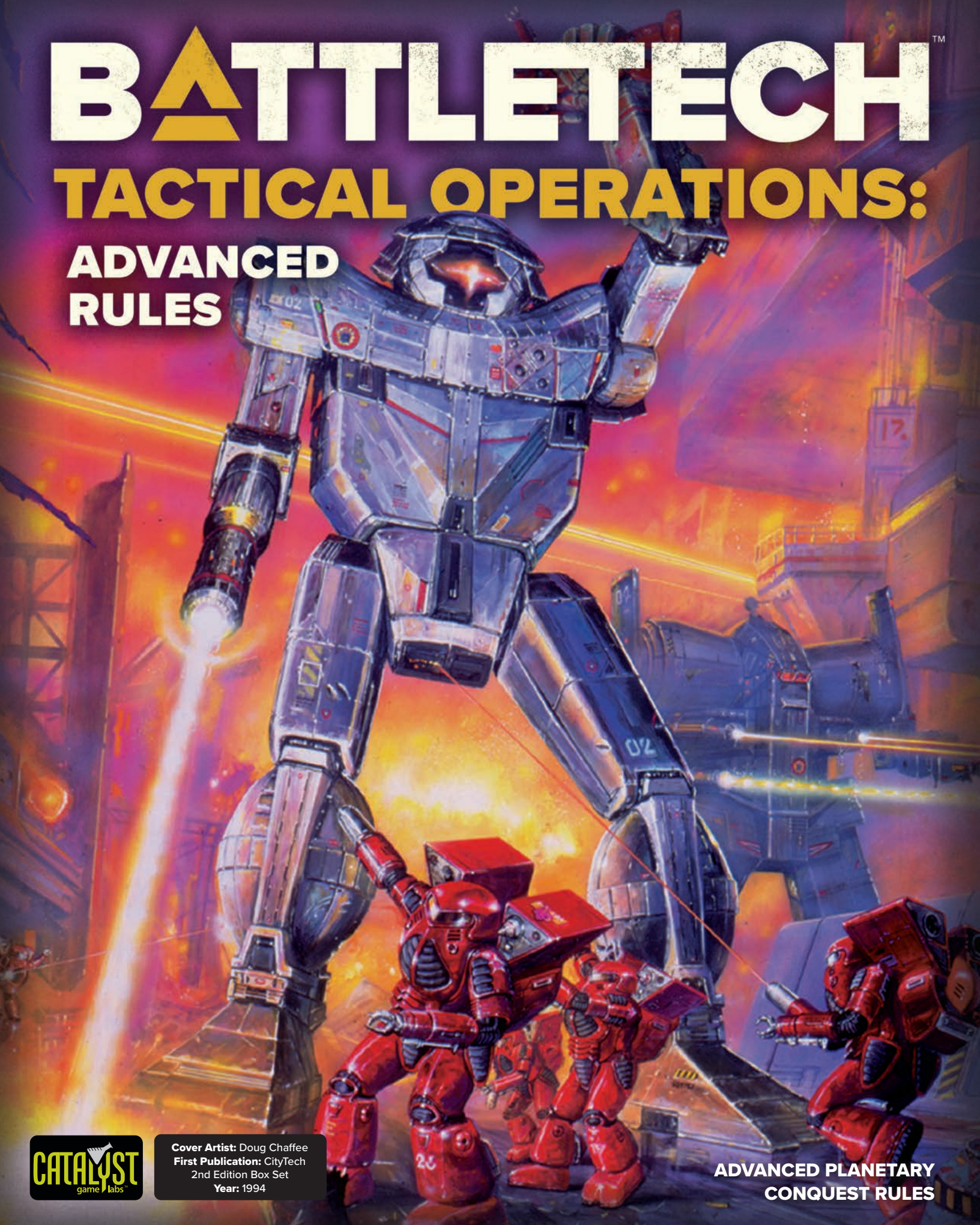
BATTLETECH™

TACTICAL OPERATIONS:

ADVANCED RULES



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TACTICAL OPERATIONS

ADVANCED RULES

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The Fifth Free Worlds Guards battle the Second Donegal Guards in the blasted ruins of a factory complex.

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Dedication

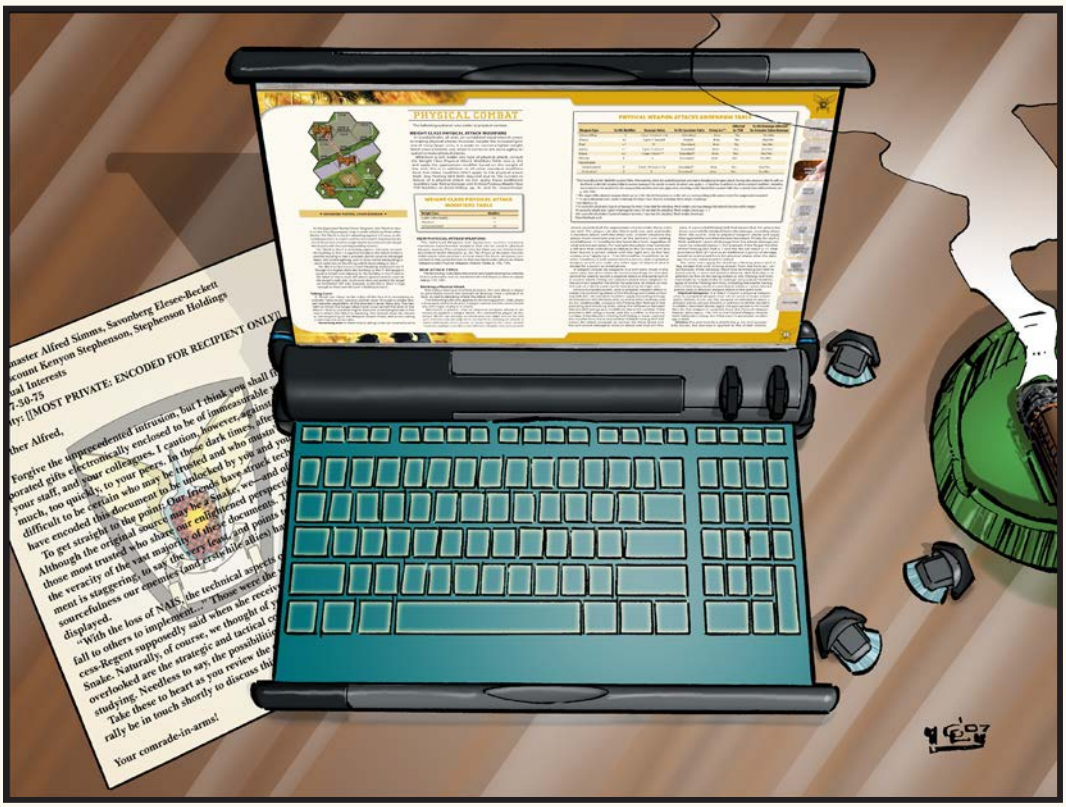
To Tara Suzanne Bills for allowing me to continue playing in the sand box that I love even as I'm supposed to be "moving on." If you love this book, give her a giant thanks the next time you see her.

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The *Total Warfare* (*TW*) and *TechManual* (*TM*) rulebooks present the core game and construction rules for *BattleTech* (*BT*), otherwise referred to as the standard rules. These two volumes encompass eight core unit types—several of which contain numerous sub-unit types—and a host of weapons and rules, as well as covering many different game situations. However, despite the breadth of play covered, many game situations still fall outside those rules, not to mention a plethora of more advanced equipment, as well as a few advanced units.

ADVANCED RULES

Beyond the standard rules, a legion of advanced rules exists, allowing players to expand their games in any direction they desire. In an effort to bring these rules to players in the most logical form possible, the advanced rules are contained in five core rulebooks, each one staging up and building off of the previous rules set. Additionally, each one focuses on a particular "in-universe time frame" that will allow players to easily grasp where a given rulebook will "plug into" their existing game play.

TACTICAL OPERATIONS (2 VOLUMES)

SitRep:
Forces on-world.
Conflict expected to last mere hours to achieve object.

ADVANCED RULES

Tactical Operations: Advanced Rules (*TO: AR*) is the rulebook you are holding in your hands, and is the first in the "staging" Advanced Rulebooks. Its focus is during game play, and applies directly to a game as it unfolds on a world in the *BattleTech* universe; its rules represent hours in-universe, the time frame it takes for a single, moderate-sized battle to play out on a gaming table.

Building on *Total Warfare*, *TO: AR* conveys numerous advanced rules for movement and combat across various units, while expanding core rules such as those for buildings, and implementing a host of advanced terrain and weather rules.

ADVANCED UNITS AND EQUIPMENT

Building on *TechManual*, *Tactical Operations: Advanced Units and Equipment* (*TO: AUE*) presents rules for the construction and use of advanced Support Vehicles, as well as advanced and prototype construction options and weapons for use by almost every unit. To use the construction rules, designers will need paper and pencils, as well as copies of the Blank Record Sheets found at the back of this book. Due to the complexities involved with the construction of the Advanced Support Vehicles, a calculator will be handy as well.

These books contains a number of rules changes from previous editions. We feel confident that these are the most complete, clear and concise advanced rules for *BattleTech* ever presented.

These rules supersede all previously published rules, including the *BattleTech Manual*, *BattleTech Compendium*, *BattleTech Compendium: The Rules of Warfare*, *BattleTech Master Rules* (standard and revised editions), *Combat Equipment*, *Tactical Handbook*, *Maximum Tech* (standard and revised editions) and *Unbound*.

STRATEGIC OPERATIONS

SitRep:
Forces in solar system.
Beginning burn to planet.
Conflict expected to last weeks to achieve object.

Strategic Operations (*SO*) is the next "staging" Advanced Rulebook. It stages a player up to the next logical area of play, focusing on "in a solar system" and multi-game play; its rules represent weeks within the *BattleTech* universe, the time frame needed for several battles to conquer an entire solar system.

Strategic Operations contains advanced movement and combat operations emphasizing the importance of aerospace units, while extensive rules cover combat drops of numerous troop types into any situation. Linked scenarios and comprehensive maintenance, salvage, repair and customization rules provide an easy format for players to turn multiple games into an interconnected campaign to capture a target system, where the support crew of technicians and doctors and their skills can be just as important as any warrior. Complete game play and construction rules for advanced aerospace units are also included. Finally, a complete game system—*BattleForce*—allows players to use their existing miniatures and mapsheets to play quick, fast-paced *BattleTech* games, from small-scale skirmishes to large-scale planetary invasions.

INTERSTELLAR OPERATIONS

SitRep:
Forces marshaled.
Flotillas assigned to target solar systems.
Conflict expected to last months to achieve objects.

Interstellar Operations (*IO*) is the third and final "staging" Advanced Rulebook. Players are staged up to the final level of play, where they can assume the roles of a House Lord or Clan Khan and dominate the galaxy; *IO* rules represent months in the *BattleTech* universe, the time frame for conquering numerous star systems.

Interstellar Operations contains complete rules for generating and running any type or size of force. Additionally, a comprehensive rules set governs the running of an entire faction's military as a player tries to conquer (or defend) numerous solar systems. More importantly, the system contains rules that allow players to stage any portion of a given conflict back through the various rule sets, as they desire–from the simple, easy-to-use rules of conflict at the largest scale, down to *BattleForce*, or all the way back down to a standard *BattleTech* game as presented in *Total Warfare* and *Tactical Operations*. Players have complete flexibility for any type of conflict in which they wish to engage.

CAMPAIGN OPERATIONS

SitRep:
Prepare forces.
Assign objectives, targets, and plans of attack across a world or a swath of interstellar space.
Wage war to achieve your final objective.

Campaign Operations (CO) is the rulebook you are holding in your hands and the foundational book to prepare players for campaigns that can encompass all of the three "staging" Advanced Rulebooks. Incorporating elements from all of the previous rulebooks, as well as *Alpha Strike Commander's Edition*, *CO* represents an entire campaign, scenario, or story arc within the BattleTech universe. Players can assume the roles of any unit within the universe or create their own iconic force.

Campaign Operations contains rules for the construction and detailing of solar systems, building an opposing force to put in conflict with the players, crafting specialized scenario and campaign arcs, and constructing a stylized *Chaos Campaign* that fits a group's play style. Players and gamemasters can use these rules with *Total Warfare* (and subsequent Advanced Rulebooks), *A Time of War RPG*, and the *Alpha Strike* system.

CHOOSE YOUR RULES

Tactical Operations: Advanced Rules encapsulates a myriad of advanced rules. In effect, all the rules in this volume are optional. This means you can use as many or as few of the rules in this book as you want. (In fact, this book contains so many new rules that we recommend you try them out a few at a time, rather than attempting to use them all at once.) Furthermore, most of the new rules here can be added individually to a standard game. You can add rules to your game one at a time—most of the rules do not rely on other rules in this book to work in existing *BattleTech* games. This allows you to tailor your *BattleTech* game to your taste by including only those rules that you find make the game more interesting or fun. Use whatever new rules you want and disregard the rest. Given the scope of the rules and the fact that they are optional, all players in a group should read through and agree to the use of any of these rules.

PLAYER ADJUDICATION

An advanced-rules book for any game is, almost by definition, more complex. In a game system with such a long and rich heritage as *BattleTech*—this rulebook alone draws from dozens of different sources across a large number of years—that complexity is even greater. Developers and writers have gone to great effort to make these rules as comprehensive as possible—not only from one section to the next in this book, but in how such advanced rules interact with the core game as presented in *Total Warfare*. However, the sheer scope of *Tactical Operations* and the plethora of options provided means that it is not possible to cover all potential situations. Once this product reaches the players' hands, they'll envision scenarios and create situations on a game board that never crossed the minds of the developers or the legion of authors and playtesters that thoroughly worked over this product.

With that in mind, when players encounter situations not covered in the rules as they integrate the contents of *Tactical Operations* into their playing group, they are encouraged to adjudicate each situation appropriately; make up the rules that work for you. If in the process a playing group runs into an argument, feel free to let a die roll resolve any disputes so you can return to playing the game and having fun.

Finally, the forums on bg.battletech.com are an excellent resource. Players can join a strong and vibrant online community, tapping a wide selection of players for different ideas on how best to adjudicate a particular situation.

FICTION

As described in *Total Warfare* and *TechManual*, fiction plays a pivotal role in bringing the *BattleTech* universe to life. Whether "story fiction" that places readers inside the heads of the characters in that universe, or "sourcebook fiction" that places the reader in the universe as though living among those characters, both work hand-in-hand to immerse players in this vibrant milieu.

Total Warfare concentrated on story fiction, while *TechManual* concentrated on sourcebook fiction. *Tactical Operations* covers something of a middle ground, with various story and sourcebook fiction sections found throughout the book.

FICTION VS. RULES

It is important to remember that regardless of the critical role fiction plays in immersing players in the *BattleTech* universe, such fiction should never be construed as rules. As with *Total Warfare* and *TechManual*, to eliminate confusion about which sections are fiction and which are rules, the fiction sections have a unique look, compared to the uniform presentation of the various rules sections. All fiction sections are italicized in the table of contents.

As with *TechManual*, the exception is the *Equipment* section, which includes sourcebook fiction as well as rules. In this case, the sourcebook fiction entries for each piece of equipment are set apart in a distinctive graphic presentation, allowing readers to tell at a glance what is fiction and what are rules.

FICTION VS. ART

Tactical Operations follows the graphic design format established by *Total Warfare* and *TechManual*, wedding art to the book's visual presentation in order to enhance the players' experience. In this case, the graphic presentation represents a computer from House Davion's New Avalon Institute of Science, one of the Inner Sphere's largest and most advanced universities for the study and development of new technologies (see *A Time of War*, p. 17, *TW*).

As with fiction, while art plays an important role in bringing the *BattleTech* universe to life, it should never be construed as rules.

RECORD SHEETS

Players use the following record sheets to track various types of information while playing *BattleTech*. Each type of unit (JumpShips, WarShips, Space Stations, Satellites, Mobile Structures and Large Naval Support Vessels) uses a unique record sheet, while Rail and Large Airship Support Vehicles use Combat Vehicle Record Sheets appropriate to the unit type. Blank Record Sheets are provided at the back of this rulebook for all unit types. How they work, and which record sheets should be used for each unit type featured in this book are outlined below.

STRUCTURE RECORD SHEET

The Structure Record Sheet is for use when constructing a building (see *Building Construc*tion, p. 126), or when using the expanded Construction Factor rules (see p. 119) with standard buildings. This record sheet is also used when dealing with Mobile Structures (see p. 33, *TO: AUE*).

Structure Map

In advanced-rules play, several rules options require tracing specific building hexes vertically and horizontally. Additionally, the Structure Map is designed to help players create truly large structures using multiple record sheets. For example, Record Sheet A could track Levels 1 to 6, while Record Sheet B could track the same horizontal area from Levels 7 to 12. On Record Sheet C, the players may add a "right side" to the sheet to show that the horizontal locations of these building hexes are conjoined exactly to the right of Record Sheet A, and so on.

Structure Data

The Structure Data block is located in the upper left corner of the record sheet and includes the total levels of the structure, what technology base was used when constructing the building, and the Weapons Inventory for tracking what weapons a building may mount; weapons of identical types and location may be combined on a single line to conserve space (ammunition is noted on a separate line). The Cost and Battle Value of the building can also be noted in this location.

For Mobile Structures (see p. 33, *TO: AUE*), this section also tracks the MP, Movement Type and Powerplant Type.

CF and Armor

The CF & Armor block is located in the bottom left of the record sheet and includes a double column for tracking the Construction Factor and Armor of various hexes. Note that this section is not designed to track all hexes (the Structure Map accomplishes that task), but to track those specific hexes that have been damaged during play.

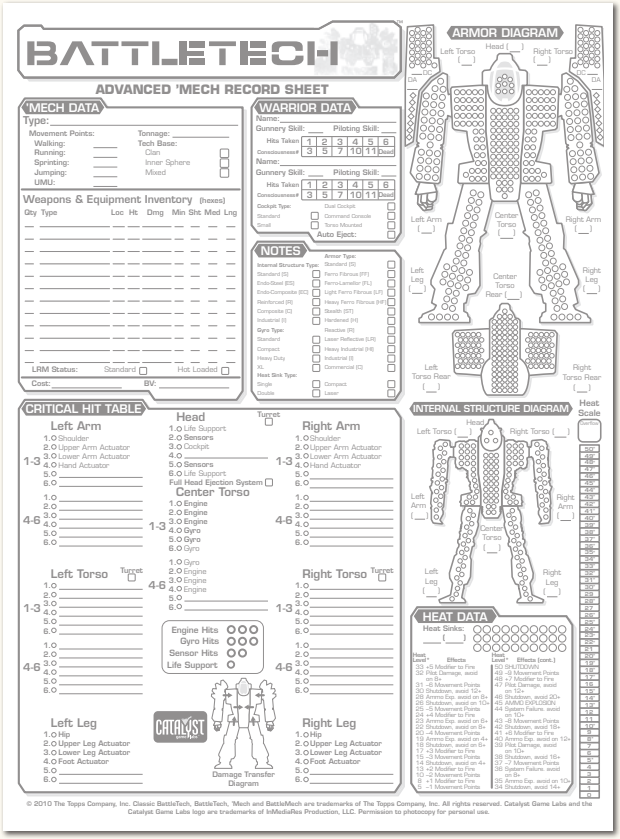
Crew Data

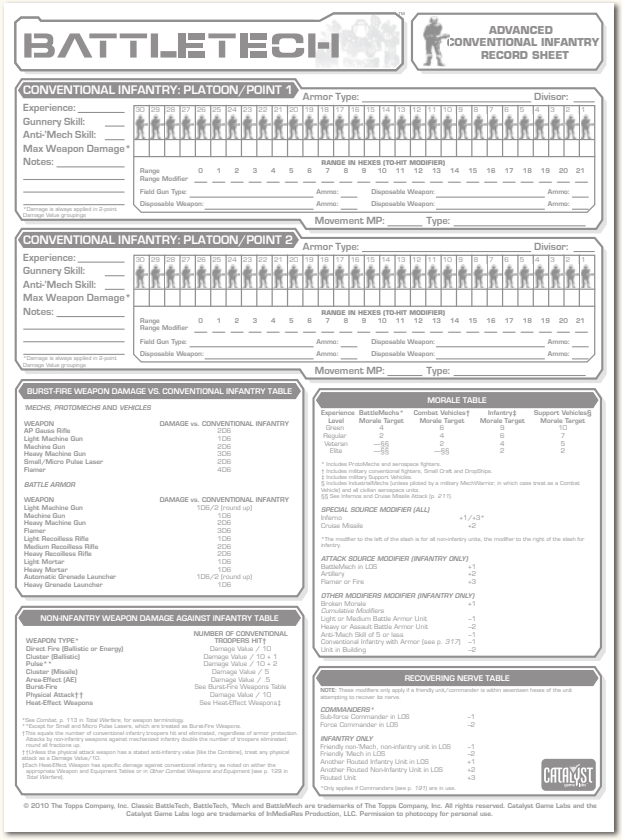
This block lists the number of crew and their Gunnery Skill.

ADVANCED RULES RECORD SHEETS

The following record sheets are modifications of standard-rules record sheets found in *TechManual*. The changes allow a player to more easily track the many new weapons/equipment options and rules during game play. This section only covers changes made to the record sheets.

Note: Despite the best efforts to provide as much information as possible for the advanced-rules record sheets, the sheer scale of options found in *Tactical Operations* makes it virtually impossible to provide a sheet that can cover every possibility. Players can use a *Notes* section of a given record sheet, or simply use the back, to track any options in use not covered on the record sheet.





Advanced 'Mech and Four-Legged 'Mech Record Sheets

The following describes the changes made to the standard 'Mech and Four-Legged 'Mech Record Sheets.

'Mech Data: Includes notes for tracking a 'Mech's Sprinting MP and whether it utilizes a Mixed technology base, and allows for tracking of whether or not an LRM is hot-loaded.

Warrior Data: Includes data for two warriors, as well as boxes for tracking the status of the auto ejection system.

Critical Hit Table: Additional critical slot items are gray-scaled to show that a 'Mech may be constructed without those items. Additionally, boxes to note the mounting of turrets or a full head ejection system are also noted, as are circles next to every critical slot, for use when using the armored component rule.

Heat Data and Heat Scale: These items have been expanded to increase the Heat Scale from 30 to 50.

Notes: In place of the cockpit illustration (or blank *Notes* section), a host of equipment options are noted for ease of tracking during construction and game play.

Advanced Ground Vehicle and VTOL Record Sheets

The following describes the changes made to the standard Ground Vehicle and VTOL record sheets.

Crew Data: Includes data for tracking crew size.

Armor Diagram: The Armor Diagrams have been expanded, as appropriate. Areas for tracking armor and internal structure for additional turrets have also been added.

Hit Location and Critical Hits Table (VTOL Only): Appropriate information has been added for tracking damage and critical hits against a turret.

Advanced Conventional Infantry Record Sheet

The following describes the changes made to the standard Conventional Infantry Record Sheet.

Range Modifier: This section has been expanded significantly to track many of the different weapon options available to advanced-rules infantry.

Skills: This area also now tracks Experience, and includes a notes section.

Armor: Armor Type (including a unit's Damage Divisor, if greater than 1) can now be tracked on the sheet.

Tables: The Morale and Recovering Nerve Tables are found on the sheet for ease of use during a game.

ADDITIONAL RECORD SHEETS AND TEMPLATES

The following additional record sheets are also found at the end of this rulebook, but are described elsewhere in this volume.

Double Blind Turn Record Sheet

This record sheet is for use with the *Double-Blind Rules* (see p. 188).

Line of Sight Chart

This record sheet is for use with the advanced *Line of Sight and Dead Zones* rules (see p. 77).

Simultaneous Movement Record Sheet

This record sheet is for use with the *Simultaneous Movement* rules (see p. 183).

The Efficiency of Rome

STEVEN MOHAN, JR.



FOOTHILLS OF MOUNT NIJAK
ILLYRIAN, ILLYRIAN PALATINATE
8 JUNE 3063

The trap had worked exactly as General Julius O'Reilly had planned. He'd hung his Auxilia Loricatus out to dry, ordering his tanks to fall back to a mountain valley whose sloping walls precluded retreat for tracked vehicles. Offered the opportunity to crush the Marian armor, the Illyrian forces bit down hard. The Right Arm of Thor and Cavanaugh's Cavalry swarmed into the valley.



And then the armor *prefect* gave the pre-arranged signal and O'Reilly's Prima and Tertia cohorts moved forward, his assault machines taking position at the top of the valley's walls and pouring a terrible, merciless fire down on the heads of the mercenaries.

O'Reilly watched his plan unfold from the vantage of his SD1-0 *Sunder*.



At first, the Right Arm of Thor stood up to the brutal beating, doggedly working their way from cover to cover.

Not Cavanaugh's Cavalry, though. They fell back.

In an instant there was not a machine left standing painted in the Cavalry's royal blue and white trim. The field was left to the gray and green mountain camo of the Right Arm of Thor. And the merciless fire of O'Reilly's cataphracti.

Thor's 'Mechs began to fall back.

O'Reilly leaned forward and said, "All units, this is Aurora. *Salvo jure*." The Latin code phrase sent O'Reilly's fast machines, his comitati, slashing forward to hit the enemy in the back or dropping into the midst of the confused retreat on plumes of argent fire. Where they were to destroy the Illyrian mercs.

Without prejudice.

And then, as O'Reilly watched, the momentum somehow shifted back.

It began with a single Thor *Nightsky*. The machine's insect-like cockpit and rounded torso made it look a like a giant roach. Apparently this bug wasn't ready to be squashed. The machine stopped, turned and hit its jump jets, suddenly rising on three plumes of golden fire.

It came down hard, already swinging the ugly hatchet in its right arm.

Right into the cockpit of a Marian *Javelin*.

The comitati dropped like a man suddenly beheaded.

The *Nightsky* pivoted and tore into a *Panther* with the large pulse laser in its left arm. The *Panther* staggered backwards, its chest armor a sudden mess.

Up and down O'Reilly's line, merc machines were turning and fighting. In seconds what should have been a rout had turned into a brutal slugfest, and

O'Reilly's comitati were getting the worst of it. The Marian lights were facing bigger and better armed 'Mechs and there was no way for his own *cataphracti* to help. The battle had raced beyond their short-range weapons and they didn't dare use their long-range weapons for fear of hitting their own countrymen.

If he didn't act quickly, he was going to lose all his striker units.

"This is Aurora. All comitati fall back. All cataphracti and auxilia forward to cover their retreat."

His light machines started to retreat. If the mercs pursued, this day might still be salvaged.

At first it seemed to be working.

As one of his *Firestarter*s broke for the advancing line of friendly cataphracti, the *Nightsky* rose on a pillar of flame. O'Reilly felt a snarl touch his lips. He dropped his reticle over the enemy medium and put his *Sunder* into a bone-crunching, earth-shaking run, pushing his 360XL for all it was worth.

The symbol flashed gold a second before the Nightsky touched down.

O'Reilly pulled his triggers, stitching a long stream of depleted uranium slugs across the *Nightsky*'s chest and following it with a flight of SRMs from his head, then two more from his torso.

The attack must have shifted the *Nightsky*'s momentum because the machine came down unbalanced on its right leg. The limb had never been designed for that kind of loading.

It snapped off.

The *Nightsky* toppled to the earth.

O'Reilly looked up, searching for another opponent, but in the time it took for him to down the *Nightsky* the enemy had melted away. The fight had been short, but no less devastating for all that. The battlefield was littered with broken machines—some painted white with blue and copper trim of his own *Il Legio* and some painted in the more practical camouflage scheme of the Arms of Thor.

This should have been a decisive victory. Instead, it was a bloody stalemate. He sighed. He would have to salvage what he could.

He began to turn away, and then something made him turn back and look again. It occurred to him that he saw little of the royal blue of Cavanaugh's Cavalry mixed in with the dead.

MARIAN HEGEMONY POW CAMP
10 JULY 3063

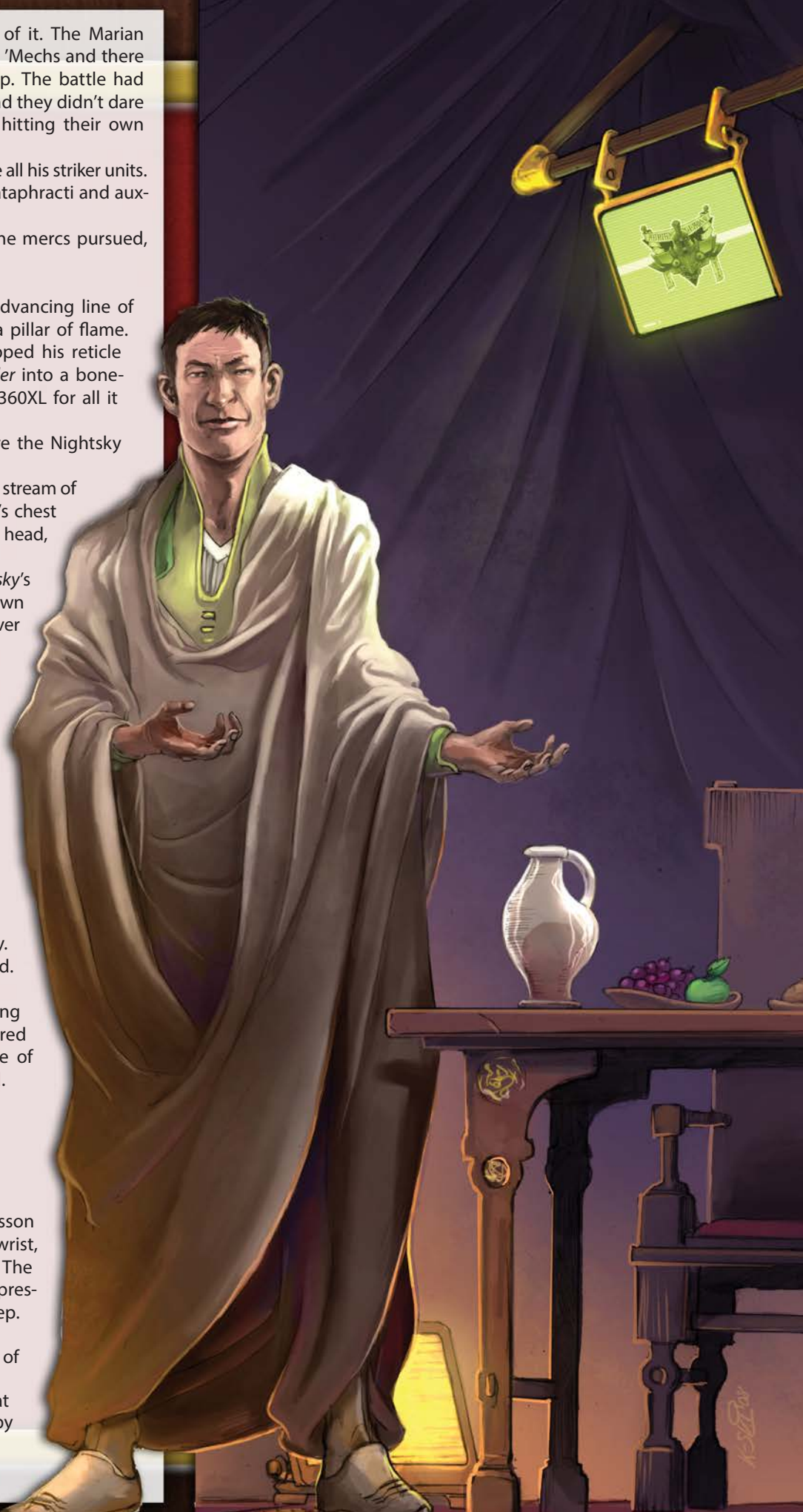
Sometime in the night, Captain Eric Larsson shifted on his bunk and bumped his left wrist, sending molten agony shooting up his arm. The ache of the broken joint was a constant presence, one he couldn't even escape in his sleep.

He dreamed of pain.

But it was nothing compared to the pain of being Dispossessed.

His *Nightsky* was eight years old, but that was practically off the showroom floor by Periphery standards. And it was his.

He closed his eyes. Not any more.



He replayed that final battle with the *Sunder* over and over again, going back to it like a child might worry a loose tooth.

Finding no solace.

The door of his cell opened, flooding the small wooden room with harsh light.

"Get up, dog," barked the silhouette in the doorway. "We're going for a ride."

MARIAN HEGEMONY FIELD HEADQUARTERS

Larsson had no illusions about his ultimate fate. The Marian Hegemony had started as a bandit kingdom, and he knew what pirates did to prisoners. He did his best to make himself ready for death.

After they'd set his wrist, he'd allowed himself to hope that they didn't intend to torture him. He shook his head.

Eric, you are a fool.

They'd obviously only fixed him so they could break him again. Torture was all about contrast.

The guards wore blue infantry uniforms and carried automatic weapons at port arms. There were four of them, two ahead, two behind. Larsson considered escape, but he couldn't take four armed soldiers. Not with a broken wrist. And even if he did get away, where would he go? They'd brought him to the heart of the Marian camp. No, he'd have to see this one through.

Whatever that meant.

The soldiers led him to a large canvas tent that had been dyed royal purple. When they pulled the flap back and pushed him inside, he found himself standing on a thick, crimson carpet. Cunning lamps simulated the flickering golden glow of candles and lent the tent a touch of warmth. All the furniture was polished cherry wood inlaid with gold.

There was red wine in silver goblets, fresh greens, warm bread. He smelled the mouth-watering aroma of roasted pheasant.

Torture was all about contrast.

With an effort he jerked his attention from the food and focused on the man the soldiers had obviously brought him to see.

On the surface there was nothing remarkable about him. He was dressed in the plain, white robes of a Roman nobleman. He was young—in his early twenties—with short brown hair already starting to recede at the temple and he was on the short side of average height.

But his eyes.

They were steel gray and Larsson got the sense they missed nothing.

The man stepped forward and offered his hand. "I'm Julius O'Reilly."

"Eric Larsson." Without thinking, he shook the young man's hand. "O'Reilly?"

The man rolled his eyes in a self-deprecating gesture. "Afraid so." He glanced at the lead soldier. "That will be all, *Miles*."

The man touched his fist to his heart and departed.

"*Miles*?" Larsson asked.

"I have given my troops Roman ranks. Perhaps this tradition will catch on in the rest of the Hegemony." He smiled. "Someday."

"Someday," echoed Larsson. "When you become Caesar."

"I see you take my meaning. So you are intelligent as well as brave."

Understanding dawned. "It was *you*," Larsson said. "In the *Sunder*."

O'Reilly nodded. He stepped over to the table, selected a cherry from a bowl, popped it in his mouth. "Want something?"

Larsson shook his head. It was the hardest thing he'd ever done.

"My father is a monster," O'Reilly said softly.

"Yeah, except right now, you're the one invading my home."

O'Reilly shrugged. "I have to have my Gaul."

Larsson looked at him blankly for a moment. Then he said, "Oh, yes. Julius Caesar earned his reputation by conquering Gaul. It was his stepping stone to Rome."

"Most impressive, Captain."

Larsson swallowed, squared his shoulders. "I won't help you, O'Reilly."

O'Reilly's lips quirked. "I think you will."

Larsson shook his head emphatically. "I will not give you a single piece of military information. We are mercenaries, O'Reilly. But that does not mean we aren't patriots. We love our nation as much as any Illyrian. We will fight you to the very last man."

O'Reilly studied him for a long moment. Finally he nodded. "I believe you, sir."

"So it doesn't matter how much you torture me, I won't—"

"Who said anything about torture?" O'Reilly frowned. "Have you been mistreated in any way? I will do everything I can to make your stay with us comfortable."

Larsson shook his head. "No, I just, uh—Look. I'm not going to help you."

A bright smile lit up the young man's face. "Why, Captain Larsson, you already have helped us."

Larsson could think of nothing to say.

O'Reilly took him by the arm directed him to a campaign chair. "Please sit."

Larsson slowly settled into the chair.

"Let me tell you a story about Julius Caesar," O'Reilly said. "When he was a young man, Caesar was captured by pirates who wished to ransom him for twenty talents of gold." O'Reilly laughed. "He told them he was worth at least fifty. They got it for him, too. But here is the interesting part. While he was their captive, he warned them that once he was released he would hunt them down and crucify them. They didn't believe him, of course."

Larsson felt a chill wriggle down his spine. "But he did it," he whispered.

"Oh," said O'Reilly, disappointed. "You've heard it before."

"No, but ..." He shook his head. "What is your point, exactly?"

"Just this, Captain. No barrier can stand before the will of a great man."

"And are you a great man, General?"

O'Reilly smiled cheerfully. "You and I will just have to find out together."

✸

And after that the four *miles* were back to take Larsson away. They walked through the Marian camp, again two in front, two in back. If O'Reilly could be believed, Larsson didn't have to worry about being tortured.

No, he'd have a nice comfortable seat for the Marian conquest of his home. *You already have helped us.*

Larsson clenched his jaw. *No. I will not give in. Not while my brothers still fight and die.*

He tripped and sank to one knee, moaning and holding his broken wrist.

One of the trailing guards leaned over to help him.

Quick as a snake, Larsson punched him in the throat. He was reaching for the man's weapon almost before he dropped it.

He heard the other soldiers shouting, "*Stop*," but he ignored them. He turned the gun on the guard next to him and pulled the trigger, feeling the submachine gun rattling in his arms, watching the man sprout black-red holes.

He fell and Larsson turned to find another target.

What he saw was the butt of a rifle swinging down into his face. And then everything went black.

MARIAN HEGEMONY FIELD HEADQUARTERS
15 JULY 3063

It was five days before he saw O'Reilly again. This time the guards shackled him when they led him out, but other than that no one mentioned the escape attempt. They brought him to a hotel that had been captured by the Hegemony and followed behind as he spoke with the General.

This time O'Reilly was dressed more formally: he wore a purple baldric draped over the left shoulder of his gray uniform tunic, a golden ballistic breastplate, and a gladius at his hip. Larsson wondered what the General had planned that required a dress uniform.

Was O'Reilly here to pass judgment on him?

"Are you here to inform me of my punishment?"

O'Reilly shook his head. "No. I as much as dared you to do it the last time we met, with my speech about great men and their will." He looked gravely at Larsson. "You killed a man. You will need to make restitution to his family. But there will be no punishment. You are a fighter, Larsson. I admire that. I *need* that."

"You 'need' me," Larsson said scornfully. "I'm the most useless thing in the universe: a MechWarrior without a 'Mech."

O'Reilly shook his head. "I need you more than you know. Conquest is easy. Governing is hard."

Larsson clenched his jaw. "You will not find the conquest of Illyria quite so easy."

O'Reilly shrugged. "Perhaps. I didn't ask you here to pick a fight."

"Oh," Larsson said acidly. "And just why did you ask me here?'"

"Julius Caesar was not destroyed on the battlefield, Captain. He was murdered by Brutus and a band of conspirators."

"Yes," Larsson said, "stabbed on the Ides of March. I've heard that story, too."

O'Reilly shook his head sadly. "Caesar wasn't murdered with a blade. The instrument of his destruction was politics. He was dead before the first conspirator picked up a knife."

"And you'd like to avoid the same fate."

Again O'Reilly shrugged. He stopped in front of a conference room with beautiful mahogany doors. The soldiers behind Larsson stepped up to flank him.

Larsson glanced at the men. "You'll forgive me if I don't wish you luck."

Just then one of the doors swung open and a Marian officer stepped out. Larsson glanced at the open door and for just a second he glimpsed what was inside: a beautiful oak conference table with the Marian senior staff arrayed along the near side of the table and empty seat in the center, obviously intended for O'Reilly himself.

Sitting opposite them were several officers wearing the royal blue dress uniform of Cavanaugh's Cavalry, Jared Cavanaugh at their head.

"Oh," said O'Reilly. "I never leave anything to luck."

OUTSKIRTS OF THE CITY OF ILLYRIA
19 JULY 3063

The battle for Illyria passed close enough to the Marians' camp that Larsson heard the sounds of combat in the night: the high-pitched shriek of lasers, the whipcrack of PPCs, the deadly rattle of autocannons. He held his breath, hoping that the Right Arm of Thor would break through and smash Julius O'Reilly, but in the morning it was the same group of Marian infantry that came for him.

This time they drove him to the outskirts of Illyria's capital. Larsson knew they were drawing near the battlefield before he saw it. He could smell it in the sharp odors of oil and metal, the stench of burning grass.

The scent of blood.

Their jeep crested a hill and Larsson gasped. What he saw was a slaughterhouse. The scattered limbs of broken machines littered the scorched grass. There were Marian 'Mechs and Thor 'Mechs, but the machines of the Illyrians outnumbered the others two to one.

Larsson didn't see a single machine painted royal blue.

"Where is Cavanaugh's Cavalry?" he asked dully.

"Holding the capital," said the lead guard. "For us."

Larsson nodded. He swallowed, held up his hands. "You don't need to keep me locked up any longer."

He was surprised when the man leaned forward and unlocked his shackles. "The General said you'd say that."

They rode in silence until they reached O'Reilly's field camp, where he found the General in MechWarrior togs, his cooling vest off and a towel draped around his sweaty shoulders.

O'Reilly flashed him a sympathetic look. "Now you see the truth of it."

Larsson had to look away. He turned from O'Reilly and stared out at the field of broken men and machines. *His brothers and sisters.*

"You said—" Larsson almost choked on the words. "That I — *helped* you."

"You showed me the character of the Right Arm of Thor," O'Reilly said gently. "And when I didn't find the same fire and intelligence in Jared Cavanaugh, I knew he could be turned."

Larsson closed his eyes.

"You're free to go, if you like," O'Reilly said. "But I hope you'll stay."

"To what purpose," Larsson said bitterly, "*Caesar*?"

"There are many 'Mechs here that can be salvaged, rebuilt, placed again on the field. But none are so valuable as what can be salvaged among men."

Larsson had nothing to say to that. He opened his eyes, but he could not bring himself to face O'Reilly.

"Do you know what made Rome so successful, Captain?"

Numbly Larsson shook his head.

"It wasn't their legions or their aqueducts or even their roads. What made Rome mighty was its flexibility. All men were adopted into the empire no matter what they looked like, how they spoke, where they were from. This was so true that even a foreigner like Septimus Severus or the son of a freed slave like Pertinax could rise to be emperor. Think of that." He drew a deep breath. "Rome wasted nothing."

"You don't need me," Larsson whispered.

"Tomorrow," said O'Reilly, "my troops and I will begin the journey home. Once we execute that first jump, there will be no turning back. The Alphard zenith jump point is my Rubicon."

O'Reilly's voice dropped in volume, but not in intensity. "If I am to rule better than my father, I will need men like you by my side. It is, of course, your choice."

Larsson heard the General who would be Caesar turn and walk away. The former merc drew a deep, shuddering breath.

Then, after a moment, he turned to follow.



With his enemy cornered into collapsed valleys and surrounded by heavy rubble, a Roughriders Salamander *pins Taurian units under ruinous fire.*

Maneuvering 'Mechs, vehicles and infantry on the battlefield is perhaps the single most important tactical consideration in *BattleTech*. In many *BattleTech* games, as throughout the history of warfare, skillful maneuvering has often been the key to victory. In *BattleTech*, all maneuvering is governed by movement rules that simulate the effects of terrain and weather conditions, the capabilities and condition of individual 'Mechs, vehicles and infantry, and other factors that affect the ability of a unit to move in battle.

This section provides optional movement and planetary conditions rules to provide greater flexibility in *BattleTech* games.

MOVEMENT MODES

This section includes rules for new movement modes, as well as new movement capabilities such as going hull-down, climbing, jumping and more.

As per standard rules, only a single type of movement mode (noted in parenthesis below) can be chosen in a turn.

STANDING STILL (EXPANDED: MOVEMENT MODE)

In standard rules, standing still inflicts no to-hit modifiers, either to the attacker or the defender. However, in mechanized combat speed is life, and standing still is a death warrant. To better reflect this aspect of battle, anytime a non-infantry ground unit does not expend any MP in a turn, apply a –1 to-hit modifier to all weapon and physical attacks made against that unit. This modifier does not stack with the Immobile Unit modifier. If a unit is Immobile, use only the Immobile unit modifier.

SPRINTING (MOVEMENT MODE)

To use sprinting movement, a 'Mech must have two working hip actuators. A 'Mech's Sprinting MP is twice its current Walking MP. Sprinting generates 50% (round down) more Heat Points per turn than the 'Mech generates when Running.

Because keeping a 'Mech safely moving at such high speeds requires a MechWarrior's total concentration, a 'Mech that sprints during the Movement Phase may not make any deliberate attacks that turn. Accidental charges as a result of skidding or hidden movement rules are still possible, and a 'Mech may still fire weapons to generate heat, though such firing has no chance of doing damage. Additionally, the 'Mech may not spot for indirect LRM fire or artillery fire, or take any other action that would normally require it to sacrifice an attack. A Sprinting unit may not move backward or enter Water hexes of Depth 1 or deeper. Finally, any Piloting Skill Roll made for a Sprinting unit suffers an additional +2 modifier.

A MechWarrior in a Sprinting unit has little spare attention to devote to avoiding enemy attacks, so any attack against a Sprinting unit receives a –1 to-hit modifier. However, the standard target-movement modifier applies.

A 'Mech equipped with MASC or a supercharger (see p. 157, *TO: AUE*) may engage either or both systems and sprint during the same turn. Engaging one gives a 'Mech MP equal to its current Walking/Cruising MP multiplied by 2.5. However, any unit that tries to sprint and use MASC or a supercharger must make a successful Piloting Skill Roll (with the +2 additional modifier for Sprinting) to avoid falling; the roll is made at the end of the 'Mech's movement.

A 'Mech equipped with MASC and a supercharger may engage both systems in the same turn and sprint. Doing so gives a 'Mech MP equal to its current Walking MP multiplied by 3, but this maneuver is quite risky. The unit must make a Piloting Skill Roll as described above for both the MASC and the supercharger.

EVADING (MOVEMENT MODE)

Evading makes enemy attacks more difficult.

Any unit that has Running/Flanking MP can use Evading. A unit's maximum Evading MP equals its Running/Flanking MP, though it does not have to use its full MP allotment. Any attack against an Evading unit suffers a +1 to-hit modifier, in addition to its normal movement modifier and any other applicable

modifiers. Evading generates 2 heat points, in addition to the heat points generated for Running/Flanking. While evading, a unit may not make any attack, spot for indirect LRM fire or artillery fire or take any other action that would normally require it to sacrifice an attack.To use Evading movement, a 'Mech must have two working hip actuators. Also, a prone 'Mech receives no benefit from Evading movement, even if it started the Movement Phase using Evading movement. For example, if an Evading 'Mech fails a Piloting Skill Roll during the Movement Phase of a turn, it does not receive the +1 to-hit modifier during the Weapon Attack and Physical Attack phases of that turn.

A 'Mech may not engage either MASC or a supercharger when using the evading movement mode.

Skilled Evading

Under the Skilled Evading option, the to-hit modifier gained from Evading movement is based on the MechWarrior's Piloting Skill, as shown in the Skilled Evading Table.

SKILLED EVADING TABLE

Piloting Skill	To-Hit Modifier for Evading
6 or greater	+0
4–5	+1
2–3	+2
0–1	+3

SHIELDING (MOVEMENT MODE)

A shielding unit uses movement to put itself in harm's way to protect another target (another unit, a building, a hex and so on) from attacks.

A shielding unit may only expend Walking/Cruising MP. A shielding unit that attacks during the turn that it is shielding suffers an additional +1 attacker movement modifier. After its movement is finished, it must designate an adjacent hex to receive its protection (that hex can be its own hex, provided the stacking rules allow such movement; i.e. it is shielding a unit in its own hex). During the Weapon Attack Phase of the turn when the unit used the Shielding movement mode, all attacks against the designated hex (whether against the hex itself, or against units or a building in the hex, and so on) that pass through the hex occupied by the shielding unit add a modifier based on the Shielding Table.

SHIELDING TABLE

Unit Type	Modifier
Vehicle	+1
'Mech, ProtoMech or Mechanized Infantry*	+2
Large Vehicle**	+3

*See below.

**Combat or Support Vehicle. Rail and Large Naval Vessel Support Vehicles cannot use the Shielding movement mode.

These modifiers are cumulative, so that two shielding vehicles in a hex would provide a +2 modifier, a shielding vehicle and a 'Mech would provide a +3 modifier and two shielding ProtoMechs would provide a +4 modifier.

The shielding unit must equal the height of the unit or building it is protecting. For example, a Small- or Medium-sized vehicle can only protect a unit of Level 1 height (or the first level of a building); it cannot protect a 'Mech, as the 'Mech is Level 2 height (though a Large Vehicle, which is considered 2 levels high, can shield a 'Mech; see Unit Heights Table, p. 99, *TW*). A Level 1 vehicle or a ProtoMech can only shield a 'Mech if the 'Mech is prone. A 'Mech can shield any other unit, but can only shield the first 2 levels of a building; players may wish to use the expanded *Line of Sight and Dead Zones* rules to determine these situations (see p. 77).

If an attack against a shielded target misses, compare the Margin of Failure against the modifier of any unit shielding, as shown on the Shielding Table. If the MoF is equal to or less than that modifier, the attack automatically strikes the shielding unit; determine direction of attack and location for applying damage normally. If two units equally apply, randomly determine which unit is struck. If the MoF is greater than the modifier of any of the shielding units, then the attack misses completely (if using the Missed Shots rule, the controlling player determines where the attack struck, and so it cannot strike either the shielding unit(s) or the original target; see *Missed Shots*, p. 79). For example, a 'Mech and a vehicle are shielding another vehicle, resulting in a final modified To-Hit Number of 9 to strike the vehicle they are shielding (a total applied modifier of +3). The die roll result is an 8, giving an MoF of 1. Because that is equal to or less than the modifiers on the Shielding Table for both the 'Mech (a +2 modifier) and the shielding vehicle (a +1 modifier), the controlling player of the attacking unit randomly determines whether the shielding 'Mech or the shielding vehicle is automatically struck by the attack that missed its intended target. If the MoF was 2, only the 'Mech could potentially be struck by the missed shot.

Glancing/Direct Blows: If a shielding unit is struck by an attack intended for the target it was shielding, the *Glancing/Direct Blows* rules (see p. 78) are never used when applying damage.

Four-Legged 'Mech: If a 'Mech is hull-down (see *Hull Down*, p. 19), then a unit at Level 1 height can shield it.

Infantry: Mechanized infantry is the only infantry type that can use the Shielding movement mode; apply a +2 modifier to all weapon attacks made by a mechanized infantry unit in the turn it is shielding. If using the Squad Deployment rules (see p. 25), a mechanized infantry squad cannot use the Shielding movement mode.

ProtoMechs: If a shielding ProtoMech is struck by an attack intended for the target it was shielding, use the Special ProtoMech Hit Location Table (see p. 184, *TW*).

Rail and Large Naval Vessel Support Vehicles: Rail and Large Naval Vessel Support Vehicles cannot use the Shielding movement mode.

VTOL Vehicles: A grounded VTOL Vehicle cannot use the Shielding movement mode. However, an airborne VTOL Vehicle—provided its bottom elevation is at the same level as the underlying terrain of the hex it is shielding and the unit/hex it is shielding is not of a greater height than the VTOL Vehicle—can use the Shielding movement mode.

For example, a standard VTOL Vehicle could not shield a 'Mech, but a Super-Heavy VTOL Vehicle, which is considered 2 levels tall (see *Super-Heavy Vehicles*, p. 190, *TO: AUE*), could shield a 'Mech, provided it was still airborne and covered the 'Mech, as described.

Air-to-Ground Attacks: Shielding cannot be used against any type of air-to-ground attacks.

Area-Effect Weapons: A shielding unit has no effect on the damage applied by an area-effect weapon, though the shielding modifier is still applied for the attempt to target a hex, such as from artillery.

Swarm Ammo: Swarm ammo can not target a unit (or building level) being protected by a shielding unit; such protected units are susceptible to Swarm's normal secondary attack mechanic, however.

Targeting a Shielded Hex: A unit attempting to target a hex with an attack must still apply the shielding modifier. For example attempting to lay a weapon-delivered minefield.

PHYSICAL DEFENSE (MOVEMENT MODE)

A 'Mech enacting the Physical Defense movement mode leaves itself wide open to weapon attacks in the hopes of catching the unwary opponent in a trap that it springs in order to bring a physical attack to bear.

The controlling player, during the Movement Phase of a turn, must announce that a unit is enacting the Physical Defense movement mode. A unit using this movement mode cannot expend any MP during the Movement Phase of that turn, nor can it make any weapon attacks during the turn's Weapon Attack Phase. During the Physical Attack Phase, when the controlling player nominates the 'Mech, the 'Mech may expend its current Walking MP and may then make a physical attack; it is considered to have walked for purposes of the attacker movement modifier during the turn in which it is using the Physical Defense movement mode. The unit can make all standard physical attacks except charging or death from above during that turn, provided the criteria for such attacks are met.

Charging and DFA: A target in Physical Defense movement mode cannot be the target of a charging or DFA Physical Attack.

CRAWLING (MOVEMENT MODE)

A 'Mech must have two hands, two lower arm, two upper arm and two shoulder actuators functioning to attempt crawling.

A 'Mech that begins a Movement Phase prone can select the Crawling movement mode. The unit can only expend half its current Walking MP (round down); all standard costs to enter a new hex apply. Additionally, to enter a new hex, the controlling player must make a standard Piloting Skill Roll (i.e. all damage modifiers apply), applying the appropriate modifiers from the Weight Class Physical Attack Modifiers Table (see p. 86). A successful roll means the unit can enter the hex. A failure does not cause any damage or result in a fall; the unit simply cannot enter the hex, and the MP expended to do so are lost. The player can make any number of Piloting Skill Rolls to enter a hex, provided it has MP remaining to do so. A unit cannot attempt to stand in the same turn in which it is using the Crawling movement mode. Regardless of the number of attempts at crawling, a 'Mech only generates 1 Heat Point per turn when using Crawling movement.

A unit can expend the standard 1 MP to change facing in a hex while crawling without the need for a Piloting Skill Roll.

A unit that has crawled is considered to have walked for purposes of the attacker Movement Modifier and can make any weapon and physical attacks, as appropriate for a prone 'Mech, during that turn.

Destroyed Gyro: A 'Mech with a destroyed gyro cannot crawl.



CPLT-K4 Catapult, *Devil's Brigade*

HURRIED MOVEMENT

In standard rules, the movement costs for various terrain (woods, levels and so on), even when running and/or sprinting, reflect a "studied" movement in order to avoid a fall. In some terrain, such as water, rubble and so on, the potential for a fall exists regardless of such studied movement.

In advanced rules, a 'Mech can engage in hurried movement, trading speed for a chance at falling that would not exist under standard rules. Whenever a unit enters a hex that requires an expenditure of movement beyond the 1 MP to enter, the player may choose to ignore one, some or all of those additional MP (the 1 MP for entering a hex can never be ignored). If any 1 MP is ignored, the controlling player makes an automatic standard Piloting Skill Roll with an additional +2 modifier upon entering the hex to avoid falling. Each additional MP ignored applies a cumulative +2 modifier, though only a single Piloting Skill Roll per hex is made. Finally, apply the modifiers from the Weight Class Physical Attack Modifiers Table (see p. 86) to the Piloting Skill Roll, as appropriate for the 'Mech's weight class. If the Piloting Skill Roll fails, the 'Mech falls in the hex it entered, taking standard falling damage; even if the 'Mech just changed levels downward, those levels are not taken into consideration for determining levels fallen. It can continue to move, however, provided it has sufficient MP to stand, move out of the hex and so on.

Hurried movement can be used in multiple hexes in a turn, with the controlling player choosing to ignore various MP requirements in a given hex, making appropriate Piloting Skill Rolls as noted above immediately upon entering each hex.

A player may never ignore the movement cost for changing a level upward.

Vehicles and ProtoMechs: Vehicles and ProtoMechs can also use hurried movement. If a vehicle fails its Driving Skill Roll, automatically roll once on the Motive System Damage Table. For ProtoMechs, use the Gunnery Skill Rating to make the appropriate Piloting Skill Roll. A failure results in 1 point of damage applied to all locations.

Terrain Piloting Skill Roll Modifiers: If a 'Mech using hurried movement enters terrain that applies a modifier to any Piloting Skill Rolls, those modifiers must be added to the hurried movement PSR. If a 'Mech enters terrain using hurried movement that automatically requires a Piloting Skill Roll, the player must make two Piloting Skill

Rolls (one for the terrain and one for the hurried movement), applying all appropriate modifiers to both PSRs.

Terrain Factor: If the *Terrain Factor Rules* are in use (see p. 63) a failed Piloting Skill Roll will result in damage to the terrain in the hex. Damage for a 'Mech's failed PSR is the standard falling damage applied to the hex. For vehicles, divide the unit's weight by 10, rounding up. For ProtoMechs, apply a single point of damage.

Water: Hurried movement cannot be used in a water hex to avoid the penalties for moving in water.

In the Movement Basics Diagram (see p. 51, TW*), the 'Mech in Hex A cannot enter Hex D, as it has a Walking MP of 5 and would require 7 MP to enter Hex D. However, using hurried movement, the controlling player of the 'Mech could choose to ignore the 2 MP requirement to enter the heavy woods in the hex, applying a +4 modifier (+2 for each 1 MP ignored) to an immediate Piloting Skill Roll upon entering Hex D; the controlling player could not ignore the MP required for entering the hex or for changing 1 level upward. If the unit was a medium or light 'Mech, it would apply a –1 or –2 modifier respectively to that Piloting Skill Roll, respectively, from the Weight Class Physical Attack Modifiers Table. If the Piloting Skill Roll fails, the 'Mech falls in Hex D.*

HULL DOWN

A four-legged 'Mech can choose to go hull-down by squatting behind an obstacle so that only its weapons are visible to the enemy. Though the 'Mech can do this in any hex, the maneuver will only help the 'Mech if it has partial cover from its opponent without going hull-down.

Going hull-down or leaving a hull-down position costs 2 MP. Attacks against a hull-down, four-legged 'Mech are resolved normally unless the 'Mech has partial cover. If partial cover exists between the attacker and the four-legged 'Mech, the attack receives a +2 modifier in addition to the standard partial-cover modifier; as usual, attacks that strike the legs will strike the terrain instead.

Bipedal 'Mech: A bipedal (two-legged) 'Mech can go hull-down exactly as described above by "taking a knee"; that is, it has one knee down on the ground, the other leg bracing for support. All the rules above apply to a bipedal 'Mech "taking a knee" to go hull-down, except that to leave a hull-down position, in addition to the 2 MP expenditure, the bipedal 'Mech must make a standard Piloting Skill Roll. A failure does not result in a fall; instead, the 'Mech simply did not stand up and the MP are expended (the 'Mech can continue to attempt to stand up as long as it has MP available).

A hull-down 'Mech can punch units in the same hex; punches against a 'Mech are resolved using the Kick Location Table. A Hull-Down bipedal 'Mech is considered to be 1 Level tall. It may take advantage of Level 1 terrain to gain Partial Cover. It still may be targeted by Punch attacks.

Prone: A 'Mech can move from hull-down to a prone position without any MP expenditure. To move from a prone position to a hull-down position requires the expenditure of 1 MP (+1 additional MP for each missing and/or destroyed leg actuator), but does not require a Piloting Skill Roll. A 'Mech can move from a prone position, to a hull-down position, to a standing position (or vice versa) all in the same Movement Phase, provided the unit has available MP (and makes the appropriate standard Piloting Skill Rolls as necessary).

Facing Change: A 'Mech transitioning from a standing to hull down position, or vice versa, retains its same facing. A prone 'Mech transitioning to hull down must designate a facing (which can be any direction); if the 'Mech then transitions to standing it retains the same facing it was designated with upon transitioning from prone to hull down.

Leg-Mounted Weapons: Leg-mounted weapons cannot be fired when a unit has gone "hull down."

Leg Destruction: If a 'Mech (either four-legged or bipedal) has a destroyed leg, it cannot go hull down.

Hull Down Vehicles

Vehicles are too low to the ground to take advantage of partial cover. However, there may be shorter terrain not marked on the standard mapsheets that can allow vehicles to go hull-down.

Such terrain can be assigned as part of the scenario setup, with the players determining the terrain's location (see *Half Levels*, p. 29). Additionally, the terrain created by specialized infantry creating a fieldwork (see *Trench/Fieldwork Engineer*, p. 153, *TO: AUE*), can also be used by a vehicle to go hull-down; terrain created by standard infantry "digging in" (see *Digging In*, p. 106), cannot be used.

A vehicle can go hull-down in three situations (note that in all situations the standard Hit Location Tables are used, except as noted below).

First, if a vehicle (including a landing VTOL/WiGE) enters a half-level hex, it can go hull-down by spending 2 MP. Attacks that would strike the vehicle's Front side add a +2 modifier. In addition, if the attacks hit, they will strike the turret if the vehicle has one, or the front armor if it does not. Attacks from other directions are resolved normally.

Second, if a vehicle is adjacent to a half-level hex and the LOS of the attack passes through that hex, the vehicle is considered hull-down for that attack.

Finally, if a vehicle (including a landing VTOL/WiGE) enters a hex "built" by an infantry unit (either friendly or enemy), as noted above, all the rules for a half-level hex apply, except that attacks against both the Front and Side receive a +2 modifier; only attacks against the Rear are treated normally. If an attack strikes the side of a unit without a turret, it will hit the appropriate side.

While the vehicle is hull-down, none of its front-mounted weapons may fire (or weapons in the location oriented toward a half-level hex, in the case of an adjacent half-level hex), though the turret may fire to the front (or in the direction of the adjacent half-level hex) as usual.

Large Vehicles: Large Vehicles cannot use half-level hexes or infantry-built hexes for cover. However, if a Large Vehicle is adjacent to a Level 1 hex and the LOS of the attack passes through that hex, the vehicle is considered hull-down for that attack.

Motive System Damage Table: Attacks that receive a +2 modifier for a vehicle being hull down ignore any chance for a roll on the Motive System Damage Table.

Backward Movement: Note that the above situations assume the vehicle entered the hex using front movement. If the vehicle entered a hex using backward movement, then simply reverse the locations (i.e. front armor becomes rear armor and so on). In the first and second cases above, the unit can change facing in the hex, as desired; again change the armor location for any attacks that strike the target, as appropriate. However, in the final case, when a vehicle enters an infantry "built" hex, it cannot change facing in the hex, but must first exit the hex, then change facing, and then re-enter the hex once more.

BACKWARD MOVEMENT (EXPANDED)

This rule allows units to change levels while moving backward.

Under this option, a backward-moving unit can change 1 level per hex. The controlling player must make a successful Piloting/Driving Skill Roll each time the unit crosses a level line. 'Mechs may not change levels by more than 1 while moving backward.

If the roll fails for a 'Mech, that 'Mech falls into the hex it was moving into or out of, whichever is lower; the change in levels is not taken into consideration for determining the levels fallen.

If a vehicle's Driving Skill Roll fails, the vehicle fails to cross the level line. It stays in its current hex and must spend 1 additional MP (if it doesn't have that MP to spend, its movement is ended). The controlling player can continue to make Driving Skill Rolls to attempt the level change, but he must pay 1 extra MP each time the roll fails.

CLIMBING AND LEAPING

The optional Climbing and Leaping rules allow BattleMechs without jump jets to climb, leap or drop multiple levels.

Climbing

The Climbing rules enable a 'Mech to enter a hex that is 3 or more levels higher or lower than the hex it occupies.

To attempt a climb, a 'Mech must have at least one arm with all four actuators (hand, lower arm, upper arm and shoulder) functional, and that arm's hand must be free (not holding a physical attack weapon such as a sword, hatchet and so on, a hand-held weapon or other object).

Only Walking MP can be used when climbing—running units cannot climb. Each level changed in a climb costs 2 MP if the 'Mech has two undamaged hands, or 3 MP if the 'Mech has only one hand.

For each level climbed, the 'Mech's controller must make a Piloting Skill Roll. Apply a +1 modifier to any Piloting Skill Rolls the unit must make while climbing (but not the climbing roll itself). If the unit has only one arm with all four undamaged actuators, apply an additional +2 modifier (this is cumulative with other modifiers). If the roll fails, the 'Mech falls from a height equal to the last level it successfully reached.

In certain cases, a unit may attempt to climb a cliff (or building) so high that the climb requires several turns. In such cases, move the 'Mech into the lower of the two hexes at the end of each turn, turn it so that it faces the higher hex and note the 'Mech's levels (the two levels it occupies). The unit may continue its climb in the following turn or remain clinging to the cliff face.

When determining line of sight for a climbing unit, treat the 'Mech as if it were standing in the hex it occupies at its current climbing level, rather than the level of the hex. While in the middle of a climb, a 'Mech may fire only rear-mounted weapons; the unit cannot perform physical attacks. Climbing 'Mechs make relatively easy targets, so any attack against such units receives a –2 to-hit modifier.

Actuator Damage: A 'Mech must have an arm with all four actuators functional to climb. If the hand actuator being used to climb is destroyed, the 'Mech will automatically fall; if the 'Mech is using two hands, then the 'Mech will only fall if both hand actuators are destroyed. If any other actuator is destroyed the 'Mech does not automatically fall, but it cannot continue to climb either up or down; it can only use the leaping rules below to get off of the cliff face.

Buildings: A unit climbing a building hex is considered to have entered that building hex as far as the Construction Factor of the hex is concerned. If the weight of the unit exceeds the Construction Factor of the hex—whether that occurs when the unit starts the climb, or during the climb (for example, if the building hex takes damage)—the hex collapses exactly as if the unit had entered that hex; treat the unit as occupying that building hex at the level it was climbing at the time it collapsed (see p. 176, *TW*).

Planetary Conditions: Any planetary conditions that apply a Piloting Skill Roll modifier based on terrain conditions, such as snow or rain or wind, must be added to all Piloting Skill Rolls (visibility modifiers do not apply).

Leaping

The Leaping rules enable 'Mechs to leap down more than 2 levels, at considerable risk of leg damage and falling.

Any leap down that covers more than 2 levels costs 4 MP, regardless of the number of levels leaped and of the terrain in the ending hex (though the target hex must be a hex the 'Mech can legally enter). Any leaping 'Mech must also make two Piloting Skill Rolls: one to avoid leg damage and one to avoid falling. If both Piloting Skill Rolls succeed, the 'Mech may continue to move normally.

The first roll receives a modifier equal to the number of levels in the leap multiplied by 2. If the roll fails, each of the 'Mech's legs takes damage equal to the number of levels the unit leaped. The controlling player must roll once on the Determining Critical Hits Table for each leg. The player must roll twice if a leg's internal structure is damaged in the leap.

Add a modifier to the second Piloting Skill Roll equal to the number of levels the 'Mech leaped. If this roll fails, the 'Mech falls the number of levels it attempted to leap and lands in the lower hex. Determine falling damage per standard rules.

A 'Mech may suffer leg damage and falling damage if it fails both rolls.

Dangle-and-Drop

The "dangle-and-drop" maneuver is a safer but slower way of dropping down multiple levels.

To use the dangle-and-drop procedure, a 'Mech must have two undamaged hand actuators. The 'Mech must start its turn in the hex where it will "dangle-and-drop" and spends the entire Movement Phase crawling down, dangling from the cliff by its hands. (This places its legs 2 levels closer to the ground than they would be if it leaped down.) Move the 'Mech into the lower hex and turn it so that it faces the higher hex; calculate its levels as if it were standing in a hex 2 levels lower than the higher hex. For the remainder of the turn, treat it as if it were in the middle of a climb (see *Climbing*, at left).

In the following Movement Phase, the 'Mech may either continue to dangle, or drop to the ground at a cost of 4 MP, or start to climb down. As with leaping, if the 'Mech drops, the controlling player must make two Piloting Skill Rolls to avoid leg damage and falling. When determining the Piloting Skill Roll modifiers and damage, reduce by 2 the number of levels traveled.

STACKING (EXPANDED)

In standard rules play, if a unit enters a hex occupied by an enemy unit (with the exception of a 'Mech entering a hex occupied by an enemy infantry unit) it cannot then exit the hex in the same Movement Phase. In this expanded stacking rule, an opposing unit

can enter and then exit a hex occupied by an enemy unit if that enemy unit is immobile, abandoned or, in the case of a 'Mech, prone. All other stacking rules (see *Stacking*, p. 57, *TW*) still apply; i.e. if the unit would violate the stacking rules (for example a 'Mech entering the hex of a prone enemy 'Mech) it must have enough MPs to exit the hex, or it cannot enter the hex.

SKIDDING

The following rules modify the Skidding rules found on pages 62-66 of *TW*. These optional modifications make for more realistic play, but they are a bit more complicated. Follow the standard rules for skidding unless specifically noted below.

Generally, a 'Mech running on road or pavement may make a single facing change at the end of its movement without risk of skidding. However, a unit may skid if it continues to move after making a facing change or makes two or more facing changes in a row.

To determine if a unit skids, first trace the path of the unit's entire intended movement and place a die or other marker in each hex where a potential skid may occur (i.e. the first hex entered after a facing change). Then count how many hexes the unit covers during its entire movement. Use this number to determine the modifier for the Piloting Skill Rolls made to avoid skidding (see the Skid Modifier Table, p. 63, *TW*). Use this modifier for all the required rolls. (Note that this differs from the standard skidding rules, under which each roll receives a modifier based on the hexes moved prior to the facing change.)

Next, the controlling player makes a Piloting Skill Roll with the appropriate skid modifier for each hex where a skid may occur, starting with the earliest possible hex in its movement. If all the Piloting Skill Rolls succeed, place the 'Mech in the ending hex of its intended movement.

If a Piloting Skill Roll fails, the 'Mech falls and skids. Place the 'Mech in the hex where the failed roll occurred. Place it with the appropriate facing, but do not move it or turn it according to the intended movement. Next, determine the length of the skid, which equals the remaining hexes in the intended move, divided by 2 and rounded down. If the result is 0 hexes, the unit simply falls in the hex it occupies and takes standard falling damage.

If the result is 1 or more hexes, the unit falls and then skids in the direction it was traveling before making the facing change that caused the skid. For each hex the 'Mech skids, it takes damage equal to its standard falling damage, divided by 2 and rounded up.

Regardless of the final result of the fall or skid, the unit's move ends and it may not spend any more MP in that Movement Phase.

PILOTING SKILL ROLLS

Advanced players can use the following changes to standard Piloting Skill Roll modifiers to increase the realism of their game play. Note that with the exception of fumbles, these options apply to 'Mech units only.

FUMBLES

Standard-rules play assumes that all things being equal, while warriors may stumble in piloting their 'Mechs or vehicles, they never do so in a catastrophic way. Real movement is much different, however, and despite years of training in keeping a 12-meter-tall metal giant on its feet (or that vehicle moving at the right angle), circumstances arise where even the elite can stumble and fall.

Whenever a player makes a Piloting/Driving Skill Roll with a result of 2, a fumble has occurred and the result is always a failure, regardless of whether the modified Target Number was 2 or less.

TAKING DAMAGE

Any time a 'Mech takes 20 or more Damage Points in a single phase, its controlling player must make a Piloting Skill Roll to keep the 'Mech from falling. The roll receives a modifier based on the number of Damage Points taken during the phase and the 'Mech's weight class, as noted in the Taking Damage Weight Class PSR Modifiers Table. For every 20 Damage Points a unit takes, it receives a +1 modifier. For example, a unit that takes 40 to 59 Damage Points receives a +2 modifier, a unit that takes 60 to 79 Damage Points receives a +3 modifier, and so on. 'Mechs that are Hull Down (see p. 19) are not affected by this rule.

Weight Class Physical Attack Modifiers: Note that the Taking Damage Weight Class PSR Modifiers are different than the Weight Class Physical Attack Modifiers (see p. 86); the latter applies to modifiers added to physical attack die rolls, while the former applies to modifiers added to the Piloting Skill Roll to avoid falling after taking damage (i.e. for taking more than 20 points of damage, for being kicked and so on).

A 50-ton medium 'Mech with TSM (running hot) and a Piloting Skill of 5, after running in the turn, is making a kicking attack against an assault 'Mech that moved 5 hexes. The modified To-Hit Number is 6 [5 (Piloting Skill Rating) –2 (Kicking modifier) –1 (Medium weight class modifier from the Weight Class Physical Attack Modifiers Table) +2 (attacker movement modifier) +2 (target movement modifier) = 6]. The roll is a success, and after determining the location, 20 points of damage is applied to the assault 'Mech's right leg. The Piloting Skill of the assault 'Mech is 5 as well, leaving that unit's player to make two Piloting Skill Rolls (one for taking 20 points of damage and one for being kicked) against a modified Target Number of 4 [5 (Piloting Skill Rating) + 1 (20 points of damage), –2 (Assault weight class modifier from the Taking Damage Weight Class PSR Modifiers Table) = 4].

TAKING DAMAGE WEIGHT CLASS PSR MODIFIERS TABLE

Weight Class	Modifier
Light (Ultra-Light)	+1
Medium	+0
Heavy	–1
Assault	–2

LEG DAMAGE

Under standard rules, a hip actuator critical hit causes a 'Mech's leg to freeze, adds a +2 Piloting Skill Roll modifier and reduces the 'Mech's MP by half, regardless of previous critical damage to the leg. This rule is designed to limit damage-related modifiers so that excessive leg damage does not completely cripple a 'Mech.

As an option, players can use the "crunchy broken leg" rule for leg damage. Under the crunchy-broken-leg rule, each hip actuator critical hit adds a +2 Piloting Skill modifier for rolls and reduces the 'Mech's MP by 2. However, these effects are cumulative—they are added to modifiers produced by any other leg damage the unit has already taken or receives in subsequent turns.

FALLING (EXPANDED)

In standard rules, when a 'Mech fails a Piloting Skill Roll to avoid falling, it automatically falls; nothing can be done to avoid that fate. However, in advanced rules, a fall may not exactly be a fall.

When a 'Mech fails a Piloting Skill Roll to avoid falling, compare the Margin of Failure (MoF) to the Piloting Skill Rating MoF Falling Table. If the roll result is within that MoF, the 'Mech does not fall, but instead goes hull-down (see *Hull Down*, p. 19). If the MoF is greater than that noted on the table, the 'Mech falls per standard rules. For example, a 'Mech with a 6 (or 7) Piloting Skill Rating is rolling against a modified Target Number of 6. Looking at the Piloting Skill Rating MoF Falling Table, the MoF that a 6 Piloting Skill Rating MechWarrior can have is 0, so just as in standard rules, the controlling player must roll 6 or higher to avoid falling. If the MechWarrior had a Piloting Skill Rating of 2-5, the controlling player could roll a 5 (MoF of 1), while a Piloting Skill Rating of 0-1 could roll a 4 or 5 (MoF of 2); in all cases, the 'Mech would simply go hull-down without falling.

ATTEMPTING TO STAND

When a 'Mech attempts to stand from a prone position, it uses its arms and legs to lift itself up. Therefore, missing or damaged arm actuators make standing up more difficult.

Players can simulate this condition by applying additional modifiers to the Piloting Skill Roll needed to stand a 'Mech up. Apply a +1 modifier for each arm that has actuator damage or is missing actuators. Apply a +2 modifier per arm if the arm is destroyed or missing. All other appropriate Piloting Skill modifiers apply as well.

Multiple damaged or missing actuators in the same arm do not produce cumulative modifiers; the maximum modifier for a damaged or destroyed arm is +2.

Careful Stand

If a 'Mech takes its time, it can improve its chances of standing up successfully. Rather than simply spending 2 MP, a 'Mech can spend its entire Movement Phase standing up (i.e. only one careful standing attempt can be made per turn). In this case, the unit is considered to have walked. If the 'Mech had more than 2 Walking MP available, the Piloting Skill Roll target is modified by –2. No modifier applies if the unit had only 1 or 2 Walking MP available.

PILOTING SKILL RATING MOF FALLING TABLE

Piloting Skill Rating	Margin of Failure
6–7	0
2–5	1
0–1	2

VEHICLES

The following additional rules apply to vehicle movement.

MOVEMENT

Vehicles must move across the battlefield without the benefit of neurohelmets or the sophisticated gyros used by 'Mechs. With most vehicles, the driver can only use the controls to accelerate, brake and steer. Consequently, skillful maneuvering in rough terrain can prove very difficult.

The complexity of advanced-rules play restricts the movement of vehicles more than the standard Level 2 rules, but offers vehicle drivers a few special maneuvers and other advantages to make up for reduced mobility.

Lance Movement

'Mechs tend to operate as independent units on the battlefield. Conventional vehicles operate in lances of several units that work closely together to achieve an objective.

Under advanced rules, all vehicles must be organized into lances of four vehicles each. If necessary, remaining vehicles may be organized into a single short lance of one, two or three units. During the Movement Phase of the turn, players alternate moving their units according to the standard rules, with each vehicle lance moving as a single unit. All vehicles in a lance move during a turn at the same time, regardless of casualties. For example, if a lance starts the game with four Bulldog tanks and three of those tanks are lost in combat, moving the last surviving tank constitutes moving the lance.

Unusual Unit Types: Some armies organize their units into formations other than lances of four. For example, the Clans use units of ten vehicles, called Stars. The Com Guards organize in Level II units that contain six vehicles. A player must organize his vehicles into units appropriate to the force he is playing, whether Clan, ComStar or Inner Sphere.

Speed

A 'Mech's humanoid structure gives it excellent acceleration and deceleration capability. Vehicles operate under certain speed restrictions due to their construction.

Acceleration and Deceleration: Unlike 'Mechs, vehicles cannot achieve maximum velocity in 10 seconds. Instead, vehicles can only increase one category of speed per turn. For example, if a vehicle stands still in one turn, it can move no faster than Cruising speed in the next turn. In the turn after that, it can move at Flanking speed. Make a note of the movement type used in each turn (Standing, Cruising or Flanking) on each unit's record sheet.

Gunning It: A unit can "gun it," however, dangerously pouring on speed. Doing so allows a player to go from standing still to Flanking speed, or from Cruising to Overdrive speed (see p. 23) in a single turn. Doing so requires the player to make a standard Driving Skill Roll before the vehicle moves. A failure results in an automatic roll on the Failed Maneuver Table (see p. 24), with the controlling player randomly determining, if necessary, the direction of the hexside change.

Units can decelerate to any speed in a single turn.

Declaring Speed: Before moving each unit, the player controlling a vehicle must announce how many MP the vehicle will expend. The vehicle must then spend these Movement Points during the Movement Phase, even if this forces the vehicle to hit an obstacle or make a dangerously tight turn.

In a friendly game, the player can count hexes carefully to plan out each vehicle's movement. For more realistic play, the player should announce the MP without examining the board too closely. After all, the vehicle's driver must simply step on the gas or brake and handle obstacles as they come!

Reverse Gear: Except for VTOLs, vehicles may not combine forward and backward movement in the same turn.

Turn Modes

Vehicles are not nearly as agile as 'Mechs: the faster you are going, the more gradual any turn must be in order to not skid, fishtail or even roll over. This is represented by a vehicle's turn mode—the number of hexes forward (or backward, if moving in reverse) it must move in a straight line before it can safely make a single hexside facing change. To use these rules, a player must declare at the start of each Movement Phase how many MPs the vehicle is planning to expend that turn. This determines the unit's base turn mode for the phase.

A vehicle can try a facing change without moving the required distance forward, but its controller must make a Driving Skill Roll, with a modifier equal to the turn mode minus the number of hexes actually moved when the facing change was attempted. If applicable, add any modifier for conditions in the hex where the facing change was attempted (as seen on the Turn Mode Table). MP loss suffered during a unit's move has no effect on that phase's turn mode.

For example, a player declares that their Medium Hover Vehicle will be expending 15 MP that phase (giving it a turn mode of 3). It then attempts to turn after moving only 1 hex forward. The player would make a Driving Skill Roll with a +2 modifier (3 – 1 = 2).

If the roll fails, consult the Failed Maneuver Table (see p. 24). Roll 2D6; add to this result the Margin of Failure from the Driving Skill Roll and the appropriate Vehicle Type modifier (as shown on the table) and apply the appropriate effect.

Hexes moved before a failed Driving Skill Roll for tight turns or other maneuvering no longer apply to the turn mode. For example, a unit expending 10 MP has a Turn Mode of 2. After moving 1 hex forward, it attempts a turn but fails the Driving Skill Roll. It must now move 2 hexes forward rather than 1 to make a safe turn; the 1 hex it moved before the failed roll no longer counts toward the 2-hex turn mode.

Advanced Maneuvers

Vehicles have a few advantages over 'Mechs when it comes to maneuverability. The ability to perform sideslip and bootlegger reverse maneuvers can help a vehicle quickly escape or bring its weapons to bear.

Sideslip: VTOLs and Hover Vehicles can make a controlled sideslip. The sideslip is executed just like a four-legged 'Mech's lateral shift (see p. 50, *TW*). However, any time a vehicle makes a sideslip, the controlling player must make a Driving Skill Roll with a –1 modifier. If the roll fails, the vehicle slips too far, moving an extra hex in the direction of the sideslip. If the vehicle has MP left, the extra hex costs MP as normal. However, the vehicle moves the extra hex even if it has no more MP, in which case this move ends the vehicle's movement.

A sideslip is not a turn, and can be executed regardless of turn mode. Furthermore, a sideslip counts as a hex of forward movement for meeting the requirements of the turn mode.

Bootlegger: All vehicles except Tracked Vehicles, WiGEs and Naval Vessels may attempt to make a quick 180-degree turn known as a bootlegger. If successful, this move turns the vehicle three hexsides and brings it to a complete stop. Because the vehicle stays in the same hex, it need not meet turn-mode requirements.

In order to gain the momentum needed to attempt a bootlegger, a vehicle must have moved at least three hexes in a straight line since its last facing change. The controlling player then announces his intention to bootlegger and spends 2 MP. He makes a Driving Skill Roll with a modifier equal to the vehicle's current turn mode +2. If the roll succeeds, the vehicle turns to face the opposite direction and ends its movement. If the roll fails, the player rolls once on the Failed Maneuver Table as though his vehicle had just attempted a 1-hexside turn. Add a +2 modifier to the failed maneuver roll result.

Vehicles also can make bootleggers while moving backward.

Overdrive: A vehicle can attempt Overdrive speed, which is identical to the rules for Sprinting for a 'Mech (see *Sprinting*, p. 16). All those rules apply, except a failed Driving Skill Roll results in an automatic roll on the Failed Maneuver Table (see p. 24), applying +2 to the die roll result, with the controlling player randomly determining, if necessary, the direction of the hexside change. If a player is combining Gunning It (see p. 22) with Overdrive, the player must make two Driving Skill Roll modifiers to avoid rolling on the Failed Maneuver Table.

Bonus MP (WiGE): A WiGE Vehicle may receive a movement bonus of 1 additional MP for every three consecutive hexes it enters that have a lower level than the previous consecutive hex the WiGE Vehicle occupied. A WiGE vehicle can receive more than 1 additional MP in a given turn; the three-hex movement groups to receive such additional MP need not be consecutive.

TURN MODE TABLE

MP Expended	Turn Mode
1–4	0
5–9	1
10–14	2
15–19	3
Every 5 above 19	+1
Light Vehicle	–1
Medium/Heavy Vehicles	+0
Assault Vehicle	+1
Mud, Sleet, Heavy Fog or Heavy Rainfall	+1*†
Ice, Heavy Snowfall	+2*‡

*Does not apply to Hover, VTOL or WiGE Vehicles.
†Does not apply to tracked vehicles
‡Only apply a +1 to tracked vehicles

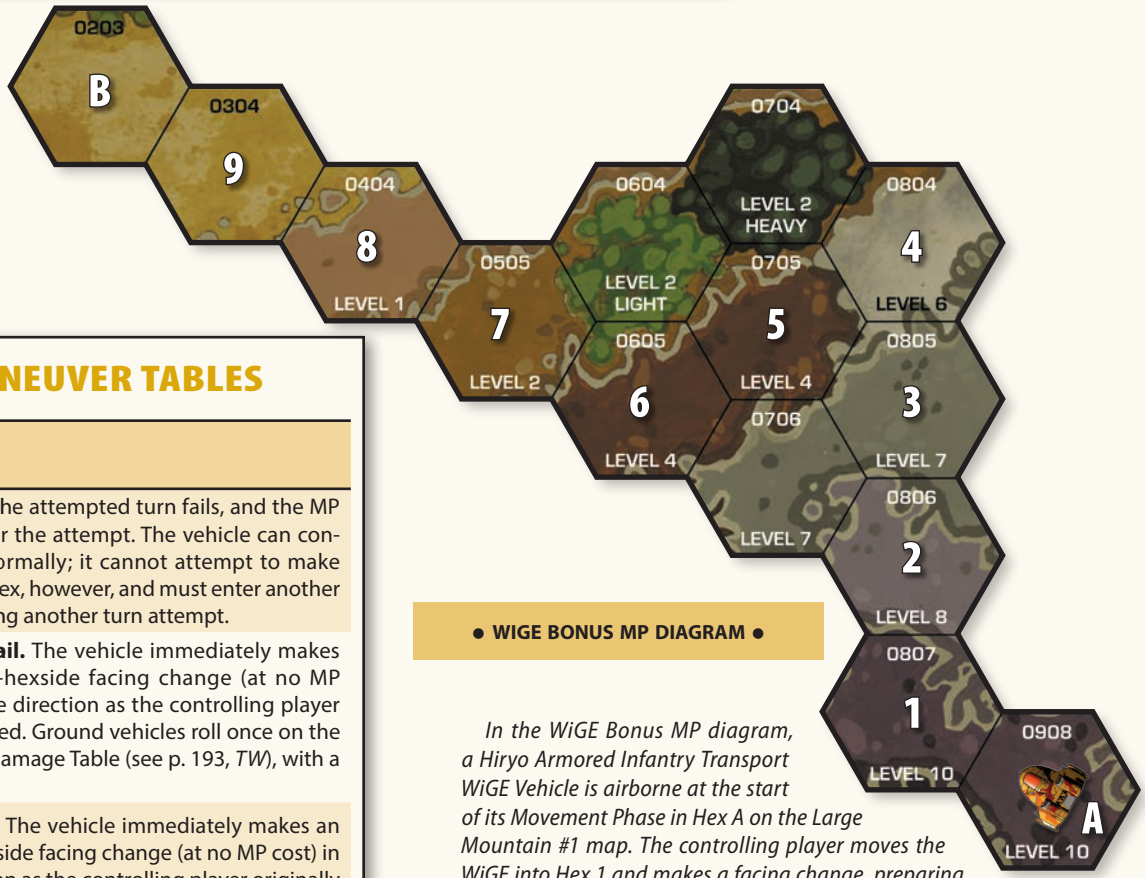
FAILED MANEUVER TABLES

2D6 Roll	Effect
2–7	**Minor fishtail.** The attempted turn fails, and the MP are expended for the attempt. The vehicle can continue moving normally; it cannot attempt to make the turn in that hex, however, and must enter another hex before making another turn attempt.
8–9	**Moderate fishtail.** The vehicle immediately makes an additional 1-hexside facing change (at no MP cost) in the same direction as the controlling player originally intended. Ground vehicles roll once on the Motive System Damage Table (see p. 193, *TW*), with a –1 modifier.
10–11	**Serious fishtail.** The vehicle immediately makes an additional 1-hexside facing change (at no MP cost) in the same direction as the controlling player originally intended. Ground vehicles roll once on the Motive System Damage Table (see p. 193, *TW*). The vehicle's movement ends immediately.
12–13	**Skid.** The turn fails completely, ending the vehicle's movement. Apply Skidding rules (see *Ground Vehicles*, p. 62, *TW*).
14+	**Major Skid.** The driver loses control of the vehicle. Wheeled vehicles begin to flip over, taking damage to their side armor and turret(s) (see *Flipping Over*, at right). Tracked vehicles, VTOLs and hovercraft do not flip over; for them, treat this result as a normal skid (see *Ground Vehicles*, p. 62, *TW*). Naval vessels and hydrofoils capsize and sink, and are effectively destroyed.

Vehicle Type	Modifiers
Tracked, Naval	+0
Wheeled*, VTOL	+2
Hovercraft, WiGE, Hydrofoil	+4

*Apply a –2 modifier if the wheeled vehicle occupies a paved hex when it failed the Driving Skill Roll.

Vehicle Weight Class	Modifiers
Light	+1
Medium	+0
Heavy	–1
Assault-Super-Heavy	–2



• WIGE BONUS MP DIAGRAM •

In the WiGE Bonus MP diagram, a Hiryo Armored Infantry Transport WiGE Vehicle is airborne at the start of its Movement Phase in Hex A on the Large Mountain #1 map. The controlling player moves the WiGE into Hex 1 and makes a facing change, preparing to enter Hex 2; the player will need to make a Driving Skill Roll to avoid sideslipping. The player then enters hexes 2, 3 and 4, expending a single MP for each hex. Because the Hiryo entered three consecutive hexes, each with a level lower than the previous hex, the Hiryo automatically gained 1 additional MP beyond its normal MP to expend this turn. The controlling player then makes two facing changes preparing to enter Hex 5; once more, the player will need to make a Driving Skill Roll to avoid a sideslip. The controlling player then moves the WiGE Vehicle into hexes 5 and 6, expending a single MP for each hex; hexes 4, 5 and 6 were not a consecutive group of three hexes with each hex a lower level than the next and so the WiGE Vehicle does not receive an additional 1 MP bonus. The player then moves the WiGE into hexes 7, 8 and 9, expending a single MP for each hex. As with hexes 1, 2 and 3, because the WiGE Vehicle entered three consecutive hexes, each with a level lower than the previous hex, the vehicle automatically gains 1 additional MP to expend, giving it a total of 2 additional MP to spend this turn. The player uses this last MP to move into the destination hex B, having expended a total of 14 MP in movement this turn.

Flipping Over

If the result on the Failed Maneuver Table (at left) calls for a vehicle to flip over, determine the direction and distance of the skid as normal (see *Ground Vehicles*, p. 62, *TW*). Subtract 1 from the resulting distance to determine the length of the "flipping" skid.

For each hex of a flipping skid, the vehicle takes damage equal to its tonnage divided by 10 (rounded up). The vehicle takes damage on a different location for each hex it flips through.

The first hex of the flip damages the armor on the vehicle side facing the skid's direction. The second hex of the flip damages the turret armor if the vehicle has a turret (if the vehicle has two turrets, both turrets take full damage); if the vehicle has no turret, apply the third-hex damage instead. The third hex of the flip damages the vehicle side opposite the skid's direction. The controlling player must roll on the Motive System Damage Table (see p. 193, *TW*) and add 1 to the result to determine the damage from the fourth hex. If the flip continues past four hexes, repeat the sequence, starting with the vehicle side facing the skid's direction.

In addition to armor damage, roll once on the Ground Vehicle Critical Hits Table (see p. 194, *TW*) for each side damaged. Make two rolls for a side if its armor is penetrated.

Finally, any vehicle that flips over takes a Crew Stunned critical hit that affects the vehicle for the remainder of the turn and all of the next turn.

INFANTRY

The following additional rules apply to infantry movement.

SQUAD DEPLOYMENT

In the field, conventional infantry units rarely operate in platoons. More often, each squad breaks off and operates individually. The following rule allows players to deploy infantry in squads rather than platoons.

Each squad consists of seven troopers. Jump infantry platoons consist of three squads, while all other types of platoons contain four squads. Normally, an infantry force participates in a scenario as a platoon, but is deployed in independent squads. In some cases, however, individual squads might take part in a battle.

An infantry squad is treated like a small platoon of seven troopers. However, 'Mechs and vehicles must apply a +1 modifier to the to-hit numbers for attacks against infantry squads in order to account for their spread-out formation and small size.

This modifier does not apply to infantry platoons reduced by damage to seven or fewer troopers—only to infantry initially deployed in squads.

A squad follows standard stacking limits unless it joins other squads from the same platoon. For purposes of stacking limits, squads from the same platoon count as a single unit while occupying the same hex. In addition, squads from the same platoon that occupy the same hex may join together to form a larger unit during the End Phase of a turn. From that point on, the unit is considered a standard infantry platoon consisting of the total surviving troopers from each squad.

MOVEMENT ON PAVEMENT

If mechanized and motorized infantry meet the same criteria as Ground Vehicles when moving on pavement (see p. 61, *TW*), they receive a bonus of 1 MP.

FAST MOVEMENT

Any infantry unit can forgo weapon and physical attacks in a turn to receive a bonus of 1 Ground MP during the Movement Phase of that turn. This can be combined with movement on pavement for mechanized and motorized infantry.

0 MP Infantry: If a unit must either move or fire, it can still gain an extra 1 Ground MP (in addition to its standard Ground MP when not firing in a turn) and make "fast movement", but the unit then cannot move or fire in the following turn.

CLIMBING

Foot and jump conventional infantry units, as well as humanoid battle armor, can use Climbing rules to enter a hex that is 2 or more levels higher or lower than the hex they occupy.

Use all the rules from the 'Mech Climbing rules (see p. 20) with the following changes.

For foot and jump infantry, each level change still requires 2 Ground MP, though a unit with only 1 MP can use the Minimum Movement Rule (see p. 49, *TW*) to change a level while climbing. For battle armor, if they are capable of swarming, each level change only requires 1 MP; if the battle armor is not swarm-capable, then each level change requires 2 MP (the Minimum Movement rule, as noted above, also applies). Quad battle armor cannot use these climbing rules.

For each level climbed, the infantry unit makes an Anti-'Mech Skill Roll; apply a –1 modifier for swarm-capable battle armor. If the roll fails, the infantry falls from a height equal to the last level it successfully reached (use the Infantry Falling Damage Table, p 151, *TW*).

An infantry unit can make standard attacks while climbing, but apply a +2 to-hit modifier, as well as a +1 modifier to the Anti-'Mech Skill Roll made on the following turn during movement; swarm-capable battle armor only apply a +1 to-hit modifier and do not apply the additional +1 modifier to the following turn's Anti-'Mech Skill Roll.

Buildings: Infantry scaling buildings do not apply the additional +2 modifier inflicted against 'Mechs.

Mountain Troops: Mountain troops (see p. 153, *TO: AUE*) apply a –2 modifier to any Anti-'Mech Skill Rolls and only expend 1 MP per 2 levels moved up or down (note that mountain troops can change 3 levels up or down, so a mountain troop unit will only need to use the Climbing rules if attempting to change 4 or more levels in a single hex). Finally, mountain troops can make standard attacks with no additional modifiers applied.

MOVEMENT DICE (TIPS AND SUGGESTIONS)

Movement dice can help speed up and simplify game play, especially if a large number of units are on the board. Keep in mind, however, that movement dice are not a formal game mechanic—simply an option to make game play smoother. Therefore, all players should agree to their use before a game begins.

Players can use six-sided (D6) or ten-sided (D10) dice. With a ten-sided die, players can show 0 movement, and need not use multiple dice when movement and terrain provide a movement modifier greater than 6. However, players can easily use two six-sided dice to achieve the same result. Making sure the movement dice are a different size and/or color from those used for rolling to-hit numbers and so on is usually a good idea.

Players use movement dice to keep track of each unit's movement. Different color dice can be used to show the movement mode chosen. Walk = Blue, Run = Yellow, Jump = Red, for example. This can be placed behind the unit before it starts its move, so players can remember where it started.

After a unit moves, place its movement die (or dice) directly in front of it. Turn the die (or dice) so that its upper side(s) shows the unit's target movement modifier. If the unit has a target movement modifier of 0, turn the die so that it shows a 0. If using six-sided dice, players can all agree that 6 represents 0. If they need to show a modifier of 6 or greater, they may use multiple six-sided dice. Movement dice enable all players to quickly and easily see which units have moved during a turn, along with each unit's target movement modifier. (No more need to ask your opponent, "How far did that *Spider* move this turn?")

Players can also use movement dice to show torso twists and turret rotations. After a unit twists or rotates its turret during the Weapon Attack Phase, simply move the unit's movement die from the front hexside to the hexside the unit's torso or turret now faces. If all players agree, they can use movement dice to show the appropriate terrain modifier for the unit's hex, as hex bases sometimes make it difficult to determine what terrain exists in a hex. For example, a *Spider* with a movement modifier of +2, standing in heavy woods (+2 terrain modifier), would have a total target movement modifier of +4.

During the End Phase, players should remove all movement dice from the board.

PLANETARY CONDITIONS

Planetary conditions is a general term used to describe all terrain and weather types/conditions that can be used in a game.

The terrain type rules—such as woods, water, levels and so on—presented in *Total Warfare* (see *Mapsheets*, p. 31, *TW*), represent basic terrain types, particularly as they appear on the pre-printed mapsheets available in published map sets. However, this represents a small, and mostly mundane, fraction of the possible terrain types that can exist in a scenario to represent the myriad worlds that occupy the *BattleTech* universe. In addition, *Total Warfare*—as the standard rules set—does not delve into terrain modifications (such as ice, mud and so on), weather conditions or other situations such as nighttime, and so on: conditions/situations that can also make any scenario more interesting and fun to play.



The Taurian Concordat reclaims a world regardless of its viability for human life.

The following rules, which expand the terrain type rules in *TW*, are designed to simulate more exotic terrain types, while introducing terrain modifications, terrain conditions and weather conditions. In addition to covering their use in a game, these rules also allow for random assignment of planetary conditions to a given scenario.

Finally, these rules provide a means of meshing random generation of planetary conditions with the *Selecting Mapsheets* rules (see p. 262, *TW*).

Combat: In *Total Warfare*, the effects of terrain on movement and combat are dealt with in separate chapters. However, to make the various game effects of all terrain and weather types/conditions as easy to use and understand as possible—and to make sure that all such effects appear on a single set of tables for ease of reference—the rules for movement and combat are all explained in this chapter.

EXPANDED MOVEMENT COST AND PLANETARY CONDITIONS RULES

The Expanded Movement Cost and Planetary Conditions Tables (see p. 30) summarizes the movement costs, Piloting Skill Roll modifiers and to-hit modifiers for each new planetary condition and how it applies to various units; this includes any new movement actions as well. For the sake of completeness, all terrain types and movement actions covered on the Movement Costs Table in *Total Warfare* (see p. 54) are included on this table.

The to-hit modifiers listed on the table may only apply to a specific type of weapon (that is, direct-fire energy, direct-fire ballistic, missile and so on), or a specific unit type ('Mech, Combat Vehicle, conventional infantry and so on). Players should therefore be sure to verify the specific effects of a given planetary condition's to-hit modifier by reading the specific rules governing a given planetary condition.

The Piloting/Driving modifiers listed in the table apply to any Piloting/Driving Skill Roll a player makes while operating a unit within a specific planetary condition. The rules that follow the table explain any required Piloting/Driving Skill Rolls for each new planetary condition (as well as covering units that do not have Piloting Skills, such as infantry and ProtoMechs, where appropriate). Do not assume that a Piloting/Driving Skill Roll is required to enter a particular planetary condition simply because a Piloting/Driving modifier is listed for that condition.

The Terrain/Construction Factor column is used when players are using the *Terrain Factor Rules* (see p. 63), or to note the Construction Factor of buildings (see p. 166, *TW* and p. 119. If a row on the table has a "0" in this column, then that planetary condition can never be changed during a given game.

Finally, the table's Prohibited Units column lists the types of units prohibited from entering each terrain or prohibited from functioning under a particular planetary condition.

Note: Every effort has been made to make the Expanded Movement Costs and Planetary Conditions Table as comprehensive as possible. However, the nature of these rules means it is important—at least the first few times that players use a given planetary condition—for all players to read the specific rules in question, using the table only as a quick reference guide during game play.

In the case of some planetary conditions, the rules are simply too complex to distill into the table; in such instances, the table will refer players to the specific rule, where often a more tailored and expanded table exists to explain it.

Units and Planetary Conditions

Various planetary conditions listed on the Expanded Movement and Planetary Conditions Table affect units differently. Once players have determined what units will be involved in a game, they should make sure that the specific planetary conditions they wish to use in a game have an effect on the units they intend to field.

If players are randomly determining planetary conditions (see Planetary Conditions Tables, p. 67), when a given planetary condition is rolled, the players should make sure it will have an effect on the units fielded in the game.

If the desired (or rolled) planetary condition has no effect (for example, if the players are only fielding 'Mechs and the planetary conditions rolled have no effect on 'Mechs), players may feel free to choose another condition (or re-roll, if randomly determining such effects) to make sure the planetary conditions they are adding will actually affect game play.

Base Terrain, Terrain Modifications, Terrain Conditions and Weather Conditions

As noted, planetary conditions is a general term used to describe terrain and weather types/conditions. However, by adding so many new terrain options—not to mention weather options—the rules for terrain become a bit more complex. This requires specific definitions that go beyond the Terrain Type column shown on the Movement Costs Table and Attack Modifiers Table (see pp. 52 and 117 respectively, *TW*), as outlined below.

Base Terrain: Base terrain represents the underlying terrain of a battlefield; the complete rules for base terrain start on p. 28. Every hex on every mapsheet must consist of a base terrain type as shown on the Expanded Movement Costs and Planetary Conditions Tables. As noted above, the Base Terrain portion of the Expanded Movement Costs and Planetary Conditions Table includes those terrain types described in detail in *TW*, as well as all new base terrain types. Unless specifically noted otherwise under *Base Terrain Types* (see p. 28), no two base terrain types can be found in the same hex.

Terrain Modifications: Terrain modifications represent specific additions to base terrain and are applied on a hex-by-hex basis (see the Expanded Movement Costs and Planetary Conditions Tables, p. 30, for a complete list of terrain modifications); the complete rules for terrain modifications start on p. 38.

Page 49 of *Total Warfare* notes that when multiple terrain types are found in the same hex, all appropriate modifiers are cumulative. That rule applies here as well. When base terrain and terrain modifications appear in the same hex, all appropriate modifiers are cumulative.

Terrain Conditions: Terrain conditions represent specific modifications to the playing area, but unlike terrain modifications, they are applied across the entire playing area (see the Expanded Movement Costs and Planetary Conditions Tables, p. 30, for a complete list of terrain conditions). In other words, terrain conditions reflect more exotic situations representing a global change to the terrain of the playing area—things that don't fall under the heading of weather, such as vacuum, heavy or light gravity and so on. The complete rules for terrain conditions start on p. 52.

Terrain conditions are cumulative with all appropriate modifiers for base terrain and terrain modifications.

Weather Conditions: Weather conditions represent specific modifications to the playing area, but, like terrain conditions, they are applied across the entire playing area (see the Expanded Movement Costs and Planetary Conditions Tables, p. 30, for a complete list of weather conditions); the complete rules for weather conditions start on p. 55.

As with the other three types of planetary conditions, weather conditions are cumulative with all appropriate modifiers from base terrain, terrain modifications and terrain conditions.

Assigning Planetary Conditions

As players set up a game and wish to use planetary conditions in a given scenario, they can look through the Expanded Movement Costs and Planetary Conditions Tables—as well as the specific rules of the various Planetary Conditions—and choose what they will include in their game.

Note, however, that some planetary conditions are easier to use in a given scenario than others. For example, most terrain conditions and weather conditions apply universally across a playing area. However, when using new base terrain types, or terrain modifications, as noted above, they must be tracked hex by hex. Since most pre-printed maps do not include these more advanced planetary conditions, players can use pre-made counters, create their own counters, or simply write the hex numbers on a sheet of paper—along with what base terrain types and terrain modifications appear in that hex—to track the various planetary conditions in a given scenario.

Alternatively, players can use the HeavyMetal Map program to generate their own maps, based on the various planetary conditions they wish to use in a given scenario (see *HeavyMetal Software*, p. 13, *TW*).

Conflicting Planetary Conditions

Note that regardless of attempts to make the various planetary conditions rules as thorough as possible in how they apply to one another—for example, many rules have a "prohibited" aspect that notes which conditions should not be used with a given rule—situations will arise when player adjudication will be needed. For example, if the extreme (hot) temperature weather condition is in play, then it would be unlikely for ice, deep snow or snowfall to appear on the same playing area.

In the mud/heavy jungle/deep snow hex example noted below, while it would be perfectly okay if players wanted to stack all that in the same hex, common sense dictates that the mud will likely have frozen. In this case, instead of mud, the hex could be considered rough: this choice imposes the same MP requirement to enter the hex for a 'Mech, but removes the possibility of getting stuck. Such changes will help make a given game feel more in sync with "reality."

With that in mind, as each new base terrain, terrain modification, terrain condition and weather condition is added (whether the players are simply choosing each planetary condition or are randomly determining them; see Planetary Conditions Tables, p. 67), such a "reality litmus test" should be applied, with the most recently added planetary condition changed if it doesn't pass such a test for all players. Furthermore, depending on the complexity of planetary conditions involved in a given scenario, once all the planetary conditions have been chosen and then applied to the playing area, players may wish to make sure that no such extremes exist in a given hex.

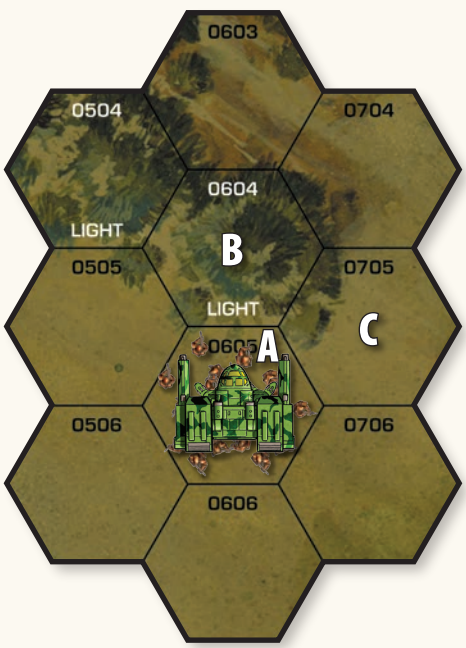
In the end, of course, if your playing group doesn't mind deep snow in a lava hex, then by all means, have fun!

In the Ground Movement-Planetary Conditions diagram below, a 'Mech with 3 Walking MP and 5 Running MP, as well as a Motorized SRM Conventional Infantry Platoon with 2 Ground MP, are attempting to move on the Open Terrain #2 map. During game set-up, the players determined that they wanted to add additional exotic base terrain types, terrain modifications and weather conditions (they decide not to add any terrain conditions). In the end, the Ultra-Heavy Jungle base terrain type and Mud terrain modification are applied to Hex C, while the Deep Snow terrain modification is added to both Hex B and Hex C. Finally, a Blizzard weather condition is applied to the entire playing area.

If the controlling player wished to move the 'Mech in Hex A to Hex B, it would require 4 MP [1 (entering the hex) + 1 (Light Woods) + 1 (Deep Snow) + 1 (Mud) = 4]; the 'Mech would have to run to enter the hex. However, the controlling player cannot move the 'Mech into Hex C, as a 'Mech cannot enter an ultra-heavy jungle hex.

If the controlling player wished to move the infantry in Hex A to Hex B, it would require 3 MP [1 (entering the hex) + 0 (infantry do not pay any MP for Light Woods) +1 (Deep Snow) + 1 (Mud)]. As the infantry unit only has 2 Ground MP, it cannot enter the hex normally. However, the infantry could enter the hex using the Minimum Movement rule (see p. 49, TW).

If the controlling player wished to move the infantry in Hex A to Hex C, it would require 7 MP [1 (entering the hex) + 4 (Ultra-Heavy Jungle hex), +1 (Mud) +1 (Deep Snow) = 7]. Once again, the infantry unit does not have 6 MP, but since it is not prohibited from entering an ultra-heavy jungle, mud or deep snow hex, it can use the Minimum Movement rule, as noted above, to enter the hex.



• GROUND MOVEMENT-PLANETARY CONDITIONS DIAGRAM •

As a final note on movement, even though both the Mud and Deep Snow terrain modifications can cause the infantry unit to get stuck, only a single roll is made upon entering the hex to determine if that happens (see Bog Down Rules, *p. 60).*

During combat, if either unit wished to fire into Hex B, it would apply a +3 to-hit modifier to all direct-fire ballistic weapons [1 (Light Woods) +2 (Blizzard) = 3], while applying a +2 to-hit modifier to all other weapon attacks [1 (Light Woods) +1 (Blizzard) = 2].

If either unit wished to fire into Hex C, it would apply a +5 to-hit modifier to all direct-fire ballistic weapons [3 (Ultra-Heavy Jungle) + 2 (Blizzard) = 5], while applying a +4 to-hit modifier to all other weapon attacks [3 (Ultra-Heavy Jungle) + 1 (Blizzard) = 4].

BASE TERRAIN TYPES

The following section describes in detail the new base terrain types introduced in *Tactical Operations*. This includes completely new terrain—such as gravel piles, jungle, sand and so on—as well as expanding upon terrain found in *Total Warfare*, such as ultra-heavy woods and extreme depths, which expand upon the standard Light and Heavy Woods and Water terrain.

Buildings

Though buildings are considered base terrain types, they are covered in their own section, as well as in *Total Warfare* (see p. 112 of this rulebook and p. 166, *TW*, respectively).

Gravel Piles

Gravel piles represent any type of rock or dirt piles that are not compacted; they are all covered under a single set of rules. While gravel piles can be designated on any hex on the playing area, only the hex's level is still considered for the game; any other terrain condition (woods, water and so on) is ignored.

Determining Gravel Piles: Unlike most other base terrain types, players must determine the number of hexes each pile covers, as well as the level each hex rises above the underlying terrain. Because such non-compacted piles are inherently unsteady, a hex cannot rise more than 1 level higher than adjacent hexes of the same base terrain type.

In other words, at the start of a game, if the players wish to designate a single gravel pile hex, it can only be a single level higher than the underlying terrain. If the players wish to have a gravel pile that is higher than a single level, then all six adjacent hexes must have Level 1 gravel piles and/or hills, which will allow the central hex to be a Level 2 gravel pile. If the players wish the central gravel pile hex to be a Level 3 gravel pile, the 6 adjacent hexes must be Level 2 gravel piles and/or hills, while the 12 adjacent hexes to those 6 hexes must be a Level 1 gravel pile and/or hill. And so on.

Game Effects: Apply a +1 MP cost to enter a Level 1 gravel pile hex, and apply a +1 modifier to all Piloting/Driving Skill Rolls made in a gravel pile hex. Both modifiers increase by 1 for each gravel pile hex level above 1, so that entering a Level 3 gravel pile hex would require an additional +3 MP cost and would inflict a +3 modifier to any Piloting/Driving Skill Rolls made in that hex.

Units entering a gravel pile equal to or greater than their height level may get stuck (see *Bog Down Rules*, p. 60). However, unlike all other terrain types, a failed Bog Down roll means the unit is not only stuck, but has sunk down into the gravel pile the exact number of levels equal to the unit's height, which means that all LOS to and

from the unit is blocked. The unit must apply an additional +2 modifier to the Bog Down roll when attempting to get unstuck. If the roll succeeds, the unit may then move normally.

- **Vehicles:** Hover vehicles may not enter a gravel pile hex; wheeled vehicles may not enter a Level 2 or higher gravel pile hex; Large Vehicles still pay the +1 MP cost to enter a gravel pile hex, but ignore the Piloting/Driving Skill Roll modifier and never check to see if they are stuck.
- **Infantry:** Infantry do not pay the additional MP cost to enter a gravel pile hex; though they may get stuck, unlike other unit types, they do not sink into the terrain of the hex and so LOS is not blocked.
- **Non-Spheroid Aerospace Units:** If a unit is landing or taking off and enters a gravel pile hex, apply the damage as though it crashed into the hex (see *Landing*, p. 87, *TW*), but the unit continues moving, only subtracting 1 hex from the total number of hexes needed to land, for each gravel pile hex the unit enters. Damage is still applied for each gravel pile hex entered separately, however.
- **Spheroid Units:** Landing Spheroid units reduce gravel pile hexes to the level of the underlying terrain. In doing so, they create a Level 1 gravel pile in each hex adjacent to the DropShip. If the level of the underlying adjacent hex is 6 or greater for Spheroid DropShips, or 3 or greater for Spheroid Small Craft, ignore this effect.

Half Levels

The effect of half-levels on movement is shown on the Expanded Movement Costs and Planetary Conditions Tables (see p. 30). Additionally, half-levels allow vehicles to go hull-down, if that rule is in use (see *Hull Down Vehicles*, p. 19).

Heavy Industrial Zone

A heavy industrial zone hex must be assigned to a clear or paved hex, within 3 hexes of a building hex on the playing area. This represents the convoluted apparatus (power lines, generators, cooling ponds, water towers and so on) that make up a heavy industrialized sector.

All Units: Apply a +1 to-hit modifier to all weapon attacks made into or through a heavy industrial zone hex. Just as with woods hexes, 3 intervening hexes of heavy industrial zone blocks line of sight.

Unlike other terrain, which always has a specific height, players must assign a height to each heavy industrial zone hex. Some apparatus can be a half-level, one level or two levels tall, while truly massive industrial zones can tower as high as a DropShip at ten levels. As each heavy industrial zone hex is assigned, designate its height for LOS purposes.

'Mechs: Apply +1 MP for a 'Mech to enter a heavy Industrial zone hex.

Unintended Explosions: Every weapon fired into a heavy industrial zone hex that does not strike its intended target (including missiles, if the maximum number fired did not strike) may cause a potentially devastating explosion of some sort; likewise, area-effect attacks (such as artillery strikes) and attacks to reduce the hex (see *Terrain Factor Rules*, p. 63) may also cause such an explosion. Roll 2D6 for every qualifying weapon attack; on a result of 8 or higher, roll again on the Terrain Effects Table. All damage is inflicted to the front of an affected unit; damage is inflicted to each trooper in a battle armor unit; double the damage inflicted to all conventional infantry units in the hex, dealing damage as if the attack originated from another infantry unit.

Note that this rule applies whether or not the Missed Shots rule (see p. 79) is in use.

Non-Spheroid Aerospace Units: If a unit is landing or taking off and enters a heavy industrial zone hex, immediately make a roll on the Terrain Effects Table and apply any resulting damage before finishing the unit's landing; if a unit enters multiple heavy industrial zone hexes, a separate roll is made for each hex.

If the landing unit is an Aerodyne DropShip, add a +2 modifier to the die roll.

Spheroid Aerospace Units: If a Spheroid DropShip lands in a heavy industrial zone hex, immediately make a roll on the Terrain Effects Table with a +4 modifier (apply a +2 modifier for Spheroid Small Craft); a separate roll is made for each heavy industrial zone hex the landed DropShip covers. If a heavy industrial zone hex entered by a landing Spheroid aerospace unit is Level 6 or higher, roll twice on the table.

Airships: An Airship entering a heavy industrial zone hex automatically rolls three times on the Terrain Effects Table.

Fire: During the End Phase of any turn when a heavy industrial zone hex is on fire, roll once on the Terrain Effects Table and apply effects, if any.

Jungle

Apply the modifiers shown on the Expanded Movement Costs and Planetary Conditions Tables for movement into jungle hexes.

Jungle hexes affect line of sight and weapons fire in the same manner as woods hexes (see p. 100, *TW*); the ultra-heavy jungle hex affects line of sight and weapons fire just like ultra-heavy woods (see p. 38).

Chainsaw: A chainsaw can be used to reduce a jungle hex just like a woods hex (see p. 134, *TW*), except that it takes three turns instead of two to reduce a jungle hex from its current state to one lower.

TERRAIN EFFECTS TABLE

Die Roll	Effect
2-7	No effect
8	Hex catches fire (see *Fire*, p. 413).
9	Power lines fall: all units in hex take 3 points of damage to a random location
10	Minor explosion: all units in hex take 5 points of damage to a random location; hex catches fire
11	Electrical explosion: all units in hex take 1D6 + 3 points of damage to a random location
12	Major explosion: all units in hex take 2D6 points of damage to a random location and suffers as if hit by 1d6 infernos for one turn; hex catches fire

Note: All conventional infantry units in the hex suffer double damage and the damage is applied as though it were an attack from another infantry unit. If tracking damage in such hexes (see *Terrain Factor,* p. 62), double the damage applied to any units to the heavy industrial zone.

EXPANDED MOVEMENT COSTS AND PLANETARY CONDITIONS TABLES

The following abbreviations can be found on the following tables 'Mechs = M; ProtoMechs = P; Vehicles = V; Tracked Vehicles = T, Hover Vehicle = H; Wheeled Vehicles = W; WiGE = Wi; VTOL = VT; Airships = A; Infantry = I; Conventional Infantry = CI; Battle Armor = B ; Missile = Mi; Direct-Fire Ballistic = DB; Direct-Fire Energy = DE; Physical Attack = PH

Movement Action/ Base Terrain Type	MP Cost Per Hex/ Terrain Cost	To-Hit Modifier	Piloting/Driving Skill Modifier	Terrain/ Construction Factor	Prohibited Units	Landing Modifier
Cost to Enter Any Hex	1					
Base Terrain Cost When Entering Any New Hex						
Clear	+0[6]	+0	+0	200	Rail,[21] Naval Vessels	+0
Gravel Piles	+1 per level	+0	+1 per level	100	Rail,[21] Naval Vessels	+3†
Rough	+1	+0	+0	200	Wheeled, Rail,[21] Naval Vessels	+3
Ultra Rough	+2	+0	+0	200	Vehicles, Rail,[21] Naval Vessels	+5
Light Woods	+1[10]	+1	+0	50	Wheeled,[9] Hover, VTOL,[12] WiGE,[12] Rail, Naval Vessels	+4
Heavy Woods	+2[11]	+2	+0	90	Vehicles,[12] Rail,[21] Naval Vessels	+5
Ultra-Heavy Woods	+3	+3	+0	120	'Mechs, ProtoMechs, Vehicles,[12] Rail,[21] Naval Vessels	+7
Light Jungle	+2	+1	+1	60	Vehicles,[12] Rail,[21] Naval Vessels	+4
Heavy Jungle	+3	+2	+2	100	Vehicles,[12] Rail,[21] Naval Vessels	+5
Ultra-Heavy Jungle	+4	+3	+3	130	'Mechs, ProtoMechs,Vehicles,[12] Rail,[21] Naval Vessels	+7
Magma Crust	+0	+0	+1	30	Wheeled, Infantry, Rail, Naval Vessels	+2†
Magma, Liquid	+1[24]	+0	+4	0	Wheeled, Hover, Tracked, Infantry, Rail, ProtoMechs Naval Vessels	*
Planted Fields	+0	p. 38	+0	30	Rail,[21] Naval Vessels	+2
Tundra	+0[6]	+0	+1	70	Rail,[21] Naval Vessels	+2
Sand	+0/+1[6, 24]	+0	+1	100	Rail,[21] Naval Vessels	+2
Water[17]						+
Depth 0	+0	+0	+0	—	Rail,[21] Naval Vessels	+2
Depth 1	+1[1]	+0	+0	—	Infantry,[14] Vehicles,[4,7] Rail[21]	+3
Depth 2–15	+3[1]	+0	+0	—	Infantry,[14] Vehicles,[4,7] Rail,[21,] IndustrialMechs[8]	+3
Depth 16+	p. 40	p. 40	p. 40	—	p. 40	+3
Level Change (up or down)						
Half Levels	+1 (+0 for 'Mechs)	+0	+0	150		+2
1 level	+1 ('Mechs, VTOLs, subs, ProtoMechs) +2 (infantry, ground vehicles)	+0	+0	200	—	+3
2 levels	+2 ('Mechs, VTOLs, subs)	+0	+0	—	Infantry, Ground Vehicles, WiGE,[13] Rail,[21] ProtoMechs	+4†
3+ levels	+1/level (VTOLs, subs)	+0	+0	—	'Mechs, ProtoMechs, Infantry, Ground Vehicles, Rail, WiGE[13]	*
Sheer Cliffs	p. 37	+0	p. 37	50	Rail,[21] Naval Vessels	*†
Rubble	+1	+0	+0	0	Rail, Naval Vessels, Wheeled	+3
Ultra Rubble	+2	+0	+1	0	Rail, Naval Vessels	+5

*Unit Destroyed.

†See corresponding section for more information.

[1]MP cost to move along the bottom of the water hex; Piloting Skill Roll required to prevent falling.

[2]Piloting Skill Roll required to prevent damage; infantry pays only 1 MP (except mechanized infantry, which pays 2 MP) to enter any building hex.

[3]If traveling along road; otherwise cost of underlying terrain.

[4]Hovercraft may enter all water hexes along the surface and may enter such hexes using Flanking movement.

[5]No cost for infantry.

EXPANDED MOVEMENT COSTS AND PLANETARY CONDITIONS TABLES (CONT.)

Movement Action/ Base Terrain Type	MP Cost Per Hex/ Terrain Cost	To-Hit Modifier	Piloting/Driving Skill Modifier	Terrain/ Construction Factor	Prohibited Units	Landing Modifier
Buildings[2]						
Tent	+0	+0	—	—	VTOL, WiGE, Rail,[21] Naval Vessels	+1
Hangar[18]		Blocks LOS			VTOL, WiGE, Rail,[21] Naval Vessels	+
Light	+0		+0	1–8		+2
Medium	+1		+0	9–16		+3
Heavy	+2		+1	17–45		+3
Hardened	+3		+3	46–75		+4
Standard		Blocks LOS			VTOL, WiGE, Rail,[21] Naval Vessels	+
Light	+1		+0	1–15		+2
Medium	+2		+1	16–40		+3
Heavy	+3		+2	41–90		+4
Fence	+1[19]	+0	—	1	VTOL, WiGE, Rail,[21] Naval Vessels	+0
Wall		Blocks LOS			VTOL, WiGE, Rail,[21] Naval Vessels	
Light	+1		+0	1–15		+2
Medium	+2		+0	16–40		+3
Heavy	+3		+1	41–90		+4
Hardened	+4		+3	91–150		+5
Bridge[20]					Rail,[21] Naval Vessels	
Light	NA	+0	NA	1–15		+0[36]
Medium	NA	+0	NA	16–40		+0[36]
Heavy	NA	+0	NA	41–90		+0[36]
Hardened	NA	+0	NA	91–150		+0[36]
Rail	NA	+0	NA	151–600		+0[36]
Gun Emplacement		Blocks LOS			VTOL, WiGE, Rail,[21] Naval Vessels	
Light	NA		NA	1–15		+2
Medium	NA		NA	16–40		+3
Heavy	NA		NA	41–90		+4
Hardened	NA		NA	91–150		+5
Fortress		Blocks LOS			VTOL, WiGE, Rail,[21] Naval Vessels	
Medium	+3		+2	16–40		+6
Heavy	+4		+3	41–90		*
Hardened	+5		+4	91–150		*
Castles Brian		Blocks LOS			VTOL, WiGE, Rail,[21] Naval Vessels	
Heavy	+4		+4	35–90[15]		*
Hardened	+5		+5	91–150[15]		*
Heavy Industrial Zone	+0[16]	+1	+1	100	Rail,[21] Naval Vessels	+7†

[6]+1 MP for Wheeled Vehicles (unless mounting the Dune Buggy chassis modification) and infantry using ground movement.
[7]Wheeled or Tracked Support Vehicles with the Amphibious chassis modification can move through any water hex on the surface at a cost of 2 MP (see p. 56, *TW*).
[8]IndustrialMechs can enter a Depth 2 or greater water hex. However, the IndustrialMechs must mount either a fuel cells, fission or fusion power plant and must mount the Environmental Sealing chassis modification to do so. If the IndustrialMech does not meet those requirements, it is considered destroyed if it remains in a Depth 2 or greater water hex (or prone in a Depth 1 water hex) in the End Phase of the turn immediately following the turn in which it entered the hex.
[9]Wheeled Support Vehicles with either the Monocycle or Bicycle chassis modification can enter a light woods hex.
[10]Infantry pays only 1 MP (except mechanized infantry, which pays 2 MP) to enter any light woods hex.
[11]Infantry pays only 2 MP (except mechanized infantry, which pays 3 MP) to enter any heavy woods hex.
[12]VTOL and WiGE vehicles can enter a woods/jungle hex provided their elevation is higher than the level of the woods in the hex.

EXPANDED MOVEMENT COSTS AND PLANETARY CONDITIONS TABLES (CONT.)

Movement Action/ Base Terrain Type	MP Cost Per Hex/ Terrain Cost	To-Hit Modifier	Piloting/Driving Skill Modifier	Terrain/ Construction Factor	Prohibited Units
Additional Movement Actions					
Climbing ('Mechs only)	2 MP or 3 MP (1 arm)	+0	+1 or +2 (1 arm)	—	
Crawling ('Mechs only)	Half current Walking MP	+0	p. 18	—	
Dangle-and-Drop ('Mechs only)	p. 20	+0	p. 20		
Dropping to the Ground ('Mechs only)	1	+0	+0	—	
Evading	+0	+0	+1	—	Vehicles, Rail, Naval Vessels
Facing Change	1/hexside[5]	+0	+0	—	Infantry
Hull-down	+2	+0	+0	—	Rail, Naval Vessels, Infantry
Hurried Movement	+0	+0	+2 per MP ignored	—	Rail, Naval Vessels, Infantry
Leaping ('Mechs only)	4 MP	+0	p. 20	—	
Physical Defense ('Mechs only)	p. 18	p. 18	p. 18	—	
Shielding	Only Walking/Cruising MP	+0	+0	—	Rail, Large Naval Support Vessels
Sprinting ('Mechs only)	+0	+0	+2	—	
Standing Still (Expanded)	+0	–1	+0	—	
Standing Up	+0	+0	2/attempt	—	Vehicles, Rail, Naval Vessels, Infantry

Terrain Modification	MP Cost Per Hex/ Terrain Cost	To-Hit Modifier	Piloting/Driving Skill Modifier	Terrain/ Construction Factor	Prohibited Units[25]	Landing Modifier
Black Ice	+1[22, 23]	+0	+0/+4[22]	40	—	+1†
Bug Storm	p. 38	+1 DB, Mi/+2 DE, Pulse	+0	—	—	+0
Deep Snow	+1[23, 24]	+0	+1	20	Wheeled	+1
Extreme Depths	p. 40	p. 40	p. 40	0	p. 42	N/A
Fire	p. 41	p. 41	p. 41	0	p. 43	+0
Geyser	+1	+2	p. 48	—	Wheeled, Infantry	+0
Hazardous Liquid Pools	p. 47	p. 47	p. 47	—	p. 49	+3†
Ice	+1[22, 23]	+0	+0/+4[22]	40	—	+1†
Mud	+1[23, 24]	+0	+1	—	Rail[21]	+1
Rail	+1	+0	+0	20	Naval Vessels	+2
Rapids	+1[23]	+0	+2	—	—	+0†

[13]This only applies to WiGE units entering a hex whose level is higher than the unit's current hex; see *Wing-In-Ground-Effect,* page 55, *TW,* for rules governing entering hexes whose level is lower than the unit's current hex.

[14]Infantry can enter a water hex of Depth 1 or deeper if they are noted as having UMU MP.

[15]Castles Brian use capital-scale damage, as noted under Scale (see p. 238, *TW*). See *Scaled Damage* (p. 124) for more information.

[16]Mechs pay 1 additional MP to enter any heavy industrial zone hex.

[17]Level change MP cost not included.

[18]Infantry (except mechanized infantry) pay only 1 MP to enter a building hex regardless of building type; ProtoMechs and mechanized infantry pay only 2 MP to enter any building hex except for tents and fences (which cost only 1 MP). Hangars apply MP and Piloting Skill modifiers only when entering from outside, unless other factors apply (see *Hangars* for details).

[19]Only applies to conventional infantry using Ground MP.

[20]Units move over bridges (never through them) as though traveling on a road.

[21]Unless rail tracks also exist in the hex; if the hex is a water hex, the track must be mounted on a bridge, or the rail support vehicle must mount the Environmental Sealing chassis modification.

[22]Skidding rules apply (see p. 62, *TW*): every time a unit enters a hex not using careful movement it must make a PSR with a +0 modifier; if a PSR is forced on a unit in such a hex (due to damage, skidding, charges, and so on), apply a +4 modifier to the PSR.

EXPANDED MOVEMENT COSTS AND PLANETARY CONDITIONS TABLES (CONT.)

Terrain Modification	MP Cost Per Hex/ Terrain Cost	To-Hit Modifier	Piloting/Driving Skill Modifier	Terrain/ Construction Factor	Prohibited Units[25]	Landing Modifier
Road						
Paved	1 (T/H/I)[3, 22]	+0	+0	150	Rail,[21] Naval Vessels	+0
Gravel	1 (V/I)[3]	+0	+0	50	Rail,[21] Naval Vessels	+1
Dirt	1[3]	+0	+0	20	Rail,[21] Naval Vessels	+2
Paved	+0[22]	+0	+0	150	Rail,[21] Naval Vessels	+0
Smoke						
Light Smoke	+0	+1	+0	—	—	+0
Heavy Smoke	+0	+2	+0	—	—	+0
Swamp	+1 (M), +2 (V/I)[23, 24]	+0	+0	—	—	+2
Thin Snow	+1 (W/CI)[23]	+0	+0	10	Rail,[21] Naval Vessels	+0
Torrent	+2 [23]	+0	+3	—	Rail[21]	+0

Terrain Condition	Movement Modifier	To-Hit Modifier	Piloting/Driving Skill Modifier	Terrain/ Construction Factor	Prohibited Units[25]
Atmospheric Pressures (Density)					
Vacuum	+0	+0	+0	—	Vehicles,[26, 31] Infantry[27]
Trace	+0	+0	+0	—	Vehicles,[26, 31] Infantry[27]
Thin	–2 Cruising MP (H, Wi, VT)	+0	+0	—	—
Standard	+0	+0	+0	—	—
High	+1 Cruising MP (H, Wi, VT)	+0	+0	—	—
Very High	+1 Cruising MP (H, Wi, VT)	+0	+0	—	—
Earthquake	+0	+1 to +5	+1 to +5	—	—
Electromagnetic Interference	+0	+2 (–2 Cluster Table)	+0	—	—
High/Low Gravity	p. 53	p. 53	p. 53	—	—
Meteor Showers	+0	+0	+0	—	—
Tainted and Toxic Atmospheres	+0	+0	+0	—	Vehicles,[26] Infantry[27]

[23]These terrain modifier do not apply to hover, WIGE or airborne VTOL vehicles; in the case of snow, does not apply to the unit if it mounts the Snowmobile chassis modification.

[24]Units entering this terrain may be stuck; see *Bog Down Rules,* page 60.

[25]Includes restrictions for underlying terrain as noted under Base Terrain Types.

[26]A vehicle must include Environmental Sealing to operate under this condition; WiGEs and VTOLs can never operate under this condition.

[27]This only applies to conventional infantry, unless the conventional infantry are XCT Troops (see p. 163, *TO: AUE*), in which case they can operate in this condition.

[28]A non-infantry unit entering this terrain may choose to ignore the additional MP cost. However, the unit may fall or crash as a result; see *Careful Movement,* page 61.

[29]An MP Cost Per Hex is noted simply as a modifier, such as "+1" or "+2". A Movement Modifier is noted as a change in Movement Points, such as "–1 SF" means "–1 Safe Thrust," "–1 C" means "–1 Cruising MP," and so on; infantry will simply indicate an MP reduction, such as –1 G" means "–1 Ground," "–1" which would apply to both Ground or Jumping movement, or "no J" means "no Jumping" and so on.

[30]If a specific weapon type is not noted, the modifier applies to all weapon attacks; a "PH" indicates a Physical Attack modifier.

[31]Hover, WiGE and VTOL Vehicles cannot operation in such conditions.

[32]At the start of Turn 5 of a scenario, includes all modifiers and effects of thin snow (see p. 50). At the start of Turn 15 of a scenario, includes all modifiers and effects of deep snow (see p. 39). At the start of Turn 20 of a scenario, includes all modifiers and effects for ice (see p. 48).

[33]At the start of Turn 10 of a scenario (provided the scenario lasts long enough), an ice storm includes all modifiers and effects of ice (see p. 48); ice occurs in every water hex across the playing area.

[34]At the start of Turn 10 of a scenario, includes all modifiers and effects of thin snow (see p. 50). At the start of Turn 20 of a scenario, includes all modifiers and effects of deep snow (see p. 39). At the start of Turn 20 of a scenario includes all modifiers and effects of ice (see p. 48).

[35]At the start of Turn 15 of a scenario, includes all modifiers and effects of ice (see p. 48); ice occurs in every water hex across the playing area.

[36]Check for Bridge Collapse (p. 176, *TW*)

EXPANDED MOVEMENT COSTS AND PLANETARY CONDITIONS TABLES (CONT.)

	MP Cost Per Hex or Movement Modifiers[29]						Piloting/Driving/Control Modifier		
Weather Condition	'Mechs	Vehicles	Infantry	Aerospace	Heat Points	To-Hit Modifier[30]	'Mechs	Vehicles	Aerospace
Fog[28]									
Heavy Fog	+2	+2	+2	+0	+0	+1 DE, P	+0	+0	+0
Light Fog	+1	+1	+1	+0	+0	+0	+0	+0	+0
Hail									
Heavy Hail	+0	–1 C	–2 G (B)/–3 (CI)	–1 MP (A)	–1	+1 DB/+2 Mi	+1	+2 (H/Wi/VT)	+1 (+3 A)
Light Hail	+0	–1 C	–1 G (B)/–2 (CI)	+0	–1	+1 Mi	+0	+1 (Wi/VT)	+2 (A)
Light									
Dusk/Dawn	+0	+0	+0	+0	+0	+1	+0	+0	+0
Full Moon Night/Glare	+1	+1	+1	+0	+0	+2	+0	+0	+0
Moonless Night/Solar Flare[28]	+2	+2	+2	+0	+0	+3/+1 PH	+0	+0	+0
Pitch Black[28]	+3	+3	+3	+0	+0	+4/+2 PH	+0	+0	+0
Rain									
Gusting Rain	+0	+0	–1 G (B)/–2 (CI)	–1 MP (A)	+0	+2 DB/+3 Mi	+2	+3 (H/Wi/VT)	+2 (+4 A)
Heavy Rainfall	+0	+0	+0	+0	+0	+1	+1	+1	+1
Lightning Storm	+0	+0	–1 (CI)	+0	+0	+1/+2 Mi	+0	+1 (Wi/VT)	+2 (A)
Light Rainfall	+0	+0	+0	+0	+0	+1 (CI)	+0	+0	+0
Moderate Rainfall	+0	+0	+0	+0	+0	+1	+0	+0	+0
Torrential Downpour	+0	+0	+0	+0	+0	+2	+2	+2	+2
Snow									
Heavy Snowfall[32]	+0	–2 C	–2 G (B)/–3 (CI)	+0	–2	+1	+1	+1	+1
Ice Storm[33]	+0	–3 C	–3G(B)/–4(CI)	+0	–3	+1 Mi	+0	+1 (Wi/VT)	+2 (A)
Light Snowfall	+0	–1 C	–1 CI	+0	–1	+1 (CI)	+0	+0	+0
Moderate Snowfall[34]	+0	–2 C	–2 CI	+0	–2	+1	+0	+0	+0
Snow Flurries[34]	+0	–2 C	–3 (CI)	+0	–2	+1/+2 Mi	+0	+1 (Wi/VT)	+2 (A)
Sleet[35]	+0	–1 C	–2 (CI)	+0	–1	+1/+2 Mi	+0	+1 (Wi/VT)	+2 (A)
Wind									
Light Gale	+0	+0	–1 G (CI)	+0	+0	+0	+0	+0	+1 (A)
Moderate Gale	+0	+0	–1 (CI)	+0	+0	+1 M	+0	+1 (Wi/VT)	+2 (A)
Strong Gale	+0	+0	–1 G (B)/–2 (CI)	–1 (A)	+0	+1 DB/+2 Mi	+1	+2 (H/Wi/VT)	+1 (+3 A)
Storm	+0	+0	–1 G, no J (B); no CI	–1 SF	+0	+2 DB/+3 Mi	+3	+3 (H/Wi/VT)	+2
Tornado F1–F3	–2 W	–2 C[31]	N/A	–1 SF; no A	+0	+2 DE, P/+3 DB/no Mi	+3	+3	+3
Tornado F4+	W only	N/A	N/A	N/A	+0	+3 DE, P/no DB, Mi	+5	—	—
Misc.									
Blowing Sand	+0	+0	–1 (CI)	+0	+0	+1 DE/P/+1 Mi	+0	+1 (Wi/VT)	+2 (A)
Extreme Temperatures	+0	+0	+0	+0	p. 62	+0	+0	+0	+0

Level 1 Foliage

In standard *BattleTech* rules, woods rise two levels above the underlying terrain. Level 1 foliage allows players to designate woods and jungle hexes as rising only 1 level above the underlying terrain.

All other rules concerning woods, including their *Terrain Factor* (see p. 62), remain the same. They rise only 1 level, and so their interaction with various units and line of sight will change accordingly (see *Terrain Height and Depth*, p. 100, *TW*).

Partial Cover: Level 1 foliage never provides partial cover for 'Mechs.

Chainsaw: A chainsaw (see p. 134, *TW*) can reduce a Level 1 foliage hex from its current state to one lower in a single turn.

Magma

Magma is divided into two different types of terrain: crust and liquid. Apply the modifiers shown on the Expanded Movement Costs and Planetary Conditions Table for movement into magma hexes.

Crust: Every time a unit enters a magma crust hex along the ground (hover, VTOL and WiGE vehicles do not count, nor do infantry expending VTOL MP, nor units expending Jumping MP provided the Crust hex is not the end hex of movement) the controlling player rolls 1D6. On a result of 1-5, nothing occurs; on a result of 6, the crust breaks and the hex is immediately converted into a liquid magma hex of Depth 1 (it stays a liquid magma hex for the remainder of the scenario; see below).

If a 'Mech or vehicle is expending Jumping MP and its target landing hex is a magma crust hex, on a result of 4, 5 or 6 the crust breaks and becomes a liquid magma hex.

For heat-tracking units, every magma crust hex they enter (but do not occupy it during the Heat Phase) generates 2 additional Heat Points in that turn; occupying a magma crust hex during the Heat Phase generates an additional 5 Heat Points that turn.

Liquid Magma: Any unit other than a 'Mech that enters a liquid magma hex is automatically destroyed. If a Hover, VTOL or WiGE vehicle—or infantry unit expending VTOL MP—touches the ground of such a hex for any reason (landing, damage and so on), that unit is automatically and utterly destroyed. In all instances, the unit cannot be salvaged in any way.

If a 'Mech jumps into a liquid magma hex (or into a magma crust hex that turns into a liquid magma hex), the controlling player must make a Piloting Skill Roll to determine if the 'Mech becomes stuck (see *Bog Down Rules*, p. 60).

'Mechs that start their Movement Phase in a liquid magma hex, or enter such a hex, take 2D6 points of damage to each exposed location immediately upon entering the hex. If the 'Mech is moving normally, its legs constitute its exposed locations; if the 'Mech falls, all of its locations (including front and rear torsos) are exposed. Make separate damage rolls for each location; regardless of how much damage is rolled, it is considered only a single attack. A unit that starts and ends a Movement Phase in a liquid magma hex takes an additional 2D6 of damage to its exposed locations; again, make a separate damage roll for each location, but this roll is considered a separate attack from the original 2D6 damage roll.

For 'Mechs, every liquid magma hex it enters (but does not occupy it during the Heat Phase) generate 5 additional Heat Points in that turn; occupying a liquid magma hex during the Heat Phase generates an additional 10 Heat Points that turn.

Unlike any other type of outside heat source (see p. 159, *TW*), there is no cap to the total heat that can be generated against a unit by magma. When determining heat from magma, a player should sum up all other outside heat sources for the unit and then apply the cap of 15 first, disregarding any heat above 15. Then apply the heat from magma, no matter how much heat it has generated.

Non-Spheroid Aerospace Units: If aerospace units are landing or taking off and enter a magma crust hex, apply the heat effects, but do not roll to see if the crust breaks. If such a unit enters a liquid magma hex, it is automatically destroyed and cannot be salvaged.



A volcanic vent begins to erupt as Roughrider warriors stand in awe of nature's fury.

Spheroid Aerospace Units: A landing Spheroid aerospace unit (including units landing using VSTOL) automatically turns a magma crust hex into a liquid magma hex. If the unit is a single hex unit, it is automatically destroyed. If it is a multi-hex unit and all the hexes it lands in are magma, then it is automatically destroyed. If it is a multi-hex unit and only some hexes it occupies are turned to magma, then apply the 2D6 damage described above for each such hex to the aft location; each hex is considered a block of damage.

Eruptions: The large-scale eruption of a volcano would devastate almost any size of force unlucky enough to be within a "playing area" of such an event. Rules for such a scenario are simply beyond the scope of any in-game mechanics. However, players can use the following rules to simulate "micro" eruptions that can occur and have an effect on a playing area without wiping every trace of all forces off the map.

Before play begins, the players must determine how often they wish the eruptions to occur. If they want only a small chance of such an occurrence, then the players should nominate 12 as the target number; if players prefer a higher frequency, they should choose a Target Number of 8. Or, if the players are looking to "build up" to the point that an eruption is almost certain (as often occurs with volcanic activity), they can start at 12 and then lower that target number every turn or every other turn. Finally, players can also set an arbitrary turn in which a die roll determines when the eruptions will begin.

At the start of the turn that the playing group has determined is the first chance for an eruption to occur (whether this is the first turn of the game, Turn 5, Turn 10 or whatever they decided before play began), roll 2D6. If the result equals or exceeds the pre-determined target number, the eruption has begun; if the roll is less than the target number, the eruption has not yet begun and a roll against the appropriate target number is made at the start of the following turn.

During the first turn when the eruption starts, the player that won the Initiative selects one unoccupied hex (containing no units of any kind) on the playing area. He then rolls 2D6. On a result of 6 or more, that hex dissolves into magma. Any unit within a two-hex radius receives 10 points of damage, assigned in 5-point Damage Value groupings to the facing in the direction of the attack (double the damage against conventional infantry and apply it as though it were an attack from another infantry unit). This damage is considered an area-effect weapon.

Additionally, in the target hex and six adjacent hexes (but never the second ring of twelve hexes), this damage is also applied vertically to the elevations above the target hex (meaning an airborne VTOL in a target hex that is at a low enough elevation may still take damage). In the target hex, for each subsequent elevation above the hex's underlying level, reduce the damage by 1 point and apply that damage to the next elevation; in the six adjacent hexes, reduce the damage by 2 and apply that damage to the next elevation (use the Front/Rear location, if a location is needed). In both instances, this is done until there is no more damage to apply to a higher elevation. Finally, such vertical damage is not inflicted twice against units that occupy more than one level (such as a standing 'Mech).

Use the rules for Buildings and Levels (Hills) as they interact with artillery when determining the outcome of an eruption's interaction with such terrain features (see p. 152).

Any units tracking heat receive an additional 2 Heat Points for that turn. Finally, any hex within the two-hex radius that can catch fire (woods/jungle, building and so on) is automatically set on fire as though attacked by infernos.

The player that lost Initiative may then select a hex and repeat the process.

For each additional turn the game continues after the eruption begins, each player may select another unoccupied hex and repeat the process described above.

Each hex that dissolves into magma takes on the properties of magma (see above) and ignores its previous terrain feature, though it retains its current height. However, unlike the magma rules above, in which the magma is considered stagnant, this magma is injected with the kinetic energy of its eruption. As such, if any hex adjacent to the newly erupted magma hex is lower than the magma hex, during the End Phase of the turn following the turn in which it erupted, the magma will flow into that hex; ignore the new hex's previous terrain feature and apply all magma rules. If multiple hexes qualify, randomly determine which hex the magma will enter (it will only flow into a single hex). Depending on the terrain of the playing area and where the eruptions occur, several magma rivers can eventually result from this "cascade."

If a 'Mech occupies a hex where lava enters in this fashion, the 'Mech must make an immediate Piloting Skill Roll to avoid falling.

If players are using the *Terrain Factor Rules* (see p. 63), once the eruption starts, if the level of any hex is reduced due to damage, immediately roll 2D6; on a result of 5 or less, nothing occurs. On a result of 6 or higher, an eruption occurs in that hex.

Finally, while players can choose whether to add this complication or not, volcanoes are usually accompanied by earthquakes; incorporating an earthquake (see p. 53) with volcanic eruptions will make for a more realistic, and scary, scenario.



● ERUPTION DIAGRAM ●

In the Eruption Diagram, Player A is fielding two 'Mechs, while his opponent keeps using a VTOL to harass him on the Large Mountain #1 map. The players have just determined through a successful die roll that an eruption is taking place, so Player A decides on a sneaky tactic. He nominates Hex A as a location for a potential eruption and rolls 2D6; the result of a 7 means a micro eruption occurs in that hex (and the hex is turned into magma). The VTOL in Hex A is at Elevation 14. As that is 4 hexes above the Level 10 of the underlying terrain, 4 points of damage are subtracted from the 10 that is applied in the two-hex radius shown in the diagram, leaving 6 points to be assigned in 5-point and 1-point Damage Value groupings to the Front column of the VTOL Hit Location Table.

However, Player A didn't think that move through well enough, and since his 'Mech in Hex B is within a two-hex radius of the eruption, the 'Mech takes 10 points of damage, assigned in two 5-point Damage Value groupings, to the Rear location of the 'Mech Hit Location Table. Even though damage would be assigned to the elevations above the underlying Level 8 in Hex B, since damage was already assigned once to the 'Mech, no further damage is applied even though it occupies two levels of height.

Luckily for Player A, the Level 12 in Hex C is in the LOS between the erupting Hex A and his own 'Mech in Hex D. Hex C is higher than the underlying terrain of Hex D, and so it blocks any damage that would have been applied to the 'Mech in Hex D.

However, Player A is once again not playing smart. During the following turn, he doesn't move the 'Mech in Hex B. As an adjacent hex exists to the erupting magma hex, and the adjacent hex is at a lower level, the magma will flow into that hex. Hex B and Hex E are lower and adjacent, and so Player A randomly determines which hex the magma will flow into; as luck would have it, it will flow into Hex B! Player A must make an immediate Piloting Skill Roll. With a Piloting Skill Rating of 5 and no damage taken, he rolls and gets a result of 4; he's fallen!

Looking at the magma rules (because Hex B is now a magma hex), Player A knows that since the 'Mech in Hex B is going to start the Movement Phase of the next turn in a magma hex, and he's just fallen in that magma hex, his inattention has just inflicted 2D6 points of damage on every location on his 'Mech. If he doesn't manage to stand and move out of the hex, he'll take an additional 2D6 points of damage to every location on his 'Mech at the end of the same Movement Phase. Not to mention the extra heat during the Heat Phase…let's hope his dice are up for it!

Planted Fields

Planted fields (crops of wheat, corn and so on) have no effect on movement modifiers. However, planted fields rise 1 level above the underlying terrain and impart a +1 to-hit modifier for every two full hexes of planted fields intervening between the attacker and target. A total of 6 intervening planted fields hexes blocks LOS.

In addition, apply a +1 to-hit modifier against any infantry in a planted fields hex; damage against conventional infantry in a planted field is still doubled.

Combine: A player with a unit mounting a combine can announce that he is activating the combine at the start of the turn; the combine is considered activated until the player announces he is deactivating it at the end of a turn. The unit may not expend Running/Cruising MP and must apply a +1 modifier to any Piloting Skill Rolls required during any turn when the

combine is active. Additionally, a +2 to-hit modifier is applied to any weapon or physical attacks made by the unit in a turn when the combine is active.

However, every planted field hex that the unit enters is automatically reduced to a clear hex. If there are any units (friendly or enemy) in a hex entered by a unit operating an active combine, roll 1D6 (the 1D6 roll is made for every friendly or enemy unit). On a result of 4, 5 or 6, the unit in question is "hit" by a combine physical weapon attack (see p. 146, *TW*); resolve all effects immediately before moving on (before the combine's movement continues). This could result in numerous attacks occurring during a single combine unit's movement.

Landing Spheroid Units: Any planted field hex adjacent to the landing hex(es) of a Spheroid aerospace unit might catch fire (see p. 41). Roll 2D6 and apply all appropriate modifiers from the Fire Table, such as planetary conditions. If the result is 7 or less, the hex is on fire.

> *A 'Mech and infantry unit are firing at a target vehicle 3 hexes away that is in a planted field hex, while both hexes along the LOS are planted fields. The 'Mech ignores the first planted field hex, but the vehicle is adjacent to a planted field so the 'Mech must take into consideration that adjacent planted field hex and the planted field hex the vehicle occupies, so applies a +1 to-hit modifier. Meanwhile the infantry, at Level 1, draws LOS through the two intervening hexes. However, as that only equals a total of 3 planted fields hexes (including the hex the vehicle occupies), only a +1 to-hit modifier is applied.*

Rough (Ultra)

Ultra-rough terrain represents a variety of truly shattered landscapes, including ultra woods/jungle hexes that have been reduced to rough ground.

Apply the modifiers shown on the Expanded Movement Costs and Planetary Conditions Table for movement into an ultra-rough hex.

Rubble (Ultra)

Ultra-rubble represents destroyed buildings made of the hardest, military-spec materials, making such a hex exceptionally difficult to navigate. Destroyed Castles Brian and fortress hexes are turned into ultra-rubble hexes.

Apply the modifiers shown on the Expanded Movement Costs and Planetary Conditions Table for movement into rubble hexes. In addition, a Piloting Skill Roll with a +1 modifier is required upon entering an ultra-rubble hex.

Sand

Sand applies a +1 MP for Wheeled Vehicles (except in the case of a Wheeled Vehicle that mounts the Dune Buggy chassis modification) and infantry using ground movement. Infantry can avoid the increased MP cost by using Jumping MP, however.

Large Vehicles without the Dune Buggy chassis modification entering a sand hex may get stuck (see *Bog Down Rules*, p. 60).

Apply a +1 modifier to all Piloting/Driving Skill Rolls made in a sand hex.

Sheer Cliffs

In standard *BattleTech* rules, all changes of Level 1 or Level 2 from one hex to an adjacent hex are considered to have enough of a slope to allow for appropriate units to move across them with little problem. This is not always the case, however, as some terrain—even if its height is not very significant—is difficult to cross due to a sheer vertical drop.

Unlike other terrain conditions, which change the entire hex, sheer cliffs only change designated hexsides. Before play begins, players determine which hexsides they wish to make sheer. Such hexsides can only be nominated if two adjacent hexes are of a different level. Though MP costs must still be taken into account when dealing with differences between a Level 1 change and a Level 2 change between two hexes, for the purpose of the rules for sheer cliffs as noted below, Level 1 and Level 2 cliffs are the same.

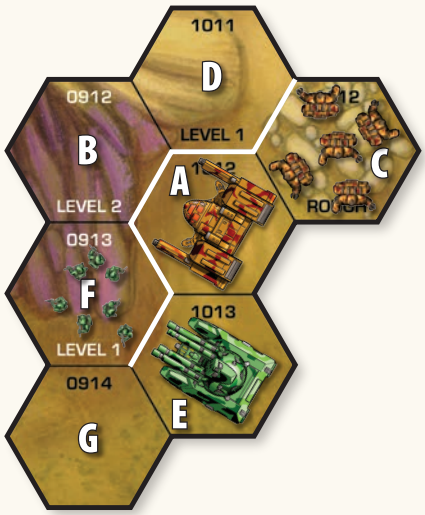
No units may use backward movement across a sheer cliff hexside (see *Backward Movement (Expanded)*, p. 20).

Moving from a lower level to a higher level across a sheer cliff hexside:

- **Mechs:** 'Mechs must make a Piloting Skill Roll when using ground movement to cross a sheer cliff hexside (+1 if a Level 1 sheer cliff, +2 if a Level 2 sheer cliff); a failed Piloting Skill Roll does not result in a fall in this case, but it means the attempt to cross the hexside has failed. The 'Mech remains in the hex where it started to cross the hexside, and the MP expenditure to cross that hexside and enter the hex has been lost. If the 'Mech has sufficient MP remaining, it can attempt to cross the hexside again. A 'Mech cannot use a Climbing action to cross a Level 1 or Level 2 sheer cliff (see *Climbing*, p. 20).
- **Vehicles:** With the exception of VTOLs and WiGEs, vehicles are prohibited from crossing a sheer cliff (though WiGE Vehicles must expend an extra 1 MP to cross a sheer cliff if they are moving at their standard 1 level above the underlying terrain).
- **Infantry:** Infantry cannot cross a sheer cliff using ground movement unless they use a Climbing action (see *Climbing*, p. 25). Mountain troops (see p. 153, *TO: AUE*), however, can cross a Level 1 sheer cliff side, with no additional movement cost (to cross a Level 2 or higher sheer cliff, they must use a Climbing action).

Moving from a higher level to a lower level across a sheer cliff hexside:

- **'Mechs:** 'Mechs must make a Piloting Skill Roll when using ground movement to cross a sheer cliff hexside (+0 if a Level 1 sheer cliff, +1 if a Level 2 sheer cliff); a failed Piloting Skill Roll means the 'Mech has fallen into the hex it was attempting to enter and its movement is over (assign damage for the fall per standard rules).
- **Vehicles:** Vehicles—except VTOL and WiGE—must make a Driving Skill Roll to cross a Sheer Cliff hexside. A failed roll forces an automatic roll on the vehicle's Motive System Damage table and its move is over.
- **Infantry:** Infantry cannot cross a sheer cliff hexside using ground movement unless they use a Climbing action (see *Climbing*, p. 25); mountain troops (see p. 153, *TO: AUE*), however, can cross a Level 1 sheer cliff side, with no additional movement cost (to cross a Level 2 or higher sheer cliff, they must use a Climbing action).



• SHEER CLIFF DIAGRAM •

In the Sheer Cliff Diagram, a series of units are attempting to scale sheer cliffs on the BattleForce map; prior to the start of play, the players designated the white-lined hexsides as sheer cliffs.

The 'Mech in Hex A has a Movement of 5/8 and a Piloting Skill Rating of 4. It must expend the standard 3 MP to enter Hex B. However, because it is a Level 2 sheer cliff, the controlling player must make a Piloting Skill Roll with a +2 modifier. The controlling player declares that the 'Mech is running and makes his Piloting Skill Roll. The result of 5 means a failure. This does not result in a fall (if the player had been moving his 'Mech from Hex B to Hex A, a failed Piloting Skill Roll would have resulted in a fall in Hex A), but the 3 MP are lost. If the player had not nominated the 'Mech for running, he would not be able to move into Hex B this turn. The player once again makes a Piloting Skill Roll with the +2 modifier; this time, he gets a result of 7, meaning the 'Mech has scaled the sheer cliff. The player has expended 6 MP to do so and so only has 2 more MP remaining to finish the 'Mech's move.

The battle armor in Hex C must use a Climbing action to cross the sheer cliff hexside into Hex D. Checking the Climbing rules, the controlling player notes that since his battle armor troops are swarm capable, it only costs 1 MP to move across the sheer hexside and then another 1 MP to enter Hex B itself. The player can choose to either spend the 2 Ground MP, or just spend 1 Jumping MP.

The Vehicle in Hex E has a Movement of 6/9 and a Driving Skill Rating of 5. However, it cannot cross the sheer cliffside into Hex F because a vehicle cannot cross a higher-level sheer cliff hexside. Instead, the player would need to spend 7 MP to enter Hex F [1 (left facing change) + 1 (entering Hex G) + 2 (two right facing changes) + 3 (changing 1 level and entering Hex F) = 7]. Next turn, if the player chose to move into Hex E, he could spend 4 MP [1 (right facing change) + 3 (changing 1 level and entering Hex E = 4], but would need to make a Driving Skill Roll; a failed roll would result in an automatic roll on the Motive System Damage Table.

Finally, the conventional infantry in Hex F have 1 Ground MP and are not mountain troops. The only way they can cross the sheer cliff is through a Climbing action. While a Climbing action requires 2 MP per level, the controlling player can use the Minimum Movement rule to make it work. So in the current turn, the controlling player moves the infantry to the sheer cliff hexside between hexes F and E, where they will remain until the following turn's Movement Phase. At that point, the controlling player will be able to move them into Hex E.

Tundra

The Expanded Movement Costs and Planetary Conditions Tables lists the MP costs for tundra. Additionally, a unit entering a tundra hex may get stuck (see *Bog Down Rules*, p. 60).

Woods (Ultra-Heavy)

The Expanded Movement Costs and Planetary Conditions Table lists the MP costs and other modifiers for ultra-heavy woods, as well as which units are prohibited from entering them.

For purposes of determining line of sight, ultra-heavy woods rise 3 levels above the underlying terrain. A single ultra-heavy woods hex lying between an attacking unit and its prospective target will block line of sight. Attacks against a target that occupies an ultra-heavy woods hex suffer a +3 to-hit modifier.

Clearing Woods: When clearing woods (see p. 112, *TW*), when ultra-heavy woods are reduced to heavy woods, they are converted to heavy woods, effectively reducing the height of the hex's trees to 2 levels above the underlying terrain (for more details, see *Terrain Factor Rules*, p. 63).

TERRAIN MODIFICATIONS

Terrain modifications represent additions to a given hex's base terrain type caused by weather, specific geologic conditions or human intervention.

As noted previously, modifiers and unit prohibitions imposed by terrain modifications are added to modifiers and unit prohibitions imposed by the underlying base terrain type.

In addition, units moving into a hex containing terrain modifications may be subject to bogging down (see p. 60). Though all such terrain modifications should be clearly marked before a given scenario begins, if no underlying base terrain type is specified for a particular hex, assume the underlying terrain is clear.

Roads/bridges and rubble are now classified as terrain modifications. Rules for these conditions appear under *Movement on Pavement*, p. 61, *TW*.

The following entries describe rules for various terrain modifications.

Black Ice

Unlike ice (see p. 48), which is usually pre-designated, black ice can suddenly "appear" on pavement. During any movement that occurs on pavement (including bridges) where the Black Ice terrain modification is in use, apply the following rules.

Whenever a 'Mech or non-hover vehicle enters any paved hex, immediately roll 1D6. On a result of 5 or 6, ice has formed in that hex; all rules that apply to ice (see p. 48) are immediately applied, as appropriate, to that hex. If the unit has not allocated the additional +1 MP required to move through an ice hex, treat the unit as if it has chosen to move at full speed despite hazardous conditions, as per the *Careful Movement* rules (see p. 61).

Bug Storms

The so-called bug storm is an unusual event—but not a wholly uncommon one—in which enormous swarms of local flying

BUG STORM TYPE TABLE

Roll	Storm Type	Effects*
1-2	Localized	Randomly place 1D6 bug storms (1 hex wide) for every two mapsheets used. Multiple storms may not occupy the same hex, and remain stationary.
3-5	Transient	Randomly place 1D6 bug storms (1 central hex and all adjacent hexes) for every mapsheet used. Multiple storms may not share the same center hex. During the End Phase of each turn, each bug storm will move 1 hex in a random direction.
6	Mass Migration	A continuous mass storm 2D6 hexes wide extends across the map, centered on a random starting point and moving toward the opposite side (if any wind conditions are in use, the starting point must be determined in a fashion that extends the storm across the field in the direction of the prevailing wind; see Wind Direction, p. 55). Roll again to determine the nature of any secondary bug storms. If another Mass Migration results, the entire map is covered by a bug storm.

*If a wind condition is in use (see p. 557), apply the following rules to determine bug drift, in the direction of the prevailing wind: Light Gale = 1 hex; Moderate Gale = 2 hexes; Heavy Gale = 3 hexes; Storm = 4 hexes. Bug storms cannot be used in the same game with Tornado F1–F3 or Tornado F4+ wind conditions.

insects, insect analogues or very tiny avian life forms fill the skies with a mad press of bodies.

If a scenario takes place under such conditions, modify movement and combat as follows.

Bug storms are abstracted into three main varieties: Localized (where small, globular clusters of insectoids generally mill about in somewhat stationary 30-meter areas), Transient (where larger clusters move about in a relentless search for food or such) and Mass Migrations (which can blanket entire strips of land as the creatures move in a mind-numbing mass).

If players opt to simulate a bug storm in their games, the type of bug storm that occurs may be randomly determined by rolling 1D6 and consulting the Bug Storm Type Table (above), which will determine the shape and general nature of the storm as it should appear on the playing area. In addition, the players should determine if the bugs are particularly hostile or voracious—and will thus eagerly attack other creatures in the storm area. This can be determined by the gamemaster or player agreement, or by a 2D6 roll result of 10+ prior to the start of play.

Bug storms extend up to four levels above the underlying terrain in every hex covered by the storm, representing the area that is considered filled with a swirling mass of tiny, flying creatures.

All non-energy ranged weapons that fire into or through a bug storm hex suffer a +1 to-hit modifier (regardless of the number of hexes), while all energy weapons suffer a +2 to-hit modifier. Furthermore, conventional infantry units, exoskeletons without a Clan chassis weight, extended life-support, or a minimum of 1 point of armor, and Support Vehicles that feature either an open convertible top or a pillion seat must spend 1 extra MP per bug storm hex entered.

If the creatures are hostile or voracious, make a 2D6 roll against the same unit types slowed down by bug storm effects for every bug storm hex entered. On a result of 11 or 12, the bugs inflict damage to these units based on their type. Conventional infantry lose 1D6 troopers to damage from the storm (apply the damage as though the attack originated from another infantry unit), while susceptible exoskeletons lose 1 trooper from the storm. Susceptible Support Vehicles must make another 1D6 roll, suffering a Driver Hit on a result of 1-3, a Gunner Hit on 4-5, or a Crew Stunned on 6, re-rolling any result that does not apply. If the Support Vehicle has already lost both its driver and gunner and its crew is stunned, any additional damage from the storm kills the Support Vehicle's crew.

Deep Snow

If a scenario uses deep snow, apply the following rules.

All Units: Apply a +1 MP cost per hex (unless the vehicle mounts the Snowmobile chassis modification) and a +1 modifier to all Piloting/Driving Skill Rolls; additionally, units entering deep snow may get stuck (see *Bog Down Rules*, p. 60).

Fire: If a fire starts in a hex that includes deep snow, after three turns during the End Phase the deep snow is reduced to mud.

Heat: Apply –1 Heat Point per turn; for 'Mechs, this modifier only applies if a heat sink is mounted in the legs (if the 'Mech is prone, a maximum of –3 extra Heat Points per turn are dissipated).

Weapons Fire: If a flamer, incendiary LRMs or plasma weapon is used on a deep snow hex to try to start a fire (see p. 41), roll 2D6. On a result of 12, the Deep Snow terrain modification is reduced to mud; no fire is started. Any weapons fire that strikes the hex due to a missed shot (see p. 79) is ignored. However, if missile infernos, inferno fuel ammo, inferno-IV artillery or inferno bombs hit a target hex (whether intentionally or not), the deep snow is automatically reduced to mud; as above, no fire is started.

Spheroid Units: A landing Spheroid unit automatically converts any deep snow hexes where it lands into that hex's underlying terrain; clear, rough and so on.

Note: Unless the underlying terrain is specified in the scenario rules, the players may agree to treat the underlying terrain of deep snow as Ice (see p. 48) or Clear terrain.

Prohibited Conditions: Cannot be used with Vacuum Atmospheric Pressures, or with Extreme Temperatures of 30 degrees Celsius and above.

EXTREME DEPTH TABLE

Depth	Modifiers (BattleMechs/ProtoMechs & Non-Submersible Vehicles/Battle Armor/Submarines) Walk/Cruise Modifier	Weapon Attack MP Modifier	Physical Attack Modifier*	BattleMech Piloting Modifier**	BattleMech Heat Modifier	Hull Breach TN
15 or less	+3/+3/+0/+0	+0/+0/+0/+0	+0/+0/+0/+0	+1	–1†	10/10/10/10
16–20‡	+4/+4/+0/+0	+1/+1/+0/+0	+1/+1/+0/+0	+2	–6	10/10/10/10
21–25	+5/+5/+1/+0	+2/+2/+1/+0	+2/+3/+1/+0	+3	–7	9/9/10/10
26–30	+6/+6/+2/+0	+3/+3/+2/+0	+3/NA/+2/+0	+4	–9	9/9/10/10
31–35§	+7/+7/+2/+0	+4/+4/+3/+0	+5/NA/+3/+0	+5	–12	8/8/10/9
36–50	—/+9/+3/+0	—/+6/+4/+0	—/NA/+5/+0	—	—	—/8/9/9
51–150††	—/—/+4/+0	—/—/+6/+0	—/—/NA/+0	—	—	—/—/8/9
151 or more	—/—/—/+0	—/—/—/+0	—/—/—/+0	—	—	—/—/—/8

*Applies to anti-'Mech attacks by battle armor as well as ProtoMech "frenzy" and vehicle "ramming" attacks.
**Also applies as the Driving Modifier for non-submersible vehicles.
†Per submerged heat sink (to a maximum of –6)
‡'Mechs, ProtoMechs, and non-submersible vehicles make Crush Depth Checks for each hex entered below a Depth of 15.
§Battle armor make Crush Depth Checks for each hex entered below a Depth of 30.
††Submarine units make Crush Depth Checks for each hex entered below a Depth of 50.

CRUSH DEPTH CHECKS (2D6)

Base: See appropriate Hull Breach TNs above. Apply the following TN modifiers by unit type:
BattleMechs & Non-submersible Vehicles: +1 for every ten (full) tons of weight, –1 for every number higher than 15.
ProtoMechs: +1 for every ton of ProtoMech weight, –1 for every number higher than 15.
Battle Armor: +(battlesuit's current armor value), –1 for every 2 full numbers higher than 30.
Submarines (300 tons and under): +1 for every 5 tons of submarine weight, –1 for every 5 numbers higher than 50.
Submarines (over 300 tons): +60, –1 for every 5,000 tons of submarine weight, –1 for every 5 numbers higher than 50.

Extreme Depths

Though it is true that BattleMechs, certain battle armor designs and submarines are fully sealed combat systems capable of fighting underwater, the rules given in *TW* presuppose that such units engage in battle close to a shoreline, where depths rarely exceed 90 meters (15 depths). However, in some exceedingly rare instances, these battlefield units—by accident or design—may be required to enter extreme depths, at which point such factors as hull pressure become a dramatically increasing problem, especially for BattleMechs, ProtoMechs and battle armor. Additionally, extreme depths can have a significantly different impact on various units.

The Extreme Depth Table above summarizes the effects of entering each depth for all relevant units. Units not on the list are automatically destroyed upon submerging in Depth 1+ water. The effects include Walking/Cruising MP penalties, weapon attack penalties, physical attack penalties, heat level bonuses and Hull Breach target numbers (which are used to determine the chance of hull breach from attack damage as well as the likelihood of a hull breach due to crushing pressures). All figures given are for BattleMechs, ProtoMechs & non-submersible vehicles, UMU-equipped battle armor and submarines, respectively. An NA entry means the action is not allowed, while a dashed entry means the unit is automatically destroyed at that depth. The listed modifiers include those already covered by the Underwater Movement (Non-Naval Units) and combat underwater rules in *TW* (see pp. 56 and 109, respectively), which take effect at depths of 15 or less.

At crush depths (15 or more for BattleMechs or ProtoMechs, 30 or more for battle armor, 50 or more for submarines), the affected unit must immediately make a Crush Depth Check using the base Hull Breach target number (TN) for every hex entered while below crush depth. This roll is modified as indicated on the table for unit size and



A MechWarrior eludes hostile Chaos March mercenaries patrolling on the surface far above.

depths below crush depth. If the roll result equals or exceeds the modified TN for that depth, the unit suffers a catastrophic hull breach caused by extreme pressure. ProtoMechs, battle armor and submarines are instantly destroyed once they fail one of these checks. BattleMechs must roll for a random location (based on the Front/Back Hit Location Table) and suffer all the effects of a hull breach to that location as described on page 121, *TW* (a roll indicating an already rolled location is kept, but no additional effects are applied). Remember that any checks for hull breach due to damage from attacks, falls or collisions use the base Hull Breach TNs without the crush depth modifiers.

Battle Armor: The only battle armor suits that can survive past depth 15 are those with UMU MP. Battle armor units lacking UMU are instantly destroyed if they descend beyond depth 15.

IndustrialMechs: IndustrialMechs are destroyed if they enter an Extreme Depth hex, unless they are equipped with a fuel cell, fission or fusion power plant and they mount the Environmental Sealing chassis modification. In that case they are treated as BattleMechs for purposes of these rules.

High/Low Gravity: The Extreme Depth Table applies only under terrestrial conditions. To reflect conditions where the gravity effects are greater or lesser than Terra-standard, assign a gravity rating to the scenario per the High/Low Gravity rules (see p. 53), then divide the maximum depth per range and the crush depth given on the table by the local gravity. Adjust the minimum depths per range accordingly, and apply modifiers and Hull Breach Checks only as the appropriate units reach the depths indicated under their new depth ranges.

For example, on a 0.5-G world, each maximum depth per range would be divided by 0.5, meaning a BattleMech would operate per the normal *TW* rules up to a maximum depth of 30 [15 / 0.5 = 30], would make Crush Depth Checks only after dropping below a Depth of 30, and would suffer a +4 MP penalty, +1 attack penalty, +2 piloting penalty, and receive –6 heat points per turn when operating at depths 31 through 40 [20 / 0.5 = 40, minimum of 31 determined based on 30 maximum from previous depth range].

Fire

While not exactly a terrain modification in the same vein as the other rules that appear in this section, fire can affect a unit's movement, to-hit modifiers and so on. Additionally, because fire is applied and tracked on a hex-by-hex basis (albeit usually across the duration of a game), it is most appropriately covered here.

Players may use the following rules to simulate the effects of fire. Place a fire counter (a pre-made counter, a penny or whatever else works for a playing group) on any hex that is set on fire during the game. Once started, a fire continues to burn for the rest of the game (see *Putting Out Fires*, p. 43).

Buildings: For each turn that a building is on fire, it loses 2 CF (regardless of the size or type of building). If a 'Mech moves through a burning building, it suffers normal heat buildup from fire as well as all other normal damage.

If using the expanded Construction Factor rules (see p. 119), the fire should be tracked per level in the hex, applying 2 CF to each level on fire.

- **Accidental Fires:** Weapons powerful enough to smash a 'Mech with one blow may also create extensive collateral damage, the most devastating of which is fire. Players may use the following rules to represent accidental fires.

  A unit attempting to clear a wooded/jungle hex (see *Clearing Woods*, p. 112, *TW*; also see *Terrain Factor*, p. 62) runs the risk of setting the woods on fire accidentally. To represent this risk, the player rolls 2D6 before each clearing attempt. On a result of 5 or less, the woods have been accidentally set alight as well as taken damage.

  If a weapon attack against a unit occupying a wooded/jungle hex misses its target, and the weapon can be used to start fires (see *Intentional Fires*, below), the attacking player rolls 2D6 to determine whether his attack accidentally set a fire. On a result of 2 or 3, the player should make another roll as though he were intentionally setting the hex on fire, applying all appropriate modifiers, as well as an additional +2 modifier; if the roll is a success, the hex has been set on fire. A building cannot be accidentally set on fire.

  If using the Missed Shots rule (see p. 79), players can decide if they wish to roll for every wooded/jungle hex a missed shot enters, or just the hex of the original target. This is per unit, per turn. If a player decides that he wishes to roll for every wooded/jungle hex a missed shot enters, all missed shot attacks that turn from that unit must roll for all wooded/jungle hexes they enter.
- **Intentional Fires:** Players who intend to start fires may declare that their unit will fire its weapons at any woods/jungle/building hex. Modify the base to-hit number by –4 for an immobile target for this attack, as well as for the attacker's normal movement and other appropriate modifiers. On a successful attack, the player rolls 2D6 and consults the Fire Table to determine if the attack started a fire, applying all appropriate modifiers based on the weapon used and any planetary conditions that may be in use, or the type of building hex. If the attack starts a fire, place a fire counter on the target hex. Multiple successful attempts to start a fire do not make the fire larger.

Hidden Units: If a unit that can be damaged by fire is hidden in a hex, and that hex is set on fire, then the unit hidden in it is automatically revealed at the end of the phase.

Infantry: Standard infantry weapons, with the exception of flamers, and any other weapons that have a "Flame-Based" special feature (see pp. 148-149, *TM*), cannot be used to start a fire.

Effects of Fire: During the Heat Phase, a 'Mech (or any other heat-tracking unit) occupying a burning hex on the ground absorbs an additional 5 Heat Points. A 'Mech (or any other heat-tracking unit) also absorbs 2 Heat Points for each burning hex that it moved out of along the ground during the Movement Phase. A unit occupying a hex ignited during the Weapon Attack Phase of the turn will not be affected by the fire until the Heat Phase of the following turn.

The controlling player must make a roll each time any of the following conditions are met.

- **ProtoMechs:** Any time a ProtoMech ends its Movement Phase on the ground in a burning hex or moves along the ground into a burning hex, the controlling player must get a result of 8 or higher on a 2D6 roll. If the roll fails, roll once on the ProtoMech Hit Location Table; note that a near-miss result is still a near miss, and so the fire would have no effect. That location is destroyed; automatically mark off the shaded box furthest to the right in that location on the Hit Locations and Critical Hits section of the record sheet.

FIRE TABLES

STARTING FIRES TABLES

Weapon Type	Success Number*
Flamer	4+
Incendiary LRMs	5+
Pulse or Direct-Fire Energy Weapon†	7+
Missile or Direct-Fire Ballistic‡	9+
Plasma Weapon and Inferno††	Automatic§

Terrain	Modifiers*
Planted Fields	–1
Woods	+0
Jungle	+1
Deep Snow	+2
Buildings	
Hangar	
Light	–2
Medium	–1
Heavy	+0
Hardened	+1
Standard/Wall	
Light	0
Medium	+1
Heavy	+2
Hardened	+3
Fortress	
Medium	+2
Heavy	+3
Hardened	+4
Castles Brian	
Heavy	+5
Hardened	+6
Building Hex Mounts Armor	Additional +3
Heavy Industrial Zone	+2
Vacuum and Trace Atmospheric Pressure	No Fire
Weather	
Light and Moderate Rainfall	+1
Heavy Rainfall and Torrential Downpour	+2
Light and Moderate Snowfall	+2
Heavy Snowfall, Light/Heavy Hail and Sleet	+3
Light and Moderate Gale	+2
Strong Gale, Storm and Ice Storm	+4
Tornado F1-F3 and Tornado F4+	No Fire
Extreme Temperatures	**
Other Terrain	Fire cannot start or spread

SPREADING FIRES TABLE

Situation	Success Number*
Crossing non-burning hex	+3
No Wind‡‡	
Hex is downwind	9+
Hex is 60° from downwind	11+
Light and Moderate Gale	
Hex is downwind	7+
Hex is 60° from downwind	10+
Heavy Gale and Storm	
Hex is downwind	6+
Hex is 60° from downwind	9+

*All modifiers are cumulative

**For every 10 degrees above 30 degrees Celsius, apply a –1 modifier. For every 10 degrees below –30 degrees Celsius, apply a +1 modifier.

†May not use small laser or ER small laser, or any kind of micro laser.

††Includes missile infernos, inferno fuel ammo, inferno-IV artillery, inferno bombs, and incendiary grenades.

‡May not use any type of Gauss rifle, SRM-2 or conventional SRM infantry.

‡‡Roll 1D6 to randomly determine the "down wind" direction each time.

§Except under the following conditions: in Vacuum and Trace Atmospheric Pressures and in Tornado F1-F3 and Tornado F4+, no fire is possible. For Castles Brian hexes, fire is not automatic; instead, divide the standard Heavy and Hardened modifiers in half (round down) and apply a +2 modifier when making the roll to start a fire. Otherwise, any hex (whether water, clear etc.) struck by any of these munitions is automatically on fire. Do not check for weather conditions extinguishing fires in the turn they are started by these munitions. At the start of the following turn, however, they are treated as a standard fire; meaning that such a fire in a Water or Clear hex would be extinguished at the end of that turn.

- **Vehicles:** Any time a vehicle ends its Movement Phase on the ground in a burning hex or moves along the ground into a burning hex (this includes Hover Vehicles, but not WiGE Vehicles; VTOL and WiGE vehicles must land in the hex for these rules to apply), the controlling player must get an 8 or higher on a 2D6 roll. If the roll fails, the controlling player must automatically roll on the Front/Rear column of the appropriate unit's Critical Hits Table (see *Ground Combat Vehicle Critical Hit Effects*, p. 193, *TW*), with the following modifiers to the dice roll result: –2 for Combat Vehicles; no modifier for Support Vehicles (unless the Support Vehicle has the Armored chassis modification and a BAR of 10, in which case it is treated as a Combat Vehicle).
- **Multi-Hex Support Vehicles:** Multi-hex units—Large Naval Vessels, Rail Trains and landed Airships—are as vulnerable to fire as other vehicles, but each hex of such units is treated separately in terms of damage and critical effects. When a multi-hex unit enters a burning hex (or begins a turn in one), the unit suffers 1D6 points of damage to the appropriate facing (or, if the hex is a center-line one, to either the left or right sides, or turret, if present—determined randomly). If the unit is the target of an inferno attack, use the rules for Vehicles (see p.

142, *TW*) to determine the outcome for the hex that takes the hit; additionally, the unit received 1D6 damage from the resulting fire during each End Phase until the fire is put out. As with standard damage, damage from fire may inflict penetrating critical hits if the damage rolled exceeds the Support Vehicle's BAR. Damage from fire that hits the unit's internal structure also applies critical hits as normal. Fire on multi-hex Support Vehicles may spread per the standard rules for fire, treating each hex of the Support Vehicle as a Heavy Building for the roll modifier. However, in contrast to the standard spreading fire rules, fires on multi-hex Support Vehicles only spread in the direction of the prevailing winds if the multi-hex Support Vehicle is stationary at the time. If the unit is in motion, "downwind" is considered to be in the direction opposite the unit's travel (toward the rear of a forward-moving multi-hex Support Vehicle, or toward the front of a multi-hex Support Vehicle moving in reverse). Note that fires on multi-hex Support Vehicles may not skip hexes, unlike normal spreading fires. These rules only apply to external fires; internal fires use their own rules (see p. 158).

- **Mobile Structures:** If a Mobile Structure ends its movement in a hex on fire, roll 2D6. On a result of 12 or better, that Mobile Structure catches fire. If it catches fire, treat it as a building hex.
- **DropShips:** Fire has no effect on DropShips.
- **All Other Units:** Unless the controlling player gets an 8 or higher on a 2D6 roll, any unit that ends its Movement Phase on the ground in a burning hex or moves along the ground into a burning hex is destroyed. This includes units that are riding, swarming, be carried externally by, or otherwise on such units. If a unit mounts fire resistant armor, fire has no effect on the unit (see *Fire Resistant Armor*, p. 223, *TW*).

Spreading Fires: Fires on the battlefield can spread from hex to hex in the direction of the wind through woods/jungle and building hexes, but they cannot spread into other terrain.

- **Determining Spread:** When a fire is started, a check for spread is first made during the End Phase of the following turn. During the End Phase of every turn, check to see if any fires currently on the map spread to additional hexes (note that wind direction must be determined to use this rule; see *Wind*, p. 55). Roll 2D6 for the adjacent hex directly downwind of a fire hex. If the result is equal to or greater than 9, and if that hex can burn (see the Fire Table, p. 42), and is within 4 levels of the burning material in the original hex (the levels of the burning woods, building and so on are taken into consideration when determining if an adjacent hex's level is "close enough" to catch fire), the fire spreads into the hex. Also roll 2D6 for each of the two hexes adjacent to the burning hex at 60 degrees from downwind (the remaining two hexes in the fire's "forward arc"). If the result is equal to or greater than 11, and if the hex can burn, the fire will spread into that hex as well. A flammable hex directly downwind from a fire but separated from it by a non-burning hex may also catch fire, provided there is no terrain higher than the terrain that is on fire, as well as the terrain in the target hex (in which case the chance to set that hex on fire is blocked). Apply a +3 modifier to the Target Number 9 for the adjacent hex directly downwind; if the die roll result equals 12 (9 + 3), the fire spreads to a flammable hex directly downwind from a fire. If one hex may catch fire because of its relationship to several burning hexes, roll for each possibility. Finally, the target numbers noted above may change depending on the type of wind conditions in use (see the Fire Table, p. 42).
- **Expanded Construction Factor:** If using the expanded Construction Factor rules (see p. 119), when determining if a fire spreads beyond its current level in the same multi-hex building, a fire will automatically ignite the level directly above the level on fire during the End Phase. Additionally, for the level directly below a fire, as well as every level adjacent to the hex on fire, roll 2D6 and apply the appropriate building modifier from the Fire Table to the die roll result. If the result is 9 or less, that level is now on fire as well.

Putting Out Fires: A fire will continue to burn for the rest of the game unless it is extinguished. The following rules cover how to extinguish a fire. All modifiers are cumulative.

- **Terrain Factor:** If using the *Terrain Factor Rules* (see p. 63), if all terrain conditions in a hex reach 0, then there is nothing left in the hex to burn and the fire will go out during the End Phase of that turn. For example, if a fire in a woods hex reduces the wood's Terrain Factor to 0, during the End Phase of that turn, the fire in that hex is extinguished.
- **Area-Effect Weapons:** If 40 or more points of damage from area-effect weapons are dealt to a hex that is on fire in a single phase, the fire is extinguished.
- **Sprayers:** If a unit mounts a sprayer (see p. 249, *TM*), directly targets a fire hex and hits it, the controlling player rolls 2D6; on a result of 8+, the fire is extinguished. For every sprayer that successfully strikes the target in the same Weapon Attack Phase, the controlling players may make a separate roll for each successful attack, or apply a –1 modifier for each additional sprayer to a single roll. If using the expanded Construction Factor rules (see p. 119), the extinguishing of a fire in this manner only applies to a targeted level within the building hex on fire.
- **Infantry:** The controlling player may nominate a platoon (or battle armor squad) of infantry to fight the fire; the infantry must be in an adjacent hex and cannot have taken any other actions that turn (it cannot have moved or made any attacks). During the End Phase of a turn, the controlling player rolls 2D6; on a result of 10+, the fire is extinguished. For each additional active platoon/squad fighting the fire, the controlling player may make a separate roll for each successful attack, or apply a –1 modifier for each additional active platoon/squad to a single roll. If using the expanded Construction Factor rules (see p. 119), the extinguishing of a fire in this manner only applies to a targeted level within the building hex on fire (see also *Firefighting Engineers*, p. 153, *TO: AUE*).
- **Weather:** Depending on the conditions in use, weather can extinguish a fire. Roll 2D6 for each fire hex on the board during the End Phase of each turn (after fire spreading is determined). If any of the following weather is in use, for light hail, light snowfall and light rainfall, add 1 to the roll result; in moderate snowfall, moderate rainfall and heavy hail, add 2; in heavy rainfall or heavy snowfall, add 3; in torrential downpour, add 4. If the final modified result is 11 or greater, the fire is extinguished.

Smoke: During every End Phase (including the End Phase when the fire was started), for as long as a fire is alight, it

spreads smoke (see *Smoke*, p. 45) to the adjacent hex downwind and to the two adjacent hexes 60 degrees from downwind (the three adjacent hexes of the fire's "forward arc"); note that wind direction must be determined to use this rule; see Wind, p. 55). The spreading of smoke occurs after drift and dissipation, as well as after players check for the spreading of fire. A fire does not create smoke in its own hex (though another fire may do so).

Use the Fire and Smoke Resolution Table to easily determine the order in which to resolve each fire and smoke action during the End Phase of each turn.

Prohibited Conditions: Cannot be used with Vacuum Atmospheric Pressure.

FIRE AND SMOKE RESOLUTION SEQUENCE

Follow these steps, in order, during every End Phase:

1. Drift existing smoke clouds
2. Check for dissipation of existing smoke clouds
3. Check for spread of existing fires
4. Place new smoke clouds from existing fires (including any new fires started)
5. Check for weather conditions extinguishing existing fires (including any new fires started)

In the Fire Diagram, during Turn 1 the 'Mech in Hex A on the City (Skyscraper) map fires a PPC and an LRM-20 at the Medium standard building in Hex B in an attempt to set it on fire. The Heavy Snowfall weather condition is in use and the players determined the wind direction before play began. Both attacks hit. Direct-fire energy weapons normally start fires on a die roll result of 7 or higher, but the player must modify this target number by +1 because the target is a Medium building, as well as +3 for the heavy snowfall, for a final modified Target Number of 11. Meanwhile, a missile weapon normally starts a fire on a die roll result of 9 or higher. Applying all the same modifiers, the controlling player determines that the final modified Target Number for the missiles is 13, so that weapon cannot start a fire in the target hex. The player rolls once for the direct-fire energy weapon with a result of 11! He's got his fire.

During the End Phase of Turn 1, the players automatically place a light smoke token in Hex F. As the building in Hexes D and E is not apart of the building in Hex B, the light smoke for those two hexes is placed on the roof of those buildings, rising to Level 8 as the smoke is two levels tall; the players verify that the height of the burning material in Hex B (which is Level 4, the height of the building), is within 4 hexes of the height of hexes D and E, so the smoke tokens stay put in those hexes.

Also during the End Phase of Turn 1, since heavy snowfall is in effect, the players must determine if the fire is immediately put out. The players roll 2D6 for a result of 7. The +3 modifier for heavy snowfall brings the result to 10, 1 less than the number needed, so the fire is not extinguished.

During the End Phase of Turn 2, the players must drift smoke and check for dissipation. The players note that a light gale is in effect and so the smoke will only drift 1 hex. The "cloud" of smoke that occupies hexes D, E and F will move in the direction of the wind to occupy hexes H, I and J.

Next, the players must determine if that cloud of smoke dissipates. The players roll 2D6 for a result of 9, 2 less than the number needed, so the smoke cloud does not dissipate.



• FIRE DIAGRAM •

Now the players place a new smoke cloud in hexes D, E and F as a result of the fire in Hex B.

Time now to see if the fire spreads. A light gale is in effect and so instead of the standard 9 and 11 target numbers, the players will be rolling against target numbers 7 and 10. For Hex E (directly downwind of Hex B), the 2D6 roll result of 6 does not equal or exceed the 7, so no fire is started. Another 2D6 roll is made each for hexes D and F at Target Number 10 each; roll results of 10 and 11 mean that both hexes are on fire! Now, under normal conditions, Hex I could potentially catch fire. However, it has two strikes against it. First, the building in Hex E is higher than the burning material in Hex B and the terrain in Hex I. Second, Hex I is clear…so no fire for that hex.

Next, the players check for dissipation against Target Number 11. A result of 7 means the smoke cloud did not dissipate.

Because two more hexes are on fire, the players place smoke counters. For the fire in Hex D, smoke is placed in hexes G, H and E (which they designate as Cloud 2 for ease of tracking); those building hexes are part of the same multi-hex building as Hex D, and so the smoke is on all levels inside the building, not on the roof. For the fire in Hex F, smoke will be placed in hexes E, J and K (designated as Cloud 3); the players verify that the height of the burning material (the woods) in Hex F is within 4 levels of the height of the building in Hex E and so the smoke is on the roof (even though 4 levels separate the smoke in Hex D from the other two hexes, they are still considered a "cloud" and will move together).

Finally, for the heavy snowfall, the players must again determine if the fires go out. The players roll for each hex on fire and get results of 3, 5 and 6; with the +3 modifier added to each die roll result, no fires go out.

During the End Phase of Turn 3, the players must again drift smoke and check for dissipation. Cloud 1, which occupies hexes H, I and J, would normally drift into hexes M, N and O. While the smoke enters hexes M and N just fine, the Level 5 building in Hex O is more than 4 levels taller than the underlying terrain of Hex J, and so the smoke will not enter that hex. Instead, the smoke from Hex J will enter Hex N, shrinking Cloud 1 from three hexes to two and turning the light smoke in Hex N to heavy smoke.

Because Cloud 2 is in a building hex out of the wind, the players randomly roll a direction for the smoke to drift. A 1D6 roll result of 3 means Cloud 2 would normally enter hexes C, D and B. However, since Hex B is not part of the multi-hex building that Cloud 2 occupies and this movement places it directly opposite the direction of the wind, Cloud 2 will not enter that hex and so now occupies hexes C, D and E at all levels inside the building.

Cloud 3 would normally move from hexes E, J and K to I, O and P. As before, however, O and P contain Level 5 buildings, which are more than 4 levels higher than the underlying terrain in hexes J and I. Once again, the smoke cloud will change from three hexes to two, occupying hexes I and J, with the smoke in Hex I becoming heavy smoke.

Next, the players must determine dissipation, with the following results: 12, 8 and 3. Cloud 1 has dissipated.

Now the players place new smoke clouds. As previously, the fire in Hex B will place Cloud 4 in hexes D, E and F; Hex D will place Cloud 4 in hexes G, H and E (again, inside the building); the fire in Hex F will place Cloud 5 in hexes E, J and K.

Now it's time to check for the spread of the fires. Again, with the light gale in effect, the target numbers are 7 and 10. The players have three fires to look at and so randomly determine to start with Hex B. As hexes D and F are already on fire (and Hex I cannot be set on fire), the players only need to determine if Hex E catches fire. They get a 2D6 result of 7 and Hex E catches fire.

Next, the players roll for the fire in Hex D. For Hex H (directly downwind), the 2D6 roll result of 9 causes that hex to catch fire as well, while a die roll result of 9 for Hex G means that hex is not on fire. Hex E is already on fire, and so the players do not roll for that hex.

For the last fire in Hex F, Hex E is already on fire, while hexes J and K cannot catch fire. The final hex that can catch fire from Hex F is Hex O. The Target Number for being directly downwind is 7, but a +3 modifier is applied for the intervening non-burning hex, bringing the TN to 10. The 2D6 result of 9 means no fire starts in that hex.

The players remember to place smoke hexes for the fires that just started: the fire in Hex E will place smoke (Cloud 5) in hexes H, I and J (the smoke in Hex J is inside the building at all levels), while the fire in Hex H will place smoke (Cloud 6) into hexes L, M and I.

Finally, the players roll to determine if any of the hexes on fire are extinguished. 2D6 results of 7, 5, 3 and 9, after applying the +3 modifier, means that Hex H is extinguished even though the fire there just started.

WIND STRENGTH TABLE

1D6 Roll	Wind Strength*
1–2	No Wind
3	Light Gale**
4	Moderate Gale**
5	Strong Gale**
6	Storm**

*Tornado F1–F3 and Tornado F4+ Weather Conditions are not on this table, as smoke does not exist under such conditions.

**See *Weather Conditions* (p. 55) for additional game effects from such wind conditions.

Smoke

As with fire, smoke is not exactly a terrain modification in the same vein as the other rules that appear in this section. However, as it too can affect a unit's to-hit modifiers and is applied and tracked on a hex-by-hex basis (albeit usually across the duration of a game), the rules are most appropriately covered here.

Light and Heavy Smoke: Smoke is divided into two categories: light and heavy. Regardless of the type of smoke involved, it always rises 2 levels above the underlying ground terrain (if there are woods or jungle in a hex, the smoke does not rise 2 levels above the trees, but above the ground beneath them). If two light smoke clouds are present in the same hex, the hex counts as occupied by heavy smoke for as long as they remain in that hex.

- **Light Smoke:** Light smoke is generated by most fires, as well as certain types of smoke-delivering weapons. In cases where the type of smoke is not specifically stated, assume it is light smoke. Light smoke acts as light woods for purposes of line of sight and attack modifiers.
- **Heavy Smoke:** Heavy smoke is usually created by smoke-delivering weapons, but it is also generated by burning Heavy or Hardened buildings, as well as fires set by inferno rounds or erupting lava. Heavy smoke acts as heavy woods for purposes of line of sight and attack modifiers.

Smoke Drift/Dissipation: Wind strength and direction will determine how smoke drifts and dissipates; players only start to determine drift and dissipation for smoke during the End Phase following the turn in which the smoke was initially placed. Use the standard rule for determining wind direction (see p. 55). To determine the strength of the wind—provided no wind conditions are already determined—roll 1D6 and consult the Wind Strength Table, above. If no specific wind strength is selected or generated, assume that Light Gale conditions prevail.

If players are using the Shifting Winds rules (see p. 55), those rules should be resolved first during the End Phase, before smoke drift and dissipation is resolved.

- **Drift:** In Light Gale and Moderate Gale winds, all smoke on the map drifts 1 hex per turn. In Strong Gale winds, smoke drifts 2 hexes per turn. Finally, in Storm winds, smoke drifts 3 hexes per turn. Smoke drifts during the End Phase of a turn in the direction of the prevailing wind. Any smoke that drifts off the edge of the playing area is removed from play. Smoke does not drift in Calm

conditions. Inside a building, smoke drifts 1 hex per turn in a random direction (see *Buildings*, below); if this would result in smoke exiting the building in a direction opposite the direction of the wind (if any), the smoke will stay in its hex. After resolving all smoke drift, determine smoke dissipation.

- **Level Changes:** As smoke enters a new hex, it will only change 4 levels up or down (taking into consideration the height of the burning material, whether a building, woods and so on); if the level change is 1 to 4 levels, the smoke will automatically adjust its 2 levels of height to the level of the underlying terrain in the new hex. If smoke enters a hex whose level is more than 4 levels below the hex it is exiting, the smoke automatically dissipates (see below). If smoke enters a hex whose level is higher than 4 levels above the hex it is exiting, it will not enter that hex. Instead, randomly determine the hex to the right or left; the smoke enters that hex instead. This may shrink the smoke hex or make it dive, depending upon the terrain. If the smoke cannot enter either of those adjacent hexes, it will stay in its current hex.
- **Buildings:** If smoke enters a building hex from another hex that is not part of the same building, the smoke does not affect the interior of the building; it will either be on top of the building, or depending on the level changes involved, may not enter the hex (see above). If smoke enters a building hex from a fire in the same multi-hex building, then the smoke affects all levels within that building hex (the smoke will not be on top of the building hex). If smoke exits from the interior of a building hex (as opposed to the roof), regardless of the height of the building, it will automatically be at the level of the underlying terrain in that new hex. If players are using the expanded Construction Factor rules (see p. 119), smoke drift should be determined by level (meaning it is only 1 level tall); in this case, smoke exiting a building does so at the level at which it is being tracked, which means the changes in levels to the new hex must be taken into consideration (see *Level Changes*, above). After that, if it still exists, it will rise the standard 2 levels tall.
- **Dissipation:** To determine dissipation, roll 2D6 for each cloud of smoke on the board during the End Phase of each turn (this is done after smoke drift, but before fire spreading is determined). A cloud is any amount of smoke that has been generated in a single turn and covers a single hex or a group of contiguous hexes. For example, a group of seven smoke hexes created by smoke LRMs is covered by a single cloud. (Use smoke markers of various shapes and sizes to keep track of clouds.) For Moderate Gale winds, add 1 to the roll result; in Strong Gale winds, add 3; in Storm Gale winds, add 5. If the final modified result is 11 or greater, the smoke cloud dissipates. A Light Smoke cloud that dissipates is removed from the map. A Heavy Smoke cloud that dissipates becomes Light Smoke. Do not add any modifiers to a roll made for a smoke cloud inside a building.

After resolving smoke drift and dissipation, determine if any continuing fire on the playing area generates more smoke or spreads.

Prohibited Conditions: Cannot be used with Vacuum Atmospheric Pressure.

Geyser

On some planets, geologic activity creates geysers and mud spouts that can erupt without warning. Often, the only clues to a geyser's presence are small holes or cracks in the ground—clues that are easily overlooked by troops in combat. When a geyser erupts, it spews steam and water into the air, obscuring line of sight and making movement through the terrain more difficult.

Before beginning the game, geysers can be placed on the map in set locations; if a gamemaster is overseeing play, he can secretly select the geyser sites and conceal their locations from the players. In any case, a geyser has no effect on the underlying terrain until it erupts.

To reflect the unpredictable nature of geysers, the gamemaster or players determine geyser activity by rolling 1D6 for each geyser on the map during the End Phase of each turn.

On a result of 1, the geyser erupts, creating the effect listed on the Expanded Movement Cost and Terrain Table. Treat the erupting geyser as ultra-heavy woods for the purpose of determining line of sight into or through the hex.

To determine how many turns a geyser eruption lasts, roll 1D6. By keeping the duration secret from the players, a gamemaster can prevent the players from predicting when the effects will end.

Geyser rules can also be used to simulate the effects of small magma eruptions on volcanic planets. In such cases, any unit that enters or stands in a hex where a magma eruption occurs suffers the same effects as if it had fallen into liquid magma (see *Magma*, p. 34). After the eruption, treat the hex as a liquid magma hex for the remainder of the game.

Terrain: If a geyser is placed in any hex that contains any other type of terrain with a Terrain Factor/Construction Factor (buildings, woods, terrain modifications and so on), the geyser's eruption automatically reduces the Terrain Factor to 0 (see *Terrain Factor Rules*, p. 63). If this causes the terrain to collapse (such as a building), players resolve that event at the end of the phase in which the geyser erupted.

Prohibited Conditions: Cannot be used with Vacuum Atmospheric Pressures, or with Extreme Temperatures of –30 degrees Celsius and below.



On the battlefield, smoke can be an aid or hindrance.

Hazardous Liquid Pools

Hazardous or caustic liquid represents manmade hazardous material (nuclear waste, chemical waste and so on) as well as naturally occurring alien substances, all of which can quickly damage manmade materials such as armor (much less what they can do to human skin).

While "dry" hazardous material can be just as dangerous, these game rules assume that it is more difficult to take damage from such contact. By comparison, hazardous liquid "pools" into a central, concentrated area, allowing for an immersion that can touch every surface of a unit for maximum damage.

Before beginning the game, pools of hazardous liquid can be placed on the playing area in set locations. Unlike geysers (see p. 46), these are usually not secretly placed; once a unit nears such a terrain modification, the pilot or driver can easily tell where it is located (players can decide to hide them, but each should be placed where they'd be difficult to detect until the unit enters the hex when it would be revealed, such as in the basement of a building). These pools can be single- or multi-hex sized, as well as different depths. The ultimate hex size and depth of each pool—as well as how many pools—is left up to the players' discretion. However, when placing each hazardous liquid pool, players should observe the following thumbnail rule: placing such pools in woods, jungle or residential building hexes, doesn't really pass the "realistic" litmus test. In the end, though, provided all players agree, such pools can be placed anywhere.

For purposes of movement, Piloting/Driving Skill Rolls and unit prohibition, a hazardous liquid pool is considered a water hex.

Unlike many other types of terrain, which have a set effect, the nature of a pool of hazardous/caustic liquid—composed of myriad different chemicals constantly mixing—means that from one moment to the next its effect can change. Whenever a unit enters a hex containing a hazardous liquid pool (or begins the Ground Movement Phase in such a hex), the controlling player immediately rolls 1D6 and consults the Hazardous Liquid Pool Table to determine the damage to be applied to the unit. (When starting the Ground Movement Phase in such a hex, the controlling player makes the roll and assigns the damage before beginning movement.)

Once the total Damage Value of the attack has been determined through a dice roll, divide the damage into 5-point Damage Value groupings and assign each grouping to a random location (provided the unit has locations); if a 'Mech is standing in a Level 1 hazardous liquid pool, the damage can only be applied to the legs.

IndustrialMechs and Support Vehicles: Double the damage against IndustrialMechs and Support Vehicles unless the unit is equipped with the Environmental Sealing chassis modification.

Infantry: In the case of battle armor, each trooper takes the assigned damage. For conventional infantry, double the damage; it is assigned as though the attack came from another infantry unit (unless the infantry are XCT troops (see p. 163, *TO: AUE*), in which case divide the damage by 3 [once any dividing of the dice roll result is done as noted on the table], rounding down to a minimum of 1.

Water Hexes: Players can decide to assign a Hazardous Liquid Pool terrain modification to a water hex. In such a case, the entire hex, no matter its depth, is considered this terrain modification.

Furthermore, as most such hazardous/caustic liquids are more viscous than water, they will adhere together, even if traveling through water, allowing players to move such terrain modifications around the board (provided there are appropriate water hexes to enter). The Water Flow rules must be in use to move hazardous liquid pools around the board (see p. 50).

Adding this element to the game will require some adjudication. First, if there are very few water hexes on the playing area, the added complexity of these rules probably does not outweigh the added fun of such a feature. Second, multi-hex hazardous liquid pools can be very hard to adjudicate in terms of how they react with water as they flow into smaller or larger areas, and so only single-hex hazardous liquid pools can be assigned to water hexes.

The following rules build on the Water Flow rules (see p. 50).

- **River:** During the End Phase of every turn, a hazardous liquid pool will travel 1 hex in the direction of the flow of water, into the most appropriate hex; if multiple hexes are equally appropriate, determine randomly which hex the pool enters. While it can enter a Depth 0 water hex, it cannot enter a non-water hex; if it would logically enter a non-water hex, either choose another appropriate hex or, depending on the flow of the water, the hazardous liquid pool may stay in the water hex adjacent to the non-water hex. If the hazardous liquid pool starts the turn in a hex that also contains the Rapids terrain modification (see p. 48), it will move 2 hexes; if the hex contains the Torrent terrain modification (see p. 48), it will move 3 hexes.
- **Lake:** The hazardous liquid pool will travel 1 hex in the direction of the flow of water; if the pool starts the turn in a hex that also contains the Rapids terrain modification (see p. 48), it will move 2 hexes; if the hex contains the Torrent terrain modification (see p. 50), it will move 3 hexes. While it can enter a Depth 0 water hex, it cannot enter a non-water hex; if it would logically enter a non-water hex, either choose another appropriate hex or, depending on the flow of the water, the hazardous liquid pool may stay in the water hex adjacent to the non-water hex.

Eruptions: The erupting magma rules (see p. 35) can be adapted for alien environments, where caustic and strange liquids are not simply found in stagnant pools, but can suddenly erupt into the air, spewing their toxic mix. Use the mechanics for determining when an eruption will occur; once it does, use the radius of effect in the erupting magma rules, but instead of applying damage for magma, roll to determine what type of liquid has erupted and apply that damage, as appropriate; the erupting target hex is now a Depth 1 hazardous liquid pool (1 depth below the previous level of the underlying terrain; ignore all previous terrain).

HAZARDOUS LIQUID POOLS TABLE

1D6 Roll	Classification	Damage*
1-2	Class 0: Normal	No Damage
3	Class 1: Slightly Hazardous	1D6/2 Damage
4	Class 2: Hazardous	1D6 Damage
5	Class 3: Extreme Danger	1D6+2 Damage
6	Deadly	2D6 Damage

*Round all damage down.

Prohibited Conditions: Cannot be used with Vacuum Atmospheric Pressure, or with Extreme Temperatures of –30 degrees Celsius and below.

Ice

Prior to the start of a game, players should indicate which hexes are ice-coated. Water hexes must be designated as either ice-covered or frozen solid.

'Mechs and Non-Hover Ground Vehicles: Every time a unit enters an ice-coated hex without using Careful Movement (see p. 61), it must make a Piloting/Driving Skill Roll with a +0 modifier. If a Piloting/Driving Skill Roll is forced on a unit in such a hex (due to damage, skidding, charges and so on), apply a +4 modifier. In addition, 'Mechs and ground vehicles that make a facing change and then move on an ice-coated hex must check to see if they skid (see *Skidding*, p. 62, *TW*), even if they are moving at Walking or Cruising speed. If using Hurried Movement (see p. 18) in a hex with ice, apply another +3 modifier (this is in addition to all the modifiers noted above).

Breaking Through Ice: Any 'Mech or ground vehicle that enters an ice-covered water hex may break through the ice and fall into the water below unless the hex is frozen solid. VTOLs and WiGE vehicles can only break through the ice if they are landing on it. Roll 1D6. On a result of 6, the ice breaks and the unit falls into the water. 'Mechs take one-half normal falling damage (for falling in water). If an IndustrialMech mounts a fuel cell, fission or fusion power plant and the Environmental Sealing chassis modification, use the standard rules as noted in this section; otherwise, it is destroyed. Vehicles are destroyed (but hovercraft are unaffected unless the unit is immobilized, in which case it is destroyed). The water hex remains unfrozen for the remainder of the game.

Note that the tonnage of the unit is not a factor in breaking through the ice—breaking through depends on ground pressure, not overall weight. Larger BattleMechs and vehicles have larger "footprints," so the weight of their presence on the ice exerts pressure per square meter as low as that of lighter units with smaller footprints.

After falling through the ice, a 'Mech can climb out of a Depth 1 or Depth 2 water hex and move back onto the ice. A 'Mech in Depth 3+ water must travel under the ice, following the underlying terrain, until it reaches a Depth 2 hex, at which point it can break through the ice (see *Underwater Movement*, p. 56, *TW*), or until it reaches a Depth 1 hex, at which time it automatically breaks through the ice, converting the hex to open water.

A ProtoMech can only climb out of a Depth 1 hex.

Jumping: For jumping 'Mechs that land on an ice-covered water hex, roll 1D6. On a result of 4+, they break the ice and fall through. If the ice does not break, the 'Mech must make an immediate standard Piloting Skill Roll with an additional +4 modifier to remain standing; if it falls, it takes normal falling damage, and another roll must be made immediately to see if the ice breaks (this time only on a 6).

Crashing: VTOL and WiGE vehicles crashing into a hex roll 1D6. On a result of 4+, they break through the ice and are automatically destroyed. Crashing aerospace units automatically break through ice (see Woods and Water, p. 82, *TW*, to determine unit's outcome).

Mobile Structure: A Mobile Structure automatically breaks through ice if it enters an ice hex.

Non-Spheroid Aerospace Unit: Apply a +2 modifier to the landing/liftoff roll for every hex of ice entered by a landing or lifting-off non-Spheroid aerospace unit.

Spheroid Units: A landing Spheroid unit automatically converts any ice hexes it lands in into the hex's underlying terrain: clear, rough and so on.

Infantry: Unless a battle armor unit has UMU MP, or a conventional infantry unit has the SCUBA specialization (see p. 153, *TO: AUE*), if an infantry unit is in an ice hex that breaks and it falls into water, the unit is destroyed.

Terrain Factor: An ice-covered water hex can be converted into a normal water hex by melting the ice with weapons fire (see *Terrain Factor Rules*, p. 63); see *Weapons Fire*, below, for additional ways that weapons fire can eliminate ice. Units (except Hover and airborne VTOL and WiGE Vehicles) occupying a hex converted in this way fall into the water.

Fire: If a fire is started in a hex that includes ice, after two turns during the End Phase the ice is reduced to mud.

Weapons Fire: If a flamer, incendiary LRMs or plasma weapon is used on an ice hex to try to start a fire (see p. 41), roll 2D6. On a result of 10, the Ice terrain modification is converted to mud or water, as appropriate for the underlying terrain; no fire is started. Weapons fire that strikes the hex from a missed shot (see p. 79) is ignored. However, if missile infernos, inferno fuel ammo, inferno-IV artillery or inferno bombs hit a target hex (whether intentionally or not), the Ice terrain modification is automatically reduced to mud; as above, no fire is started.

Prohibited Conditions: Cannot be used with Extreme Temperatures of 30 degrees Celsius and above.

Mud

A quick and easy way to apply mud to a playing area is to make any Depth 0 water hex mud. As always, though, players can choose to add mud however they wish.

Apply a +1 MP cost to enter a mud hex, as well as a +1 modifier to all Driving Skill Rolls made while in that hex.

Units entering a hex containing the Mud terrain modification may also get stuck (see *Bog Down Rules*, p. 60)

'Mechs, Hover Vehicles and Mobile Structures: Hover Vehicles and Mobile Structures ignore mud. 'Mechs apply the standard penalties from mud, but cannot get bogged down in it.

Non-DropShip Aerospace Units/VTOLs/WiGEs: These units only make a Bog Down Roll if they end their movement on the ground in such a hex; DropShips never get stuck in mud.

Spheroid Units: A landing Spheroid unit automatically converts any mud hexes it lands in into the hex's underlying terrain: clear, rough and so on.

Prohibited Conditions: Cannot be used with Vacuum Atmospheric Pressures, or with Extreme Temperatures of –30 degrees Celsius and below.

Rapids

For any water of Depth 1 or greater that contains rapids, apply a +1 MP cost to enter that hex, as well as a +2 modifier to all Piloting Skill Rolls made while in that hex.

Water Flow: All the rules for water flow (see p. 50) also apply to rapids, with the following additions.

A unit that fails a Piloting Skill Roll, in addition to falling, will be displaced 2 hexes in the direction of the flow of water. Additionally, all Naval Vehicles on the surface of the water, in order to not be moved by water flow, must spend 2 MP at the end of their movement in order to "hold position" in the hex where they ended their movement. If the MP are not spent, the Naval Vehicle is displaced

2 hexes in the direction of the flow of water; if only 1 MP is spent at the end of movement, the Naval Vehicle is only displaced 1 hex. As with failing a Piloting Skill Roll, a unit cannot be displaced into a Depth 0 water hex.

Prohibited Conditions: Cannot be used with Trace or Vacuum Atmospheric Pressures, or with Extreme Temperatures of –30 degrees Celsius and below.

Rails

Rails represent a variety of tracks, from traditional steel rails on wooden ties to advanced extruded ferrocrete troughs for maglevs and more. However, all of them act as a road, in that a rail passes through terrain of some other type in a hex.

A rail hex is treated as rough terrain by all ground vehicles and 'Mechs, but has no effect on any other unit's movement and does not affect line of sight. As with a road (see p. 61, *TW*), if such units are traveling along the rail, they only need to pay the cost for moving in a rough hex, not the additional cost of whatever may be the underlying terrain.

Railroads have a CF of 20 and may be attacked per standard rules for attacking buildings. (Note the CF here is only a measuring of how easy it is to destroy a section of rail and has no bearing on the weight that can be carried.) Once destroyed, a rail hex is treated as a clear hex for movement and line of sight.

Rail Support Vehicles: For Rail Support Vehicles to move on a mapsheet, they must move through a continuous, unbroken line of rail hexes (see *Rail*, p. 17, *TO: AUE)*.

Roads

As noted on p. 61 of *Total Warfare*, a road is simply a narrow strip of cleared terrain that passes through terrain of some other type. The rules in *TW* represent a paved road. However, there are other types of road that provide varying effects for different unit types.

All the standard rules for road movement as noted on p. 61, *TW*, still apply.

Dirt Road: Tracked and Hover vehicles (except Large Vehicles) and infantry traveling on a dirt road pay only 1 MP per hex, regardless of the hex's underlying terrain. Infantry (except mechanized) using Ground Movement on a dirt road may receive a movement bonus of 1 MP. To gain the extra MP, the unit must begin its turn on a dirt road and continue to travel on the dirt road for the entire Movement Phase.

Gravel Road: Vehicles (except Large Vehicles) and infantry traveling on a gravel road pay only 1 MP per hex, regardless of the hex's underlying terrain. Infantry, Hover and Tracked vehicles using Ground Movement on a gravel road may receive a movement bonus of 1 MP. To gain the extra MP, the unit must begin its turn on a gravel road and continue to travel on the dirt road for the entire Movement Phase.



Free Rasalhague Republic troops guard an important crossroads.

Swamp

Apply a +2 MP cost to enter a hex with the Swamp terrain modification, as well as a +2 modifier to all Driving Skill Rolls made while in that hex. Units may also get stuck (see *Bog Down Rules*, p. 60).

'Mechs: 'Mechs only apply a +1 MP cost to enter a swamp hex, as well as a +1 modifier to all Piloting Skill Rolls made while in that hex. 'Mechs or vehicles that jump into a swamp hex are automatically stuck (see *Bog Down Rules*, p. 60).

Hover Vehicles and Mobile Structures: Hover Vehicles and Mobile Structures ignore swamps.

Non-DropShip Aerospace Units/VTOLs/WiGEs: Any of these units that end their movement on the ground in a swamp hex are automatically stuck (see *Bog Down Rules*, p. 60).

Small Craft and DropShips: If a Small Craft or DropShip ends its movement on the ground, and all hexes it touches on the ground are swamp hexes, then it might get stuck (see *Bog Down Rules*, p. 60).

Quicksand: A swamp hex can also unexpectedly turn into quicksand; it remains quicksand for the rest of the scenario. Anytime a unit (not including DropShips) enters a swamp hex and becomes stuck, roll 2D6. On a result of 12, the swamp hex has become a quicksand hex. If a unit is in a hex that turns to quicksand, or enters a quicksand hex, it automatically gets stuck.

During every End Phase after the turn in which the swamp hex becomes a quicksand hex, the unit will sink 1 level (treat 'Mechs one level down as in partial cover; they are unable to fire any leg-mounted weapons). Apply a +3 modifier to the Piloting Skill Roll to get unstuck from a quicksand hex, as well as a cumulative +3 modifier for each level under the surface. As soon as the surface of the quicksand hex is higher than the unit in question, the unit is destroyed.

Prohibited Conditions: Cannot be used with Vacuum Atmospheric Pressure, or with Extreme Temperatures of –30 degrees Celsius and below.

During the Movement Phase of Turn 1, an infantry unit entered a swamp hex and did not get stuck. However, it did not have enough MP to exit the hex, and when a 'Mech entered the same hex and got stuck, the controlling player rolled 2D6 with a result of 12! The hex became a quicksand hex, and so the infantry unit is automatically stuck along with the 'Mech. During the Movement Phase of Turn 2, both units must make Piloting Skill Rolls to try to get unstuck, both applying a +3 modifier. Neither roll is successful, and during the End Phase of Turn 2, both units sink 1 level. During the Movement Phase of Turn 3, both players must make a successful Piloting Skill Roll with a +5 modifier. Again, neither is successful, and during the End Phase of Turn 3 both units sink another level. The surface of the quicksand hex is now higher than the infantry and so the infantry unit is destroyed. During the Movement Phase of Turn 4, the 'Mech has one final chance at getting unstuck by making a successful Piloting Skill Roll with a +7 modifier. If this roll fails, during the End Phase of Turn 4 the 'Mech will sink 1 more level. That will put the surface of the quicksand higher than the 'Mech, destroying the unit.

Thin Snow

If a scenario uses thin snow, apply the following rules.

Wheeled Vehicles and Conventional Infantry: Apply a +1 MP cost per hex (unless the vehicle mounts the Snowmobile chassis modification) and a +1 modifier to all Driving Skill Rolls.

Fire: If a fire is started in a hex that includes thin snow, during the End Phase of the following turn, the snow is reduced to mud.

Weapons Fire: If a flamer, incendiary LRMs or plasma weapon is used on a thin snow hex to try to start a fire (see p. 41), roll 2D6. On a result of 8, the Thin Snow terrain modification is reduced to mud; no fire is started. Weapons fire that strikes the hex from a missed shot (see p. 79) is ignored. However, if missile infernos, inferno fuel ammo, inferno-IV artillery or inferno bombs hit a target hex (whether intentionally or not), the thin snow is automatically reduced to mud; as above, no fire is started.

Spheroid Units: A landing Spheroid unit automatically converts any thin snow hexes it lands in into the hex's underlying terrain: clear, rough and so on.

Note: Unless the underlying terrain is specified in the scenario rules, the players may agree to treat the underlying terrain of thin snow as ice (see p. 48) or Clear terrain.

Prohibited Conditions: Cannot be used with Vacuum Atmospheric Pressure, or with Extreme Temperatures of 30 degrees Celsius and above.

Torrent

For any water hex of Depth 1 or deeper that contains torrents, apply a +2 MP cost to enter that hex, as well as a +3 modifier to all Piloting Skill Rolls made while in that hex.

Water Flow: All the rules for water flow (below) also apply to water flow for torrents, with the following additions.

A unit that fails a Piloting Skill Roll, in addition to falling, is displaced 3 hexes in the direction of the flow of water. Additionally, all Naval Vehicles on the surface of the water, in order not to be moved by water flow, must spend 3 MP at the end of their movement in order to "hold position" in the hex where they ended their movement. If the MP are not spent, the Naval Vehicle is displaced 3 hexes in the direction of the flow of water; if only 2 MP are spent at the end of the movement, then the Naval Vehicle is only displaced 1 hex; if only 1 MP is spent, then the Naval Vehicle is only displaced 2 hexes. As with failing a Piloting Skill Roll, a unit cannot be displaced into a Depth 0 water hex.

Prohibited Conditions: Cannot be used with Trace or Vacuum Atmospheric Pressures, or with Extreme Temperatures of –30 degrees Celsius and below.

Water Flow

In standard *BattleTech* rules, the flow of water in a water hex does not have any effect on a game. However, particularly when using some terrain modifications—such as rapids and torrents—the flow of water can add a fun, tactical element.

Before play begins, all water hexes on the playing area must be classified as a "river hex" or a "lake hex;" generally speaking, a river on a map is a thin number of continuous water hexes that actually crosses a portion of the map. For purposes of these rules, a river flows in one direction, while a lake can flow in multiple directions.

Once the players have agreed which water hexes on the playing area are river hexes and which are lake hexes, use the following rules.

- **River:** A river flows in one direction or the other; the players need to determine which two directions the river can possibly flow. Before beginning play, roll 1D6. On a result of 1–3, it flows in one direction, while on a result of 4–6, it flows in the opposite direction. This direction of flow continues for the duration of the scenario.
- **Lake:** Whenever necessary—when something is in the hex that may be moved by the flow of water—check to see the direction of a lake hex. Declare one side of the water hex to be Direction 1 (using the numbered hexside as Direction 1 is helpful), and then number the remaining hexsides as 2 through 6, moving clockwise. Now roll 1D6. The water is currently traveling in the direction that corresponds to the roll result. This check need only be made once per turn; regardless of when it is made in the turn, that direction of flow applies to all units, conditions and so on. On a subsequent turn, if necessary, a new check is made to determine the direction of water flow.

If a unit in a water hex fails a Piloting Skill Roll, in addition to falling, it is displaced 1 hex in the direction of the flow of water. However, a unit cannot be displaced into a Depth 0 water hex, or any non-water hex; if it would enter a Depth 0 water hex or a non-water hex, either choose another appropriate hex or, depending on the flow of the water, the unit may stay in the water hex adjacent to the hex it cannot enter.

Additionally, all Naval Vehicles on the surface of the water, in order not to be moved by water flow, must spend 1 MP at the end of their movement in order to "hold position" in the hex where they ended their movement. If the MP is not spent, the Naval Vessel is displaced 1 hex in the direction of the flow of water. As with failing a Piloting Skill Roll above, a unit cannot be displaced into a Depth 0 water hex.

A unit displaced by water flow automatically changes its facing to most appropriately match the direction of water flow. For a vehicle, this will be either the nose or rear; for a fallen 'Mech, this will be either head or feet.

If multiple units within a hex must be moved by water flow, randomly determine which units to move first, then completely resolve each unit's movement (and any fallout from such movement) before moving on to the next unit. For example, such movement may cause a displacement and/or domino effect (see p. 151, *TW*).

In all instances, movement due to water flow occurs at the end of the Movement Phase (Ground); all water movement is simultaneous and is resolved on the playing area after all other movement is resolved that occurs during the Movement Phase (Ground).

In the Water Flow Diagram on p.53, a 'Mech and two identical Naval Vehicles are moving through water on the BattleForce map. Prior to the start of play, the players determined that hexes A and B (as well as the other hexes to the right and bottom of hexes A and B) are lake hexes, while hexes C, D, E and F are river hexes. Additionally, they determined the direction of the flow of water for the river hexes, which will remain constant for the entire scenario. Finally, a Torrent terrain modification is in effect for the river hexes.

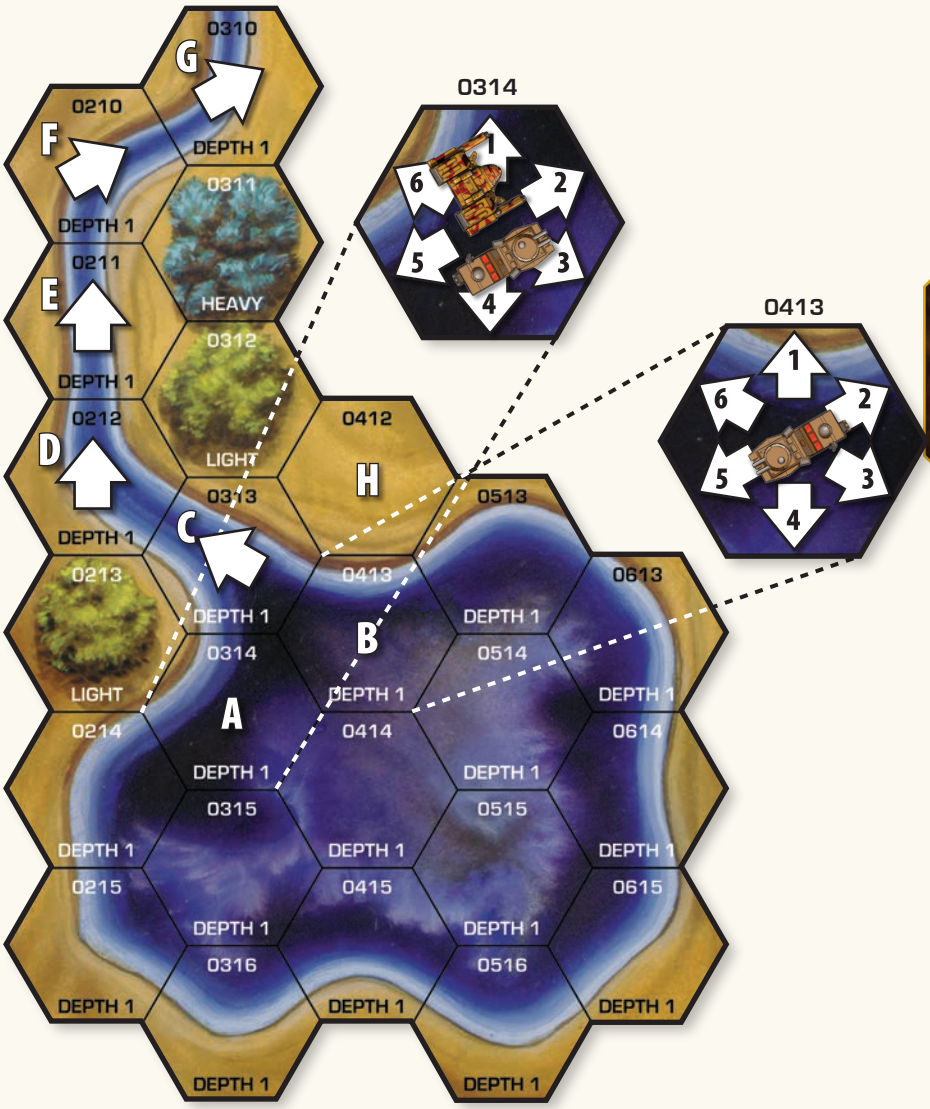
During the Movement Phase of Turn 1, the 'Mech in Hex A entered the Depth 1 water in that hex and failed a Piloting Skill Roll, which means it falls; it doesn't have enough MP remaining to stand again. The controlling player rolls 1D6 to determine the direction of the fall and gets a result of 3: two

hexsides right. Additionally, the controlling player forgot to keep 1 MP reserved for both his Naval Vehicles, so they are also at the mercy of the water.

Because lake hexes A and B are now occupied by units that can be affected by water flow, the direction of flow for each hex is determined; as it is a lake hex, they can both be moved in different directions. For Hex A and for Hex B, the 1D6 die roll result is 1. As a unit cannot be displaced into a non-water hex by water flow, the Naval Vehicle in Hex B will not enter Hex H and remains in its current hex (its facing does not change because it did not enter a new hex). However, both the Naval Vehicle and the 'Mech in Hex A are moved into Hex C. The Naval Vehicle's facing is changed so that its front is now facing Hexside 1, while the 'Mech's facing is changed so that its facing is now Hexside 4. Because all water flow is simultaneous, the movement of the river hexes does not apply to the units that were moved into Hex C by water flow.

During the Movement Phase of Turn 2, the player manages to stand the 'Mech back up, but cannot get it out of the water. Additionally, the player remembers to reserve 3 MP (as the units are now in a torrent hex) for the Naval Vehicle in Hex C to remain in place. Unfortunately, combat the previous turn made the Naval Vehicle in Hex B immobile, so it is unable to expend the 1 MP required to remain in place in a lake hex; it will drift with the water. The controlling player once again rolls to determine direction of the lake hex and gets a 6. Worse luck! As the Naval Vehicle in Hex B is displaced into Hex C (its facing changes so it is now facing Hexside 3), the stacking rules are violated, and so the player randomly determines which unit will be displaced. Another die roll result determines that the 'Mech is displaced. The 'Mech is then moved into Hex D. Because this displacement occurred due to stacking limit violation rather than water flow, the 'Mech's facing does not change; the water flow in Hex D does not affect the 'Mech, as water flow occurred before the unit's displacement.

If the 'Mech fell in Hex D during the Movement Phase of Turn 3 and was unable to stand up again, the torrent river flow would finally come into play, moving the 'Mech from Hex D, through hexes E and F, and finally into Hex G, changing its facing appropriately.



● WATER FLOW DIAGRAM ●



Jeremiah Youngblood jumps his Phoenix Hawk *into a turbulent lake.*

TERRAIN CONDITIONS

Terrain conditions represent global terrain and/or environmental conditions, such as vacuum, high and low gravity, toxic atmosphere and so on.

Modifiers and unit prohibitions imposed by terrain conditions are added to modifiers and unit prohibitions imposed by the underlying base terrain type and terrain modifications.

The following entries describe rules for terrain conditions.

Atmospheric Pressure (Density)

A myriad of worlds and planetoids make up the Inner Sphere, many of them with atmospheric pressures stretching from vacuum (effectively no atmosphere at all), to very high (dense), or somewhere in between. The following rules simulate these various conditions.

Vacuum: If a scenario takes place under such conditions, modify movement and combat as follows.

- All BattleMechs and battle armor are capable of operating in a vacuum.
- **Prohibited Units:** Vehicles, conventional infantry and conventional fighters cannot operate in a vacuum. The only exceptions are the following: any non-infantry unit that mounts both a fusion engine (or for applicable units, any kind of electric power plant—including external, battery, fuel cell and solar—or a fission power plant) and the Environmental Sealing chassis modification can operate in a vacuum; for conventional infantry, if the unit are XCT troops (see p. 163, *TO: AUE*), it can also operate in a vacuum.
- **Non-Spheroid Aerospace Units:** Non-Spheroid aerospace units that fit the criteria for operating in a vacuum move on the board as though they were Spheroid units; conventional fighters and Fixed-Wing Support Vehicles must mount VSTOL equipment.
- **Hull Integrity:** Whenever a non-aerospace/non-infantry unit operating in a vacuum takes damage, the controlling player rolls 2D6. On a result of 10 or greater, the unit's hull has been breached.

  The integrity of that location has been lost and all components in that location are exposed to vacuum. If all of a location's armor is destroyed, that location is automatically breached. Treat all of a 'Mech's components in a breached location as nonfunctional. None of that location's actuators, weapons or other equipment works; if the breached location contains engine slots, the engine now functions as if it took as many critical hits as there were engine critical slots in that location.

  Note that these hits are not technically critical hits and, for example, will not cause ammunition to explode. Equipment and components in the breached location can still take critical hits per the standard rules, even though the component is temporarily nonfunctional.

  Breached locations continue to take damage as usual. Do not transfer combat damage inflicted on a breached location until that location's internal structure is destroyed.
  - **'Mechs:** If a 'Mech's head is breached, the pilot is automatically killed. Additionally, a life-support critical hit eliminates the 'Mech's internal air supply. During the End Phase of every turn that the 'Mech remains in vacuum, the pilot takes 1 point of damage. Each point of Life Support damage requires the pilot to make an immediate Consciousness Roll. A failure inflicts a point of damage on the pilot. Until the unit is removed from the game (is destroyed, the pilot ejects and so on), a Consciousness Roll must be made at the end of every turn in which the pilot is active and the Life Support remains damaged. Every failure inflicts an additional point of damage on the pilot.
  - **ProtoMechs:** If a ProtoMech's center torso is breached, the pilot is automatically killed.
  - **Vehicles:** If any location on a vehicle is breached in a vacuum, the vehicle is destroyed.
  - **Infantry:** As noted above, conventional infantry units that are XCT Troops (see p. 163, *TO: AUE*) can function normally in a vacuum. However, double any damage taken by an infantry unit while operating in a vacuum to represent the loss of personnel due to suit breaches, damage that normally would not result in any casualties.

Trace Atmosphere: If a scenario takes place under such conditions, modify movement and combat as follows. Trace Atmosphere follows all the same rules for Vacuum Atmosphere noted above, except the following.

- **Non-Spheroid Aerospace Units:** Non-Spheroid aerospace units that fit the criteria for operating in a Trace Atmosphere move on the Low-Altitude Map as though they were moving in Atmospheric Row 4 on the High-Altitude Movement map (see p. 79, *TW*); all movement on the High-Altitude Map is considered to be at Atmospheric Row 4.
- **Hull Integrity:** Breaches only occur on a result of 12.
- **Wind Condition:** If wind conditions are used with Trace Atmosphere, the Trace Atmosphere reduces the wind speed by two categories, so that a Strong Gale would become a Light Gale and a Moderate Gale would mean no wind condition at all.

Thin Atmosphere: If a scenario takes place under such conditions, modify movement as follows.

- **WiGE, VTOL and Hovercraft:** Apply a –2 Cruising MP penalty (multiply the new Cruising MP by 1.5 and round down to determine the new Flanking speed); WiGE Vehicles must expend 7 MP to take off.
- **Non-Spheroid Aerospace Units (excluding Airships):** Increase the number of landing/liftoff hexes required by such units by 1.5 (round up).
- **Wind Condition:** If wind conditions are used with Thin Atmosphere, the Thin Atmosphere reduces the wind speed by one category, so that a Strong Gale would become a Moderate Gale.

Standard Atmosphere: This represents Terran standard and so no additional effects apply to movement and combat.

High Atmosphere: If a scenario takes place under such conditions, modify movement as follows.

- **WiGE, VTOL and Hovercraft:** Apply a +1 Cruising MP (multiply the new Cruising MP by 1.5, rounding down, to determine the new Flanking speed); WiGE Vehicles must expend only 4 MP to take off.
- **Airships:** Each .1-bar atmosphere above 1.2 increases an Airship's carrying capacity by 10 percent (round down).
- **Non-Spheroid Aerospace Units (excluding Airships):** Decrease the number of landing/liftoff hexes required by such units by .75 (round up).
- **Wind Condition:** If wind conditions are used with High Atmosphere, the High Atmosphere increases the wind speed by one category, so that a Strong Gale would become a Storm; this cannot increase the wind condition above a Tornado F4+.

Very High Atmosphere: If a scenario takes place under such conditions, modify movement as follows.

- **Aerospace Units:** Instead of 4 rows on the High-Altitude Map between the Ground Hexes row and Space/Atmosphere Interface row (see p. 79, *TW*), there are 7 rows.
- **Wind Condition:** If wind conditions are used with Very High Atmosphere, the Very High Atmosphere increases the wind speed by two categories, so that a Strong Gale would become a Tornado F1-F3; this cannot increase the wind condition above a Tornado F4+.

Earthquake

If a scenario takes place under such conditions, modify movement and combat as follows.

When using the earthquake rules, assign a strength value to the tremor, ranging from +1 (mild) to +5 (severe). Apply this value as a to-hit modifier to any weapon or physical attacks made during the same turn as the tremor. Additionally, players must make a Piloting Skill Roll for each standing 'Mech they control at the start of each Movement Phase during the tremor. Apply a Piloting Skill Roll modifier equal to the strength of the tremor. If the Piloting Skill Roll fails, the 'Mech falls and takes damage per standard rules. If the Piloting Skill Roll result equals 2, a fissure may open up beneath that 'Mech. Make a second roll and check the Basements Table (see p. 179, *TW*) to determine if a fissure opens and the sublevel of the fissure. The 'Mech will fall into the fissure the same way it would fall into a basement. Treat the fissure as a permanent map feature of Sub-level 1 or Sub-level 2 for the remainder of the scenario.

Four-legged 'Mechs: For four-legged 'Mechs, the Piloting Skill Roll modifier equals half the strength value of the tremor, rounding down (their extra legs provide improved stability). The standard –2 Piloting Skill Roll modifier for four-legged 'Mechs applies as well.

Electromagnetic Interference (EMI)

Many worlds and settings in the *BattleTech* universe remain so rich in heavy metals or are inundated with such powerful background radiation (caused by everything from an irregular planetary magnetic field to local solar activity) that even the well-shielded sensors and communications gear used by BattleMechs, ground vehicles and battle armor are overwhelmed by the resulting interference.

If a scenario takes place under such conditions, modify combat as follows.

Apply a +2 to-hit modifier for all ranged weapon attacks and a –2 penalty to rolls on the Cluster Hits Table (regardless of the weapon system used) made by all units operating within an affected area. This area of effect may cover the entire playing area, or—if the players and/or gamemaster decide—be confined to select mapsheet-sized regions, to represent a more localized phenomenon.

Additionally, all active probes within an EMI-affected region are rendered useless, while ECM systems double their effective range.

High/Low Gravity

Combat on worlds whose gravity is significantly greater or less than normal Earth gravity (1 G) affects a unit's movement.

Determining Movement Effects: As shown in the following rules, while low gravity generally allows units to move faster, it does not reduce their mass and momentum, and so offers a chance that the unit will suffer damage through normal movement. For example, a 'Mech traveling at 200 kph on a .5-G world is likely to snap off its legs. Gravity affects all units' movement in the same way. To determine a unit's movement rates as affected by gravity, divide its Walking (or Cruising) and Jumping MP by the G-rating of the world and round to the nearest whole number (round down at .5). Modifiers to movement due to gravity are always calculated after all other movement modifiers.

Calculate the new Running (or Flanking) MP based on the revised Walking (or Cruising) MP.

Thus, a unit with a normal Walking MP of 4 would have Walking MP of 5 on a .75-G world (4 ÷ .75 = 5.3, rounded to 5). On a 1.25-G world, that same unit would have a Walking MP of 3 (4 ÷ 1.25 = 3.2, rounded to 3). Units whose MP is reduced to 0 by the effects of gravity are incapable of moving.

Potential Damage From Running/Flanking Movement: 'Mech legs and vehicle suspensions are designed to operate at maximum efficiency on worlds with close to 1 G gravity. If the gravity of a world allows the unit to move faster than normal, the strain on the unit's systems may damage its internal structure. If a unit spends more MP than its normal Running (or Flanking) MP during a turn (as in the example above of the unit moving on a world with .75 G), the player must make a Piloting Skill Roll at the end of the phase in which the Running MP was exceeded, appropriately modified for relevant conditions, to determine if the unit takes any damage from moving at an unusual rate. If the Piloting Skill Roll fails, the unit takes the following damage: a 'Mech takes 1 point of internal structure damage to each of its legs for every point of movement by which the unit exceeded its normal Running MP (the 'Mech does not fall if this roll fails). Thus, a 'Mech with a normal Running MP of 8 that spends 10 MP running during a turn and then fails a Piloting Skill Roll would take 2 points of internal structure damage to each of its legs. A vehicle takes 1 point of damage to its Front side internal structure for each Movement Point spent that exceeds its normal Flanking Speed MP and must make a single roll on the Motive System Damage Table (regardless of how much damage is received, only a single roll is made). Roll on the Determining Critical Hits Table to resolve whether internal structure damage resulted in a critical hit. Apply critical hit results before the Weapon Attack Phase of the turn.

Potential Damage From Jumping: Make a Piloting Skill Roll, applying a modifier for every full 0.5 gravities above or below 1. For example 0.2 gravity would apply a +1 modifier, while a 2.6 would apply a +3 modifier. If the roll fails for low gravity, the 'Mech takes 1 point of internal structure damage to each leg for each Movement Point spent jumping that exceeds its normal Jumping MP. On high-gravity worlds, every Jumping MP spent solely to "cushion" the landing (i.e. not to move hexes) applies a –1 modifier. If the roll fails for high gravity, the 'Mech takes 1 point of internal structure damage to each leg for every second Walking MP lost from its normal Walking MP.

Falling: Calculate damage from falls taken in unusual gravity normally, then multiply the result by the G-rating of the world and apply the total damage to the unit.

ProtoMechs: A ProtoMech's MP is not increased for low gravity, though it is reduced for high gravity. A ProtoMech does not need to make a roll when jumping in low gravity.

Weapon Attacks: Add a +1 to-hit modifier to all Missile and Direct-Fire Ballistic weapon attacks for every .2 G (or fraction thereof) above or below the Terran standard 1 G.

Meteor Showers

Meteor showers that actually affect a ground battle are rare in the extreme, but may occur on worlds with little to no atmosphere to burn up inbound debris from space or where the rocks that do fall are large enough to survive re-entry.

To simulate a meteor shower, players take turns rolling 1D6 during the End Phase of each turn. The result is the number of impacts that will occur at the end of the Movement Phase in the following turn. Impacts occur at random locations on the map, and deliver 3D6 damage points to any units in the hex of impact (delivered in 5-point clusters across the affected unit's Front facing). Double this damage if the unit consists of infantry or battle armor, or is a Support Vehicle with a BAR Rating of less than 10.

If there is an airborne non-aerospace unit in the target hex, it may be hit by falling debris (instead of any ground units) on a 2D6 roll of 10+. If so, in the case of VTOLs, Rotor location damage automatically destroys the unit's rotor mechanism and results in a crash.

Terrain Factor/Construction Factor: If using the *Terrain Factor Rules* (see p. 63), planetary conditions take damage as though they were a battlefield unit; any hex with a planetary condition that does not have a Terrain Factor is converted into a rough hex, with the exception of water.

Tainted and Toxic Atmospheres

Many worlds in the *BattleTech* universe where warriors are often called upon to fight do not possess the same concentrations of elements in their atmospheres as Terra does. Taints and toxins, such as elevated carbon dioxide, unsafe oxygen levels, leftover nuclear fallout and residue from biochemical weapons have left many planetary atmospheres unsafe for continued exposure. To rate these hazards, many worlds are described as having a breathable atmosphere, a tainted atmosphere or a toxic one. Breathable atmospheres, while they may smell a bit different from Terran standard or have slightly different levels of various chemicals, are safe enough for prolonged exposure and have no additional effect in game play.

Tainted atmospheres require special safeguards, and may yield unpredictable side effects when weapons begin blazing. Toxic atmospheres, where the taints are so excessive that only full environmental sealing can negate their effects on personnel, may eliminate the availability of some military units (most commonly infantry), forcing commanders to adapt their tactics accordingly.

The exact natures of various taints and toxins are many and varied, but for simplicity's sake, the most common atmospheric taints fall into three broad categories: caustic (corrosive or burning to organic tissues), radiological/poisonous (atmospheres that human respiratory systems cannot metabolize, or rendered such by natural or manmade poisons and nuclear fallout) and flammable (atmospheres that either naturally or artificially are more conducive to starting or spreading fires). The Tainted and Toxic Atmospheres Table below outlines the effects of these categories in *BattleTech* combat.

TAINTED AND TOXIC ATMOSPHERES TABLE

Atmosphere Type	Effects
Breathable	No effects
Caustic	**Tainted:** All conventional infantry must be XCT Troops (see p. 163, *TO: AUE*), and any weapon attack against them deals an additional 1D6 damage points (the damage is applied as though it originated from another infantry unit). Vehicles whose armor is breached suffer a Crew Stunned result. 'Mech or aerospace fighter pilots suffer one extra warrior hit if the Cockpit/Crew location takes damage in combat. **Toxic:** Conventional infantry, and vehicles that do not contain the Environmental Sealing chassis modification, may not be fielded. Vehicle hull breaches or cockpit armor breaches in 'Mechs instantly kill vehicle crews and MechWarriors. Battle armor troopers whose suits take damage are considered destroyed on a separate 2D6 roll of 9+ (10+ for HarJel-equipped suits), even if they have armor remaining.
Radiological/ Poisonous	**Tainted:** All conventional infantry must be XCT Troops (see p. 163, *TO: AUE*). They take double damage in combat and cannot remain in the field outside a fortress or Castles Brian building hex or vehicle with the Environmental Sealing chassis modification for more than 30 turns before suffering 1D6 damage per round thereafter (the damage is applied as though it originated from another infantry unit). Vehicles that do not have the Environmental Sealing chassis modification cannot remain in the field for more than 90 turns before suffering a Crew Killed result. **Toxic:** Conventional infantry, and vehicles that do not contain the Environmental Sealing chassis modification, may not be fielded. Breaches of vehicle armor or cockpits instantly kill vehicle crews and MechWarriors. Battle armor troopers are killed on a separate 2D6 roll of 9+ (10+ for Harjel-equipped suits) after any damaging hit in combat.
Flammable	**Tainted:** Increase rolls to determine the likelihood of starting fires by 2, and players must make checks for starting accidental fires when making weapon attacks against any non-water hex. Heat-tracking units that are at 15 or higher heat may spontaneously ignite the hex they are standing in on a 2D6 result of 10+ during the End Phase of the current turn. Aerospace fighters, DropShips, Small Craft and other jet-propelled craft may ignite all hexes in their rear arc, out to a distance of 2 hexes, upon takeoff or landing; the 2D6 roll is made at the start of takeoff, or the end of landing, and a fire starts on a result of 6+. Jump jets may ignite the liftoff and landing hexes on a 2D6 result of 7+ (infantry expending Jumping MP ignite the hex on a 9+). Weapon attacks against conventional infantry are considered to be two types better (to a maximum of the area-effect weapon); for example, a Cluster (Missile) attack would be considered an area-effect attack for purposes of assigning damage (see the Non-Infantry Weapon Damage Against Infantry Table, p. 216, *TW*). **Toxic:** Increase rolls to determine the likelihood of starting fires by 4, and players must make checks for starting accidental fires when making weapon attacks against any non-water hex. Fires caused by inferno rounds and explosive ordnance (such as AC rounds and missiles) instantly spread to all adjacent hexes. Aerospace and other jet-propelled units may not launch in lower atmosphere. Jump jets instantly create a fire hex at the point of liftoff and landing. With the exception of area effect attacks, non-infantry weapon attacks against conventional infantry are treated as though the attacks originated from another infantry unit (see *Damage from Other Infantry Units*, p. 216, *TW*).

WEATHER CONDITIONS

Like terrain conditions, weather conditions represent situations that apply to an entire playing area—fighting at night, a battlefield covered in fog, etc. Modifiers and unit prohibitions imposed by weather conditions are cumulative with those imposed by other factors.

Fire: A hex that is on fire (see p. 41) is illuminated, along with all hexes immediately around it. This illumination reduces any Light-based weapon attack modifiers (see p. 56) against targets in those hexes by up to 2 points, and cancels any Light-based physical attack modifiers.

Searchlights: Searchlights illuminate units, which reduces the penalties for attacking in night-time conditions based on the specific weather condition in use: *Full Moon Night*, *Moonless Night*, and *Pitch Black* (see p. 56 for all three). See *TechManual*, pp. 237 and 268, for details on Searchlights.

Units with searchlights may turn them either on or off during the Movement Phase and End Phase. A unit using a searchlight illuminates itself, as well as all units in a chosen hex that the unit with the searchlight could normally trace LOS to and that are in the arc where the searchlight is mounted. A searchlight also illuminates all intervening hexes between the target hex and the searchlight-equipped attacker in the same manner. Handheld searchlights reach 10 hexes, while mounted searchlights reach 30 hexes. Halve all ranges underwater.

For simplicity's sake, all searchlight beams are treated as two levels/elevations high. A searchlight is presumed to be aiming at ground level, but a player may specify any depth, level, or elevation within LOS up to the searchlight's range –1. Add or subtract from this range if the carrying unit is at a depth or level/elevation other than 0. For example, a unit on a level 5 hill with a mounted searchlight (range 30) could specify that it is aiming up to elevation 34; if it did so, elevations 34 and 35 would be illuminated.

If all players agree—or the scenario designates as such—'Mechs and Combat Vehicles lacking searchlights can be designated as having a mounted searchlight for the duration of the scenario. Each time such a designated 'Mech takes a hit in any torso location (Front or Rear), or when a designated Combat Vehicle takes a hit to the Front or Side, the player must roll 2D6. On a result of 7+ the searchlight is destroyed, in addition to the normal attack effects.

Wind: Below are additional rules for when using any type of Wind conditions in a game.

- **Wind Direction:** In a game including any type of Wind condition (p. 59), wind direction must be determined. At the beginning of a given scenario, declare one side of a hex on the playing area to be Direction 1 and then number the remaining hexsides as 2 through 6, moving clockwise. Roll 1D6. For the entire game, the wind will blow in the direction indicated by the die roll result.
- **Shifting Winds:** Players may opt to have the direction and strength of the wind shift from turn to turn. During the End Phase of each turn, check to see if the direction or strength of the wind has changed. First roll 1D6 for wind strength. On a result of 1, the wind becomes one category weaker (for example, a Strong Gale would become a Moderate Gale). On a result of 6, it becomes one category stronger (for example a Storm would become a Tornado F1–F3). Then roll 1D6 for direction. On a result of 1, the wind direction changes by one hexside (60 degrees) clockwise. On a result of 6, the direction changes one hexside counterclockwise. A result of 2–5 on either roll indicates no change. If the weather shifts to a type where a unit type in play becomes prohibited (such as a shift from a Strong Gale to Storm), remove any prohibited units from the game. In a campaign setting it is up to the GM to determine which units manage to ride out the storm and which are actually destroyed.

Tactical Rules: These weather rules are designed to provide the flavor of various conditions with in-game effects that apply during the time frame of a standard *BattleTech* scenario. If players are linking scenarios together to create campaign play—and hence introducing much longer time frames—they'll need to make their own judgment calls concerning the exact effects of these conditions on a playing area spanning hours or even days.

FOG

LIGHT FOG

If a scenario takes place under such conditions, modify movement and combat as follows.

Effects: Most units pay a +1 MP cost to enter each light fog hex: see *Careful Movement*, page 63.

Prohibited Conditions: Cannot be used with Thin, Trace or Vacuum Atmospheric Pressures.

HEAVY FOG

If a scenario takes place under such conditions, modify movement and combat as follows.

Effects: Apply a +1 to-hit modifier to all pulse and direct-fire energy weapon attacks. Most units pay a +2 MP cost to enter each heavy fog hex: see *Careful Movement*, page 63.

Prohibited Conditions: Cannot be used with Thin, Trace or Vacuum Atmospheric Pressures.

HAIL

LIGHT HAIL

If a scenario takes place under such conditions, modify movement and combat as follows.

Conventional Infantry and Airships: During the End Phase, each player rolls 1D6 if he or she controls any conventional infantry or Airships. The result is the number of conventional infantry and/or Airships that are damaged by the light hail; if the result is more than the number of such units a player controls, ignore the excess. Randomly determine the units affected and then roll 1D6/2 separately for each unit and apply that amount of damage as a single Damage Value grouping to the appropriate units, in a randomly determined location; for conventional infantry units, this damage is applied as though the attack originated from another infantry unit.

Moderate Gale: Light hail automatically includes all modifiers and effects of a Moderate Gale (see p. 59). If players are using the Shifting Winds rules (see p. 55) and the wind shifts to a Light Gale, the effects for light hail are lost, until the winds shift back to a Moderate Gale. Even if the wind shifts above a Moderate Gale, the effects of light hail remain constant.

Extreme Temperature: Light hail automatically includes all modifiers and effects of –40 degrees Celsius (see p. 61).

Prohibited Conditions: Cannot be used with Thin, Trace or Vacuum Atmospheric Pressures, or with Extreme Temperatures of 30 degrees Celsius and above.

HEAVY HAIL

If a scenario takes place under such conditions, modify movement and combat as follows.

All Units: During the End Phase, each player rolls 1D6. The result is the number of each player's units that take damage from the heavy hail; if the result is more than the number of units a player controls, ignore the excess. Randomly determine the units affected and then roll 1D6 separately for each unit and apply that amount of damage as a single Damage Value grouping to the appropriate units, in a randomly determined direction of attack and location. For battle armor, the damage is applied to a single trooper, with any excess damage lost; for Airships and conventional infantry units, double the damage (damage is applied to the conventional infantry as though the attack originated from another infantry unit).

Strong Gale: Heavy hail automatically includes all modifiers and effects of a Strong Gale (see p. 59). If players are using the Shifting Winds rules (see p. 55) and the wind shifts to a Moderate or Light Gale, the heavy hail becomes light hail, until the winds shift back to a Strong Gale. Even if the wind shifts above a Strong Gale, the effects of heavy hail remain constant.

Extreme Temperature: Heavy hail automatically includes all modifiers and effects of –40 degrees Celsius (see p. 61).

Prohibited Conditions: Cannot be used with Thin, Trace or Vacuum Atmospheric Pressures, or with Extreme Temperatures of 30 degrees Celsius and above.



A Roughriders' Cerberus stumbles into the spotlights of a picket force lying in wait.

LIGHT

DUSK/DAWN

If a scenario takes place under such conditions, modify combat as follows.

All Units: Apply a +1 to-hit modifier to all weapon attacks.

Heat: For every 25 points of heat on a target unit that tracks heat, apply a –1 to-hit modifier to any weapon attacks; conventional infantry ignore this modifier.

Searchlights: Searchlight-equipped units do not offset these penalties.

FULL MOON NIGHT/GLARE

If a scenario takes place under such conditions, modify movement and combat as follows.

All Units: Apply a +2 to-hit modifier to all weapon attacks.

Heat: For every 20 points of heat on a target unit that tracks heat, apply a –1 to-hit modifier to any weapon attacks; conventional infantry ignore this modifier.

Searchlights (only applies to Full Moon Night): When targeting units illuminated by an active searchlight, ignore the +2 to-hit modifier; attacks against units equipped with an active searchlight eliminate this modifier as well.

MOONLESS NIGHT/SOLAR FLARE

If a scenario takes place under such conditions, modify movement and combat as follows.

All Units: Apply a +3 to-hit modifier to all weapon attacks, while applying a +1 to-hit modifier to all physical attacks.

Heat: For every 15 points of heat on a target unit that tracks heat, apply a –1 to-hit modifier to any weapon attacks; conventional infantry ignore this modifier.

Searchlights (only applies to Moonless Night): When targeting units illuminated by an active searchlight, ignore the +3 to-hit modifier (physical attacks against units illuminated by a searchlight ignore the +1 modifier); any weapon or physical attacks against units equipped with an active searchlight eliminate this modifier as well.

PITCH BLACK

This weather condition refers to a region of the Inner Sphere or Deep Periphery that is sparsely populated by star systems, or some other astronomical/atmospheric condition (such as a heavy asteroid field) that completely eliminates all light, including starlight.

If a scenario takes place under such conditions, modify movement and combat as follows.

All Units: Apply a +4 to-hit modifier to all weapon attacks and a +2 to-hit modifier to all physical attacks.

Heat: For every 10 points of heat on a target unit that tracks heat, apply a –1 to-hit modifier to any weapon attacks; conventional infantry ignore this modifier.

Searchlights: When targeting units illuminated by an active searchlight, modify the +4 to-hit modifier to a +1 modifier (physical attacks against units illuminated by a searchlight ignore the +2 modifier); any weapon or physical attacks against units equipped with an active searchlight reduce the weapon attack modifier to +1, while completely eliminating the physical attack modifiers.

RAIN

LIGHT RAINFALL

If a scenario takes place under such conditions, modify movement and combat as follows.

Conventional Infantry: Apply a +1 to-hit modifier to all attacks.

Prohibited Conditions: Cannot be used with Thin, Trace or Vacuum Atmospheric Pressures.

MODERATE RAINFALL

If a scenario takes place under such conditions, modify movement and combat as follows.

All Units: Apply a +1 to-hit modifier to all weapon attacks.

Mud: Moderate rainfall automatically includes all modifiers and effects of mud (see p. 48) in any clear, Depth 0 water or dirt road hex on the playing area.

Prohibited Conditions: Cannot be used with Thin, Trace or Vacuum Atmospheric Pressures.

LIGHTNING STORM

If a scenario takes place under such conditions, modify movement and combat as follows.

During the End Phase of every turn, roll 1D6. On a result of 1–4, nothing happens. On a result of 5–6, roll 1D6 again, dividing the result by 2 (round down, to a minimum of 1). This new result indicates the number of lightning bolts that have struck the ground. Finally, players should roll on the Lightning Bolt Table to determine the strength of each lightning bolt.

Once the type of lightning bolt has been determined, using any manner that the players agree on, randomly determine the hexes where the lightning strikes. All units within that hex take damage. This damage is applied as a single Damage Value grouping from a single attack from a randomly determined direction, to a single location (for units with locations). For conventional infantry, the attack is resolved as though it originated from another infantry unit.

Terrain Factor: If players are using the *Terrain Factor Rules* (see p. 63), the damage from this attack is applied to all terrain conditions as appropriate; remember to scale damage for building hexes, as appropriate (see *Scaled Damage*, p. 124).

Moderate Rainfall: A lightning storm automatically includes all modifiers and effects of moderate rainfall (at left).

Moderate Gale: A lightning storm automatically includes all modifiers and effects of a Moderate Gale (see p. 59).

Prohibited Conditions: Cannot be used with Thin, Trace or Vacuum Atmospheric Pressures.

HEAVY RAINFALL

If a scenario takes place under such conditions, modify movement and combat as follows.

All Units: Apply a +1 to-hit modifier to all weapon attacks and a +1 Piloting/Driving Skill Roll modifier (this includes Control Rolls).

Mud: Heavy rainfall automatically includes all modifiers and effects for mud (see p. 48); mud occurs in every hex across the playing area (except for water hexes of Depth 1+, standard roads and building hexes).

Rapids: Heavy rainfall automatically includes all modifiers and effects for rapids (see p. 48) for any Depth 1 or deeper water hexes on the playing area. For units in rapids during heavy rainfall, use only the skill roll modifier provided by rapids.

Prohibited Conditions: Cannot be used with Thin, Trace or Vacuum Atmospheric Pressures.

GUSTING RAIN

If a scenario takes place under such conditions, modify movement and combat as follows.

Heavy Rainfall: Gusting rain automatically includes all modifiers and effects of heavy rainfall (above).

Strong Gale: Gusting rain automatically includes all modifiers and effects for a Strong Gale (see p. 59).

Prohibited Conditions: Cannot be used with Thin, Trace or Vacuum Atmospheric Pressures.

TORRENTIAL DOWNPOUR

If a scenario takes place under such conditions, modify movement and combat as follows.

All Units: Apply a +2 to-hit modifier to all weapon attacks and a +2 modifier to all Piloting/Driving Skill and Control rolls.

Mud: A torrential downpour automatically includes all modifiers and effects of mud (see p. 48); mud occurs in every hex across the playing area except for water hexes of Depth 1+, standard roads and building hexes. Additionally, all Depth 0 water hexes become swamp hexes (see p. 49).

Torrent: A torrential downpour automatically includes all modifiers and effects of torrents (see p. 50) for any Depth 1 or deeper water hexes on the playing area. For units in torrents during a torrential downpour, use only the skill roll modifier provided by torrents.

Prohibited Conditions: Cannot be used with Thin, Trace or Vacuum Atmospheric Pressures.

LIGHTING BOLT TABLE

1 D6 Roll	Damage Value	Number of hexes affected
1–3	5	1
4–5	10	1
6	15	7*

*15 points of damage are applied to all units in the central hex, while 5 points are applied to all units in adjacent hexes.

SNOW

LIGHT SNOWFALL

If a scenario takes place under such conditions, modify movement and combat as follows.

Conventional Infantry: Apply a +1 to-hit modifier to all conventional infantry.

Extreme Temperature: Light snowfall automatically includes all modifiers and effects of –40 degrees Celsius (see p. 60).

Prohibited Conditions: Cannot be used with Thin, Trace or Vacuum Atmospheric Pressures, or with Extreme Temperatures of 30 degrees Celsius and above.

MODERATE SNOWFALL

If a scenario takes place under such conditions, modify movement and combat as follows.

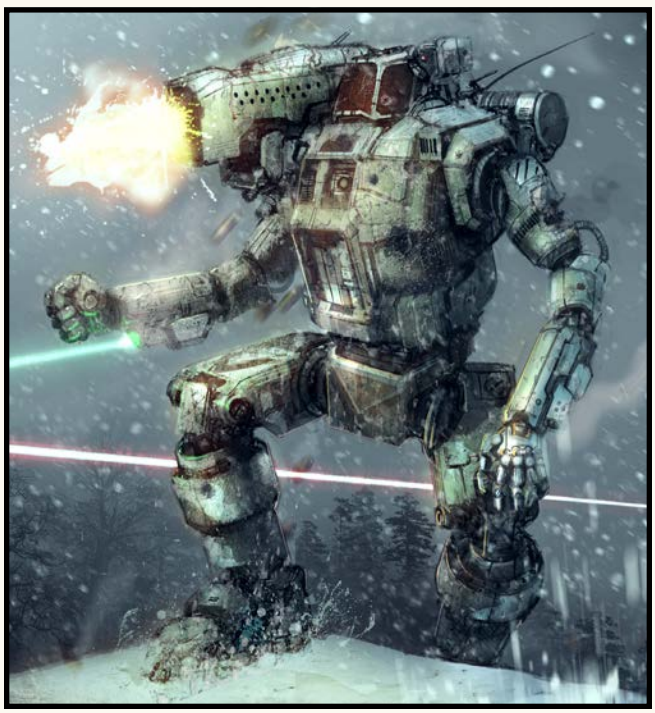
All Units: Apply a +1 to-hit modifier to all weapon attacks.

Extreme Temperature: Moderate snowfall automatically includes all modifiers and effects of –50 degrees Celsius (see p. 60).

Thin/Deep Snow: At the start of Turn 10 of a scenario (provided a scenario lasts long enough), moderate snowfall includes all modifiers and effects of thin snow (see p. 50). At the start of Turn 20 of a scenario (provided a scenario lasts long enough), moderate snowfall includes all modifiers and effects of deep snow (see p. 39). In both instances, thin/deep snow occurs in every hex across the playing area (this includes the tops of buildings, but not water hexes, unless they are frozen over). Snow cannot accumulate in a Liquid Magma or Eruption hex.

Ice: At the start of Turn 20 of a scenario (provided the scenario lasts long enough), moderate snowfall includes all modifiers and effects of ice (see p. 48); ice occurs in every water hex across the playing area.

Prohibited Conditions: Cannot be used with Thin, Trace or Vacuum Atmospheric Pressures, or with Extreme Temperatures of 30 degrees Celsius and above.



SLEET

If a scenario takes place under such conditions, modify movement and combat as follows.

All Units: Apply a +1 to-hit modifier to all weapon attacks.

Ice: At the start of Turn 15 of a scenario (provided the scenario lasts long enough), sleet includes all modifiers and effects of Ice (see p. 48); ice occurs in every water hex across the playing area.

Extreme Temperature: Sleet automatically includes all modifiers and effects of –40 degrees Celsius (see p. 60).

Prohibited Conditions: Cannot be used with Thin, Trace or Vacuum Atmospheric Pressures, or with Extreme Temperatures of 30 degrees Celsius and above.

SNOW FLURRIES

If a scenario takes place under such conditions, modify movement and combat as follows.

Moderate Snowfall: Snow flurries automatically includes all modifiers and effects of moderate snowfall (at left).

Moderate Gale: Snow flurries automatically includes all modifiers and effects of a Moderate Gale (see p. 59).

Prohibited Conditions: Cannot be used with Thin, Trace or Vacuum Atmospheric Pressures, or with Extreme Temperatures of 30 degrees Celsius and above.

HEAVY SNOWFALL

If a scenario takes place under such conditions, modify movement and combat as follows.

All Units: Apply a +1 to-hit modifier to all weapon attacks and a +1 modifier to all Piloting/Driving Skill Rolls (this includes Control Rolls).

Thin/Deep Snow: At the start of Turn 5 (if the scenario lasts long enough), heavy snowfall includes all modifiers and effects of thin snow (see p. 50). At the start of Turn 15 (if the scenario lasts long enough), heavy snowfall includes all modifiers and effects of deep snow (see p. 39). In both instances, thin/deep snow occurs in every hex in the playing area (this includes the tops of buildings, but not water hexes, unless frozen over). Snow cannot accumulate in a Liquid Magma or Eruption hex.

Ice: At the start of Turn 20 of a scenario (provided the scenario lasts long enough), heavy snowfall includes all modifiers and effects for ice (see p. 48); ice occurs in every water hex across the playing area.

Extreme Temperature: Heavy snowfall automatically includes all modifiers and effects of –50 degrees Celsius (see p. 60).

Prohibited Conditions: Cannot be used with Thin, Trace or Vacuum Atmospheric Pressures, or with Extreme Temperatures of 30 degrees Celsius and above.

ICE STORM

If a scenario takes place under such conditions, modify movement and combat as follows.

Black Ice: An ice storm automatically includes all modifiers and effects of black ice (see p. 38).

Extreme Temperature: An ice storm automatically includes all modifiers and effects of –60 degrees Celsius (see p. 60).

Ice: At the start of Turn 10 of a scenario (provided the scenario lasts long enough), an ice storm includes all modifiers and effects of ice (see p. 48); ice occurs in every water hex across the playing area.

Moderate Gale: An ice storm automatically includes all modifiers and effects for a Moderate Gale (see p. 59).

Prohibited Conditions: Cannot be used with Thin, Trace or Vacuum Atmospheric Pressures, or with Extreme Temperatures of 30 degrees Celsius and above.

WIND

LIGHT GALE

If a scenario takes place under such conditions, modify movement as follows.

Airships: Apply a +1 modifier to all Control Rolls.

Conventional Infantry: Apply –1 Ground MP to all foot conventional infantry, to a minimum of 0; any units reduced to 0 MP can either move or make a weapon attack in a turn, but not both (see p. 213, *TW*).

Prohibited Conditions: Cannot be used with Trace or Vacuum Atmospheric Pressures.

MODERATE GALE

If a scenario takes place under such conditions, modify movement and combat as follows.

All Units: Apply a +1 to-hit modifier to all missile weapon attacks.

Airships: Apply a +2 modifier to all Control Rolls.

WiGE, VTOL: Apply a +1 modifier to all Piloting Skill Rolls.

Conventional Infantry: Apply –1 MP to both Ground and Jumping movement to all conventional infantry, to a minimum of 0; any units reduced to 0 MP can either move or make a weapon attack in a turn, but not both (see p. 213, *TW*).

Prohibited Conditions: Cannot be used with Vacuum Atmospheric Pressures.

STRONG GALE

If a scenario takes place under such conditions, modify movement and combat as follows.

All Units: Apply a +2 to-hit modifier to all missile weapon attacks and a +1 to-hit modifier to all direct-fire ballistic weapon attacks.

'Mechs: Apply a +1 modifier to all Piloting Skill Rolls.

Airships: Apply a –1 modifier to Safe Thrust and a +3 modifier to all Control Rolls.

Hover, WiGE, VTOL: Apply a +2 modifier to all Driving Skill Rolls.

Aerospace Units (excepting Airships): Apply a +1 modifier to all Control Rolls.

Battle Armor: Apply –1 Ground MP, to a minimum of 0; any such units can either move or make a weapon attack in a turn, but not both (see p. 213, *TW*).

Conventional Infantry: Apply –2 Ground MP to all conventional infantry, to a minimum of 0; any units reduced to 0 MP can either move or make a weapon attack in a turn, but not both (see p. 213, *TW*). No jumping movement is allowed.

Water Hexes: All water hexes contain the Rapids terrain modification (see p. 48).

Terrain/Construction Factor: If using the *Terrain Factor Rules* (see p. 63), during the End Phase of every turn, apply 10 points of damage to every base terrain type that lists a TF (CF in the case of buildings) value greater than 0 on the Expanded Movement Costs and Planetary Conditions Tables (see p. 124).

In the case of building hexes, this damage is scaled, depending on the building classification (see *Scaled Damage*, p. 30).

Prohibited Conditions: Cannot be used with Vacuum Atmospheric Pressures.

STORM

If a scenario takes place under such conditions, modify movement and combat as follows.

All Units: Apply a +3 to-hit modifier to all missile weapon attacks and a +2 to-hit modifier to all direct-fire ballistic weapon attacks.

'Mechs: Apply a +3 modifier to all Piloting Skill Rolls.

Hover, WiGE, VTOL: Apply a +3 modifier to all Driving Skill Rolls.

Aerospace Units (excepting Airships): Apply a +2 modifier to all Control Rolls.

Battle Armor: Apply –1 MP to Ground movement, to a minimum of 0; any such units can either move or make a weapon attack in a turn, but not both (see p. 213, *TW*). No jumping movement is allowed.

Airships and Conventional infantry: These units cannot operate in storm conditions.

Water Hexes: All water hexes contain the Rapids terrain modification (see p. 48).

Terrain/Construction Factor: If using the *Terrain Factor Rules* (see p. 63), during the End Phase of every turn, apply 20 points of damage to every base terrain type that lists a TF (CF in the case of buildings) value greater than 0 on the Expanded Movement Costs and Planetary Conditions Tables (see p. 30).

In the case of building hexes, this damage is scaled, depending on the building classification (see *Scaled Damage*, p. 124).

Prohibited Conditions: Cannot be used with Vacuum Atmospheric Pressures.

TORNADO F1–F3

If a scenario takes place under such conditions, modify movement and combat as follows.

All Units: Apply a +3 to-hit modifier to all direct-fire ballistic weapon attacks and a +2 to-hit modifier to all pulse and direct-fire energy weapon attacks; missile weapon attacks cannot be made.

Apply –2 Walking/Cruising MP and a +3 modifier to all Piloting/Driving Skill Rolls.



Whipped by a growing storm, fog envelops these Pleiades Hussars 'Mechs.

Aerospace Units (excepting Airships): Apply –1 Safe Thrust MP and a +3 modifier to all Control Rolls.

Hover, VTOL, WiGE, Airship and Infantry Units: These units cannot operate in Tornado F1–F3 conditions.

Terrain/Construction Factor: If using the *Terrain Factor Rules* (see p. 63), during the End Phase of every turn, apply 40 points of damage to every base terrain type that lists a TF (CF in the case of buildings) value greater than 0 on the Expanded Movement Costs and Planetary Conditions Tables (see p. 30).

In the case of building hexes, this damage is scaled, depending on the building classification (see *Scaled Damage*, p. 124).

Water Hexes: All water hexes contain the Torrent terrain modification (see p. 50).

Prohibited Conditions: Cannot be used with Vacuum Atmospheric Pressures.

TORNADO F4+

If a scenario takes place under such conditions, modify movement and combat as follows.

'Mechs: 'Mechs cannot run, and apply a +5 modifier to all Piloting Skill Rolls; apply only a +2 modifier when crawling (see p. 18). Only Pulse and Direct-Fire Energy weapons can be used, but apply a +3 to-hit modifier.

Non-'Mech Units: These units cannot operate in Tornado F4+ conditions.

Water Hexes: All water hexes contain the Torrent terrain modification (see p. 50).

Terrain/Construction Factor: If using the *Terrain Factor Rules* (see p. 61), during the End Phase of every turn, apply 80 points of damage to every base terrain type that lists a TF (CF in the case of buildings) value greater than 0 on the Expanded Movement Costs and Planetary Conditions Table (see p. 30).

In the case of building hexes, this damage is scaled, depending on the building classification (see *Scaled Damage*, p. 124).

Prohibited Conditions: Cannot be used with Vacuum Atmospheric Pressures.

MISC.

BLOWING SAND

If a scenario takes place under such conditions, modify movement and combat as follows.

All Units: Apply a +1 to-hit modifier to all pulse and direct-fire energy weapon attacks (these modifiers supersede any to-hit Moderate Gale modifiers; see below).

WiGE/VTOL Vehicles: During the End Phase, each player rolls 1D6 if he controls any WiGE or VTOL vehicles that were airborne that turn. The result is the number of units damaged by the blowing sand; if the result is more than the number of such units a player controls, simply ignore the excess. Randomly determine the WiGE/VTOL vehicles affected; then roll 1D6 and divide by 2 (to a minimum of 1) separately for each unit and apply that amount of damage as 1-point Damage Value groupings to the appropriate units, in a randomly determined direction of attack and location for each point of damage.

Moderate Gale: Blowing sand automatically includes all modifiers and effects of a Moderate Gale (see p. 59). If players are using the Shifting Winds rules (see p. 55) and the wind shifts to a Light Gale, the effects for blowing sand are lost, until the winds shift back to a Moderate Gale. For each level of wind condition above Moderate Gale, increase the damage to WiGE/VTOL vehicles by 1 point.

EXTREME TEMPERATURES

If a scenario takes place under such conditions, modify movement and combat as follows.

For combat in temperatures between –30 and 50 degrees Celsius (–22 degrees and 122 degrees Fahrenheit), the environmental conditions have no impact on a game of *BattleTech*. However, fighting in significantly higher or lower temperatures affects how well units dissipate heat and degrades the combat effectiveness of other units.

For all units that track heat, for each 10 degrees C (or fraction thereof) higher than 50 degrees, add 1 Heat Point to the unit's overall heat buildup each turn. For every 10 degrees C (or fraction thereof) less than –30 degrees, subtract 1 Heat Point from the unit's overall heat build-up each turn.

Vehicles: For vehicles, for each 10 degrees C (or fraction thereof) higher than 50 degrees, reduce their Cruising speed by 1 Movement Point. For every 10 degrees C (or fraction thereof) less than –30 degrees, reduce their Cruising speed by 1 Movement Point. Recalculate Flanking speed based on the new Cruising speed.

Infantry: Extreme temperatures affect infantry in the same way as vehicles, slowing their movement. However, conventional infantry platoons cannot be deployed outside a vehicle or building in temperatures that exceed 50 degrees C or are less than –30 degrees C, unless they are XCT troops (see p. 163, *TO: AUE*), in which case they ignore such movement restrictions.

ProtoMechs: ProtoMechs are affected by extreme temperatures as for vehicles.

BOG DOWN RULES

Some planetary conditions may actually stick a unit in place, as noted in the description of such conditions.

Any time a unit enters a hex that may cause it to get stuck, the controlling player must make a Piloting/Driving Skill Roll. If the roll fails, the unit gets stuck in the hex and may not move for the rest of the turn; a 'Mech that fails this roll does not fall. The unit may torso twist or rotate its turret normally, but it may not change its facing. For any weapon or physical attacks made against a unit stuck in a hex, modify the to-hit number by –2.

At the start of the next turn's Movement Phase, the player controlling a stuck unit makes a Piloting/Driving Skill Roll. On a successful roll, the unit breaks away from the planetary condition in the hex and may move normally. If the roll fails, the unit remains stuck (but does not fall in the case of 'Mechs) and makes another Piloting/Driving Skill Roll at the start of the next Movement Phase.

Hover units ignore these rules, though they may still be prohibited from entering the terrain in question. Jump-capable units that become bogged down after using non-jumping movement can free themselves in subsequent Movement Phases by simply jumping out of the terrain.

Additional Modifiers: For tundra, deep snow and mud hexes, apply a –1 modifier to the Piloting Skill Roll to determine whether a unit entering such terrain gets stuck. Apply the same modifier to Piloting Skill Rolls made to free a stuck unit.

Falling: If a 'Mech falls in such a hex (for example, if it is forced to make a Piloting Skill Roll after being displaced), it automatically becomes stuck and its movement ends. The 'Mech must make three successful Piloting Skill Rolls to be free of the hex; the first to free itself from a stuck prone position, the second to stand up and the third to free itself from the hex completely.

Jumping: A jumping 'Mech that lands in such a hex automatically gets stuck; jumping infantry are not automatically stuck, however.

Infantry: For infantry entering such a hex, roll 2D6. On a result of 4 or less, the unit gets stuck. To escape getting stuck, an infantry unit need only make a 2D6 roll of 4+.

ProtoMechs: For ProtoMechs entering such a hex, use the Gunnery Skill Rating when making Piloting Skill Rolls.

Skidding: A unit entering such a hex while skidding automatically gets stuck.

Displacement

Units that get stuck in a hex are still displaced under the Unit Displacement rules (see p. 151, *TW*); however, they will automatically fall in the hex into which they are displaced. If a unit is displaced into a hex where it can bog down, an immediate roll is made to see if the unit gets stuck in the new hex.

If a unit is displaced more than one hex in a single action and the first hex into which it is displaced has a planetary condition that requires a Bog Down Roll, the unit is not displaced any further if it gets stuck. The only exception to this rule is if a unit is displaced multiple hexes in a single action because each of the previous hexes is occupied by another unit (that is, if the unit was not displaced, it would violate stacking rules). In this case, no Bog Down Roll is made and the unit is displaced appropriately (though a Bog Down Roll is made in the final hex into which the unit is displaced, if appropriate).

> *Using the Unit Displacement Diagram (see p. 153,* TW*), all hexes are mud and the 'Mech in Hex B is stuck. As 'Mech A falls into Hex B, it automatically gets stuck in the mud, which means that during the Movement Phase of the following turn, if the player wishes to move the unit, he must make three successful Piloting Skill Rolls. The 'Mech in Hex B, even though it is stuck, is still automatically displaced into Hex C. However, because it was stuck when it was displaced, it automatically falls in Hex C and will automatically get stuck in a prone position. If the 'Mech in Hex C has 2 MP left, it can attempt to move into Hex F, or if it has 1 MP left, it can attempt to move into Hex E; both require a Piloting Skill Roll to move into the hex, avoiding the domino effect, and then another Piloting Skill Roll to avoid getting stuck in either mud hex. If the 'Mech in Hex C does not have any MP left, it is automatically displaced into Hex D. It must then make a Piloting Skill Roll to avoid falling, and if successful, another Piloting Skill Roll to avoid getting stuck; if it fails the first roll and falls, it is automatically stuck.*

CAREFUL MOVEMENT

The increased MP cost of entering hexes enveloped by light or heavy fog, covered with ice, or if using the Moonless Night/Solar Flare or Pitch Black light conditions, represents the extra caution needed to avoid tripping, falling or crashing in such conditions. By paying the increased Movement cost, units can cross such dangerous terrain without mishap.

Alternatively, players who do not wish to pay this cost can announce their intention to pass through the terrain at full speed before moving their units. After the unit moves 1 hex, the player must make a Piloting/Driving Skill Roll.

If the unit is a 'Mech and the roll fails, the 'Mech immediately falls and must stand up per standard rules before continuing its movement (if this fall occurs on pavement, the unit skids and its move is over). If the roll succeeds, the 'Mech remains upright and the unit may move per standard rules. However, the player must make an additional Piloting/Driving Skill Roll for each non-clear hex (unless there is ice in the clear hex) and level change through which the unit passes.

If the unit is a vehicle and the roll fails, the effects depend on the specific terrain and conditions. On icy terrain, the vehicle skids (see *Skidding*, p. 62, *TW*). Unless it is in Clear terrain, if the roll fails in fog, the vehicle crashes. In Clear terrain, the vehicle hits a hole or other minor obstruction that costs the unit 1 additional MP. In all other terrain, the crash ends the vehicle's movement, and the vehicle sustains damage to its Front side as if it had charged a unit identical to itself.

The MP Cost Per Hex modifier from ice is cumulative with other such modifiers as normal. However, if both fog and light conditions are present, apply a maximum MP Cost modifier of +3 from these two elements, as visibility can only be restricted so much.

Aerospace and Infantry: The *Careful Movement* rules do not apply to these unit types.

EXPANDED HEAT POINT TABLE

Activity	Heat Points
Walking	+1 per turn
Running	+2 per turn
Jumping	+1 per hex (minimum of 3 per turn)
Sprinting	+3 per turn
Attempting to stand	+1 per attempt
Weapons fire	Per Weapons and Equipment Tables, p. 303, *TW* and p. 216, *TO: AUE*.
Heat-causing weapons	Per Weapons and Equipment Tables, p. 303, *TW* and p. 216, *TO: AUE*.
Heat sink	–1 per operational heat sink –2 per operational double heat sink –1 additional per operational single heat sink under water (max. 6 points) –2 additional per operational double heat sink underwater (max. 6 points)
First engine hit	+5 per turn
Second engine hit	+10 (total) per turn
Low Temperature	–1 per turn per 10 degrees Celsius below –30 degrees Celsius
High Temperature	+1 per turn per 10 degrees Celsius above 50 degrees Celsius
Weather Conditions	See Weather Conditions Table, p. 34
Deep Snow	–1 per turn; for 'Mechs this only applies if a heat sink is mounted in the legs.
Fire/Magma Crust	+5 if occupied during Heat Phase +2 per each hex exited during Movement Phase
Magma Liquid	+10 if occupied during Heat Phase +5 per each hex exited during Movement Phase

Hover and WiGE Vehicles: Hover and WiGE vehicles ignore the effects of ice and do not need to expend Careful Movement MP when moving through such conditions.

Jumping and VTOL Units: Units expending Jump or VTOL MP ignore the need for Careful Movement while doing so. However, 'Mechs that jump into ice hexes follow the rules for such a scenario on page 50.

ProtoMechs: ProtoMechs use their Gunnery Skill to make checks required by moving through a hex at full speed. Treat a ProtoMech like a vehicle if it fails.

Terrain Factor: Some units may expend an additional +1 MP for careful movement when entering a hex in order not to inflict movement damage against the planetary conditions in that hex. See *Careful Movement* under *Terrain Factor Rules*, p. 63.

HEAT SCALE MODIFIERS

Different planetary conditions may also affect how quickly a unit that tracks heat generates internal heat. Though the rules for each planetary condition note whether they affect heat, for ease of use, the Expanded Heat Point Table (see previous page) lists the

TERRAIN FACTOR AND CONVERSION TABLE

Table Key:
NLV: Non-Large Vehicles
SSV: Small Support Vehicle
LCV: Light Combat Vehicle
PM: ProtoMechs

Terrain Factor	Former Terrain	New Terrain	Prohibited Units Movement Damage	Prohibited Units Combat Damage	Careful Movement
Ultra-Heavy Woods: 120	Ultra-Heavy Woods	Heavy Woods	Infantry	Infantry*	—
Heavy Woods: 90	Heavy Woods	Light Woods	Infantry	Infantry*	—
Light Woods: 50	Light Woods§§	Rough	Infantry, SSV, PM	Infantry*	NLV
Ultra-Heavy Jungle: 130	Ultra-Heavy Jungle	Heavy Jungle	Infantry	Infantry*	—
Heavy Jungle: 100	Heavy Jungle	Jungle	Infantry	Infantry*	—
Light Jungle: 60	Light Jungle§§	Rough	Infantry, SSV, PM	Infantry*	NLV
Gravel Piles: 100	Gravel Piles	Rough	Infantry	—	
Magma Crust: 30	Magma Crust	Magma Liquid	‡	—	—
Planted Fields: 30	Planted Fields	Clear	—	—	Infantry, LCV, SSV
Sand: 100	Sand	Sand Sublevel 1§	—	Infantry*	—
Sheer Cliffs: 50	Sheer Cliffs	**	Infantry	—	SSV, PM
Tundra: 70	Tundra	Rough	Infantry	—	LCV, SSV, PM
Rail: 20	Rail	Clear	Infantry	—	LCV, SSV, PM
Dirt Road: 20	Dirt Road	‡‡	—	—	Infantry
Gravel Road: 50	Gravel Road	‡‡	Infantry	—	Infantry, LCV, SSV, PM
Paved Road: 150	Paved Road	‡‡	Infantry, SSV, PM	Infantry*	Infantry, Vehicles
Paved: 200	Paved	Rough	Infantry, NLV, PM	Infantry	Large Vehicles,'Mechs
Deep Snow: 30	Deep Snow	Thin Snow	—	—	Infantry
Thin Snow: 15	Thin Snow	Mud	—	—	Infantry
Ice: 40	Ice	††	—	—	Infantry, PM, Vehicles
Clear/Rough: 200	Clear/Rough	Rough Sublevel 1†	Infantry, SSV	Infantry*	All

*Except for infantry with the Combat Engineer specialization (see p. 153, *TO: AUE*).
†This also applies to any Clear Level terrain, so that Level 5 Clear terrain would now be Level 4 Rough.
‡See *Magma*, p. 34.
§If more than 50 points of damage dealt to the hex is done by pulse and direct-fire energy weapons, it becomes a Rough Sublevel 1.
§§If the hex started as ultra woods/jungle, it is reduced to ultra-rough.
**Sheer cliffs are simply removed from the hexside, with no additional affects, or without leaving any other condition behind.
††If the underlying terrain is water, the hex is reduced to water; otherwise the condition is simply removed from the hex.
‡‡Each road, when reduced, becomes a rough road. This means all units pay an extra 1 MP to enter the hex, but it is still a road, and so a unit may pass through a hex with an underlying terrain that it may be prohibited from entering; all other benefits of the road are lost and skidding no longer occurs. A rough road has half the Terrain Factor as the original type of road it was derived from. Reducing this Terrain Factor to 0 destroys the road completely; the hex is treated as a normal hex of its type with no road.

number of Heat Points generated by all conditions, as well as the Heat Points generated by various activities and damage. (For a full description of heat rules, see pp. 158–161, *TW*.)

TERRAIN FACTOR RULES

In standard rules *BattleTech*, all terrain—with the exception of buildings—is considered indestructible for movement purposes. When it comes to combat, only the clearing of wooded terrain is addressed (see *Clearing Woods*, p. 112, *TW*). However, while simple and easy to use, such rules are far from realistic. Particularly with the introduction of some base terrain types and terrain modifications that can easily be damaged and/or destroyed by the movement of heavy machinery—much less the targeted impact of powerful weaponry—taking that factor into account conveys a more realistic game, while adding whole new levels of tactics.

With that in mind, the Terrain Factor rules build on the Terrain Factor concept originally described in *Clearing Woods* (see p. 112, *TW*), but greatly expands its usage.

The Terrain Factor (TF) determines the number of damage points a particular planetary condition in a specific hex can take before being reduced or eliminated; this damage, regardless of when it occurs, is tracked across a game until the TF is reduced to 0. Damage can occur from movement and/or combat (see *Movement Damage* and *Combat Damage*, at right).

Though the TF of every planetary condition is found on the Expanded Movement Costs and Planetary Conditions Table (each TF is the rating per hex), those values are also listed on the Terrain Factor and Conversion Table on the previous page, for ease of comparison and use. The table also details whether a planetary condition is converted to another type of planetary condition as its TF is reduced and what it will ultimately be converted to once its TF is reduced to 0. Note that only those planetary conditions with a TF value higher than 0 are listed on the Terrain Factor and Conversion Table.

The introduction to planetary conditions mentions the added complexity of including such rules in a given scenario—a reality particularly worth repeating for the Terrain Factor rules. These rules provide a wonderful diversity, for the realistic element as well as the new and fun tactics that such "terrain destruction" allows. However, tracking damage across all the planetary conditions of an entire playing area can significantly increase the complexity of a game, as well as the length of time it will take to finish that game. As a way to mitigate such a factor, players can be selective, if they wish. For example, in a given scenario perhaps only terrain modifications can be reduced using these rules, while all other planetary conditions cannot. Regardless of whether a playing group is selective or plans to apply the Terrain Factor rules across the entire playing area, all players should be very familiar with these rules and willing to implement them in a given scenario before play begins.

Current TF: As with Construction Factor (see p. 155, *TW*), the current TF of a planetary condition in a specific hex is defined as the TF at the instant an action takes place. For example, if two 'Mechs enter the same hex with a planetary condition that has a TF above 0 at different times in the same Movement Phase, the current TF for both units may be different, if the first unit damaged the planetary condition's TF.

For those planetary conditions that can be reduced through different types of conditions—such as ultra-heavy woods, to heavy woods, to light woods, to rough hex—its type does not change until the TF falls below the value of the reduced hex as shown on the Terrain Factor column of the Terrain Factor and Conversion Table.

Note: A hex must be reduced to a rough/clear hex, with no terrain modifications left, before the hex itself can be damaged. For example, an ultra-heavy jungle hex would need to have 130 points of damage applied to it, to reduce it to a rough hex, and then additional damage could be applied to that rough hex's Terrain Factor of 200.

Movement Damage

Each time a unit enters a hex—depending on the unit type and the planetary condition in question—it can potentially damage the planetary condition(s) in that hex. If the Terrain Factor and Conversion Table indicates that a specific unit type entering a hex can damage a specific planetary condition in that hex, the player divides the weight of the unit by 10 (rounding up) and applies that value to the planetary condition, reducing its TF.

If more than one planetary condition exists in a hex, and the unit entering the hex can damage the TF of multiple planetary conditions, damage is applied to all appropriate conditions.

Buildings: While these rules are very similar to how building hexes resolve damage due to unit movement, players should refer to those specific rules when dealing with buildings (see pp. 166, *TW*, and 112).

Falling Damage: Damage inflicted from a fall is also inflicted against all the target planetary conditions and the hex. Determine the damage to the unit that has fallen and apply the same damage to the hex and the planetary conditions.

Large Vehicles: Double the damage applied to a planetary condition from a Large Vehicle.

Infantry: In the case of infantry, to determine the damage to the TF of planetary conditions in a hex, use the Tons of Cargo Space Occupied column of the Generic Conventional Infantry Units Table and Battle Armor Organization/Weight Table (see pp. 213 and 214, *TW*, respectively). If the Advanced Battle Armor Weights rules are in effect (see p. 154), use those weights instead.

Non-DropShip Aerospace Units: Non-Spheroid aerospace units taking off and landing do not determine damage for every hex they pass through. Instead, they only determine damage in the final hex or hexes they occupy at the end of landing, or the hex(s) where they began their takeoff.

DropShips: DropShips taking off and landing do not determine damage for every hex they pass through. Instead, they use the proximity damage from their fusion exhaust, determining damage not only for units, but for appropriate planetary conditions as well, applying said damage to appropriate Terrain Factors (see *Proximity Damage*, p. 88, *TW*). All planetary conditions in a hex—including roads, rails and so on—with a landing or taking-off Spheroid DropShip are automatically reduced to 0 TF.

Mobile Structures: A Mobile Structure automatically inflicts 150 points of damage to all terrain and terrain modifications within a hex it enters (see p. 33, *TO: AUE*).

Careful Movement: Some units can use Careful Movement (see *Careful Movement*, p. 61) to avoid damaging a planetary condition's TF. The Terrain Factor and Conversion Table (see p. 62) notes which units can expend an extra 1 MP per hex to avoid dealing damage.

Combat Damage

Units can use weapon attacks to reduce various planetary conditions, changing them from one type to another. As all such targets are immobile, apply a –4 to-hit modifier to any such attacks.

Specifically targeting a planetary condition to reduce its TF requires a conscious effort. If an attack against a unit passes through or into such hexes, the attack does not reduce that planetary condition's TF (unless the rules for Woods Cover and Missed Shots are in use; see pp. 82 and 79, respectively).

Prohibited Units: Not all units can use attacks to reduce a given planetary condition's TF; the Terrain Factor and Conversion Table notes which units are prohibited from damaging which planetary conditions.

Area-Effect Weapons: Because area-effect weapons target the hex, such weapons always damage a planetary condition in a hex, regardless of whether or not the player made a conscious choice to strike the hex (for example, a bomb that scatters will still damage the TF of any planetary conditions in the hex); double the Damage Value of these weapons against all planetary conditions (except Clear/Rough terrain).

Buildings: These rules do not apply to buildings, which have their own rules for resolving the damage from an attack against a building hex (see p. 166, *TW*, and p. 112).

Cluster Weapons: For weapons that use the Cluster Hits Table, use the weapon's total Damage Value.

LOS: When trying to damage a planetary condition in a given hex, treat the condition as a standing 'Mech. If the "'Mech" would have partial cover from the attack (see p. 102, *TW*), then the attacker cannot attempt to damage the planetary condition. This rule does not apply to buildings, which have their own rules for resolving LOS (see p. 166, *TW*, and p. 112).

Terrain Displacement

In most instances, when a base terrain type's or terrain modification's TF is reduced to 0, nothing further occurs beyond the change in a hex as described on the Terrain Factor and Conversion Table (see p. 62). However, some instances exist when the reduction of a hex's TF to 0 results in the terrain itself displacing.

Clear/Rough: There are two instances in which a clear/rough hex's terrain may displace.

- If a clear/rough hex's TF is reduced to 0
- If the total tonnage of units in the hex (DropShips do not count) is more than the clear/rough hex's TF x 2

In both instances, if an adjacent hex is one level lower (or more), the terrain will displace into that hex in the way described below; if there is more than one adjacent hex with a lower level, randomly determine which hexside the terrain displaces into (the terrain will only displace across a single hexside).

The terrain will not collapse until the very end of the End Phase of the turn in which the TF was reduced to 0 (or the tonnage of units in the hex is greater than the current TF of the hex), after all other damage resolution has occurred.

Divide the clear/rough hex's TF at the beginning of the turn by 5 (round up; if this number is 0 or less, no damage is applied) and apply it to all units—and Terrain Factors—in the hex in which the terrain displaces. Apply the damage in 5-point Damage Value groupings, to randomly determined locations using the Front/Back column of the appropriate hit location table; damage to conventional infantry is applied as though the damage originated from another infantry unit.

'Mechs and ProtoMechs: 'Mechs and ProtoMechs must make an immediate Piloting Skill Roll (ProtoMechs use their Gunnery Skill Rating) with a +3 modifier. If the roll fails, the 'Mech falls into the hex where the terrain is being displaced, taking standard falling damage. Next, the damage from the displaced terrain above is applied using the 'Mech Front Hit Location Table. If the roll succeeds, the damage from the displacement is only applied to the 'Mech's feet, but it does not fall and stays in the target hex.

Non-Airborne Units and Infantry: Non-airborne units and infantry (with the exception of DropShips) automatically fall into the hex where the displacement is occurring, taking damage as noted under *'Mechs and ProtoMechs*.

- **Continued Displacement:** If the target hex where the terrain displaces has an adjacent hex one level lower (or more), the destroyed terrain will automatically displace into that hex as well. Divide the clear/rough hex's TF at the start of the current turn by 10 (round up; if this number is 0 or less, no damage is applied) and apply it to all units—and Terrain Factors—in the additional hex into which the terrain displaces, in the same manner as noted above.

  The terrain will continue to displace into new hexes as long as any lower-level hex exists adjacent to the latest hex where the terrain displaced, with the damage applied to each unit—and Terrain Factors—in a new hex continuing in that format; a third hex would divide the TF by 15, the fourth hex by 20 and so on. If at any time the displacing terrain would no longer cause damage to units in a new hex, even if a lower-level hex exists, the terrain stops and does not enter the new hex.
- **Units and Continued Displacement:** If the terrain displacement continues beyond the hex in which a unit is located, all units will automatically displace into the new hex. There are two exceptions involving 'Mechs and DropShips. If 'Mechs make their initial Piloting Skill Roll to stay standing, they are not displaced; DropShips are never displaced.
- **Order of Damage/Events:** The falling and displacement of units—and the damage involved—are resolved first in every hex; if this results in further displacement of units, that is resolved first. Then the damage from the displacing terrain is applied. Finally, once all such events have been determined, the players determine if another terrain displacement will occur, as noted above.
- **New Hex Conditions:** Any hex where terrain has displaced is now considered a gravel pile hex (see p. 28), along with any other planetary conditions that may already exist in the hex.

While the above rules are mainly geared toward a "rock slide," they can be used to simulate several different types of terrain slides. For example if using deep snow across the entire playing area, the same rules could be used to simulate an avalanche.

In the Terrain Damage and Displacement Diagram, a scenario is unfolding on the Deep Canyon #1 map. The Thin Snow planetary condition exists in all hexes. As the battle is relatively small, the players have decided to track movement and combat damage across all planetary conditions, which includes the underlying terrain of all hexes (this choice feels particularly appropriate, as moving giant machines of war along the edges of a canyon's precariously balanced rocks and crevasses can be dangerous).

During the Movement Phase of a turn, a Hauberk battle armor unit enters Hex A. As shown on the Terrain Factor and Conversion Table, the unit cannot damage light woods and so no damage is applied for the movement. However, it can damage the Thin Snow in the hex, and so 1 point of damage is applied to the Thin Snow [8 tons (2 tons per trooper as shown on the Advanced Battle Armor Weights Table; see p. 155) / 10 = .8, rounding up to 1].

When the Goblin Infantry Tank enters Hex A, it automatically damages the woods and Thin Snow. The 45-ton tracked vehicle inflicts 5 points of damage [45 (weight of tank) / 10 = 4.5, rounding up to 5] to the light woods as well as the Thin Snow.

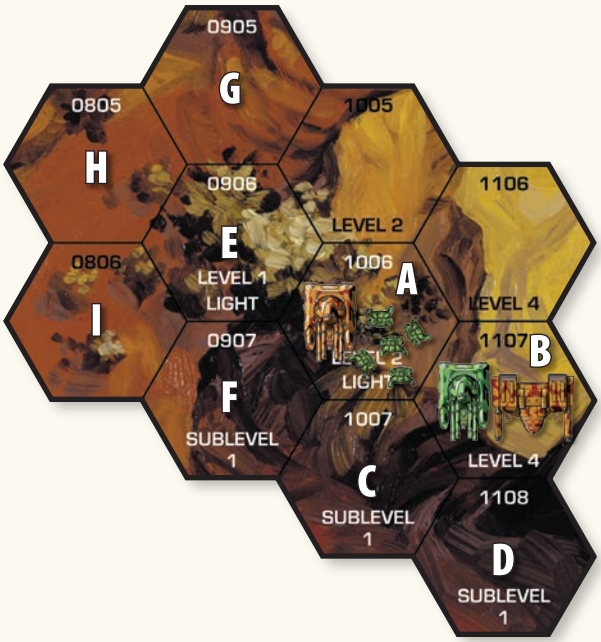
An 85-ton BattleMaster *enters Hex B, automatically inflicting 9 points of damage [85 (weight of 'Mech) / 10 = 8.5, rounding up to 9] against both the snow and Hex B. Afterwards, a DI Morgan vehicle also enters Hex B, automatically inflicting 10 points of damage [100 (weight of vehicle) / 10 = 10] against the Thin Snow and the hex; as the Thin Snow's TF is only 15, it is immediately reduced to mud.*

Unfortunately, during the Indirect Artillery Attack Phase of the same turn, a Cruise Missile/90 lands precisely in Hex B. As a result, 90 points of damage are applied to the BattleMaster *and DI Morgan (both units survive), as well as to Hex B.*

Then 65 points of damage are applied to all the immediately adjacent hexes. The players mark down the damage to all the Clear terrain hexes (all the Thin Snow is turned to mud). Then they look at Hex A: the damage reduces the Thin Snow there to mud and the light woods to Rough terrain (especially as the area-effect weapon damage is doubled against such planetary conditions). Then 65 points of damage is applied to the units in Hex A as well. The Goblin barely survives; because the cruise missile is an area-effect weapon and damage is applied to each trooper, the Hauberk battle armor is eliminated.

Then 40 points of damage are applied to the next adjacent hexes. Again, the players mark down damage to all clear hexes (all the Thin Snow is turned to mud); again, the light trees in Hex E are reduced as the area-effect weapon doubles its damage against the woods.

Finally, the players track the last 15 points of damage applied to each clear hex in the next adjacent hexes; the Thin Snow is reduced to mud in all those hexes.



• TERRAIN DAMAGE AND DISPLACEMENT DIAGRAM •

The players now have something else to contend with at the end of the End Phase of the current turn. The current TF of Hex B is 91 [200 (TF at start of turn) – 9 (damage inflicted by BattleMaster *movement) – 10 (damage inflicted by DI Morgan movement) – 90 (damage inflicted by Cruise Missile/90) = 91]. If the combined weight of any units [85 ('Mech tonnage) + 100 (DI Morgan tonnage) = 185] in Clear/Rough terrain is more than double the current TF [91 (current TF) x 2 = 182], the hex collapses. The TF of the hex is automatically reduced to 0. Because there are adjacent hexes at a lower level, a displacement also automatically occurs.*

First, the players determine where the displacement will occur: into hexes A, C or D. The players roll and determine the displacement will fall into Hex A (it only falls into a single hex, even if multiple hexes are available). The controlling player of the BattleMaster *must immediately make a Piloting Skill Roll to avoid falling and being swept away in the displacement. A roll of 10 means a success and the 'Mech stays on its feet despite the +3 modifier. However, damage done by the displacing terrain must be assigned and so 40 points of damage are applied to the 'Mech's legs [200 (TF of the hex at the start of the turn) / 5 = 40]. The* BattleMaster *remains standing, now in a Level 1 rough hex, with a current TF of 200.*

Unfortunately for the DI Morgan, it is automatically displaced into Hex A. It will take 10 points of damage for a one-level fall [100 (DI Morgan tonnage) / 10 x 1 (levels fallen) = 10)—which will also be inflicted against the target hex—and then 40 points of damage for the displaced terrain. The displaced terrain will also inflict 40 points of damage against the Goblin Infantry Tank (which the players determine destroys it) and against Hex A itself, leaving its current TF at 80 [200 (TF at start of turn) – 5 (Goblin movement) – 10 (DI Morgan falling damage) – 65 (Cruise Missile/90) – 40 (displacing terrain damage) = 80].

An adjacent hex is at a lower level, and so displacement continues. Displacement could move into Hexes E, F or C. The players randomly determine the location and come up with Hex E. Once again, the DI Morgan is automatically displaced and so will once again take 10 points of damage for the fall; this damage would have been inflicted against both the woods and the target hex, but since the woods are gone, only the hex receives the damage. Damage from displacement is then determined to be 20 points [200 (TF of the hex at the start of the turn) / 10 = 20], which is applied both to the DI Morgan and Hex E.

One further displacement can still occur. Hex F is adjacent to Hex E and a level lower, and so displacement occurs once more. Provided the DI Morgan has survived this long, it will once more displace into Hex F, taking another 10 points of damage from the fall (again, is also inflicted against Hex F) and then 14 points of damage from the displacement [200 (TF of the hex at the start of the turn) / 15 = 13.3, rounding up to 14], which is also applied to the hex. Even though there is enough terrain left to displace, no adjacent hex now exists that is also a level lower, and so no further displacement occurs.

Finally, the players note that the hexes where a displacement occurred (B, A, E, and F) are now considered gravel piles. If any of the falling and displacement had reduced further hexes' TF to 0, then after the complete resolution of Hex B's displacement had occurred, those further displacements would also be resolved, in the appropriate order.

Finally, the players note that the hexes where a displacement occurs (A, E, I and F) are now considered gravel piles.

If any of the falling and displacement had reduced a hex's TF to 0, then after the complete resolution of Hex B's displacement had occurred, those further displacements would also be resolved, in the appropriate order.

PLANETARY CONDITIONS TABLES

As noted under *Expanded Movement Costs and Planetary Conditions Rules* (see p. 26), players can simply assign planetary conditions to a given scenario. However, weather is always uncertain, and all too often intel on a battlefield is lacking, leaving combatants to make decisions on the fly for how to overcome bad weather and surprising terrain to still achieve victory. The Planetary Conditions Tables help to simulate this X factor of combat, by randomly injecting planetary conditions not necessarily of any player's choosing.

For ease of use, the tables are split into six tables covering weather conditions and six tables covering base terrain types, terrain modifications and terrain conditions. Each set of six tables has a corresponding seventh "general" table to randomly roll any of the six correlated tables. A final sub-table exists for atmospheric pressures.

Players may either select a specific Weather Table, and then roll 1D6 to determine the exact weather rules to be used in a game, or for a truly random situation, roll 1D6 on the General Weather Table to determine the specific Weather Table for the scenario and then roll 1D6 to determine the exact weather rules to be used in a game.

Likewise, players may either select a specific Terrain Table and then roll1D6 to determine the exact terrain rules to be used in a game, or to really mix things up, roll 1D6 on the General Terrain Table to determine the specific Terrain Table for the scenario and then roll 1D6 to determine the exact terrain rules to be used in game.

Conflicting Planetary Conditions: When randomly determining planetary conditions, remember to resolve any conflicting conditions before play begins (see p. 27.

Planetary Conditions and Mapsheets

While any of the terrain and weather conditions in this section can be used with any mapsheet, the Planetary Conditions to Mapsheets Table provides a quick and easy way to match up the most appropriate mapsheet types with the general terrain and weather condition types in use in a given scenario.

PLANETARY CONDITIONS TO MAPSHEETS TABLE

Planetary Condition	Mapsheet Terrain
Weather Table 1: Solar	Badlands, Wooded, Mountains
Weather Table 2: Wind	Flatlands, Coastal, Mountains
Weather Table 3: Rain	Wetlands, Hills, Mountains
Weather Table 4: Snow	Mountains
Weather Table 5: Extreme Temperature	Badlands, Flatlands, Coastal, Mountains
Weather Table 6: Combined Weather	Flatlands, Coastal, Hills, Mountains
Terrain Table 1: Flora/Fauna	Hills, Wetlands, Wooded
Terrain Table 2: Extreme Temperature	Badlands, Flatlands, Coastal, Mountains
Terrain Table 3: Water	Wetlands, Costal
Terrain Table 4: Hostile	Wetlands, Badlands, Mountains
Terrain Table 5: High/Low Gravity	Any
Terrain Table 6: Ground	Hills, Badlands, Wooded, Mountains

PLANETARY CONDITIONS TABLES

1D6	General Weather Table
1	Light
2	Wind
3	Rain
4	Snow
5	Extreme Temperatures
6	Combined Weather

1D6	Weather Table 1: Light
1	Pitch Black (p. 56)
2	Moonless Night (p. 56)
3	Full Moon Night (p. 56)
4	Dawn/Dusk (p. 56)
5	Glare (p. 56)
6	Solar Flare (p. 56)

1D6	Weather Table 2: Wind
1	Light Gale (p. 59)
2	Moderate Gale (p. 59)
3	Strong Gale (p. 59)
4	Storm (p. 59)
5	Tornado F1–F3 (p. 59)
6	Tornado F4+ (p. 60)

1D6	Weather Table 3: Rain
1	Light Fog (p. 55)
2	Heavy Fog (p. 55)
3	Light Rainfall (p. 57)
4	Moderate Rainfall (p. 57)
5	Heavy Rainfall (p. 57)
6	Torrential Downpour (p. 57)

1D6	Weather Table 4: Snow
1	Sleet (p. 58)
2	Light Hail (p. 55)
3	Heavy Hail (p. 56)
4	Light Snowfall (p. 58)
5	Moderate Snowfall (p. 58)
6	Heavy Snowfall (p. 58)

1D6	Weather Table 5: Extreme Temperatures*
1	–70C to –60C (p. 60)
2	–59C to –40C (p. 60)
3	–39C to –30C (p. 60)
4	50C to 60C (p. 60)
5	61C to 70C (p. 60)
6	71C to 80C (p. 60)

1D6	Weather Table 6: Combined Weather
1	Gusting Rain (p. 57)
2	Snow Flurries (p. 58)
3	Blizzard (p. 58)
4	Blowing Sand (p. 60)
5	Ice Storm (p. 60)
6	Lightning Storm (p. 57)

1D6	General Terrain Table
1	Flora/Fauna
2	Extreme Temperature
3	Water
4	Hostile
5	High/Low Gravity
6	Ground

1D6	Terrain Table 1: Flora/Fauna
1	Planted Fields (p. 36)
2	Woods (p. 38)
3	Jungle (p. 29)
4	Clear
5	Level 1 Foliage (p. 34)
6	Bug Storm (p. 38)

1D6	Terrain Table 2: Extreme Temperature
1	Black Ice (p. 38)
2	Ice (p. 48)
3	Thin Snow (p. 50)
4	Deep Snow (p. 39)
5	Tundra (p. 60)
6	Geyser (p. 46)

1D6	Terrain Table 3: Water
1	Rapids (p. 48)
2	Torrent (p. 50)
3	Hazardous Liquid Pools (p. 47)
4	Mud (p. 48)
5	Swamp (p. 49)
6	Extreme Depths (p. 40)

1D6	Terrain Table 4: Hostile
1	Meteor Shower (p. 54)
2	Earthquakes (p. 53)
3	Atmospheric Pressure (p. 52)**
4	Tainted/Toxic Atmospheres (p. 54)
5	Magma (p. 34)
6	Electromagnetic Interference (p. 53)

1D6	Terrain Table 5: High/Low Gravity*
1	.1 to .3 (p. 53)
2	.4 to .6 (p. 53)
3	.5 to .9 (p. 53)
4	1.1 to 1.3 (p. 53)
5	1.4 to 1.5 (p. 53)
6	1.6 to 1.9 (p. 53)

1D6	Terrain Table 6: Ground
1	Sand (p. 37)
2	Dirt/Gravel/Paved Roads (p. 49)***
3	Gravel Pits (p. 28)
4	Heavy Industrial Zone (p. 29)
5	Sheer Cliffs (p. 37)
6	Half Levels (p. 29)

1D6	Atmospheric Pressure Table
1	Vacuum (p. 52)
2	Trace (p. 52)
3	Thin (p. 52)
4	Standard (p. 52)
5	High (p. 52)
6	Very High (p. 53)

*Extreme Temperature weather and High/Low Gravity terrain can go above and beyond the conditions listed on the table. If the players roll a 1 or a 6 on either table, provided all players agree, the playing group can simply choose a temperature/gravity higher or lower than that represented by the table.

**Immediately roll on the Atmospheric Pressure Table at bottom right of this page.

***Players may choose which type of road, or randomly determine which type.



GLANCING BLOWS

Jason M. Hardy

ORESTES
FREE RASALHAGUE REPUBLIC
16 FEBRUARY 3052

It had been solo combat. That was the problem—there had been only two pilots, two machines involved. If it had been otherwise, if it had been different, maybe there would have been more witnesses, maybe even cockpit footage recorded by others who stood nearby and couldn't help but take a moment in the chaos to stand and watch. But it had been solo. Everyone else stayed away.

Haakon Magnusson already knew this task of reconstruction would consume him. Maybe he'd come out on the other side of it some day, in a year or five or ten, maybe he'd have a clear enough picture of what happened that he could say to himself, enough, no more, now I know. I know what happened. Or maybe he would exhaust himself and be forced to quit because he wouldn't have the energy to continue, or maybe his drive to discover what happened would diminish and he would no longer feel the need to interrogate anyone who had been anywhere near Satalice that day. He couldn't imagine that happening, but the universe had proved exceptionally able to produce events completely beyond his conception.

He closed his eyes, weary, then opened them again. He didn't want to sleep. He didn't want the company of his dreams right now. They kept producing his son for him in various guises. His infant son, his son as a youth, and, most cruelly, his son as triumphant warrior, returning home from the fight with sweat on his brow and a grim smile on his mouth. He would willingly go without sleep forever if it meant he could avoid being haunted by that image.

Keeping his eyes open, though, was no better. What did he have to look at? An empty room, white and austere like an untouched glacier. He hated the white furnishings and their smooth, contoured surfaces. He hated the screens fitted into the walls at various intervals, and he especially hated the information they kept shoving in his face. On top of all that, he hated that the entire installation had been his idea.

❖

"This will be the easiest of all," Haakon had said, on a planet far away, the first time he had set up a room like this. He pointed to the space between joists where a wall would eventually be erected. "Big, but not too big. It has to be visible from anywhere in the room, but I don't want it to overwhelm any of the other displays."

"What's it going to be hooked up to?" asked Vanessa, dutifully making annotations in her noteputer as it recorded Haakon's words and translated them into text.

"Same mainframe as the others, but it doesn't need to be as complicated. This is going to display a simple image."

"And that image will be …"

"The Free Rasalhague Republic, of course, in all its glory, from Orestes to Damian." It would be perfect, a reminder of his greatest joy every time he walked into the room. It would be a comfort in his most difficult times. He could look at the map, smile, and know that Free Rasalhague existed. That would take the edge off any sorrow.

❖

When Haakon had fled Rasalhague, he'd made sure his map had come with him. He was determined to have his Republic with him, no matter what else they took from him.

But the map was no longer a comfort. Every glance he gave it brought sorrow. The Republic it showed was a mere shadow of its

former self, planets darkened to indicate their fall to the Clans. More than fifty worlds gone! Rasalhague, the heart of his nation, where he had first designed his command room, where he had carefully placed the map that gave him so much pride, now seemed impossibly distant from his current border.

His nation had existed, whole and intact, for sixteen years. The survival, even triumph, of the Republic in the Ronin War convinced Haakon that he had been more than a deft politician—he had been a tool of destiny. Free Rasalhague was meant to be, and he was meant to create and lead it.

But then the invaders had come. Swarming from the rimward border of his nation, the Clans had captured fifty of the Republic's worlds in less than a year. Fifty circles now black.

He should take the map down. How could he look at planets like New Oslo, Skandia and Rasalhague, especially Rasalhague, darkened? And more still falling. Satalice was now dark. Satalice, where his son had been. Where Haakon had sent the bulk of the KungsArmé, the hopes of a reeling Republic.

Where those hopes had come to nothing.

❖

His son Ragnar had piloted an *Ostsol*, 25 tons heavier than the *Wolfhound* used by the merc-turned-Wolf barbarian, Phelan. Haakon had heard from dozens of soldiers already, by word or by letter, and each and every one of their accounts was contradictory.

The one thing they all agreed on was that Ragnar's last fight came at the end of the Battle of Satalice, after several hours of brutal fighting.

"The Clanner drew him out," one infantry *löjtnant* had reported. "He must have been planning it for awhile, but it took him a long time to work his way to where he needed to be. But if you were paying attention—and I had to, we always had to know where that damn *Wolfhound* was—you could see the Clanner was herding Ragnar, guiding him, practically steering the Prince away from the center of the battle so he could engage him one-on-one. He'd lay down a fusillade of energy in front of the Prince to push him backward, or graze a beam against one side or another to get him to move laterally. The precision—I've never seen such accuracy. He could have made them all direct hits, I'm sure of it, but that's not what the Clanner wanted. He wanted to take him on by himself, so he used these shots, these darts he was throwing, to draw the Prince out. Then, on open ground, it was just the two of them, and the Clanner launched himself at the Prince like a wolf at a rabbit. He got what he wanted."

That was one story. Here was another.

"The Prince was in control the whole time," said the driver of a transport. "You should've seen how he moved on the field, you would have been so proud. The damn Clanner



couldn't get a clear bead on him, he was firing wild, taking shots that didn't come anywhere near the Prince. I could tell Ragnar wanted a piece of this guy—I don't know how, but you can tell, you know? You can feel it—but there kept being people in front of him he needed to take care of, people closer than this damn Phelan character. It didn't help that the Clanner was faster, and he used his speed. Fire and run, fire and dodge, fire and run. But the Prince wouldn't slow down. The Prince kept after him. He was smart, right? Knew what victory over that *Wolfhound* would mean. Could take the whole day for us. So he kept after him, playing that field like a chessboard. Every shot set up something that was two or three moves away. The *Wolfhound* tried to stay away, but he just … he wasn't a pure tactician, like the Prince was."

And it just got worse. None of the accounts seemed to agree on anything—except that the Clanner had won and Ragnar was gone.

❖

There should have been a great funeral. Wooden boat set on fire, sparks flying into the night sky, people mourning theatrically and possibly throwing themselves onto the burning ship before it drifted into the deep water. Maybe Haakon would have been one of them.

Except Ragnar wasn't actually dead. There was no body to send to sea. Besides, the way things were going, Haakon had trouble believing he would be able to assemble enough true Rasalhagian warriors for a proper funeral.

But he could imagine. If he closed the eyes, he could feel the flames lapping his arms, his legs, blistering his skin, eating him away into ash.

Those people of ancient Terra knew what they were doing. A warrior's exit from this life should be a bright blaze of glory, not slow decomposition in the ground. A warrior should be here one moment, and then gone like that. Because a warrior who stays around too long absorbs blow after blow after blow, and even if they're light blows, even if they barely slow you down, they eventually take their toll, and you … you eventually aren't a warrior anymore.

Just like a nation of planets. The Inner Sphere was seemingly based on the idea that nations could lose a planet or two on the border and be okay. Some planets got traded back and forth the way football teams traded aging quarterbacks. That sort of loss could be endured.

But loss after loss after loss—that was long, drawn-out pain. It would be better if the whole realm, the whole Republic, were wiped away with a single blow. An explosion, or a sucking black hole, and Free Rasalhague would be gone. A suitable, dignified death.

He looked out at the night sky and focused on the space between the stars.

❖

There was business the next day. The volume of it seemed small, of course, but still, there were a handful of planets and billions of people, and a ruler had tasks to perform. And there was the slow, backward trickle of the war.

"Supply routes are being changed," said Haakon's chief of staff. "You probably don't need to know the details, but in case you're curious a file outlining the new routes has been sent to your noteputer."

"Are the supplies ever catching up to the troops?"

The chief glanced at a handheld screen. "Sometimes," he said. "But I wouldn't worry too much about it. Of all the reasons we've had for losing, low supplies are far down the list."

Haakon only nodded in reply.

"The flow of refugees seems to have slowed a bit," the chief said. "For once we have enough supplies on most planets to meet the demand. It's probably only a temporary lull, though. I'm sure the pace will increase again, and we will need to be ready for another surge."

"No," Haakon said.

"Pardon, sire?

"No. There will be no surge."

"With all due respect, sire, the pace of attacks is not slacking, and … and, well, we have not gained additional victories. There will be more refugees."

"There will be more defeated Rasalhagians," Haakon said. "But there will be fewer refugees. They will no longer flee."

"How do you …"

"They have nowhere to flee to," Haakon said. The words came out flat, emotionless. "Refugees flee because they are looking for someplace safer. But there are fewer and fewer such places in the Republic. Soon there will be none." He looked at his ever-shrinking map on the wall. "They have realized they will not be able to escape Clan rule."

The briefing ended soon after that. The chief knew better than to dispute Haakon's assertion. The black mood had been on him for some time, and there was nothing the chief could do to talk it away.

❖

The chief had tried to buoy Haakon's spirits once, not long after Ragnar had been lost.

"He's not dead," the chief said. "That's one thing all the reports agree on. Your son is captured, but not dead."

Had Haakon seen the humor in anything anymore, he would have laughed. Was that supposed to be better? Was he supposed to be happy that his son was in the hands of the people who were ripping his realm apart? Did anyone know what they did to their prisoners? Or perhaps he was really dead...

Haakon kept having a vision. A vision of the last Rasalhague forces making a final stand on some coreward planet—likely here on Orestes. The battered, shattered remnants of the KungsArmé fall under the relentless Clan attack, until there is nothing between Haakon and the enemy but a small unit of loyal troops. They fight valiantly in their final battle, but there is nothing they can do to slow the onslaught. Then, at the end, there is nothing besides Haakon, his dead soldiers, and the advancing Clanners. And then one of the Clan `Mechs stops, the hatch opens, and a face appears. Ragnar's face, but not his. The features are the same, but the expression is twisted, malevolent. Alien. He sneers for a brief moment, then disappears back inside his `Mech.

Then he blasts his father into nothing.

That could be what they are doing to my son, Haakon thought. They will steal him from me completely before they are done. What comfort can I draw from that?

The chief talked on for a while and watched Haakon's eyes sink deeper into his head. After that effort, the chief didn't attempt to cheer him again.

❖

Here, in the present, days come and go, and Haakon is amazed each morning to wake up and find out he is still alive. That he emerges from his bedroom and functions, at least to a degree. He had put so much planning into Ragnar's ascension to the throne, so much care into his upbringing, that when that stopped—shouldn't everything else have stopped? But people went on, events went on, much as they had before his son was lost.

He knew he was not the only one who mourned his son. The outpouring of grief was nationwide, and the people had been sent reeling. But even in the midst of all this, even as the Republic fell apart, people still lived. They worked, they occasionally played, they found time to be with those they wanted to be with. They persisted. The entire Republic might fall, and the people would carry on. Many of them had been alive before the Republic existed, living in a Rasalhague of the mind rather than a political reality. They had survived without it before. They could endure without it again.

One day, while he was looking out a window and watching life proceed around him, a thought struck Haakon. He called to one of his assistants, then pointed at the map.

"Turn them on," he said. "Turn all of them on."

The assistant complied without hesitation. Soon, it was there again, restored with a few keystrokes. The Free Rasalhague Republic, mighty and strong.

The planets were still there. They had fallen, but they had not vanished. They remained as real as their history, and that history was written in Rasalhague ink. They had waited a long time for independence. If necessary, they could wait again.

Haakon could not. The struggle of twenty years ago could not be repeated, not by him. But perhaps there was someone out there, someone who survived the onslaught, who would lead the Republic back. Perhaps.

It was the first time since his son had fallen that Haakon saw anything in the future except blackness.

❖

His chief of staff came again, and again and again, every day with new business, new minutiae. The details of retreat were considerable, and retreat remained all the KungsArmé could do in the face of its implacable enemy.

Occasionally the chief brought him yet another account of the battle between Phelan Kell and his son. Haakon still read them all, but with an air of detachment, as if he were reading dry history, not family tragedy. One account in particular struck him, the story related by a crewman from a scout vehicle. The man had eagle eyes and a sharp memory, and his account bore the ring of truth—even though it directly contradicted several other accounts. If it was not the complete truth of what happened, it was a truth Haakon could accept.

"The critical element to understanding the fight between Phelan and the Prince," the crewman wrote, "is knowing that the Clanner had the smaller, faster `Mech. Meaning he also had less firepower.

"Anyone who rises to a high rank and still prefers a light `Mech obviously knows the key to fighting in one—never stop moving. Never fool yourself into thinking there's a moment where you can stop and stand and pummel your opponent. It was a concept the Clanner understood very well.

"I didn't see the Clanner land too many clean shots on the Prince, and I never saw him fire while standing still. He was darting, turning, serpentining, circling—anything. That made his shots wild, but he knew how to compensate. They didn't hit dead center very much, but they seldom missed. A beam would cut into the Prince's leg, into an arm, into his torso, whittling away the edges. Not enough to knock the Prince out, but enough to keep him off balance. Glancing blow after glancing blow after glancing blow.

"I couldn't tell you which was the shot that finally decided the combat. There was no single killshot. It was the final accumulation of all those minor blows, all combined, that finally finished the Prince off.

"I am only guessing at this last part, but perhaps the Clanner's strategy was intentional. His marksmanship was uncanny, making hits when other warriors wouldn't have bothered to fire. I eventually got the impression that the nature of the blows was intentional—that the Clanner wanted to win, but wanted the Prince to survive. And so he fought the way he did."

Haakon had no way of knowing if that was true. Who could know what was in a Clanner's head? But if he couldn't know, he could at least believe.

He slept that night. Not soundly, but he slept. As he lay on his pillow, he heard his heartbeat echo in his ears. He imagined it was the heartbeat of Rasalhague, and of his son. Somehow, it was still beating. Cataclysms and captivity would come, but that heart would still beat.

Rasalhague would never truly fall.





Paula "Lady Death" Trevaline directly enters the fray during a raid against a Periphery world.

Combat is at the heart of *BattleTech*. When 'Mechs and other units pound each other with barrages of laser and autocannon fire, the fun really begins. This section greatly expands the options available to players for *BattleTech* combat.

As with all optional rules, all players must agree to use a particular rule in a given game. As these rules in particular will have a direct effect on how a game unfolds, we recommend that players review all the rules in this section before choosing the optional rules they want to include in their game.

GENERAL RULES

The following rules apply to weapon attacks and physical combat, as appropriate.

EXPANDED CRITICAL HITS AND DAMAGE

In standard-rules *BattleTech*, the ability of weapons to deal critical hits and how those critical hits affect a 'Mech are kept simple, for game balance and also for ease of play. The expanded rules in this section create differences between the critical damage-dealing abilities of the proverbial "golden BB" from an LB-X autocannon and the horrific destruction wreaked by an AC/20. What's more, instead of a single critical hit immediately eliminating equipment, a range of effects is introduced to better reflect degradation of ability due to damage. This rule applies only to 'Mechs, though it does not apply to a 'Mech's engine, gyros, sensors or double heat sinks.

Remember that players pick and choose which optional rules they wish to use, and these are not intrinsically linked; players can use both, or just one or the other of these rules in their games.

Advanced Determining Critical Hits

In place of the standard rules for determining critical hits (see *Critical Damage*, p. 123, *TW*), use the following rules.

Every time the internal structure of a 'Mech takes damage from an attack (not from falls, ammo explosions, or other sources), roll 2D6 and add a modifier based on the Damage Value grouping of

ADVANCED DETERMINING CRITICAL HITS TABLES

Damage Value Grouping	Modifier
1–5	+0
6–10	+1
11–15	+2
16–20	+3
21+	+4

Dice Roll (2D6)	Effect
2–8	No Critical Hit
9–10	Roll 1 Critical Hit Location
11–12	Roll 2 Critical Hit Locations
13–14	Roll 3 Critical Hit Locations
15+	Head/Limb Blown Off; Roll 3 Critical Hit Locations*

*Only roll 3 critical hit locations if the attack strikes the torso

the hit, as shown on the Advanced Determining Critical Hits Table, and then compare the die roll result to that same table. On a result of 9 or higher, the target unit takes critical damage.

The Damage Value grouping modifier does not take into account the weapon's overall Damage Value (or Attack Value), but only the Damage Value grouping as it applies to the 'Mech. Furthermore, it doesn't matter how much internal structure was damaged, just that it was in fact damaged. For example, a HAG 40 has a Damage Value of 40 points, but since all its damage is applied in groupings of 5 points (or less), at most any potential critical damage by a HAG would never apply a modifier to the die roll result. An AC/20, however, has a Damage Value grouping of 20, and so would apply a +3 modifier when determining a critical hit (again, regardless of how much internal structure was actually damaged by the attack).

Use all other standard rules (see *Critical Damage*, p. 123, *TW*) for determining the specific locations of critical hits rolled.

Aerospace Units Vs. Ground Units: Due to the abstract nature of certain weapons when mounted on aerospace fighters, the ability of a fighter to deal devastating damage to ground units is significantly increased. If players wish to keep this increased level of lethality for their fighters, they can feel free to do so. However, if that increased lethality is not desired, then when using aerospace units vs. ground units, use the standard rules for determining critical hits.

Expanded Critical Damage

Expanded Critical Damage does not apply to the engine, gyros, sensors, double heat sinks, or any physical attack weapons.

The expanded Critical Damage rule works as follows: every time a piece of equipment suffers a critical hit, it may be only damaged or it may be destroyed. If more than half of an item's slots have been damaged, the equipment is considered destroyed. Otherwise, it may continue functioning (which means a one slot item is still automatically destroyed).

When using these expanded critical damage rules, a single critical slot can be damaged multiple times until is is "destroyed."

At the end of a phase in which an item is damaged, roll 2D6 on the appropriate Critical Damage table to check the status of that item. Add the total number of damaged slots for the item, regardless of when the damage occurred, to the die roll result. Roll only once per phase for each item damaged during that phase, regardless of the number of times the item was hit. Damage takes effect at the end of the phase.

The effects of multiple critical hits are cumulative. For example, two Focus Misaligned results against a Direct-Fire Energy/Pulse weapon result in the weapon inflicting 2 less points of damage and an additional +2 to-hit modifier for subsequent attacks at medium and long range. Critical effects that call for a roll with a certain result (such as a To-Hit Roll result of 2, or a result of 7+ for the item to work) increase their target numbers by +1 for each additional hit. For example, an autocannon (Direct-Fire Ballistic weapon) that has suffered three Ammo Feed Damage results will sustain an ammunition explosion on a To-Hit Roll result of 4 or less (rather than the result of 2 that indicates an explosion after a single Ammo Feed Damaged result).

A jammed ballistic or artillery weapon may not fire. The jam can be cleared using the same rules for clearing a jammed Rotary Autocannon (see p. 140, *TW*).

Cockpit Critical Hit: Under these rules, a cockpit critical hit does not automatically destroy the cockpit and kill the MechWarrior. Instead, the player rolls on the Cockpit Critical Damage Table and applies the results. Unless the player rolls a 12+, if there is internal structure remaining in the location, the cockpit slot is not marked off as destroyed.

Electronic Equipment: For Electronic Equipment that provides a continuous effect throughout a turn, the controlling player should roll at the start of each subsequent turn to see if it functions (see Equipment Critical Damage Table, p. 74). For example, an Inner Sphere Guardian ECM Suite takes 1 critical hit in a turn and the controlling player rolls a 10 on the Equipment Critical Damage Table. At the start of each subsequent turn for the rest of the scenario, the player must roll a 10+ for the Guardian ECM Suite to function in that turn.

Keeping Damage Secret

In a refereed tournament or one with a gamemaster, such as a Double Blind game (see p. 188), it is more fun to keep the effects described above secret from the players. For example, if a player's AC/10 has an ammo feed problem, the gamemaster should tell the player that the weapon makes a "funny sound" when fired. When the player gets a result of 2 on his to-hit roll, the explosion of his weapon comes as a complete surprise.

FUMBLES

Standard-rules play assumes that all weaponry functions perfectly until it is damaged and that all MechWarriors, while they may miss, never do so in a catastrophic way. Real combat is much messier and despite the best maintenance and training, both machine and warrior can fumble.

DIRECT-FIRE ENERGY/PULSE WEAPONS CRITICAL DAMAGE TABLE

2D6* Roll	Effect
2–3	Minor damage; no effect
4–5	Moderate damage; attacks with weapon add +1 to-hit modifier
6–7	Focus misaligned; weapon inflicts –1 damage, additional +1 to-hit modifier applies to shots at medium and long range (as well as at extreme and LOS range, if those rules are in use; see p. 85.
8–9	Emitter damage; weapon generates +1 Heat Point. To-Hit Roll result of 2 for an attack with the weapon causes overload with effects identical to an ammo explosion, inflicting damage equal to the damage inflicted by the weapon; for Variable Damage weapons, use the Damage Value at short range.
10–11	Weapon severely damaged (mark off another critical slot on the weapon, the top most slot available); cannot fire
12+	Weapon destroyed (mark off all critical slots on the weapon)

*Add number of critical slots damaged to this result

DIRECT-FIRE BALLISTIC AND ARTILLERY WEAPONS CRITICAL DAMAGE TABLE

2D6* Roll	Roll Effect
2–3	Minor damage; no effect
4–5	Moderate damage; attacks with weapon add +1 to-hit modifier
6–7	Barrel damage; To-Hit Roll result of 2 for attack with weapon causes it to jam
8–9	Ammo feed damage; weapons that can fire various types of ammo may no longer switch between them, must fire last ammo type used. To-Hit Roll result of 2 for attack with weapon causes an ammo explosion in an ammo bin that feeds that shot (the controlling player decides which ammo slot explodes; if there is an ammo bin with shots remaining, the player must select that slot, meaning he cannot select an ammo slot that is empty if another slot of the same ammo type is not empty).
10–11	Weapon severely damaged (mark off another critical slot on the weapon, the topmost slot available); cannot fire
12+	Weapon destroyed (mark off all critical slots on the weapon)

*Add number of critical slots damaged to this result

EQUIPMENT CRITICAL DAMAGE TABLE

2D6* Roll	Effect
2–7	Minor damage; no effect
8–9	Moderate damage; player must roll 7+ before each use for damaged item to work
10–11	Severe damage; player must roll 10+ before each use for damaged item to work
12+	Item destroyed

*Add number of critical slots damaged to this result

COCKPIT CRITICAL DAMAGE TABLE

2D6 Roll	Effect
2–5	Minor Wound; apply one hit against MechWarrior
6–7	Moderate Wound; apply two hits against MechWarrior
8–9	Severe Wound; apply three hits against MechWarrior
10-11	Critical Wound; apply four hits against MechWarrior
12+	MechWarrior Killed/Cockpit destroyed (mark off slot)

MISSILE WEAPONS CRITICAL DAMAGE TABLE

2D6* Roll	Effect
2–3	Minor damage; no effect
4–5	Moderate damage; attacks with weapon add +1 to-hit modifier
6–7	Damage to ranging system; shots at medium and long range suffer an additional +1 to-hit modifier (as well as at extreme and LOS range, if those rules are in use; see p. 85)
8–9	Ammo feed damage; weapons that can fire various types of ammo may no longer switch between them, must fire last ammo type used. To-Hit Roll result of 2 for attacks with weapon causes an ammo explosion in the ammo bin that fed that shot (the controlling player decides which ammo slot explodes; if there is an ammo bin with shots remaining, the player must select that slot, meaning he cannot select an ammo slot that is empty if another slot of the same ammo type is not empty).
10–11	Weapon severely damaged (mark off another critical slot on the weapon, the topmost slot available); cannot fire
12+	Weapon destroyed (mark off all critical slots on the weapon)

*Add number of critical slots damaged to this result

ADVANCED 'MECH HIT LOCATION TABLE

2D6 Rolls	Left Side	Front/Rear	Right Side
2*	Left Torso [critical]	Center Torso [critical]	Right Torso [critical]
3	Left Leg	Right Arm	Right Leg
4	Left Arm	Right Arm	Right Arm
5	Left Arm	Right Leg	Right Arm
6	Left Leg	Right Torso	Right Leg
7	Left Torso	Center Torso	Right Torso
8	Center Torso (R)	Left Torso	Center Torso (R)
9	Right Torso (R)	Left Leg	Left Torso (R)
10	Right Arm	Left Arm	Left Arm
11	Right Leg	Left Arm	Left Leg
12	Head	Head	Head

*A result of 2 may inflict a critical hit. Apply damage to the armor in that section in the normal manner, but the attacking player also rolls once on the Determining Critical Hits Table, page 124, *TW*.

ADVANCED FOUR-LEGGED/PRONE 'MECH HIT LOCATION TABLE

2D6 Rolls	Left Side	Front	Rear	Right Side
2*	Left Torso [critical]	Center Torso [critical]	Center Torso (R) [critical]	Right Torso [critical]
3	Front Right Leg	Rear Left Leg	Front Left Leg	Front Left Leg
4	Front Left Leg	Front Left Leg	Rear Left Leg	Front Right Leg
5	Front Left Leg	Front Left Leg	Rear Left Leg	Front Right Leg
6	Right Torso	Left Torso	Left Torso (R)	Center Torso
7	Left Torso	Center Torso	Center Torso (R)	Right Torso
8	Center Torso	Right Torso	Right Torso (R)	Left Torso
9	Rear Left Leg	Front Right Leg	Rear Right Leg	Rear Right Leg
10	Rear Left Leg	Front Right Leg	Rear Right Leg	Rear Right Leg
11	Rear Right Leg	Rear Right Leg	Front Right Leg	Rear Left Leg
12	Head	Head	Head	Head

*A result of 2 may inflict a critical hit. Apply damage to the armor in that section in the normal manner, but the attacking player also rolls once on the Determining Critical Hits Table, page 124, *TW*.

Whenever a player makes a to-hit roll with a result of 2, a fumble has occurred and the attack always misses; note that even if the modified To-Hit Number is 2 or less, under this rule the player always makes a die roll and on a die roll result of 2 the shot misses.

Additionally, the controlling player should immediately roll 2D6 again. On a result of 12, the weapon that missed automatically receives a single critical hit (apply the critical to the topmost unmarked critical slot of the weapon); if the Expanded Critical Damage rules (see p. 73) are in use, the player should immediately roll on the appropriate table.

FLOATING CRITICAL RULE

Under standard rules, when the possibility of a critical hit arises by rolling a 2 on the 'Mech Hit Location Table, any critical hits are applied to the location initially rolled (center, right or left torso, depending on the attack direction). This chance for a critical hit represents the possibility of a lucky shot penetrating a chink in the 'Mech's armor and striking a vital internal component. As it is logical to assume that such lucky shots can strike areas of the 'Mech other than the torso, the following rule allows a possible critical hit to affect any area of the 'Mech. This rule applies only to 'Mech hit locations.

When a player rolls a 2 on the Hit Location Table, ignore the Torso hit location. Instead, roll the dice a second time to determine where the shot actually hits. If another 2 is rolled, that result indicates the shot struck the appropriate torso location. It does not indicate another possible critical hit. If the result is other than 2, the shot strikes the appropriate hit location. Mark off armor for that location and roll once on the Determining Critical Hits Table to see if any critical hits were inflicted on that area.

Partial Cover: If the target of the attack has partial cover and a leg location is rolled after the 2 result is first rolled, re-roll until a non-leg location is rolled.

ADVANCED HIT LOCATIONS

The following rules provide advanced (and more accurate) hit locations for 'Mechs.

Four-Legged and Prone 'Mech Hit Location Table

Players can use the Advanced Four-Legged/Prone 'Mech Hit Location Table to more accurately reflect hit locations against standing four-legged (quad) and prone 'Mechs. Under advanced rules, four-legged 'Mechs determine attack direction the same way as vehicles (see p. 192, *TW*).

The Left Side and Right Side columns in the Advanced Four-Legged/Prone 'Mech Hit Location Table are identical to those in the standard Hit Location Table, but are provided here for players' convenience.

Advanced 'Mech Hit Location Table

Players can use the Advanced 'Mech Hit Location Table to more accurately reflect side hit locations against biped 'Mechs; namely, that side hits have a chance at hitting a rear location. Players should note that the weakest part of any 'Mech armor is the rear and the use of this advanced hit location table will significantly increase the number of rear hits that may occur.

The Front/Rear column in the Advanced 'Mech Hit Location Table is identical to that in the standard Hit Location Table, but is provided here for players' convenience.

Four-legged 'Mechs: When using four-legged 'Mechs, players may wish to use the Front and Rear column of the Advanced Four-Legged/Prone 'Mech Hit Location Table and the side columns of the Advanced 'Mech Hit Location Table to provide the most accurate hit location situations.

ENGINE EXPLOSIONS

Though the scientific reality of fusion engines prevents them from exploding, the dramatic effect of such an expensive piece of machinery blowing up in a huge ball of fire is so appealing to the majority of *BattleTech* players that this rule was created to satisfy the common desire for a good explosion.

The fusion engines that power 'Mechs and certain vehicles are well protected from damage. Designed to operate under heavy fire, they can withstand direct hits from enemy weapons. Fail-safe devices and the basic physics of magnetic plasma confinement present in all fusion engines prevent them from exploding when damaged; instead, the engine shuts down immediately when catastrophic damage occurs (as described in detail on pages 36-37 of *TechManual*). However, secondary effects may sometimes create massive explosions.

The fusion engine of a 'Mech may explode any time four or more of its slots are destroyed in the same phase of a turn, usually when the center torso location is destroyed (also destroying the equipment contained therein).

When the fusion engine of a 'Mech takes four or more critical hits in the same phase, roll 2D6. On a result of 10 or higher, the engine explodes. In the case of fusion-powered Combat and Support Vehicles and aerospace fighters, the engine explodes on a 2D6 result of 12 after an engine critical hit.

The explosion destroys the unit and all other units in the same hex, and also starts a fire in the hex, regardless of the terrain (see p. 41). Any units in adjacent hexes take damage equal to the engine's rating divided by 10 (rounded to the nearest whole number; round .5 down). Units 2 hexes away take damage equal to the engine's rating divided by 20. Units 3 hexes away take damage equal to the engine's rating divided by 40. Divide this damage into 5-point Damage Value groupings and randomly determine each location; determine the direction of the attack from the direction of the hex where the engine exploded.

Area-Effect Weapon: An engine explosion is treated as an area-effect weapon, and so all rules that apply to such weapons also apply to an engine explosion.

Buildings, Levels (Hills) and Mobile Structures): Use the rules for Buildings, Levels (Hills) and Mobile Structures as they interact with artillery when determining the outcome of an engine explosion's interaction with such terrain features (see p. 152).

Scale: These rules only apply to ground units and when using standard 30-meter ground map hexes. For ground units at an Elevation, treat every 5 full Elevations as 1 hex of distance.

Water: Use the rules for Area Effect Weapons against buildings (see p. 172, *TW*) when resolving the damage from an exploding engine if the target is in a water hex. If the target is not in a water hex and an adjacent hex is a water hex, no damage is applied to completely submerged targets in that adjacent hex.

Woods: Woods hexes provide no protection against damage from engine explosions, even if the Woods Cover (see p. 84) rules are in use.

Ammunition

In Standard Rules play, the destruction of a unit by an ammo explosion has no affect on any other unit in the vicinity. However, some ammo explosions can be truly titanic. For those wishing to have more spectacular results from an ammo explosion, use all the rules above for an engine explosion, with the following modification.

When a unit without CASE in the proper location to stop an ammunition explosion from destroying a unit is destroyed by an ammunition explosion, determine the total amount of damage caused by the detonation (generally equal to the amount of shots remaining times the maximum damage of each shot). Divide this amount by 10 (round down) and apply it as an area-effect attack in the destroyed unit's hex, with all units in adjacent hexes taking half this damage (round down).

Self-Destruct Sequence

A desperate pilot may choose to destroy his own BattleMech rather than let it fall into enemy hands. Other pilots use this tactic as a last-ditch effort to take enemy 'Mechs down with them. Whatever the rationale, the wide radius of a BattleMech explosion means that it will almost certainly kill the pilot, even if he ejects.

In order to initiate a self-destruct sequence, the player must announce to his opponent that one of his units will be self-destructing, but not which one. The player secretly writes down which of his units is self-destructing during the End Phase of a turn. If the pilot wishes to eject, he will do so during the following turn's Movement Phase instead of moving the unit.

In the turn following the turn in which the announcement was made, during the Weapon Attack Phase, the self-destructing unit is revealed to all the players. The unit does not automatically explode, however. In order to correctly override the 'Mech's safety features and initiate destruction, the controlling player must make an unmodified Piloting Skill Roll. If the roll is successful, the unit explodes. If it fails, the unit does not explode, and it can no longer move, fire or make physical attacks. The controlling player may continue to make Piloting Skill Rolls in subsequent Weapon Attack Phases until successful, as long as the pilot remains in the unit. If the pilot has ejected and the player fails the initial Piloting Skill Roll to destroy the 'Mech, the unit will not explode and the enemy has just gained a nice piece of salvage.

If at any time during the self-destruct sequence the engine receives the three critical hits required to destroy the engine, the self-destruct sequence is aborted as the system controlling the sequence is destroyed. However, if an engine in this situation takes four critical hits in the same phase, then it could still explode as noted above.

CALLED SHOTS

A called shot is similar to an aimed shot, though less narrowly targeted. An aimed shot is an attack against a specific hit location and can only be made against an immobile target. An attack "aimed" more generally, representing the pilot's skill at directing his attack against a desired general area, is a called shot. Called shots can be made against active, mobile targets.

Any attack can be a called shot. The player must announce the type of called shot—high, low, right or left—when the attack is declared. All called shots must be made with an additional +3 to-hit modifier. If the attack hits, the hit may be resolved on a different table than the one that would normally be used. If the attack misses, the shot misses the target completely. For a successful called shot aimed high, consult the Shot from Above section of the Special Hit Location Table (see p. 175, *TW*). For one aimed low, consult the Shot from Below section. Units cannot aim low against a target in partial cover, or against a vehicle; vehicles are also not subject to "aim high" attacks.

For called shots aimed right and left, a successful attack strikes the target as though the attack had come from one hexside to the right or left of the hexside through which the attack would normally come, based on the line of sight. Aiming left hits the next hexside clockwise, while aiming right hits the next hexside counterclockwise. For example, if an attack would normally come in from the right side, aiming right would hit the front (one additional hexside to the right), while aiming left would hit the back (one additional hexside to the left). This means aiming left or right makes no difference if the attack is coming in straight at the front side of a 'Mech, because all three front hexsides are considered "front."

Unlike an aimed shot (see p. 110, *TW*), there are no restrictions on weapons (or targeting computers) making a called shot; the more generalized nature of "calling an area" as opposed to trying to hit a specific location means that even "scatter-style" weapons can be used in a called shot.

Advanced 'Mech Hit Location Table: Players may wish to disallow the use of the Advanced 'Mech Hit Location Table with "called right" or "called left" shots, as this can significantly increase the likelihood of rear torso hits.

WEAPON ATTACKS

Unless specifically stated otherwise, the following optional rules apply only to weapon attacks.

Super-Heavy Combat Vehicles: Super-Heavy Combat Vehicles (including VTOLs) are considered Large Support Vehicles for the Unit Heights Table (see p. 99, *TW*).

LINE OF SIGHT AND DEAD ZONES

The standard line-of-sight rules work well under all circumstances except one: when two opposing units are not separated by terrain equal to or higher than both of them or adjacent terrain equal to or higher than one of them, and yet logically there should be no line of sight (LOS) between them. The example below illustrates such a situation.

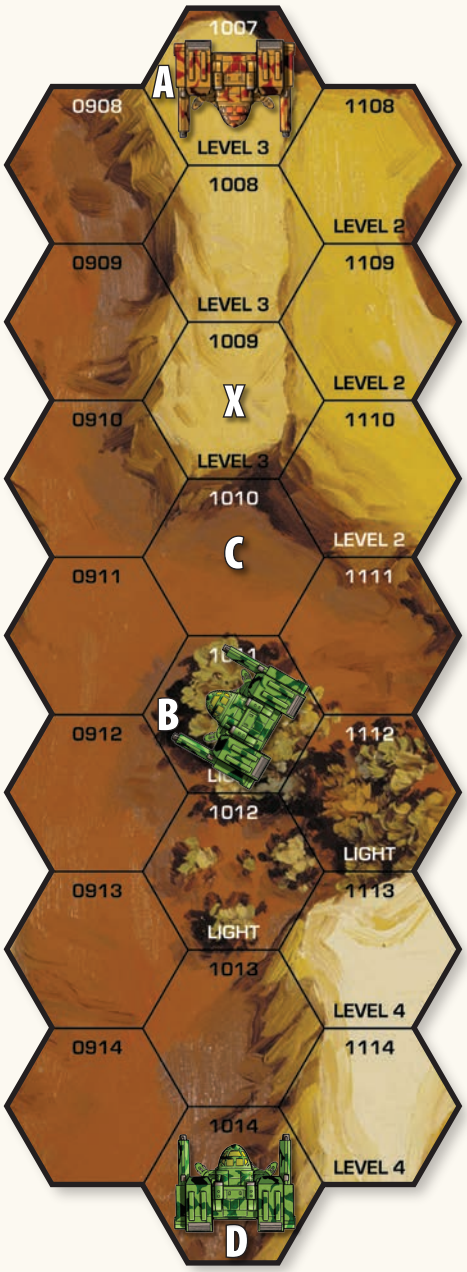
> *In the LOS Dead Zone 1 diagram, the BattleMech in Hex A on the Deep Canyon #2 map is at Level 3. It wants to fire at the 'Mech in Hex B, which is at Level 0. As the cut-away diagram shows, no line of sight should exist between these two units, because of the Level 3 hill in Hex X. However, the standard LOS rules require the 'Mech in Hex B to be adjacent to Hex X in order to be in the hill's "dead zone." As it stands, the 'Mech in Hex A has LOS to the one in Hex B and so can fire on it.*

The Dead Zone rule adds more complexity to calculating LOS between units, but treats dead zones more realistically. This rule is especially important in mountainous terrain, sinkholes and canyons where there is often a large difference between different units' levels.

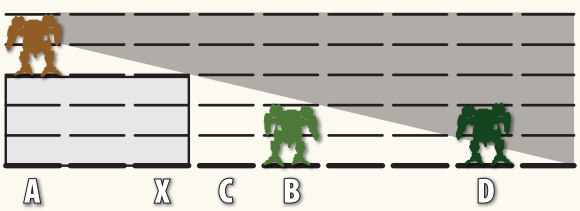
The Dead Zone rule replaces the following standard LOS rule (see p. 100, *TW*), which reads: "Terrain along the LOS between two units is intervening if: The terrain or feature is adjacent to the attacker and equal to or higher than the attacker's level; or the terrain or feature is adjacent to the target and equal to or higher than the target's level." All other standard LOS rules still apply. Because the standard line-of-sight rules work well in most situations, advanced line of sight should only be used when a player thinks there is a legitimate line-of-sight question. Players should not invoke this rule unless absolutely necessary, as it will slow down game play.

Dead Zone Rule

Players must check for dead zones if there is no intervening terrain equal to or higher than both the attacker and the target, but there is still some question as to whether LOS exists. Note which of the two units is at the higher level and which is lower. Then find the highest-level hex between the two units.



● LOS DEAD ZONE DIAGRAM 1 ●



● LOS DEAD ZONE DIAGRAM 2 ●

If there is more than one of equally high levels, use the hex closest to the lower of the two units, designating it "Hex X." The level of Hex X may or may not create a dead zone. To find out, follow the steps shown below.

1. Subtract the level of the lower unit from that of Hex X. This number is "A."

2. Subtract the level of Hex X from that of the higher unit. This number is "B."

3. Subtract B from A and multiply the result by 2. This number is "C."

4. Count the range to Hex X from both units. Subtract the range to the lower unit from the range to the higher. This number will be negative if the higher unit is closer to Hex X than the lower unit. Add this number to C.

If the final result is greater than 0, the lower unit is in the dead zone and LOS is blocked. If the result is 0 or less, then LOS exists between the two units.

Using the previous example, the dead-zone rule works as follows. For the purposes of this rule, BattleMechs are considered to only be 1 level above the terrain on which they are standing (as opposed to the standard 2 levels), so the 'Mech in Hex B is at Level 1. Hex X is at Level 3. 3 – 1 = 2, so "A" is 2. The 'Mech in Hex A is at Level 4; 4 – 3 = 4, so "B" is 1. 2 – 1 = 1 and 1 x 2 = 2, so "C" is 2. The range from Hex X to both units is 2 hexes, and 2 – 2 = 0. The final result is 2 (2 + 0 = 2). As the result is higher than 0, there is no LOS between the two units.

The Dead Zone rule does not change the way partial cover is determined.

Consider the 'Mech in Hex D in the LOS Dead Zone diagram on p. 77. To find out whether it has LOS to the 'Mech in Hex A, subtract its level (Level 1) from 3 (3 – 1 = 2; A = 2). Next, subtract the level of Hex X (Level 3) from that of the higher unit (4 – 3 = 1; B = 1). Subtract B from A (2 – 1 = 1), then multiply by 2 (1 x2 = 2; C = 2). The range from Hex X to the lower unit is 5; the range to the higher is 2 (2 – 5 = -3). Add this to C (2 + -3 = -1). The result is -1, which is less than 1, so LOS exists between the two 'Mechs.



Black Widow Company and Bounty Hunter take the high ground.

Diagramming LOS

Some players might find it easier to diagram LOS between two units rather than using the formula provided for the Dead Zone rule.

To use the Line of Sight Chart found at the back of this rulebook, first determine the level of the attacking unit. The level of an attacking 'Mech is the level of the hex it occupies plus 2, to account for the 'Mech's height. Then plot the firing unit along the Level axis on the left side of the chart. Next, determine the target unit's distance from the attacker as well as its level, and plot it on the chart.

Then plot intervening terrain features between the two units.

Finally, use a straightedge and draw a line from the attacking 'Mech to the target on the chart to determine whether a clear LOS exists. (In the sample chart, the building interrupts the line, and so no LOS exists.)

See the Missed Shot LOS Chart, p. 83, for an example; the attacking unit is marked with an "F", while the target is marked with a "T".

Line of Sight Chart: The Line of Sight Chart at the back of the book is designed for players to photocopy, cut apart and paste together to cover truly large ranges, as needed.

GLANCING/DIRECT BLOWS

Weapons fire in standard rules is almost always a straight-up hit or miss affair. However, not all shots are created equal. Some shots barely hit the target, while others are more perfectly center-lined. The following advanced rules reflect the differences that can exist even between multiple successful hits.

Glancing Blow

Any time a dice roll result for a weapon or physical attack is exactly the number needed for the attack to strike its target, the hit is considered a glancing blow. For example, if you need to roll a 9 or better to hit the target, a result of 9 would be a glancing blow. A result of 10 or greater would be a normal hit.

A glancing blow inflicts half the normal damage against the target (rounded down). In the case of weapons that roll on the Cluster Hits Table, apply a –4 modifier to the dice roll result on the Cluster Hits Table. This modifier never reduces a roll on the table below 2.

A glancing blow is also less likely to cause critical damage. To reflect this, apply a –2 modifier to the die roll result on the Determining Critical Hits Table if a glancing blow yields the possibility of a critical hit; if using the Advanced Determining Critical Hits rule (see p. 83), apply a –4 modifier.

The Glancing Blow rule does not apply to damage that does not require a to-hit roll, such as falling damage. It also does not apply to non-damaging attacks such as TAG. All-or-nothing attacks such as Streak missile launchers cannot have glancing blows. If using the *Linking Weapons* rule (see p. 83), the entire linked group is considered a glancing blow.

Armor Reduction: Any damage reduction due to armor is applied after the damage reduction for the glancing blow. For example, a Clan ER PPC strikes a glancing blow against a unit mounting Ferro-Lamellor armor. The 15 points of potential damage are reduced to 7 for the glancing blow, then the effects of the armor are applied, reducing 2 additional points of damage, leaving 5 points of damage from the attack to be applied to the target.

Conventional Infantry: First determine damage as per *Attacks Against Conventional Infantry*, p. 215, *Total Warfare*. Once determined halve this damage, rounding up to the nearest whole number. This result may end up being the same as the unmodified damage, and reflects the power of even a glancing blow from a Mech scale weapon, being deadly to a relatively unprotected human being.

Direct Blow

Any time a successful weapon or physical attack is made, the player should determine the Margin of Success (see p. 42, *TW*). For every MoS of 3, increase the Damage Value of the attack by 1; for weapons that roll on the Cluster Hits table, for every MoS of 3, apply a +2 modifier to the dice roll result on the Cluster Hits Table. The maximum Damage Value that can occur due to a direct blow is 2 times the standard Damage Value of the weapon. For example, a light machine gun making a direct blow would increase its standard Damage Value of 1 by 1, for a total Damage Value of 2. However, since that is the maximum increase that can occur, even if the MoS of the light machine gun attack was 6 or higher, the damage would remain at 2. However, a MoS of 6 for a heavy machine gun would increase the Damage Value from 3 to 5.

A direct blow is also more likely to inflict a critical hit. For every MoS of 3, apply a +1 modifier to the die roll result when determining critical hits; this applies whether using standard rules or the Advanced Determining Critical Hits rule (see p. 72).

Automatic Hits: If the Modified To-Hit Number is 2 or less for a given attack, the Target Number for the purposes of these rules would be 2. In this instance, the player would still roll the die, even if the strike is automatic, and compare the MoS against a Target Number of 2 to determine if a direct blow occurred.

Conventional Infantry: For every MoS of 3, treat a direct blow weapon attack from a non-infantry unit against conventional infantry as the next row down on the Non-Infantry Weapon Damage Against Infantry Table (see p. 216, *TW*); in the case of burst-fire weapons, apply an additional 1D6. For each row "above" Cluster (Missile), roll 1D6 and add that number of troopers eliminated. For example, an LRM 20 direct blow with a MoS of 6 would first determine its standard damage (20 / 5 = 4) and then would roll 2D6 (1D6 for each 3 MoS "above" Cluster (Missile)) and apply that die roll result to the 4 to determine the total number of eliminated troopers.

Triple-Strength Myomer: For a unit mounting activated TSM, apply the effects of TSM first, then apply the effects from the direct blow.

MISSED SHOTS

In standard-rules *BattleTech*, a shot that misses the target simply vanishes (with the exception of some area-effect weapons, such as bombs). However, reality is more brutal and weapons always deal damage, often to friendly targets if they are too near when a missed shot occurs. Players have two ways to deal with missed shots: a somewhat more simplified rules set, and a rules set that builds on the initial rules and provides a more realistic way to determine missed shots.

Note that in a truly large game, numerous units may be intervening in the LOS between the attacker and target, so the use of this rule could greatly slow down game play. Players therefore may wish to only use this rule in smaller games (though ultimately, of course, it is up to each playing group to decide when and if they implement this rule).

Swarm and I-Swarm: Swarm and I-Swarm (see p. 183, *TO: AUE*) follow their own rules for a missed shot.

Determining Where a Missed Shot Hit

Whenever a weapon attack misses its target, note the die roll result, and then use the following rules to determine what it hit. In general the player will start at the hex closest to the target and then move backwards towards the attacker, using the various rules in this section to determine if a unit and/or terrain is struck in a given hex.

If a unit (friendly or enemy) is in the LOS between the attacker and target, and the unit is also a valid target, the attacking player should refigure the Modified To-Hit Number as though the attack is directed at that unit and compare that number to the original dice roll. Note that this "simplified" rules set does not take into consideration differences in the height of units, or differences in levels. Simply find the next appropriate unit that could have been a target and compare the newly figured Modified To-Hit Number against the original dice roll to determine if the attack struck the intervening unit as though it was the original target.

If more than one such unit is in the LOS between attacker and target, the player should begin with the unit closest to the original target. If more than one legal unit is in a hex (regardless of whether the units in question are friendly or enemy), randomly determine which unit to compare its Modified To-Hit Number against the original die roll first. If the new attack misses, the controlling player determines a new Modified To-Hit Number against the next unit, and so on.

If any woods/jungle hexes are between the attacker and a new target, and the Woods Cover rules (see p. 82) are in use, automatically apply the Woods Cover rule to those hexes if the shot strikes that new target; that is, treat each intervening jungle/woods hex as though the target occupied that hex for damage absorption. If several jungle/woods hexes intervene, each hex will absorb the damage as defined under that rule. This means that if the Damage Value of an attack drops to 0, the controlling player no longer needs to determine a new target for the missed shot. If a unit occupies a jungle/woods hex, apply the damage first to the hex, and then determine whether the attack strikes the target(s) in the hex. Note that such woods/jungle hexes only absorb damage if the target is struck.

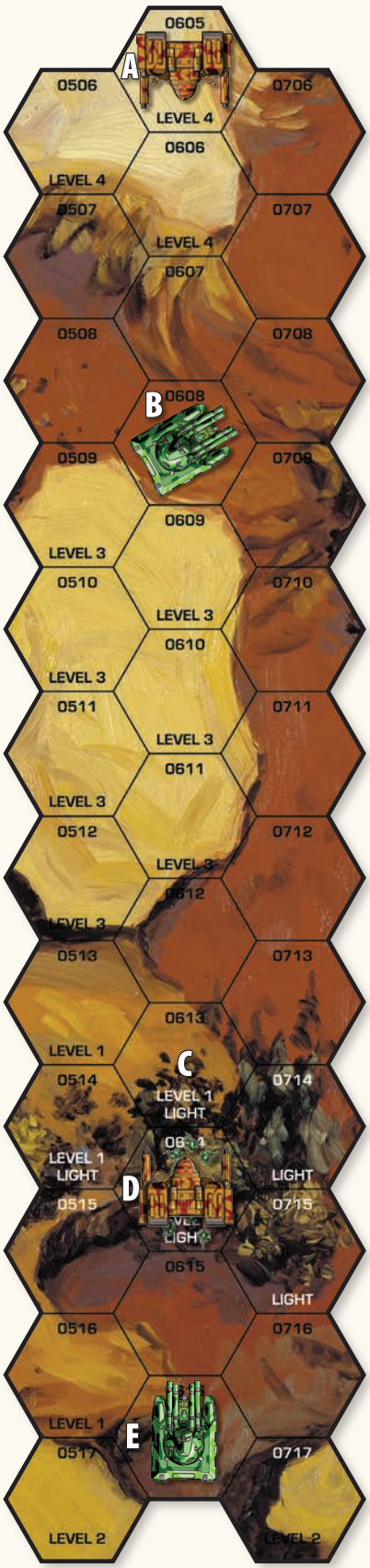
If a level or building hex between the attacker and a target provided partial cover to a 'Mech (or hull-down to a vehicle, or hull down to a 'Mech, if the 'Mech is hull down), the controlling player should roll 2D6. On a result of 8 or higher, the attack strikes the terrain; in the case of weapons that roll on the Cluster Hits Table, the full Damage Value of the weapon is applied (if tracking damage to terrain; see *Terrain Factor Rules*, p. 63).

Note that there may be a mix of terrain types and/or units within the intervening LOS, requiring the players to switch through the rules above to ultimately determine the effect of a missed shot.

If no units and/or terrain are intervening between the attacker or target, or if the attacks against such units and/or terrain missed, or if there is damage left over after strikes against woods/jungle hexes, then the controlling player must move beyond the target to determine where the missed shot hit.

Draw a line between the attacker's hex and the target's hex, out to the edge of the playing area. Using the rules above, the controlling player should determine the ultimate resolution of any weapons that failed to strike the target in the hexes, along that LOS, beyond the target hex.

If any terrain equal to or higher than the target exists beyond the target (such as a hill or a building), the shot automatically strikes that terrain feature, dealing full damage (or whatever damage remains).



• MISSED SHOT DIAGRAM •

The Missed Shot rule automatically uses the Extreme and LOS Range rule (see p. 83). If a weapon does not strike any target and hits the edge of the playing area, any remaining damage is ignored. If a weapon cannot be used at LOS Range, and the weapon does not strike any target (either unit or terrain) and it hits its final extreme range hex, any remaining damage is ignored.

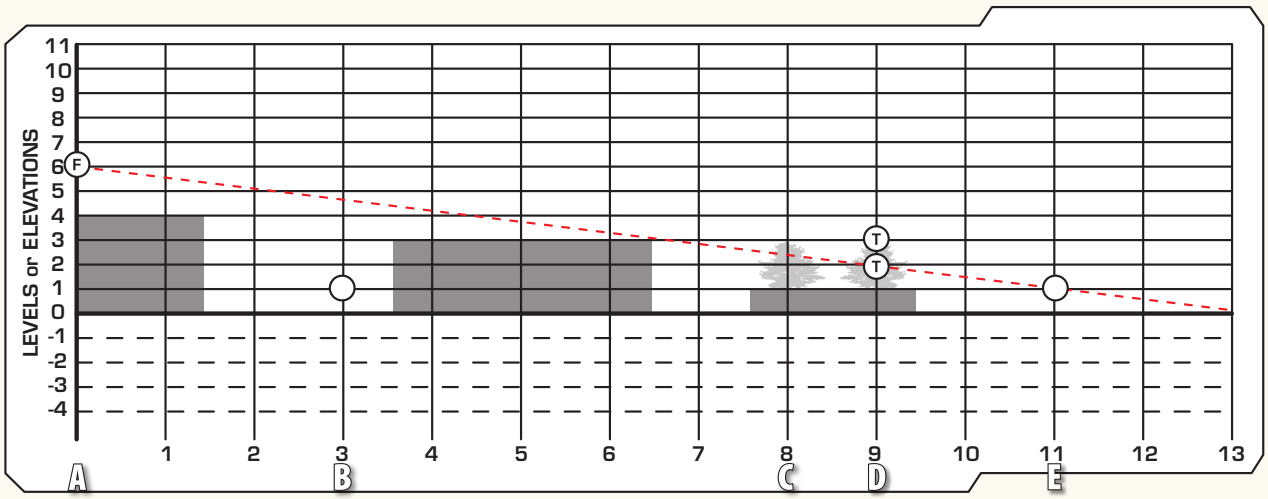
Cluster Hits Weapons: Note that all the rules above also apply to any damage that does not strike the target for weapons that roll on a Cluster Hits Table. For example, a controlling player makes a successful to-hit roll with an LRM 20 on the Cluster Hits Table, but only rolls a 5; 9 missiles struck the target. That leaves 11 missiles that didn't strike the target, so the player would use the rules noted above, rolling on the 11 column of the Cluster Hits Table if a new successful attack occurs.

Aerospace Units: Missed shots from airborne aerospace units against airborne aerospace units are simply ignored. Missed shots from airborne aerospace units against ground targets always strike the target hex, if tracking damage to terrain (see *Terrain Factor Rules*, p. 63) or are ignored; this does not include artillery or bombs, which use their own rules to determine where a missed shot lands.

In the Missed Shot diagram, at left, on the Deep Canyon #1 map, the 'Mech in Hex A is firing a PPC and LRM 20 at the vehicle in Hex E. The PPC completely missed, while the LRM 20 struck the target vehicle, but only 9 missiles hit the target. The controlling player therefore needs to determine where the PPC hit, as well as the other 11 missiles from the LRM 20 that didn't strike the vehicle.

Starting back toward the attacking 'Mech from the target, along the LOS, the first potential targets are in Hex D. An enemy 'Mech and a friendly infantry unit occupy Hex D. As the missed shot doesn't care what is in the way, the controlling player randomly determines which unit the shot will attempt to strike first; he determines the infantry is up first. The controlling player must completely refigure the modified to-hit number as though the attack were originally against the infantry unit and compare that to the original die roll result. If that shot misses, the controlling player then completely refigures the modified to-hit number as though the 'Mech in Hex D were the target. If either of those shots hit, the player automatically subtracts 2 points of damage from the PPC and LRM 11 (the remaining missiles) for the intervening light woods in Hex C and then 2 more points of damage from the light woods in Hex D. This leaves the PPC with a Damage Value of 6 to inflict on the target, while the LRM 11 would be an LRM 7; the controlling player rolls on the 7 column of the Cluster Hits Table to determine how many missiles struck the target.

If neither target in Hex D is struck (or if some of the missiles from the "LRM 7" didn't strike the target after a roll on the Cluster Hits Table), the controlling player would move all the way back to the target in Hex B and completely refigure the modified to-hit number and once again compare it to the original die roll result. If that target missed, the player would then move beyond Hex E to any targets, along the LOS, out to the edge of the playing area. If there are no additional targets and/or terrain to hit before reaching the edge of the playing area (or the targets were missed), then the weapons deal no damage.



● MISSED SHOT LOS CHART ●

Level Difference

In the more simplified rules above, differences in a unit's height and/or differences in level are ignored. However, the "true" LOS between the attacker and the target means that often units in the LOS would not be intervening and so there would be no way for a missed shot to strike those targets. While these rules are more complicated, they provide the most accurate way of determining what a missed shot strikes. While "realistic and accurate," the use of these rules will significantly increase the length of a game, so players may decide to restrict them to situations where the radical differences in terrain and units' heights make it hard to accurately eyeball events on the battlefield. For example, though fighting in a city is dealt with exactly like fighting in terrain, if combat is taking place on a truly large "city" playing area, with missed shots fired from units at radically different heights due to their location on top of tall buildings, these rules may be the most effective for determining where a missed shot hit, especially if players are using the expanded Construction Factor rules (see p. 119) where damage is tracked per level within a building hex.

Per *Diagramming LOS* (see p. 78), the controlling player should use the Line of Sight Chart (provided at the back of this rulebook) to graph out the various terrain features and units between the attacker and the original target along the LOS, and then draw the "true" LOS between the attacker and target using a straight edge (see the Missed Shot LOS Chart and example). Once the graph is completed, the players then use the rules under *Determining Where a Missed Shot Hit* as normal, but only those units and terrain features that fall within the LOS graphed on the chart are taken into consideration.

If there is damage remaining from the shot and it either goes up in the air above the playing area (for example, in the Missed Shot Diagram, if the vehicle in Hex E fired at the 'Mech in Hex A and the shot did not strike any terrain or units), or it strikes the underlying terrain of a hex (in the Line of Sight Chart, it strikes Hex 13), the damage is ignored; if players are using the *Terrain Factor Rules* (see p. 63), the damage from the attack that struck Hex 13 would be tracked, however.

Using the Missed Shot Diagram (see p. 80) as an example, graphing that situation would result in a graph as shown on the Missed Shot LOS Chart, above. This chart clearly shows that both the enemy 'Mech and friendly infantry in Hex D are in the LOS, and so as described in the Missed Shot Diagram example, the player would need to determine if the shot struck either target.

Unlike the Determining Where a Missed Shot Hit rules, where woods/jungle hexes only absorb damage if a "new target" is struck, if those rules are in use, any woods/jungle hexes intervening in the LOS as shown on the graph absorb damage; in this case, the woods in Hex C and D absorb damage from the missed shots, regardless of whether the targets in Hex D are hit.

If the missed shots do not hit either target in Hex D, the player would not move to the vehicle in Hex B, as it is clearly not intervening in the "true" LOS as shown on the graph. Instead, if the shots missed both targets, it would strike the ground in Hex 13 on the graph (off the diagram) and the damage would be ignored; or, if the players are tracking terrain damage under the Terrain Factor Rules (see p. 63), 13 points of damage [21 (PPC + 11 missiles) – 4 (2 points from each weapon for the light woods Hex C) – 4 (2 points from each weapon for the light woods Hex D) = 13] would be applied to Hex 13 on the graph.

DAMAGE

The following rules expand on the possibilities for damage inflicted by weapons, offering greater variety at the expense of simplicity.

Altered Energy Weapon Damage

Due to the constraints of focusing, energy weapons can lose effectiveness over their range.

The Altered Energy Weapon Damage rule decreases or increases Pulse and Direct-Fire Energy weapons damage depending on the distance between the attacker and the target. Damage inflicted at long range decreases by 1 point. For attacks against very close targets (which are a bit more effective), increase the damage done by 1 point for targets in the same hex as or in a hex immediately adjacent to the attacker.

Woods Cover

Woods can provide protection from an attack in much the same way as a building, in that shots will sometimes strike trees and overgrowth instead of the intended target.

When using the Woods Cover rule, woods in the target unit's hex do not provide the usual to-hit modifier for terrain. Instead, the woods hex absorbs damage from any type of weapon attack. A light woods/jungle hex absorbs 2 points of damage, a heavy woods/jungle hex absorbs 4 points of damage, while an ultra woods/jungle hex absorbs 6 points of damage. The woods will absorb damage from each attack into its hex, in a manner similar to the way buildings absorb damage (see *Attacking Units Inside Buildings,* p.171, *TW*).

Remember to track damage applied to such a hex in this fashion for the purposes of clearing (see *Clearing Woods*, p. 110, *TW*). Woods cover only applies to woods occupied by the target hex; intervening woods simply inflict the standard to-hit modifiers rather than absorbing damage.

Cluster Hit Penalties

This optional rule reflects the fact that for some weapons that roll on the Cluster Hit Table (missiles, LB-X and so on), the damage spread increases at a certain range, reducing the number of hits that will strike the target at longer ranges. This rule does not apply to Streak or LRM missile launchers, or to standard/extended-range missiles from an ATM launcher.

For any HAG, LB-X, SRM, MRM or HE ATM, against targets at long range, apply a –1 modifier to the result of the die roll on the Cluster Hits Table. Add a +1 modifier to the die roll against targets in the same hex as or hexes adjacent to the attacker. In all instances, this is in addition to any other modifiers that may affect this die roll result. These modifiers never reduce a roll on the table below 2, or above 12.

ADVANCED FIRING

The following rules explain special firing stances and modes.

Attacks Against Large Infantry Formations

When more than a single infantry unit is located in a hex, this increases the likelihood of an attack hitting a unit…just not exactly the unit the attacker was attempting to hit. Whenever more than one conventional infantry platoon occupies the same hex, use the following rule.

For each additional conventional infantry platoon that occupies the hex, apply a –1 to-hit modifier. Then randomly determine the actual target hit. For example, a hex is occupied by two friendly and two enemy infantry platoons. A –3 to-hit modifier would be applied to any weapon attacks against any of the four units occupying the hex. However, if the to-hit roll is successful, the attacking player would randomly determine which of the four infantry units is actually hit.

Note that these modifiers only apply if a platoon has at least 21 active troopers. If the platoon has less than 21 active troopers, then that additional modifier does not apply. However, the platoon can still be the accidental target of an attack. For example, a battle armor unit, a platoon with 18 active troopers, a platoon with 21 active troopers and a platoon with 28 active troopers occupy the same hex. Regardless of the unit targeted, only a –1 to-hit modifier applies; there are two platoons with at least 21 troopers active, which activates this rule, but the platoon with only 18 active troopers and the battle armor squad provide no additional modifiers. However, because the rule is activated, if a successful attack is made, the attacking player would randomly determine which of the four infantry units is struck.

Bracing

A 'Mech may gain additional accuracy when firing weapons by bracing itself against a hill or building, much like a twelve-meter-tall sniper. A 'Mech may also combine bracing with careful aim (below) or bracing with careful aim and opportunity fire (see p. 84) for deadly accurate shots.

The 'Mech may only brace a single arm against the hex directly in front of it, which must be 1 level higher than the level of the underlying terrain of the hex occupied by the 'Mech. The bracing action is executed during the Movement Phase of a turn and costs 1 MP; a 'Mech expending Jumping MP cannot brace in that turn (i.e. the 'Mech would need to wait until the following turn and only expend Walking/Running MP to brace).

While bracing, the 'Mech is considered an immobile target; it cannot move or make physical attacks. A bracing 'Mech may not fire leg- or front-torso-mounted weapons or weapons in the un-braced arm. The 'Mech may not torso twist, and weapons in the braced arm may only fire at targets in the front firing arc. The 'Mech may only fire weapons mounted in the braced arm.

Apply a –2 to-hit modifier to all attacks made with the weapons in the braced arm.

A bracing 'Mech is considered to be taking cover behind the hex against which it is bracing (see *Taking Cover*, p. 86). A four-legged 'Mech cannot brace because it has no arms. A bracing 'Mech may stop bracing during any subsequent Movement Phase simply by moving. Ending a bracing action costs no MP.

Actuator Damage: Modifiers from actuator damage in a braced arm are ignored.

ProtoMechs: ProtoMechs may brace their main guns, but do not require any terrain to do so. Instead, the player simply nominates a ProtoMech as "bracing" at the end of its movement. A ProtoMech that is bracing is considered an immobile target during any turn it is bracing. Apply a –2 to-hit modifier to any attack made by the main gun; the ProtoMech can only make attacks with the main gun in a turn it is bracing.

Careful Aim

Instead of firing its weapons, a unit can spend the Weapon Attack Phase of a turn taking careful aim on a single target within its line of sight. While taking careful aim, the unit may make neither weapon nor physical attacks, nor may it expend MP.

For every consecutive Weapon Attack Phase the unit spends taking careful aim, apply a –1 to-hit modifier to any weapon attacks against the chosen target (to a maximum of –3). Once the unit attacks, it uses up this bonus. If the aiming unit moves, switches targets or fails a Piloting Skill Roll, or if the target moves out of LOS before any weapon attacks are made, careful aim is interrupted and any accumulated bonus is lost.

Pulse/Rapid-Fire/LB-X/HAG: Pulse, Rapid-Fire (when firing more than one shot), LB-X (when firing cluster rounds) and Hyper-Assault Gauss rifle weapons cannot make use of careful aim.

Targeting Computers: Targeting computers apply their standard modifier when used in conjunction with careful aim.

Extreme Range

Ranged weapons can fire at targets beyond long range, but such shots are difficult.

Use the following rules for Extreme Range.

- Extreme Range starts 1 hex beyond long range and extends to a range equal to the weapon's maximum medium range times 2. For example, extreme range for a medium laser extends from 10 to 12 hexes; the medium laser's long range is 9 (9 + 1 = 10), and its maximum medium range is 6 (6 x 2 = 12). For weapons with uneven range brackets (such as MRMs, Snub-Nose PPC, and so on), multiply the Long Range by 1.5 (round down). If a weapon does not have a Long Range, it cannot have an Extreme Range.
- Apply a +6 to-hit modifier to any weapon attacks against targets at extreme range.
- For any weapon that rolls on the Cluster Hits Table, apply a –2 modifier to the die roll result when rolling on the Cluster Hits Table (this is in addition to any other modifiers that may affect this die roll result). These modifiers never reduce a roll on the table below 2.
- Divide the Damage Value of any Pulse Weapon by 2, rounding down.
- Subtract 1 point of damage from any Direct-Fire Energy weapon or any weapon with the word "Gauss" in its name (except HAGs).
- Multiply the Damage Value of any Direct-Fire Ballistic (but not Gauss) weapons by .75 (rounding down).
- For Variable Damage weapons, use the long range Damage Value when determining the Extreme Range Damage Value.
- In the case of special rules that use range as a determining factor and do not specifically mention extreme range, treat extreme-range attacks in the same way as long-range attacks; i.e. any long range modifiers are also applied to extreme range. For example, the null-signature system (see p. 148, *TO: AUE*) increases the modifier for long-range attacks by +2 to a total of +6. As such, for extreme range attacks, a +2 modifier would be added to the standard +6 extreme range modifier, for a total modifier of +8. Finally, as it is impossible to consider every case in the space available, the players' judgment must prevail on occasion.
- Any weapon attack from a weapon at Extreme Range using a C^3 System adds 1 range bracket beyond the closest friendly unit in the C^3 system. For example, if a weapon is firing at Extreme Range and the closest friendly unit is at Short Range, the firing unit would determine the final Modified To-Hit Number as though the closest friendly unit was at Medium Range.

LOS Range

For those playing truly large games across dozens of maps, players can institute LOS Range. Note that for added realism, players can use the LOS Range rule in conjunction with the Visual Range Table found in the Double Blind rules (see p. 189), to provide a "hard number" of hexes that a player can visually see under a variety of Planetary Conditions: if you can see it, you can try to make an attack.

Use the following rules for LOS range.

- LOS Range starts 1 hex beyond extreme range and extends to the limits of the entire playing area, regardless of how large.
- Apply a +8 to-hit modifier for any weapon attacks against targets made at LOS range.
- Any Missile or Direct-Fire Ballistic weapon with a Long range of less than 13 hexes cannot make use of LOS range.
- Any Pulse or Direct-Fire Energy weapon with a Long range of less than 7 hexes cannot make use of LOS Range.
- For any weapon that rolls on the Cluster Hits Table, apply a –3 modifier to the die roll result when rolling on the Cluster Hits Table (this is in addition to any other modifiers that may affect this die roll result). These modifiers never reduce a roll on the table below 2.
- Divide the Damage Value of any Pulse Weapon by 3, rounding down.
- Divide the Damage Value of any Direct-Fire Ballistic (but not Gauss) weapons by 2, rounding down.
- Multiply the Damage Value of any Direct-Fire Energy weapon, or any weapon with the word "Gauss" in its name (except HAGs), by .75 (rounding down).
- For Variable Damage weapons, use the long range Damage Value when determining the LOS Range Damage Value.
- As with extreme range, treat LOS Range attacks as long range attacks for any situations where range is a determining factor; i.e. any long range modifiers are applied to LOS Range. In the null-signature system example above, an additional +2 would be added, making the LOS Range modifier +10.
- Note that any C^3 System is incompatible with LOS Range. If a weapon is firing at LOS Range, it cannot make use of a C^3 network.

Firing When Down

Under standard rules, a prone 'Mech may only fire if neither of its arms has been destroyed. Advanced rules allow a prone 'Mech with one arm destroyed to prop itself up on its intact arm and fire any non-limb mounted weapons. Apply an additional +1 modifier (beyond the standard prone modifier) to all shots made while prone to reflect the damaged 'Mech's reduced stability. Any actuator damage modifiers are also added.

Linking Weapons

Before the game begins, and also during the End Phase of any turn, a player may designate certain weapons to be linked on his units (this can be any non-infantry unit). Any or all weapons on a single unit can be linked, but they must be able to fire into the same firing arcs. A unit may also have more than one linked group of weapons. For example, a ALB-3U *Albatross* may link the large pulse laser and two medium lasers in its right arm into "link 1", the SRM 6, LRM 15 and ER Large Laser in the torsos into a "link 2" and finally, since only the LB 10-X AC is the only weapon mounted in the left arm, it is in its own "link 3." Additionally, provided the rules above are adhered to, a weapon can be a part of multiple links. Linked weapons must be clearly indicated on a unit's record sheet.

Linked weapons must always be fired at the same target, though all linked weapons in a given group need not fire every time (for example if a target is out of range of some weapons in a link, those shorter-ranged weapons need not be fired at the target, but they cannot be fired at any other target). The controlling player makes only one to-hit roll for the entire group of linked weapons. The to-hit number for the group is determined according to the worst range and other modifiers in the group. For example if a large pulse laser and a medium laser were in a

link together and the target was in range of the medium laser, then the to-hit modifier would be determined based upon the medium laser (i.e. its shorter range, no pulse modifier would be applied and so on). If the roll fails, all the linked weapons miss. If it succeeds, all the linked weapons hit. Hit location is determined normally for each individual weapon in the linked group.

Opportunity Fire

Instead of attacking during the Weapon Attack Phase of a turn, a unit may elect to watch for enemy units to come closer or into line of sight and then launch an attack immediately. Such attacks are called opportunity fire. Opportunity fire can be combined with the *Hidden Units* rules (p. 259, *TW*). Players should note that opportunity fire can make the game much more complicated because it allows attacks to be made outside the normal sequence of play. Players should carefully consider the impact of this optional rule before incorporating it into their game.

During any Weapon Attack Phase, in place of making a weapon attack, a controlling player may announce the unit is in "Over-watch" mode. If the unit is also a Hidden Unit, the player must write "Over-watch" on the same piece of paper that is used to record the unit's hex number and exact hexside facing. From that point on, the unit's player watches for a chance to strike, and the unit may not move or make any attacks until the controlling player announces that he is taking opportunity fire.

At any time during the Movement Phase of any subsequent turn, a player controlling any unit previously said to be in Over-watch mode can announce opportunity fire. A player can even announce opportunity fire in the middle of a target's movement, allowing him to attack a unit dashing from one area of cover to another. Opportunity fire may only be used against targets in the front firing arc, and the attacking unit cannot torso twist or rotate its turret.

Opportunity fire is resolved immediately in the same Movement Phase. If two or more units wish to use opportunity fire at the same time, resolve the attacks in the order in which they were announced. If the players cannot agree on which attack was announced first, roll a die to determine which player starts. On a result of 1–3, Player A goes first; on a result of 4–6, Player B goes first.

Opportunity fire works like other types of attack, except that all such attacks include an additional +2 to-hit modifier to reflect the speed at which the shot must be made. The target movement modifier is based on the movement of the target up to the point at which it is attacked. Hidden units using opportunity fire do not get the benefits of the *Pointblank Shots From Hidden Units* rules (p. 260, *TW*). Once a unit announces opportunity fire, it may attack with any and all of its weapons, but must make all attacks immediately; any damage, and Piloting Skill Rolls required due to damage, are resolved immediately. The unit using opportunity fire may not move or make any weapon attacks for the remainder of the turn, though it may make physical attacks. A unit in over-watch that makes any attacks using opportunity fire cannot be declared to be in "Over-watch" mode again until the following turn's Weapon Attack Phase.

A unit may also make physical attacks as opportunity fire. The controlling player must choose one type of attack or the other, and in either case the unit ceases watching after the attack is made.

Damage from opportunity fire takes effect immediately. If the attack forces the target's player to make a Piloting Skill Roll, he must do so immediately following the attack. Once the attack is over, the target finishes its movement (if possible) and the Movement Phase continues normally; if the 'Mech fell due to a failed Piloting Skill Roll due to damage, provided it still had MPs available, it could attempt to stand and continue moving.

Instead of announcing opportunity fire, a watching unit may move during the Movement Phase (unless its controlling player declares that it is still watching). A 'Mech that moves is no longer in Over-watch mode for opportunity fire.

Jumping 'Mechs: A 'Mech that is jumping that is the target of opportunity fire that fails a Piloting Skill Roll caused by that fire falls into the hex it occupied when the attack was made. Resolve any falling damage, displacement and so on that might occur due to such an un-intended fall. The jumping 'Mech's movement is over.

Opportunity Fire: Firing on the Move

In standard rules, all units move and then all units fire. However, the ability to snap off a quick shot as a unit moves from cover to cover can often be a valid and crucial tactic. As with the Opportunity Fire rules (above), the ability to interrupt movement with weapon attacks can significantly increase not only the complexity, but the length of a game, so all players should firmly review this rule before deciding to add it to a game.

During the Movement Phase, a controlling player can announce at any time (either before MP are spent, during the expenditure of MP, or after all MP have been spent) that the unit being moved is making a weapon attack. Only 1 weapon can be fired using this rule. The weapon must fire into its standard firing arc. No torso or turret twisting is allowed, so a front torso-mounted weapon could only fire into the front arc, while a right arm-mounted weapon could fire into the front arc and right-side arc.

Apply a +3 modifier (in addition to all other standard modifiers) to reflect the nature of the rapidly taken shot. If the target has already moved in the current Movement Phase, then apply the standard target movement modifier; if the target has not yet moved, then no target movement modifier is applied.

This means that a unit expending Jumping MP (infantry, a jumping 'Mech, and so on) can make an attack while jumping. In this case, both modifiers would apply: the +3 for jumping and the +3 for the Firing on the Move, as well as any other applicable modifiers.

Any damage inflicted against the target is resolved immediately, with any required Piloting Skill Rolls also made immediately.

Infantry: Infantry apply a +1 to-hit modifier unless jumping; then a +3 to-hit modifier applies. This is in addition to the +3 Firing on the Move modifier.

VTOL Vehicle: If a VTOL Vehicle does not enter a new hex at any point in a Movement Phase, then its standard attacker movement modifier is not applied when making a Firing on the Move attack in that Movement Phase; in other words, the unit is only moving vertically within the hex (any weapon attacks against such a unit would only apply a +1 modifier for an airborne unit and would not have any additional target movement modifiers).

Linking Weapons: If using the Linking Weapons rule (see p. 83), a series of linked weapons can be fired in this fashion. However, all linked weapons must be in the same location (note this restriction is more stringent than the standard linking restriction of "the same firing arc").

Physical Attacks: While this type of attack can be made in the same turn that an attacking unit is making a charging (ram) or death-from-above attack, apply a +2 to-hit modifier to the physical attack in question in order to reflect the difficulty of trying to fire on the run while making such a difficult physical attack.

"Popping Up": Any non-'Mech unit expending Jumping MP can stay in its hex and simply move vertically up and down to make use of this rule; on the other hand, a 'Mech must enter a new hex for each Jumping MP it expends and so cannot simply "pop up" in the same hex using Jumping MP.

Expanded Reversing (Flipping) Arms

In standard rules, a 'Mech cannot torso twist and reverse its arms. However, this can occur under advanced rules. The player must announce whether a 'Mech is torso twisting or reversing its arm first. Then the controlling player makes a standard Piloting Skill Roll, applying all standard modifiers. If it is successful, then the secondary move can be made. If it fails, it does not result in a fall. Instead, the second move (whether a torso twist or reversing arms) simply cannot be made.

Suppressing Fire

In place of a standard attack, a unit can use suppressing fire in an attempt to pin an infantry unit in place. The use of this rule requires the use of the *Morale* rules as well (see p. 179).

Before making the attack the controlling player must announce that in place of a weapon attack, a suppressing fire attack is being made. The attack is made against the hex where the infantry is located (whether in woods, in a building and so on); a unit may not target the hex it occupies. If the attack is successful (if using the Fumble rules, a result of 2 is a miss and the suppressing fire doesn't force a roll; see p. 73), no damage is directly applied against any infantry units occupying that hex. However, if players are tracking damage to hexes—a building hex, the terrain (see *Terrain Factor Rules*, p. 63) etc.—the attack deals to the terrain half the damage a weapon attack of that type normally would, rounded down (and then modified further by the terrain, if applicable), meaning infantry in the hex can in turn be indirectly damaged in this manner. Instead, any infantry units (friendly or enemy) in that hex must make a Morale Check at the end of the Weapon Attack Phase, applying the modifiers from the Suppressing Fire Table, as well as all appropriate modifiers from the Morale Tables (see p. 180). If the unit fails the Morale Check, it is not broken; none of the standard effects for a failed Morale Check apply. Instead, any infantry units in the hex cannot expend MP in the subsequent turn's Movement Phase, and apply a +1 to-hit modifier to all weapon attacks by battle armor and a +2 to-hit modifier to all weapon attacks by conventional infantry in that turn's Weapon Attack Phase as well.

SUPPRESSING FIRE TABLE

Weapon Type	Modifier
Direct Fire (Ballistic or Energy), Cluster (Ballistic), Pulse	+0
Cluster (Missile)	+1
Burst-Fire Weapon: 1D6 or 2D6	+2
Burst-Fire Weapon: 3D6 or 4D6+	+3
Area-Effect	+4
Additional Weapons Beyond First	+1

Regardless of how many suppressing-fire weapon attacks are directed at a hex in a turn, each infantry unit in a hex can never make more than a single Morale Check against suppressing fire in a turn. The highest modifier as shown on the Suppressing Fire Table is applied, with each additional weapon that would normally apply a modifier higher than 0 applying a +1. For example, a flamer, heavy machine gun, SRM 6, PPC and medium pulse laser are announced as engaging in suppressing fire against a target hex. The highest-modifier weapon on the Suppressing Fire Table is the flamer at +3. Neither the PPC (Direct Fire Energy) nor the medium pulse laser (Pulse) provide a modifier above 0. Therefore, though they both would cause a Morale Check for suppressing fire on their own, they do not add an additional modifier in this case. The SRM 6 (Cluster Missile) and the heavy machine gun (additional weapon beyond first), however, both apply a +1 modifier, for a total of +6, which will be added to any applicable modifier from the Morale Check Table.

Airborne Infantry: Suppressing fire against airborne infantry (for example, infantry expending VTOL MP) cannot be made.

PARTIAL COVER

The following rules expand on partial cover. Like other advanced rules, they increase realism at the expense of simplicity.

Expanded Partial Cover

Expanded partial cover allows a unit to have 1/4 cover, 3/4 cover and vertical cover in addition to the horizontal partial cover permitted under standard rules.

If the line of sight for an attack passes directly through the line between two hexes, the target normally chooses the attack direction. Under the expanded partial cover rules, the attack enters the target hex through the corner, and levels in either hex may provide partial cover to the target.

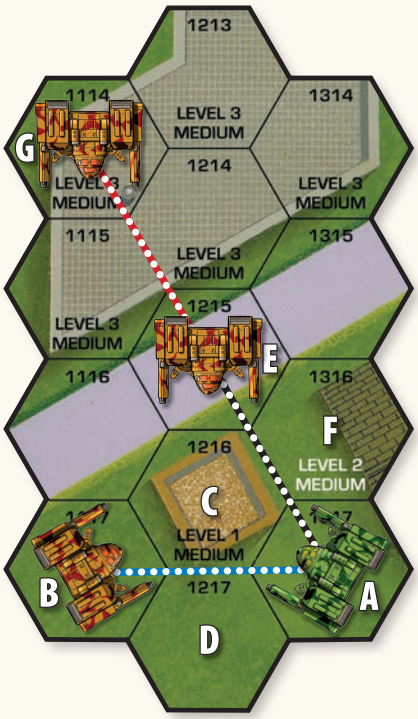
If both hexes adjacent to the line of sight and the target are one level higher than the level of the underlying hex the target occupies, the terrain provides standard partial cover.

If one hex's level is equal to the level of the underlying hex the target occupies and one hex is one level higher than the level of the underlying hex the target occupies, the target has 1/4 cover. An attack against such a target has no partial-cover modifier. If the hit location roll result indicates a leg hit on the covered side, the shot hits the cover rather than the 'Mech.

If one hex's level is equal to the level of the underlying hex the target occupies and one hex is equal to the level of the target, the target is in vertical cover. The partial-cover modifier is the standard +1, and any hit locations rolled against the covered side (arm, leg, or torso, but not center torso or head) strike the cover.

If one hex is one level higher than the level of the underlying hex the target occupies and one hex is equal to the level of the target, the target has 3/4 cover. The partial-cover modifier is the standard +1 and any hits on the legs or the covered side strike the cover.

If the attacker is at a higher level than the target,1/4 and horizontal cover do not apply unless the target is actually taking cover (see *Taking Cover*, p. 86). A target can use vertical cover as long as the attacker is not higher than the terrain that provides it. Three-quarter cover is considered vertical cover if the attacker is higher than the target; if the attacker is higher than the hex providing 3/4 cover, such cover does not apply.



• EXPANDED PARTIAL COVER DIAGRAM •

In the Expanded Partial Cover Diagram, above, the 'Mech in Hex A on the City (Skyscraper) map is under attack by three other 'Mechs. The 'Mech in Hex B is attacking against 1/4 cover, as the building in Hex C is Level 1 and Hex D is Level 0. Any shots by the Hex B 'Mech that result in a right-leg hit location miss the target 'Mech and strike the covering building instead.

The 'Mech in Hex E is attacking against 3/4 cover, because the building in Hex F is equal in height to the 'Mech in Hex A and the building in Hex C provides partial cover to the target 'Mech. Hits on the right leg, arm or torso will hit the building in Hex F, while hits on the left leg will hit the building in Hex C.

The 'Mech in Hex G is on a Level 3 building, making it Level 5. Though it is higher than the building in Hex F, the target is equal in height and adjacent to the building in Hex F and so the 'Mech in Hex G must still attack against vertical cover on the target's right side. Such cover does not protect the target on the bottom left side, however, as the Hex G 'Mech is high enough to shoot over the Level 1 building in Hex C.

Taking Cover

A 'Mech can move to the edge of the hex it is occupying to actively "take cover," gaining partial cover through a single chosen hexside regardless of the attacker's level. Naturally, the hex behind which the target takes cover must be half the level of the 'Mech—that is, one level higher than the underlying terrain in the hex in which the 'Mech is standing. The hexside must be chosen at the beginning of the Weapon Attack Phase, and a unit taking cover may not torso twist.

Reversing Arm: A 'Mech that is taking cover can reverse its arms.

PHYSICAL COMBAT

The following optional rules relate to physical combat.

WEIGHT CLASS PHYSICAL ATTACK MODIFIERS

In standard rules, all units are considered equal when it comes to making physical attacks. However, despite the increased gyro size of many larger units, it is easier to control a lighter-weight 'Mech than a heavier one when it comes to the extra agility required to make physical attacks.

Whenever a unit makes any type of physical attack, consult the Weight Class Physical Attack Modifiers Table (below) and apply the appropriate modifier based on the weight of the unit; this is in addition to all other standard modifiers. Note that these modifiers ONLY apply to the physical attack itself. Any Piloting Skill Rolls required due to the success or failure of a physical attack do not apply these additional modifiers (see p. 21).

WEIGHT CLASS PHYSICAL ATTACK MODIFIERS TABLE

Weight Class	Modifier
Light (Ultra-Light)	–2
Medium	–1
Heavy/Assault	+0

NEW PHYSICAL ATTACK WEAPONS

The *Advanced Weapons and Equipment* section contains numerous experimental weapons that can be used in physical weapon attacks. The complete rules for their use are found under *BattleMech Melee Weapons* p. 100, *TO: AUE*. The Physical Weapon Attacks Addendum Table (see p. 87) provides a cheat sheet for those weapons, presented in the same format as the standard-rules physical attack weapons (see Physical Weapon Attacks Table, p. 146, *TW*).

NEW ATTACK TYPES

The following rules describe some new types of physical attacks. Unless otherwise noted, standard rules for physical attacks apply (see p. 144, *TW*).

Blocking a Physical Attack

Not really a new type of physical attack, this rule allows a player to potentially lessen the amount of damage from a physical attack, as well as deciding where the attack will land.

The following rule only applies to incoming punch, club, physical weapon and kick attacks. A player cannot use this rule to block any other type of physical attack.

Whenever a punch, club or physical weapon attack is announced against a target 'Mech, the controlling player of the target 'Mech can attempt to block with the right arm or the left arm that has not already been declared as making an attack; a block with both arms cannot be made against the same attack. However, a player can block two different attacks, one arm to each attack, provided all the appropriate criteria under these rules are met. The player can also block with one arm and make a standard attack with the other arm. In both situations the player must nominate one

PHYSICAL WEAPON ATTACKS ADDENDUM TABLE

Weapon Type	To-Hit Modifier	Damage Value	To-Hit Location Table	Firing Arc**	Affected by TSM	To-Hit/Damage Value Affected by Actuator Damage
Chain Whip	–2	3	Standard	Arm	No	Yes/No
Claws	+1	1/per 7 tons‡‡	Punch	Arm	Yes	Yes/Yes
Flail	0	9	Standard	Arm	No	Yes/No
Lance	+1	1/per 5 tons††	Standard	Arm	Yes	Yes/Yes
Mace	+1	1/per 4 tons***	Standard*	Arm	Yes	Yes/Yes
Shields	†	†	Standard	Arm	No	Yes/No
Vibroblade						
Deactivated	–2	1/per 10 tons + 1‡	Standard*	Arm	Yes	Yes/Yes
Activated	–2	§	Standard*	Arm	No	Yes/No

*Roll normally on the 'Mech Hit Location Table. Alternatively, when the controlling player announces the physical weapon attack, he may also announce that he will use the Punch or Kick Hit Location Table to resolve damage if the attack succeeds, in which case apply a +4 modifier in addition to all the standard modifiers, including the standard to-hit modifier for the weapon (this modifier does not apply when attacking on the Punch/Kick Location Table due to attacks from different levels; see p. 150, *TW*).

**The target of the physical weapon attack can be in the 'Mech's forward arc or in the side arc corresponding to the arm in which the equipment is mounted.

***A successful attack does 1 point of damage for every 4 tons that the attacking 'Mech weighs (round up).

†See *Shield*, p. 102, *TO: AUE*.

††A successful attack does 1 point of damage for every 5 tons that the attacking 'Mech weighs and may damage the internal structure of the target.

‡A successful attack does 1 point of damage for every 10 tons that the attacking 'Mech weighs (round up), + 1.

‡‡A successful attack does 1 point of damage for every 7 tons that the attacking 'Mech weighs (round up).

§See *Vibroblade*, p. 104, *TO: AUE*.

arm as the "primary" arm, adding an additional +1 modifier to the "secondary" arm, regardless of what actions are taken. For example the player may nominate a left arm that is blocking an attack as the "primary arm" and then launch a punch attack with the right arm as the "secondary arm," applying a +1 to-hit modifier, in addition to all other modifiers. A unit cannot block a punch, club or physical weapon attack and make any other type of physical attack except for a punch as noted above.

If weapon attacks by weapons in a arm were made in the same turn, that arm cannot be used for blocking; the arm also cannot be used to launch a physical attack in the same turn it is used to block. Finally, the physical attack must originate in the arm's arc used for the block; for example, an attack on the left side of a 'Mech could not be blocked by the right arm.

Once a successful punch, club or physical weapon attack is made, the controlling player of the blocking unit makes a Piloting Skill Roll. All standard modifiers apply (including damage to actuators in the blocking arm, as well as other damage, and so on). Additionally, compare the Piloting Skill Ratings of the attacking and blocking units, using the difference between the two skill ratings as a modifier to the to-hit number. If the attacker's skill rating is lower, add the modifier to the to-hit number. If the blocker's Piloting Skill Rating is lower, subtract the modifier from the to-hit number. A failed Piloting Skill Roll means the attack proceeds as normal; the block failed and the unit cannot attempt to make an attack with that arm this turn. A successful Piloting Skill Roll means that the attack has been successfully blocked; halve the damage, rounding down, from the punch, club or physical weapon attack and apply that against the arm that blocked the attack. Finally, for each 2 MoS, subtract 1 point of damage from the attack; damage can never be reduced below 1. For example if the Target Number of the Piloting Skill Roll is 7 and the die roll result is 11, that provides a MoS of 4 and so an additional 2 points of damage would be subtracted from the physical attack, after the damage from the initial attack is halved.

The same rules apply for blocking a kicking attack with a leg, except that only kicking attacks from the front arc can be blocked. If the blocking 'Mech fails its Piloting Skill Roll to block a kick, it must roll another Piloting Skill Roll; this is in addition to the roll for being kicked or any Piloting Skill Rolls that might be required due to damage (as usual, all modifiers apply to all the Piloting Skill Rolls, including the one for having missed blocking a kick). If a unit blocks a kick, it cannot block a punch, club or physical weapon attack in the same turn. A 'Mech that successfully blocks a kick must make a PSR to avoid falling.

Physical Weapons: If a 'Mech mounts a physical weapon (that is, a physical weapon that can be used to make a damaging attack), it can use the weapon to attempt to parry a physical attack, not just block it. In addition to all the standard modifiers described above, apply the appropriate to-hit modifiers for the weapon in question from the Physical Weapon Attacks Table (see p. 146, *TW*) or the Physical Weapon Attacks Table Addendum (above). If the parry is successful, no damage is dealt.

Shields: If a unit mounts a shield (see p. 102, *TO: AUE*) and successfully blocks, the damage is applied to the shield; shields cannot be used to parry an attack, as described under *Physical Weapons* above.

Weight Class Piloting Skill Roll Modifiers: The Weight Class Physical Attack Modifiers Table (see p. 86) apply when attempting to block an attack.

Different Levels: A punch/physical weapon or kick attack can be blocked by either a leg or an arm, depending on the differences in levels (see Different Levels Table, p. 150, *TW*).

Grabbing

Only 'Mechs with at least one undamaged hand actuator (or claw) may attempt a grabbing attack. Rather than inflicting damage, this type of attack is intended to take away an object that the target is holding, such as a handheld weapon (see p. 127, *TO: AUE*), unprotected cargo or certain items that must be carried in "capture-the-flag" scenarios. This type of attack cannot be used to grab items that only have the appearance of being hand-held, such as hatchets and certain arm-mounted weapons, which are actually part of the 'Mech. If an item occupies critical slots, it cannot be grabbed.

The attacker must announce what he is attempting to grab during weapon attack declaration, and may make no weapon attacks with the grabbing arm during the turn. The grab is treated as a punch attack (see p. 145, *TW*), with an additional +1 to-hit modifier. If the attack is successful, the attacking 'Mech grabs the desired object, provided the 'Mech is strong enough to carry it (see *'Mech Lifting Capabilities*, p. 261, *TW*). If the attacking 'Mech is not strong enough to carry the object, the attack knocks it out of the target's grasp and it falls to the ground in the hex the attacker occupies.

Grabbing Turrets: If a 'Mech is in the same hex as a vehicle with a turret in the Physical Attack Phase, the 'Mech can make a grabbing attack to grab hold of the turret, though a 'Mech attempting such a grabbing attack must have two functioning hand actuators; only a single grabbing turret attack can be made against a vehicle per turn. If the attack is successful, the 'Mech has grabbed hold of the turret. The player then immediately makes another Piloting Skill Roll with an additional +3 to-hit modifier, while also applying the following additional weight-class modifiers: light +1, medium +0, heavy –1, assault –2. Activated triple-strength myomer also applies a –2 modifier. A failure has no effect. A successful Piloting Skill Roll automatically forces the vehicle's controlling player to roll once on the Turret column of the Ground Combat Vehicle Critical Hits Table (see p. 194, *TW*). Additionally, for each 3 MoS, the player must make an additional roll on that table. Regardless of success or failure, the grabbing attack is finished at the end of the Physical Attack Phase; if the attacking player wishes to attempt to grab the turret once more, his 'Mech must make a new grabbing turret attack in the following turn.

If a 'Mech is in a hex with another unit that mounts a turret, or in a building hex that mounts a turret, all the same rules apply as above. A successful roll forces a Determining Critical Hit roll for the turret (i.e. in the case of a unit with it mounted in a location, the Determining Critical Hit roll is made for that location). As above, every 3 MoS forces an additional Determining Critical Hit roll.

Grappling

This dangerous type of attack is an attempt to restrain an enemy unit through brute force. Only 'Mechs or ProtoMechs may attempt it, and only against other 'Mechs or ProtoMechs.

The grappling unit may not make any weapon attacks in the turn in which it attempts to grapple. The base to-hit number of a grapple attack is equal to the attacking unit's Piloting Skill Rating (for ProtoMechs, use their Gunnery Skill Rating), with an additional modifier based on the relative weight classes of attacker and target. For every weight class by which the attacker is heavier than the target, apply a –1 to-hit modifier. For every weight class by which the attacker is lighter than the target, apply a +1 to-hit modifier. For example, an attempt by an assault 'Mech to grapple a medium 'Mech has a modifier of –2 because the attacker is two weight classes heavier than the target. In the case of ProtoMechs, treat them as a weight class underneath lights, so the assault 'Mech attempting to grapple a ProtoMech has a –4 modifier. In addition, the to-hit number may be modified for missing or damaged actuators in the same way as for a punch (see p. 145, *TW*). Damaged and missing actuators in both arms count toward this modifier because the grapple attack requires both arms, as well as leg actuator damage and gyro damage. All modifiers are cumulative.

If the attack is successful, the target is grappled. Move the attacking unit into the target's hex regardless of the standard stacking rules. In subsequent Physical Attack phases, the target can attempt to break the grapple by making an Attack Roll, applying the modifiers described above. For example, a medium 'Mech's attempt to break free of an assault 'Mech's grapple would have a +2 to-hit modifier because the medium 'Mech (now the attacker) is two weight classes lighter than its target (the assault 'Mech).

While grappling, neither unit may move or make physical attacks. The grappling 'Mechs may only fire head- and front torso-mounted weapons, and only at the grappling opponent. Such weapon attacks receive a –4 immobile-target modifier; however, neither grappling unit may make an aimed or called shot.

If other units attempt to attack the grappling units, they run the risk of hitting the friendly unit. Make the Attack Roll against the enemy unit first, with a +1 modifier. If the attack misses, make a second Attack Roll against the friendly unit, this time with no +1 modifier. If this attack succeeds, the player who made the rolls has hit the friendly unit by mistake.

If a unit breaks a grapple, move the unit that made the initial attack to any adjacent hex chosen by the player controlling the unit that broke the grapple. Place the attacking unit so that it faces the the unit that broke the grapple. This move can result in the attacker being thrown off a high level or into water, or may result in other unit displacement. If either unit is destroyed, the grapple is broken and the surviving unit stays in the hex.

The attacking unit may choose to break the grapple in a subsequent Physical Attack Phase. Such an attempt counts as its physical attack for that phase. If the attacker breaks the grapple, the target immediately may make an Attack Roll in order to continue it; all grappling rules apply. If the roll is successful, the grapple continues with the target becoming the attacker. If this counterattack fails or if the original target does not wish to counterattack, the original attacker may move to any hex adjacent to the target, facing the target unit.

If a grappled unit fails a Piloting Skill Roll, and the grappler does not want to break their grapple, the grappler must immediately make their own Piloting Skill Roll, applying a +2 modifier. If the grappling unit succeeds, it prevents the other unit from falling and maintains its grapple. If the grappling unit fails, it will maintain the grapple but will fall as well. The grappler may also stop grappling and let the grappled unit fall to the ground, preventing the need for the PSR.

If a grappling unit fails a Piloting Skill Roll, it automatically lets the unit it is grappling go.

Jump Jet Attack

As a desperate measure, a 'Mech can use the exhaust from its jump jets as an extremely short-range weapon. This type of attack,

known colloquially as the "I Am Jade Falcon" maneuver, can only be used against targets adjacent to the attacker and so follows all standard rules for physical attacks.

Only 'Mechs with undamaged jump jets (but not mechanical jump boosters; see p. 104, *TO: AUE*) in their legs can make a jump jet attack, and only if they are prone or at 1 level higher than the target. Also, the attacking 'Mech cannot have already jumped in the same turn.

If the attacking 'Mech is standing, it may only attack a target directly in front of and 1 level below it. It may only attack with the jump jets mounted in one leg, and may make no attacks with weapons mounted in that leg during that turn. Prone 'Mechs may only make jump jet attacks against a target in the hex directly behind them. The attacker may use jump jets mounted in either or both legs, provided that the legs used have not fired weapons in the same turn. The base to-hit number for this type of attack is equal to the attacking unit's Piloting Skill Rating; all other appropriate modifiers apply, including the firing while prone modifier if the attacker is prone.

If the attack hits, it inflicts damage equal to the number of jump jets mounted in each attacking leg times 3. If both legs are used, determine hit location for each leg's jets separately. The damage from each leg's jets strikes a single location, determined on the appropriate column of the 'Mech or Vehicle Hit Location Table.

The attack generates heat as normal for the number of jump jets fired; this heat is also applied to the target unit for units that track heat.

Tripping

This attack represents a leg hook or "leg sweep" attack intended to knock the target off its feet. Only biped 'Mechs may make a tripping attack, and only against other biped 'Mechs.

The base to-hit number for this attack is equal to the attacking unit's Piloting Skill Rating, applying a –1 to-hit modifier, in addition to all other standard modifiers. If the attack is successful, the target unit must make a successful Piloting Skill Roll at the end of the Physical Attack Phase or fall. Unlike a kick, a failed attack does not require the attacker to make a Piloting Skill Roll.

CHARGING

In a standard charging attack, the attacker suffers relatively little damage compared to the target. The standard rules are structured this way to make possible such bold attacks as a *Hermes* charging an *Atlas*, which would otherwise be suicidal, as well as relatively easy to determine what that damage is. The following optional rule provides a more realistic way of determining damage between attacker and target, albeit at the expense of more complex math.

Follow standard rules for charging (see p. 148, *TW*), but change the damage to the attacker and target using the formulas found below. Round any fractions up after multiplication. If the base to-hit for the attacker is less then 2, use 2 to measure the Margin of Success.

Target Damage = [(Attacker Mass x Target Mass) x (Hexes moved) / (Attacker Mass + Target Mass)] / 10

Attacker Damage = [(Attacker Mass x Target Mass) x (Hexes moved) / (Attacker Mass + Target Mass)] / (10 + MoS)

DEATH FROM ABOVE

The best way to stop a death from above attack is to destroy the 'Mech as it jumps at the target. This optional rule allows the wreckage of the destroyed attacker to continue to hurtle toward the target and even cause damage.

If the attacking 'Mech is destroyed, its player should make a Piloting Skill Roll with an additional +1 modifier. If the roll is successful, resolve the attack as though the 'Mech had not been destroyed. The only change to the procedure is that the attack suffers an additional +1 modifier, and the damage is resolved differently.

If the attacker was destroyed by the loss of all its center torso internal structure, it hits the target in pieces. Divide the damage in half (round up), then into 5-point Damage Value groupings and apply it using the appropriate column of the Hit Location Table (not the Punch Hit Location Table). If the attacker was destroyed by any other means, it hits the target in one chunk. Divide the damage the attack would have inflicted in half (round up), but apply it all to a single hit location determined using the standard Hit Location Table. The target must make a Piloting Skill Roll or fall according to the standard rules.

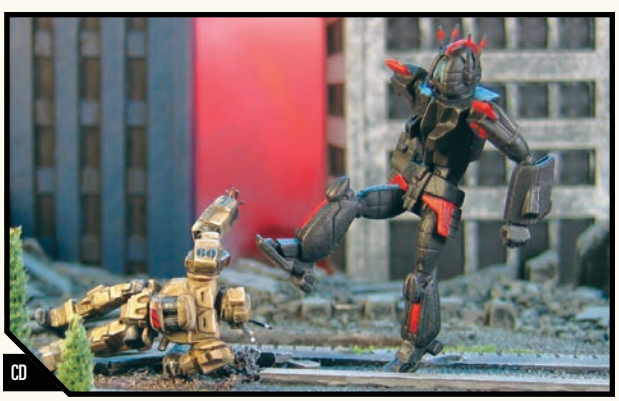
The attacking 'Mech takes damage as though the attack had failed, which is only important for determining what is left of it for salvage after the battle.

INTENTIONAL FALLS FROM ABOVE

Standard rules prohibit a unit from intentionally flinging itself off a hill to make an "accidental" fall from above attack against a target in a lower adjacent hex. In advanced-rules play, such an action is possible (if foolish).

Under advanced rules, a unit may deliberately walk or run off any level during the Movement Phase by spending 1 MP—if its pilot can muster up the guts to do so. To determine this, the controlling player makes a 2D6 roll, applying a –1 modifier to the Target Number for a Veteran pilot and a –2 modifier for an Elite pilot. If the result is greater than 9, the pilot is determined enough to make the leap. Otherwise, the unit's movement ends immediately.

If the unit manages to jump off the hill, move it into its new hex and resolve the fall immediately. The unit's movement ends at this point. If another unit is in the hex where the jumping unit falls, follow the rules for Accidental Falls from Above (see p. 152, *TW*). To reflect the intentional nature of the attack, apply an additional –1 modifier to the base to-hit number.



Under Condition Feral there can be no mercy from a Wolf's Dragoons warrior.

PICKING UP AND THROWING OBJECTS

'Mechs with working hand actuators are capable of considerable dexterity. When combined with the strength of the 'Mech and its height, this allows them to pick up a variety of objects, carry those objects and potentially even throw objects a considerable distance.

The following rules build on the *'Mech Lifting Capabilities* rules (see p. 261, *TW*); a 'Mech's lifting capability remains 10 percent of its tonnage; increased to 20 percent for operating Triple Strength Myomer (see p. 143, *TW*). However, that restriction is based on two working (unoccupied) hand actuators. A 'Mech can pick up 5 percent of its tonnage (increased to 10 percent for operating Triple Strength Myomer) with a single hand (arm). If a TSM-activated unit is carrying an object that weighs more than 10 percent of its tonnage (5 percent in the case of a single arm), and its heat drops below the required activation level of the TSM in any Heat Phase, the object is dropped in that turn's End Phase, in the hex the unit occupies.

ProtoMechs: These weight restrictions also apply to ProtoMechs, such that a one-handed, 2-ton ProtoMech can lift 100 kg (two-handed can lift 200 kg), while a one-handed, 9-ton ProtoMech can lift 450 kg (two-handed can lift 900 kg). Note that the construction rules for ProtoMechs automatically assume that it is built with two hands. The distinction here is for describing whether a player will designate that the ProtoMech is using one or two hands (i.e. one hand might already be carrying an object) for the various actions described in this section.

Additionally, anytime these rules call for a Piloting Skill Roll to be made by ProtoMechs, use the unit's Gunnery Skill Rating.

Battle Armor: Anytime the rules call for a Piloting Skill Roll to be made by battle armor, use the unit's Anti-'Mech Skill Rating.

Four-Legged 'Mech: Four-legged 'Mechs do not have hand actuators (obviously), and so cannot use any of these rules.

Throwing Capabilities

Regardless of the object to be thrown (whether an inanimate object or another unit), a 'Mech with one working (unoccupied) hand actuator can throw objects up to 2.5 percent of its mass, while a 'Mech with two working (unoccupied) hand actuators can throw objects up to 10 percent of its mass. As usual, Triple Strength Myomer doubles the allowable weight.

Additionally, the distance any object or unit can be thrown is determined by the weight of the object/unit in comparison to the throwing unit's weight as shown on the Throwing Distance Table (round down). If the throwing unit has active Triple Strength Myomer, divide the weight of the thrown object/unit by 2 (rounding down) before consulting the Throwing Distance Table.

For example, a 100-ton 'Mech with a single hand actuator free could lift a 5-ton ProtoMech (as it is 5 percent of the 'Mech's weight), but could not throw the ProtoMech (as it can only throw 2.5 percent of its weight with a single hand). If the 'Mech had operational Triple Strength Myomer, however, which doubles its throwing capacity, it could not only lift the ProtoMech, but if the action was successful, the 'Mech could throw the ProtoMech up to a maximum distance of 6 hexes. If the 'Mech did not have active Triple Strength Myomer but was using two hand actuators (arms), the 'Mech could potentially throw the ProtoMech up to the 3-hex distance. Finally, if the 'Mech was using two hands (arms) and had active Triple Strength Myomer, the ProtoMech could be thrown up to a maximum of 6 hexes.

THROWING DISTANCE TABLE

Percentage of Throwing 'Mech's Weight*	Total Distance
10%	1 Hex
7.5%	2 Hexes
5%	3 Hexes
2.5%	6 Hexes
1% (or less)	9 Hexes

*If TSM is active, divide the weight of the thrown object/unit by 2 (rounding down) before consulting this table.

PICKING UP INANIMATE OBJECTS

Any inanimate object may be picked up, provided it is within the weight limit for the 'Mech. However, as an inanimate object can literally be anything (a flag pole from a building, the roof of a house, a statue, an un-occupied car and so on), the players will need to agree on the weight of a given item before attempting to pick it up. Regardless, the unit must be in the hex with the object during the Physical Attack Phase; if the item is only "level 1" in height, the 'Mech must be in a hull-down position (see *Biped 'Mech* under *Hull Down* rules, p. 19) to pick it up.

Like finding a club, when attempting to pick up an inanimate object, the unit may not fire weapons or make physical attacks during the turn.

If the object is not attached to a fixed location, the player makes a standard Piloting Skill Roll. A failure means the object was not picked up; no damage is done to the object. A success means the object has been picked up.

If the object is attached to a fixed location (a building, the ground and so on), then divide the 'Mech's lifting ability by 4 to represent the strain of detaching the object. In addition, the 'Mech must make a successful standard punch attack to remove the object from its fixed location; if the weight of the object requires two hands to lift, then two successful punch attacks are required to pick up the object; the standard –4 immobile modifier is not applied when attempting to pick up an object. This means the controlling player announces that the 'Mech will attempt to pick up the object during the Movement Phase, but the physical attack to "tear off" the object does not occur until the Physical Attack Phase. A success (in the case of two arms, two successes) indicates the object has been picked up, while a failure (in the case of two arms, only a single failure need occur) means the object was not picked up.

Whether or not the object was successfully removed, it takes some type of damage. After every successful (or unsuccessful) attempt to remove an object from a fixed location, roll 1D6. On a result of 1–4, only minor damage occurs: the flagpole is bent, the statue goes from 1,000 kilograms to 900 kilograms and so on. On a result of 5, major damage occurs: half the flagpole snaps off, the statue goes from 1,000 kilograms to 500 kilograms, and so on. On a result of 6, the object is destroyed: the flagpole snaps into a handful of pieces, the statue shatters, and so on. Depending on the object, the players may need to come to a complete consensus about the specific damage done to a given object, using the rules above as a guideline.

Physical Weapons: As noted under *Dropping or Setting Down Inanimate Objects* (see p. 96), a hatchet, mace, sword or vibrosword

can be dropped. Use the rules for picking such an item up exactly as described above for an inanimate object; i.e. the 'Mech that originally dropped it or another 'Mech can attempt to pick it up, provided it can lift the weight. However, it cannot be used in a standard physical weapon attack; it can only be thrown as an inanimate object (see *Physical Weapons* under *Throwing Inanimate Objects*, p. 93). Only a 'Mech that was built to use that exact tonnage and critical space (or less) weapon and that does not currently hold another physical weapon can pick it up and then use the weapon as its own. For example a *Hatchetman* that does not currently hold a hatchet could pick up any of the four noted physical weapons, provided they weigh 3 tons and occupy 3 critical slots or less. For example the *Hatchetman* could obviously pick up another *Hatchetman*'s hatchet, but it could not pick up an *Axman*'s hatchet (it weighs 5 tons and occupies 5 criticals), yet it could pick up and use in a physical weapon attack the *Gurkha*'s sword (it weighs 3 tons and is 2 criticals); or it could simply throw the sword as an inanimate object.

'Mech Limbs: Tearing off an object from a fixed location can include an arm or leg from a disabled and/or abandoned 'Mech (friendly or enemy); meaning the cockpit is destroyed, the MechWarrior is dead and/or ejected and so on. This also includes a shut-down 'Mech or one whose pilot is unconscious, making the 'Mech immobile. Regardless, the 'Mech must be prone and the 'Mech making the attempt to tear off a limb must end the turn in the target hex but with enough MP remaining to exit the hex. To avoid violating stacking rules, after the attack on the limb is made (whether successful or not), at the end of the Physical Attack Phase the 'Mech "spends" those held MP and enters the adjacent hex it was going to enter.

Note that like charging and DFA attacks, the unit doesn't finish its move until after the Movement Phase and so cannot be the target of a charge attack or DFA. However, the unit does occupy the hex. As such, any other type of physical attacks can be made against the unit during the Physical Attack Phase both before and after it spends its final MPs, it can be hit by a skidding unit, it can be the subject of displacement, and so on. If a Piloting Skill Roll is required to avoid falling and the 'Mech falls, it is automatically displaced into a random, legal adjacent hex. If the unit is displaced out of the target hex for any reason, such as for a fall, before it can tear off the arm, then the action automatically fails and the extra MP are lost as well; i.e. the unit's move is completely over.

The weight of the limb must be taken into consideration when attempting to lift it. A 'Mech limb is considered to weigh 10 percent of the 'Mech's total internal structure weight (regardless of damage taken to the internal structure), plus the weight of the armor (if any), rounded up to the nearest .5. In the case of advanced armors that provide extra points, that multiplier must be removed from the armor points to determine the actual weight of the armor on a limb. Finally, any equipment mounted in the arm must also be taken into consideration, such as heat sinks, weapons and so on; if a weapon is split across a limb and torso location the full weight of the weapon must be taken into consideration when determining if the attacking unit can lift the limb.

All the standard rules from above are used, except an additional +3 modifier is applied to the target number (applied to both punch attacks if two are required), to reflect the added strain required to tear a still-attached limb off the abandoned/immobile 'Mech; the modifier for a prone and adjacent target is never applied to this punch attack.

If the attack is successful, the shoulder/hip actuator is automatically destroyed; if a weapon is split across a limb and torso location, all critical slots in the torso are automatically marked off (in the case of exploding weapons, apply damage to the immobile 'Mech as per a standard critical to such a weapon; the weapon does not explode in the arm). Roll for determining critical hits and apply the damage to othe arm; if "limb blown off" is the result, the limb is destroyed and completely worthless. Finally, if the arm is not destroyed, roll 1D6 and apply that damage to the arm; if this results in internal structure damage, roll as normal for determining critical hits.

If any critical results in an ammunition explosion in the arm, subtract all the damage from the internal structure and the armor (the arm is completely destroyed, in this case), then apply any remaining damage in 5-point Damage Value groupings to random locations of the 'Mech holding the limb using the front column of the hit location table.

If the attack is unsuccessful, roll 1D6 and apply that damage to the arm; if damage is applied to internal structure, roll as normal for determining critical hits. Even if the internal structure is not damaged, roll for determining critical hits, but apply a –3 modifier to the die roll result.

Loren wants his Caesar *(with a Piloting Skill Rating of 4) to tear the arm off a* BattleMaster *that just had its cockpit destroyed in a previous turn. During the Movement Phase, he runs to enter the target hex where the prone enemy 'Mech is located, but he makes sure to hold the 2 MP required to enter the Clear Level 0 hex from the adjacent Level 1 hex where the prone 'Mech is located, as he can't violate the stacking rules at the end of the turn.*

First, he has to determine the weight of the limb to make sure he can remove it. The weight of an un-damaged BLR-4S BattleMaster *arm is 2.5 tons [8.5 (total internal structure weight) x .1 = .85 + 1.43 (26 (arm armor) / .9 (to remove the ferro-fibrous 1.12 multiplier) = 23 / 16 (standard armor per ton) = 1.43)) = 2.28, rounding to 2.5]. However, the weight of the equipment in the arm must also be taken into consideration. The right arm mounts a 15 ton Gauss Rifle, making the total weight 17.5, while the right arm mounts 2 small pulse lasers, making the total weight 4.5. The* Caesar *is a 70-ton 'Mech and so can pick up 7 tons with two hands, or 3.5 tons with one hand. The* Caesar *cannot lift the weight of the right arm, but it can lift the weight of the left arm. Luckily Loren didn't fire the weapons mounted in either arm (and both hand actuators remain active), as he'll need both to lift the left arm.*

Loren determines that his modified Target Number for the two punch attacks are 9 [4 (Piloting Skill Rating) + 0 (punch attack modifier) + 2 (attacker movement modifier) + 3 (modifier for tearing off a limb) = 9]. Loren rolls twice for a result of 10 and 11! He's torn off the limb; the controlling player crosses the limb off the BattleMaster.

Because the attacks were successful, Loren makes a note that the shoulder actuator is automatically destroyed. He also rolls once on the Determining Critical Hits Table, with a result of 8. Unfortunately, he has to assign another critical hit. He rolls to determine the location and comes up with a hand actuator. Loren rolls 1D6 with a result of 5 and marks off that much armor.

Finally, at the end of the Physical Attack Phase, he spends the held 2 MP to move into the adjacent hex.

Carrying Inanimate Objects/Units

A 'Mech/ProtoMech may choose to carry the object (or unit; see the various following rules for picking up units) it has picked up. As noted previously, all the 'Mech Lifting Capabilities rules (see p. 261, *TW*) apply. However, if a 'Mech can pick up an object one-handed and does so, then it can fire weapons and make punch attacks from the arm that is not holding the object; all other restrictions still apply, including not firing any forward firing torso-mounted weapons.

If the carrying 'Mech falls for any reason, it drops the object. Roll 1D6 and use the rules for picking up an object from a fixed location to determine damage. Depending on the type of object being used, players may wish to tweak these rules. For example, a large closet safe is likely not going to be destroyed by a drop, so a result of 1–5 may indicate minor damage, with 6 indicating major damage and no chance of destruction, while a box full of ancient pottery might receive major damage on a result of 1–2, while a 3–6 result will destroy the object.

Carrying Hostile Units: A carried hostile unit (again, see various following rules for picking up a hostile unit) has a facing equal to the facing when it was picked up (except 'Mechs, which always face the carrying 'Mech). If the carrying or carried units have torso weapons (or, in the case of a vehicle, weapons mounted in the location facing the carrying unit and/or a turret), they may fire at each other using the grappling rules (see p. 88). No attack may be made by either unit against any other units while a unit is being carried. Carried hostile battle armor may never be the target of a weapon attack.

During any Weapon Attack Phase that the carrying unit takes damage from the carried unit, the controlling player of the carrying unit must make an immediate Piloting Skill Roll with a +1 modifier; a failure means the carried unit was dropped (for a carrying 'Mech, a failed Piloting Skill Roll does not result in a fall). Units dropped this way resolve the fall as for an opposed Piloting Skill Roll MoS of 1–3 in favor of the carried unit as described below, but do not roll for any potential critical hits against the carrying unit.

Additionally, an opposed Piloting Skill Roll must be made at the start of each Physical/Driving Attack Phase (for vehicles, assign a –2 modifier to the die roll result to represent their less dexterous ability to break a hold). If the carrying unit has a greater MoS, it retains its hold on the carried unit. If the carried unit has a greater MoS, it breaks free.

An MoS of 1–3 in favor of the carried unit results in an immediate 2-level fall (1-hex fall if carried by a ProtoMech) for the carried unit. For 'Mechs, determine facing after the fall as normal; for vehicles, use the *VTOL Rotor Destruction* rules (see p. 197, *TW*); for battle armor, use the Infantry Falling Damage Table (see p. 151, *TW*); treat ProtoMechs as 'Mechs (see *Special Circumstances*, p. 185, *TW*). A dropped unit is placed either in the same hex as the carrying unit, or in a randomly determined adjacent hex if same-hex placement would violate the stacking rules, with a randomly determined facing. This may result in a fall greater than 2 levels, a domino effect and further displacement, all of which should be resolved immediately. If a unit cannot be appropriately placed (for example, if all the adjacent hexes are more than two levels higher than the hex of the carrying unit), then the dropped unit is destroyed.

Additionally, the controlling player of the carrying unit makes a Determining Critical Hit Roll to see if any critical hits occurred to the arm of the carrying unit. If critical hits occur and two arms were used, randomly determine which arm all the critical hits are assigned to; note that in this instance, a dice roll result of 12 does not blow off the limb, but instead means that 3 critical hits are assigned (as normal, any "extra" critical hits that cannot be assigned are ignored). For ProtoMechs, if a critical hit occurs—regardless of how many—assign only a single critical hit (determined randomly if two arms were used) to the left-most open critical box on the affected arm.

An MoS of 4 or more in favor of the carried unit means it successfully drops to the ground without being damaged, while the carrying unit still determines if any critical damage occurred as described above.

If both units fail the Piloting Skill Roll, nothing happens. However, if both units fail their Piloting Skill Rolls and the carrying unit rolls a 2, then the carrying unit takes an automatic shoulder actuator critical hit (randomly determine an arm if both arms were used; for ProtoMechs, automatically mark off the right-most critical box) and the controlling player also rolls for potential additional critical hits as described above. The carried unit suffers a fall exactly as determined above, except it takes double the damage.

As noted for an object, if the carrying 'Mech falls for any reason, the carried unit is dropped; resolve as for an opposed Piloting Skill Roll MoS of 1–3 in favor of the carried unit as described above, but do not roll for potential critical hits against the carrying unit.

Throwing Inanimate Objects

An object that has been picked up can be thrown either at a target hex or at another unit. A 'Mech must be standing to throw an object.

Throwing at a Hex: To throw an object at a hex, the controlling player makes a standard punch attack. Apply a +1 to-hit modifier for every hex beyond the first adjacent hex to the target hex; for example, throwing an object 6 hexes would apply a +5 modifier. However, the standard –4 to-hit modifier for an immobile target is still applied.

If the attack is successful, charging damage divided by 2 (see p. 148, *TW*) is applied to the target hex (whether a building, or terrain if using the *Terrain Factor Rules* on p. 63, and so on). In other words, the weight of the object is divided by 10, multiplied by the number of hexes thrown, divided by 2 and then rounded up, to a minimum of 1 point of damage.

If an object weighs 1 to 9 tons, inflict the base damage of 2 points for 1 to 3 tons, 3 points for 4 to 6 tons and 4 points for 7 to 9 tons; per normal charging damage, this is multiplied by the distance thrown and then divided by 2.

If an object weighs less than a ton, divide its kilograms by 1000, then multiply by hexes thrown and divide by 2, rounding up. If this number is less than 1, no damage is applied to the target. For example, a 650-kilogram statue is thrown 5 hexes, which would cause 2 points of damage [650 kilograms (weight of statue) / 1000 = .65 x 5 = 3.25 / 2 = 1.625, rounded up to 2].

If the level of the unit throwing the object is greater than the level of the target hex, then that must also be taken into consideration. In addition determine the potential damage for this "distance fallen" separately from the "distance thrown." In other words, the weight of the object is divided by 10, multiplied by the number of levels fallen (adding +2 for a 'Mech, or plus 1 for a ProtoMech), rounded up, to a minimum of 1 point of damage (note that unlike distance thrown, this value is not divided). Once a player has determined both the distance thrown value and the

distance fallen value, only apply the greater value to both the target and thrown object.

If the attack is a failure, use the Altitude Bombing Scatter Diagram (see p. 245, *TW*) to determine where the object landed. Roll 1D6 to determine direction and then another 1D6 to determine distance (to the maximum hex range allowed for the object as shown on the Throwing Distance Table, p. 90).

Additionally, on a natural result of 2, the carrying unit takes an automatic shoulder actuator critical hit (randomly determine an arm if both arms were used; for ProtoMechs, automatically mark off the right-most critical box).

Regardless of whether the attack was successful, damage to the inanimate object is resolved with a 1D6 roll using the rules for picking up an object from a fixed location, but apply a +3 modifier to the die roll result.

Throwing at Another Unit: Use all the rules above for throwing at a hex, including the modifiers added for the number of hexes thrown, except instead of a punch attack the throwing unit makes a charging attack (per standard rules, the relative Piloting Skill Rolls of the attacking and target unit are taken into consideration).

If the attack is successful, apply the damage as noted above to the target, using the direction of the attack to determine the appropriate location. For battle armor, the damage only applies to a single trooper; for conventional infantry, the attack is treated as though it originated from another infantry unit.

If the attack is a failure, determine where it lands as described above; regardless of whether a unit is in the new hex, the attack fails to strike that unit (it automatically strikes any other non-unit object, such as terrain or a building).

Physical Weapons: The following Physical Attack Weapons can be thrown as inanimate objects (whether by the unit they are mounted on, or by another unit if the unit picks the object up (see *Physical Weapons* under *Picking Up Inanimate Objects*, p. 90): Hatchet, Mace, Sword, and Vibrosword.

Use all the rules described above, with the following exception. If a unit is built to use the physical attack weapon (i.e. it can use the weapon in a physical weapon attack), apply a –1 modifier to the punch attack. When rolling to determine damage to the physical weapon, roll 1D6: on a result of 1-4, nothing happens, on a result of 5-6, the weapon takes a critical hit, applied to the topmost open critical slot. If the weapon is damaged, it can still be thrown as an inanimate object until all its critical slots are destroyed, but it cannot be used to make a physical weapon attack as soon as 1 critical slot is assigned.



A pirate seeks to terrify his opponents with a make-shift flail using a 'Mech's head.

THROWING 'MECHS AND PROTOMECHS

To throw another 'Mech or ProtoMech, all the standard rules for carrying and throwing an inanimate object apply, except as noted below.

The 'Mech must have first grappled the target unit successfully (see *Grappling*, p. 88). During the following turn's Physical Attack Phase, provided the grapple has not been broken, the 'Mech may attempt to throw the grappled unit.

Both players make a Piloting Skill Roll, applying the appropriate modifiers from the 'Mech Throwing Tables to the die roll results. Compare Margins of Success. If the throwing 'Mech has a greater MoS, the throw is successful; use the difference in MoS to determine total distance thrown (to a maximum number of hexes as shown on the Throwing Distance Table, p. 90).

If the controlling player of the throwing 'Mech was attempting to hit a specific target (this target must be announced prior to making the first opposed Piloting Skill Roll), a second attack must immediately be made, using the rules for throwing at a hex or throwing at a target, as described for inanimate objects. If this second attack is successful, the thrown unit strikes the target. If the target was another unit, apply damage to the target and the thrown unit as described under throwing inanimate objects; resolve any displacements (and possible domino effects) if the stacking rules are violated.

A successful second attack against a target, even after a successful opposed Piloting Skill Roll for throwing a unit, can still miss the target if the MoS was not high enough to allow a sufficient number of hexes to be covered. In this case, place the thrown unit in the maximum hex range according to the MoS, along the LOS between the attacker and target.

If this second attack is not a success, or if the player did not nominate a specific target, use the Altitude Bombing Scatter Diagram (see p. 245, *TW*) to determine where the object landed. Roll 1D6 to determine direction and then another

'MECH THROWING TABLES

Unit Picking Up Is A:	Modifier
ProtoMech	+0
Light 'Mech	+0
Medium 'Mech:	+1
Heavy 'Mech	+2
Assault 'Mech:	+3

Unit Being Picked Up Is A:	Modifier
ProtoMech	+2
'Mech	+0

1D6 to determine distance (to the maximum hex range as determined by the MoS and allowed for as shown on the Throwing Distance Table, p. 90).

Note that unlike a thrown object, a thrown unit can potentially strike another unit located in the hex into which it is thrown. If the stacking rules for a given hex are not violated when the unit enters it, there is no chance for the thrown unit to strike another unit. If the stacking rules will be violated, however, roll 1D6; on a result of 4 or higher, a randomly determined unit in the target hex has been struck. Apply damage as described above; on a result of 1–3, no target is struck. In either case, resolve any displacements (and possible domino effects) appropriately.

Damage to the thrown unit and any target is resolved exactly like a thrown inanimate object, except the players randomly determine the direction of attack and apply the damage in 5-point Damage Value groupings to randomly determined locations on the thrown unit. Additionally, once that damage is resolved, the unit automatically takes additional damage as for a fall (unless "falling damage" was applied in place of "throwing damage", in which case this additional damage is ignored): damage is applied to the unit as for an opposed Piloting Skill Roll with a MoS of 1–3 in favor of the carried unit, as described under *Carrying Hostile Units* (see p. 92). This damage is applied before any other damage if it occurs due to additional displacement and so on. If a thrown unit lands in a hex with a lower level, those additional levels should be taken into consideration when determining damage from the fall.

If the grappled 'Mech or ProtoMech has the higher MoS, then the throw is unsuccessful. In the case of an MoS of 1 or 2, the grapple remains in effect. An MoS of more than 2 in favor of the grappled unit will result in the grapple being broken and the opposing unit being placed in an adjacent hex per the grappling rules (see p. 88).

If both units fail their Piloting Skill Roll, nothing happens; the grappled unit remains grappled.

If both units fail their Piloting Skill Rolls and the grappling unit rolls a 2, the grappled unit is dropped. Damage is applied to the unit as for an opposed Piloting Skill Roll with a MoS of 1–3 in favor of the carried unit (as described under *Carrying Hostile Units*; see p. 92), and the unit is placed in an adjacent hex per the grappling rules. Additionally, the grappling unit takes an automatic shoulder actuator critical hit (randomly determine which arm; for ProtoMechs, automatically mark off the right-most critical box).

Attacks Against Units Carrying 'Mechs/ProtoMechs

Use the rules for attacks against grappling units (see p. 88) to determine the results of an attack against a unit carrying another unit.

> *Peter's AS8-D* Atlas*, with a Piloting Skill Rating of 4 and activated TSM, has managed to grapple a 20-ton* Stinger *with a Piloting Skill Rating of 2. At the start of the Physical Attack Phase of the following turn an immediate opposed Piloting Skill Roll is made to see if the* Stinger *breaks free. Peter rolls a 9, while his opponent rolls a 6; even with the +2 modifier for the differences in Piloting Skill Rating, Peter's result is still higher, so the* Stinger *doesn't manage to break free.*
>
> *When it is Peter's turn to nominate the* Atlas *for a physical attack he decides to try and throw the* Stinger*; with his activated TSM the 'Mech is able to lift the 20 tons. He actually doesn't care where he throws it, as all three hex facings from where his* Atlas *is standing (noting the Altitude Bombing Scatter Diagram from p. 245 of TW) are off a cliff edge. Both players make Piloting Skill Rolls, applying the modifiers from the 'Mech Throwing Table (which means Peter will add a +3 for his assault 'Mech) as well as the differences of Piloting Skill Ratings. He rolls 2D6 with a result of 5 (which equals 8, with the +3 modifier), while his opponent rolls only a 4 (which equals a 6 with the difference in Piloting Skill Ratings). That provides a MoS of 2 so he successfully throws the* Stinger*!*
>
> *Peter immediately rolls 1D6 with a result of 5 and consults the Altitude Bombing Scatter Diagram to determine the direction of the throw. While the MoS of 2 normally would mean that the* Stinger *would be thrown 2 hexes, consulting the Throwing Distance Table lets Peter know he can only throw the* Stinger *a maximum of 1 hex. Which is fine, since the Level 6 of the hex they occupy and the Level 0 of the target hex means damage will be determined as for an 8 level fall (the 6 levels of the difference between the two hexes, plus 2 for being thrown by a 'Mech); since this will by far be greater damage than the "1 hex throwing charge," the falling damage is applied to the* Stinger*. (If Peter and his opponent were using the Terrain Factor rules, that damage would also be applied in the terrain in the target hex.)*

PICKING UP AND THROWING VEHICLES

To pick up vehicles, all the standard rules for picking up and carrying an inanimate object apply, except as noted below. Note that regardless of whether a vehicle is thrown or dropped, for simplicity it is always considered to land right side up.

VTOL Vehicles: If a VTOL Vehicle is successfully picked up, its rotor is automatically destroyed.

Airborne Vehicles: Airborne vehicles cannot be picked up; the vehicle must be landed.

Fighters: Fighters must be landed to be picked up, but are treated exactly like vehicles.

Picking Up a Friendly Vehicle

To pick up a friendly vehicle, the 'Mech must be in a hull-down position (see *Biped 'Mech* under *Hull Down* rules, p. 19) and in the same hex as the vehicle during the Physical Attack Phase, and it cannot have made any weapon or physical attacks with either arm that turn.

The player makes a standard Piloting Skill Roll. A success means the vehicle is picked up, while a failure means it is not picked up; no damage or any other effects are applied. Apply a +1 modifier to the Piloting Skill Roll to stand if carrying a vehicle.

Picking Up an Enemy Vehicle

To pick up an enemy vehicle, the 'Mech must be in a hull-down position (see *Biped 'Mech* under *Hull Down* rules, p. 19) and in the same hex as the vehicle during the Physical Attack Phase, and it cannot have made any weapon or physical attacks with either arm that turn.

The player makes a standard punch attack (two punch attacks if both hands are needed to lift the vehicle). If the attack(s) is successful, both units must make Piloting Skill Rolls as for the Throwing 'Mechs and ProtoMechs rules (see p. 93). An MoS in favor of the carrying unit allows it to lift the vehicle up (in place of damaging the unit with the punch attack), while an MoS in favor of the vehicle allows it to avoid the attempt, taking half the standard punching damage instead.

If both units fail their Piloting Skill Rolls and either unit rolls a natural 2, then the 'Mech takes an automatic hand actuator critical hit (randomly determine which arm if two punches were made) and double damage for the punch.

Once the ground unit is held by the 'Mech, the 'Mech must stand (with a +1 modifier to the Piloting Skill Roll) in order to take any action other than holding the vehicle in place like a grapple (see p. 88).

Throwing a Vehicle

Use the rules for throwing an inanimate object to throw a vehicle (see p. 92).

Damage to the thrown unit and any target is resolved exactly like a thrown inanimate object, except randomly determine the direction of attack and apply the damage in 5-point Damage Value groupings to randomly determined locations on the thrown unit. Additionally, once that damage is resolved, the unit automatically takes additional damage as for a fall; this damage is applied to the unit as for an opposed Piloting Skill Roll with an MoS of 1–3 in favor of the carried unit (as described under Carrying Hostile Units; see p. 92). This damage is applied before any other damage that may occur due to additional displacement and so on. If a unit is thrown and lands in a hex with a lower level, those additional levels should be taken into consideration when determining damage from the fall.

Attacks Against Units Carrying Vehicles

Use the rules for attacks against grappling units (see p. 88) to determine the results of an attack against a unit carrying a vehicle.

PICKING UP AND THROWING BATTLE ARMOR

To pick up and throw battle armor, all the standard rules for picking up and throwing an inanimate object apply, except as noted below.

Picking Up Friendly Battle Armor

A 'Mech may pick up a friendly battle armor squad if the 'Mech is equipped with two working (unoccupied) hand actuators. The total number of battle armor that may be picked up and carried in this manner is determined by the size of the 'Mech as shown on the Maximum Additional Battle Armor Table. Additionally, the weight of the battle armor being picked up must be taken into consideration as shown on the Advanced Battle Armor Weights Table (see p. 155); as normal, a 'Mech can only lift 10 percent of its weight.

Note that picking up friendly battle armor is in addition to any mechanized battle armor that might be carried by the 'Mech.

MAXIMUM ADDITIONAL BATTLE ARMOR TABLE

'Mech Weight Class	Total Number of Battle Armor
Light	2
Medium	3
Heavy	4
Assault	6

Regardless of the total tonnage of the battle armor squad, a 'Mech can never pick up more than 6 troopers. Additionally, a 'Mech may only pick up a complete squad of battle armor. If there are more troopers in the squad than the 'Mech can carry, it may not pick up the squad. For example, a 50-ton *Hunchback* wants to pick up and carry a squad of Grenadiers. There are four active troopers, however, so it cannot pick the squad up. Its companion, a 70-ton *Archer*, may pick up the squad.

To pick up a friendly battle armor squad, the 'Mech must be in a hull-down position (see *Biped 'Mech* under *Hull Down* rules, p. 19) and in the same hex as the battle armor unit during the Physical Attack Phase, and cannot have made any weapon or physical attacks with either arm that turn. The player makes a standard Piloting Skill Roll. A success means the battle armor is picked up, while a failure means the troopers are not picked up; no damage or any other effects for a failed Piloting Skill Roll are applied. If the 'Mech is carrying the maximum number of battle armor for its weight class, assign a +1 modifier to the Piloting Skill Roll to stand.

> *A* Titan II *is trying to decide between two hexes to go hull-down—one containing a friendly battle armor squad composed of 6 Nephilim or another containing a friendly squad composed of 6 Tengu. As an assault 'Mech, the 100-ton* Titan II *can pick up all 6 troopers. However, looking at the Advanced Battle Armor Weights Table, that equals 12 tons for the assault Nephilim and so the* Titan II *would not be able to pick the squad up (as it can only lift 10 percent of its weight with both hands; if it mounted activated Triple Strength Myomer, it could pick the squad up). Looking at the table again, the total trooper weight for the heavy Tengu battle armor is 9 tons, and so the* Titan II*'s controlling player moves the 'Mech into that hex so he can go hull-down and make a standard Piloting Skill Roll to pick up the squad of 6 Tengu.*

Picking Up Enemy Battle Armor

Enemy battle armor follow all the same rules for picking up friendly battle armor, except that the rules for picking up a vehicle also apply. Alternatively, these rules can be used to pick up enemy battle armor that is swarming a friendly unit, provided the 'Mech is in the swarmed vehicle hex, adjacent to the swarmed 'Mech, or is the swarmed 'Mech. However, a 'Mech may only ever pick up two troopers, one in each hand.

In other words, the player makes a punching attack against the infantry unit. If successful, both players then make Piloting Skill Rolls. An MoS in the attacking unit's favor defines the trooper as "captured" in the 'Mech's hand (rather than damaging the trooper with the punch), while an MoS in the battle armor's favor means the trooper was not captured; instead, the trooper takes half the standard punching damage. If the battle armor was swarming a unit, that unit takes the other half of the punching damage. Resolve as a Punch attack for a swarmed 'Mech, or roll 1D6 and use the table on page 227, TW to determine where the vehicle is damaged. In this instance, if two punch attacks are made, the opposing player makes a single Piloting Skill Roll for the battle armor unit, but the opposing player makes two separate Piloting Skill Rolls to compare for MoS (representing both arms).

If a trooper is grabbed in this fashion, it automatically becomes a squad of 1, with the controlling player tracking it as though it is a separate unit; the trooper is pulled from the squad

to which it was attached. If two punch attacks are successful and two Piloting Skill Rolls win the MoS, then each trooper is its own unit, with the controlling player separating both units off from the original squad.

If at any point later in the scenario those single trooper squads are in the same hex as the original squad they were attached to during the End Phase of turn, they may automatically rejoin their unit.

Throwing Battle Armor

The rules for throwing an inanimate object apply to battle armor, except a 'Mech may only throw a maximum of two battle armor troopers, even if the 'Mech is attempting to throw both troopers at units and so can still make two "charging attacks" (one for each arm). If the 'Mech is carrying more than one battle-armored trooper in an arm, it may not throw that battle armor.

Chris' Seraph Dominus, *with a Piloting Skill Rating of 3 and activated Triple Strength Myomer, has walked and then gone hull down in a light woods hex with an elite enemy battle armor squad that jumped 3 hexes, composed of four Phalanx with an Anti-'Mech Skill of 2. Chris didn't make an attack with the* Seraph*'s left arm at any prior point in the turn, and so he can make a punching attack against the Phalanx to attempt to grab a trooper.*

To make the attack, the modified To-Hit Number is 8 [3 (Piloting Skill Rating) + 0 (punch attack modifier) + 1 (attacker movement modifier) + 2 (target movement modifier) +1 (light woods) + 1 (battle armor modifier) = 8]. Chris rolls 2D6 and gets a result of 8: a successful punch. Instead of dealing damage, however, Chris wants to try to capture a trooper. He and his opponent each make Piloting Skill Rolls (an Anti-'Mech Skill Roll for the battle armor). Because the Anti-'Mech Skill Rating of the battle armor is 1 less than the 'Mech's Piloting Skill Rating, a +1 modifier is added to the die roll result for the opponent. Chris rolls 2D6 for a result of 9, while the opponent's roll result is a 7. Even with the +1 modifier, that still leaves an MoS of 1 for Chris… he's snagged the battle armor! The opponent immediately notes on the squad's record sheet that he now has two Phalanx battle armor squads, one of 3 troopers and one of 1 trooper.

Chris notes wryly that if the MoS had not been in his favor, he would've done 9 points of damage [85 (tonnage of the Seraph*) / 10 = 8.5, rounding to 9, x 2 (activated TSM) / 2 (failed attempt to grab trooper) = 9]. As the Phalanx only has 8 total armor, including the trooper, that would have ended it real quick.*

During the Movement Phase of the following turn, Chris successfully stands the Seraph *up from its hull down position. At the start of the Physical Attack Phase of that same turn, an immediate opposed Piloting Skill Roll is made to see if the battle armor breaks free. Chris rolls a 10, while the opponent gets a 5 (making it a 6 with the +1 modifier for the difference in skill ratings). No luck, the trooper is still stuck.*

During his turn to nominate the Seraph *in the Physical Attack Phase, Chris verifies the weight of the Phalanx in comparison to the 'Mech. The 1.5 tons of the Phalanx is 1.76 percent of the* Seraph*'s 85 tons [1.5 / 85 = .0176, or 1.76 percent]. Looking at the Throwing Distance Table, this weight is higher than 1 percent of the* Seraph*'s weight, and so even with the TSM activated (which doesn't change the distance an object can be thrown, only the weight that can be picked up), he can only throw the battle armor 6 hexes. He sees an enemy 'Mech 6 hexes away, which has moved 4 hexes and has a Piloting Skill Rating of 4; there are 2 woods hexes intervening. This provides a final "charging attack" modified To-Hit Number of 11 [3 (Piloting Skill Rating) + 1 (attacker movement modifier) + 1 (target movement modifier) +2 (two light woods hexes) + 5 (distance thrown beyond the adjacent first hex) –1 (difference in Piloting Skill Rolls) = 11]. Chris makes the roll with a result of 12! A hit!*

Next, Chris must figure out the damage to apply to attacker and target, and arrives at 6 points [2 (base damage for a 1–3 ton object) x 6 (number of hexes) = 12 / 2 = 6]. He randomly determines two hit locations, using the appropriate direction of attack, and applies a 5-point and a 1-point Damage Value grouping to the target 'Mech. Six points of damage is then applied to the Phalanx for the "charging attack". Next, damage for a 2-level fall is applied, which the players determine is 1 additional point after looking at the Infantry Falling Damage Table. Finally, the Phalanx (minus all its armor, but still alive), is placed in the hex where it landed.

If the opposing player manages to move the lone trooper into a hex with the original Phalanx squad during a future turn, the trooper can automatically re-merge with its unit during the End Phase.

Attacks Against Units Carrying Battle Armor

Attacks against a unit carrying battle armor in its hands may strike that battle armor as well. When a 'Mech takes a hit on either arm where it is carrying battle armor, roll 1D6. On a result of 1–4, the battle armor unit does not take damage, and the total value of the weapon damage is applied directly to the carrying unit's location; a result of 5–6 means the carried battle armor unit is hit.

For battle armor, a randomly chosen trooper takes maximum damage before the entire carrying unit takes damage. Any damage left after the trooper is destroyed is applied to the location hit.

DROPPING OR SETTING DOWN INANIMATE OBJECTS

A unit may drop a carried object/unit at anytime. If an object is simply dropped, roll 1D6 and use the rules for picking up an object from a fixed location to determine damage; for a dropped unit, resolve damage as for an opposed Piloting Skill Roll with an MoS of 1–3 in favor of the carried unit, as described under *Carrying Hostile Units* (see p. 92).

To set down an object, a 'Mech must go hull-down (see *Biped 'Mech* under *Hull Down* rules, p. 92), an expense of 1MP. The object is placed in the carrying unit's hex or any adjacent hex to the arm arc (if both arms are carried, this must be the front arc), at the controlling player's discretion. A 'Mech can set the object down on an adjacent Level 1 or Level 2 without going hull-down, but must still expend the 1 MP. A ProtoMech can place an object in a hex at the same level as its underlying terrain or at Level 1, only paying the 1 MP cost.

Physical Weapons: During the End Phase of any turn a player with a 'Mech mounting a Hatchet, Mace, Sword or Vibrosword can declare he is dropping the weapon, regardless of whether the weapon is destroyed or not; i.e. the hand actuator in that arm is "occupied" by the weapon and so cannot be used unless the weapon is dropped. The player should simply note that the weapon in question is no longer on the 'Mech and is in the unit's hex (it is now an inanimate object), and also let players know whether the weapon is "destroyed" due to a critical slot hit, or all the critical slots remain undamaged. The same unit, or another unit, can then attempt to pick it up just like an inanimate object (see *Physical Weapons*, p. 90).

DRAGGING A 'MECH

In place of picking up a 'Mech, two friendly 'Mechs may attempt to drag a disabled and/or abandoned 'Mech (friendly or enemy) from the playing area; a friendly immobile 'Mech can be dragged in this fashion, but an enemy immobile 'Mech cannot (it must be disabled and/or abandoned).

Each 'Mech must have two working hand actuators (unoccupied), and the 'Mech to be dragged must have at least 1 internal structure point in both arms or both legs. Both 'Mechs must be in a hull-down position (see *Biped 'Mech* under *Hull Down* rules, p. 19) in an adjacent hex, facing the downed 'Mech. When they stand back up, both apply a +1 modifier to their Piloting Skill Rolls. If either roll fails, nothing occurs, but they fail to "latch onto" the downed 'Mech. Both 'Mechs must go hull-down and attempt to stand back up with the downed 'Mech once again.

The weight of the 'Mech to be dragged must be equal to or less than the combined weight of the two 'Mechs doing the dragging. Additionally, use the Movement Penalties under *Cargo Carriers* (see p. 261, *TW*) for the modifications to movement for dragging; treat the dragged unit's weight as half (round down), applied to each dragging 'Mech. For example, a 5/8 *Quickdraw* and a 4/6 *Hunchback* are dragging a 25-ton *Dart*. A quarter of 50 tons is 12.5. Half of the *Dart*'s weight is also 12.5 (the weight applied to both the *Quickdraw* and *Hunchback*), so they either subtract 3 or cut in half, rounding down (which ever is less) their Walking MP. In this instance that leaves the *Hunchback* with a Walking MP of 1 and the *Quickdraw* with a Walking MP of 2; neither unit can move faster than the *Hunchback's* Running MP of 2 while dragging the unit.

While the two 'Mechs are dragging the other 'Mech they are considered to be in the same hex with the prone 'Mech, both with the same facing, while the prone 'Mech is being dragged by its arms or legs (and so is facing in the same or opposite direction), face-down. No other units, infantry or otherwise, can occupy the hex. Neither dragging 'Mech can make any physical or weapon attacks. Any attacks against any of the three 'Mechs involved that miss the target automatically have a chance at striking the two dragging units (see the *Missed Shots* rule, p. 79).

If either dragging 'Mech falls (due to damage, terrain and so on), the falling 'Mech is displaced into a randomly determined adjacent hex (it is displaced before falling damage occurs), while the other 'Mech "loses its grip." Though it does not fall, it also is randomly displaced into an adjacent hex. In both cases, players should avoid additional displacements if possible; if they are unavoidable, resolve any additional displacements and/or domino effects as appropriate. A successful charging attack or a death-from-above attack against either dragging 'Mech automatically displaces all three 'Mechs; randomly determine which 'Mech to displace first, then displace the second 'Mech and finally the third 'Mech, resolving damage and any additional displacements that this might cause in order.

At the end of every Movement Phase after the dragging 'Mechs have moved into a new hex (regardless of how many hexes), each should make a Piloting Skill Roll. If either roll fails, the 'Mechs do not fall and do not lose their grip. Instead, a failure means they were unusually rough in pulling the prone 'Mech. If one or both dragging 'Mechs fail the Piloting Skill Roll, apply 1D6 points of armor as a single Damage Value grouping to a randomly determined location on the prone 'Mech, using the Front column of the hit location table. Additionally, roll for determining critical hits and apply any that occur to a random location using the Front column of the hit location table; if more than one critical hit is rolled, assign each critical hit to a different location (ignore a "limb blown off" result and apply 3 critical hits instead).

OTHER COMBAT WEAPONS AND EQUIPMENT

The following section provides additional optional rules that enhance the capabilities of certain weapons and equipment.

SPECIAL: SHUTTING OFF EQUIPMENT

During the End Phase of any turn, a player may announce that they are powering down a weapon or piece of equipment on a unit they control (or powering up a previously powered-down item). The change must be marked on the unit's record sheet. A powered-down weapon may not fire, but powered-down weapons and equipment do not explode if they suffer a critical hit. Powered-down electronics do not function, and are not valid targets for anti-radiation missiles.

A powered-down item is still destroyed if it takes a critical hit. Ammunition, fuel, cargo, etc., may not be powered down and explosive ammunition, fuel, or cargo will always explode if it takes a critical hit.

ACTIVE PROBES

Active probes are primarily used to locate hidden units on the battlefield—battle armor as well as 'Mechs and vehicles. Active probes cannot detect hidden unarmored infantry.

Hidden Units (Expanded)

In standard-rules play, the player determines if any enemy units lie within the detection radius of an active probe after the unit has finished moving (see p. 129, *TW*). As an optional rule, the effect radius can be active throughout the unit's entire movement. This allows a probe-equipped unit to detect hidden units along its movement path, whereas the standard rules can result in a probe passing a hidden unit without detecting it.

Targeting

Another optional rule allows active probes to aid in targeting enemy units within the probe's range. If the target is within the probe's range and line of sight exists to the target, reduce the total to-hit modifier for firing through and into woods/jungles by 1 (that is, reduce the total woods/jungles modifier by 1, regardless of the number of woods/jungle hexes involved.

This bonus applies only to the unit with the Probe, unless that unit is part of a C^3 network, in which case the bonus is passed along to other units in that network.

Concealing Information

A unit with an active probe can also acquire information about an enemy unit's status if players are playing with concealed record sheets (see *Concealing Information*, p. 187).

Minefields

A unit with an active probe can potentially reveal minefields (see *Weapon-Delivered Minefields*, p. 178).

ECM Suites

A unit with an active probe will find it easier to overcome an ECM's ghost target ability (see *Ghost Targets*, p. 98).

ANTI-MISSILE SYSTEMS

To increase the effectiveness of anti-missile systems, the following two optional rules are available.

Enhanced Missile Defense

Under *Total Warfare* rules, an anti-missile system subtracts four from the die roll result on the Cluster Table for a missile weapon, but this cannot be modified below a result of 2. In this optional rule, anti-missile systems can be more effective. If the modified die roll result is less than 2, the anti-missile system has successfully destroyed all the missiles and no damage from the weapon is applied.

Used As a Weapon

Though designed as a defensive measure, the standard anti-missile system is a kind of specialized machine gun and can be fired as an offensive weapon in a pinch. An AMS used as a weapon functions exactly like a machine gun, except that it has a range of 1; it cannot reach targets at medium or long range (or more). A laser AMS used as a weapon acts like a micro pulse laser with a maximum range of 1.

AUTOCANNONS

Compared to laser weapons, autocannons have little to recommend them except for heat efficiency and submunitions. The following advanced rules suggest several options that make autocannons more potent weapons on the battlefield.

Note that these options only apply to autocannons, not other types of Direct-Fire Ballistic weapons such as Gauss rifles and artillery cannons.

Optional Firing Modes

Autocannons fire bursts of large-caliber shells to damage a target, much like enormous machine guns. They can be used in rapid-fire mode or fired at multiple targets, as described below.

Rapid-Fire Mode: Any standard or light autocannon (not LB-X, Ultra or Rotary models) can fire any ammunition type legal to it at double the standard rate, as though it were an Ultra AC. This approach carries considerable risks. Follow the standard rules for a Rapid-Fire Weapon firing two shots (see p. 114, *TW*), with the following exceptions.

The weapon jams on a To-Hit result of 4 or less (rather than 2 or less). On a To-Hit result of 2, the rounds in the chamber explode inside the barrel. This causes an effect similar to an ammunition explosion, but inflicts only the amount of damage the autocannon would normally inflict in one shot and does not cause any other ammo to explode. The autocannon is considered completely destroyed (meaning players must mark off all of its critical slots). CASE keeps this damage from spreading to other locations, but the MechWarrior still receives two pilot hits.

Double the heat generated by the specific weapon type used when firing in Rapid-Fire Mode (see p. 114, *TW*).

Multiple Targets: Rather than firing at a single target, any type of autocannon can be "walked" across two targets close to one another. An LB-X autocannon firing a cluster shot and Ultra and Rotary autocannons firing at multiple targets are a special case.

No matter what type of autocannon is being used, both targets must be in adjacent hexes and within range of the weapon. Determine the to-hit number for both targets and make separate to-hit rolls against each target, using the higher (more difficult) of the to-hit numbers and adding a +1 modifier for firing at multiple targets with a single shot. Note that this is not the secondary target modifier; that modifier does not apply to this type of attack unless multiple targets also are being attacked in the same phase. If the to-hit roll succeeds, the target is struck by a single hit that inflicts damage equal to half the normal damage done by the weapon (rounded down).

For an LB-X autocannon firing a cluster shot, make a single to-hit roll against the highest to-hit number plus 1. If all damage is applied to the first target after a roll on the Cluster Hit Table, then no additional damage is applied to the second target. However, if some of the damage missed the target, use that "missed" Damage Value as the new number to roll on the Cluster Hit Table to determine what damage struck the second target. For example, a controlling player rolls a 7 on the Cluster Hit Table roll for an LB 10-X, resulting in six 1-point Damage Value groupings hitting the first target. That leaves 4 damage and so the controlling player would then roll on the 4 column of the Cluster Hit Table to see what damage is applied to the second target.

For Ultra and Rotary autocannons, make a single to-hit roll against the highest to-hit number plus 1. Then determine whether the designated number of shots fired hit a target. If only one shot hit, it will strike one of the targets—determined at random—with a single shot that does full damage. If two, four or six shots hit, one, two or three shots will strike each target at full damage. If three or five shots hit, one or two shots will strike each target; randomly determine where the other shot lands.

When using this attack from a non-infantry unit against conventional infantry, treat the weapon as the next row above on the Non-Infantry Weapon Damage Against Infantry Table (see p. 216, *TW*). i.e. a Cluster (Ballistic) becomes a Direct Fire (Ballistic) attack.

Players can fire at multiple targets in rapid-fire mode (see above). Resolve damage as though the autocannon is a Rapid-Fire weapon firing two shots.

ECM SUITES

The rules below expand on the use of ECM suites.

ECCM

An ECM Suite (including infantry ECM) can be tuned to act as electronic counter-countermeasures (ECCM) in order to negate enemy ECM systems. The ECM loses its normal functions when used in this way. The player must announce the switch to ECCM in the End Phase of any turn, or may set the suite for ECCM at the start of the scenario. In either case, note the change on the record sheet of the unit in question.

While the ECCM suite is active, the electronic countermeasures of an enemy unit within the ECCM's radius will not work. Also, any LOS traced through a hex that is encompassed by both ECM and ECCM will be unaffected by the ECM, even if the actual unit carrying the ECM suite is outside the ECCM bubble.

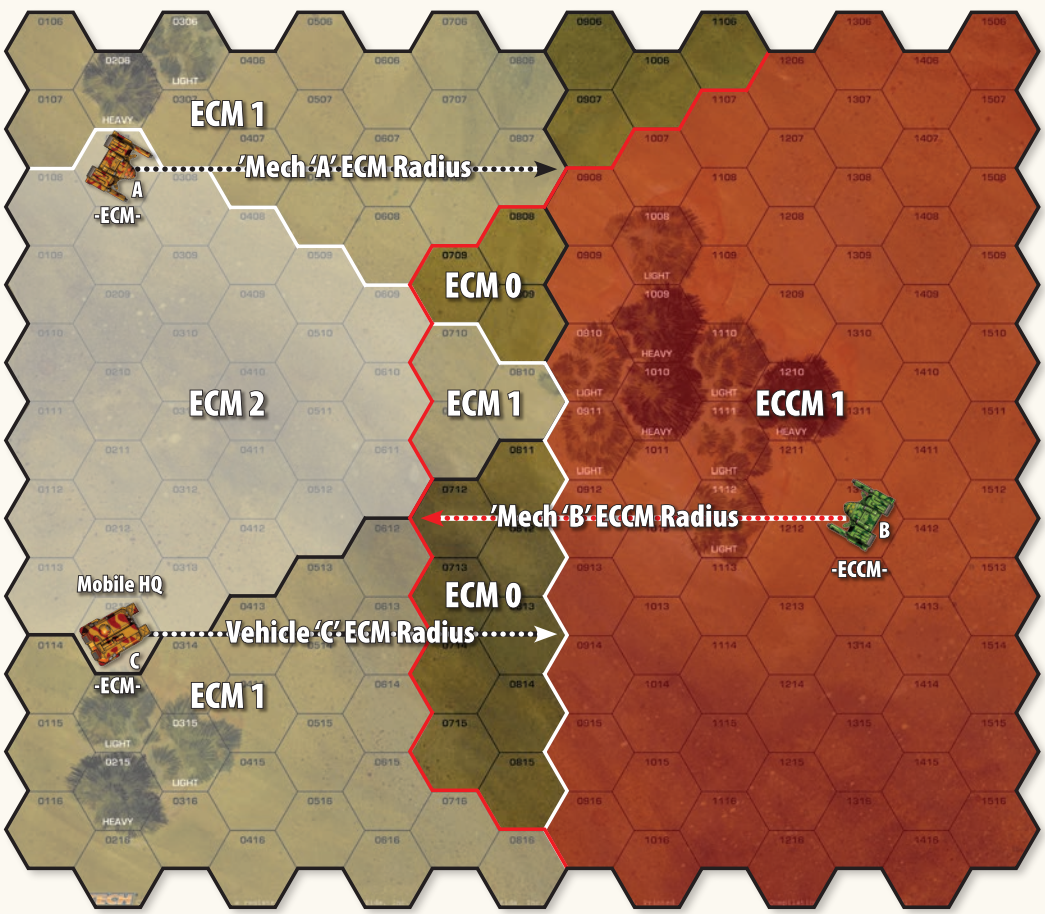
If multiple units equipped with both ECM and ECCM are on the map, the interaction between the two types of electronics systems becomes complicated, because multiple ECM suites operating in the same area can counter an enemy's ECCM (see the ECCM Diagram below). One ECCM suite can counter one ECM suite. If the amount of friendly ECCM in a hex is equal to or greater than the enemy ECM in that hex, ECM does not function in that hex.

Angel ECM may only be countered by Angel ECCM; standard (Guardian) ECCM does not interfere with Angel ECM in any way. Similarly, one Angel ECCM can counter any amount of non-Angel ECM. Alternatively, the player may elect to operate his Angel ECM Suite as if it were two standard ECM Suites, losing the additional jamming abilities of the Angel Suite but gaining the ability to operate ECM and ECCM simultaneously. As with the choice to operate an ECM suite in ECCM mode, the decision to operate an Angel Suite as two standard suites must be made in the End Phase of the preceding turn.

ECM Pod: The iNarc ECM Pod (see p. 141, *TW*) can also be used to generate an ECCM field. Each time a player fires an ECM Pod, he declares whether it is a standard ECM Pod or an ECCM Pod.

Communications Equipment: Communications equipment (see p. 212, *TM*) can be used to generate an ECCM field with the same area of effect as an Inner Sphere Guardian ECM Suite. Any unit that mounts 3 to 6 tons of communications equipment equals half of an ECM suite when generating an ECCM field. If the unit mounts 7 or more tons of communications equipment, it equals 1 ECM suite when generating an ECCM. Any time communications equipment is used to generate an ECCM field, all other bonus modifiers are lost.

Stealth Armor: Though a unit with Stealth Armor requires an active ECM suite to operate, this ECM cannot be used to create ECM or ECCM fields while the Stealth Armor is active. If the unit mounts an Angel ECM Suite, it may be used to both power the Stealth Armor and produce an ECCM field; however, this will result in just the ECCM field being active, with all effects from the Stealth Armor lost except for the 10 heat generated. ECCM fields have no effect on Stealth Armor.



ECCM DIAGRAM

Ghost Targets

An ECM suite can be tuned to generate "ghost targets" that may affect the ability of enemy units to properly target friendly units. The ECM suite loses its normal functions when used in this way. The player must announce the switch to ghost target generation in the End Phase of any turn, or may set the suite for ghost target generation at the start of the scenario. In either case, note the change on the record sheet of the unit in question.

At the start of every Weapon Attack Phase when a unit has an ECM suite tuned to generate ghost targets, the unit may target either one friendly or one enemy unit within range of its ECM suite (a unit may target itself). The unit using ghost targets makes a Piloting/Driving Skill Roll with a +3 modifier; no other modifiers are applied to this roll. If the roll fails, there is no effect. If successful, apply a +1 to-hit modifier to all ranged attacks made against the target if the target is friendly to the unit using ghost targets, or a +1 to-hit modifier to all the target's ranged attacks if the target is an enemy. This modifier lasts until the end of the Phase; to generate it again the next turn requires a new skill roll.

Multiple ECM suites generating ghost targets may affect the same unit, applying a +1 to-hit modifier per successful roll, to a limit of +3 in friendly ghost target modifiers and +3 in enemy modifiers.

Active Probe: A unit with any type of active probe ignores any ghost target to-hit modifiers, regardless of the range of their probe, unless the unit with the probe is being jammed or has active stealth armor.

Angel ECM Suite: An Angel ECM Suite generating ghost targets can also be tuned to act as 1 ECM or 1 ECCM at the same time.

Cockpit Command Console: If a unit mounts a cockpit command console (see p. 112, *TO: AUE*) and has a second pilot that enables all its other abilities to function, it can be used to generate ghost targets up to six hexes away.

Communications Equipment: Communications equipment (see p. 212, *TM*) can be used to generate ghost targets up to six hexes away. However, to do so, the unit must mount 7 or more tons of communications equipment. Communications equipment may not generate ghost targets and an ECCM field at the same time.

Conventional Infantry: Ghost targets have no effect on conventional infantry.

ECCM: An ECM suite cannot generate ghost targets if the amount of friendly ECCM in a hex is less than the enemy ECM in that hex.

Stealth Armor: A unit with active stealth armor and an Angel ECM Suite may generate ghost targets. However, such a unit generating ghost targets also suffers from a +1 to-hit modifier to all its ranged attacks.

Multiple Fields From A Single Unit: A unit mounting any combination of ECM Suite, Communications Equipment, and Cockpit Command Console can potentially generate as many ghost targets as it mounts appropriate equipment (up to the maximum modifiers on any one target as outlined above). Each target and attempt must be selected and rolled separately.

ENERGY WEAPONS

Any energy weapon (either Direct Fire or Pulse) can dial down its Damage Value, cutting back on heat generated. Before a controlling player makes a to-hit roll for an energy weapon attack, he can announce that he is "dialing back" the Damage Value. For each 1 point less of Damage Value, the weapon generates 1 less heat point than normal, to a minimum of 1 heat; regardless of whether a weapon's Damage Value is reduced to 0, the weapon will always generate at least 1 heat. For example, a medium laser could dial back its Damage Value of 5 down to a 3 to only generate 1 heat. However, even if the medium laser's Damage Value is dialed back to a 2, 1 or even 0, the weapon would still generate 1 heat. Meanwhile, an Inner Sphere ER large laser dialed back to a 0 Damage Value would still generate 4 heat.

This dialing back rule has no other affect; i.e. it doesn't change a weapon's range, to-hit modifiers, and so on.

Ammo: Any energy weapon that is ammo-dependent (such as a vehicle flamer, Plasma weapons and chemical lasers) cannot make use of this rule.

Bombast Laser: Only use this rule for a Bombast Laser when dealing with a Damage Value of 7 or less. For a Damage Value greater than 7, use that weapon's special rules (see p. 132, *TO: AUE*).

MACHINE GUNS

The humblest weapon on the battlefield, the often-neglected machine gun can be fired in new optional modes in advanced-rules play. Like autocannons (see p. 98), machine guns can be fired against multiple targets or in rapid-fire mode.

Against multiple targets, machine guns use the rules for autocannons. If any of the targets is a conventional infantry unit, after determining the number of troopers eliminated (see Burst-Fire Weapon Damage Vs. Conventional infantry Table, see p. 217, *TW*), divide the value in half (round down) to minimum of 1.

When rapid-firing, use the optional rule below.

Rapid-Fire Mode

A machine gun may be modified to fire at a much higher rate than normal, chewing up huge amounts of ammunition but significantly increasing the weapon's damage potential. The controlling player must mark any machine guns to be used in rapid-fire mode on the record sheet at the beginning of the game, and the weapons must be rapid-fired for the entire game.

Each time the weapon is rapid-fired, roll 1D6 to determine the heat generated. This number also becomes the damage inflicted by the weapon if it hits (it is possible for a burst to inflict only 1 point of damage). Each rapid-fire burst uses a number of rounds equal to the damage rolled below (whether it hit or not) x 3.

Rapid-fire machine guns do not inflict increased damage on conventional infantry. Conventional infantry may not use Rapid Fire mode. Battle Armor may use this rule, and roll for each active trooper firing an MG separately.

Light and Heavy Machine Guns: For light machine guns, the damage and heat is 1D6 –1 (to a minimum of 1); for heavy machine guns the damage and heat is 1D6 +1.

Machine Gun Array: Machine Guns cannot be fired in rapid-fire mode when fired as part of a Machine Gun Array (see p. 137, *TW*); for Machine Guns in an array to use rapid-fire mode, the Machine Gun Array must be shut off before the game begins, and left off throughout.

MISSILES

The minimum range of missiles in the standard rules reflects the time it takes for the internal guidance systems to lock on to targets and for the explosive payloads to arm. Hot-loading enables a player to arm his warheads before firing the missiles.

Because a 'Mech's ammo bays are enclosed during battle, missiles must be hot-loaded before a scenario.

The controlling player must indicate which ammo slots are "hot-loaded" on the 'Mech's record sheet before play begins. Because vehicles have crews that can set up missiles to be hot-loaded during battle, a player controlling a vehicle can announce hot-loading during the End Phase of a turn. After the End Phase of the following turn, any of the vehicle's missile launchers can be set to fire hot-loaded missiles. A player may follow the same procedure to switch back to normal firing mode.

Minimum-range modifiers do not apply to hot-loaded-missiles. However, hot-loaded missiles are not as accurate as standard missiles. When resolving damage from a flight of hot-loaded missiles, the attacking player rolls 3D6. Add the two lowest die results together to determine hits on the Cluster Hits Table.

Because hot-loaded missiles are fully armed in the launcher, any critical hit to the launcher triggers a missile explosion that destroys all of the launcher's critical slots. Also, the body location of the launcher takes damage equal to the maximum potential damage of the missile flight. For example, an exploding hot-loaded LRM 10 launcher causes 10 damage points to the internal structure of the location where it's mounted. Any time a hot-loaded missile launcher explodes, the controlling player must roll 2D6. On a result of 2 through 5, the destruction of the launcher triggers an ammunition explosion in a single ammunition slot in that location (randomly determined), if any exist in that location. Note that vehicles store their ammunition in the "body" away from where the actual launchers are mounted and so this roll is never made for a vehicle.

Equipment: All missile-related equipment still apply all their standard modifiers when using this rule, such as Artemis-IV, -V, NARC and TAG munitions and so on. Smoke and illumination rounds are also un-affected by hot-loading missiles.

Mine Clearing: Mine-clearing attacks are unaffected by this distinction.

Vehicle Crews: If a vehicle has a crew of 1, it cannot make use of hot-loaded missiles unless they are designated as such before the start of the game.

PARTICLE PROJECTOR CANNON (PPC)

The following provide optional rules for PPC use.

Disengaging Inhibitor

Advanced rules for particle projector cannons allow players to disengage the weapon's field inhibitors if they so desire. The field inhibitors restrict the dangerous charged-particle feedback produced when a PPC is fired, but also prevent the weapon from firing accurately at targets closer than minimum range. Disengaging a PPC's field inhibitor removes the minimum range modifier, at the risk of subjecting the firing unit to particle feedback.

To disengage a unit's PPC inhibitor, a player must declare the inhibitor disengaged during the End Phase of a turn; the inhibitor will stay disengaged until a player announces during a subsequent End Phase that it is re-engaged. The standard minimum-range modifier does not apply to that attack; otherwise, the player makes his to-hit roll per standard rules. The player must then roll 2D6 and compare it to the PPC Feedback Table, below, to determine if the shot causes particle feedback. If the result is less than the safe level shown above, the first unmarked PPC critical slot is destroyed and the 'Mech takes additional damage equal to the Damage Value of the PPC (as well as capacitor, if the PPC is connected to one and it is charged) to the internal structure of the body location in which the weapon was mounted, even if the Expanded Critical Damage rules (see p. 73) are in effect. CASE will stop damage transfer, but the MechWarrior will always take two pilot hits.

Aerospace Fighters: The damage is applied to the armor location; if the damage destroys the armor, then any remaining damage is halved (rounded down) and applied to the SI, per standard damage transfer rules.

Large Craft: Large Craft cannot disengage a PPC inhibitor.

Overcharging

A unit can intentionally override the safeguards on a particle projector cannon and overcharge the PPC. However, this dangerous move can have unexpected consequences and automatically results in damage inflicted on the PPC itself.

At any time before firing the weapon, the player announces he is overcharging it. When the controlling player makes a weapon attack with an overcharged PPC, he or she rolls a number of dice equal to the type of PPC fired, based on the Overcharging PPC Table (below). The player rolls those dice and adds the results together. This value is added to the standard Damage Value and heat generated by the weapon that turn.

The weapon automatically takes a critical hit (applied to the topmost unmarked critical slot) when it is overcharged. Additionally, the player then compares the original die roll result to the Feedback Table. If the player rolled only a single

PPC FEEDBACK TABLE

Target Distance	Avoid Feedback On
1 hex	10+
2 hexes	6+
3 or more hexes	3+

OVERCHARGING PPC TABLE

Weapon Type	Dice Rolled
Light PPC	1D6
PPC, ER PPC, Snub-nose	2D6
Heavy PPC	3D6

die, consult the "3 or more hexes" row; if the player rolled two dice, consult the "2 hexes" row; if the player rolled three dice, consult the "1 hex" row. If the result of the die roll is less than or equal to the relevant number, the PPC catastrophically explodes; use the rules under *Disengaging Inhibitor* (at left) for determining the damage caused by such an explosion (damage applied to the unit is equal to the total Damage Value of the overcharged PPC; the only difference is that instead of a single critical hit, all of the weapon's critical slots are marked off).

PPC Capacitor: Overcharging can be used with a PPC capacitor, but regardless of whether or not an explosion occurs, in addition to the single critical hit applied to the PPC, the PPC capacitor slot is marked as destroyed.

RETRACTABLE BLADE

In Advanced Rules retractable blades have a deadly, if risky attack. Anytime a 'Mech with a retractable blade that is retracted successfully punches, the controlling player can immediately announce that he is extending the retractable blade. This automatically inflicts a possible critical hit in the location successfully struck by the punch attack (this additional possible critical hit is regardless of whether internal structure was damaged or not); the player rolls on the Determining Critical Hit Table, if a 'Mech, or the appropriate Vehicle Critical Hits Table, if a vehicle. In the case of a successful punch against a battle armor unit, a critical hit means the trooper inside the suit struck is automatically eliminated. However, the controlling player must immediately roll 2D6. On a result of 10+, the blade is destroyed (mark off the topmost critical slot).

HEAT

Under standard rules, though a 'Mech's heat level can rise above 30, it has no additional effect on the 'Mech beyond the power plant shutdown at 30 Heat Points, though the excess heat makes it take longer to restart the 'Mech. The following rules add additional effects to the heat scale above 30 points. This is important because many modern and especially advanced 'Mech designs can build up far more than 30 heat points. With this optional rule, such extreme heat levels can have dire consequences.

For ease of use, the Expanded Heat Scale is included on the Advanced 'Mech Record Sheet at the back of this book.

AVOIDING SHUTDOWN

The Expanded Heat Scale shows some shutdown-avoid numbers higher than 12. The following optional rule is recommended for use in conjunction with the new heat scale, but can be used in any game.

The controlling player of a unit can make a Piloting Skill Roll to avoid shutdown, because a skilled pilot would know how to override shutdown. To find the base target number, find the appropriate Avoid Number under the Heat Data and apply a –5. Then apply a final modifier based upon the skill of the pilot as shown on the Avoid Shutdown Pilot Skill Rating Modifiers Table. For example, at a heat level of 34, for a Veteran Pilot, the final Modified Target Number would be 8 [14 (34 heat level avoid number) –5 (standard modifier) –1 (veteran pilot) = 8].

EXPANDED HEAT SCALE

Heat Points	Effects
50	Shutdown
49	–9 Movement Points
48	+7 modifier to fire
47	*Pilot damage, avoid on a result of 12
46	Shutdown, avoid on a result of 20+
45	Ammo explosion
44	**System failure, avoid on a result of 10+
43	–8 Movement Points
42	Shutdown, avoid on a result of 18+
41	+6 modifier to fire
40	Ammo explosion, avoid on a result of 12
39	*Pilot damage, avoid on a result of 10+
38	Shutdown, avoid on a result of 16+
37	–7 Movement Points
36	**System failure, avoid on a result of 8+
35	Ammo explosion, avoid on a result of 10+
34	Shutdown, avoid on a result of 14+
33	†+5 modifier to fire
32	*Pilot damage, avoid on a result of 8+
31	–6 Movement Points
30	Shutdown, avoid on a result of 12+

* If the Avoid Roll fails, the pilot takes 1 point of damage. If the 'Mech has suffered a Life Support critical hit, this damage cannot be avoided, and is added to damage normally suffered (see p. 127, *TW*).

** Extreme heat levels can cause critical damage to the 'Mech. If the Avoid Roll fails, roll a hit location on the Front column of the 'Mech Critical Hit Table and apply a single critical hit to that location. Determine the slot hit normally.

† Inferno ammunition automatically explodes.

AVOID SHUTDOWN PILOT SKILL RATING MODIFIERS TABLE

Pilot Skill Rating	Modifier
6–7	+1
4–5	+0
2–3	–1
0–1	–2

REROUTING HEAT SINK COOLANT ('MECHS ONLY)

Heat sinks networks are designed to cool the entire 'Mech, offering maximum flexibility at the expense of efficiency. It is possible to re-route the coolant flow from the cockpit controls, sending more coolant to a specific item of equipment, but denying that coolant to the rest of the 'Mech's systems. This is called linking the heat sink.

When sufficient numbers of heat sinks are linked to the item of equipment, the item is treated as generating slightly less heat than normal, representing a boost in efficiency. To gain this improvement, first calculate the reduced heat output of the item. The heat load reduction is calculated as follows: an item that generates 10 or more heat points when activated (i.e. a PPC, a fusion engine with 2 critical hits and so on) has its heat reduced by 2 points; an item that generates 3 to 9 heat points when activated (i.e. a medium laser, a fusion engine with 1 critical hit, an Inner Sphere large laser, and so on) has its heat reduced by 1 point; items that generate 0 to 2 points of heat (i.e. machine guns, undamaged fusion engines, and so on) do not have their heat reduced.

This reduced heat does not take effect until sufficient heat sinks have been linked to completely handle the reduced heat load. For example, a MechWarrior trying to link double strength heat sinks to an ER PPC would not receive the benefits of the linked heat sinks until 7 DHS were linked to the one weapon.

Heat sinks linked to an item cannot be used to handle heat from other heat sources. A heat sink linked to the engine can dissipate heat from non-jumping movement as well as heat generated by engine critical hits; jump jets must have heat sinks linked to each jump jet individually.

During the End Phase, a player may announce an attempt to link a heat sink. The player makes a standard Piloting Skill Roll, applying all standard modifiers. Only one heat sink may be linked in this fashion per End Phase. Additionally, the heat sink must appear on the Critical Hit Table (heat sinks not shown on the Critical Hit Table are integral to the engine, and so cannot be re-routed to specific systems.) A successful Piloting Skill Roll routes the coolant from that heat sink to one desired component: the engine, one jump jet, or one weapon or other heat-generating component. Mark the link in pencil on the Critical Hit Table.

A failed attempt has no effect. If using the *Fumbles* rule (see p. 73), a fumble actually ruptures a coolant line, recorded as a critical hit against the heat sink the controlling player was attempting to link.

Ending a link similarly is performed one heat sink per End Phase, but success is automatic; no Piloting Skill Roll is needed.

Coolant Pod: Coolant Pods (see p. 115, *TO: AUE*) do not affect linked heat sinks, as they are outside the normal coolant distribution network.

PPC Capacitors: PPC Capacitors (see p. 149, *TO: AUE*) are not considered part of the PPC for this rule and must be linked separately.

Critical Hits: If the item a heat sink is linked to is destroyed, the player must reroute any linked heat sinks, using the rules above, before those heat sinks can be used again.

HEAT SINK COOLANT FAILURE ('MECHS ONLY)

Despite the wonders of technology and solid maintenance, push a 'Mech's heat too far and venting for emergency pressure relief and evaporative cooling results in a reduction of coolant inventories to dangerous levels. In some cases, the heat burden reduces the efficiency of heat sinks in a vicious cycle of overheating and efficiency reduction, until the 'Mech is barely able to cool itself. As a result, in extended battles, BattleMechs may need external cooling assistance and coolant replenishment of a coolant truck to get their heat levels under control.



In harsh, deep deserts, heat can be worse than any enemy.

During the End Phase of any turn in which a unit has Heat 5 or higher (meaning heat is being tracked on the Heat Scale that has inflicted some type of modifier), the player rolls 2D6 and applies the modifier from the Heat Sink Coolant Failure Modifier Table based on that level of heat to the die roll result. If the modified result is 10 or higher, a breakdown in the 'Mech's coolant efficiency has occurred. The total heat dissipation capacity of the 'Mech is reduced by 1, starting during the Heat Phase of the following turn.

This is not a critical hit applied to a given heat sink, and so it must be tracked separately. A unit can lose both heat sinks due to damage, as well as multiple strikes against its total heat dissipation from multiple failures of this die roll. If a unit receives enough strikes against its heat dissipation capacity in this manner, depending upon other circumstances (such as engine hits, infernos and so on), a unit may not be able to dissipate any heat at all without the assistance of a coolant truck's coolant system (see below).

Coolant Systems

Coolant trucks are not only useful for cooling off overheated 'Mechs, but can replace degraded coolant during the midst of a battle (as might occur under the *Heat Sink Coolant Failure* rule; at left), thus returning a 'Mech to full heat-dissipation capacity.

HEAT SINK COOLANT FAILURE MODIFIER TABLE

Heat Level	Modifier
5–10	+0
11–15	+1
16–20	+2
21–25	+3
26–30	+4
31–35	+5
36–40	+6
41–45	+7
46–50	+8

Any unit with at least 5 tons of liquid storage capacity (for example, the Coolant Truck from *Technical Readout: 3039*) can be used under this rule; the player simply nominates the unit to be carrying the appropriate type of coolant before the start of play. For this rule, any such unit is termed "coolant truck," regardless of what unit actually might mount such storage capacity.

The controlling player of any 'Mech adjacent to a friendly coolant truck at the end of a Movement Phase may announce that the 'Mech is hooking up. Hooking up takes the remainder of the turn, and so the 'Mech may make no attacks. During the Heat Phase of that turn and every Heat Phase thereafter during which the 'Mech remains attached, a 'Mech hooked up to a coolant truck can dissipate an additional 15 points of heat. Additionally, the 'Mech removes two points of coolant failure.

A player may announce his intention to detach a 'Mech from a coolant truck during the End Phase of any turn. Detaching takes up all of the following turn, after which the 'Mech can move and operate normally.

A 'Mech hooked up to a coolant truck is immobile (as is the coolant truck), and so the standard –4 modifier for an immobile target applies to the to-hit number for attacks against it. It can also be the target of aimed shots. The 'Mech stays immobile (i.e. it cannot expend any MPs and is considered immobile) for the entire cooling process, from hookup to detaching, though all its electronics still work, it can make any type of weapon attacks and/or appropriate physical attacks and so on.

If a 'Mech falls or is displaced, the hook-ups are automatically undone; the 'Mech will need to be hooked up once more, using the rules outlined above. Additionally, roll 1D6; on a result of 4 or higher, the hook up is damaged and cannot be used for the remainder of the scenario.

Each coolant truck has five hookup points. Light and medium 'Mechs (up to 55 tons) use a single hookup point to cool down. Heavy and assault 'Mechs (60 tons and up) require two hookup points.

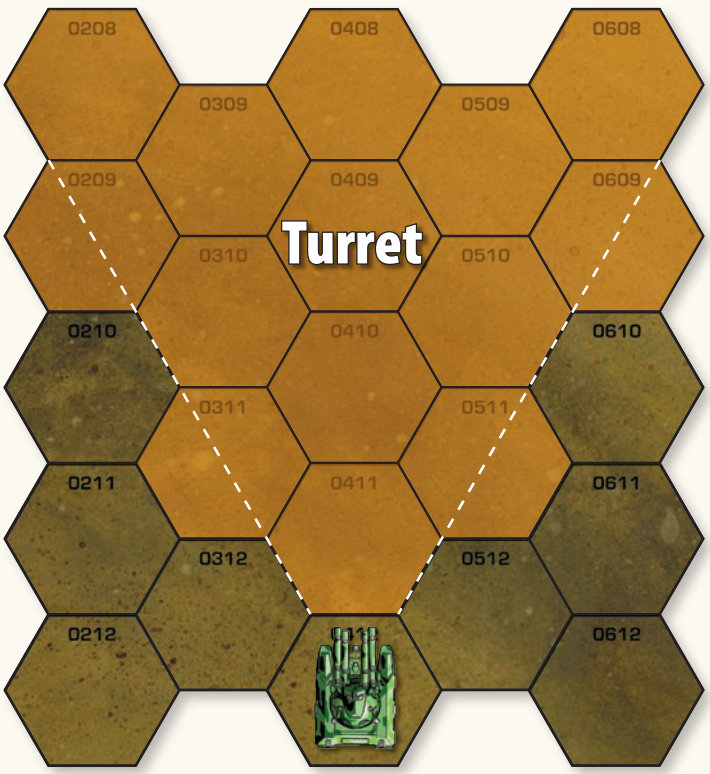
Currently accepted rules of warfare offer a hooked-up 'Mech a degree of immunity from battle; if it makes no attacks, no one will fire on it. If the 'Mech engages in hostile action, however, enemy units may fire at it with impunity. This convention is a point of etiquette rather than a hard-and-fast game rule.

Coolant trucks equipped with flamers or sprayers may fire coolant. A player must announce his intention to fire coolant before using the flamer/sprayer, and firing coolant consumes a "shot" of flamer ammo. Also, firing coolant through a flamer/sprayer reduces the number of hookup points available for other uses (the tank can only pump so much coolant). Each vehicle flamer/sprayer fired reduces the number of available hookups by 1; each heavy flamer fired reduces the number of hookups by 2. A single coolant-equipped vehicle can fire coolant through a maximum of five standard vehicle flamers/sprayers or two heavy flamers and one standard flamer/sprayer; in this case no coolant flows to the hookup points.

A coolant truck may fire coolant at a heat-tracking target (such as a 'Mech) to reduce its heat level, though this does not work nearly as efficiently as hooking up to it. Resolve



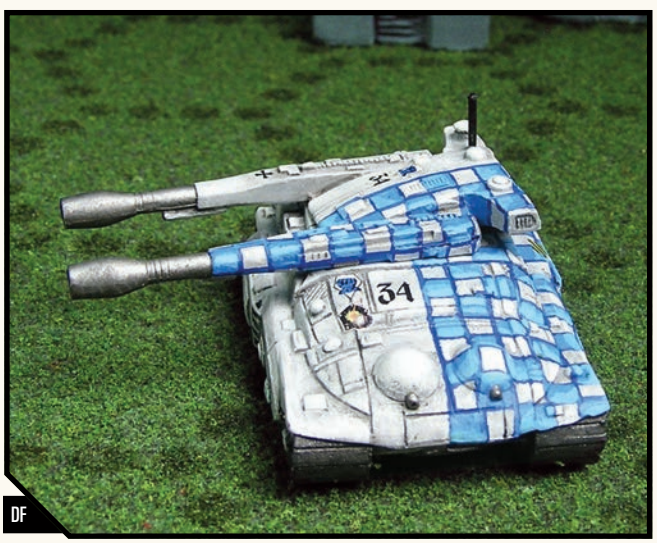
• NEW VEHICLE ARC FIRING DIAGRAM •



• NEW VEHICLE TURRET ARC DIAGRAM •



● NEW VEHICLE FIRING ARCS DIAGRAM ●



Demolisher II, First Donegal Jaegers (House Steiner)

the shot as a normal flamer/sprayer attack. If the attack hits, the coolant shot reduces the target's heat level by 3 (by 4 if fired by a heavy flamer) rather than inflicting damage; a unit can be cooled a maximum of 9 points per turn in this manner. Coolant fired at conventional infantry is treated as a 1-point direct-fire (ballistic) weapon when determining damage to the unit (see p. 216, *TW*).

Coolant may also be fired at a burning hex or unit to put out the fire. Roll against the to-hit number as with a normal attack, applying the Immobile Target modifier if firing at a hex. If fired on a hex, structure or unit that has caught fire, coolant ammo douses all such fires not created by Inferno munitions (such as Inferno Fuel, Inferno Missiles, Inferno Mines and Inferno Artillery rounds) on a 2D6 roll of 4+. For fires caused by Inferno munitions, a roll of 12 is required to extinguish the flames.

VEHICLES

The following additional rules specifically apply to vehicles in combat.

AMMUNITION TRAILERS

Using this rule, a vehicle attached in a Tractor/Trailer combination can use the ammunition carried by an adjacent, attached vehicle.

FIRING ARCS

In advanced rules, vehicles have unique firing arcs as shown on the New Vehicle Firing Arcs diagram. The diagram also includes all the various firing arcs a vehicle could potentially posses, based on the equipment it mounts (see *TO: AUE*, *Vehicular Sponson Turrets*, p. 160, and rules for mounting two turrets, p. 159).

VEHICLE EFFECTIVENESS

While the vehicle rules presented in *Total Warfare* increased the effectiveness of vehicles from previous rules sets, vehicles were still carefully maintained at a level that would leave 'Mechs the kings of the battlefield. For those players wishing to further increase the effectiveness of vehicles, the following changes to the Ground Combat Vehicle Hit Location Table and Motive System Damage Table (see p. 193, *TW*) can work wonders. Individual playing groups can pick and choose which of these changes they wish to implement.

VTOLs and Large Vehicles: If desired, these same changes can be made to VTOL and Large Vehicle hit location tables.

Ground Combat Vehicle Hit Location Table

- Remove the critical result from the "8" die roll result on the Side column.
- Remove the potential motive system damage from the "9" die roll result on the Front, Rear and Side columns.

Motive System Damage Table

- Completely remove the Attack Direction Modifiers.
- Reduce all Vehicle Type Modifiers by 1 (to a minimum of 0).

VEHICLES AND FIELDWORKS

Vehicles with a bulldozer, backhoe, or any piece of equipment ruled as equivalent may be considered to have the fieldworks ability, allowing them to construct field fortifications in a manner identical to Trench/Fieldworks Engineers (see p. 153, *TO: AUE*).

VTOL BOMBING

Like aerospace fighters, VTOLs may carry bombs on external racks, using those rules (see p. 245, *TW*). However, each bomb carried reduces the VTOL's Cruising MP by 1.

A VTOL may make only one bombing attack per turn, and may not make weapon attacks in the same turn. Its controlling player declares the bombing attack during the Movement Phase. The player indicates the target hex, which must be one that the VTOL flew over during that turn.

The VTOL may only strike one target hex, but may drop as many of its bombs as desired in that hex in a single turn. The attack is resolved at the end of the Weapon Attack Phase, after all other attacks have been resolved (if there are multiple VTOL dive-bombing attacks, randomly determine their resolution order), in the same manner as an aerospace fighter's dive-bombing attack (see p. 245, *TW*).

Note that a dive-bombing attack does not force a VTOL to change elevations.

INFANTRY

The following additional rules specifically apply to infantry in combat.

DIGGING IN

An infantry unit may safeguard itself from attack by digging in: hiding behind foliage and other ground cover, lying prone or other defensive measures. Digging in is an option in any type of terrain except roads, pavement, buildings and water. The process takes a full turn, during which the infantry unit may not move or attack. If it is attacked during this turn, it is not considered dug in yet and so receives no bonuses.

All attacks against a dug-in unit (regardless of munition type) add a +2 to-hit modifier, except for flamers and area-effect weapons. In addition, damage is not doubled against a dug-in unit in Clear terrain.

The unit remains dug in until it moves; after moving, it must spend another turn to dig in again.

Note that "digging in" in this fashion only applies to the infantry unit in question. Specialized infantry (see *Trench/Fieldworks Engineers*, p. 153, *TO: AUE*) can build a fortified hex that any infantry unit, including mechanized infantry, can enter and automatically receive the "digging in" benefit.

Mechanized Infantry: Except in the case of fortified hexes built by appropriately specialized infantry, mechanized infantry may not use the digging-in rule.

Hitting the Deck

A variation on digging in, hitting the deck is an infantry unit getting their noses close up and personal to the terrain they're in. If an infantry unit does not expend any MP during the Movement Phase, the controlling player may announce that the infantry is "hitting the deck." This action can only be performed in the Movement Phase.

All attacks against an infantry unit hitting the deck (regardless of munition type) add a +1 to-hit modifier (including attacks made in the same turn the unit hit the deck), except for flamers and area-effect weapons. However, damage is still doubled against a "hitting the deck" unit in Clear terrain.

Unlike a unit "digging in", however, an infantry unit hitting the deck can still make a weapon attack in the same turn.

The unit remains on the deck until it moves. If an infantry unit on the deck does not move or fire for two turns, it can change to "dug in."

Anti-'Mech Skill Rolls: Apply a +1 modifier to any Anti-'Mech Skill Rolls made by a unit that has hit the deck.

0 MP: Any infantry unit that can only move or shoot must designate a facing in the hex when they hit the deck, and the troopers may only fire their weapons in that direction. Use the standard front firing arc to determine which targets the unit can attack. In the following turn, if the unit remains on the deck, the controlling player can designate a new hexside during the Movement Phase (this is not considered an expenditure of MP and so the unit is still on the deck).

CONVENTIONAL INFANTRY SQUAD DEPLOYMENT

Apply a +1 to-hit modifier to all attacks made against squad-deployed conventional infantry (see *Squad Deployment*, p. 25). This modifier does not apply to infantry platoons reduced by damage to seven or fewer troopers—only infantry initially deployed in squads.

USING NON-INFANTRY UNITS AS COVER

If an infantry unit occupies the hex of a non-infantry unit that is on the ground (including enemy units), they can use that unit for cover.

At the end of the Movement Phase, after all units have moved, any controlling players with infantry units occupying the hex of a non-infantry unit should nominate a hexside. Any attacks made against the infantry where the direction of attack crosses that hexside apply a +3 to-hit modifier; any attacks made by the infantry unit that cross that hexside apply a +1 to-hit modifier. Any attacks (either by or against the infantry unit) where the attack direction crosses any other hexside apply no additional modifiers These bonuses do not stack with the Shielding movement mode (p. 17).

INFANTRY MORTARS

Battle armor equipped with Light or Heavy Mortars, and conventional infantry for whom Light or Heavy Mortars define the final range value may use indirect fire like 'Mech Mortars (see p. 136, *TO: AUE*).

BATTLE ARMOR INFANTRY

Battle-armored infantry troopers are supposed to be tough, but some players may feel they are a bit too tough. The following optional rule makes battle-armor units vulnerable to lucky critical hits.

Make the standard die roll to see which trooper is struck by an attack. After resolving damage, make a second die roll. If that die roll result indicates the same trooper where damage was just assigned that trooper is destroyed regardless of the damage just applied, or how much armor remains. If the second result is any other trooper (whether active or not), than the chance for a critical hit is gone and the controlling player should move on to the next attack, if any.

Conventional Infantry: Attacks from conventional infantry cannot make use of these rules (unless they're using field guns (see p. 123, *TO: AUE*).

BATTLE ARMOR VS. BATTLE ARMOR

Some battle armor-grade weapons are particularly effective against other armored troops. To represent this, use the Battle Armor Vs. Battle Armor Table, instead of normal damage.

BATTLE ARMOR VS. BATTLE ARMOR TABLE

Battle Armor Weapon	Anti-Battle Armor Damage (apply to single trooper)
Bearhunter Superheavy AC	3D6
King David Light Gauss Rifle	1D6
Plasma Rifle	2 + 1D6*

* Uses standard damage against Fire-Resistant Battle Armor.

BATTLE ARMOR UNDERWATER

While battle armor is not intended for underwater use and will be hopelessly mired in the seabed when it enters water, it does feature very efficient environmental sealing. Using these optional rules, Battle Armor forced underwater and lacking UMUs is not considered automatically destroyed for the purposes of the scenario unless it is an Exoskeleton not featuring Extended Life Support, or is reduced to zero armor. The battle armor cannot move or use Mechanized Battle Armor rules, nor perform anti-'Mech attacks for the rest of the game. It is not considered immobile for the purpose of being attacked and may fire weapons as appropriate. Any battle armor not featuring a Clan Tech Base with HarJel will be breached and destroyed when suffering any hit. If a unit that is swarmed or carrying mechanized battle armor (without UMU) enters water, the battle armor immediately drops in the first hex in which it is immersed.

WEAPON RESOLUTION DICE (TIPS AND IDEAS)

As with movement dice, weapon resolution dice can help speed up and simplify game play, especially if a large number of units are on the board. Keep in mind, however, that weapon resolution dice are not a formal game mechanic—simply an option to make game play smoother. Therefore, all players should agree to their use before game play begins.

Players can use weapon resolution dice in two ways.

The first is when resolving to-hit rolls for multiple weapon attacks simultaneously. For example, the controlling player of a PTR-4D *Penetrator* is firing all six of his medium pulse lasers at the same target. Instead of rolling 2D6 six times, he would use the weapon resolution dice method and roll six different pairs of dice simultaneously for the six medium pulse laser to-hit rolls (each pair a distinct color so that it is quick and easy to see which of the six medium pulse lasers struck the target and which missed). It is important to note that this use of weapon resolution dice should only apply when multiple weapons are attacking with the same modified to-hit number. Furthermore, it is suggested that such a use of weapon resolution dice only occur when firing multiples of the same weapon. In both instances it is all too easy to get the dice mixed up. For example, if the controlling player of that PTR-4D *Penetrator* tried rolling eight pairs of dice to resolve the six medium pulse lasers as well as the 'Mech's twin extended range large lasers, the chances are the large lasers would have a different modified to-hit number from the medium lasers. If so, the controlling player would have to announce, and then remember, which two sets of 2D6 out of eight sets represent the extended range large lasers, and then once rolled, remember the two different modified to-hit numbers: one for the large lasers and a different one for the six medium pulse lasers. Not only can this cause confusion for the controlling player, but it can open up the game to unnecessary arguments if the opponent feels the controlling player forgot one of those elements as well.

The second way to use weapon resolution dice is when rolling on the Cluster Hits Table for multiple Cluster Weapons. For example, the controlling player of an SRM Carrier has already resolved that Combat Vehicle's weapon attack to-hit rolls and is now ready to roll on the Cluster Hits Table to determine how many short-range missiles from his various SRM weapons struck the target. Instead of rolling 2D6 multiple times for each Cluster Weapon that struck the target and comparing it to the Cluster Hits Table, weapon resolution dice would allow a player to make a single roll with multiple pairs of dice to quickly determine how many clusters of damage from each Cluster Weapon actually struck the target. (As a side note, if the controlling player was the first to use weapon resolution dice, instead of rolling 2D6 nine times for the carrier's nine SRM-6s, he or she could have made one roll of nine distinct pairs of 2D6 dice.) As with resolving multiple weapon attacks, it is suggested that weapon resolution dice only be employed this way when rolling multiple Cluster Weapons of the same type in an effort to avoid confusion.

Given the nature of damage resolution, weapon resolution dice should not be used to resolve hit locations and damage to target.

Note: The way in which a player determines locations and damage to target for announced attacks can be an important tactic in game play. For example, if the controlling player of an AS7-D *Atlas* hits a target with the *Atlas*' AC/20 and SRM-6, it will usually be better to determine the location and apply the damage of the AC/20 first in an effort to strip the hit location of its armor. Then the controlling player would determine how many SRMs struck the target using the Cluster Hits Table, and finally determine location and damage to target for each SRM that struck; that is, if the AC/20 stripped the location struck of armor, then the multiple rolls to determine location for the missile hits provide a higher probability of hitting the now defenseless location's internal structure (perhaps several times), thus resulting in several chances for a critical hit.

BOOM

Jason Schmetzer



JUBILEE DROPPORT
MARANTHA
MAGISTRACY OF CANOPUS
14 MARCH 3071

The sentry died with barely a sound.

Vincent crept up behind him, cat-quiet on the soft soles of his boots, and slid his assault rifle around on its sling behind him. The Blakist guard was looking the other way, watching one of the DropShips squatting on the tarmac as a BattleMech walked sentry-go across the field. Vincent allowed himself a grin as he came out of his crouch, arms reaching, hands open and tensed.

In a smooth motion he slid forward, one hand around the Blakist's head to cup his chin and the other on the back of his helmet. "Peace of Blake," he whispered, and twisted. There was a moment's resistance—*forty kilograms of pressure*, his mind filled in—and then a slight pop, like a green stick breaking, and then he was holding the sentry's entire weight. The body sighed as the zealot's last breath slithered out of it, but Vincent laid him down before the man's bowels could release.

"Clear," he whispered.

Three black shadows detached themselves from the base of the retaining wall behind him and sprinted forward, covering the twenty meters in seconds. They were garbed identically to him, each in a black sneaksuit with web-harnesses festooned with silent pouches. Each of them held an assault rifle toward the port.

"A knife would have worked," the leftmost one said. Sheila was always a distance killer, Vincent knew. He smiled—it was an old argument—and reached down to tap the dead man's body armor.

Sheila shrugged, nearly invisible in the dark. "I would have gotten him in the neck," she said.

"Vehicle," Franks whispered, twisting slightly to bring his Ebony assault rifle to bear.

Vincent crouched over the sentry and brought his own Ebony around from where he'd slung it behind him. He didn't look toward his hands, instead judging the distance between the team and the approaching truck. *Four hundred meters*, he thought. A flick of his thumb dialed the power selector on the Ebony's receiver to high.

"We need transport," he said. "Dalton." He beckoned toward the body, then reslung his rifle to grasp the dead man's feet. The third Magistrate operator took the Blakist's forearms and together they carried the man the ten meters to the roadway. Two swings for momentum and then they tossed the body into the center of the road.

"It stops, we take it," he said, bringing his rifle around again.

"It's a Pit Bull," Sheila whispered.

"Watch the cargo bed for troops," he ordered. The lights of the truck were starting to cast a shadow behind the body. They'd be spotting it any minute now. He

looked to Sheila. "Would have been kind of hard to hide the knife wound to his neck, don't you think?"

Vincent watched the truck slow suddenly as the driver saw the body, and tried to keep his mind on the mission. The truck itself was a symbol of the troubles, he knew. Pit Bulls were inexpensive, all-terrain cargo trucks built primarily in the Taurian Concordat. He'd ridden in any number of identical vehicles during his stint in the Magistracy Armed Forces, but he'd never been comfortable with them. They came from the Concordat, after all.

Can't we even make a decent enough truck that we don't have to buy other people's?

That he got to shoot at this one, and kill the Blakist bastards driving it, was a welcome bonus. He'd spent ten years in the MIM, the last year leading this cell of the Ebon Magistrate. The Blakists had come to the Magistracy to bring their Jihad to Vincent's home. He didn't need to wait for orders from his control; he knew what the Magestrix would say. Kill them. Kill them all, and make certain they know the Magistracy is not their playground.

The Pit Bull stopped, groaning on its oversized axles. Two men jumped out, one from each side of the cab. The cargo bed was stacked high with containers but the light was too low for Vincent to read the icons on the side. They left the truck running as they jogged toward the sentry's body. Vincent, from his position on the rightmost edge of the team, took the nearest Blakist. Sheila and Franks would target the left, and knew to do it without being ordered to. The Ebons spent enough time training for these situations that they didn't need to be told what to do.

"Blake's blood," Vincent heard, as one of the new arrivals knelt by the body. "You okay, pal?" The other man remained standing, looking around. His hand dipped toward his belt. Vincent fired. The others fired.

The Ebony laser assault rifle was a silent weapon, designed from the start for Ebon operations. Along with the shock-resistant polymer frame and the variable power function, it also had an all-but-invisible pulse. The four lasers fired within a second of each other and the only sound was the muted click of the firing mechanism engaging. There were no showy flashes of neon light or earth-shattering screeches of power. The two men near the body both had heads; four rifles fired at two targets, and then their heads were gone.

Vincent was on his feet before his target had finished falling to the ground. He didn't bother going to check the bodies; without heads they weren't a threat to anyone, and he already knew the sentry was dead. Instead he moved to the Pit Bull and mounted the cargo bed. Up close he read the icons on the containers, and a tight, feral smile broke out on his face.

"Boom," he whispered.

Sheila climbed into the bed with him while Dalton and Franks climbed into the cab. The Pit Bull lurched into motion, continuing on the way it had been going when they stopped it. They had an appearance to make on the opposite side of the Port, but turning off the road and going across the fields would only attract attention.

"Primary target," Vincent said, trusting the whisper-mike on his throat to transmit his words to the Ebon driving. Franks nodded his head once and turned at the next intersection, pointing



the Pit Bull toward the squat shape of the *Mule*-class DropShip in the distance. Vincent slung his rifle, pushing it around behind him and letting the friction sling draw it tightly against the small of his back. He reached into the left thigh pocket of his sneaksuit.

Sheila looked at him. "The DropShip?"

Vincent grinned and slapped the container beside him. "Boom."

▼

"'Mech."

Vincent looked up from the third container he was working on. A white-painted Word of Blake BattleMech was coming toward them. It was a light 'Mech, a *Commando*, but it was still more powerful than anything the Ebons had at their command. "Rifles off," he said, reaching behind him to pull the power pack from the Ebony's butt. With no power, the sophisticated laser assault rifle became a quiescent mass of plaster and polymer.

"We're still a klick away," Sheila said.

"And then we've got to get aboard," Vincent said, not taking his eyes off the *Commando*. "So let's worry about what's in front of us right now, shall we?"

The *Commando* wasn't moving with any more purpose than its already established patrol pattern. Vincent could well imagine the tedium of walking a 'Mech across the same ground again and again, waiting for something to happen. Either the MechWarrior would be ultra-sensitive, checking every sensor contact out of sheer boredom, or he'd simply be bored out of his mind and just keep walking until the end of his shift. Vincent knew which type of pilot he'd be, but he was hoping for the other.

"If it shoots?" Sheila asked.

"Then we die," Vincent said.

The *Commando* came abreast of them and passed, without so much as a pause.

"Half a klick," Franks reported. "Two minutes."

Vincent looked forward, toward the mass of DropShip that was rapidly blotting out everything else on the landscape. This close he could see the landing ramps still closed, as if the ship was buttoned up for launch. For a moment he was afraid they were too late, but the landscape around the massive vessel still crawled with vehicles and personnel. He smiled after a moment. It would take the massive ground tug a while to re-hitch trailers and get clear of the blast radius of the *Mule*'s drive.

"Warehouse," he ordered.

The *Commando* continued along its patrol route, its pilot safely ignoring any danger around him in his single-minded pursuit of the end of his shift. The Pit Bull turned away from the DropShip and toward the low line of warehouses in the distance.

"We're not going to the DropShip?" Sheila asked, as she reinserted her power pack in the Ebony's butt.

"Not just yet," Vincent said, returning to his wiring. "And not in this truck."

▼

Vincent pounded on the cab of the truck and pointed. "That one, over there." The warehouse he indicated was virtually deserted, but he saw the telltale scuffs on the tarmac out front that told him what he sought was inside. Franks dipped his head once and guided the Pit Bull toward it. He swung the front end of the vehicle around and then switched to reverse, backing into the doorway so that the cargo bed was the first part of the truck through, as if they were expecting to load more cargo.

"Hey!" a laborer shouted. Vincent looked across the containers at him, eyes narrowed. If it was a Canopian citizen he'd simply incapacitate him. There was no need to harm those who were just trying to earn an honest living. Wars came and went but cargoes always needed handling. "You can't bring that crap in here, friend. This is a restricted warehouse."

"Orders," Sheila shouted back, as Franks gunned the engine one last time before he shut the big diesel down. A surreptitious swipe unclipped her rifle from its harness; Vincent caught it as she stepped around him. "The Adept out there told us to bring it here." Vincent smiled, impressed by her tactic.

"Adept Kline?" the man asked.

"That's the one," Sheila said. Her hand moved too quickly for him to see and there was a pop. The laborer collapsed and Sheila turned away, revealing the suppressed pistol she'd drawn from the holster low on her thigh. Franks and Dalton piled out of the truck's cab and came around the back, looking to Vincent.

"Exos." He pointed to a rack against the side of the wall, where a brace of bulky Gorilla exoskeletons were waiting. "Get these drums unloaded." He turned and waved a hand at Franks to hold up. "Go back out and get us one of those baggage jitneys," he said. "Three cars at least, empty if you can find it quickly."

The slender man nodded once and trotted out the warehouse door. Vincent followed Sheila and Dalton toward the racked exoskeletons. They were simple muscle-amplification suits, used by laborers across the Human Sphere to make moving bulk items easier. While nowhere near as sophisticated as the powered combat armor the MIM had access to, the Gorillas were simple, reliable technology.

And they'd move the bombs like they were weightless.

Each drum was a 50-kilo container of concentrated fertilizer, intended for the reforestation project at Indian Island. There were six in the back of the Pit Bull, and Vincent had spent the drive across the DropPort dousing each in diesel fuel, then wiring them together with the initiator charges from his thigh pouch. The trick now would be getting them close enough to the DropShip to actually do any damage. Which was where the jitney came in, if they could get back across the tarmac without anyone catching on.

"Boom," Vincent whispered.

Franks reappeared at the door just as they were getting the body of the laborer back into the now-empty Pit Bull. He jumped in the cab of the truck and fired the diesel up before pulling the truck out. The warehouse was filled with the sickly-pungent tang of diesel exhaust by the time the truck was gone, but Vincent barely noticed. He stomped his exo to the doorway and looked out, being patient and waiting for his eyes to adjust.

The *Commando* he found almost immediately, still stalking its way around the tarmac. Vincent smiled at that, thinking of what his commander would have said about such a predictable patrol routine when he'd been on tour with the MAF. It made him feel better about this mission, knowing that even the high and mighty Word of Blake carried idiots on its rolls.

There was still traffic around the *Mule*, and more and more cargo carriers and baggage jitneys going toward it still. His eyes rolled across the mélange of hovercraft, tracked crawlers, and wheeled cargo vehicles until he saw the one he wanted. He looked behind him, saw the others ready with the bombs. He brought his Ebony around, thumbing the selector from high-power to extended-range, shouldered it.

"Vincent," Sheila said. He fired.

The fuel truck he'd targeted, almost a full kilometer distant, exploded as the laser pulse stabbed into the thin metal shell. The explosion cast light for a square kilometer. Vincent watched the

rolling shadows as Franks pulled the jitney up in front of the warehouse. "You sure that was smart?" he asked.

Vincent smiled. "Not at all… but it should keep their attention over there."

The others loaded the containers into the three-trailer jitney while Vincent shed his Gorilla suit. He beckoned the others back into the warehouse and pointed toward an access stair. "I want you three to get up there and cover me," he said.

"You're kidding," Dalton said.

"It doesn't take four people to drive that thing," Vincent said, reslinging his Ebony now that he was out of the exoskeleton. "I'll take it out to the DropShip and leave it. Then one of you can tag the containers from here and we'll all get out in the confusion."

"And when something goes wrong?" Sheila asked.

Not if, when, Vincent thought. *Good girl.* "Then you kill it," he said, and walked out.

The jitney's controls were simple to the point of imbecility. Two foot pedals, one marked "Go" and the other "Stop" and a steering bar. He climbed into the driver's couch and pushed the "Go" pedal, turning the bar toward the *Mule*. There weren't any obstacles on the road, so Vincent took the opportunity to look around. *It's always a good idea to see how the bad guys react to bad news*, he thought.

Emergency vehicles were already emerging from the hardened shelters they hunkered in when not needed. He looked toward the military reservation on the western edge of the port but saw little response; evidently the Word figured that Magistracy crews could handle Magistracy problems. That was good news for him. The big *Mule* with the broadsword painted on it looked open and inviting. Vincent grinned and looked the other way.

The *Commando* was running toward the explosion. Vincent shook his head and started to turn away, but then jerked his head back as the twenty-five ton BattleMech sprinted past the flaming wreck and kept coming, directly toward the *Mule*. "Shit," he breathed, and smashed his foot down on the "Go" pedal. The jitney lurched and gained another five kph, but that was it.

"Vincent," his earbud whispered.

"I see it," he growled.

"We can't kill that thing," Franks said.

"I know," Vincent said.

The *Commando* jerked and angled toward the warehouse. Vincent looked at it, confused. The radios should have been so low-powered as to be undetectable, especially through the sure-to-be-cluttered RF frequencies of the port. Then a white-hot bloom of light flared on the 'Mech's faceplate canopy, and Vincent understood.

"Sheila," he whispered.

"Get to the ship," she said. The warehouse was still a kilometer distant. The Ebons' assault rifles could make that stretch. Two more spots of luminescence flared to life on the *Commando*'s head before the 'Mech pounded past. Franks and Dalton.

"Displace!" he shouted, twisting in his seat to follow the 'Mech.

"The target, Vincent! The mission!"

Telltale puffs of scintillating light showed where the Ebons were hitting the *Commando*'s tough armor, but the damage their rifles could do to even the lightest BattleMech was infinitesimal. The *Commando*, sprinting forward in multi-meter strides, was already raising its arm-mounted weapons to bear on the warehouse. It fired.

The building exploded.

Vincent turned forward again. The DropShip filled the jitney's windscreen as he approached. There were marines out now, gray-clad Word of Blake infantrymen with rifles directing the vehicles away from the DropShip. Vincent kept the jitney on course, ignoring the wave-offs from soldiers and directors alike. The *Mule*'s squat stern clutched above the tarmac, with just enough space for the fusion torch's mighty exhaust to clear to lift the ship free of a planet's gravity. The massive legs that supported the vessel were splayed, stressed with the weight of the 11,200 ton DropShip. Vincent steered for the small space between the nearest leg and the DropShip's hull.

A bullet ricocheted off the tarmac in front of him. He looked to the side, saw the infantryman adjusting his aim to the jitney's driver's carriage. Vincent snarled at the man, bringing his Ebony around one-handed and stabbing a laser pulse at him. The soldier dodged to the side, safe.

For the moment.

Vincent let the sling take the rifle and grabbed the steering bar with both hands, jerking the jitney to the side around the curve of the *Mule*'s stern. He leaned out of the cab, pulling the rifle free, and looked back, watching the trailers curl around behind him. He saw the canvas flaps swing open, saw the barrels secured together. He looked the other way.

The *Commando* was running toward him, arms raised. Vincent saw the focusing lens of the medium laser in the 'Mech's right forearm begin to glow as the MechWarrior preheated the laser. He looked away, back at the trailers, and raised the Ebony.

"For the Magestrix," he muttered, and fired.





A St. Ives Lancers' UrbanMech *surveys the price of urban warfare.*

Though the building rules in standard *BattleTech* can seem a little complicated at first, they are still designed with ease of use in mind. The advanced rules for buildings in this section introduce additional building classifications and game play options, while offering more "realistic" choices for damaging buildings, building collapse and so on.

This section allows for the "construction" of buildings that include elevators, turrets, armor, weapons and more, a process that will reference the Mobile Structures rules in *Advanced Support Vehicles Construction* (see p. 48, *TO: AUE*). However, this is merely a reference guide for players interested in more advanced and sophisticated static building designs, rather than in Mobile Structures themselves, whose effect in game play is covered under *Advanced Ground Rules* (see p. 16).

Note: These rules do not provide details on how to use the various buildings in a campaign, but instead are focused on how they interact with units during a stand-alone *BattleTech* game. Campaign rules for how various building types can affect a much larger-scale war will appear in detail in *Interstellar Operations*.

STRUCTURE RECORD SHEET

Players interested in using these rules will find it helpful to track the condition and capabilities of any advanced buildings using the Structure Record Sheets found in the back of this book. Each sheet may be used to track one or more structures, using the hexagonal grids to determine their size and shape. To differentiate an advanced building from a Mobile Structure, simply note a motive type of "Static" on the Structure Record Sheet. As desired, players may use multiple record sheets to track larger or more extensive cityscapes.

ADVANCED BUILDING CLASSIFICATIONS

Under standard *Total Warfare* rules, a single, generic "building" structure is used, with four broad categories covering every type of building available. This generic term, however, does not truly cover the myriad of static structures that exist in the *BattleTech* universe.

The following section introduces a range of buildings through the use of an expanded classification system, while retaining the building-type nomenclature (Light, Medium, Heavy and Hardened) used in *Total Warfare* to denote buildings of varying levels of overall strength and resiliency.

The Building Classification and Type Table on the following page outlines all of the advanced buildings covered here, including classification and type, their basic CF, maximum armor allowed per hex, maximum size (in hexes and levels), the MP cost of movement into such building hexes and the Piloting/Driving Skill modifiers for such movement. If an "NA" appears in both the MP Cost Per Hex and Piloting/Driving Skill Modifier columns, then that building hex cannot be entered by a unit until the hex is reduced to rubble (see *Large Doors*, p. 136, for the exception).

Following the table, the *Building Classifications* section provides additional rules and details covering all the buildings described on the table.

Note: Unless specifically stated otherwise, all Buildings rules presented on pages 166-179 of *Total Warfare* still apply.

Building Sizes: The building sizes presented in these rules represent an abstraction for game play and construction purposes,

BUILDING CLASSIFICATION AND TYPE TABLE

Classification/Type	Construction Factor (CF)*	Max Armor (per hex)	Max Size (Hexes/Levels)	MP Cost Per Hex†	Piloting/Driving Skill Modifier	Damage Scaling: Damage to Building/ Damage to Units‡
Tent	1–2	—	1/1	+0	—	x1/x0
Hangar		—				
Light	1–8		10/7	+0	+0†	x1/x0.5
Medium	9–16		14/10	+1	+0†	x1/x0.5
Heavy	17–45		18/13	+2	+1†	x1/x0.5
Hardened	46–75		20/14	+3	+3†	x1/x0.5
Standard§		—				
Light	1–15		6/5	+1	+0	x1/x1
Medium	16–40		8/8	+2	+1	x1/x1
Heavy	41–90		10/10	+3	+2	x1/x1
Fence	1	—	—/3	+1††	—	x1/x0
Wall		CF x 1				
Light	1–15		—/4	+1	+0	x1/x0.5
Medium	16–40		—/6	+2	+0	x1/x0.5
Heavy	41–90		—/8	+3	+1	x1/x0.5
Hardened	91–150		—/10	+4	+3	x1/x0.5
Bridge		—				
Light	1–15		—	NA‡‡	NA‡‡	x1/x1
Medium	16–40		—	NA‡‡	NA‡‡	x1/x1
Heavy	41–90		—	NA‡‡	NA‡‡	x1/x1
Hardened	91–150		—	NA‡‡	NA‡‡	x1/x1
Rail	151-650		—	NA‡‡	NA‡‡	x1/x1
Gun Emplacement		CF x 1				
Light	1–15		1/1	NA	NA	x0.5/x2
Medium	16–40		1/1	NA	NA	x0.5/x2
Heavy	41–90		1/1	NA	NA	x0.5/x2
Hardened	91–150		1/1	NA	NA	x0.5/x2
Fortress		CF x 1				
Medium	16–40		12/15	+3§§	+2	x0.5/x2
Heavy	41–90		15/20	+4§§	+3	x0.5/x2
Hardened	91–150		20/30	+5§§	+4	x0.5/x2
Castles Brian		CF x 2**				
Heavy	35–90		35/10	+4§§	+4	Capital/Capital**
Hardened	91–150		70/15	+5§§	+5	Capital/Capital**

*See pp. 166-167, *TW*. The listed CFs show the range applicable to each building type. If a scenario does not specify a building's CF, assume that all its hexes have the maximum CF possible for that building type and classification.

†Infantry (except mechanized infantry) pay only 1 MP to enter a building hex regardless of building type; ProtoMechs and mechanized infantry pay only 2 MP to enter any building hex except for tents and fences (which cost only 1 MP). Hangars apply MP and Piloting Skill modifiers only when entering from outside, unless other factors apply (see *Hangars*, p. 114).

‡Round all damage down; if the damage is reduced to 0 or less, no damage is applied.

§As detailed in *TW*, except there is no Hardened type.

†† The modifier for Fences only applies to conventional, non-foot infantry. Foot infantry may only cross Fences by Climbing (see p. 25).

‡‡Units move over bridges (never through them) as though traveling on a road.

§§ Infantry, of all types, may not pass through Fortress and Castles Brian hexes that are considered hostile unless using VTOL or Jump movement to pass over the building entirely.

**Castles Brian use capital-scale damage, as noted under *Scale* (see p. 238, *TW*). See *Scaled Damage* (p. 124) for more information. Area-effect weapons do not double their damage against Castles Brian hexes.

with horizontal "area" represented by hexes 30 meters across and vertical height represented by "levels" 6 meters tall. In reality, buildings may be constructed with far more variety in both area and height, but for purposes of these rules, such details have little impact on the building's game play effects.

Damage Scaling: In addition to the CF of a building type, building classifications change the way in which damage is applied, as noted on the Damage Scaling column of the table (see *Scaled Damage*, p. 124).

BUILDING CLASSIFICATIONS

The following entries define each building classification and list any unique rules for each beyond those given on the table.

Building Construction: Each of these building classifications can be enhanced (some more than others) by several different types of construction options, as described in *Building Construction*, p. 126.

Tents

The term "tent" applies to any non-permanent or semi-permanent structure lighter than any other fixed structure type. Tents are usually makeshift or collapsible structures that offer some protection from the elements but negligible protection against damage. Tents do not affect or impede the movement of battlefield units into or through their hexes, and are automatically destroyed if any unit type weighing 5 tons or more attempts to enter them. Units passing through a tent hex do not require a Piloting Skill Roll.

Units inside a tent suffer the full damage from any attack delivered against them.

Hangars

Hangars feature wide-open interiors for housing 'Mechs, aircraft and other large vehicles or equipment. Most types of warehouses and some large commercial structures also fit into the hangar category.

Unless building design features and equipment create some form of clutter, units moving between hexes inside an "empty" hangar expend only 1 MP, suffer no damage and inflict no damage to the hangar's CF—as long as the hangar ceiling is high enough to accommodate the unit. A Level 1 hangar can accommodate vehicles, infantry and ProtoMechs, while Level 2 or higher hangars can accommodate 'Mechs as well (see the Unit Heights Table, p. 99, *TW*, for reference).

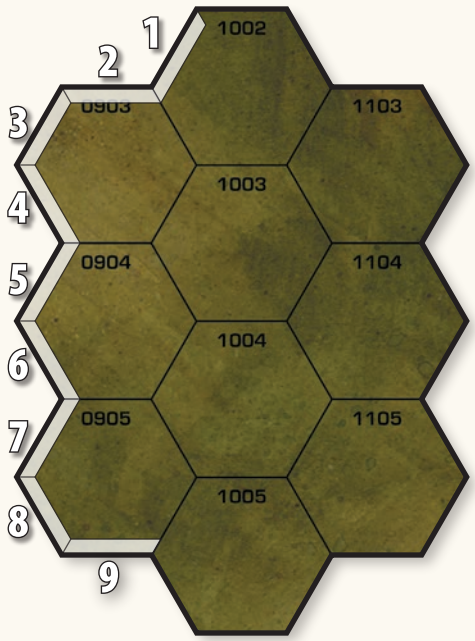
If a hangar lacks the height necessary to accommodate the unit, or if the unit is moving through the hangar's walls, the hangar suffers damage as normal for the unit's passage, and any movement and piloting modifiers based on its construction will apply as if passing through a standard building.

If advanced building movement is being used, and the hangar features equipment of any kind (including unspecified equipment), additional movement costs and Piloting Skill modifiers will apply as well, even if the hangar is large enough and the unit is already within its walls. However, the structure's open design reduces these effects, and the building sustains damage only if the unit fails a Piloting Skill Roll.

Hangars generally have no suitable floors above ground level, so any unit in a hangar hex must be on the structure's ground floor or its roof.

Standard Buildings

Standard buildings (buildings as presented in *Total Warfare*) represent homes, office complexes and other mostly civilian structures that contain interior spaces for rooms and hallways.



• WALL DIAGRAM •

Walls

Not strictly buildings, walls are simple structures with no enclosed spaces, generally used as a basic static defense against ground forces or a simple delineation of property lines. Under these rules, walls are not part of a building, but stand-alone structures.

Walls are always placed along hexsides, with each hexside treated as a separate structure for purposes of damage tracking and movement effects. Units can occupy hexes containing walls, but in many such cases, the unit's controlling player must declare whether the unit is standing on ground level alongside the wall or on the wall itself (and, if standing upon the wall, which wall segment it is standing upon). Place a counter or die with the unit to indicate when it is standing on the wall. For range purposes, an attacking unit treats a wall section (and any units thereon) as if it is located in the nearest of the two hexes it borders.

Fences: The lightest form of wall—so much so that they have their own entry on the Building Classification and Type Table—fences represent an obstacle only to conventional infantry that are limited to Ground MP (including foot infantry, motorized infantry and most mechanized infantry). All other units suffer no movement penalties to pass through a fence hexside, and require no Piloting Skill Rolls when doing so.

Like walls, fences are always placed along hexsides, but cannot support the weight of any unit climbing on them.

Bridges

Under standard rules, bridges are considered both structures and roads (or rails, as appropriate). The advanced rules treat bridges as special walls with roads (or rails) running along them. All wall rules apply, with the following additions.

Unlike walls, bridges pass through the middle of hexes. Each bridge hex has its own CF, like a building, which reflects its external weight and damage capacity. If a unit's tonnage exceeds the CF of a bridge hex, or the bridge hex's CF is reduced to 0 or less, the hex collapses. Furthermore, any bridge hexes that are completely cut



● BRIDGE DIAGRAM ●

off from both ends of a bridge (such as through the collapse of bridge hexes on both ends), these isolated bridge hexes will collapse as well. (Bridge hexes that are still connected by a continuous bridge length to either end point of the structure will remain standing.)

Every bridge starts and ends with a road hex that has the same elevation as the underlying terrain. The difference in elevations between opposite ends of a bridge may not vary by more than 1 level per hex of bridge length (so a bridge that runs 5 hexes from start to finish may not be constructed if its start and end points are more than 5 levels in height apart). For movement and line of sight purposes, units upon a bridge must first determine the bridge's height at the current hex (see Multi-Level Bridges, at right). For the sake of simplicity, multiple bridges may not occupy the same level and hex at the same time.

In most cases (notably excepting the start and end hexes) the terrain below a bridge is treated as a lower level that may be occupied by battlefield units. (Bridges represent a rare instance in which a single non-building hex can have two distinct levels.) For units upon a bridge, the underlying terrain is considered to be either road or rail (as appropriate).

Therefore, a unit in a bridge hex may be on the bridge or under it (see diagram above); the controlling player decides and should clearly indicate the unit's position with a die or counter. Note that a unit may enter a bridge hex and be considered underneath the bridge, provided the level of the underlying hex plus the height of the unit is equal to or less than the level of the bridge. If a unit cannot move underneath the bridge, the unit must move onto the bridge as if the move were a level change.

Multi-Level Bridges: Bridges that change elevation levels between their start and end points as described above must identify their height along each hex traversed. For simplicity's sake, this elevation change must be steady, linear and spread across the entire length of the bridge, with no more than 1 elevation level of change per hex of bridge. To compute the exact rate at which a bridge's elevation changes, divide the height difference (in levels) between the start and end hexes by the bridge's length (in hexes), and do not round the result. For each hex along the bridge, starting from its lowest point, add this value to the bridge's height, rounding normally (.5 rounds up).

For example, if a bridge runs 8 hexes long, but changes 2 levels in the process (starting from a terrain height of 5 levels to a terrain height of 7 levels), each hex of bridge would add 0.25 levels to the starting height. At Hex 0 (the first bridge hex), this would mean the bridge is at Level 5. At 1 hex in, it would be 5 levels high (5 + 0.25 = 5.25, rounded down to 5). At 2 hexes, it would be 6 levels high (5.25 + .25 = 5.5, rounded up to 6); and again at 3 hexes (5.5 + .25 = 5.75, rounded up to 6) through 5 hexes ([5.75 + .25 = 6] at Hex 4; [6 + .25 = 6.25, rounded down to 6] at Hex 5). At Hex 6 and beyond, the bridge will be at Level 7 ([6.25 + .25 = 6.5, round up to 7] at Hex 6; [6.5 + .25 = 6.75, round up to 7] at Hex 7, and [6.75 + .25 = 7] at Hex 8).

Gun Emplacements

Gun emplacements are single-hex buildings designed strictly to provide a weapons platform and protection for the crew manning those weapons. A variety of weapons and other special structure equipment can be mounted in a gun emplacement (see *Building Construction*, p. 126). Furthermore, unlike other building types, gun emplacements have minimal interior space, and so cannot be "entered" as a building by non-infantry units. Instead, they are largely treated as a stationary vehicular unit for purposes of stacking and making or receiving attacks, but as a building for tracking damage.

Fortresses

Fortresses represent any type of heavy military building, including bunkers, guard towers and installations.

Like gun emplacements, fortresses can mount a variety of special equipment and weapons (see *Building Construction*, p. 126).

Castles Brian

Castles Brian represent the pinnacle of military-grade fortifications. Pioneered by the Terran Hegemony at the height of its power, each represents some of the most hardened structural material created by man, often strengthened further by

burying the bulk of their complexes into local terrain (such as inside a mountain). Almost impregnable, often it takes nothing short of a nuclear blast or heavy orbital bombardment to significantly damage such structures.

Like fortresses and gun emplacements, Castles Brian can mount a variety of special equipment and weapons. Unlike these other structures, they can support far more weight because they use capital-scale Construction Factors, which apply not only to how they sustain damage and support external loads, but also to how much internal weight capacity they receive during construction (see *Building Construction*, p. 126). Furthermore, these buildings are ideally suited to sub-surface use, and may be constructed as underground and underwater buildings with far fewer restrictions on their design.

Castles Brian are also immune to the damage-doubling effect of area-effect weapons, and feature environmental sealing by default.

Castles Brian are almost never built small or as single structures, but almost always form the basis of a massive semi-subterranean complex. For a rough guide on the construction of a Castles Brian complex, see *Castles Brian Complexes*, p. 39.

STANDARD RULES EXPANSIONS

The following sections expand on various standard rules used for buildings in *Total Warfare*, as they apply to the advanced buildings rules.

MOVING THROUGH ADVANCED BUILDINGS

The standard *BattleTech* rules (see pp. 166-179, *TW*) cover the effects of moving units within and through fairly abstracted buildings for speed of game play. Advanced buildings, however, often possess additional features that can further complicate movement into and within such structures. The following expanded rules present additional features intended to better simulate the effects of moving into and conducting combat within and around buildings.

Climbing Buildings

Under standard game rules, ascending to the roof of a building requires a non-infantry unit to possess VTOL capability or sufficient Jumping MP to reach and land on the rooftop, while other units may ascend to the roof from inside the building itself. Under these advanced rules, 'Mechs and ProtoMechs with hand actuators, as well as any infantry unit (other than those with Mechanized or Motorized movement types) may also climb the building's exterior to reach the rooftop.

For 'Mechs and ProtoMechs, this action follows the same rules for climbing described on p. 20, but inflicts damage to the hex's CF as through the unit had entered the hex normally (reflecting the stress of climbing the vertical surface). For infantry units, this action is the same as ascending a building from the inside, at a cost of 1 MP per level, but such units receive no defensive benefits from being inside the structure if attacked while doing so, nor do they inflict any damage to the building in the process. 'Mechs and ProtoMechs climbing buildings in this manner may use only rear-mounted weapons and may not execute any physical attacks; infantry units climbing a building may make attacks as well, but halve any damage values when doing so (to reflect the difficulties of firing weapons while hanging onto a building for dear life).

Climbing and CF: A climbing unit whose tonnage exceeds the CF of the building hex it is trying to climb (after accounting for the damage to the building's CF caused by climbing it, as described above) will cause a collapse and suffer an automatic fall. If using the standard building rules, the entire hex will collapse and the unit will fall from its current level (before it started to ascend). If using the expanded Construction Factor rules (see p. 119), the first level in the building hex being climbed that falls below the unit's tonnage (after damage) will collapse instead, and the unit's falling distance will equal whatever height it managed to ascend to before the level's CF gave out. (For example, a 35-ton 'Mech scaling a 7-level, CF-40 standard-class building would inflict 4 points of damage to the CF of each level as it climbs up the structure. This reduces the CF to 36 points at each level of the building's hex—still enough to support the 'Mech's weight. If, however, the sixth level suffered 2 points of CF damage at Level 6—likely from a stray SRM or machine gun burst—the climbing unit would collapse the sixth level upon reaching it because the CF there—already reduced to 38 points—would be reduced to 34 points by the 'Mech's tonnage, and would no longer be able to hold up the 'Mech. As the level collapses, the 'Mech would suffer a 6-level fall as well.)

Small Buildings

Small buildings are any structure standing 2 levels or less above the underlying terrain. Standard movement rules permit other units to ascend to the tops of these buildings as a consequence of a basic elevation-change movement. However, under these advanced rules, ground vehicles and 'Mechs may not simply drive or walk onto a building in this fashion. Instead, a suitable unit must climb per the Climbing Buildings rules above.

The above does not apply if a special bridge or road (representing a ramp) specifically links the building's upper level(s) with the unit's current level. In this case, such a climb would follow the standard rules for changing elevations while moving along a road.



Crimson Hawk, *Tau Provisional Galaxy (Clan Blood Spirit)*

Advanced Building Features

With advanced building construction, units moving through a building hex may encounter a variety of additional obstacles not generally tracked in standard game play, such as low ceilings, internal equipment, heavy metal superstructure and so forth. These advanced building features can add to (or reduce) a non-infantry unit's mobility and susceptibility to suffering damage as it enters each building hex.

To determine the effect of any relevant advanced building features, consult the Advanced Building Movement Table below. Any applicable Piloting Skill modifiers are applied to the target number for all non-infantry Piloting Skill Rolls made to avoid taking damage from the building, in addition to those for the building's class and type on the Building Classifications and Types Table (see p. 113). Any applicable MP costs per hex are likewise added to the MP costs for the appropriate building class and type. The notes for each building feature then describe any additional effects on movement or combat within buildings that have such features. If multiple features apply to the same building hex, all modifiers presented here are cumulative, along with those for the building class and type.

While brawling their way through a city, Jason and Rich find their two BattleMechs—a War Dog *and a* Warhammer, *respectively—isolated in a built-up area on a map of their own creation. To escape their pursuers, the two warriors decide to split up and tear straight through the buildings nearby.*

Jason's War Dog, *as it happens, is facing a 3-hex long Medium standard building with a CF of 40, low ceilings and a heavy metal superstructure. A general-use building, it has been designed by the gamemaster to house unspecified equipment. Looking at the Building Classifications Table and the Advanced Building Movement Table, Jason finds that each hex of this building will cost his 'Mech 5 MP to move through (1 [Base MP cost per hex] + 2 [Medium Standard Building] + 1 [Low Ceilings] + 0 [Unspecified Equipment] + 1 [Heavy Metal Superstructure] = 5). He also finds that the Piloting Skill target number to avoid damage when charging through each building hex will have a +4 modifier (+1 [Medium Standard Building] + 1 [Low Ceilings] + 0 [Unspecified Equipment] + 2 [Heavy Metal Superstructure] = +4). As he has a Piloting Skill of 5, this means Jason will need to roll a 9 or higher for every building hex he plows through on his way to the other side or he will suffer damage from the building (and because his 'Mech has a Walking rate of 4 MP and a Running rate of 6 MP, moving through each hex will force Jason to run).*

As Jason charges through his building, he looks at the notes on the Advanced Buildings Table and finds that each building hex he plows into will suffer 15 points of damage from his 75-ton War Dog *thanks to the low ceilings (75 tons ÷ 10 [standard damage] x 2 [Low Ceilings] = 15). He further finds that if he fails his Piloting Skill Roll, his 'Mech will suffer a total of 16 damage points in the bargain, thanks to the low ceilings and heavy metal superstructure (CF 40 ÷ 10 [standard damage] x 2 [Low Ceilings] x 2 [Heavy Metal Superstructure]). Jason forges onward just the same, and narrowly makes his Piloting Skill Roll with a result of 9. The building hex he enters sustains 15 points of damage, while his* War Dog *is unscathed.*

Rich, meanwhile, finds that his Warhammer *must crash through the walls of a Heavy hangar building 2 hexes long and 2 levels high—tall enough to accommodate his 'Mech. The hangar is built using standard construction, has a generator unit in the second hex, and unspecified equipment in the first hex. Consulting the tables, Rich finds that the movement through the hex with unspecified equipment will cost 2 MP (1 [Base hex cost] + 2 [entering Heavy Hangar] – 1 [Hangar hex with equipment] + 0 [Unspecified Equipment] = 2), with a –2 Piloting Skill modifier to avoid damage (+1 [entering Heavy Hangar] – 3 [Hangar hex with equipment] + 0 [Unspecified Equipment] = –2), and the hex with the generator will cost 2 MP (1 [Base hex cost] – 1 [Hangar hex with equipment] + 2 [Generator Equipment] = 2) with a –1 Piloting Skill modifier to avoid damage (–3 [Hangar hex] + 2 [Generator Equipment] = –1). The MP costs and Piloting Skill modifiers for a Heavy hangar do not apply, because Rich's 'Mech is already inside the building at this point, and the building has enough height to accommodate its size.*

At a walk, Rich's 'Mech can traverse both of the building's hexes, but he must make a Piloting Skill Roll to avoid damage for each hex (though, if the second hex had been an empty hangar hex, no roll would have been needed). He decides to do so, confident in his MechWarrior's Piloting Skill of 4. For the first hex, Rich finds that his 70-ton Warhammer *will automatically inflict a standard 7 points of damage to the building's 45 CF (because it is entering the building through a wall). With a Piloting Skill Roll result of 6 (easily beating his Target Number of 2 for the first hex [4 – 2 (first Hangar hex Piloting Skill modifier) = 2]), Rich's 'Mech receives no damage. He then moves onward, entering the generator's hex. Here, he makes a Piloting Skill Roll of 2, missing his Target Number of 3 to avoid damaging either himself or the building (4 – 1 [generator hex Piloting Skill Roll modifier] = 3). Because of this failed roll, Rich's 'Mech will inflict 7 points of damage to this building hex, and also receives 5 points of damage (CF 45 ÷ 10 = 4.5, rounded up to 5), applied randomly to the Front Hit Location Table.*

Much to Jason's surprise, an enemy infantry platoon is present in his building, 2 hexes ahead. In addition to the +2 modifier to attack this platoon (or for the platoon to attack Jason's 'Mech) thanks to the standard rules for combat within buildings (see p. 175, TW), Jason notes that the presence of the unspecified equipment in each hex raises that to a +4 modifier. With a Gunnery Skill of 4, and having run to enter his hex, Jason's War Dog *would need an 11 or higher to hit with its Gauss rifle (4 [Gunnery] + 4 [2 Building hexes, plus 2 Unspecified Equipment hexes] + 2 [*War Dog*'s run] + 1 [Gauss rifle minimum range modifier] = 11), while his Streak SRMs (lacking the minimum range modifier) would need a 10, and his Large and Medium pulse lasers (which benefit from a –2 pulse laser modifier) would need 8 each. The regular-rated Rifle (Ballistic) infantry platoon with its Gunnery Skill of 4, by comparison, would need a 10 to shoot back (4 [Gunnery] + 2 [Medium Range] + 4 [2 Building hexes, plus 2 Unspecified Equipment hexes]).*

ADVANCED BUILDING MOVEMENT TABLE

Building Features	MP Cost/Hex*	Piloting Modifier**	Notes
Empty Hangar/Tunnel/Open-Space Hex	1	NA	Treat as Paved Terrain†
Hangar/Tunnel/Empty Cargo Hex	–1	–3	To a Minimum MP cost per hex of 1††
Non-Liquid Cargo Hex	+0	–2	
Liquid Cargo Hex	+1	+2	See *Liquid Fuel/Chemical Storage Tanks* (p. 132)
High Ceilings	+0	–1	Half all damage from movement (round down)‡
Low Ceilings	+1	+1	Double all damage from movement (round up)‡
Unspecified Equipment Hex‡‡	+0	+0	+1 to-hit modifier for weapon attacks (per hex)
Specified Equipment Hex‡‡	+1	+1	+2 to-hit modifier for weapon attacks (per hex)
Generator/Weapon Hex‡‡	+2	+2	+2 to-hit modifier for weapon attacks (per hex)
Heavy Metal Superstructure	+1	+2	Double damage to unit from failed Piloting Skill

*In addition to all other applicable MP costs for the building type (see Building Classification and Type Table, p. 113).
**In addition to all other applicable modifiers for the building type (see Building Classification and Type Table, p. 113).
†See *Open-Space Construction,* p. 136. Hangars and tunnels apply these rules only if they are as high as or taller than the moving unit, feature no equipment, and the unit is not moving through the building's outer walls (otherwise, apply the standard hangar MP and Piloting modifiers.
††Hangars and tunnels apply these costs and modifiers only if they are as high as or taller than the moving unit and feature interior equipment of any kind. (Do not apply normal hangar MP and Piloting costs if already inside.)
‡Applies to damage done both to the building and to the unit moving through it.
‡‡Do not count turreted or rooftop-based equipment.

ADVANCED BUILDING CRITICAL DAMAGE

The basic rules for attacking buildings in *Total Warfare* treat buildings more as "destroyable terrain" than as complex systems in and of themselves. When dealing with less generic buildings (such as those that can be created using the rules in this section), the following additional rules enable players to reflect critical damage effects against such structures.

Damage Threshold: To use the Advanced Buildings Critical Hits rule, players must determine an advanced building's Damage Threshold at the start of any turn in which it suffers damage. This value is equal to the building hex's current Construction Factor (at the start of the turn), divided by 10 (round up). If the damage inflicted by any single weapon attack or Damage Value grouping exceeds the hex's Damage Threshold, the attacker must make a critical hit roll as outlined below.

Armor: Per *Armored Buildings* rules (see p. 119), critical hits may not occur against an advanced building hex that is armored as long as no damage is inflicted to the CF.

Aimed Shots: Against advanced buildings with level-specific equipment (such as turrets), an attacking unit may declare an aimed shot at the desired level and hex of the building where a targeted component is located. This attack works as a standard aimed shot against an immobile target (see p. 110, *TW*), striking the desired hex and level on a successful hit and a follow-up 2D6 roll of 6, 7 or 8. (If using the expanded Construction Factor rules [see p. 119], should this second roll fail, the damage is resolved against a random level of the same hex; otherwise, the damage is resolved against the hex normally.) A successful aimed shot adds a +2 modifier to the Advanced Building Critical Hit roll, as long as all other conditions for a critical hit apply (including exceeding the building's CF threshold).

Only units located outside a building, and with a valid line of sight to the desired building hex and level, can attempt an aimed shot against a building.

Critical Hit Effects

The following rules describe the effects of critical hits against an advanced building. If the target hex (and level, if using the Expanded Construction Factor rules) does not contain an appropriate item corresponding to these critical effects, no critical hit occurs.

Ammunition: This result means the hex's ammunition explodes. Unlike a 'Mech, where only a single slot explodes, the hex loses all its ammunition. Count the total damage for all ammunition carried and apply the damage directly to the hex's Construction Factor. If CASE is mounted in a hex with an Ammunition critical hit, divide the total damage by 10 (round down) and apply that value to the hex's Construction Factor. As usual, ammo that cannot explode (such as Gauss and Plasma) is still destroyed and cannot be used for the rest of the scenario.

Gunners Killed: A critical hit kills or severely injures the gunners for this hex. No weapons can be fired from this hex for the rest of the scenario.

Gunners Stunned: Damage from the critical hit disorients the gunners. During the following turn, the hex may take no actions (firing weapons and so on). After that, the hex may act normally. Multiple Gunners Stunned results in the same turn extend the number of turns for which these effects last.

Turret Jam: The turret rotation mechanism temporarily freezes, leaving the turret stuck in its current facing until the gunners spend a Weapon Attack Phase fixing the jam. The hex may not fire any weapons from that turret (though other weapons in that hex may still fire) while the jam is being fixed. Treat a second or subsequent Turret Jam critical hit—regardless of whether the gunner cleared the first jam—like a Turret Locks critical hit.

Turret Locks: The turret rotation mechanism is severely damaged, locking the turret in its current facing for the remainder of the game. Additional critical hits of this type—or Turret Jam critical hits—have no further effect.

ADVANCED BUILDING CRITICAL HITS TABLE

2D6 Roll	Effect
2–5	No Critical Hit
6	Weapon Malfunction
7	Gunners Stunned
8	Weapon Destroyed
9	Gunners Killed
10	Turret Jammed/Turret Locked*
11	Ammunition
12	Other

*When rolling these critical hit results, roll 1D6. On a result of 1–3, the effect to the left of the slash occurs; on a 4–6 result, the effect to the right of the slash occurs.

Weapon Destroyed: One weapon mounted in the damaged hex suffers major damage and ceases to function. The attacking player then rolls 1D6. On a result of 1–3, the player controlling the target unit chooses which weapon stops working. On a 4–6, the attacking player chooses which weapon stops working. If there are weapons in and outside of a turret in a hex, randomly determine which location the player will choose from. The hex cannot fire that weapon for the remainder of the game. If a weapon is destroyed that can explode (such as a Gauss rifle), the weapon explodes for its normal effects as an equivalent-damage ammunition explosion for the location where the weapon is mounted (see *Ammunition*, p. 125, *TW*).

Weapon Malfunction: This critical hit causes a weapon mounted in the hex to malfunction. If a hex has multiple weapons in that location, randomly determine which one takes the hit using the Weapon Destroyed rule above. The hex cannot fire that weapon until the malfunction is fixed. The gunners must spend one Weapon Attack Phase clearing the malfunction, during which the hex may make no weapon attacks. The gunners may only fix one weapon malfunction per Weapon Attack Phase.

Other: A variety of other equipment can be mounted in an advanced building hex. On this critical hit result, a randomly determined item assigned to this hex (and level, if using the expanded Construction Factor rules; at right) is damaged and rendered inoperative. If no such other item exists in this location, this critical hit has no effect.

ARMORED BUILDINGS

Some building classes—including fortresses, Castles Brian and walls—may be constructed with additional armor beyond their Construction Factor. If a building hex is armored, non-infantry units may not enter the hex except through an open (and suitably sized) large door (see *Large Doors*, p. 136).

Attacks against an armored building from outside the structure will not cause breaches, critical hits or CF damage until the armor in the targeted hex is destroyed. Attacks from inside an armored building will affect its CF directly, however.

ATTACKING BUILDINGS FROM WITHIN

Though a dubious action in most instances, units inside a building hex may opt to deliver attacks against the building itself, rather than against any other units therein. This kind of attack automatically succeeds if the unit can trace a valid line of sight to the target hex and its weapons can reach that range (if using the optional LOS Range bracket—see p. 83—treat this as an attack against an immobile target at such ranges). A successful attack will deliver the weapon's full damage to the targeted building hex (and level, if using the Expanded Construction Factor rules); cluster weapons and weapons fired in rapid-fire modes deliver their maximum damage result.

If the attack is delivered using the standard building rules, the CF damage caused by such attacks affects the targeted hex as normal, regardless of whether the attacker aimed at a wall, the floor or the ceiling. If the expanded Construction Factor rules (below) are used, an attack against a building hex's floor or wall will affect the attacker's own level, while an attack against the ceiling will affect the CF of the level above the attacker.

If the attacked hex suffers damage significant enough to cause a collapse, and the attacking unit is within the same hex, it will suffer the effects of the resulting collapse per standard rules (see pp. 176-177, *TW*), or—if they are being used—the expanded Construction Factor rules (below).

Attacking Building Equipment: If an advanced building employs specific equipment of any kind (see *Building Construction*, p. 126), and a unit inside the building can trace a valid line of sight and weapon range to it, the unit may opt to "attack" such equipment directly. Resolve this attack as an appropriate attack against an immobile target. A successful attack on such equipment will deliver the attack's damage to the equipment, rather than to the building's CF. To determine if the targeted equipment is destroyed, roll on the Advanced Building Critical Hits Table, at left, after delivering a successful attack, adding 10 percent of the attack's full damage value (rounded up) to the roll (so a standard Gauss rifle will raise a roll result by 2 points [15 ÷ 10 = 1.5, round up to 2]). If no other critical hit effect applies to the targeted item, a critical roll result of 10 will render the item inoperative, destroying the item if it occupies only one hex.

Missed Shots: It is virtually impossible to miss a building while standing inside it, especially when intentionally aiming at the structure or its components. If for any reason an attack against a building or building equipment fails to hit the targeted hex, deliver half the attacking weapon's rated damage (round up) against a randomly determined building hex adjacent to the targeted hex location. If no other potential target hex lies within the attacking unit's range or line of sight, deliver this damage to the target hex instead.

Armored Buildings and Damage Scaling: When attacking a building from within, any armor assigned to the building hex is ignored and damage is applied directly to the CF. However, if damage-scaling rules are in use, these rules continue to apply (see *Scaled Damage*, p. 124).

CONSTRUCTION FACTOR (EXPANDED)

Under the standard *BattleTech* rules presented in *Total Warfare*, the Construction Factor of a building is tracked per hex. This is done for simplicity and ease of tracking damage, particularly across numerous, large multi-hex buildings.

Under the following Expanded Construction Factor rules, each *level* of each building hex tracks damage separately, using a CF at each level equal to that of the entire building. Thus, a four-level Medium building with a CF of 40 is treated as having a CF of 40 at each level, rather than over the entire structure.

Armored Buildings: As with CF, the armor on a building using Expanded Construction Factor rules also applies equally to each level (abstracting the manner in which building armor is effectively infused with the structure itself), so a building with a CF of 50 and 20 armor points under standard rules would receive 50 CF and 20 armor *per level* under these rules. If any armor remains on a targeted level, the CF for that level will not sustain damage and the hex may not be entered from outside (except via an open door).

Area-Effect Weapons: Under these rules, damage delivered by an attack from an area-effect weapon (see p. 173, *TW*) is determined for each level of a building whenever damage assigned to units is also assigned to those various building levels.

Top-Down Collapse: Under the Expanded Construction Factor rules, an entire building hex will not automatically collapse when a level within that hex has collapsed. Instead, any levels of structure *above* the destroyed level will fall into the structure and inflict additional damage to themselves and the building overall. This "top-down" collapse will inflict damage on the level above the originally destroyed level and the next level below it equal to one-third of the total CF of all the levels above the originally destroyed level (rounded down). If this damage exceeds the CF of either level, that level has been destroyed in the process and any excess damage transfers equally to the next level up (for the levels above the originally destroyed level), and down (for levels below the originally destroyed level). A top-down collapse will stop only if the falling upper levels are completely destroyed, or if they no longer inflict enough damage to destroy those below them. If floors remain to fall, however, players must re-compute their Damage Value after each level is destroyed.

A top-down collapse may also occur if the CF of any level of the building hex is reduced below the weight of any units occupying levels above the damaged level.

If the bottom-most level of a building hex is destroyed under these rules, the entire hex of the structure will collapse per the normal rules in *Total Warfare*.

Total Collapse (Multi-Hex Buildings): Under these rules, a multi-hex building will collapse if more than half its hexes suffer collapses that reduce them to half their original height or lower. (So a 6-hex building that started play at 4 levels in height will suffer a total collapse if 3 or more hexes of the building are reduced to a height of 2 levels or less.)

Damage and Displacement: All the standard rules (starting on p. 177, *TW*) apply. If a level collapses, falling damage and displacement are resolved normally.

When tracking damage per level, if a unit occupies a level that collapses, it will fall and deal damage to the level it strikes below, equal to the unit's weight divided by 10 (round up, to a minimum of 1), multiplied by the number of levels it fell. As this is considered movement damage, damage is applied immediately to that level. A unit will not pass through a level it fell on unless the damage applied reduces the CF of that level below the weight of any units occupying that level, in which case the level collapses immediately, with the subsequent falling and displacement—and damage to the building—of those units immediately resolved.

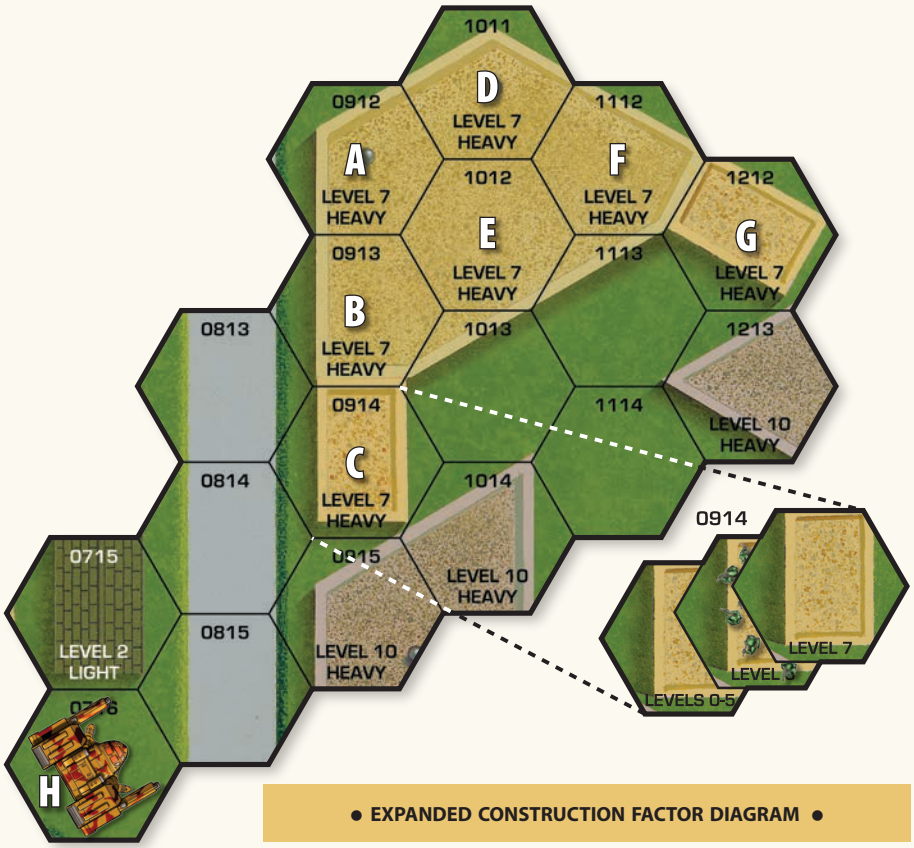
Damage to units within a collapsing building is still resolved per the normal rules in *Total Warfare* (see pp. 176-178). To find the damage, simply add up the CFs of all levels above the unit (not including the level the unit currently occupies) and divide that sum by 10 (rounding up). This damage applies in addition to normal falling damage, based on the difference in levels the unit has fallen. If any unit occupying an upper level finds itself falling into a lower level occupied by another unit, treat the effect as an accidental fall from above, resolved after all other damage from the collapsing levels is assessed, using both units' original starting levels to determine the height of the fall.

Randall and Herb are playing an urban battle in which the Expanded Construction Factor rules are in place. A 7-level tall advanced building has a CF of 50 and occupies 7 hexes on the map (hexes A through G). Inside, Randall has placed an infantry platoon that has spent several turns spotting for artillery fire against Herb's forces (the platoon is in Hex C). Using the Expanded CF rule, the building began play with a CF of 50 for all 7 levels in each hex, but after several turns of combat, Hex C comes under fire when Herb realizes that Randall's infantry platoon is somewhere inside. One of Herb's attacks has delivered 10 points of damage to the third level (reducing its CF to 40), while another has inflicted 24 points of damage to the fourth level (reducing its CF to 26).

Frustrated after yet another artillery strike pummels his forces with deadly accuracy, Herb delivers another attack against the building's fourth floor—using the Sniper Artillery Cannon mounted on his customized Zeus *(located in Hex H). As a 10-point area-effect weapon with a damage radius into the adjacent hexes, the Sniper's successful attack delivers three times its normal damage—30 points—to the fourth level of Hex C, as well as 20 points to the third and fifth levels of that hex, and 10 points to the second and sixth levels. Hex B of the three-hex building also sustains 20 points of damage to its fourth level, as well as 10 points of damage to its fifth and third level CFs. After assessing the damage, Randall finds that Hex C has now sustained a total of 10 points of damage to its sixth and second levels, 20 points of damage to its fifth level, 30 points of damage to its third level (10 from previous damage, 20 from the Sniper) and 54 to the fourth level (24 previous damage, 30 from the Sniper). As the damage on the fourth level exceeds the 50 CF of the building, that level of Hex C collapses.*

Because the levels above and below the collapsed level still exist, the players find a top-down collapse has begun. To find the damage the collapsing upper levels (levels 5 through 7) will inflict, the remaining CFs of the upper levels are added together and divided by 3, rounding down. The result is 40 points ([50 points for Level 7] + [(50 – 10 = 40) points for Level 6] + [(50 – 20 = 30) points for Level 5] = 120 ÷ 3 = 40). As the top-down collapse begins, Randall—as the building's controlling player—applies 40 points of damage to the fifth and third levels. This damage destroys both levels, with the fifth level sustaining 60 points (20 points previously, plus 40 from the collapse), and the third sustaining 70 (30 from prior damage, plus 40 from collapse damage).

Excess damage from the fifth level's destruction (10 points) transfers to the sixth level, bringing its total CF damage to 20, while 20 points of excess damage to the third level transfers down to the second, bringing it to a total CF damage of 30. Because upper floors still exist, the collapse continues—only now, the combined CF of the sixth and seventh levels comes to 80 (50 for Level 7, plus 30 for Level 6), for a collapsing damage value of 26 points (80 ÷ 3 = 26.667, rounded down to 26). After applying this damage to the levels above and below



• EXPANDED CONSTRUCTION FACTOR DIAGRAM •

the destroyed levels—now the sixth and second levels—Randall finds that the second level has been destroyed with a total of 56 points of damage (30 previous points, plus 26 from this phase of the collapse = 56), but the sixth level still has some CF remaining (20 previous damage, plus 26 = 46). The 6 points left over from the second level's collapse transfer to the first level, and the collapse continues.

With a combined remaining CF of 54 (50 for Level 7 and 4 for Level 6), Randall finds that the falling levels now inflict only 18 points of damage in their continued collapse to levels 1 and 6. This will destroy Level 6's 4 remaining CF and transfer 14 points to Level 7's CF. Against Level 1, the 18 points adds to the 6 points from the last part of the collapse, leaving Level 1 intact with a CF of 28 (50 – [18 + 4] = 28). Because the damage failed to collapse the lower floor, the top-down collapse of the building hex has ceased, leaving two battered but still technically intact levels remaining in Hex C—except that the seventh level has now fallen to Level 2, a five-level plunge.

Randall's foot infantry—who were on level 6 all this time—sustained only 25 percent damage from the collapse of their floor (a CF 50 standard building, as a Heavy Building, passes along only 25 percent of its damage to the infantry unit within—per p. 173, TW), for a total of 13 points (50 x 0.25 = 12.5, round up to 13). In addition, they now face 9D6 damage for falling five levels (3D6 for every 2 levels—or fraction thereof--results in 9D6 damage, per p. 151, TW), plus 4 points for the collapse of Level 7 on top of them (36 CF ÷ 10 = 3.6, round up to 4 points). The odds of any survivors from that catastrophe are slim.

BUILDING COLLAPSE (EXPANDED)

Under the standard *BattleTech* rules presented in *Total Warfare*, a collapsing building hex does not affect any other hex. However, particularly tall buildings, or multi-hex buildings, can cause heavy damage to the rest of the structure or throw out a lot of debris as they fall. To reflect this more accurately, the following rules provide a more extensive alternative to the standard building collapse rules.

Multi-Hex Building Collapse

When a building hex that is part of a multi-hex building collapses, it automatically damages all adjacent building hexes in the same multi-hex building. To reflect this, when one hex of a multi-hex building collapses, reduce the current CF of every hex that is part of the same building and adjacent to the collapsing hex by half (rounding the result down). If multiple hexes adjacent to an affected hex of a multi-hex building collapse in the same damage phase, this halving effect applies only once.

Scaled Damage: This damage is modified if using the *Scaled Damage* rules (see p. 124).

Construction Factor (Expanded): If using the Construction Factor (Expanded) rules (see p. 119), when any level of a hex collapses, divide the damage for every level adjacent to the collapsing hex that is part of the same structure by half (rounding down). If the entire hex collapsed, divide every level in the adjacent and connected hexes by half (rounding down).

Order of Damage: All damage to adjacent and attached building hexes and/or levels applies after all collapsing, falling and displacement effects have occurred from the collapse of the original hex (or level, if using the Expanded Construction Factor rules). See *Collapse*, p. 176, *TW*, for rules on these additional effects.

Building Collapse Splash Damage

A building hex that collapses also has a chance of spilling its debris into other hexes (even if it is not part of a multi-hex building). This "splash" damage depends mainly on the height of the collapsing building hex.

Area of Effect: The debris from a collapsing building will affect a radius equal to 1 hex for every 12 full levels in height that the building (or building hex) stood at the time of its collapse, rounded down. This means an 11-level tall building will not affect any adjacent hexes, while a 50-level skyscraper will affect a radius of 4 hexes if it topples (50 ÷ 12 = 4.1667, rounded down to 4). All units, buildings and terrain within the affected area—except for other hexes of the collapsing building itself—will receive area-effect damage from the collapsing building as described below *unless* a building hex or hill equal to or taller than half the collapsing building's height (rounded down) lies

between the affected hex and the collapsing building hex. (If in doubt—such as if the line of sight follows a hexside where one half would block the debris and the other would not—assume the building receives the better "cover".)

Damage: All splash damage—applied as an area-effect attack to any units or buildings in the affected hexes—is computed as follows:

- For all units in the adjacent hexes, divide the collapsing hex's CF (as it was at the beginning of the turn) by 20, then multiply that value by the number of levels the building hex stood. Round the result up to the nearest whole number.
- For every hex outward beyond the adjacent hexes, add 10 to the CF divider before multiplying for the number of collapsing levels. Thus, at 2 hexes from a collapsing building (if it is tall enough to affect those hexes), the collapsing hex's CF is divided by 30 (20 + 10), then multiplied by the building height. At 3 hexes, the CF is divided by 40 (20 + [10 x 2]), then multiplied by height. At 4 hexes, the CF is divided by 50 (20 + [10 x 3]) before multiplication, and so on.
- As this reflects the random and uncontrolled scattering of falling debris from a great height, partial cover does not protect against this type of splash damage.
- Units inside a collapsing building hex suffer damage as normal for a collapsing building, with no additional splash damage effects applied.
- The splash damage effect from a collapsing building will not only cause damage to all units and structures within the surrounding hexes, it will also fill such hexes with rubble and will also act as an unintended Clearing Woods action (see pp. 112-113, *TW*) if any woods or jungle terrain lies within the affected area.

Scaled Damage

This damage is modified if using the *Scaled Damage* rules (see p. 124).

Order of Damage

The collapse, falling and unit displacement effects of the original collapsing hex—as described under *Collapse* in *TW* (see p. 176)—are resolved first. Next, if the hex is part of a multi-hex building, damage to the adjacent building hexes, as noted under *Multi-hex Building Collapse* (see p. 121), is applied. Finally, the splash damage from a collapsing building hex is applied.

All affected hexes should be dealt with in this order, before any additional collapses are resolved. In other words, if a Level 13 multi-hex building hex collapses, and the damage from the collapse reduced the CF of an adjacent building hex to 0, that building collapse would not be resolved until the splash damage from the originally collapsing building hex is resolved.

Domino Effect

If the splash damage from a collapsing building should cause another building hex to collapse, resolve that effect only after completely resolving the effects of the first collapse. If multiple buildings are collapsed in this fashion, pick the one that can deliver damage to the most nearby buildings and units in its area of effect (for example, a building with a splash radius of 2 hexes, within which are two other building hexes and a vehicle, would resolve its damage before another building that would only inflict damage on two infantry units.

In the Building Collapse Splash Damage diagram at right, the players are running a game where the Expanded Building Collapse rules (but not the Expanded CF rules or Damage Scaling) are in effect. The 5-hex, 24-level Fortress-class high-rise sandwiched among other buildings in a massive skyscraper complex (represented by Hexes A through E), began play with a starting CF of 95, while the adjacent structures represented by Hexes F through I and J through M each began play with a CF of 75 and 120, respectively. The level 6 building represented by Hexes Q through S, and the level 2 building represented by Hexes T through X, each have a starting CF of 60.

By the third turn of game play, the high-rise—marked as a primary objective—has suffered 44 points of damage to Hex B (reducing it to a CF of 51). In the following turn, the Demolisher II in Hex N unloads its full fury—a double-fired Ultra-AC/20 and an LB 20-X using solid slug ammunition—against Hex A, while a second Demolisher II (in Hex O) unloads with the same volley. Scoring a full hit, the first Demolisher inflicts 60 points of damage, while its partner hits with only its LB and half the burst from its Ultra AC for another 40 points. This damage, however, is more than enough to completely collapse that building hex.

Because Hex A is part of a multi-hex structure—connected to the rest of the building by one hexside—the Multi-Hex Collapse rule applies first, and the adjacent building hex (Hex B) is reduced to half its current CF. As it was previously damaged, this reduces B to a CF of 25 (51 ÷ 2 = 25.5, round down to 25). The building's third through fifth hexes—Hexes C through E—remain unaffected, because they are not adjacent to the collapsing hex, and remain strong at a CF of 95 each. Though the building hexes G, I, and J are all adjacent to Hex A as well, they are treated as belonging to separate buildings because they have a different height and CF, thus they suffer no immediate damage from the Multi-Hex Collapse rule.

After assessing the immediate damage from the collapse of Hex A, the splash damage is assessed next. As Hex A stood 24 levels high, its debris will affect a radius of 2 hexes from the collapsing hex (24 ÷ 12 = 2). In Hex A itself, the damage applied against any units will be as normal for units within or on top of a collapsing building (but none were in that hex to suffer such damage). For the adjacent hexes (not including Hex B—which is part of the same structure and already sustained its damage effects), the "splash" damage will equal 114 points (95 CF ÷ 20 x 24 Levels = 114). Within this radius lie building hexes G, I, and J, as well as light woods in hex P. As 114 points exceeds the Construction Factors for hexes G and I (but not J), these "destroyed" Building hexes will collapse, while the light woods terrain (hex P) will become a rough hex, as its Terrain Factor of 90 is also exceeded by hex A's splash damage. Hex J, which had been previously undamaged, is reduced from a CF of 120 to a CF of 6 (120 – 114 = 6).

At 2 hexes distant, the splash damage from Hex A's collapse will be 76 points (95 CF ÷ 30 x 24 Levels = 76). This will be resolved against the front facing of the Demolisher II in hex N, but will not affect the building hexes F, H, K, L or T because Buildings at least half as tall as Hex A's 24 levels block the line of sight (even though hexes G and I are in the process of collapsing themselves). The Spider *standing on the level 6 building in hex Q is also unaffected despite being in the radius of Hex A's splash damage, because Hexes B and I are blocking debris from falling into that area. Thus, the only damage delivered to anything 2 hexes away from Hex A is the damage to the Demolisher II in*



• BUILDING COLLAPSE SPLASH DIAGRAM •

Hex N. Finally, the entire area within 2 hexes of Hex A (that is not blocked from debris by other structures 12+ levels in height) is filled with rubble.

Now that the collapse of Hex A is completely resolved, the players note that Hexes G and I have also collapsed in the process. As both represent parts of the same 4-hex building—which started the game at a CF of 75 and stood 12 levels tall—the Multi-Hex Collapse rule applies, reducing the remaining 2 hexes of the same building (Hexes F and H) to half their current CF. Since neither hex suffered previous damage, this will leave them reduced to 37 (75 ÷ 2 = 37.5, round down to 37). While Hex H was adjacent to two collapsing hexes of the same structure, it applies the halving effect only once.

Although they are adjacent to Hex I, Hexes B, Q, and T represent different buildings, and so the Multi-Hex Collapse rule does not affect them.

The splash damage for Hexes G and I are assessed next. As both stood 12 levels high, the area of effect for each of these buildings' splash damage will be 1 hex (12 levels ÷ 12 = 1). For Hex G, this means that the Demolisher in hex N will once more be affected by falling debris, but no other units or building hexes not already destroyed (like Hex A) or part of the same multi-hex structure (like Hexes F and H) will suffer additional damage. For Hex I, this damage will affect the building hexes B, Q, and T, as well as the Spider *on hex Q's rooftop (because while it stands on a building that could block the debris, the building does not lie* between *the* Spider *and the collapsing hex I).*

The splash damage caused by the collapsing hexes G and I comes to 45 points. The Demolisher II—affected by Hex G's splash damage—thus suffers another 45 points of damage, resolved against its right side facing. Hexes B, Q, and T—affected by Hex I's collapse—will suffer 45 points each, as will the Spider *atop Hex Q. This reduces Hex B (already reduced to 25 by Hex A's collapse) below a CF of 0 (starting another collapse), while hexes Q and T survive with a final CF of 15 points each (60 – 45 = 15). If the* Spider

is not destroyed after resolving the 45 points applied to its left side arc (where Hex I's damage originates from), its 35-ton mass will cause Hex Q to collapse as well.

Because the damage from hex I's collapse has done it in, hex B crumbles the same way hex A did, halving the CF of hex C in the bargain (to 47 points; 95 ÷ 2 = 47.5, round down to 47) thanks to the Multi-Hex Collapse rule, and dishing out 114 points of damage to all structures and units within 1 hex, and 76 points to all structures and units 2 hexes away—as was computed above when hex A collapsed to start with.

Hex J—already reduced to just 6 points when hex A fell, is collapsed as a result of this, while hex L is reduced to 6 CF (120 CF – 114 = 6 CF). Hex C is unaffected because it is part of hex B's building, but hex Q and the Spider *(if they weren't already going down from prior damage and the 'Mech's weight) are pounded by 114 points as well—enough to wipe out the building segment in hex Q, if not the already-damaged* Spider. *(If, by some miracle, the* Spider *survived all that, it still has a 6-level fall to contend with, thanks to its position when this disaster began.)*

At 2 hexes from hex B, 76 damage points then rains down, leaving hexes K and M alone because of the presence of hexes J and L, and leaving R unscathed because the line of sight between hexes B and R passes alongside hex C—which deflects the debris. But hexes H, T, and U are not spared. As hex H is already reduced to 37 from hex I's collapse, and hex T was reduced to 15 by hex I's splash damage, and hex U has a CF of 60, all three hexes collapse from hex B's splash damage.

With this fourth round of collapsing building hexes, the players find that hex F—already reduced to a CF of 37 when hex G collapsed—now suffers another CF reduction from hex H's collapse. Hex H's splash damage—effective as computed above for G and I at 45 points—will not add to this misery, and lack any targets to affect, so they will simply fill all other adjacent hexes with rubble. Although this would technically leave hex F teetering at a CF of 18 (37 ÷ 2 = 18.5, round down to 18), this hex will now collapse because, at this point, over half of its parent multi-hex building has been destroyed.

Hexes Q and U, meanwhile, will reduce hexes R and V (respectively) to 30 CF as a result of their falls thanks to the Multi-Hex Collapse rule, but inflict no splash damage at all because they are too short.

Hex J, finally, will halve the current CF values for hexes K and L (to 60 and 3, respectively) as a result of the Multi-Hex Building Collapse rule, but will not affect any other buildings with splash damage, despite a 2-hex area of effect (30 levels ÷ 12 = 2.5, round down to 2), because hexes K and L are deflecting its debris. However, as a 30-level tall building with a starting CF of 120, its splash damage would have been most devastating, with 180 points to all adjacent hexes and 120 to all units and buildings 2 hexes away. With no other units or buildings to damage, however, the debris simply fills all its affected hexes, creating Rubble terrain for the next turn.

And thus, the final building hex to collapse from the two Demolisher IIs' fateful volley is none other than Hex F, which delivers another 45 points in splash damage to all adjacent hexes. The tank in Hex N, which already suffered 76 points to the front arc from the fall of hex A, and 45 from the collapse of hex G to its right side arc, will be lucky if it survives another 45 to its side as Hex F falls. However, as its single blast has helped down 10 hexes of buildings and a Spider *in a spectacular cloud of debris, the controlling player may see this as a fair trade.*

SCALED DAMAGE

Under standard *Total Warfare* rules, damage applies equally to all building types. In reality, however, not all buildings are created equal. Beyond simple Construction Factor values, the very nature of the building and its architecture can change the way in which it handles damage and protects units within it. For example, hangars are much less effective at shielding units inside them than standard buildings, while fortifications are specifically designed to reduce the effects of weapons fire all around.

The Damage Scaling column of the Buildings Classification and Type Table (see p. 113) details the scaling of damage depending on the classification of a building. The information to the left of the slash indicates how the damage is modified when it is applied to the building hex (or a unit inside the building hex) after the players have determined how much damage the building hex will absorb (see *Attacking Units Inside Buildings*, p. 171, *TW*). The information to the right of the slash indicates how damage is modified when applied to a unit that is entering the building hex in any fashion other than through an open door (such as a failed roll to avoid damage while entering a building hex, or skidding into the building, and so on).

In both cases, the information is expressed as either a multiplier (x0.5, x1 or x2) or—as in the case of a Castles Brian—with the word "Capital". These values work in the following manner.

Multipliers on the left side of the slash modify the amount of damage that the building (and any units therein) will sustain if hit by a successful attack (with any fractions rounded down). For example, if a value of x0.5 appears here (as in the case of a gun emplacement or fortress), the damage delivered to the building and its occupants by any attack will be multiplied by 0.5, reducing the attack's effectiveness by half.

Multipliers on the right side of the slash reflect the amount of damage inflicted on any units by the structure, such as when crashing through its walls, colliding after a skid or suffering through the building's collapse. For example, if a value of x2 appears here, a unit crashing through the walls of this structure will multiply any damage taken by 2.

A value of "Capital" on either side indicates that the structure uses capital-scale damage, as noted in *Total Warfare* under *Scale* (see p. 238, *TW*). When dealing damage to a building hex that has a "Capital" damage scaling value, total all the damage from a single unit's attacks (taken separately for the Weapon and Physical attack phases)—or the damage directed against the building from crashing through its walls—and divide by 20 (round normally; .5 rounds up). This new Damage Value is applied to the building hex's CF. In addition, when attempting to apply damage from such an attack against units inside a building with Capital damage scaling, determine the hex's current Damage Threshold by dividing its current CF by 10 (rounding up; for structures with Capital-scale armor the threshold is Capital-scale as well). If a single hit exceeds the structure's current Damage Threshold (regardless of by how much the damage exceeds it), the attack will deliver a single 10-point, standard-scale hit to all units inside (assigned in 5-point Damage Value groupings; treat as an area-effect weapon for infantry). When applying damage to a unit (or other buildings) from a building with Capital damage scaling (such as through movement, building collapse and so on), the resulting Damage Value must be multiplied by 10 before it can be applied as appropriate.

Note that damage scaling applies across the board, whether the damage is dealt to the building through movement, combat

or planetary conditions. The damage from a collapsing building is also scaled when applied to other units and/or building hexes (see *Multi-hex Building Collapse* and *Building Collapse Splash Damage*, p. 121, respectively). In all cases, after scaling, round down.

Peter is trying to determine which of two targets his TI-2P Titan II *will fire on. Enemy BattleMechs are in two different building hexes: a 38 CF fortress and a 38 CF Castles Brian.*

The Titan has line of sight to each building hex, and the levels on them containing the enemy units. With both structures standing less than 3 hexes away, Peter's 'Mech is at short range to each building hex. Since they are immobile structures, he knows that all his weaponry will automatically hit, and so he tosses heat concerns to the wind and fires everything: Heavy PPC, four ER Medium Lasers, a Streak SRM-6 and two MML-9s (even though he's in the minimum range for the LRMs, Peter knows he's got no chance to damage the units inside the building if he loads the MMLs with SRMs, so he's firing LRMs; the –4 immobile modifier negates the minimum range modifier, making even these shots a sure thing).

Peter decides to run quick numbers to determine which attack will be the most effective against the targets (he assumes he'll roll an average of 7 on the Cluster Hits Table for his MML-9s, giving him 5 missiles for each—which would be divided into 5-point Damage Value groupings).

Looking at the Attacking Units Inside Buildings rules (see p. 171, TW*), Peter determines that each building will absorb 4 points of damage from each attack (38 ÷ 10 = 3.8, rounded up to 4) against the units within. This will leave the following Damage Values to strike the 'Mech targets inside a building hex: 11 points for the Heavy PPC (15 – 4 = 11); 1 point for each ER Medium Laser and each 5-point grouping from his MML-9s (5 – 4 = 1); no damage from each SRM (as the 2-point Damage Value groupings would be reduced below 1).*

Consulting the Buildings Classification and Type Table, Peter next assesses how the damage will scale against each building.

For the fortress, Peter sees a Damage Scaling Multiplier of 0.5 to the left of the slash, meaning that the damage is halved (rounded down) for attacks against the building and any units inside it. Thus, against the 'Mech inside the fortress, the Titan's Heavy PPCs will find their 11-point hits further reduced to 5 (11 ÷ 2 = 5.5, rounded down to 5), while the 1-point hits from the ER Medium Lasers and twin MMLs will be reduced to 0 damage (1 ÷ 2 = 0.5, rounded down to 0). Against the fortress hex itself, however, the following damage applies: 7 points from the Heavy PPC (15 ÷ 2 = 7.5, rounded down to 7), 2 points of damage for the four ER Medium Lasers and the 5-point missile groups from the twin MMLs (5 ÷ 2 = 2.5, rounded down to 2), and 1 point of damage for each SRM missile (2 ÷ 2 = 1). Such an attack would thus reduce the fortress' CF from 38 to 13 (38 – [7 PPC + (4 x 2) ER Medium Lasers + (2 x 2) MML-9s + (6 x 1) Streak SRM-6] = 13). If this had been a building with x1 scaling damage, the damage would have been twice as severe, and would have reduced the fortress to rubble.

For the Castles Brian, Peter notes that damage now falls into capital-scale rules. Peter first totals up all the weapons damage from his Titan II*, which comes to 57 points [15 (Heavy PPC), + 20 (4 x ERML) + 10 (2 x MML), + 12 (Streak SRM) = 57]. He then divides that value by 10, leaving him 6 points of capital-scale damage (57 ÷ 10 = 5.7, rounding up to 6) to apply to the Castles Brian's CF, reducing it from 38 to 32. Next, Peter checks to see if any damage will actually pass on to the 'Mech target inside. He first determines the current Damage Threshold of the Castles Brian to be 4 points (38 ÷ 10 = 3.8, rounding up to 4), and then compares that to damage from each individual weapon hit, to see if any can inflict capital-scale damage greater than 4 points. Peter quickly notes that nothing his Titan carries even comes close (the Heavy PPC only inflicts 1.5 capital-scale damage points). This means no damage will be passed on to the 'Mech inside the Castles Brian.*

Peter's obvious choice is thus to fire on the fortress hex, hoping that some artillery or bombing runs will make quicker work of the Castles Brian than he can with his Titan II.



Constant pirate raids have reduced a once thriving Periphery city to ruins.

BUILDING CONSTRUCTION

Even under the advanced rules discussed above, the various building classifications and types reflect "generic" structures. In truth, buildings can be outfitted with a variety of additional components (elevators, armor, weapons and so on) that can also have a direct effect on game play. The basic rules below cover these details by enabling players to construct custom buildings for game play.

Pre-Generated Maps

All buildings on pre-printed maps published by Catalyst Game Labs (or FanPro/FASA) represent generic structures, which can use the *Total Warfare* rules, as well as the advanced rules discussed above. In terms of the construction rules outlined below, these buildings stop at the end of Step 1 (see *Step 1: Establish the Superstructure*, at right), which is a valid point for any players to stop at in the design process, and allows for game play without too much additional complexity.

Players can add variety to these pre-generated buildings simply by picking up the process where the maps left off, adding extra features such as armor and equipment to the building designs, or modifying what is shown on the mapsheet into a more sophisticated "look-alike"—perhaps by reclassifying one or two Hardened buildings as a Castles Brian. The size and shape of the building wouldn't change on the map, but the Construction Factor could be modified, as well as the way damage is inflicted.

Static Buildings vs. Mobile Structures

The buildings covered in this section share much with Mobile Structures (see p. 33, *TO: AUE*) in terms of overall design and functions, with the only major difference between them being the fact that static buildings are not mobile, and thus do not have to invest internal capacity in power and motive structures. In addition, the more permanent nature of static buildings allows for a broader range of design options and sizes, including subsurface buildings and Castles Brian (which cannot be built as Mobile Structures).

To cut down on redundancy, these rules refer to the Mobile Structure design rules where they most directly apply (such as when mounting armor, heat sinks and weapons).

BUILDING BASICS

Building construction relies on three primary factors: technology base, building classification and Construction Factor.

Technology Base

In standard-rules play, as with units, Clan buildings can only mount Clan equipment while Inner Sphere buildings can only mount Inner Sphere equipment. If using the *Mixed-Technology* rules (see p. 189, *TO: AUE*), then an advanced building can mount both.

Tech Rating: All weapons and equipment (whether found here or in *TechManual*) receive a Technology Rating in addition to a technology base. This rating (expressed as a series of letter grades that indicate the level of technology and its availability through the major eras of *BattleTech* history) helps to define the item's level of sophistication and can be used for era-based campaigning. Beyond this, however, an item's Technology Rating has no direct bearing on building design.

Building Classification

An advanced building's ability to mount additional components is dependent on its building classification. These rules are discussed under *Install Components* (see p. 129).

Construction Factor (CF)

Once a player has verified that a building classification can mount a component, the Construction Factor (CF) then must be taken into consideration to determine if the building type can mount that component—or, if it can mount such equipment, how much tonnage it may mount.

Complexes

Complexes are groups of buildings that collectively serve a combined function. Most—but not all—may be buildings of similar or even identical types, such as a warehouse complex, a military base or an industrial park. Designers wishing to build such complexes need only generate multiple buildings.

THE DESIGN PROCESS

The following basic rules cover the construction of advanced buildings. Despite their range of types, sizes and capabilities, these structures follow five simple design steps, each of which is described in detail later. In brief, these steps are as follows.

Step 1: Establish Superstructure—Determine the building's technology base, classification, structure type, size and Construction Factor (CF).

Step 2: Install Armor—Determine type, amount and weight of armor (if any), and add armor points.

Step 3: Install Weapons, Heat Sinks, Equipment and Control Systems—Add weapons, any required heat sinks and other equipment to the advanced unit, as well as facilities for crews as needed.

Step 4: Complete the Record Sheet.

The above steps are a framework for designing an advanced building. The actual process can involve a bit more flexibility as equipment and armor (if any) are balanced for their best fit in terms of tonnage and space. For example, some designers might wish to assign armor before the weapons and heat sinks are established, to maximize protection over firepower. Others may want to add equipment first, leaving any remaining tonnage to armor and other modifications.

To assist in this effort, the designer may find it useful to make copies of the Structure Record Sheet (in the back of this book), to visually arrange the placement of weapons and equipment while tracking the use of weight on a piece of scratch paper.

Terminology: Buildings, like Mobile Structures (see *Designing Mobile Structures*, p. 71, *TO: AUE*), are not constructed so much by a weight standard, though their design does use weight as a regulating factor when it comes to equipment capacities. Thus, classifications and Construction Factors are used to determine the broader capabilities of each structure type.

STEP 1: ESTABLISH SUPERSTRUCTURE

The first step in creating an advanced building is choosing its primary function, size, height and framework. This step determines some of the most basic aspects of the building, including its classification, its technology base, its size and its CF. These choices will restrict the designer's access to certain equipment and can also influence the building's capabilities in game play.

Choose Technology Base

Buildings may be constructed using Clan or Inner Sphere technology bases.

Choose Building Classification

When choosing a classification, the designer must first determine what kind of building he wishes to construct: house, skyscraper, warehouse, office building, military barracks and so on. Often a player will already have a specific image in mind, perhaps of a "real world" building.

With that image in mind, the designer must then consult the *Advanced Building Classifications* section (see p. 112) to find the classification that best fits the building's chosen function.

Choose Building Type

The building type—Light, Medium, Heavy or Hardened—helps determine the range of Construction Factor (CF) values available to the structure design. The type also determines other factors, such as the MP costs and Piloting Skill Roll modifier that apply to units entering each of the building's hexes. As shown in the Building Classifications and Type Table (see p. 113), not all building types are available for all building classifications.

Choose Construction Factor

A building's Construction Factor (CF) is used in several ways during the design process as well as during game play. This value reflects not only the maximum amount of damage each hex of the structure can withstand before collapsing, but also the maximum weight of any units occupying each hex.

In construction, CF is also used to determine the weight capacity of any equipment mounted in the building (per level). If a given building classification allows the designer to mount a desired component, the Construction Factor determines whether that component can fit within the design.

The range of CFs available to a given building classification and type is shown on the Building Classification and Type Table (see p. 113).

Internal Weight Capacity: For each hex of area covered, all advanced buildings—except for tents, hangars, fences and bridges—may internally carry a total tonnage of equipment (including weapons, heat sinks and armor) equal to their Construction Factor times the number of levels of structure height. Because of their open frames, hangar-type structures may triple this capacity, but that same open frame means they can support a maximum of 600 tons of equipment per hex for every 4 levels of structural height (or fraction thereof), even if their structural tonnage capacity would support more. Tents, fences and bridges have no internal weight capacity for equipment, but bridge hexes may support external weight (on top of the bridge) in the same fashion as a building of equivalent CF.

Castles Brian: Buildings with a Castles Brian classification use a capital-scale CF rather than standard-scale. As with armor, each point of capital-scale CF translates to 10 points of standard-scale CF damage, as well as 10 tons' worth of structural support for units in a Castles Brian structure. Each point of a Castles Brian's CF also translates to 10 tons' worth of per-hex internal weight capacity (per level).

Choose Size and Shape

The final part of this step determines the building's size and shape—how many hexes it covers, how many levels each hex contains and how it fits on the mapsheet. The Building Classification and Type Table (see p. 113) lists the maximum total number of hexes for each building classification and building type. Within this range, a designer may arrange the hexes in any shape desired, but for ease of design, every hex of a given building receives the same level in height.

Walls/Fences: These special buildings have no set maximum limit for length, but do have a maximum effective height allowance, depending on their classification and type. Walls and fences also effectively occupy only the sides of a hex, not an entire hex. For purposes of these rules, any continuous length of wall or fence must be treated as a single building, and thus receives the same technology base, type, CF and height.

Bridges: Like walls and fences, these special building types have no set maximum limit for length, and no effective height (as the main portion is effectively treated as a special form of road).

Complexes

Complexes, which are represented as a group of multiple buildings in close proximity or directly connected, are constructed as multiple separate buildings. Each building in a complex may thus be built using a different building classification, type, CF, size and shape. As they are part of the same overall construction project, however, complexes may not vary by technology base.

Castles Brian: Castles Brian, a unique form of building complex, are almost always far more sophisticated than a simple arrangement of multiple buildings. For more information on these complexes, see *Castles Brian Complexes*, p. 139.

Ryana wants to build a very large shopping mall complex, complete with interior atrium. This complex, she decides, will have a large central building for the atrium, a main building and six smaller structures to reflect outlying shops. As they will all be combined in a civilian shopping complex, like so many among the mercantile districts of most Inner Sphere realms, Ryana chooses to build all seven structures with an Inner Sphere technology base, and chooses the Standard building classification.

A Standard-class building may be constructed with a Light, Medium or Heavy building type, but while Ryana intends her mall to be sturdy, she just doesn't see a Heavy type as practical for her needs, even for the larger central building. She thus constructs the central building as a Medium type, while assigning the outlying smaller buildings a Light building type.

The Medium Standard building serving as her mall's central structure has a CF range of 16 to 40 points, and a maximum size of 8 hexes and 8 levels of height. The Light Standard buildings she's using for the outlying shops have a CF range of 1 to 15 points, and a maximum size of 6 hexes and 5 levels. Ryana opts to give the central building the maximum CF of 40, and designs it as a ring-shaped building six hexes in total size (leaving a central, open hex to represent the atrium) that stands three levels high. (This gives it an internal weight capacity of 120 tons per hex [CF 40 x 3 Levels = 120].) The six smaller, identical structures, she decides, will receive their maximum CF rating of 15, and will ring the complex's central structure, with each shop building taking up only one hex and standing 2 levels high. (This gives the shops an internal weight capacity of 30 tons per hex [CF 15 x 2 Levels = 30].)

Kenyon wants to build a static defensive battery to defend one of Clan Hell's Horses' newly won mining enclaves in the Inner Sphere. As this is for Clan use, he chooses a Clan technology base. He then chooses a Gun Emplacement building classification, preferring the advantages of a simpler static weapon over a built-up structure that can be entered and such.

With the full range of building types—Light through Hardened—open to him, Kenyon decides on a Heavy type, which provides a CF range of 41 to 90 points. Kenyon wants his gun emplacement to be well protected and well armed, and so chooses a CF of 80 for this structure.

Gun emplacements have a fixed size of 1 hex by 1 level tall, which locks in the size and shape of Kenyon's building design and sets the internal weight capacity of these buildings at 80 tons (CF 80 x 1 Level = 80).

Tara doesn't want to take a lot of time designing a lot of buildings from scratch. Instead, she decides to modify a few buildings on a pre-existing map for use as the central building in a major military base. One that catches her eye is the Hardened structure on the far right side of the City (Residential) mapsheet (from Map Set #6). As this is a multi-level structure, by the rules of advanced building construction, it actually qualifies as three buildings in a single joined complex.

The central building is Hardened, 5 levels tall, and occupies a total of six hexes in a triangular pattern. To either side of this central building are two slightly smaller buildings, each of which is Hardened, 4 levels tall, and occupies 6 hexes in a simple two-hexes-by-three-hexes trapezoidal shape. This establishes the type, size and shape of these buildings, but Tara must still identify the buildings' classifications and CF values.

Tara decides to classify all three of these structures as fortress buildings, and assigns all three the maximum CF values allowed under that classification: 150 points. This means that the central building, at 5 levels in height, will have a total internal weight capacity—per hex—of 750 tons (CF 150 x 5 Levels = 750), while the other two buildings receive an internal weight capacity of 600 tons per hex (CF 150 x 4 Levels = 600).

STEP 2: ADD ARMOR

All buildings have an inherent protection—representing the level of engineering and toughness of the materials used in their construction—that is quantified for game purposes in their Construction Factor values. Some buildings, however—most notably those designed specifically for military use—may add armor as well, providing a level of protection beyond that of mere architecture.

In game play, a building's armor must be destroyed before the structure itself can sustain damage in accordance with the normal rules for attacking buildings. This armor is purchased in tonnage, as it is for other combat units, but is applied to the entire building in a uniform manner as an Armor Factor. This Armor Factor abstracts the level of protection provided by armor, regardless of the direction of attack (so a single-hex advanced building with a CF of 40 and an Armor Factor of 30 can sustain a total of 30 points of damage—regardless of the direction of attack—before damage is applied directly to the building's CF).

Only Wall, Gun Emplacement, Fortress and Castles Brian building classifications may install armor. Hangars, standard buildings, fences and bridges may not install armor. Armor is only installed in full-ton lots for buildings, and the same amount of armor must be installed on each hex of a building. The armor applied to a hex counts against the internal weight capacity of the hex being armored (so a 3-hex building that installs a ton of armor per hex counts only 1 ton against each hex's internal weight capacity, rather than the full 3 tons of armor installed on the structure). Armor does not affect the building's external weight capacity or ability to support other units inside.

The maximum number of armor points an appropriate building may receive is noted on the Building Classifications and Types Table (see p. 113).

Technology Base and Building Armor: For Inner Sphere-made buildings, each ton of armor provides 16 points of protection to a single building hex. Clan-made buildings (which benefit from slightly superior architectural, metallurgical and engineering design) receive 20 points of armor per hex for each ton of armor installed. Advanced buildings may not install other specialty armor types. This armor is assigned in standard-scale points; to convert to capital-scale armor (for Castles Brian structures), simply divide the armor value by 10 and round down after all armor is installed.

Ryana's shopping complex, made up of Standard-class buildings, may not install armor.

Kenyon's gun emplacement can be armored, and with a CF of 80, it may receive up to 80 points of armor per hex. As the emplacement was built using Clan technology, Kenyon will receive 20 points of armor (per hex) for every ton of armor installed. Since the building occupies only one hex, Kenyon decides to install the maximum armor—80 points—on his gun emplacement, spending 4 tons from the structure's internal weight capacity in the bargain (20 points per ton x 4 tons = 80 points). The gun emplacement now has enough room for 76 tons of weapons and equipment.

Tara's Fortress-class buildings may install armor, if desired. Though all three structures together make up a complex, she decides to armor only the central building, leaving the others without armor. The central building has a CF of 150 points per hex (so it may support up to 150 armor points per hex), and a total internal weight capacity of 750 tons per hex. Because armor has to be mounted in full-ton lots, Tara quickly realizes that 150 points of armor on an Inner Sphere building would require 10 tons per hex (150 maximum ÷ 16 points per ton = 9.375 tons of armor, rounded up to 10). Rather than waste tonnage, Tara decides to install 9 tons of armor per hex instead, which will provide the central building with 144 armor points per hex (9 tons x 16 points per ton = 144 points). Each hex now has an internal weight capacity of 741 tons (750 – 9 = 741).

STEP 3: INSTALL COMPONENTS

Advanced buildings may install weapons, heat sinks and other equipment in accordance with the rules for mounting weapons and equipment on Mobile Structures (see p. 78, *TO: AUE*), but with a few modifications as outlined below.

Unspecified Equipment

Buildings often have broadly varied functions—ranging from simple residences and shopping complexes to hospitals, factories and administrative centers. In many cases, equipment that already exists for use with Mobile Structures, Support Vehicles and the like can be used to provide in-game functions and features that further define a building's purpose. Many players, however, may find exploring such options tedious for buildings (which are often seen simply as a sophisticated piece of terrain or a mission objective).

Thus, at the designer's option, some (or all) of a building's design may be left aside for "unspecified equipment." This equipment would have no effect in game play, but would instead be used as "filler" without defining an entire structure as an empty cargo space or generic quarters.

Light and Medium Weapons

Only hangars, standard buildings and walls may mount Medium and Small weapons (weapons listed on the Conventional Infantry Weapons Table in *TechManual*; see pp. 349-352, *TM*). These building classes may mount a maximum of 6 such weapons per hex for each level of the building's height.



Mad Cat *and* Savage Coyote, *Delta Galaxy (Clan Coyote)*

Heavy and Capital Weapons

Only Gun Emplacement-, Fortress- and Castles Brian-class buildings may carry Heavy weapons. Only Fortress- and Castles Brian-class buildings may carry Capital weapons. For the purposes of these rules, Heavy weapons are all weapons weighing 0.25 tons or more that are available to 'Mech or vehicle units, while Capital weapons cover all weapons that use capital-scale damage and range values.

The rules and limits for mounting Heavy and Capital weapons on buildings are the same as those used for mounting such weapons on Mobile Structures (see pp. 78-79, *TO: AUE*). The exception being Gun Emplacements, which may mount weapons equal to their CF/3 (round down), and Castles Brian which do not divide their CF when calculating weapon tonnage.

Power Systems and Power Amplifiers

The rules presented here generally presume that a given advanced building is drawing power indirectly (either from the local energy grid, or through a power collection system such as solar power). Buildings intended to operate independently of the local grid—such as gun emplacements, fortresses and Castles Brian—may find independent internal power supplies far more preferable. See *Power Generators* (see p. 131) for information on incorporating power systems into an advanced building design.

Power Amplifiers: Any building drawing power indirectly or through a non-fusion or non-fission generator must add power amplifiers for any and all Heavy- or Capital-class energy weapons mounted on the unit. The weight of such amplifiers is equal to 10 percent of the weight of all such weapons mounted in the hex (rounded up to the nearest .1 tons). Power amplifiers do not count toward the weight of any weapons slaved to a targeting computer, nor do they count toward the weight of any turret or pintle mechanisms mounted on the building, but their weight must be assigned to the hex locations where their related weapons are mounted.

Crew Systems and Quarters

By and large, buildings do not require a crew to run them. However, any equipment installed within an advanced building (such as weapons, communications systems and medical facilities) may require crewmen to operate in game play. To determine how many crewmen are required to operate an advanced building's equipment, consult the Advanced Building Minimum Crew Table on page 132.

Crew Quarters: Unlike Mobile Structures and other battlefield units, advanced buildings do *not* require quarters to meet any crew needs unless they are specifically designed to operate far from local population centers or even a barracks of their own. Gun emplacements, for example, may require crew quarters for long-term habitation and immediate operation, as might a fortress with communications and medical support facilities, but civilian-focused buildings can make do with a "crew" that arrives via the morning commute.

Passenger Quarters: Also not a required part of advanced building design, passenger quarters may nevertheless be used to represent everything from hotel room space to residential quarters, or even shops, offices and cafeterias in a large building. For more technical and support applications, appropriate cargo space, transport bays or cubicles (see p. 239, *TM*) may

be used to reflect specialized-function equipment (such as 'Mech cubicles for a 'Mech repair hangar), to indicate the building's intended capacity where people and machinery are concerned.

Quarters Space: If a designer opts to install quarters, they may be divided as evenly as desired among all of the building's hexes and levels.

ADVANCED BUILDING MINIMUM CREW TABLE

Minimum Crew Formula:
Minimum Crew Needs = Minimum Non-Gunners + Minimum Gunners + Minimum Officers (if required)

Non-Gunners	Minimum Crew Requirement
Communications Equipment (per ton, see p. 212, *TM*)	1
Field Kitchen (per item, see p. 217, *TM*)	3
Flight Deck (per item, see p. 310)	20
Landing Deck (per hex, see p. 317)	3
Helipad (per item, see p. 310)	5
MASH (per theater, see p. 228, *TM*)	5
Mobile Field Base (per item, see p. 328)	5
Modular Structure Linkage (per item, see p. 77, *TO: AUE*)	4

Gunners	Minimum Gunners*
Per Light Weapon (see p. 129)	1
Per Medium Weapon (see p. 129)	1
Per Heavy Weapon (see p. 129)	Weapon Tons ÷ 5 (round up)
Per Capital Weapon (see p. 129)	7

*Gunners are required only for items that require a Gunnery Skill Roll to use in combat.

Officers	Minimum Officer Requirement*
9 Non-Officer Crewmen or less	1
10 or more Non-Officer Crewmen	Total Non-Officer Crew ÷ 10 (round up)

*Officers are not required for advanced buildings that are non-military in nature.

Because she sees her buildings as part of a shopping complex that draws power from the local grid, Ryana has little need for sophisticated equipment or generators. But rather than assign the various shops as undefined equipment—like any random structure on a mapsheet—she decides to use quarters to reflect the main stores and even some field kitchens to reflect a food court.

For the Light outlying buildings, Ryana assigns two second-class quarters worth 7 tons each, plus two more steerage-class quarters (at 5 tons each), to reflect two medium-sized shops and two smaller shops in each building. With a total of 24 tons spent, Ryana leaves the 6 remaining tons to standard cargo, which she envisions as stockrooms for these outlets.

For the Medium central building, Ryana installs 3 first-class quarters (10 tons each), 3 second-class quarters (7 tons each) and 6 steerage quarters (5 tons each) per hex, for a total of 81 tons. She then nominates three of the six central hexes (each 1 hex apart) to receive field kitchens (each worth 3 tons) for her food court (the central atrium, as she sees it, will serve as an open-air dining area to connect them). This leaves the central building with 39 tons of space in 3 hexes, and 36 tons in the other 3 hexes. Deciding that the mall is packed well enough, Ryana leaves the remaining space for storage and stockrooms. Her mall complex is complete.

No crew is required to operate Ryana's mall, but she does know from the Advanced Building Minimum Crew Table that the food court has a requirement of at least 9 employees. She also feels that each of the shops ("quarters") she assigned should have a minimum of 3 employees each during the day—a rather arbitrary figure on her part, but one fitting the spirit of the structure. Each Light building hex thus requires 12 employees, while each Medium building hex employs 36 associates. These employees will all be able to commute to work, so no additional quarters are necessary here. Thus, on any given shopping day, her mall will house 297 employees ([6 x 12 outer building hexes] + 9 [food court] + [6 x 36 inner building hexes] = 297). As the shopping mall complex is not a military compound, no officers are required.

Kenyon's gun emplacement can carry up to 76 tons' worth of weapons, ammo, heat sinks and—if necessary—power systems and crew quarters. In an effort to maximize the emplacement's potential, he decides that the building can draw power from external generators, and that the crew can commute from the nearby base, rather than living in the weapon platform. This leaves all the internal tonnage capacity for weapons.

Kenyon decides that the primary weapons for his emplacement will be a pair of Clan ER Large Lasers (which weigh 4 tons each). Because these are energy weapons that generate 12 points of heat each, Kenyon must also spend 24 tons on heat sinks. Furthermore, because the building is drawing power indirectly, he will also need to install 0.8 tons of power amplifiers (8 tons of heavy energy weapons x 0.1 = 0.8 tons). With 32.8 tons spent on these weapons, Kenyon decides to back up the lasers with a pair of Artemis IV-enhanced LRM-20s (6 tons each; 12 tons total), and adds 5 tons of ammo per launcher (for a total of 10 tons of ammo). Because they are missile weapons, heat sinks and power amplifiers are not required. Thus, the final weight for all weapons, ammunition, heat sinks and power amplifiers comes to 54.8 tons.

Kenyon decides that all four weapons will be placed in a turret, to maximize the emplacement's flexibility in battle. As the lasers weight 4 tons each and the LRMs weigh 6 tons each, and all heat sinks, power amplifiers and ammunition are not counted, this yields a turret weight of 2 tons ([(2 x 4 tons for lasers) + (2 x 6 tons for missile launchers) = 20 tons] ÷ 10 = 2). With 56.8 tons spent, Kenyon finds that his gun emplacement still has 19.2 tons remaining. After some thought, he decides to allocate 5 of these tons to a battle armor transport bay, to

reflect a place for a Point of support troops, and leaves the remaining 14.2 tons to a generic storage bay for supplies.

Tara is not as interested in detailing every feature of her Fortress-class buildings as the others have been. There are only a few items of interest she'd like to place in these structures: a helipad, communications equipment and a power generator that will enable the structures to remain independent of the local grid. The rest, she decides, will be unspecified equipment centered on the buildings' primary role as a military administrative center.

To make matters even simpler, Tara decides that all the equipment she has in mind can be placed in the central building. Looking up the Power Generators rules, she determines that her three buildings require 78 hexes of power ([6 hexes x 5 levels = 30 hexes for the central building] + (2 x [6 hexes x 4 levels for the secondary buildings] = 48) = 78). Opting for a fusion-type generator, Tara multiplies this by 1 (fusion generator weight multiplier) to find that the generator will take up 78 tons in total weight. Tara decides to distribute the weight evenly among the building's six hexes, reducing their 741-ton capacities by 13 tons (to 728 per hex).

The helipad, at 500 tons, Tara places at the top of the central hex (leaving 228 tons there), while she places 9 tons' worth of communications equipment in another hex (on the third level, just in case advanced building rules will be used). The remaining internal space—in all hexes—Tara assigns to "unspecified equipment," allowing her to complete the design process.

STEP 4: COMPLETE THE RECORD SHEET

Once an advanced building's size, shape, CF, armor, weapons and equipment are established, a blank Structure Record Sheet can be used to record these specifics for game play. (This is the same record sheet as the Mobile Structure uses.) All data on the advanced building must be filled in for the Structure Data block (including name, building type and CF—though all advanced buildings constructed according to these rules receive a value of "NA" for MPs). All equipment slots must be allocated on the Weapons and Equipment Inventory (including ammunition and number of shots per bin), making certain to note in which hexes the items have been placed as well as their facings (turreted weapons should be noted with a "(T)" and pintle-mounted weapons should receive a "(P)" notation).

Finally, all extraneous hexes must be blacked out on the structure's mapsheet diagram.

Once all of the above is completed, the advanced building is ready for game play.

Multiple Buildings/Complexes: In the case of multiple smaller buildings and complexes, if the hex space on the Structure Record Sheet permits, multiple buildings may be laid out on the record sheet's mapsheet diagram in a manner corresponding to their positions on the game map. Using the record sheet's hex numbers, players can track equipment across the separate buildings as easily as across a single larger building.

ADVANCED BUILDING EQUIPMENT

Advanced buildings may install any of the equipment featured in *TechManual* that is specifically identified as being available to DropShips on the Equipment tables (see pp. 341-345, *TM*). Buildings may also employ any items shown in the Advanced Weapons and Equipment rules (starting on p. 86 of *TO: AUE*) that are specifically noted as being available to Mobile Structures.

In addition, the following items and design options are available for the appropriate building classifications and types, reflecting extra features not commonly found on DropShips or Mobile Structures.

AUTOMATED WEAPONS

Automated weapon systems are available to any advanced building that may carry weapons. Controlled by little more than a basic pre-programmed fire control system slaved to a standard sensor array, automated weapons fire on the closest non-friendly target unit within their range (or at a randomly determined non-friendly target, if more than one is at the same distance). This attack is resolved using a fixed base Gunnery Skill of 5, and takes place first during the Weapon Attack Phase (regardless of initiative order). An additional +1 modifier applies to an automated weapon attack if the line of sight passes through or into a hex covered by a hostile ECM field (or if the automated weapon system itself is subjected to a hostile ECM field).

Construction Rules: Only Heavy-class, non-artillery weapons may be used with an automated control system. Automated control systems also may not use any weapons that require no Gunnery Skill to fire (such as anti-missile systems, A-Pods, B-Pods and electronics). The control system replaces the standard fire control systems (for the same weight, size and cost), but requires no crew to operate.

POWER GENERATORS

For most structures and facilities, it is generally presumed that any power needs are met by the capacity of a local power grid. Where desired, however, players may opt to install independent power generators for their advanced buildings. Power generators for static buildings differ significantly from the power systems used in Mobile Structures, in part because they do not need to provide enough power for a massive, distributed motive system. Building power systems may also be used to power multiple buildings within a "power grid," often by a system of suspended cables, underground conduits and such.

Advanced buildings may draw power from any one of the generator types shown on the Power Generators Table below. The listed generator types provide a Generator Weight Multiplier (used to find the generator's total weight), Daily Fuel Weight (in tons, per every five hexes of buildings requiring power) and any special notes about the generator's design and use (such as minimum building sizes, explosive hazards and such).

Generators may power one or more buildings, and may even be supplemented by power from other generators. There is no practical limit on how many generators may power a building or group of buildings; most industrial or commercial complexes tend to use no more than two or three generators, while residential areas tend more toward external power supply from a distant but dedicated generator complex. Military complexes can vary more, with one or two generators providing power to the main facilities, while static defenses receive their own internalized power generators for independent operation.

Regardless of the arrangement and nature of any power generators installed, if a building hex housing generators is destroyed (or the fuel supply for such generators is destroyed or depleted), the affected generators will cease providing power to any buildings in their grid. Any building that finds itself without power as a result may not operate any Heavy weapons, communications systems or other electronics. A building receiving power from multiple generators receives no additional benefits beyond losing power only after all power sources are destroyed or disabled.

Construction Rules: To find the Base Generator Weight for an advanced building (or a complex of buildings), add up the total number of hexes for all of the advanced buildings intended to receive power (including the building with the generator) except for Tent-, Fence-, Wall- and Bridge-class buildings. In the case of multiple-level buildings, multiply the building's hex-count by its height in levels—plus any basement levels—before adding it to the sum (so a 3-hex building that stands 4 levels in height is worth 12 hexes). Add to this sum 10 percent of the total tonnage for all Heavy-class energy weapons used by any of these buildings. This is the Base Generator Weight.

Next, multiply the Base Generator Weight by the appropriate Generator Weight Multiplier, and round up to the nearest whole number. This is the weight of a single power generator. The generator may be housed within a single building, with its weight distributed as evenly as possible across all the generator building's hexes as necessary. (For example, a 960-ton generator might exceed the weight capacity of a single hex of a 2-level, CF 90 Heavy fortress with its per-hex weight capacity of 180 tons, but if the building occupies 6 hexes, its total weight capacity of 1,080 tons [180 x 6 = 1,080] would allow it to support the generator's weight at 160 tons per hex [960 ÷ 6 = 160].) Multiple generators may be installed within a single building, if desired, but the designer should bear in mind which generators occupy which hexes, as the destruction of even a single hex assigned to a generator will render that generator inoperative.

Generator Fuel: Steam, Internal Combustion and Fuel Cell generators require fuel to power themselves and other structures. This fuel may be stored in separate storage tanks in other buildings. See *Liquid Fuel/Chemical Storage Tanks* for rules to determine how much fuel such generators require, and how to construct storage tanks to contain the fuel.

LIQUID FUEL/CHEMICAL STORAGE TANKS

Generators powered by steam, internal combustion or fuel cells require fuel to operate, as do vehicles and other units driven by fuel-based systems, while various other chemical applications may require ample storage and distribution facilities to maintain their liquid supplies.

Fuel storage buildings require no power, so long as they feature no other equipment beyond liquid cargo storage.

Infantry units may not move through a liquid fuel or chemical storage tank, but may ascend the structure along the outside as described under the rules for climbing under *Moving Through Advanced Buildings* (see p. 116). Mechanized and motorized infantry may not ascend the outside of a building. Other units may move into and through a liquid storage tank building per the normal rules, but do so at an additional +1 MP cost and a +2 modifier to Piloting Skill Rolls when doing so. Such actions also cause leaks as described below.

Liquid Fuel/Chemical Tank Explosions: If any hex of a liquid fuel/chemical storage building collapses or is otherwise reduced to a CF of 0 by weapons fire or fire effects (see *Fire*, p. 41), the contents of the entire structure may explode on a 2D6 roll of 6+.

POWER GENERATORS TABLE

Generator Type	Weight Multiplier	Daily Fuel Weight	Notes
Steam	3	1.5	Liquid-based fuel supply required
Solar	3	NA	May not mount other equipment on rooftop*
Fission	1.5	NA	
Fusion	1	NA	
Internal Combustion			
Petrol, Natural Gas	1.5	1	Liquid-based fuel supply required
Coal, Wood	2	2	Solid-based fuel supply required
Fuel Cell	1	1.2	Liquid-based fuel supply required
External (PCMT)**†	0.5	NA	Minimum building size (regardless of height) = 5 hexes per ton of transmitting PCMT (round up); May not mount rooftop equipment*
External (Other)†	0.5	NA	

*For construction purposes, rooftop equipment is any equipment that uses turrets or occupies turret space.
**Reflects receiver, power storage and distribution for energy transmitted by PCMT equipment (see p. 48, *TO: AUE*).
†Externally-fed power generators store enough power to operate for 1 hour for every 5 tons of equipment (round up).

An exploding liquid fuel/chemical tank will affect all units, structures and terrain within a number of hexes of the storage tank equal to the storage tank's current total fuel capacity (in tons) divided by 1,000 (rounded up). Thus, a storage tank that is holding 2,400 tons' worth of fuel when it explodes will affect all units within 3 hexes of the structure (2,400 ÷ 1,000 = 2.4, round up to 3), while a storage tank that currently holds 700 tons of fuel or liquids will only affect all units within 1 hex of the structure (700 ÷ 1,000 = 0.7, rounded up to 1).

All units within the area of effect of an exploding liquid fuel/chemical tank building will sustain a base Damage Value equal to the Explosion Damage Value shown for the stored liquid or fuel in the Fuel Tank Leak/Explosion Table below, treated as area-effect damage. (Units sustain this damage based on their facing relative to the exploding storage tank, with any units standing within or on top of the structure sustaining damage to their appropriate Front hit location table.) Multiply this value by the storage tank's maximum effect radius as computed above for all units adjacent to the storage tank, and divide this modified value by the unit's distance from the storage tank for any units within the area of effect but not adjacent to the tank. (Thus, if a liquid storage tank explodes with a base Damage Value of 20 points, but has an area of effect of 3 hexes due to its capacity, any units directly adjacent to the exploding storage tank will sustain 60 points of area-effect damage [20 points x 3-hex area = 60], while any units standing 3 hexes away from the exploding storage tank will sustain only 20 points of damage [20 points x 3-hex area ÷ 3 hexes away = 20].) Any units within or on top of an exploding storage tank's building hexes sustain twice the damage an adjacent unit would otherwise sustain.

If the storage capacity of a liquid fuel/chemical storage tank is unknown, presume that a given storage tank hex can contain up to 546 tons of fuel for every 4 levels in height (or fraction thereof)—reflecting the capacity of a standard 600-ton liquid storage tank; the largest size storage tank possible in a Hangar-class structure. Thus, a 4-hex storage tank that stands 3 levels tall can contain up to 2,184 tons of fuel ([546 tons x 4 hexes] x [3 levels ÷ 4 = 0.75, round up to 1] = 2,184).

Liquid Fuel/Chemical Tank Leaks: If a liquid fuel/chemical storage building is collapsed by non-weapon attacks or fire, or is breached by a unit other than infantry attempting to pass through its walls, the storage tank will not explode, but will instead lose its total liquid fuel (or chemical) capacity at a rate equal to 1 ton for every point of CF damage the building has sustained. This amount is taken from the total liquid storage capacity of the damaged building, but does not affect any linked storage tanks. This fuel will pool up in all hexes adjacent to the fuel storage building (except for those occupied by another building) and is treated as a water feature with a Depth of 0.

The leak will continue for as long as the fuel storage tank remains standing, does not explode, and has contents to spill; for every 3,000 tons of liquids spilled by a leak in this fashion, the radius of the spill will expand outward from the leaking storage tank by 1 hex. Any additional effects due to the liquid type being leaked (such as increased chances for starting fires from spilled fuels) are noted on the Fuel Tank Leak/Explosion Table.

Generator Fuel

Generator buildings (see *Power Generators*, p. 131) that run on steam, internal combustion or fuel cells also require fuel storage facilities to maintain their operations. To abstract the fuel needs for such facilities, consider that a typical generator of the above-mentioned types burns 1 ton of fuel per day for every 5 hexes of structure (rounded up, regardless of height) that it provides with power (including the generator building itself, but not its fuel storage structures). An additional ton of fuel is also required per *hour* for every building-mounted Heavy weapon among these structures that sees use in combat (even if the period of use is as brief as a few combat turns), while capital-scale weapons burn fuel equal to 10 tons per hour of use. When establishing the daily fuel needs for a generator supplying power to such armed structures, the designer may establish anywhere from 0 to 24 hours' worth of weapon-power fuel per day, but must factor in *all* of the associated Heavy or Capital weapons appropriately when doing so.

Once the daily fuel needs for a given Steam, Internal Combustion or Fuel Cell engine are determined, this figure must be multiplied by the Daily Fuel Weight value for the generator type used (see the *Power* Generators Table, p. 131).

As this fuel is typically burned and replenished on a monthly basis, a power generator's minimum fuel storage should be sufficient to supply a month's worth of continuous power for all the essential structures it supports. For ease of reference, players may compute a month's worth of generator fuel by multiplying the generator's daily fuel consumption rate by 30.

Coal- and Wood-Burning Generators: In very rare instances, generators using an internal combustion power source may be fueled by coal or wood. As these are non-liquid fuels that are largely inert, there is no chance of explosion from the destruction of a storage building filled with them. Instead, such fuel stores simply ignite under explosive conditions, with all storage tank hexes catching fire instead of exploding (see *Fire*, p. 41). Leaks from a coal- or wood-storage tank simply spill the fuel out into the adjacent hexes for 1 turn. This spill creates rough terrain in all hexes outside the storage tank that lie adjacent to the breach.



A lance of Death Commandos guard a critical generator station.

Construction Rules

Any building class may be constructed as a liquid fuel/chemical storage tank, but hangars, with their open structure design, are generally the most efficient. To create a liquid fuel/chemical storage tank, the designer must simply devote some or all of a given building's internal tonnage capacity to liquid storage. This fuel/chemical storage counts as a single liquid cargo transport bay (see p. 239, *TM*), meaning that for every ton of structure devoted to liquid storage, the building actually holds 0.91 tons of fuel or liquid chemicals. If the maximum size of a fuel/chemical storage building cannot accommodate all of the fuel/chemicals required, it may be linked to other liquid storage buildings for greater total capacity, but such linked liquid storage tank buildings must be placed in adjacent hexes.

Non-Liquid Fuels: The non-liquid fuels (coal and wood) covered under these rules do not use liquid storage, but use standard "dry" storage compartments instead. As a result, the tonnage of non-liquid fuel available to generators using such fuel supplies is equal to that of the cargo transport bay itself (see p. 239, *TM*).

Paul has built a military base that consists of a total of 80 building hexes, six of which include weapon turrets that house four Heavy weapons each. Having elected to power this with an Internal Combustion generator, he computes that the fuel needs for such a generator to provide daily power to the buildings and up to two hours' worth of active power (per day) for the Heavy guns would come to 64 tons per day ([80 total building hexes ÷ 5 = 16] + [2 hours/day x (6 buildings x 4 heavy weapons = 48)] = 64). As his chosen power source is neither Steam nor Fuel Cell, Paul finds that this value is unchanged for the generator type used (64 tons/day x 1.0 Daily Fuel Weight value for Internal Combustion generators = 64). To supply a month's worth of power needs, Paul computes that his generator building would need fuel storage for 1,920 tons of fuel (64 x 30 = 1,920).

Because the storage capacity of a liquid cargo transport bay is 0.91 tons for every ton of equipment space devoted to it, a grand total of 2,110 tons is needed to store the month's worth of fuel weight computed above (1,920 tons ÷ 0.91 capacity tons per ton = 2,109.89 tons, rounded up to 2,110). Deciding on a Hangar-class building for the job, Paul notes that the maximum internal tonnage capacity of a Hangar-class building (with sufficient CF) is 600 tons per hex for every 4 levels in height (or fraction thereof). A single-hex fuel storage building with sufficient capacity would need to stand 16 levels high (4 hexes per 600 tons x 4 = 16 levels, for 2,400 tons of internal weight capacity). Alternatively, a similar-CF, Hangar-class fuel storage building could simply be built as a 1-level tall building occupying 4 adjacent hexes, to achieve the same capacity.

ENVIRONMENTAL SEALING

Environmentally sealed buildings are built for occupation in extreme environments such as vacuum, underwater or within toxic atmospheres. Whenever occupied buildings appear in such settings, they are assumed to incorporate environmental sealing.

Whenever a sealed building suffers CF damage in excess of 10 points (per hit), a 2D6 roll must be made, modified as noted on the Sealed Building Breach Table below. If the final, modified result is 10 or higher, the structure is breached. A breached building will not necessarily collapse, but all unprotected personnel and equipment within the building are considered destroyed. (Castles Brian hexes only breach in the hex where the damage occurred.)

Adjacent structures—such as tunnels—may also be breached when a building connected to them is breached, but only if any doors between the two are open at the time. Units attempting to move through the walls or closed doors of a sealed building must make the breach roll first in order to pass. Remember that an armored structure may not sustain CF damage until its armor is destroyed.

FUEL TANK LEAK/EXPLOSION TABLE

Fuel/Chemical Type	Explosion Used For	Damage*	Leak Effect
Water	Steam Power	0**	–2 to ignite Terrain/Buildings/Units in adjacent hexes
Petroleum	Internal Combustion	15†	+2 to ignite Terrain/Buildings/Units in adjacent hexes
Natural Gas	Internal Combustion	10†	+1 to ignite Terrain/Buildings/Units in adjacent hexes
Volatile Chemicals	Fuel Cells/Chemical	10	+1D6 damage to conventional infantry in adjacent hexes
Aerospace Fuel	Aerospace Engines	20†	+1 to ignite Terrain/Buildings/Units in adjacent hexes
Coal/Wood	Internal Combustion	NA††	Ignore normal leak effects; leak lasts 1 turn; adjacent hexes to breach become rough terrain.
Pressurized Chemicals‡	Chemical Applications	2D6**	+1D6 damage to conventional infantry in adjacent hexes
Other Chemicals‡	Chemical Applications	0**	–1 to ignite Terrain/Buildings/Units in adjacent hexes

*Explosion damage affects units adjacent to the exploding fuel storage building; double this damage for all units standing on (or inside) an exploding fuel storage building.

**Conventional infantry suffer 4D6 burst-fire damage instead; all other units must make a Piloting/Driving/Anti-'Mech Skill Roll to avoid being displaced 1 hex outward from the structure.

†Fire automatically starts in exploding fuel tank hexes.

††Coal and wood for Internal Combustion engines are not stored as liquid fuel, but in powder or pellet forms that are inert under most conditions; if explosive conditions are met, all related fuel storage building hexes catch fire, rather than exploding.

‡Other than the fuels and chemicals noted above

SEALED BUILDING BREACH TABLE

Target Number to Breach (2D6): 10+

Building Type	Roll Modifier
Light	+2
Medium	+0
Heavy	–2
Hardened	–4
Subsurface/Underwater	+(Depth ÷ 2)*

*Round up

Construction: Hangar, Standard, Fortress and Gun Emplacement building classes intended for vacuum, toxic or underwater environments must be sealed to function in such environments. (Castles Brian receive this benefit automatically, and all other structure types—such as tents—either may not be placed in such environments or lack the sealing requirement because they do not have human-occupied internal spaces to seal—such as walls, bridges and fences.) Constructing an environmentally sealed building requires no allocation of internal weight capacity, but does increase the costs for such structures as a result of the specialized engineering.

HEAVY METAL SUPERSTRUCTURE

Most advanced buildings (with the main exception of Tent- and Fence-class structures) may be constructed using heavier, higher-ferrous metals than normal. A building using such a heavy metal superstructure interferes with the operations of most sensors and targeting systems (excepting those mounted on the building itself). If a line of sight passes through or into any hex that is part of (or adjacent to) a building constructed with a heavy metal superstructure, any weapon attacks, electronics, or communications using that line of sight are affected as if within an electromagnetic interference (EMI) field (see *Electromagnetic Interference*, p. 53). Furthermore, if the players agree, a large concentration of buildings featuring this construction option—such as 15 or more hexes' worth of such buildings per mapsheet—may also constitute a Heavy Industrial Zone (see *Heavy Industrial Zone*, p. 29)

Furthermore, when moving a non-infantry unit into any hex of a building constructed with a heavy metal superstructure, the building hex suffers the normal amount of damage caused by the unit's passage, but a failed Piloting Skill Roll delivers twice the normal amount of damage to the unit (the building's current CF divided by 5, rounded up).

Construction: Other than tents and fences, any advanced building that has a Heavy or Hardened building type may be constructed with a heavy metal superstructure. However, this superstructure reduces the available internal weight capacity of the structure by 25 percent (multiply the building's internal weight capacity figures by 0.75 and round down to the nearest whole before adding equipment).

HIGH/LOW CEILINGS

For various reasons, most buildings may be constructed using higher or lower ceilings than normal. High-ceilinged buildings might include those constructed to serve as amphitheaters or coliseums, while low-ceiling buildings may represent common residential designs. The following rules reflect the impact of such design options on an advanced building in game play.

High Ceilings: High ceilings generally range as high as 6 meters—large enough to accommodate most vehicles without difficulty, though many are ill suited to use as hangars. Non-infantry units passing through a high-ceilinged building will be less impeded by the structure, and thus deliver half as much damage (rounded down) to the building's CF as they enter each high-ceilinged hex, while suffering half as much damage from the building in the event of a failed Piloting Skill Roll for movement (see pp. 167-168, *TW*). See *Moving Through Advanced Buildings* (see p. 116) for more information on modifiers and MP costs imposed by each high-ceilinged building hex.

Low Ceilings: Low ceilings generally sit as low as 2 to 3 meters in height—scarcely large enough to accommodate most humans without difficulty, though they are not quite cramped enough to slow down personnel. Non-infantry units passing through a low-ceilinged building will be more impeded by the structure, and thus deliver twice as much damage (rounded up) to the building's CF as they enter each low-ceilinged hex, while suffering twice as much damage (rounded up) from the building in the event of a failed Piloting Skill Roll for movement (see pp. 167-168, *TW*). See *Moving Through Advanced Buildings* (see p. 116) for more information on modifiers and MP costs imposed by each low-ceilinged building hex.

Construction: Only Standard, Fortress and Castles Brian building classes may be constructed using high or low ceilings. Use of high or low ceilings does not affect a building's internal weight capacity. For simplicity's sake, a building may not combine high and low ceilings, or combine either one with standard ceiling heights (which range around 3.5 to 4 meters).

INDUSTRIAL ELEVATORS

Elevators are a common enough sight on virtually any building of significant height. Typical elevators, however, are scaled to human operations, with limited capacities intended to handle no more than 10 to 20 adult individuals at any given time. Industrial elevators, on the other hand, reflect lifts designed to accommodate much larger units, such as vehicles, bulk cargo or even 'Mechs.

Industrial elevators have a pre-designated cargo capacity that defines the maximum tonnage of units or cargo they may haul at any one time. If an industrial elevator's maximum capacity is exceeded, it will not move (in either direction) until the load tonnage falls to or below this maximum capacity. Furthermore, an industrial elevator must have an assigned "elevator shaft" length (the area, in levels, that the elevator reaches), as well as access hexsides for all levels within the building (to identify any restrictions to entry and egress). For the sake of simplicity, an industrial elevator's platform is presumed to occupy its entire assigned hex.

To access an industrial elevator, a unit must enter the elevator's hex when the elevator platform is at the unit's current height within the structure, so it is important to keep track of where the elevator is both in terms of the building's hexes and its level within a structure. Industrial elevators ascend and descend at a rate of 1 level per turn (regardless of load size), and each level moved is counted as 1 Walking/Cruising MP to any units within, to reflect the time spent in transit. (For example, if a *Griffin IIC* with a Walking MP of 6 began a turn adjacent to—and facing—an elevator hex, and the elevator platform was present, the 'Mech would spend 1 MP entering the elevator, 1 MP descending to the next level below, 3 MP to turn around—to face the exit—and 1 final MP to step out again, now one level lower.) Units may only use Walking/Cruising MP when entering, using or exiting an industrial elevator.

Industrial elevators only travel up and down within a building, never into adjacent hexes. If any level of an industrial elevator's hex is breached, flooded or collapsed, the elevator ceases to function.

To call an industrial elevator (if the platform is not already on the same level as the unit looking for a ride), the calling unit must be in a hex adjacent to the industrial elevator's platform and its controlling player must announce during the End Phase that the elevator is being called. If multiple calls are made in this fashion, the elevator platform will arrive in the order of the calls received, moving to each call location at 1 level per turn (so it is important to know when and where an elevator platform is called to). If multiple calls are made in the same End Phase, the elevator will move to the nearest of the callers before going to the next nearest after that and so on. (If multiple calls are made in the same phase by units at the same distance from the platform, the controlling players must roll initiative against each other to determine which one sees the platform first.)

Stacking rules apply as normal within an industrial elevator's platform hex.

If any unit enters an elevator's hex when the platform is not present, the unit will fall toward the bottom of the building until it hits the elevator platform or the bottom of the elevator shaft, whichever has the higher elevation.

Construction: Industrial elevators weigh 1 ton for every 20 tons of desired carrying capacity (rounded up to the nearest whole ton), times the number of levels they are designed to access, not including the ground level. An industrial elevator may not be built with a carrying capacity greater than its building's CF, nor can it access levels higher or lower than the building itself. An industrial elevator can be made to reach the building's rooftop, but doing so precludes the installation of any rooftop items (or any items that occupy "turret space") in the same hex as an industrial elevator.

No additional equipment can be placed on any level of the hex where an industrial elevator is meant to reach, but if the elevator does not reach those levels within its hex, additional items may be placed in the hex. (For instance, if the industrial elevator of a 12-level building only operates from the first through sixth levels, equipment may be placed in the elevator's hex as long as it is assigned a height of Level 7 or higher.)

While the entry and egress hexsides of an industrial elevator may vary from level to level within a building, these hexsides may not include any of the building's outermost hexsides.

The location of a building's industrial elevator, its capacity, the range of levels it can reach, its access and egress hexsides (per level) and its current elevation must be tracked on the building's Structure Record Sheet.

LARGE DOORS

As with elevators, exterior doors are a commonplace (and generally necessary) component in any building's design. Like elevators, doors are not strictly limited to human-scaled sizes, but can also come in large-scale "industrial grade" sizes intended to accommodate vehicles or even BattleMechs. The following rules cover these large doors, and how they apply to entering or exiting buildings.

Doors can be opened or closed only during the End Phase of a turn, and the same door cannot be opened and closed during the same turn. Only the force controlling a building may open or close the building's door, unless the opposing force can get at least one infantry platoon inside the building (per standard rules) to seize the door controls. (In order to accomplish such a feat, the attacking infantry unit must clear all enemy units from the hex where the door is located and remain in that hex for a full turn; the door will then open or close as desired in the End Phase of that turn.)

Vehicles and ProtoMechs can pass through any open large door without taking damage; 'Mechs can only pass through open doors that are 2 or more levels high. An open door in a Wall-class structure allows units to pass through that hexside of the wall as though the wall was not there. Open large doors in other building types allow units of suitable size to enter the building without sustaining damage or inflicting damage to the building. However, moving from hex to hex within a fortress or building may still cause damage to the structure and the unit. (See *Moving Through Advanced Buildings*, p. 116.)

Any unit that attempts to walk through a closed large door inflicts and takes damage in the normal fashion, as if the unit were passing through the building's walls.

Construction Rules: Like bay doors in vehicle or spacecraft designs, large doors take up no tonnage in a building's design. Large doors can be installed in Hangar, Fortress, Castles Brian, and Standard-type buildings, as well as in walls and fences (Gun Emplacements, tents and bridges may not install large doors.) Large doors can be installed in Hangar, Fortress, Castles Brian and Standard-type buildings, as well as in walls and fences. (Gun Emplacements, tents and bridges may not install large doors.)

Doors may only be placed on a building's outer hexside (wall and fence doors take up a whole hexside in the wall or fence's length). Door heights may range from 1 level to the height of the building itself, but each hexside may have a maximum of only one large door. Each door's height and hexside must be assigned during construction.

OPEN-SPACE CONSTRUCTION

Similar in many ways to hangar construction, open-space construction is a far more sophisticated and large-scale design feature that is used to effectively construct super-massive enclosures such as sealed air domes and elaborate man-made caves. Though this construction option is considered exclusive to the Castles Brian Building class (to establish the minimum CF strength required for such engineering), open-space construction is not actually limited to the design of Castles Brian complexes, but may be found on pre-Castles Brian complexes, such as early human hostile-atmosphere colonies built on land, underground or even underwater.

A building with open-space construction has no walls except along the outer edges of the structure, and the few columns that extend from ceiling to floor have no effect on visibility or mobility in such areas. For movement purposes, each hex of a building

made using open-space construction is treated as a paved/road hex by all units (skidding rules and such apply in such hexes as normal). For combat purposes, open-space construction also negates any terrain modifiers for line of sight or weapons fire within buildings that have this feature, but only as long as the target of such attacks is a non-infantry unit. Any infantry units operating within an open-space building hex can benefit from various minor ground-cluttering features, and so receive the terrain benefits of being inside a light woods hex (rather than a paved hex), if attacked.

Attacks against the wall or ceiling of a building made using open-space construction will create a devastating collapse effect if they successfully reduce the hex's CF to 0 or less. In the event of such a collapse, a building will suffer varying effects based on its nature as an underwater, surface or underground building, as follows:

- **Underwater Collapses:** Underwater building hexes with open-space construction will start to flood the entire building if they collapse. In the End Phase of the first turn in which such a collapse occurs, the entire building instantly fills with water at a Depth of 0 (relative to the building's floor). This water level will rise toward the building's roof at a rate equal to the number of levels of water above the building's highest level, divided by 5 (rounding up), per turn. Thus, if a building with open-space construction is 16 levels below the ocean surface and suffers a hex collapse, the water will pour in at a rate equal to 4 levels per turn (16 ÷ 5 = 3.2, rounded up to 4).
- **Surface Collapses:** If a surface building hex with open-space construction collapses, it instantly fills with the exterior atmosphere (or loses its atmosphere, if the exterior environment lacks one). The resulting atmospheric conditions take effect after the End Phase of the following turn, before which any unprotected personnel units equipped with (but not using) environmental survival gear must roll an 8+ on a 2D6 roll (made for each appropriate unit) to avoid any terminal effects.
- **Underground Collapses:** If an underground building hex with open-space construction collapses, it results in a cave-in. In this case, however, not only will the ceiling of the hex that suffered damage fall into the building, but surrounding hexes also collapse into the building. An underground collapse will affect a distance of 1D6 hexes outward from the hex of the original breach (excepting those hexes that represent the collapsing building's wall or another building). The base damage inflicted by the falling debris is equal to one-tenth of the building's original CF, multiplied by sum of the building's height and the number of levels between the building's uppermost level and the ground surface (divided by 5, rounded up). (Remember that Castles Brian buildings use capital-scale Construction Factors, with every point of CF translating to 10 points of standard damage.) Thus, if the ceiling of a 7-level tall, Capital-CF 100 Castles Brian building located 7 levels below the surface collapses, all units below the breach (or within 1D6 hexes of it) will suffer 900 points of damage ([100 Capital CF = 1,000 CF ÷ 10 = 100] x [7 levels tall + (7 levels below ground ÷ 5 = 1.4, rounded up to 2)] = [100] x [9] = 900).
- **Underground *and* Underwater:** If an underground building that suffers a collapse lies beneath ground that is also underwater (such as beneath a lake bed), a collapse also creates an underwater flooding effect on a 2D6 roll of 10 or higher. Add 2 to this target number if the building's roof is deeper than 6 levels below the water's lowest depth in the collapsed hex (meaning 6 levels of ground separate the roof of the collapsed hex and the water levels above it). Subtract 2 from this target number if the number of ground levels between the building's rooftop and the water's depth above the collapse is 4 or 3; subtract 4 from the target number if the ground between the roof of the collapsed hex is less than 3 levels below the water's depth.
- **Construction Factor (Expanded):** The Expanded Construction Factor rules allowing for damage (and breaches) to be contained to a single level does not apply to buildings using open-space construction.

Construction Rules: Open-space construction is available only to Castles Brian-class buildings. Because its primary function is to provide a super-large "umbrella" over a large area, buildings constructed with this feature have a maximum internal weight capacity of 600 tons, regardless of the CF chosen, and all equipment must be located on the building's ground level. Buildings with open-space construction cannot install any rooftop equipment, including turrets.

Because of the large-scale framework, a building with open-space construction can accommodate other buildings inside its area. Such buildings may be of any height and size desired (even taller than the open-space building, reflecting structures that rise up and through—such as industrial elevator shafts), but their hex areas must lie entirely within the open-space building's outer hex area. Buildings that connect with an open-space building from the outside reflect tunnels or other external structures.



WER-LF-005 Werewolf, *Independent Solaris VII MechWarrior Itsura "Hellhound" Mikasai*

SUBSURFACE/UNDERWATER STRUCTURES

As a more complex construction option, most building classes and types may be constructed below ground (or underwater), rather than on the surface. Though such structures face certain risks surface buildings do not (such as the threat of collapse or flooding), their practical and strategic advantages cannot be denied.

Construction: Subsurface buildings use all of the existing rules for construction, with the following exceptions:

- For a building to be considered subsurface, its highest elevation must be at least one level below the surface of the ground (or body of water). Underwater subsurface structures—including those built beneath the "floor" of the water feature as an underground building—also require environmental sealing, and may be constructed at a depth no deeper than their CF (thus, an underwater Light hangar with a CF of 8 may not be constructed at or below a Depth of 9). No such sealing is necessary for underground structures (unless the native atmosphere is unbreathable).
- Only buildings, hangars, fortresses, tunnels and Castles Brian may be built as subsurface structures.
- Except for Castles Brian, the maximum building sizes (both in terms of height and number of hexes) for all underground subsurface structures are reduced to one-half their surface versions, rounded up (for example, an underground Hardened fortress building can be a maximum of 15 levels "high" and occupy no more than 10 hexes: 30 ÷ 2 = 15 and 20 ÷ 2 = 10).
- Underground subsurface buildings may not employ rooftop equipment or turrets. (These rules presume that the subsurface buildings are literally carved out of the surrounding earth and rock, rather than constructed within a larger cave; if the latter is the case, disregard this restriction as long as the uppermost level of the underground subsurface building is at least 1 level lower than the cave ceiling.)

Game Play: Subsurface buildings in combat are subject to the same rules as their surface-based counterparts, with the following exceptions:

- Units attempting to move through the walls of subsurface structures may not do so under any circumstances if the area beyond the wall is solid rock or earth, but may inflict damage on the walls in order to encourage a collapse. Units in underwater subsurface structures may attempt to penetrate the walls using the same rules for environmentally sealed structures above.
- With the exception of tunnel openings, underground subsurface buildings may be damaged normally only by units standing inside such buildings (see *Attacking Buildings from Within*, p. 119). This also applies to underwater subsurface buildings constructed below the floor of the water feature. Tunnel openings to the surface are exposed to external and internal attacks as a normal structure.
- Underwater subsurface buildings and tunnel openings to them may be attacked by outside units per normal rules.
- Except for Castles Brian, all subsurface buildings that suffer 10 points of damage or more (in any phase) must check for a breach as though they were an environmentally sealed structure, whether or not they actually feature environmental sealing. This breach check uses the Sealed Building Breach Table (see *Environmental Sealing*, p. 134).
- If an underground subsurface building sustains damage that causes a breach, the hex will collapse. If using the expanded Construction Factor rules (see p. 119), this collapse will be limited to the building level that was breached, but may also produce a top-down collapse, if those rules are also in use.
- If an underwater subsurface building sustains damage that causes a breach, the entire building will flood. If using the Expanded Construction Factor rules, this flooding will be limited only to the level of the building that was breached, as long as the building is not a Hangar- or Tunnel-class structure, but on each turn thereafter, the flood will fill another level lower (toward the bottom of the building). If the tunnel floods with its doors open, adjacent buildings will be flooded as well, starting with their lowest levels and filling upward if the expanded Construction Factor rules are used.
- All equipment and unprotected personnel within a flooded or collapsed subsurface structure are trapped and treated as destroyed in the event of a collapse. Vehicles, 'Mechs, ProtoMechs and suitably protected infantry (including battle armor) within a collapsed subsurface hex suffer damage as though they stood within a collapsing building equal to the height of the subsurface structure, *plus* the height of all ground or water above it.

Semi-Subsurface Structures: Semi-subsurface buildings are any building types that have levels both above and below the surface of the map (such as basements, but also including the structures that typically make up mining buildings or Castles Brian). For ease of reference, track such buildings as if they were two separate buildings on top of one another, with construction and use of the surface portion following the standard building rules, and construction and use of the subsurface portion following the rules for subsurface buildings. The following additional rules also apply:

- The area occupied by any surface buildings must be equal to or smaller than that of any subsurface buildings placed below them, and must occupy the same hexes on the mapsheet.
- If the subsurface building is an underground building that connects to the building above and is constructed using the same building type (Light, Medium, Heavy and so on) or lighter, the subsurface half of the building is considered to be a basement, and may not be constructed with a depth equal to more than half the number of levels as the surface building has (rounded down). Thus, a Medium Standard subsurface building placed below a Medium Standard surface building that is 5 levels tall may not have a depth greater than 2 levels (5 ÷ 2 = 2.5, round down to 2).
- Underground subsurface buildings with a higher building type than the surface building may be constructed with any desired depth, regardless of the surface building's height.
- If the subsurface building is an underwater (submerged) building, it must be built using an equal or heavier building type *and* a higher CF than the surface building placed above it. Furthermore, the surface building must incorporate environmental sealing, and may not be constructed at a greater height than half the subsurface building's depth (round down). Thus, a Light Standard surface building placed atop a Medium Standard (submerged) building that has a depth of 9 levels may not stand taller than 4 hexes above the surface level (9 ÷ 2 = 4.5, rounded down to 4).

- If a subsurface building is of a higher CF and building type than the surface building it sits beneath, normal Basement rules do not apply for units within the surface building. Instead, a unit will only fall into the subsurface building if its tonnage exceeds the subsurface building's CF.
- If using the expanded Construction Factor rules (see p. 119), when any surface building suffers a top-down collapse to its semi-subsurface structure, all collapse damage is reduced by half (rounded down) once the level of collapsing structure passes the surface level of the local terrain. This includes damage inflicted against the building itself, as well as damage to any units within.

TUNNELS

Usually used for subsurface structures, but also applicable above ground between sealed structures, tunnels are essentially specialized variations on an empty hangar, and use the same movement rules as such structures (see *Hangars*, p. 114), comprised of two opposing walls and ending on each side in doors. Tunnels are primarily used to connect subsurface buildings to one another, but surface buildings can use the same structures as an enclosed passageway. All normal rules for hangars apply to tunnels.

Construction Rules: Tunnels are not an equipment item for advanced buildings, so much as an alternative form of the Hangar-class building. Tunnel construction follows the same basic rules as for hangars, with the following exceptions:

- Tunnels may not install any equipment, either internally or externally.
- Tunnels must connect to at least two separate buildings (or connect one building to a surface structure), and must assign large doors to each connection. If longer tunnel lengths than permitted by the Hangar class are desired, a tunnel may connect to another tunnel, but still requires the door.

CASTLES BRIAN COMPLEXES

Most building complexes represent a fairly simple arrangement of buildings related by their functions, if not their class and type. Typical examples may include a residential block, a commercial area, an industrial zone or even a warehouse district. Military bases, too, often combine structures of similar overall nature, though many buildings located in such compounds may be mission-specific, including headquarters, barracks, a base hospital and hangars.

Of all the complexes seen in the *BattleTech* universe, Castles Brian complexes (not to be confused with individual Castles Brian-class buildings) may well be the most sophisticated. These elaborate super-fortifications are almost never built entirely on the surface, and most feature elaborate tunnels, hyper-reinforced buildings and construction that embeds them deep within the local terrain for maximum secrecy and defensibility. Though well over half the structures devoted to a Castles Brian complex are often invisible to the casual observer, these sprawling complexes can take up hundreds—if not thousands—of square kilometers, rivaling the sizes of most major cities across the Inner Sphere.

Players interested in mimicking a typical Castles Brian complex should be aware of all construction rules and options, including subsurface buildings, tunnels, environmental sealing (included automatically in all Castles Brian-class buildings), industrial elevators and power generators. Castles Brian complexes also make extensive use of building armor, large doors, weapons (crewed and automated) and design options like heavy-metal superstructures and high or low ceilings. In short, a typical Castles Brian complex may use all of the advanced building concepts introduced in this section.

Typical Castles Brian Complex Components: Built exclusively during the days of the Star League, the typical Castles Brian complex included a minimum of 20 armored Heavy weapon turrets, commonly armed with conventional Heavy weapons (rather than Capital weapons). Backing up these turrets were an additional 50 smaller turrets (which carried fewer weapons and were often automated), plus 100 smaller anti-personnel bunkers (typically armed with Light and Medium-class weapons), and an uncountable number of minefields. These turrets—plus a minimum of five vehicle-scale tunnel exits (most of which were concealed within the local terrain)—often comprised the entirety of the complex's surface structures (though a few more elaborate Castles Brian complexes added a complete military base to the surface, including landing strips and control towers for aerospace traffic, for added defense and support).

Below ground (usually deep within local mountains), a typical Castles Brian complex descended around 10 'Mech-scale levels (20 standard game play levels), and included barracks, tunnels, administrative buildings and (of course) massive hangars and garages that could support up to a full tank or 'Mech regiment. Intended to survive any assault up to—and including—a nuclear blast, the typical Castles Brian complex added survivability by alternating habitable levels with additional levels of native rock, to limit any possible collapses to the uppermost levels while the majority of the base's living quarters and supplies remained safely deeper underground.

The sample diagrams shown on the following two pages reflects just one quadrant of what a "typical" Castles Brian complex might look like in game play (to show a full map would take up too much room). Each open space beneath the mountain's terrain reflects a distinct building within the Castles Brian complex, linked by tunnels and large doors wherever appropriate, while an industrial elevator provides for transporting heavy units between the various levels. Players interested in constructing their own Castles Brian complexes should see this diagram and its corresponding Structure Record Sheet map grid as a mere sample of how a portion of a Castles Brian complex might be laid out, and use their best judgment when preparing their own such complexes for game play.

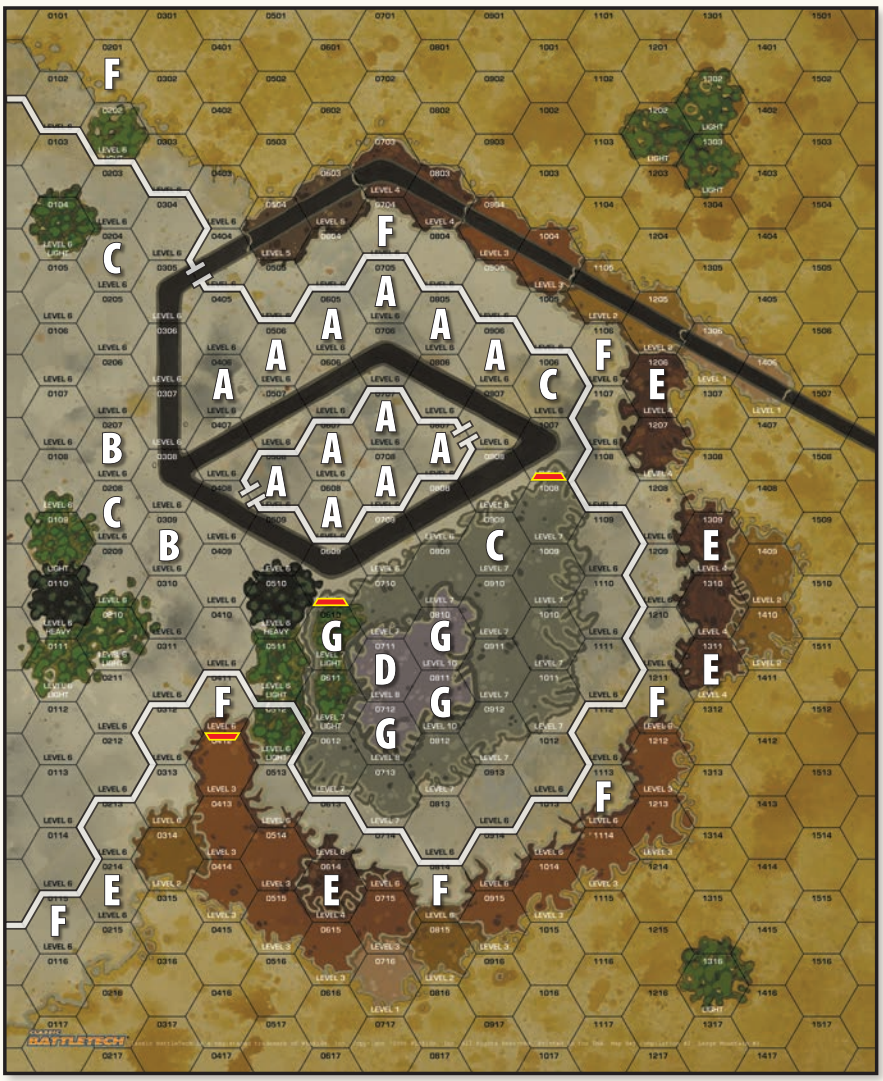
The map shown on the following page and the corresponding Structure Record Sheet sample represent a portion of a sample Castles Brian complex (the "upper-eastern half"). This complex has been envisioned as having an extensive surface development as well as an elaborate and deeply buried underground system. For simplicity, the surface and underground portions are represented separately here, with the surface installations shown on the standard mapsheet, while the Structure Record Sheet focuses on the

upper levels of the subsurface structures. For further simplicity, the buildings described here have not been fully detailed, but sketched out to show overall arrangement while providing a usable template that players can build on.

In this case, the Castles Brian was constructed on—and within—a mountain (represented by the Large Mountain #2 mapsheet).

As the topside portion is the first line of defense, it has been laced with weapon turrets, ringed by a wall, and features hangars and bunkers to house a fair portion of the complex's active defenders, as well as a surface-based command and communications tower. For this part of the construction, five main building types have been devised:

- *The Standard buildings (marked with an "A") each occupy 1 hex and stand 2 levels tall. Built as Heavy, Standard-class structures, these buildings each have a CF of 80, possess no armor and may function as anything from basic administrative structures to barracks.*
- *The Vehicular Hangars (marked by a "B") each occupy 1 hex and stand 1 level tall. Constructed as Hardened, Hangar-class structures, these buildings have received a CF of 70, possess no armor and can house up to a lance of light vehicles (or two heavy vehicles).*
- *The Infantry Bunkers ("C" hexes) each occupy 1 hex and stand 1 level tall. Constructed as medium Fortress-class structures, these buildings have a CF of 40, 40 armor points (rounded to 3 tons of armor, using Inner Sphere technology) and enough bay space for at least two full platoons of motorizing infantry. Six tons have also been reserved to place a fixed-mounted machine gun in each hex facing—each with a half-ton of ammunition.*
- *The Command Tower (marked by a "D") is the tallest building on the map. It serves as the surface control center for the complex, so it has been constructed as a Heavy Castles Brian building, though it occupies only 1 hex and stands 4 levels tall. The building has a CF of 50 capital-scale points, and has been armored for another 50 capital points (which equates to 500 standard armor points, or 32 tons of building armor). Its internal equipment includes various sensors and communications equipment, as well as bays for infantry to provide extra defense against capture.*
- *Three types of gun emplacements have been established as well, identified on the map by hexes marked "E", "F" and "G." All three types are built as Gun Emplacement-class structures, possess armor and place their weapons in turrets to maximize their field of fire, but each has a different CF, armor value and weapon capacity. The "E" emplacements were established as Light structures, receiving a CF of 15, an equal amount of armor and five tons of weapons slaved to an automated fire control (see Automated Weapons, p. 121). The "F" emplacements, meanwhile, are Heavy structures, with a CF of 65, 64 armor points and 21 tons of crew-served weapons, plus an independent fusion generator. The "G" emplacements use the Hardened structure type, with a CF of 130, 120 armor points and 100 tons' worth of crew-served weapons and ammunition. Like the "F" emplacements, these batteries also include independent power generators to avoid being quickly disabled by a local grid failure.*
- *For additional defense, a fence line has been established around some of the buildings in the central compound, with two access gates at the east and west ends. However, with its CF of 1 and lack of armor, this 3-level tall fence would hardly impede a determined enemy force. More effective is the Hardened wall running around the outer rim of the main compound. Standing 2 levels tall, with a CF of 140 and 136 armor points per hexside, this wall produces a barrier that enemy ground units must breach before they can enter the compound. A large door along the main road is the only break seen in this wall from the outside.*

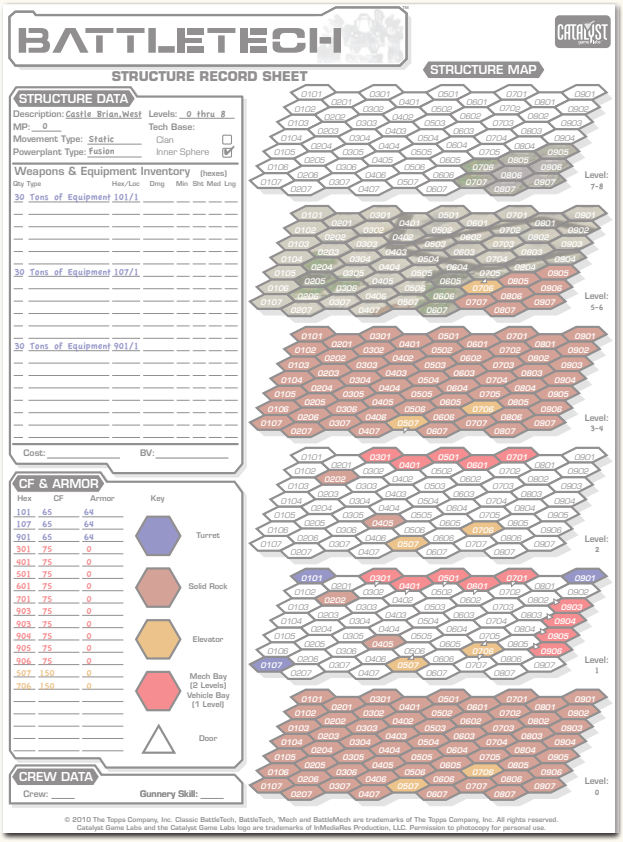


• Castles Brian map sample •

- *As a final touch, the grounds outside the castle's walls are seeded with various minefields, most of which are either standard fields or command-detonated.*

  Beneath all this lies the bulk of the Castles Brian itself. Represented on the Structure Record Sheet, where details from the mapsheet have been placed on the structure map's uppermost levels in order to establish a frame of reference (for example, Hex 0403 on all levels of the Structure Map matches the map of 0308 on the Large Mountain #2 mapsheet). To further account for the depths to which the subsurface half of this Castles Brian extends, each level of the Structure Map reflects two levels of depth, rather than just one (for example, the uppermost level of the Structure Map reflects levels 8 and 9 on the surface mapsheet). Most of the subsurface structures noted here fill both of the levels assigned to the Structure Map, unless otherwise noted.

  On the Structure Map, colors have been used to indicate specific subsurface structures, with the patterns of the mapsheet duplicated on the uppermost levels to note surface terrain. As above, many of these structures were developed with a common approach:
- *The large white areas below the mapsheet-level tiers indicate a vast Castles Brian building constructed with open-space structure, effectively forming a man-made cave. These Hardened structures stand 2 levels tall and use the maximum CF of 150 capital-scale points. As the "outsides" of these structures reflect cave walls, they have no armor to speak of, and merely serve to open the area and provide structural integrity to the underground base.*
- *The gold structures reflect industrial elevator shafts. These are, in effect, single-hex Castles Brian buildings that extend straight up and down for several levels of the underground complex. Arrows along the hexsides of some levels indicate entrance and egress points for the elevator platform at the "floor" each applicable level. For example, the elevator running through Hex 0706 extends as far down as Level 0 (and possibly lower, if desired, reflecting further sublevels that could house the Castles Brian's main power generators) and as far up as Level 6. It has north and south entry facings on Level 1, as well as a northern facing on Level 6 (which opens into Hex 0609 on the surface mapsheet). The elevator shaft in Hex 0507, meanwhile, extends as low as the 0706 shaft, but only rises as high as Level 3; its north and south entry points also exist on Level 1, but its Level 3 egress only opens to the south (reflecting an exit into Hex 0412 on the surface mapsheet). The elevator buildings have an effective CF of 150 capital-scale points, but feature no armor and no significant equipment beyond the elevator system.*
- *The brown hexes on every tier below the surface map levels reflect solid bedrock. Note that in some cases, entire hex-sized columns of this continue through the open-space Castles Brian hexes. This was not a requirement of the subsurface structure's design, but a deliberate choice to provide some character (and line of sight obstacles) to the underground environment.*


BATTLETECH

STRUCTURE RECORD SHEET

STRUCTURE MAP

STRUCTURE DATA

Description: Castle Brian,West Levels: 0 thru 8

MP: 0 Tech Base:

Movement Type: Static Clan

Powerplant Type: Fusion Inner Sphere

Weapons & Equipment Inventory (hexes)

Qty Type Hex/Loc Dmg Min Sht Med Lng

30 Tons of Equipment 101/1

30 Tons of Equipment 107/1

30 Tons of Equipment 901/1

Cost: BV:

CF & ARMOR

Hex	CF	Armor
101	65	64
107	65	64
901	65	64
301	75	0
401	75	0
501	75	0
601	75	0
701	75	0
903	75	0
903	75	0
904	75	0
905	75	0
906	75	0
507	150	0
706	150	0

Key: Turret; Solid Rock; Elevator; Mech Bay (2 Levels) Vehicle Bay (1 Level); Door

CREW DATA

Crew: Gunnery Skill:

Level: 7-8

Level: 5-6

Level: 3-4

Level: 2

Level: 1

Level: 0

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● CASTLES BRIAN RECORD SHEET ●

- *The red hexes on levels 1 to 2 and levels 2 to 3 indicate the location of multi-hex hangars used to house vehicles or 'Mechs. These 2-level structures (1 level for vehicles) are built as Hardened hangars, with a CF of 75 and no armor, which gives them enough internal tonnage capacity to contain up to 3 'Mech cubicles (or 9 light vehicle cubicles) each.*
- *The blue hexes on Levels 1 are gun emplacements built in the same fashion as the medium "Hex F" guns on the surface. As they stand only 1 level high, these turreted weapon arrays do not effectively exist on Level 2, unlike the 'Mech hangars.*

  The above represents the layout of a sample Castles Brian—at least in part. Deeper, more varied subsurface designs could add secondary communications and command centers, more barracks and infantry space below ground, or even capital scale weaponry on the surface. Some could even include semi-subsurface design features, such as continuing the surface control tower into the mountain itself, or the use of tunnels instead of open-space construction to connect the subsurface buildings. After all, the particular needs and features of the local terrain often affect how a base is laid out on or beneath it; the variety possible is limited only by the designer's imagination.

INTO THE FIRE

Jason Schmetzer



ORBITAL INSERTION
BROMHEAD
CAPELLAN MARCH, FEDERATED SUNS
21 NOVEMBER 3071

The hull of the shuttle vibrated out of tune with the bulky combat armor Subaltern Gloria Riordan wore. She rested her gauntlet against the hull and noted the discordant tones. Must have something to do with relative densities of the metals, she surmised. The thin armor-weave gauntlet of her Asterion battlesuit was far more dense than the thin, barely-armored hull of the shuttle. She looked at her gauntlet as the tone changed against the hull. The atmosphere was thickening, which meant the relative density of shuttle hull was rapidly losing place on her list of priorities.

"Listen up," she called, using the maniple frequency even though the tough helmet of her Asterion was thrown back and open. The noise in the shuttle's bay was more than she cared to shout across, no matter what the Force Sergeant had taught her about the "bellow of command" back at A-School on Cyrton.

"Two minutes to jettison," she said. "We're linking up with a platoon of Third Taurian armor on the ground in ten minutes." She flashed both hands at her troopers, first two fingers raised and then ten. The comm systems built into the combat armor would transmit her words clearly to the other troopers of her irregular-sized squad, but the habits of infantry training were difficult to break. *And if you're trying to hide your signature,* she thought, *what then?* Though she had to admit that walking most of a ton of powered metal around didn't lend itself to stealth.

The shuttle lurched and dropped, taking with it any sense of security Gloria's stomach had gained since they'd launched from the DropShip. She snapped her visor down and chinned for the cockpit channel. "What the hell, Cornet?" she barked at the pilot.

"Fighters," the pilot gasped. "Shut up."

Gloria cut the channel and signaled the maniple to seal up. The other four troopers slapped their visors down and checked the shoulder restraints that locked them into the jettison pods. They'd practiced low-grav insertions on Cyrton before this deployment, but not enough, and never under fire.

"Fighters," she told them after she checked to see that each of them had a green seal. "We'll shake 'em and get down okay, you wait." Three of the troopers flashed her a thumbs-up, but the fourth, Madison, sat mute. She frowned.

Acceleration kicked her in the seat of her suit and then the shuttle shuddered and lurched to the side. Red warning lights flashed to life inside the bay and the indicator for the cockpit channel burned to life inside Gloria's helmet. She chinned the accept stud.

"—out, for Christ's sake, get out!"

The shuttle slammed her against her restraints again, kicking her

shoulder painfully, and there was a scream across the channel before the carrier wave cut out and Gloria was left with silence inside her helmet. She listened to herself breathe once, then twice, and then twisted enough to see the cockpit hatch. A solitary red light burned in its center.

Vacuum.

A cold knot formed in the middle of Gloria's stomach. "Saints preserve us," she whispered, and then her mind snapped into focus.

"We're out of here, troops," she shouted, cutting her chin on the channel-switch pad. "Drop NOW-NOW-NOW!" She let go of the handhold beside her seat and raised her armored fist, held it up, showed her troops, brought it down. The glass over the switch shattered beneath the armor of her gauntlet.

And then the shuttle came apart.

Pistons drove her dropseat out of the shuttle's bottom, shoving it into the already-deformed airflow as the shattered vessel fell into the thickening atmosphere. Her seat tumbled, whirled, spun. Gloria didn't know how high they were, didn't know if they'd be safely into the thicker air and slow enough that they wouldn't burn up, didn't know if they'd be too high and bounce off to float in orbit until Bromhead embraced them again.

She didn't know where the fighters were.

She didn't know where she was.

She fell.



"I can see the ground," Madison called finally.

Gloria turned herself in her descent until her heads-up display painted Madison's suit with a green-slashed icon. He was roughly half a kilometer away and slightly lower than she was. He'd be down first.

"Any signs of contact?" she asked.

"You could say that," Madison said, and flashed her a compressed video feed. A small window opened on the inside of her helmet, and Gloria's already-tight stomach lurched. They weren't coming down anywhere near the landing zone. That had been chosen safely away from the battlefield, to give them time to link up with the armor team that was detailed to move them toward the Davion depot that was their target. The LZ was cold, safe. Almost as easy as training, she'd called it during the brief.

They were coming down on the battlefield.

BattleMechs roamed the low-visibility canyons beneath them. The final layer of cloud haze cleared away and her Asterion's small computer began to identify units. Two companies of Third Taurian BattleMechs were playing a cat-and-mouse game with a short company of Davion defenders, but they were outclassed. These Davy boys knew the ground.

The still-warm hulks of three Taurian 'Mechs attested to that.

Gloria swore and flashed her transponder. "Let's get down there and assemble," she said. "Everyone try and get closer before we hit." She closed the channel without waiting for an acknowledgement and concentrated on her falling.

The Taurian Defense Force had little experience deploying powered armor, and even less in deploying them from the air. Gloria's squad had been in the middle of an airborne training evolution when the orders came through for deployment into the Federated Suns salient, but they'd picked

up a lot. Soldiers had been dropping from the skies to engage their enemies for more than a thousand years, and that experience, even in the Periphery, was not lost to antiquity.

Of course, old-time airborne troopers didn't wear a full ton of armor around themselves, Gloria thought.

The shuttle's dropseat formed a partial parafoil that allowed the rapidly falling Asterions to guide their descent, and a small fuel bunker in the center of their seat supplemented a low-opening parachute and the dropseat's integral jump jets to slow them just before landing. One of Gloria's instructors at the drop school likened the experience of airborne battle armor to "the longest zip-line deployment in history. Fall for a hundred kilometers, slow down in the last one. One way or another." They'd all laughed at the gallows humor on Cyrton.

Gloria wasn't laughing now.

The altimeter bounced a whisker laser off the ground every second, updating her with the distance to solid earth. At a kilometer her parafoil broke away and freed the chute, which tugged her upright and aligned her boots—and the jets on her armored hooves—toward the ground. At 750 meters those jets began to fire, and fire.

And fire.

And then the ground fired back. Hutchins had time for a fast curse before a line of glittering tracers from a Davion *JagerMech* erased his suit from the sky. Madison swore and cut away his chute, trusting his jets to bring him down safely. Gloria opened her mouth to stop him, but he'd already fallen away before she could get a word out.

"Bloody fool," she whispered, watching him in her HUD. Without the chute's stabilizing influence, the Asterion would tumble and it would be up to the trooper to keep his jets pointed down. She didn't trust herself to be able to do that, not even with a BattleMech hunting them. On the ground she could hunt back, but she was no cloud dancer.

There was a grunt across the maniple channel when Madison hit the ground, but that was all. Gloria directed her view down and saw the icon for his suit bouncing across the terrain in ninety-meter sprints, trying to get closer to where she would come down. Juresh and Falcone were closer to her, still dangling from their chutes. The *JagerMech* turned away, content with its sole kill, and concentrated on the Taurian 'Mechs moving toward it.

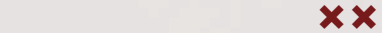
Fifty meters. The crackle of weapons fire began to penetrate the insulation of her suit, and a PPC flashed by close enough to raise the hair on her forearms.

And then she was down. Madison was waiting, the bull's-horned head of his suit bent toward the ground. One hoof-shaped boot came down and pawed at the soil, tearing the blue-green grass apart. Gloria slapped the release that cleared her suit from the drop apparatus and straightened. A toggle inside her right gauntlet brought the big barrel of the mid-size recoilless rifle over her armor's shoulder. The weapon checked out green.

She stamped her own foot and wished again that the suit's designers had put a valve on the minotaur-head helmet to blow steam. Moments later, Juresh and Falcone appeared, both of them with weapons ready.

Gloria looked at her maniple, past the hole where Hutchins would have stood. She reached up and stroked the rifle's thick barrel. Madison growled, a low sound that curled through the Asterion's comms like an angry phantom.

"New plan, boys," she said. "Let's go kill something."



It took the local TDF commander a minute or two to get the comm codes sorted out, but once he did, he wasn't happy to have the support of a maniple of battle armor, not when it didn't fit into his tidy little plan of battle. "Where the hell are my tanks, Subaltern?"

Gloria was in the middle of leading her maniple across the field of fire between a hunkered-down Davion *Nightstar* and a pair of Taurian *Cataphracts*. She and Madison had already sprinted across, but Juresh caught the tail-end of a barrage of cannon fire from the nearest *Cataphract* and tumbled down. His suit rolled, crushing soil and rock alike, before he regained his footing and sprinted toward the rest of the maniple. Falcone made it across without incident, though Gloria winced when she saw the portside Gauss rifle on the *Nightstar* track him for a handful of steps.

"We missed the LZ, Brigadier," she said. "We're here now, and the tanks aren't. Where do you want us?"

"The tanks were supposed to flush the damn Davions!" the officer shouted. Gloria frowned and called up a tactical map. The brigadier's *Marshal* was half a klick behind the engagement zone, surrounded by a lance of heavy 'Mechs. "I needed them to get into the warrens and drive the bastards out."

"Sir," she started, but then ducked as an explosion rocked across the area. When she looked up there was only one *Cataphract* left and the *Nightstar* was striding forward, both arms raised to deliver the same coup de grace to the remaining Taurian 'Mech. She snarled inside her helmet and stabbed a hand at the Davion 'Mech. "Back in a few, sir," she said. "We're a little busy here." She chinned the circuit closed and got her troopers' attention.

"That big bastard right there," she said, pointing to the *Nightstar*. "He's all alone and that *Cataphract* could use some help."

Juresh's suit managed to slump into a pout. "That's the fool that shot me, Subaltern," he said. "Besides, that's an assault 'Mech. That's not our brief, is it? I thought we were here for a supply point?"

Gloria spread her hands. "You see any skimmers, Juresh? See any way for us to hump our ton-heavy asses across forty kilometers unless we carry ourselves?" She waited half a heartbeat and then clapped her gauntlets together. The metal vibrated for a moment.

"We're here," she said. "We screwed the drop, missed the LZ. We're in the pot now, and it's time we start to get some back." She rubbed her hands together, knowing that their external pickups would hear the gravelly scratch of metal and composite rubbing against itself. "Who wants to go kill something?"

"Oh, killing is good," Madison said. "I was hoping for a nice, deadly *Locust* or something, maybe one of those killer *Wasp*s. But if all we've got is a pansy little *Nightstar*, well… I guess it'll do."

Gloria laughed. "All right, then." She leaned around the boulder they'd sheltered behind and took a look at the ground, thought for a moment. Her eyes judged the *Nightstar*'s angle of advance, looked across to see where the *Cataphract* was headed, waited while her mind worked the angles. She bounced a ranging laser off the *Nightstar*'s bulbous chest, did a little math. It might work, she thought.

"Here's the plan," she said, and sketched it out quickly. The maniple got it fast, each of them looking at the lay of the land and the angles for themselves. Madison chuckled as the *Nightstar* stumbled with one foot in a crater, but the other two kept silent. She asked for questions, got none, and then took a deep breath. Two years of training, two hundred light years from home. Hutchins already gone. The *Cataphract* already gone.

"Move," she said.

In two steps each of them was around the boulder and sprinting toward the *Nightstar*. The doctrine had been relentlessly drilled into them almost since the first day they were issued the battlesuits: four steps forward, one to the side, three forward, two to the side, four forward, again and again and again, with variations added in case the enemy caught the pattern. With myomer-assisted legs and high-energy servos, the Asterion's zig-zag covered a lot more ground than a regular infantryman, and the maniple made good use of it to close the two hundred meters to the *Nightstar* in just over twenty seconds. Gloria kept her sights on the Davion 'Mech and held down the trigger. The recoilless rifle belched fire as the autoloader slammed each shell into the barrel, but she didn't watch to see how many hit. She wasn't trying to shoot the damn thing to death, just distract it.

"It's fixated on the 'Mech," Falcone called. Gloria risked a look around, saw Juresh and Madison right behind her, Falcone out to the side. Falcone laughed, freely as a child does. "I can't believe he's ignoring us."

Gloria looked over at him again, getting ready to tell him to clear the circuit. There was a snarling hash of static in the radios, a screech, a flash of silver. She blinked.

Falcone was gone.

"Gauss round," Juresh growled.

Gloria screamed into the loneliness of her helmet and lurched forward. Her vision blurred and tinged red at the edges as she held down the firing stud on her rifle, waiting for death to come. It had followed them all the way from the Concordat, on the JumpShip, the DropShip, even the shuttle and this damnable dirtball of a Davion world.

Her Asterion slammed into the *Nightstar*'s thick ankle joint and bounced off. Gloria shook herself. Her vision cleared, as did her mind, and she realized she was sitting on her ass beneath ninety-five tons of pissed-off Davion. She lurched to her feet and stamped her hoof. Madison and Juresh were already at the other leg, climbing, using the sharp forward edge of their Asterions' boots and the powerful claws built into their gauntlets to scale the BattleMech's body. The 'Mech, as if sensing its enemies, lurched into motion. Gloria leapt, reached, clutched.

She was aboard.

"Knees, hips and head," she whispered. The anti-'Mech commando's prayer. She'd learned it her third day of basic training, all the way back on Jamestown. She'd known the words, and then she'd learned the skills. Now she'd been given the tools. All that remained was her; all that remained was the will.

She climbed.

Gloria bypassed the *Nightstar*'s awkward reverse-canted knees and kept climbing. Juresh had stopped and pulled a shaped-charge from the built-in pouch on the Asterion's thigh, but she knew this only peripherally. She had her target. Her HUD kept a picture of him in the corner, so she saw him stab his arm into the narrow joint as the *Nightstar*'s knee flexed, saw the joint close on his arm, heard him scream as the limb was amputated as cleanly as a scalpel might have done it by the unrelenting mass of the 'Mech's armor. He fell away.

She climbed past the jutting hip joint, timing herself, getting a feel for the 'Mech's stride. She climbed, crouched, balanced for a instant, and leaped, using the *Nightstar*'s own upward thrust to help loft herself to the 'Mech's angular torso. Her claws scratched impotently before they finally caught, and her boots found purchase.

"Fire in the hole," Madison called from the *Nightstar*'s other hip. Gloria let go with her left fist, drew back, and slammed it into an already-torn patch of armor. The powerful fist broke through just far enough for her to find purchase before the charge exploded, shaking the *Nightstar*'s entire frame and threatening to pop Gloria's shoulder from its socket. She heard Madison's call as he dropped clear and moved to cover, where he could snipe with his rifle.

Gloria climbed higher.

"Clear field!" a strange voice shouted. She jerked her head to the side, saw the *Cataphract* barely ninety meters away, weapons leveled. The *Nightstar* lurched as the MechWarrior tried to move on the shattered hip. Gloria snarled, tore her hand loose, and climbed. This was hers.

Hers.

"Gloria!" Madison called. "Get out of the way!"

The *Nightstar*'s canopy was thick transpex, heavy enough to shed BattleMech-scale weaponry, but it stood little chance against her rage. She straddled the 'Mech's bullet-shaped nose and drew back, screaming inside her helmet, and then slammed her horned head against the canopy. The thick composite cracked—and cracked—and cracked as she struck it again and again, until she could force her hand through the hole, deeper, just deep enough, until her grasping claw found something soft and gently resistant, and tore.

She was still screaming, still raging, as the dead BattleMech fell.

✖✖✖





A spotter, Scott Stansbury, uses his Swift Wind's electronics suite to call in an artillery strike.

The following rules cover a wide variety of advanced options for game play.

ADVANCED SCATTER

The usual rules for determining scatter (such as for bombs in *TW*, artillery within this section, and so on) are presented in a way to quickly implement during a game. However, that ease of use means that a wily opponent can place himself very near a target hex for such an attack, knowing that under the usual scatter rules there's no chance he'll take damage. The following Advanced Scatter rules ensure that any hex can be hit, because a scattering shot can strike anywhere; this eliminates the loophole and injects a little more realism into the game. These rules can be used for any action that normally calls for the use of a scatter diagram.

Per standard scatter rules, determine the MoF of the action. Next, to determine the exact hex location of the failed action, first roll one die and compare it to the standard Scatter Diagram (see p. 150) to find the direction of the scatter. Next, if the MoF was 1 or 2, roll a second die that represents the distance away from the target hex (in hexes). If the MoF was 3 or 4, roll 2D6 to determine the exact hex hit. If the MoF was 5 or 6, roll 3D6 determine the exact hex hit. And so on.

Next, count two hexsides to the right, starting with the hexside opposite the original target hex. Roll a final set of dice equal to the number of dice rolled for the MoF that represents the distance away from this hex (in hexes), in the direction of that new hexside, where the attack actually lands.

ADVANCED ALTITUDE BOMBING SCATTER

When using the Altitude Bombing Scatter Diagram (see p. 245, *TW*), if players wish to use advanced scatter, the following rules apply.

Per standard scatter rules, determine the MoF of the action. Next, to determine the exact hex location of the failed action, roll 1D6: on a result of 1–3, start on the left hexside (marked "1–2" on the Altitude Bombing Scatter Diagram); on a 4–6, start on the right hexside (marked "5–6" on the Altitude Bombing Scatter Diagram). Next, if the MoF was 1 or 2, roll a second die that represents the distance away from the target hex (in hexes). If the MoF was 3 or 4, roll 2D6 to determine the exact hex hit. If the MoF was 5 or 6, roll 3D6 to determine the exact hex hit. And so on.

Next, once you travel the distance to the target hex determined by the dice roll above, if you started on the left hexside of the Altitude Bombing Scatter Diagram, turn two hexes to the right; if you started on the right hexside, turn two hexes to the left. Finally, roll a set of dice equal to the number of dice rolled for the MoF to determine (in hexes) how far away, in the direction of that new hexside, the attack actually lands. Subtract a value from that die roll result equal to the number of dice rolled. For example, a MoF of 5 requires a 3D6 roll. In this case, for the final distance rolled after determining the new direction, the player would roll 3D6 – 3 to find the final target hex.

A player is targeting Hex 0808 on a map with an artillery attack and has missed by a MoF of 5. First the player rolls 1D6 and gets a result of 3, meaning the direction of travel for the initial scatter will be 2 hexsides to the right of the numbered hexside of Hex 0808. Next, the player rolls 3D6 (required by the MoF of 5), with a result of 7; the player counts out 7 hexes to Hex

1512. The player then rotates two hexes to the right from the hexside opposite the direction of travel from the original target hex, which in this case is 2 hexsides to the right of the numbered hexside; rotating 2 hexsides results in the hexside that is 2 hexsides to the left of the numbered hexside. Finally, the player rolls 3D6 one more time and gets a result of 5. This means the final target is Hex 1014; damage is applied in that target hex (and adjacent hexes, if appropriate).

ARTILLERY

Artillery can provide a force with useful long-range fire support. Unlike the real world, where artillery is often the decisive force in combat, *BattleTech* artillery is only a supplement to conventional forces, though it can still be very effective if used well. BattleMechs are the kings of the battlefield, however, and even the best artillery strikes will rarely be more effective than a good 'Mech lance.

Like LRMs, artillery may be fired directly or indirectly. However, artillery is most effective when fired indirectly. These rules therefore approach artillery from the point of view that such weapons most often will be used indirectly; rules for firing artillery directly appear under *Direct-Fire Artillery* (see p. 153).

Definition of Indirect: Any unit more than seventeen hexes away from the target is considered indirect for purposes of artillery fire, even if the artillery unit is on the same mapsheet as the target and has a clear line of sight to the target hex. An artillery unit can fire indirectly at a target less than seventeen hexes away if there is no LOS (see *Indirect fire at Targets Seventeen Hexes Or Less Away*, p. 153).

If the attacker is seventeen hexes or closer to the target, and LOS exists to the target, use the *Direct-Fire Artillery* rules (p. 153).

Area-Effect Weapon: Artillery attacks are area-effect weapons, and so all rules that apply to such weapons also apply to artillery attacks. This includes applying all standard damage to the infantry as well as the carrying unit for mechanized battle armor.

SEQUENCE OF PLAY

When artillery is used, modify the normal sequence of play as follows:

1. Initiative Phase
2. Targeting Phase
3. Movement Phase (Ground)
4. Movement Phase (Aerospace)
5. Indirect Artillery Attack Phase
6. Weapon Attack Phase
7. Physical Attack Phase
8. Heat Phase
9. End Phase

ARTILLERY NOT DIRECTLY ON THE PLAYING AREA

Prior to placing their units on the playing area, players may decide to assign artillery units that will not be located directly on the playing area to one or both sides during game setup. This choice may be dictated by the scenario being played, or the players can simply agree to add this element to their game.

Players should determine the relative location of any artillery not located on the playing area. Any unit mounting an artillery weapon that the player is not directly fielding on the playing area sets up behind that player's home map edge (see *Set-Up*, p. 256, *TW*). For example, if the friendly forces set up on the north side of the playing area, artillery units not on the playing area would set up north of the map. Designating a specific location for artillery is important because hit locations of many units (including 'Mechs, vehicles, grounded aerospace units and so on) are determined by the direction from which the artillery fire arrives.

Players must also determine the artillery unit's distance from the playing area, expressed in units of 500 meters (the length of one ground mapsheet). Players may place an artillery unit any distance from the playing area up to its maximum range (see Artillery Ranges Table, p. 149; this information is also found on the Weapons and Equipment Tables in the back of this rulebook, included for ease of reference).

Players may place units further away than that, if they wish, but the artillery will be unable to affect the playing area without moving. The further away from the playing area an artillery unit is placed, the longer it takes for its shells/missiles to reach the target. Also keep in mind that such ranges are to a single mapsheet, not the playing area. For example, in a given game the playing area consists of 9 mapsheets laid in a square (3 x 3) and the controlling player of a Long Tom artillery unit places it at its maximum range behind his side: 30 mapsheets (15,000 meters or 15 kilometers). This means the artillery could only hit the middle mapsheet of the first row of three on his edge (30 mapsheets range) without moving. The artillery could not hit the mapsheets in the first row to the left or right of the middle mapsheet (31 mapsheets), or the other 6 mapsheets of the playing area, as the two rows of three mapsheets would be at 31 mapsheets and 32 mapsheets, respectively. Yet the closer the unit is placed to the playing area, the greater the likelihood that its position could be overrun and the weapon destroyed or captured if the battle goes against that side (see *Artillery and Rolling Maps*, below). Players must therefore strike a balance when determining where to place such units. If the players cannot decide on a range, position the artillery unit(s) at a distance of half its maximum range from the battlefield.

Artillery and Rolling Maps

Rolling maps turn a fixed battle into a mobile affair, where opponents, once they've determined the general direction of an artillery attack, can send units to search out those positions and attack them directly (as opposed to simply using their own artillery as counter-battery fire; see p. 154). If using the Rolling Maps rule (see p. 182), modify the placement of artillery not directly on the playing area as follows.

Divide the playing area in half, with each player's home edge on opposite sides. For example, looking at the Number 2 map placement diagram (see *Laying Out Mapsheets*, p. 264, *TW*), if the top and bottom of that diagram are the home edges for two players, the middle map would have a line drawn down its center, bisecting the playing area into two equal halves. That line extends into the distance in both directions. When placing artillery not directly on the playing area, a player can place those units in any direction (back, left or right) from the playing area, provided it is on his own side of that line. If a player is fielding multiple artillery units, they need not all be in the same direction, but can be placed in any direction, provided they all fall on "their side" of that line.

For each artillery unit placed, the player must pre-determine the type of mapsheet each artillery unit occupies, as well as the exact hex(s) on those mapsheets (this is in addition to the distance and direction from the playing area). All such artillery units start a scenario as hidden units on their respective mapsheets (see *Hidden Units*, p. 259, *TW*).

During game play, if the target hex of an artillery attack was in the LOS of an opponent unit in the turn in which the shell/missile arrives (the actual targeted hex, not a hex the shot might scatter to if it misses), then the opponent may know the general direction of the artillery attack. The controlling player of any units that fall into this category makes an immediate Gunnery Skill Roll, using the unit's base Gunnery Skill Rating, applying a +5 modifier. Additionally, consult the Artillery Modifiers Table (at right) to determine any additional modifiers. For example, a 'Mech with a Gunnery Skill Rating of 2 would make a Gunnery Skill Roll against a Modified Target Number of 6 [2 (Gunnery Skill Rating) + 5 (standard modifier) – 1 (Artillery Modifiers Table modifier) = 6]. While multiple units that qualify (i.e. have LOS to the target hex) may make such a roll, a unit may make only one such roll a turn, regardless of how many shell/missiles might arrive in a given turn, or how many of those target hexes are in LOS.

If any Gunnery Skill Roll is successful, the controlling player of the artillery attack must announce a direction, based on the hexside of the target hex where the artillery landed. Draw a line from the center of that target hex to the center of Hex 0909 on the "mapsheet" occupied by the attacking artillery unit and then announce that hexside. This may need to be sketched out on a piece of paper, but it should be done in a way that the "exact" mapsheet off the playing area remains a mystery.

The opponent that witnessed the attack can then determine if he wishes to send units in that general direction, using the Rolling Maps rule, to try to find the artillery unit and attack it directly. If the player does use the Rolling Maps rules to seek out an opponent's artillery, whenever a mapsheet is placed on a player's "side" of the playing area (determined by bisecting the playing area as noted above), the controlling player of that side should automatically place a mapsheet of his choice. This is done so that when the controlling player places the mapsheet where his artillery is actually located (pre-determined before the game began), he does not move from a random mapsheet placement to suddenly choosing a specific mapsheet for placement and giving away the fact that his artillery is on that that specific mapsheet.

Alternately, players can predetermine the total number of maps required to extend the playing area out to where any artillery is located, then select that number of mapsheets (either using the Mapsheet Tables, as noted below, or using any form the players agree upon) and place them in a pile next to the playing area. As new maps are needed to extend the playing area, the player then selects from the pile, knowing that map X is the actual location of a given artillery unit and that he'll select map X when it comes to placing that mapsheet onto the playing area.

When placing mapsheets in this fashion, the players should determine before any play begins how difficult or easy they wish to make such mapsheet choices. It would be all too easy for a player to throw up the most difficult terrain possible as he lays out new mapsheets to try to stop an opponent from locating his artillery; if a particular playing group agrees to that type of play, they can go right ahead. However, players may wish to use the Mapsheet Tables instead (see p. 263, *TW*), where a player chooses a new mapsheet to lay out that is similar in terrain to the mapsheet already in play.

Pre-Designated Hexes

If all players agree, before beginning play, each side using artillery units not placed directly on the playing area may secretly choose up to 5 hexes on the playing area as pre-plotted target hexes. Artillery fire on a pre-plotted hex automatically hits after the shell/missile flight times have elapsed.

Note that this number is for a playing area composed of four maps. If players are using a truly large area, they may wish to alter this number: a total of 5 hexes per side fielding artillery units for every four mapsheets used (for example, a twelve-mapsheet playing area would allow 15 pre-plotted hexes per side). However, regardless of the size of the playing area, no player can place more than 5 pre-plotted hexes per mapsheet (an area seventeen hexes long by fifteen hexes wide). These limits apply regardless of how much artillery is in use by either side.

ARTILLERY MODIFIERS TABLE

Condition	Modifier
For every 2 points of Gunnery Skill less than 4 possessed by the spotting unit*	–1
For every 2 points of Gunnery Skill greater than 4 possessed by the spotting unit*	+1
Adjusting fire: for each previous shot fired at the target hex by the artillery unit*	–1

*See *Artillery Spotters*; Round any fractions down.

TARGETING

During the Targeting Phase of a turn, a player wishing to make an indirect artillery attack may select and record the map hex numbers that he wishes his artillery to fire on that turn. Indirect artillery fire can only be directed at hexes, not individual targets. Players may direct artillery fire at hexes not under the direct observation of a friendly unit; however, this fire may not be adjusted (see *Artillery Spotters*, p. 149). Each artillery unit that a player controls may target a different hex or the same hex; if an artillery unit mounts multiple artillery weapons, each weapon can be fired at the same or different hexes at the controlling player's discretion. Record the turn in which each piece fired, each target hex, and the turn in which each fired shell will land. The turn in which a shell will land equals the current turn number plus the shell's time in flight, as shown on the Indirect Artillery Flight Times Table (see p. 149).

Airborne Targeting

An aerospace unit mounting an Arrow IV (no other artillery weapons may be used to make an airborne attack) may make an artillery attack against ground hexes while airborne; direct-fire airborne artillery attacks cannot be made. When making such an attack, follow all the standard rules for a unit on the ground making an artillery attack, with the following additions.

If using Low-Altitude Movement, apply the following additional modifiers: if the attack is made from Altitudes 4-6, apply a +1 modifier; if the attack is made from Altitudes 5-9, apply a +2 modifier;

attacks from Altitude 10 or higher cannot be made. If an artillery attack is made from Altitudes 1-8, the attack lands the turn after it was fired; if it is made from Altitude 9 or 10, the attack lands two turns after it is fired.

If on a High-Altitude Map, an airborne unit can only make artillery attacks against ground hexes if in the Ground Row, Row 1, Row 2, Row 3 or Row 4 hex rows; no attacks against ground targets may be made if the attacking unit is in a Space/Atmospheric Interface Hex, or in a space hex. Regardless of what hex row the attacking unit occupies, apply a +3 to-hit modifier. In addition, apply to-hit modifiers through atmospheric hexes (see *Effects of Atmosphere*, p. 236, *TW*) to the flight time, with each hex representing a mapsheet; this is one of the few times when a weapon can fire further than its maximum range and still inflict damage. For example, a unit is firing an Arrow IV from Hex Row 3. Each atmospheric hex represents 6 hexes, which is translated to mapsheets for artillery. This means that the distance from the attacker to a ground target hex is 18 mapsheets; out of range for the Arrow IV, though the weapon can still be fired (it also will have a flight time of 3 turns). If firing an artillery weapon beyond its maximum mapsheet range, apply an additional +1 modifier for each mapsheet beyond that range. For the Arrow IV (Inner Sphere technology), that means an additional +10 modifier is applied to the to-hit roll; this will automatically miss, but the final modified target number will help determine the Margin of Failure and how far the attack will scatter before applying damage to a target hex(s) (see *Determining Hits*, p. 150).

In both instances of movement on High-Altitude or Low-Altitude maps, the target hex must be on the mapsheet corresponding to the hex occupied by the attacking unit. If using the *Aerospace Units on Ground Mapsheets* rules, the target hex can be anywhere on the playing area within a weapon's firing arc, except for the hex directly underneath the airborne unit.

Homing Missiles: Arrow IV homing missiles (see p. 166, *TO: AUE*) cannot be fired beyond their maximum hex range, as they will automatically miss with no effect.

Artillery Spotters

Artillery spotters can improve the accuracy of artillery fire in the following two ways (note that both of these situations can occur simultaneously, providing both benefits):

If the target hex was in the LOS of a friendly unit (the spotter) at the end of the Movement Phase of the turn in which the artillery attack was launched, and the same friendly unit has the target hex in its LOS in the turn in which the shell/missile arrives, then a modifier, as shown on the Artillery Modifiers Table, can be added to any new attack. As soon as that friendly unit does not have LOS to the target hex at the end of a Movement Phase in which an artillery shell/missile is either launched or landed, any new artillery attack made loses that bonus.

The player manning an artillery unit may attempt to adjust subsequent fire to home in on its target hex by noting how far off from the target hex and in which direction its shot landed. If there is a spotter with LOS to the target hex as described above, the attacker may adjust subsequent fire at that hex. Each attack adjusted in this way modifies the to-hit number for that artillery unit by –1, as shown in the Artillery Modifiers Table. Again, remember to take into account the proper attack and when that attack will arrive on the target mapsheet when applying the modifier.

In both instances, if an artillery spotter makes an attack of its own in the same turn it is spotting for an artillery attack, apply a +1 modifier to all the spotting unit's attacks, as well as a +1 modifier to the artillery attack made that turn; as above, note the turn when that shot will arrive on the mapsheet containing the target hex. That is the shot where the modifier for such an attack will apply. If the spotting unit makes no attacks, do not apply these additional modifiers.

A Long Tom artillery unit will be firing 7 shots in 7 turns against a single hex, using the same spotter. The Long Tom is 16 mapsheets away from the mapsheet containing the target hex. Looking on the Indirect Artillery Flight Times Table, this means the shell will take three turns before hitting the target hex. A unit friendly to the Long Tom (the spotter), with a Gunnery Skill that provides a –2 modifier has the target hex in its LOS at the end of the Movement Phase during Turn 1. The controlling player begins to make

ARTILLERY RANGES TABLE

Type	Maximum Range (in mapsheets)
Arrow IV Missile (Inner Sphere)	8
Arrow IV Missile (Clan)	9
Thumper	21
Sniper	18
Long Tom	30
BA Tube	2
Cruise Missile/50	50
Cruise Missile/70	90
Cruise Missile/90	120
Cruise Missile/120	150

INDIRECT ARTILLERY FLIGHT TIMES TABLE

Distance from Battlefield (in mapsheets)	Artillery† Flight Time (in turns)
Less than 1*	0
1–8	1
9–15	2
16–21	3
22–26	4
27–30	5
Cruise Missile‡ Flight Time (in turns)	
1 + (Number of mapsheets ÷ 5, round down)	

*See *Direct-Fire Artillery*, p. 185.
†Arrow IV, Thumper, Sniper and Long Tom
‡Cruise Missile/50, Cruise Missile/70, Cruise Missile/90 and Cruise Missile/120

an artillery attack during the Indirect Artillery Attack Phase each turn, starting on Turn 1. Meanwhile, the spotting unit has kept the hex in LOS through Turns 1, 2, 3 and 4. During the Indirect Artillery Attack Phase of Turn 4, the first shell arrives on the mapsheet. The controlling player can now apply a –1 modifier to his next attack, which will occur during the Indirect Artillery Attack Phase of Turn 4. However, the attacks made during Turns 2 and 3, which will arrive onboard during Turns 5 and 6, will not receive that benefit. The first shell to receive that benefit will arrive on Turn 7.



• SCATTER DIAGRAM •

Determining Hits

During the Indirect Artillery Attack Phase, players announce artillery attacks due to land in that turn and resolve the effects of their fire. Artillery fire may or may not land in the targeted hex. Except for fire against a pre-designated artillery target hex, determine whether or not an artillery attack hits its target hex. Use the attacking unit's Gunnery Skill as a base to-hit number and apply a standard modifier of +7, plus the appropriate modifiers from the Artillery Modifiers Table.

Roll 2D6. If the result equals or exceeds the modified to-hit number, the attack hits the target hex; otherwise, the attack scatters. To determine where the scattered attack lands, first determine the Margin of Failure (MoF). For each point of MoF the artillery round scatters by one hex.

To determine the exact location, roll one die and compare it to the Scatter Diagram to find the direction of the scatter. The scattered artillery will scatter in that direction a number of hexes equal to the MoF.

Once an artillery unit hits its target hex (not any hex to which a shot scatters), it will automatically hit that hex every time it targets that hex for the remainder of the scenario; the same rules for spotting apply (see *Artillery Spotters*, p. 150), so that only those shots fired after the shot strikes the hex will automatically strike the hex. The exception to this rule is if the unit in question making the artillery attack expends MP after the hex has been hit, in which case that hex can no longer be hit automatically (this means airborne units firing Arrow IV missiles can never automatically hit a hex once they've hit it). In all instances, players keep track of which hexes can be struck by which units, as artillery units cannot use each other's "auto hit" hexes.

DAMAGE

The amount of damage a unit takes from an artillery attack depends on two factors: the base damage value of the shell/missile, and the distance between the unit and the detonation hex when the shell/missile explodes.

The base Damage Value of a shell/missile is the damage the shell/missile inflicts on any unit within a hex struck by the shell/missile. Reduce the damage by 10 points for each hex of distance between the target hex and the affected unit. For example, reduce the Damage Value by 10 for a unit in an adjacent hex, by 20 for units two hexes away, and so on.

Cruise missiles reduce the damage by 25 points for each hex of distance between the target hex and the affected unit.

All units and structures occupying a hex hit by an artillery attack take full damage from the attack. Group damage from artillery into 5-point Damage Value groupings and apply to the target. To determine direction of attack for hit locations for artillery off the playing area, consider the artillery piece to be in the center hex of the map edge beyond which it lies. Thus, if the artillery is located to the north of the mapsheet on which the battle is taking place, resolve hit locations as if the attack originated in the center of the north edge of that mapsheet; the attack direction against targets in adjacent hexes is determined as though the attack came from the target hex. If an attack is made from on the playing area, regardless of size, determine the direction of the attack by drawing a line between attacking and target hexes. See the Artillery Ordnance Table for the Damage Values of each artillery type against the target and adjacent hexes; many types of ordnance have additional effects, and so players are encouraged to look over the ordnance they have in mind by reading the relevant entry in the *Advanced Weapons and Equipment* section, starting on p. 86, *TO: AUE*.

Additionally, in the target hex only (never in any adjacent hexes), this damage is also applied vertically into the elevations above the target hex (meaning an airborne VTOL in a target hex that is at a low enough elevation may still take damage). In the target hex, for each subsequent elevation above the level of the underlying struck hex, reduce the damage by 10 points (25 for cruise missiles) and apply that damage to the next elevation; this is done until there is no more damage to apply to a higher elevation. This type of vertical damage does not apply to buildings or Mobile Structures, which follow their own rules (see below). Also, such vertical damage is not inflicted twice against units that occupy more than one level (such as a standing 'Mech).

Any player using an artillery weapon must select the ordnance type during the Targeting Phase of the turn when the round/missile is fired. While the players can determine any method that works for them, it is suggested that a player controlling artillery write down his selection of ordnance—along with the intended target hex—without revealing it to his opponent; this information will be revealed in the turn the attack arrives onboard.

Buildings, Mobile Structures and Grounded DropShips: A building or Mobile Structure in a hex hit by artillery attacks uses the area-effect weapons rules to resolve damage (see *Area Effect Weapons*, p. 172, *TW*).

If a unit occupies a non-Fortress or -Castles Brian building hex, or a non-hardened building hex of any other classification (see



● RADIUS DIAGRAM ●

ARTILLERY ORDNANCE TABLE

Ordnance Type	Damage Type	Weapon Type Damage Values (Radius)					
		Long Tom	Sniper	Thumper	BA Tube	Arrow IV	Cruise Missile
Air-Defense Arrow (ADA)*	F	—	—	—	—	20	—
Arrow IV Homing Missile*	AE	—	—	—	—	20	—
Arrow IV Non-Homing Missile*	AE, F	—	—	—	—	20/10 (R1)	—
Cluster*	AE, F	20/10 (R1)	15/5 (R1)	10/1 (R1)	—	20/10 (R1)	—
Copperhead*	AE	15 (R0)	10 (R0)	5 (R0)	—	—	—
Flechette*	AE, AI	*	*	*	—	—	—
High-Explosive (standard)	AE, F	25/15/5 (R2)	20/10 (R1)	15/5 (R1)	3/1 (R1)	—	
Minefield Rounds							
Thunder Active-IV*	AE	—	—	—	—	20 (R0)	—
Thunder FASCAM (Inner Sphere)*	AE	25 (R0)	20 (R0)	—	—	20 (R0)	—
Thunder FASCAM (Clan)*	AE	25 (R0)	20 (R0)	15 (R0)	—	30 (R0)	—
Thunder Vibrabomb-IV*	AE	—	—	—	—	20 (R0)	—
Non-Explosive Rounds**							
Illumination*	—	(Radius 3)	(Radius 2)	(Radius 1)	—	(Radius 4)	—
Inferno IV-Missiles*	AE, H, AI	—	—	—	—	(Radius 1)	—
Laser-Inhibiting Arrow Missile*	—	—	—	—	—	(Radius 1)	—
Smoke*	—	(Radius 1)	(Radius 1)	(Radius 1)	(Radius 1)	(Radius 1)	—
Cruise Missiles							
Cruise Missile/50	AE	—	—	—	—	—	50/25 (R1)
Cruise Missile/70	AE	—	—	—	—	—	70/45/20 (R2)
Cruise Missile/90	AE	—	—	—	—	—	90/65/40/15 (R3)
Cruise Missile/120	AE	—	—	—	—	—	120/95/70/45/20 (R4)

*See additional rules for the specific ordnance in the *Advanced Weapons and Equipment* section.

**The effect radius describes the area affected by a non-explosive shell. For example, an illumination round fired by a Long Tom has an effect radius of 3, so it affects the target hex, as well as any unit within 3 hexes of the target hex. Ordnance with an effect radius of 0 affects only the target hex.

Advanced Building Classifications, p. 112), in a hex damaged by an artillery attack, full damage is applied to the unit as well as the building hex. If a building, Mobile Structure or Grounded DropShip hex is higher than both the underlying level of the target hex and a unit/building occupying a hex that would be damaged by an artillery attack, and that building, Mobile Structure or Grounded DropShip hex lies along the LOS between the target hex and the hex occupied by the unit, and the building, Mobile Structure or Grounded DropShip hex completely absorbs the damage assigned to it by the artillery attack without being destroyed, the unit/building receives no damage. If, however, the attack destroys the building, Mobile Structure or Grounded DropShip, divide the damage not applied to the building, Mobile Structure or Grounded DropShip by the Damage Value applied to that hex, then multiply that percentage by the Damage Value that would be applied to the hex occupied by the target unit/building to determine the actual damage applied (round down in all cases). For example, a 40 Damage Value cruise missile artillery attack (the third "ring" of damage of a Cruise Missile/90) is applied to a standard building hex with a current CF of 19, which destroys the building. The target unit in the adjacent hex behind the building would receive 7 points of damage [21 (damage not absorbed by building) / 40 (damage value assigned to the building hex) = .525 x 15 (Damage Value assigned to the target unit's hex) = 7.875 (rounding down to 7)].

Levels (Hills): If a hill is higher than both the underlying level of the target hex and a unit/building occupying a hex that would be damaged by an artillery attack, and that hill lies along the LOS between the target hex and the hex occupied by the unit, the unit/building receives no damage. If using the *Terrain Factor Rules* (see p. 63), and the damage from an artillery attack reduces the level of the hex so that it no longer is higher than the unit in the hex that avoided damage, then use the formula as described under *Buildings* at left to determine the actual damage assigned to the unit/building.

Large Naval Vessel Support Vehicles: Large Naval Vessel Support Vehicles have their own rules for dealing with area-effect weapons (see p. 27, *TO: AUE*).

Water: Use the rules for area-effect weapons against buildings (see p. 172, *TW*) when resolving the damage from an artillery attack if the target hex is a water hex, and if units and/or buildings are occupying such water hexes. If the target hex is not a water hex and an adjacent hex is a water hex, no damage is applied to completely submerged targets in that adjacent hex; in the case of a 'Mech standing in Level 1 water, the damaged is applied using the Punch Hit Location Table.

DIRECT-FIRE ARTILLERY

While most players use artillery for indirect attacks, an artillery-equipped unit has several attack options for directly targeting enemy units.

In all instances, start with the attacker's Gunnery Skill as a base to-hit number, with a +4 to-hit modifier; apply all other modifiers as noted below.

All direct-fire artillery attacks are made during the Weapon Attack Phase.

Cruise Missiles: Cruise missiles cannot be used to make any of the following attacks.

Flight Times: As noted on the Indirect Artillery Flight Times Table (see p. 149), any direct-fire artillery attack lands in the same turn it is made.

Direct Fire

To make a direct artillery attack, the artillery unit must have line of sight to the target hex, and the target hex must be no further than seventeen hexes away. Do not modify the to-hit number for range, target movement, the terrain of the target hex or an immobile target. The base to-hit number is modified normally for all other to-hit modifiers such as the attacker's movement and for firing through (not into) woods and for other terrain features.

A direct-fire artillery attack is made during the Weapon Attack Phase and has no time in flight.

If the attack hits the target hex, the shell/missile inflicts standard artillery damage, including damage to adjacent hexes, as well as any other effects, if applicable. If the round misses its target, it scatters as described in *Targeting* (see p. 148), but only 1D6 is rolled to determine distance; i.e. the MoF is not applied.

Minimum Range: When making a direct-fire artillery attack, if the target is within six hexes of the attacking unit, the attack cannot be made (this minimum range is ignored when making Pointblank Attacks; at right).

Indirect Fire at Targets Seventeen Hexes or Less Away

Artillery units may make an indirect attack on a unit that is less than seventeen hexes away if there is no LOS to the target hex.

Modify the to-hit number for attacker movement during the turn in which it fires.

Note: If firing at targets more than seventeen hexes away, use the standard rules for indirect artillery fire.

Bore Sighting

Bore sighting is a specialized version of a direct-fire attack. It enables an artillery weapon to make a Careful Aim attack (see *Careful Aim*, p. 82). All the rules for Careful Aim apply, and the unit can begin bore sighting when the target is further than seventeen hexes away. However, the weapon may not fire until the target is within seventeen hexes. If the artillery fires before the target is within seventeen hexes, resolve as a standard indirect artillery attack, and all accumulated Careful Aim modifiers are lost.

To make bore sighting attacks with one or more artillery units, the controlling player must secretly write down which units are bore sighting and specify the target for each unit. When the attacker uses his artillery weapons, he turns over the piece of paper and shows the defending player which units are attacking, how long they have been bore sighting and which defending units are being attacked.

Pointblank Attacks

Only hidden onboard artillery units that have not previously fired or moved in a scenario can make pointblank artillery attacks. The artillery unit makes its pointblank shot from hiding as described on page 259 of *Total Warfare*, with the following additional rules.

Only high-explosive rounds can be used in a pointblank attack, and the attack must be aimed at the hex the target unit occupies; it cannot be aimed behind the target unit or at any other hex within the attacking unit's LOS.

If the attack hits, it is treated as a hit from a direct-fire ballistic weapon, resolved against the unit's facing relative to the attacking unit. An additional 5 points of artillery damage applies to all other units in the target's hex (treat as an area-effect weapon if these other units include infantry).

If the to-hit roll fails, the round scatters. Re-roll the scatter direction if the result calls for the attack to scatter toward the attacking unit or the two hexes adjacent to the attacking unit.

Flak

Players can use an artillery unit located on the playing area (any ordnance on the Artillery Ordnance Table with an "F" Damage Type) to fire directly at airborne ground units (VTOL Vehicles, WiGEs and units expending VTOL MPs such as infantry) as well as airborne aerospace units. The player must declare that he is firing at the unit, and must have a valid line of sight to the target unit. Resolve the attack as normal for an artillery direct-fire attack, per the rules in Direct-Fire Artillery, at left (if the target is an airborne aerospace unit, the minimum number of hexes does not apply).

Apply a +3 to-hit modifier. Ignore the regular modifiers for using Type "F" weapons or making a direct-fire attack; the only other modifiers applied are for the firing unit's movement and current damage, as well as woods/jungle, if any are intervening. Additionally, if firing at an airborne aerospace unit on a Low-Altitude Map, apply a +1 modifier for each 3 altitudes above the first 3; i.e. 1-3 altitudes provide no modifier, 4-6 altitudes provide a +1 modifier, 7-9 altitudes provide a +2 modifier and Altitude 10 provides a +3 modifier. Flak shots from artillery cannot be made into any hex row beyond Ground on the High-Altitude Map.

Low-Altitude and High-Altitude Maps: Damage against units on Low-Altitude and High-Altitude maps is determined normally, but no damage is applied to any adjacent hexes and/or altitudes.

When determining scatter on a Low-Altitude or High-Altitude map, divide the distance scattered by 6 (round down) to determine the distance in hexes scattered. If the shot does not scatter into a new hex, the shot inflicts no damage. If it scatters into a new hex, then apply damage per the standard rules to any units in that new hex.

Aerospace Units on Ground Mapsheets: Determine damage to flying units (including non-aerospace units, such as VTOL Vehicles, or units expending VTOL MP) using the *Aerospace Units on Ground Mapsheets* rules (see p. 91, *TW*) in the target and adjacent hexes as normal.

In addition, in the target hex only (never in any adjacent hexes), this damage is also applied vertically into the elevations above and below the target hex (meaning an airborne VTOL in the target hex that is at the correct elevation above or below the target elevation may still be damaged). In the target hex,

for each subsequent elevation above and below the elevation of the target, reduce the damage by 10 points and apply that damage to the next elevation; this is done until there is no more damage to apply to a higher elevation. This type of vertical damage can potentially damage non-airborne targets (buildings, trees, other units) if the elevation of the damage equals the elevation of the target. However, such vertical damage is not inflicted twice against units that occupy more than one level and/or elevation (such as a standing 'Mech, Large Fixed-Wing Support Vehicles and so on).

Shots that missed scatter as normal but explode at the elevation of the target unit (they do not fall to the ground and explode).

COUNTER-BATTERY FIRE

It is possible to launch attacks against an opponent's artillery. Such attacks are called counter-battery fire and can only be launched by a player's own artillery, be it on or off the playing area.

Counter-battery fire can be initiated only after an enemy artillery attack strikes the map on a hex that is in the LOS of at least one of the defender's units. From that point on, counter-battery attacks may be launched by the defender against that particular enemy artillery unit.

Counter-battery fire is resolved in the same way as standard indirect artillery attacks. If the target of an attack is not on the playing area, however, players must use slight variations on those rules to determine a successful attack. The range to the target (in mapsheets) is determined by adding together the distance from the playing area to the attacking and defending artillery units, including the mapsheets that make up the playing area.

Counter-battery fire is always aimed directly at the "hex" the enemy artillery occupies. If the attack roll succeeds, the attack hits the target hex. If the attack roll fails, the shot scatters according to the standard rules.

Cruise Missiles: Cruise missiles can be used to make counter-battery attacks. However, counter-battery attacks against a unit making a cruise missile attack cannot be made.

A Long Tom high-explosive round is fired against an enemy artillery position. The attacking artillery piece is 5 mapsheets away from the playing area, while the target artillery piece is 7 mapsheets distant. The battle itself is taking place on a 16-mapsheet area (4 x 4), so the total distance is 16 mapsheets, which means the shell will arrive at the target hex after three turns in flight.



A Grenadier and Rottweiler face off against a squad of Death Commando Ying Longs.

PLANETARY CONDITIONS

The following apply when using these specific Planetary Condition rules with artillery.

Weather Conditions

When using Weather Planetary Conditions with artillery spotters (see p. 149), use the Visual Range Table (see p. 189) to modify the distance to which a spotter can visually see a target hex.

Additionally, apply any Missile to-hit modifiers to all artillery attacks, depending upon the type of Weather condition in use (see the Weather Conditions Table, p. 34)

Atmospheric Pressure (Density)

If using the Atmospheric Pressure (Density) Planetary Conditions (see p. 52), apply the following rules. Apply Atmospheric Range reductions after Gravity Range reductions.

- Vacuum: Increase range (in boards) by 20%, round down.
- Trace/Thin Atmosphere: Increase range by 10%, round down.
- High Atmosphere: Decrease range by 10%, round down.
- Very High Atmosphere: Decrease range by 20%, round down.

High/Low Gravity

If using the High/Low Gravity Planetary Conditions (see p. 53), apply the following rule: divide the ranges in each row of the Artillery Ranges Table by the gravity (in terms of fractions of the Terran Standard gravity of 1), and round down. Flight times continue to use the Artillery Flight Time Table, but with the new range.

A game is being played on a world with Trace Atmosphere and a High Gravity of 2.2. Player A has a Long Tom that he's looking to fire, but must adjust the range. Player A divides the range by gravity first, 30 mapsheets /2.2 = 13.63, rounded down to 13 mapsheets. The Trace Atmosphere then extends range by 10%, 13 mapsheets x 1.1 = 14.3, rounded down to 14 mapsheets. Since flight times do not change, the Long Tom can reach its new maximum range in 3 turns.

BATTLE ARMOR WEIGHTS

While the simplicity of 1 ton per trooper for battle armor makes for quicker, easier game play when dealing with Infantry Carriers (see p. 223, *TW*), it does not accurately reflect the vast differences between the ultra-light weight PA(L)/Exoskeletons all the way up to massive assault battle armor.

To better reflect such differences, see the Advanced Battle Armor Weights Table. Note that while it is much more realistic, it also makes the heaver weight classes much more difficult to carry with standard vehicles found in various Technical Readouts, as most such dedicated infantry-carrying designs are based on the 1 ton per trooper rule.

ADVANCED BATTLE ARMOR WEIGHTS TABLE

Weight Class	Tons of Cargo Space Occupied	Battle Armor Units (total occupied cargo space)		
		4 troopers	5 troopers	6 troopers
PA(L)/Exoskeleton	.25 tons	1 ton	1.25 tons	1.5 tons
Light	.5 tons	2 tons	2.5 tons	3 tons
Medium	1 ton	4 tons	5 tons	6 tons
Heavy	1.5 tons	6 tons	7.5 tons	9 tons
Assault	2 tons	8 tons	10 tons	12 tons

BATTLEFIELD WRECKAGE

For simplicity, in standard-rules play, when a unit is destroyed it is removed from the playing area and has no further effect on the battlefield. However, this is not very realistic, as many units are large enough they would indeed have an effect on the battlefield even after their destruction. The Battlefield Wreckage Table provides a set of conversion rules for what a hex (or hexes, in multi-hex units) turns into after the destruction of a given unit type. If there is a dash in the Terrain Type column, then the unit doesn't translate into any type of terrain and is ignored after it is destroyed (as in standard-rules play).

These terrain modifiers stack with other terrain modifiers, and so the destruction of a 'Mech that creates a rough hex in what was originally a light woods hex actually converts it to a light woods/rough hex. However, if the hex type created by the destruction of a unit already exists in that unit's hex, the terrain remains the same; that is, the destruction of a 'Mech in a rough hex would result in a rough hex.

Crashing: Crashing airborne units destroyed in a crash also create their appropriate terrain type in the hex(s) involved; airborne units destroyed while airborne break up enough not to affect ground mapsheets.

Water: Any unit that occupies a water hex when it is destroyed will convert the bottom of the water hex into the new terrain type shown on the table; such destroyed units do not modify the Depth levels of the water hex.

BATTLEFIELD WRECKAGE TABLE

Tonnage: In all instances, a unit must be 40 tons or greater to modify terrain upon destruction.

Unit Type	Terrain Type
'Mech	Rough
ProtoMech/Infantry	—
Combat Vehicles	Rough
Medium Support Vehicles	Rough
Large Support Vehicles/ Super-Heavy Vehicles	Ultra Rough
Rail	Ultra Rough
Fighters/Small Craft	Rough
DropShips/Mobile Structure	Ultra Rubble



A destroyed Stingray *adds its metal carcass to the battlefield.*

BOARDING ACTIONS (NON-INFANTRY)

While the infantry vs. infantry actions (see p. 167) provide an abstracted system for large-scale infantry to fight over control of a unit, the following rules allow for units to use "standard" movement and combat, with minimal changes, to resolve boarding and fighting inside large-scale units.

Legal Targets: Only Large Naval Vessel Support Vehicles and grounded DropShips can be the target of this type of non-infantry boarding action; Mobile Structures use the *Combat Within Buildings* rules (see p. 175, *TW*), to resolve such situations.

MOUNTING THROUGH A BAY DOOR (INTO A CARGO BAY)

An enemy unit can attempt to mount a DropShip or Large Naval Vessel through one of its bay doors (see p. 209, *TM*); note that such mounting places the unit inside the transport bays and/or cargo bays (all treated as a cargo bay for purposes of these rules).

All the standard rules for a friendly unit mounting a DropShip apply (see p. 89, *TW*), with the following additions:

- Any attempts to mount through a bay door can only be made against a hit location that has at least a portion above water; if a hit location is completely submerged, this rule cannot be used to mount through any bay doors in that location.
- Unlike a friendly unit mounting a DropShip, any bay doors (including cargo doors) may be used.
- A mounting enemy infantry unit must make an Anti-'Mech Skill Roll, applying a +2 modifier. If the roll is a success, the infantry unit has mounted into the bowels of the target unit. The infantry can either be used to make attacks in the cargo bay (see *Weapon Attacks in Cargo Bay*, at right) or the infantry is removed from the playing area and an infantry vs. infantry action begins (see p. 167). If the roll fails, the infantry remain in the last hex they occupied.
- A mounting enemy 'Mech must make a standard Piloting Skill Roll, applying an additional +4 modifier. If the roll is a success, the 'Mech has mounted into the bowels of the target unit and can make attacks during the Weapon Attack Phase (see *Weapon Attacks Against Cargo Bays*, below); if the roll fails, the 'Mech remains in the last hex it occupied. As with a friendly unit attempting to board a DropShip, if the 'Mech's controlling player gets a 2 on the Piloting Skill Roll, the door is damaged and cannot be used for the rest of the game; in this instance, the 'Mech does not mount the unit, however.
- A ProtoMech may attempt to mount a DropShip or Large Naval Vessel using all the same rules as a 'Mech, but in place of a Piloting Skill Roll, the ProtoMech makes a specialized weapon attack (using its Gunnery Skill Rating as the Base Target Number), applying a +3 modifier (unlike a 'Mech, no modifiers for damage apply).
- A ground vehicle may attempt to mount a DropShip or Large Naval Vessel using all the same rules as a 'Mech, but must apply a +5 modifier to the standard Driving Skill Roll.
- VTOLs, WiGEs, Small Craft, fighters and naval units cannot mount an enemy unit using this rule.
- If the hit location containing the bay door does not have any armor remaining, apply a –2 modifier to all rolls for mounting through a door.
- Only a single attempt per unit per turn can be made, regardless of available MP.
- Any enemy unit that has mounted through a bay door may follow the exact rules as noted above for dismounting, except apply a –2 modifier. If all bay doors have been damaged since mounting (meaning that units cannot use those doors), the unit cannot dismount.
- If Planetary Conditions rules are in use (see p. 26), any condition that adds a modifier to a Piloting Skill Roll applies, even if the unit does not enter a hex. For example, Deep Snow would not apply, as the hex the unit is attempting to enter (a Large Naval Vessel) would not be filled with snow. However, Heavy Falling Snow would apply. Players should use their best judgment on which planetary conditions might affect this Piloting Skill Roll; roll a die to resolve any disagreements.

WEAPON ATTACKS IN CARGO BAYS

Any weapon attacks (whether from a friendly or enemy unit) in the cargo bay of a DropShip or Large Naval Vessel use the following rules.

A player can nominate one of four targets of attacks in a cargo bay each turn: the unit itself, cargo within the cargo bay, transport bays (non-active units; see *Transport Bays (Expanded)*, p. 185), and active units (those that are not in a transport bay; that is, they are mounting or dismounting from the DropShip or Large Naval Vessel and/or are attacking the enemy unit in the cargo bay). The specifics of each are discussed in detail below.

Unlike standard combat, a unit cannot attack separate targets. Instead, during the Weapon Attack Phase, when the controlling player announces he will be making a weapon attack with a unit in an enemy cargo bay, he must choose which of those four targets he will attack. All weapon attacks are made only against that target. In the Physical Attack Phase of the same turn, however, the controlling player can nominate another target; all physical attacks are made only against that target. The following stipulations apply to physical attacks: only punch, kick and physical weapon attacks may be made, and must still adhere to their standard rules (for example, an arm carrying a physical attack weapon cannot deal damage with it if a weapon from that arm is fired in the same turn). Any additional physical weapons effects re lost (a lance will not apply a critical hit, for example).

Regardless of the target of the attack, all weapon attacks are automatically successful; all Cluster Weapons automatically deal their full Damage Value. However, to-hit rolls should still be made to determine jam rolls, possible critical hits against enemy active units and so on. Whether they hit their intended target depends on the target, as noted below.

Finally, for the purposes of these rules, if a friendly unit is already on board the Large Naval Vessel and is in its transport bay (that is, it is not "active" because it has expended MP in a turn following the turn in which it mounted, or hasn't expended MP since the start of the scenario), the controlling player must "activate" units for them to be used, following the *Transport Bay (Expanded)* rules (see p. 185).

Attacks Against the Interior of a DropShip or Large Naval Vessel

- For each attacking unit, total all damage inflicted by weapon attacks (including rear-firing weapons) that the controlling player makes, and then total all damage inflicted by physical attacks that the controlling player initiates. Randomly determine a hit location on the DropShip or Large Naval Vessel for the total weapon Damage Value and another location for the

total physical attack Damage Value. Apply ten percent (round down) of each total Damage Value to the structural integrity (DropShip) or internal structure (Large Naval Vessel) of the randomly determined locations (which will result in an automatic roll for a possible critical hit for the DropShip, as well as an automatic roll on the Ground Vehicle Critical Hits Table—p. 194, *TW*—for the Large Naval Vessel), and then apply the rest of the damage to the armor in those locations. If the damage exceeds the armor in that location, apply any remaining damage to the internal structure in that location (or half damage, rounded down, to the structural integrity for a DropShip).

- For Large Naval Vessels, compare the damage of both the total weapon Damage Value and total physical attack Damage Value to the vessel's BAR. For every group of damage from the total Damage Value that exceeds the BAR, roll once on the Ground Combat Vehicle Critical Hits Table (see p. 194, *TW*), using the column associated with the location where the damage was applied; these rolls are in addition to the roll made for the damage applied to the internal structure.
- If an area-effect weapon (such as artillery) is used in the bay of a DropShip or Large Naval Vessel, apply all damage equally to all cargo, transport bays and active units. Apply the target hex Damage Value to all cargo (1 point of damage destroys 1 ton of cargo), transport bays (non-active units; use the Front column of the appropriate hit location table) and active units (randomly determine the attack direction and hit location for each 5-point Damage Value grouping), using the standard area-effect rules for artillery damage (see p. 150). In addition, total the Damage Value from such an attack for the target hex, as well as all adjacent hex values (but not any vertical damage), and then divide that equally for the number of locations of the unit (round up). Apply the damage as described above. A unit self-destructing or an engine explosion due to damage (see *Engine Explosions*, p. 75), or a booby trap explosion (see p. 109), are all considered area-effect weapons for purposes of this rule.
- Any ammunition critical hit to the DropShip or Large Naval Vessel that results in an explosion applies damage as an area-effect weapon against all active units.

Attacks Against Cargo

- All weapon attacks and physical attacks against cargo automatically hit, as noted above. However, for each Damage Value grouping from weapon attacks, the controlling player must roll 2D6. On a result of 10 or more, the attack does not strike the cargo, but instead strikes the DropShip or Large Naval Vessel itself; physical attacks always strike the target cargo and never miss in this fashion.
- First, determine all the attacks that struck the target. For each point of damage, 1 ton of cargo is destroyed; this type of attack against cargo never includes transport bays (unlike a critical hit against cargo, which could damage transport bays; see p. 239, *TW*). The players will need to agree on a set of rules for how this is determined. Regardless of what is destroyed, ammunition (or any weapons that explode) never explodes in this situation. Instead, it is simply destroyed along with whatever else the attack obliterates.
- Next, total all weapon attack Damage Values that missed the target and apply them to the DropShip or Large Naval Vessel exactly as shown under *Attacks Against the Interior of a DropShip or Large Naval Vessel* (see p. 156).

Attacks Against Transport Bays

- Whenever a player nominates transport bays for his attacks, he has two options: a quick attack or a search. In a quick attack, the player simply nominates "transport bays"; the opposing player randomly determines the specific transport bay that will be the target of those attacks. If the controlling player does not make any weapon or physical attack in a turn, he spends that turn searching. In the following turn, the opposing player must detail the specific units in transport bays and the controlling player can nominate a specific target for the attacks. Once the controlling player has searched and found a target, he can always specifically attack that target. To search for another target, the controlling player must spend another turn searching; that is, not making any weapon or physical attacks.
- All weapon and physical attacks against transport bays automatically hit, as under *Attacks Against the Interior of a DropShip or Large Naval Vessel* (see p. 156). However, for each Damage Value grouping from weapon attacks, the controlling player must roll 2D6. On a result of 8 or more, the attack does not strike the transport bay (i.e. the unit in the transport bay), but instead strikes the DropShip or Large Naval Vessel itself; physical attacks always strike the target unit and never miss in this fashion.
- First, determine all the attacks that struck the target using the Front column of the appropriate hit location table. Determine a different location for each weapon attack, or Damage Value grouping in the case of weapons with multiple groupings.
- Next, total all weapon attack Damage Values that missed the target and apply them to the DropShip or Large Naval Vessel exactly as shown under *Attacks Against the Interior of a DropShip or Large Naval Vessel* (see p. 156).

Weapon Attacks Against Active Units in Cargo Bays

- If an enemy unit is active (see *Transport Bays (Expanded)*, p. 185), it can be the target of an attack.
- All weapon and physical attacks against an active unit automatically hit, as under *Attacks Against the Interior of a DropShip or Large Naval Vessel* (see p. 156). However, for each Damage Value grouping from weapon attacks, the controlling player must roll 2D6. On a result of 8 or more, the attack does not strike the transport bay, but instead strikes the DropShip or Large Naval Vessel itself; physical attacks always strike the target unit and never miss in this fashion.
- First, determine all the attacks that struck the target; also determine a random attack direction and random location for each Damage Value grouping.
- Next, total all weapon attack Damage Values that missed the target and apply them to the DropShip or Large Naval Vessel exactly as shown under *Attacks Against the Interior of a DropShip or Large Naval Vessel* (see p. 156).
- Infantry units can swarm any enemy units in a cargo bay, using all the standard swarming rules (see *Swarming Attacks*, p. 220, *TW*). Apply a –2 modifier to all swarming attempts.

FIRE DUE TO WEAPON ATTACKS IN CARGO BAYS

Fires in a DropShip or Large Naval Vessel cargo bay are treated differently than fires on the exterior (see p. 42), or in the case of a DropShip where an external fire has no effect. For each weapon attack that strikes the interior of the unit, its cargo or a transport bay, make a roll per the standard rules shown on the Fire Table (see p. 42), applying the standard Fortified Building modifier. If a fire starts, it has a Fire Rating of 1. For Large Naval Vessels, the fire inflicts 1 point of damage to a randomly determined internal structure location each turn during the End Phase (per standard rules, a roll is made on the Ground Vehicle Critical Hits Table, using the appropriate column); for DropShips, damage is halved (rounded down) and applied to the structural integrity, so a Rating 1 fire has no effect (per standard rules, a possible critical hit is still rolled, however).

If multiple fires are started through multiple weapon hits, each additional fire increases the Fire Rating by 1, with each point inflicting a point of internal structure damage to a randomly determined internal structure location. For example, a Fire Rating of 5 would inflict 5 points of damage to 5 randomly determined internal structure locations. For a DropShip, that Fire Rating of 5 would apply 2 points of damage [5 / 2 = 2.5, rounding down to 2] to the structural integrity.

The controlling player may nominate a platoon (or battle armor squad) of active infantry to fight the fire; an equal number of crew can also be tasked with this job. However, such infantry cannot be involved in a infantry vs. infantry actions (see p. 167); likewise, any crew involved cannot take part in any infantry vs. infantry actions. Crew assigned to fight fires must also be taken into consideration when determining the effective "crew hits" of a unit (see *Crew Casualties Table*, p. 174). The controlling player rolls 2D6; on a result of 8+, the Fire Rating is reduced by 1 point. For each additional active platoon/squad fighting the fire, the controlling player may make a separate roll for each successful attack, or apply a –1 modifier for each additional active platoon/squad to a single roll.

If a friendly active unit mounts a sprayer (see p. 249, *TM*), the controlling player may announce he is fighting the fire. The controlling player rolls 2D6; on a result of 8+, the fire is extinguished, regardless of its rating. For every sprayer that successfully strikes the target in the same Weapon Attack Phase, the controlling player may make a separate roll for each successful attack, or apply a –1 modifier for each additional sprayer to a single roll.



A fire-fight inside a DropShip can be devastating.

At the start of the Movement Phase of Turn 5 of a game, the controlling player of a BNC-5S Banshee *(Piloting Skill 4) is standing in a hex adjacent to a water hex occupied by a Luftenburg Supercarrier's aft right hit location (the controlling player of the Supercarrier moved adjacent to land hexes to off-load its complement of 40 vehicles). The level of the underlying terrain occupied by the 'Mech is 2, which is within 2 levels of the surface of the water in the hex occupied by the Supercarrier, and so the* Banshee *can attempt to board the enemy unit through the bay door in that location.*

Per the DropShip mounting rules (see p. 89, TW*), the controlling player spends half the* Banshee*'s Walking MP and then makes a Piloting Skill Roll with a +4 modifier (the* Banshee *has not sustained any damage, so no other modifiers are applied). With a result of 9, the player successfully enters the cargo door and is now in the Luftenburg's cargo bay!*

Because the vehicles activated (meaning they expended MP) by the Luftenburg's controlling player in Turn 5 have all dismounted, there are no currently active units in the Luftenburg's cargo bay beyond the Banshee. *During the Weapon Attack Phase of Turn 5, the* Banshee *fires all its weapons. All weapons automatically hit with their full Damage Values, resulting in a total Damage Value of 73 [15 (Gauss Rifle) + 20 (2 ER PPCs) + 12 (SRM 6) + 20 (4 medium lasers, including front and rear) + 6 (2 small lasers). The controlling player of the* Banshee *then randomly determines where that damage will be applied. As there are no turrets on the Luftenburg, there are only six locations to choose from, which the players quickly agree are assigned a numerical value of 1 to 6, front to rear; a result of 3 means the damage (as agreed to by the players) is assigned to the Front Right Side. First, the* Banshee*'s player determines 10 percent of 73 and comes up with 7 points [73 x .1 = 7.3, rounding down], which is applied to the internal structure. The controlling player of the Luftenburg immediately rolls on the Ground Vehicle Critical Hits Table. The remaining 66 points of damage are assigned to the armor in the Front Right Side. Finally, the players determine how many additional rolls on the Ground Vehicle Critical Hits Table will be required. As the BAR of the Luftenburg is 10, the players divide the total Damage Value by 11, coming up with 6 [73 / 11 = 6.6, rounding down].*

During the Physical Attack Phase of Turn 5, the controlling player of the Banshee *makes a kick attack (it cannot punch with either arm, as it made weapon attacks with weapons in both arms), for a total of 19 points. Once again the controlling player of the* Banshee *randomly determines the location and comes up with the rear. Only 1 point is assigned to the internal structure at that location (causing an automatic roll on the Ground Vehicle Critical Hits Table), while 18 points are assigned to the armor in the rear location. As the 18 points exceeds the BAR of 10 only once, only a single additional roll is made on the Ground Vehicle Critical Hits Table.*

At the start of Turn 6, the controlling player of the Luftenburg announces he is activating 4 tanks: 3 Regulators and a Long Tom. During the Movement Phase, the controlling player of the Banshee *feels he's doing fine and so decides to stay; the controlling player of the Luftenburg does not dismount those activated units, leaving them to fight the* Banshee.

During the Weapon Attack Phase of Turn 6, the Banshee *again fires all its weapons at the Luftenburg, with identical results as shown above.*

The controlling player of the three Regulators fires their Gauss rifles at the Banshee. *The weapons automatically hit, but the controlling player then must roll to see if they hit the* Banshee *or the Luftenburg. The player rolls a 5, 8 and 9; only one Gauss rifle struck the target! A randomly determined attack direction and hit location will resolve the 15 points of damage against the* Banshee. *Then a randomly determined location must be assigned to each 15-point Damage Value grouping from the two remaining Gauss rifles; each will inflict 1 point of damage to the internal structure in that randomly determined location, and 14 points against the armor in that location, requiring two rolls each (for a total of four) on the Ground Vehicle Critical Hits Table.*

Finally, the controlling player of the Luftenburg turns a little desperate at all the critical hits striking his giant ship and fires a High-Explosive round from the Long Tom. Twenty-five points of damage are inflicted against the Long Tom, the three Regulators and the Banshee *(a randomly determined attack direction and hit location made for each 5-point Damage Value grouping). In addition, the attack inflicts 175 points of damage to the Luftenburg [25 (target hex) + 90 (15 points to first adjacent hex times 6) + 60 (5 points to second adjacent hex times 12) = 175]. There are six locations (again, no turrets), so 30 points of damage is applied to each location [175 / 6 = 29.1, rounding up to 30]. As usual, 3 of those points will be assigned to each internal structure location (resulting in six different rolls on the Ground Vehicle Critical Hits Table, one for each appropriate column), while 27 points will be assigned to the armor in each location. Finally, since the BAR of the Luftenburg is 10, the controlling player will make two rolls on the Ground Vehicle Critical Hits Table for each location [30 / 11 = 2.7, rounding down], for a total of twelve additional rolls.*

The controlling player of the Luftenburg realizes too late that firing a massive area-effect weapon in the bowels of his own ship probably wasn't a good idea.

COMMAND-LEVEL (TACTICAL) COMMS

Standard-rules *BattleTech* concentrates on equipment and skills that usually apply on an individual basis. However, some equipment goes well beyond the individual and instead provides a benefit to an entire force within a battlefield operational theater. In addition, the skills of a commander go well beyond piloting and fighting in a 'Mech; they also convey leadership qualities that enable a force to act in ways they would not be able to without that leadership.

The following rules attempt to bring some of the larger aspects of communications and command to the tactical level of play during a scenario.

Note: All modifiers, except where specifically noted, are cumulative with all other standard modifiers. Initiative modifiers, in particular, can become very lopsided if both sides do not employ commanders and other Initiative-conveying equipment/units equally.

In addition, depending on the size of forces fielded, both sides may restrict commander assignments. For example, if both sides are fielding a battalion, the players may decide to restrict the nomination of commanders to the company and battalion level, leaving 2 sub-commanders and 1 overall force commander (in place of 8 sub-force commanders and 1 overall force commander if assigning at the lance level).

COMMANDERS

At the start of a game, before any play takes place, players may nominate sub-force commanders (lances, companies, battalions; Stars, Trinaries, Clusters; Level IIs, Level IIIs, Level IVs; and so on), as well as the overall force commander of each player's force (see *Commanders*, p. 273, *TW*). An overall force commander cannot be a sub-force commander; for example, a company of three lances would have 3 sub-force (lance) commanders and 1 force (company) commander.

Only units piloted by a single warrior may be nominated as a sub-force commander or force commander. The exceptions are the cockpit command console for a BattleMech (see p. 112, *TO: AUE*), infantry (the controlling player nominates which trooper in the squad/platoon is the commander), or any vehicle that uses the Ground Combat Vehicle Critical Hits Table. If the vehicle suffers a Crew Stunned critical hit, the commander is considered to have retreated for purposes of these rules, for as long as the crew is stunned; if the vehicle suffers a Commander Hit critical hit, the commander is considered dead (see below).

Players can hide which commanders are operating which units (or in which infantry unit), though it is advisable to write such information down—each commander on a different piece of paper—and place it hidden on the table so it can be easily confirmed during play as units start to retreat and/or are destroyed.

For each sub-force commander fielded on a side, apply a cumulative +1 Initiative modifier. The force commander can roll twice each turn for Initiative, using the higher roll; the two rolls are made automatically, without reference to any other Initiative rolls made by other players, with the controlling player using the highest value of the two dice rolls (all Initiative modifiers are applied after the two rolls are made and the highest is chosen).

Additionally, each sub-commander and the force commander—at the controlling player's discretion—may be assigned one of the following unique abilities; each ability only applies to the units under that commander's sway. For example, Player A is fielding a company-sized force. Sub-commander One has the Overrun Combat ability, Sub-commander Two has the Disrupt Communications ability, Sub-commander Three has the Zone of Control ability and finally the overall force commander has the Off-Map Movement ability. Only the 4 'Mechs of Sub-commander One's lance may use the Overrun Combat ability, only the 4 'Mechs of Sub-commander Two's lance may use the Disrupt Communications ability and only the 4 'Mechs of Sub-commander Three's lance may use the Zone of Control ability. However, all 12 'Mechs may use the Off-Map Movement ability of the force commander.

If any commander retreats off the playing area, his Initiative modifier is lost, as is his ability; if the controlling player is in the middle of using the ability, he can finish using it (for example, if he is in the middle of off-map movement). If

a sub-force commander is killed, not only are his ability and Initiative modifiers lost, but an additional –1 Initiative modifier is applied (a –2 Initiative modifier is applied for the death of the overall force commander).

Multiple Abilities in a Lance: If players wish, they can assign multiple sub-commanders in a single lance, effectively also assigning multiple abilities to that lance. However, the player must determine before play begins which sub-commander is the overall leader of a lance; that sub-commander's ability is the only ability that applies during game play. Only if that sub-commander is killed or withdraws from the playing area can the controlling player nominate a new sub-commander to be the overall lance leader, meaning the new sub-commander's ability is in use. The new ability can be used at the start of the turn following the one in which the previous sub-commander was eliminated and/or removed from the playing area.

To maintain the leadership aspect of this style of play, players should avoid simply making every MechWarrior a sub-commander. Instead, players may choose to assigned multiple sub-commanders at the company and battalion (or higher) level, representing XOs (executive officers), whose job is to take over command if a commanding officer should fall during combat.

Abilities: The following abilities represent a thin slice of the myriad possibilities that can add extra flavor and cool tactics to a given game. Players are encouraged to draw additional abilities from other *BattleTech* rulebooks and sourcebooks, as well as to generate their own; a scenario played again with the same forces and maps but with commanders having different abilities will offer up new potential fun. However, players should be careful not to create abilities that are too powerful; an ability should be a balanced trade-off between the pros and cons. Ultimately, of course, the players will determine what abilities they wish to use in a game and so can design and field any abilities they wish, so long as all players agree to their use.



From the command-cockpit of a BattleMaster, *a commander orchestrates a desperate defense.*

Banking Initiative (Force Commander Only)

Before making the Initiative roll (both rolls), the controlling player can choose to give the Initiative to his opponent. For each two turns the controlling player elects to lose Initiative in this manner, he may—at a later turn, and before making his Initiative roll—choose to take the Initiative. The controlling player may only "bank" up to two Initiative rolls (giving up four beforehand) at any one time in this way. For purposes of any other special abilities, consider the opponent to have won or lost the Initiative (as appropriate) by a margin of 1.

Forcing the Initiative (Force Commander Only)

The controlling player can "force the initiative" and gain bonuses to his Initiative rolls; the controlling player announces at the start of every turn, before the dice are rolled, whether he will use this ability or not. The bonus is equal to the number of enemy units his side destroyed in the previous turn, reduced by the number of his own destroyed units.

For example, a side with this capability receives a +2 Initiative bonus if it destroyed four enemy units and lost two of its own during the previous turn.

Off-Map Movement

A player may only use this ability if the scenario type allows for it. For example, an offensive force may not use this ability in breakthrough scenarios; in a hold-the-line scenario, the defending force cannot use off-map movement.

To use this ability, the controlling player writes down the exit hex and mapsheet of each unit moving off-map. The player then writes down the hex, mapsheet and turn at which each unit will re-enter. Before re-entering the map, an exiting unit must remain off the map for the amount of time it would take to travel from its exit hex to its entrance hex. To calculate this travel time, count the number of blank half hexes along the map edges between the entrance and exit hexes. Then divide this number by the unit's Running/Flanking MP (rounding fractions up). The result is the minimum number of turns the unit must remain off the map. The controlling player can delay the unit's re-entry beyond this period if he desires, but must select the re-entry turn when the unit leaves the map.

Each returning unit re-enters the map in the End Phase of the turn noted on its "written orders." At that time, the opposing player can check the unit's orders to make sure the move was legal. If the move was illegal, the unit is considered destroyed and removed from play. (A move is illegal if the unit does not remain off the map for the required travel time or does not enter at the location and turn noted on its written orders.) In a campaign setting, these "destroyed" units may be brought back into play in a later battle, since they are actually lost rather than destroyed.

If a returning unit is supposed to enter the map in a hex containing an enemy unit, or containing a friendly unit that would violate the stacking limits of the hex, the returning unit is placed in a hex of the opposing player's choice adjacent to the intended entry hex.

Once the returning unit has re-entered the map, any enemy unit adjacent to it may immediately attack it using the rules for Point Blank Shots from Hidden Units (see p. 260, *TW*). This attack does not restrict the attacking unit's ability to make attacks in the following turn.

Units off the map cannot engage in combat. If the opposing force destroys all the units remaining on the map before off-map units return, the battle is lost.

Initiative: Off-map units do not count toward Initiative.

Overrun Combat

When rolling Initiative for overrun-capable forces, the controlling player notes the die roll result's Margin of Success (MoS). Divide the MoS by 2 and round fractions down. The result equals the number of individual units that may move, designate their targets and fire before any other units move and fire. "Extra" successes (such as when the player has more successes than there are units available to move) do not carry over to later turns. For example, an overrun-capable force makes an Initiative roll of 11, while its opponent rolls a 6. That gives the overrun-capable force an MoS of 5, allowing two units to move and fire before any opposing units may move (5 divided by 2 is 2.5, rounded down to 2).

Units employing the overrun capability do not take part in the normal move/fire sequence and so do not count when determining how many units each side must move when alternating turns during the Movement and Weapon Attack phases. Overrunning units make physical attacks as normal during the Physical Attack Phase.

Communications Disruption

Assign numerical values to a number of lances in the opposing force equal to the number of lances controlled by the commander. For example, a lance commander could only assign a numerical value to a single opposing lance, a company commander could assign a numerical value to 3 different opposing lances, a battalion commander could assign a numerical value to 9 different opposing lances, and so on. The specific lances chosen are completely at the discretion of the controlling player.

At the beginning of each turn, the controlling player rolls 1D6. On a result of 6, the player randomly determines the numerical value corresponding to one of the lances in the opposing force; this can be done with a die roll, pulling a number out of a hat, and so on (the players should determine what method to use before the start of the game). That unit may only expend Walking/Cruising/Safe Thrust during the Movement Phase of that turn (this does not affect units only expending Jumping, VTOL or UMU MP).

Zone of Control (Sub-Force Commander Only)

To create a "zone of control," a unit must enter an adjacent hex to an enemy unit that has not moved yet this turn, and must have at least 1 unused MP remaining at the end of the Movement Phase, and must be directly facing the enemy unit. If these conditions are met, the enemy unit cannot enter either of the two hexes adjacent to its own and the one occupied by the enemy unit exerting the zone of control; this only applies to the current Movement Phase. Additionally, this only applies to "ground movement". A unit expending Jumping or VTOL MPs can enter those hexes, though it cannot end the Movement Phase in those hexes.

Infantry: Infantry can only exert a zone of control against another infantry unit.

Sharp Shooters (Sub-Force Commander Only)

Use the following range modifiers in place of the standard range modifiers: Short +1, Medium +2, Long +3, Extreme +4.

Brawlers (Sub-Force Commander Only)

Use the following range modifiers in place of the standard range modifiers: Short –1, Medium +2, Long +5, Extreme +10.

Anti-Aircraft Specialists (Sub-Force Commander Only)

All weapon attacks against airborne units receive a –2 to-hit modifier. Against all ground targets (including grounded aerospace units), apply a +1 to-hit modifier. This ability can only be taken by non-aerospace units; any aerospace units in a force with this ability do not gain its benefits.

Ground Attack Specialists (Sub-Force Commander Only)

All weapon attacks against non-airborne units receive a –2 to-hit modifier. Against all airborne targets (including airborne ground units, such as VTOLs and WiGEs), apply a +1 to-hit modifier. This ability can only be taken by aerospace units; any non-aerospace units in a force with this ability do not gain its benefits.

SATELLITES

As discussed under *Satellites* (see p. 16, *TO: AUE*), these units can be placed in low orbit or geo-synchronous orbit. How useful such Satellites are for ground-based battles is dependent on the ability to communicate with them and whether they are actually over the field of battle; a battle may extend beyond the reach of a stationary geo-synchronous orbit, or there may be overlapping low-orbit Satellites that provide a constant benefit as one passes out of range and another enters.

The following rules allow for limited implementation of these all-important (though often rare) resources in a scenario. These rules assume that the players in question are not actively deploying Satellite units in a scenario, but instead require a generalized set of rules for how to use whatever Satellites may be in orbit around a planet. If players are employing Satellites as units, they can feel free to wed these rules to those units, thus allowing aerospace units to attempt to engage and destroy the Satellites and deprive a side of the benefits they provide.

Note: Communications technology in the 31st century has progressed dramatically since the 20th century, but military communications jamming and signal corruption technology has possibly advanced even further. Combined with the relative abundance of power available to a fusion-powered unit, the signal interference ability of even a regular communications suite is tremendous. This makes unaugmented long-range communications difficult, sometimes requiring massive communications arrays that draw significant amounts of power to end up with performance that would be considered pathetic 1,000 years ago.

Also note that these rules play fast and loose with realism in an attempt to provide fun and useful in-game benefits that are relatively balanced within the context of a single scenario. In reality, the benefits often provided might require days if not weeks of observation from Satellites to generate a given bonus.

Establishing Uplink

Unless a commander knows exactly the type of Satellites in orbit around the target planet or brings his own (see *Satellite Imagers*, p. 163), he must use the communication equipment at his disposal to attempt to determine what Satellites (if any) are available over the battlefield and whether or not he can access them.

During the End Phase of any turn, the controlling player of a unit with a minimum 4 tons' worth of manned Communication Equipment (see p. 212, *TM*) may roll 2D6 to determine if a Satellite is available. On a result of 8+, there is a low-orbit Satellite that can provide a battlefield benefit. If the roll result is a 12, there is a geo-synchronous Satellite that can provide a battlefield benefit for the rest of the scenario. Only one such roll can be made per turn, and only one Satellite can be found per roll.

A player can continue to roll each turn (even if he rolls a 12) to see if additional Satellites are available, though only one Satellite of each type will be available at one time. For example, while a player may gain access to two different military low-orbit Satellites (after the first one passed out of sight), the player cannot roll two military Satellites at once and double the benefits. If the player rolls a type he has already rolled, re-roll. If the player is lucky enough to have access to all types of Satellites at one time, then he cannot roll for another Satellite until one type of Satellite has passed out of sight (meaning the number of turns that the Satellite's abilities are available has expired).

Only one side may be in control of a single Satellite at a time. However, instead of attempting a Satellite uplink, the player can attempt to hack control of the Satellite away from the other player (using a Target Number of 11 or higher, as noted below). Though only a single roll can be made in a turn per side to see if a Satellite is available, a player attempting to hack a Satellite(s) away from a controlling player can make a number of rolls per turn equal to the number of units that mount the required communications equipment, as noted above. If communications with a Satellite are hacked away from another player, the number of turns that the Satellite is available during a scenario remains unchanged. Because all Satellite abilities are direct movement and combat abilities that immediately take effect, the opponent will also immediately know what type of Satellite has been rolled.

If the world is controlled by the faction with which the force is associated (or for whom the mercenary force is working), the player automatically gains the Satellite's benefits; a roll still must be made to see if a Satellite is available, but communication is automatic.

If the world is controlled by a faction not associated with the force (a hostile or neutral faction toward that of the player's force), the player must hack into the Satellite. To do so, the force's controlling player must field a unit with at least 5 tons' worth of manned communication equipment. If the player has such a unit, he rolls 2D6; on a result of 9 or higher (11 or higher if the Satellite is controlled by a hostile faction), the Satellite has been hacked and an uplink established. As noted above under hacking control of a Satellite away from an opposing player, though only a single roll can be made in a turn per side to see if a Satellite is available, a player attempting to hack a Satellite can make a number of rolls per turn equal to the number of units that mount the required communications equipment.

Once communication with a Satellite has been established, the player rolls 1D6 to determine the type of Satellite and its game benefit on the Satellite Type Table (see p. 163); this roll is not made if the player hacks control of a Satellite away from another player (as that Satellite is already determined). Next, the player rolls 1D6 again, with the result being the number of turns that the player gains the benefit (before the Satellite passes out of sight). Benefits begin on the following turn.

These rules assume the players are using the specific advanced rules as noted on the Satellite Type Table. If players are not using a given rule, they can either re-roll for another Satellite that provides benefits that are in use in a given scenario, assume the Satellite is not available and not re-roll, or substitute their own rules that apply to the scenario they are playing.

Factions: Using the various fiction sourcebooks published for *BattleTech*, it should be readily apparent which factions are hostile or neutral toward each other. If the players cannot agree, assume the faction is neutral.

BattleMech Satellite Uplinks: BattleMechs are equipped with higher-powered communications equipment than other units. A MechWarrior can re-route power in the BattleMech to enhance these communication abilities, but at the price of leaving the BattleMech a sitting target.

During the End Phase of any turn, a player may announce that a BattleMech is attempting a Satellite uplink. The BattleMech cannot take any movement or combat actions (though it can make any Piloting Skill Rolls required by outside actions) in the following turn. For each subsequent turn in which the BattleMech takes no action, it can be used to determine if a Satellite is available, and/or to establish communications with a friendly Satellite; it cannot be used to hack a neutral or hostile Satellite.

Cockpit Command Console: A BattleMech mounting a cockpit command console (see p. 112, *TO: AUE*) may determine if a Satellite is available or attempt to establish a Satellite uplink with a friendly or neutral Satellite, but can do so and still move and fire normally in the subsequent turn, provided the second warrior does not need to take any actions to do so. For the turn following the turn in which the player announced that the BattleMech will determine if a Satellite is available, or establish a connection to a friendly or neutral Satellite, the +2 Initiative for the cockpit command console is lost. A cockpit command console cannot be used to hack into a hostile Satellite.

Pre-Determining Satellites: In place of randomly rolling Satellites, players can pre-determine the number and type of Satellites that might be available over a given planet, leaving both sides to try to zone in on their availability and establish communication.

Communications Equipment (Mobile HQs)

Units with massive communications capabilities can provide a commander with a decisive edge during battle. Such units are usually referred to as Mobile HQs.

Any unit that mounts 3 to 6 tons of communications equipment (see p. 212, *TM*) conveys a +1 Initiative modifier to that unit's side. If the unit mounts 7 or more tons of communications equipment, it conveys a +2 Initiative modifier to that unit's side.

In addition to the Initiative modifiers, a Mobile HQ can determine if a generic Satellite is available or attempt to establish communication with a generic Satellite (see *Establishing Uplink*, at

SATELLITE TYPE TABLE

1D6 Roll	Satellite Type	Benefit
1	Communications	1 unit for every 4 units fielded in a scenario (meaning if there are less than 4 units fielded, this ability has no effect) can increase all its weapons' maximum long range by 1 hex; short- and medium-range brackets (or long-range brackets, if using extreme range) are not affected (representing a comprehensive coordination of overlapping lines of fire).
2	Resource	For any terrain or terrain modification Planetary Conditions (see p. 40) where the outcome of entering a hex is uncertain (magma crust, geyser, breaking through ice, swamp and so on; the PSR for entering a water hex would not count), the player knows what will happen in the hex before entering it (representing long-term ground-penetrating imagery comparisons). If a roll is required after entering a planetary condition hex (to set off the geyser, break through the ice, avoid bogging down in the swamp and so on), the controlling player rolls before entering the hex, and then based on the die roll result can decide to enter the hex, or can change the unit's movement to avoid the hex.
3	Navigation	1 unit for every 4 units fielded in a scenario (meaning if there are less than 4 units fielded, this ability has no effect) can expend 1 additional Running/Flanking/Maximum Thrust MP beyond the unit's limits (representing a unit's ability to find the optimal path through the terrain based on detailed images). Units expending only Jumping, VTOL or UMU MP—meaning they do not select a Cruising/Flanking speed—do not gain this benefit.
4	Military	If the opposing side has hidden minefields, half of those fields (randomly determined; round down) are revealed. This occurs during the End Phase of any turn when communication is established with a new military Satellite. Additionally, for any enemy-controlled command-detonated minefields (including those laid by missile/artillery/bomb munitions), during the End Phase the player may roll 1D6 for each such minefield; on a result of 6, the minefield explodes, dealing its damage as normal.
5	Scientific	The sensors that monitor the various types of energies produced by a planet can be turned into a large-scale ECCM suite (see *ECCM*, p. 100) or Ghost Target generating suite (see *Ghost Targets*, p. 102), for the controlling player's side; the controlling player must nominate which effect will be used and it occurs for the duration of the use of that satellite (i.e. you cannot switch between abilities). For an ECCM, a scientific Satellite equals a single ECCM suite, but it covers the entire playing area. For Ghost Target generation, the controlling player must make the standard Piloting Skill Roll at the start of each turn, but at a +4 modifier in place of the standard +2; like the ECCM field, it covers the entire playing area
6	Weather	If weather Planetary Conditions (see p. 57) rules are in use, treat all weather as 1 condition less, to a minimum of the lightest weather condition (representing a crystal-clear image of the ebb and flow of a weather pattern and how a force can use that to its advantage). For example, Heavy Snowfall would become Moderate Snowfall and Moderate Rainfall would become Light Rainfall, but Light Rainfall would still be Light Rainfall.

left) or with a Satellite Imager (see below); if communication is established, those benefits replace the Initiative modifiers provided by the communications equipment for as long as the Satellite benefits are in effect.

If a vehicle acting as a Mobile HQ suffers a stabilizer critical hit (or a 'Mech takes a hip or gyro critical hit), in addition to the normal effects, the Initiative bonus (as well as any benefits from a Satellite/Satellite Imager) only applies if the unit did not expend any MP in the previous turn. If the vehicle suffers a Commander Hit critical hit, the HQ no longer grants the bonus (and loses communication with the Satellite/Satellite Imager, if any existed).

A side may only benefit from one Mobile HQ at a time; this includes a 'Mech mounting a cockpit command console cockpit (see p. 112, *TO: AUE*).

Large Craft: For the purposes of these rules only, Large Craft are considered to mount 7 or more tons of communications equipment.

Satellite Imagers

Satellite Imagers are specific pieces of equipment that provide several different types of abilities as noted in the *Advanced Weapons and Equipment* section (see p. 150). As noted in those rules, a unit must mount at least 4 tons of communications equipment (see p. 212, *TM*) to link with the imager, in which case it automatically conveys the benefits of the imager to that unit's side.

Electronic Countermeasures

A battlefield can be filled with electronic counter-measures attempting to block communications.

Any unit using equipment (as opposed to the warrior) to communicate in order to provide additional benefits (such as Initiative modifiers), that is located within the bubble effect of an enemy ECM field, loses that bonus; this includes Mobile HQs, the cockpit command console, units communicating with a Satellite and so on. If the unit moves outside the enemy

ECM's effect bubble (either through its own movement or due to the movement of the unit carrying the ECM), the benefit is restored—including communication with the Satellite, if it has not yet passed out of sight (that is, the number of turns in which its benefits apply has not expired)—at the start of the turn following the one when the unit clears the ECM bubble.

If using the ECCM rules (see p. 98), a unit is only blocked if the amount of friendly ECCM in a hex is less than the enemy ECM in that hex.

Communications Equipment: As described in the ECCM rules (see p. 98), communications equipment can be used to generate an ECCM effect, but doing so makes the equipment lose all its other abilities (the Initiative modifier, determining if a Satellite is available, establishing a Satellite uplink and so on) for as long as it is generating an ECCM effect.

During a battle, Christian is fielding a force that includes two 'Mechs each mounting a cockpit command console, a grounded DropShip and two Mobile HQs. His House Davion force is raiding a House Kurita world, and so all potential Satellites are considered hostile.

During the End Phase of a turn, one of Christian's cockpit command consoles is within the ECM bubble of an enemy unit and so cannot be used to determine if a Satellite is available. His other 'Mech mounting a cockpit command console is not within an ECM bubble. However, because a cockpit command console cannot hack into a hostile Satellite, he decides to not use the remaining 'Mech to determine if a Satellite is available (meaning he'll still gain the +2 Initiative modifier from that 'Mech's cockpit next turn).

Instead, Christian uses the DropShip to determine if a Satellite is available and rolls 2D6 (because he's using the DropShip, the +2 Initiative provided by it cannot be used in the following turn). The result is a 9, meaning a Satellite is available. It is a hostile Satellite, unfortunately (House Kurita to his House Davion), so he must attempt to hack in. He immediately rolls 2D6, but the result of 7 means the hacking failed. He can still attempt two more hacks for both Mobile HQs, however, and so nominates an HQ to attempt to hack the Satellite (once again, the +2 Initiative modifier from that Mobile HQ cannot be used in the following turn). He rolls 2D6 and scores an 11! He's hacked the Satellite. He then rolls 1D6 with a result of 4 and consults the Satellite Type Table. However, the players are not using minefields and so they determine he can re-roll (they determined this before play began). This time he rolls a 5, meaning he's established communication with a scientific Satellite; he's more than happy with that result, as the ECCM field will help combat all the ECM fielded by his opponent (as well as helping to disrupt the Satellite communications already established by the opponent). To wrap up this Satellite uplink, he rolls 1D6 with a result of 3, meaning the ECCM effect will last for three turns (provided communication is not interrupted or the opposing player does not hack away communication with the Satellite), starting on the following turn.

Finally, even though Christian cannot determine if another Satellite is available, he has 1 remaining HQ. As they're using weather Planetary Conditions and the opposing player was lucky enough to establish communication with a weather Satellite last turn—he rolled a 6, meaning Christian's opponent will gain those benefits for 5 more turns—Christian decides that because his attempts at getting an ECM into place to disrupt that communication have failed, he'll attempt a hack (he's got enough Initiative modifiers from still active commanders—as well as the cockpit command console not in an ECM bubble—to risk the loss of the +2 Initiative modifier from this Mobile HQ in the following turn). He rolls 2D6 with a result of 12!!! He's hacked his opponent's communications from the weather Satellite; he will gain the benefits of that Satellite starting in the following turn, for 5 more turns (provided communication is not interrupted or the opposing player does not hack back communication with the Satellite).



A Daboku *pilot ejects after a critical hit by a* Cyclops

EJECTION AND ABANDONING UNITS

The following rules allow for the ejecting from and/or abandoning of units during game play.

Electronics: All electronics on a unit where the pilot/crew have ejected or have abandoned the unit continue to function until the unit is destroyed (or captured; see *Taking Control of a Unit*, p. 184).

Unit Selection: Units a player controls that have been ejected from cannot be selected when that player is designating movement or attacks by their units.

ProtoMechs: ProtoMechs have no ejection system and no way to exit the unit during combat.

'MECHS

Under certain unfortunate conditions, a MechWarrior may be forced to leave his BattleMech in a hurry by using the cockpit ejection system. When the pilot fires this system, explosive bolts allow the cockpit canopy to separate from the unit and the pilot rockets away from the now-disabled BattleMech. The ejecting MechWarrior lands in the hex immediately behind the abandoned BattleMech. All BattleMechs are equipped with sensors that detect impending ammo explosions and automatically eject the pilot before the ammo explodes. Because the advent of CASE made it more likely for a BattleMech to survive an ammo explosion, many MechWarriors disable the auto-eject feature. Players must decide before each battle and note on the record sheet whether or not the pilot disables his 'Mech's auto-eject.

During the Movement Phase, a player may choose to have their MechWarrior eject rather than take any other action that phase. If the auto-eject function is operational and an ammo explosion occurs, the pilot automatically ejects before damage to the 'Mech is resolved (though the pilot still takes 2 points of damage due to ammo explosion feedback; see *Ammunition*, p. 125, *TW*). Ejecting from a 'Mech can be dangerous, and the pilot may suffer damage upon landing. The pilot must make a successful Piloting Skill Roll to avoid taking damage, modified for the circumstances listed on the Ejection Modifiers Table.

A pilot who fails this Piloting Skill Roll takes damage equal to the MoF divided by 2 (rounded down), and will need to make a Consciousness Roll for every point of damage taken per the standard rules (see *Consciousness Rolls*, p. 41, *TW*).

A conscious pilot who successfully ejects may move at the rate of 1 MP per turn in the same manner as a standard infantry unit. He may be fired on in the same manner as an infantry unit, but with an additional +2 to-hit modifier. If the pilot ends a Movement Phase in the same hex as any unit (friendly or enemy), the pilot is considered to have been picked up in the End Phase; he may choose by which unit if more than one occupies the hex. Pilots picked up by friendly units that survive the battle or move off the board have survived and can be used again in future games. Players may ransom pilots captured by enemy forces if they wish.

Destruction of Head Location: If players are looking for a slightly less deadly style of play involving MechWarriors—specifically if they are playing a campaign—use the following rule. Any time the internal structure of a cockpit location is destroyed and the unit has an ejection system (not counting a *BattleMech Full-Head Ejection System*, see p. 122, *TO: AUE*), the auto-eject automatically engages. However, regardless of the condition of the pilot, the MechWarrior automatically receives damage to bring its condition up to 5 hits (so a pilot with no hits and a pilot with 3 hits under these rules would both fill out their condition monitors to 5 hits, to represent the MechWarrior's "skin-of-the-teeth" survival). The pilot may still take damage during the ejection itself, and these rules do not apply in the event of a critical hit to a cockpit slot (in which case the pilot is still killed).

BattleMech Full-Head Ejection System: This type of ejection involves the removal of the entire 'Mech's head and follows its own set of rules (see p. 122, *TO: AUE*). If the head itself is destroyed (as described above), this form of ejection system will not save the MechWarrior.

Multi-Pilot Setups: In the case of 'Mechs with multiple pilots (such as one with a cockpit command console), each pilot makes its own Piloting Skill Roll when ejecting.

Water: A MechWarrior cannot eject if the cockpit is submerged (unless it is a full-head eject system; see above).

EJECTION MODIFIERS TABLE

Landing Terrain	Modifier
Clear	–2
Water	–1
Snow	–1
Deep Snow	–2
Rough	0
Rubble	0
Light Jungle/Woods/Ultra Rough	+2
Heavy Jungle/Woods/Ultra Rubble	+3
Ultra Jungle/Woods	+4
Per Level of Building	+1

Planetary Conditions	Modifier
Zero-G	+3
Low-G (more than .2 off Terran standard)	+2
High-G (more than .2 off Terran standard)	+3
Vacuum or Tainted Atmosphere*	+3
Trace or Very High Pressure Atmosphere	+2
Heavy Snowfall/Ice Storm/Lightning Storm/ Strong Gale/Torrential Downpour	+2
Blizzard/Storm/Tornado	+3

Situation	Modifier
BattleMech Prone	+5
Pilot Unconscious	+3
Per Point of Head Internal Structure Damage	+1
Automatic Ejection	+1

*Assumes the pilot is wearing a suit to protect against vacuum or a tainted atmosphere; the pilot is killed immediately if in vacuum with no protection (see p. 56 for rules governing a tainted atmosphere and no protection).

VEHICLES

Vehicles do not have an automatic ejection system like BattleMechs (see *Combat Vehicle Escape Pod*, p. 121, *TO: AUE*, for the exception). However, during the End Phase of any turn, a player may announce that the crew of a vehicle is abandoning it. The unit may not take any action during the subsequent turn. During the End Phase of that turn, the crew (however large; see *Vehicle Crews*, p. 186) is treated as an infantry foot platoon (ballistic rifle), with a number of troopers in the platoon equal to the size of the crew. The crew (now platoon) is placed in the same hex (if stacking limits allow) or an adjacent legal hex; if the crew cannot enter a legal hex, they cannot abandon the vehicle. Starting in the turn after they abandon their vehicle, the crew can move and make attacks exactly like a foot infantry platoon for the remainder of the scenario.

Infantry may abandon an airborne vehicle in this same fashion, in which case the vehicle immediately crashes in the hex it occupies. The infantry must use the *Dropping Troops* rules (pages 22-23 of *Strategic Operations*) to resolve where they land, after which they are treated as above.

NAVAL VESSELS

In the Movement Phase, some or all of a Naval Vessel's crew may be ordered to abandon ship. When abandoning ship, make a Piloting Skill Roll for the unit. A success indicates 1 + MoS lifeboats may launch safely (1 on an MoS of 0, 3 on an MoS of 2, and so on). Additional lifeboats may launch in the same turn, but each must make a Piloting Skill Roll with a +2 modifier, suffering a point of damage for each point of the MoF.

When crewmen abandon a naval vessel, lifeboats are placed in adjacent water hexes. These lifeboats count as a conventional infantry unit for purposes of stacking, and for attacks against them. Each lifeboat has a damage capacity equal to 1 point (for the boat) plus 1 "trooper" per crewman on board (to a maximum of 10 troopers per boat). Lifeboats have 1 MP on water hexes only.

If a crew abandons a submerged vessel, the lifeboat is placed as above, but at the depth level of the ship; the lifeboat will then rise 1 depth at the end of the Movement Phase each turn until it reaches the surface, before moving as noted above.

Individual crewmen can also abandon ship (using life vests and/or breathing gear, as necessary), but may do so only from a surface vessel or a submerged vessel at a Depth of 15 or less. Crewmen who abandon ship in this manner receive 0 MP, and will simply float on the water surface, subject to Water Flow rules if those are in play (see p. 50).

Another naval vessel (or a hover vehicle; or non-naval vehicle with the Amphibious chassis modification; or a WiGE Vehicle that lands on the water's surface) may rescue crew from any lifeboats if it ends its turn in a lifeboat's hex (or adjacent to it, if the rescuing unit is a Large-size Naval Vessel), and then takes no other actions for the subsequent turn. During the End Phase of that subsequent turn, the crew from the lifeboat is rescued and now considered to be on board the rescuing vessel. If the rescuing unit moves out of the hex before the End Phase for any reason, the rescue operation fails, but can be attempted again any number of times, as long as the criteria above are met.

VTOLs and Airships may also attempt to rescue a lifeboat or individual crewmen without landing on the surface of the water. These units must end their turn in the hex occupied by the lifeboat or individual crewmen and must be at Elevation 1, or Altitude 1 (NOE) in the case of an Airship; for a Large Airship, the pivot point hex must be in the hex occupied by the lifeboat. Over the next two subsequent turns, the rescuing unit cannot take any other action (except to spend MP to stay in the hex). At the end of that time, the crew from the lifeboat is rescued. As with a naval rescue, if the rescuing unit moves out of the hex (or to a higher elevation) for any reason before the rescue operation is completed, the operation fails, but can be attempted again in a following turn.

Only one lifeboat (or 10 individual crewmen) may be rescued per turn in either case (if the rescuing unit is a multi-hex unit, such as a Large Naval Vessel, it can rescue one lifeboat—or 10 crewmen—per hex that touches water and is adjacent to a lifeboat, per the above criteria). A rescuing unit must also have enough cargo space to accommodate an equivalent number of conventional foot infantry for the rescued crewmen, assessed at 0.1 tons per crewman. So if a vessel picks up ten full lifeboats, it must have the cargo capacity to carry a 100-man conventional foot infantry platoon [10 lifeboats x 10 crewmen each = 100] or 10 tons of cargo space [100 x 0.1 = 10].

FATIGUE

A standard *BattleTech* game turn lasts only 10 seconds, meaning that even a battle of 20 to 30 turns is only five minutes long. As such, Standard Rules play generally ignores fatigue. However, combat is exceptionally draining, emotionally and physically; seconds can seem like minutes, and five minutes can feel like hours. Use the following rules to introduce the concept of battle fatigue directly into a *BattleTech* game.

A unit's ability to ignore fatigue is based on its rating (as determined by its Gunnery or Anti-'Mech skill, whichever is better), as shown on the Fatigue Table. When a unit reaches the start of its target turn, apply a +1 Piloting Skill Roll for the remainder of the scenario. In addition, when a unit reaches the next level's starting point, also apply a +1 to-hit modifier to all attacks. For example, at the start of Turn 10, all Green units would apply a +1 Piloting Skill Roll modifier. Then, at the start of Turn 14, all Regular units would also apply a +1 Piloting Skill Roll modifier, while the Green units would add a +1 to-hit modifier to all attacks. Note that this means Elite pilots never apply a to-hit modifier.

Conventional Infantry: In addition to the restriction above, Foot Conventional Infantry, once they are fatigued, can either move, or they can make a weapon attack, or they can make a anti-'Mech attack in a turn; i.e. in a turn a fatigued Foot Conventional Infantry may take only 1 of those three actions. If a fatigued Foot Conventional Infantry unit takes no actions in a turn (does not expend MPs or make any type of attack), then in the following turn it may move and make attacks normally; this is not cumulative, so that if a unit takes no actions for two turns, it would still only be able to move and attack normally on the following turn, but on the turn after that the unit would be back to a single action per turn restriction.

FATIGUE TABLE

Piloting Skill Rating	Turn When Modifier Starts
6–7	Starting on Turn 10
4–5	Starting on Turn 14
2–3	Starting on Turn 17
0–1	Starting on Turn 20

IMPROVED POSITIONS

Given enough time, a defending unit can improve the natural defenses of the surrounding terrain. If both sides agree to use the improved positions rule, units that start on the mapsheet may begin the game in improved positions. Treat these field fortifications as a Light Standard Building with a CF of 15 (damage is assigned to them exactly like building hexes, including collapsing and so on). These positions do not affect LOS or movement, and a unit cannot climb on top of an improved position to increase its level. Apply standard terrain modifiers to any unit in an improved position. Units that begin the game in improved positions may also use the *Hidden Units* rule (see p. 259, *TW*).

Improved positions can be used by any player; if the controlling player moves units out of an improved position, an opponent can move into those same improved positions and gain their benefits. Improved positions cannot be used to make units hidden during a scenario, however.

INFANTRY VS. INFANTRY ACTIONS

The infantry vs. infantry actions rules allow for the large-scale resolution of infantry-only combat. While this system can be used in almost any situation the players desire, because it is a wholly separate combat—with infantry literally removed from standard *BattleTech* combat while these rules are in play—it is best used in situations where normally only infantry will fight infantry: in buildings, or during boarding actions involving Large Naval Vessels or Small and Large Craft.

Regardless of the location, the basics of infantry vs. infantry actions remain the same. The following rules provide those basics, as well as touching on the unique rules that also apply to combat within buildings, Large Naval Vessels and aerospace units.

BOARDING ACTIONS (INFANTRY)

Boarding an enemy unit (whether a large traditional wet-navy vessel or an aerospace unit) is a tactic as old as naval warfare. The rules specifically refer to the use of infantry to board an enemy unit, move into the bowels of the vessel and fight the defenders for control of the ship; other units boarding an enemy unit for an attack inside a vessel are dealt with under *Boarding Actions (Non-Infantry)* (see p. 156). The basics of such actions are the same, regardless of which unit type is being boarded. The specifics unique to each type of unit are described in detail, as appropriate.

Legal Targets: Only Large Naval Vessel Support Vehicles, Small Craft and Large Craft may be boarded using these rules. Players can choose to either use these rules, or the *Combat Within Buildings* rules (see p. 175, *TW*) when resolving infantry actions inside a Mobile Structure.

Docking and Grappling Aerospace Units

Before an infantry vs. infantry action can occur aboard an aerospace unit, an opponent must either dock or grapple with the target unit.

A Large Craft can only dock with a target unit for a boarding action if that target unit cannot expend any thrust points in the turn the docking maneuver is attempted (meaning it has taken damage that disallows thrust expenditure). The Large Craft must end the Movement Phase in the same hex as its target and match velocity and heading with the defending unit. At the end of the Movement Phase (Aerospace), a Large Craft that has matched velocity and heading with a defending unit may attempt to dock with a target that cannot expend thrust. Roll 2D6 to determine the success of the docking attempt against a Target Number of 8. Apply a cumulative –2 modifier for each turn in which the attacker matches the defender's velocity and heading; if during any subsequent turn the defender expends thrust, not only can the attacker no longer dock, but the cumulative count modifier is lost.

Any Small Craft may operate as an assault craft to dock with a target, regardless of whether or not the target can expend thrust points. Each ton of cargo space on a Small Craft can hold five marines in space suits or one marine (or Elemental) in battle armor. To grapple a target unit for a boarding action, the Small Craft must end the Movement Phase in the same hex as its target and match velocity and heading with the defending unit. At the end of the Movement Phase (Aerospace), a Small Craft that has matched velocity and heading with a defending unit may attempt to grapple the target. Roll 2D6 to determine the success of grappling, against a Target Number of 8. A successful roll attaches a grapple to the target ship and allows the Small Craft to deploy forces to board it. Apply a +2 modifier to any target numbers for attacks against Small Craft that made a grapple attempt that turn, to reflect the erratic maneuvers such units make to avoid enemy fire during the approach.

In both instances, if a docking/grappling maneuver is successful, both the attacking and defending players should roll 1D6 to randomly determine the location on both aerospace units where the docking/grappling occurred: 1 Nose; 2 Left-Front/Left-Wing; 3 Right-Front/Right-Wing; 4 Left-Aft/Left-Wing Aft; 5 Right-Aft/Right-Wing Aft; and 6 Aft. This roll applies regardless of the defending unit type; docking never occurs on the "broad side" of a WarShip, as captains are never suicidal enough to try to maneuver themselves in front of that many guns.

In the End Phase of any space turn during a boarding action, the player who controls the attacking aerospace unit can announce that the unit will disconnect from the dock/grapple, leaving the marine boarding action to continue. No roll is required, and the attacking unit is once again counted for Initiative (see *Initiative*, below) at the start of the following turn and can maneuver normally.

Attacks From Attacking and Defending Aerospace Units: Neither the defending nor attacking aerospace unit can make any attacks using weapons in the arc where the docking/grappling occurred (as determined by the random die roll noted above). The only exceptions are when different unit classifications are involved; for example, Small Craft to DropShips. If a smaller-class unit is docked/grappled to a unit with a larger classification, the smaller unit still cannot use the weapons in the arc where the docking/grappling occurred, but the larger unit can use weapons in its arc; this applies regardless of whether the smaller or larger unit is the defender or attacker. For example, a Small Craft grappled to a DropShip on its aft could not use any aft weapons, but the defending unit can still fire its weapons in the Fore-Front Arc.

Attacking a Docked/Grappled Unit: The ability to attack a defending or attacking aerospace unit in a boarding action depends on the unit classification, as discussed above under *Attacks From Attacking and Defending Aerospace Units*.

Attacks against a target aerospace unit in a smaller classification than another docked/grappled aerospace unit, in which the attack direction corresponds to the location where the larger aerospace unit is attached, cannot be made. For example, an aerospace unit is attempting to attack a Small Craft grappled to a DropShip. The DropShip is attached to the Small Craft's aft location, and the line of sight from the

attacker to the target Small Craft falls into the aft location. This attack cannot be made because LOS is blocked by the DropShip. In the case of an Above/Below situation (see p. 238, *TW*), an attack can be made, but once a successful weapon attack occurs, the attacking player must roll 1D6. On a result of 1–3, the attack strikes the intended target; on a result of 4–6, the attack strikes the other aerospace unit. In a situation where multiple aerospace units are docked to a target, randomly determine which other aerospace unit is struck.

Attacks against a target aerospace unit in a larger unit classification than another docked/grappled aerospace unit can be made. If the location of the successful attack corresponds to the location where another aerospace unit is docked/grappled, the attack has a chance of striking the other aerospace unit. The attacking player rolls 1D6. If the aerospace unit in question is a single classification smaller (a Small Craft grappled to a DropShip), on a result of 5–6 the attack strikes that other aerospace unit; on a result of 1–4, it strikes the intended target.

In all such instances, make sure to take into account the orientation of the other aerospace unit that is struck, to best determine where the attack lands. Players may need to randomly roll to determine the hit location, as it may not be clear-cut.

Expending Thrust: An attacking aerospace unit that is docked/grappled cannot expend thrust, as doing so will automatically break the dock/grapple; the attacking aerospace unit would need to match velocity and heading during the Movement Phase (Aerospace) of a subsequent turn and attempt a new dock/grapple maneuver. If the defending aerospace unit changes velocity, the attacking player must make a standard grapple/docking roll at the end of the Movement Phase (Aerospace) in which that change occurred; apply a +1 modifier for every 2 points of velocity change.

Initiative: Aerospace units that are docked or grappled for a boarding action do not count toward Initiative. If the aerospace unit breaks away from the dock/grapple for any reason, it counts toward Initiative in the following turn.

Multiple Docking/Grappling: A Small Craft can only be docked/grappled by a single unit at one time; this means that if two Small Craft are docked/grappled, then no other aerospace units can attempt to dock/grapple with either unit. A DropShip can only be docked/grappled by two units at one time, but not in the same arc; re-roll the random arc location for the defending unit if that location is already occupied by another unit. In all instances, if an attacking unit breaks the dock/grapple, a new attacking unit can attempt to dock/grapple in a subsequent turn.

Grappling Large Naval Vessels

Similar to aerospace units attempting to grapple a target in the depths of space, any Small or Medium Combat/Support Naval Vessel, any type of Hover Vehicle, VTOL Vehicle or any type of Airship may attempt to grapple an enemy Large Naval Vessel Support Vehicle.

To grapple a target unit for a boarding action, the vehicle in question must end the Movement Phase in a hex adjacent to a hex occupied by the target (this cannot be at its front or rear), with the same orientation; in the case of Airships, this can either be an adjacent hex or a hex occupied by the target vessel, but the Airship must be at Altitude 1 (NOE); for VTOLs, if the unit occupies the same hex, it must be at least 1 elevation above the top level (deck) of the target unit. At the end of the Movement Phase (Ground), a vehicle in a hex adjacent to the target may attempt to grapple it. Roll 2D6 to determine the success of grappling, against a Target Number 6 (if the target unit is completely submerged, the Target Number is 8). A successful roll attaches a grapple to the target ship and allows the grappling vehicle to deploy forces to board it; all infantry units (as well as all other ship crew/personnel) currently carried by the attacking vessel can be used in the boarding action (except for mechanized infantry). All actions occur during the time frame of a ground turn, as opposed to a space turn. If the grappling roll fails, the vehicle can attempt the grapple again at the end of the following turn's Movement Phase, provided it is still adjacent to the target vessel.

When grappling a target vessel, use the Large Naval Template (see the record sheets at the back of the book) to determine where on the unit the grappling occurred (in the case of Airships above the target vessel, neither unit blocks any arcs); in all cases, the attacking vessel will have the same orientation as the target vessel. Neither the defending nor attacking units can make any attacks using weapons in the same arc where the grappling occurred (this applies to Airships as well).

Infantry Grappling: As opposed to an infantry-carrying vehicle grapping a Large Naval Vessel in order to deploy infantry troops (as noted above), infantry units alone can attempt to board and seize control of an enemy Large Naval Vessel Support Vehicle. Mechanized infantry (except VTOL mechanized infantry) cannot be involved in such an action.

Infantry units without Jumping, VTOL or UMU MP cannot board a target Large Naval Vessel Support Vehicle unless it is in an adjacent hex to the one occupied by the infantry unit at the start of the infantry's Ground Movement Phase (this can include a land hex occupied by an infantry unit, or by another Large Naval Vessel Support Vehicle where the infantry is on the deck (as opposed to being carried using the *Infantry Carriers* rules, p. 223, *TW*).

Infantry units with Jumping or VTOL MP can mount a target naval vessel provided they can move the required number of hexes to the target, within the number of MP they have available (all standard Jumping and VTOL movement rules apply; see pp. 53–54, *TW*).

Infantry units with UMU MP can mount a target naval vessel, provided they are at the same depth (any depth corresponding to one of the depths occupied by the target unit in the case of a unit that occupies more than 1 depth simultaneously) and in the same hex as the naval vessel (either submerged or on the surface) at the start of their Ground Movement Phase.

In all instances of infantry attempting to board the target vessel, the unit must make an Anti-'Mech Skill Roll (apply a +2 modifier if the target unit is submerged). A successful roll allows the infantry to board the vessel; a failure means the attempt did not succeed, and the infantry unit remains in the hex at the level/depth/elevation from which it attempted to board. In the case of infantry using UMU MP to board a target vessel, on a failed attempt, apply a single point of damage to all battle armored troopers, or in the case of conventional infantry, apply a single 5-point Damage Value grouping as though another infantry unit had made a successful attack.

Once an infantry unit has successfully boarded the vessel, at the controlling player's discretion it can either remain "on deck" and move and fight using standard movement and combat (see *Specialized Attacks*, p. 24, *TO: AUE*), or it can actually move into the bowels of the vessel to attempt to take control. In the latter case, the infantry are removed from the playing area and an infantry vs. infantry action takes place.

Grappling Mobile Structures

Use the following rules to grapple Mobile Structures; once a grapple has occurred, an infantry vs. infantry action is treated as conflict inside a building. All actions occur during the time frame of a ground turn, as opposed to a space turn.

Water: For Water Mobile Structures, use all the rules that apply to Large Naval Vessels.

Ground: Any vehicle in an adjacent hex to a Ground Mobile Structure may attempt a grapple. To grapple a target unit for a boarding action, the vehicle in question must end the Movement Phase in a hex adjacent to a hex occupied by the target (the orientation does not matter); in the case of Airships, this can either be an adjacent hex or a hex occupied by the target vessel, but the Airship must be at Altitude 1 (NOE). At the end of the Movement Phase (Ground), a vehicle in a hex adjacent to the target may attempt to grapple it. Roll 2D6 to determine the success of grappling, against a Target Number 4. A successful roll attaches a grapple to the target ship and allows the grappling vehicle to deploy forces to board it; all infantry units (as well as all other ship crew/personnel) currently carried by the attacking vessel can be used in the boarding action (except for mechanized infantry). If the grappling roll fails, the vehicle can attempt the grapple again at the end of the following turn's Movement Phase, provided it is still adjacent to the target vessel.

Air: Any Air Mobile Structure or Airship can attempt to grapple an Air Mobile Structure; if the Air Mobile Structure is at Altitude 1 (NOE), an airborne VTOL (regardless of elevation) may attempt to grapple as well. To grapple a target unit for a boarding action, the unit in question must end the Movement Phase in the same hex and at the same altitude as the target unit. At the end of the Movement Phase (Ground), a vehicle in a hex adjacent to the target may attempt to grapple it. Roll 2D6 to determine the success of grappling, against a Target Number 8. A successful roll attaches a grapple to the target ship and allows the grappling vehicle to deploy forces to board it; all infantry units (as well as all other ship crew/personnel) currently carried by the attacking vessel can be used in the boarding action (except for mechanized infantry). If the grappling roll fails, the vehicle can attempt the grapple again at the end of the following turn's Movement Phase, provided it is still adjacent to the target unit.

Infantry Grappling: All the rules for infantry grappling of a Large Naval Vessel also apply, as appropriate, to Mobile Structures.

INFANTRY VS. INFANTRY ACTION INSIDE A BUILDING

Unlike Large Naval Vessels and aerospace units, which require an opponent to board the unit—which can be difficult—before an infantry vs. infantry action can take place, combat inside any type of building can take place as soon as an infantry unit enters a building hex (see *Castles Brians*, p. 139, for the exception).

Note that such infantry vs. infantry action only occurs with those infantry (and other personnel, as described under *Resolving Infantry Vs. Infantry Actions*, below) occupying the same multi-hex building. Even if infantry on either player's side are in adjacent building hexes, if the building hexes are not a part of the multi-hex building being fought over, they cannot be used until those units are moved into the same multi-hex building and added to a future turn's Marine Points Score.

RESOLVING INFANTRY VS. INFANTRY ACTIONS

Use the following rules to resolve an infantry vs. infantry combat situation.

Marines: These rules use the term "marine" as a generic word to describe a single trooper, the baseline from which all other personnel are valued (whether a conventional infantryman for a ground-based action, or an infantryman trained in zero-g operations for actions on board Small and Large Craft in space).

Marine Points Score

To determine the result of an infantry vs. infantry action, first establish the total number of combatants fielded by each side; how many marines (or other combatants) are added to each side is up to the controlling player (for example, a controlling player can hold some marines in reserve). Adding up the Marine Points for the relevant troop types as shown on the Marine Points Table below will generate a final Marine Points Score for each unit.

In the case of battle armor, the player first determines whether the trooper is a Clan Elemental or an Inner Sphere-trained warrior, and then adds the appropriate modifier based on the type of battle armor, as well as any additional equipment modifiers.

Most unit record sheets (or Technical Readout write-ups) indicate the number of marines, non-marines (military personnel not specifically trained for combat in micro-gravity), civilians and so on. If it is at all ambiguous, the players must agree to the exact personnel allotment before a boarding action can begin.

Crew: When an infantry vs. infantry action occurs where crew may get involved (for example, on a target unit, a Mobile Structure, or a building mounting weaponry and so possessing "crew"), the crewmen must be taken into consideration for the Marine Points Score.

Neither the attacker's nor the defender's crew (if both sides have such crews available) are automatically tallied into the Marine Points Score. Instead, each player must decide how much of each unit's crew (including a building crew, if any) will be committed to the attack for each turn that an infantry vs. infantry action roll is made. The more crew committed to the attack, the more the unit's performance degrades. Use the Crew Casualties Table (see p. 174) to determine the exact effects; each crewmember hit imposes a +1 to-hit modifier for any attacks made by that unit, as well as a +1 modifier for any Piloting Skill Rolls/Control Rolls, for the duration of the time that those crew are committed to the infantry vs. infantry action.

As shown under the *Crew Losses and Crew Hits* rules (see p. 174), these values can last for the rest of the game if a unit's crew sustained heavy damage, whether or not the infantry vs. infantry action is successful. While this may be preferable to losing the unit/building, such things must be taken into consideration as a player determines how much of a crew to throw into the battle.

During each turn's infantry vs. infantry action roll (see p. 172), both players can add more crew at their discretion; doing so, however, requires re-determining either side's Marine Points Score. Neither player need reveal how many additional crew (or bay personnel or civilians, as noted below)

MARINE POINTS TABLES

Trooper Type	Marine Point Values (each)
Clan Battle Armor Weight Class	
Elemental trooper without armor	2
PA(L)	+0
Light/Medium	+1
Heavy	+2
Assault	+3
Inner Sphere Battle Armor Weight Class	
Inner Sphere battle armor trooper w/out armor	1
PA(L)	+0
Light/Medium	+1
Heavy	+2
Assault	+3
Marine	1
Any Marine wearing armor with a 2 or more Damage Divisor*	2
Non-combat unit crew/fighter pilot	0.25
Non-marine soldiers (MechWarriors/vehicles/infantry)	0.5
Other (civilians)	0.1

*See *Infantry Armor*, p. 317. Even if a Clan Elemental wears such armor, the Marine Point Value is never more than 2 per trooper.

Battle Armor Modifiers (cumulative)	Marine Point Values (per trooper)
Quad*	–1
Mounts one or more Burst-Fire Weapons**	+1
Mounts Space Operations Adaptation*	+1
Mounts magnetic clamps*	+1
Mounts paired magnetic or vibro-claws	+2
Mounts paired other claws	+1
Mounts one or more heavy battle claws of any type	+.25
Mounts one or more cutting torches	+.25
Mounts one or more industrial drills	+.25

*Only applies in microgravity **Any weapon as shown on the Burst-Fire Weapon Damage Vs. Conventional Infantry Table (see p. 217, *TW*)

BAY PERSONNEL TABLE

Bay Type	Units Carried	Unit Personnel	Technicians
'Mech	1 'Mech	1	1
ProtoMech Point	5 ProtoMechs	5	1
Light Vehicle*	1 Light Vehicle	4	1
Heavy Vehicle†	1 Heavy Vehicle	7	1
Super-Heavy Vehicles‡	1 Super-Heavy	10	1
Fighter	1 fighter	1	1
Small Craft	1 Small Craft	4	1
Battle armor Squad (IS)	4 troopers	4	2
Battle Armor Point (Clan)	5 troopers	5	1
Battle Armor Squad (CS/WoB)	6 troopers	6	2
Mechanized Infantry Squad§	5 troopers	5	1
Infantry Platoon (Foot)	28 troopers	28	0
Infantry Platoon (Jump)	21 troopers	21	0
Infantry Platoon (Motor)	28 troopers	28	0

*Light Vehicles include all vehicles with a mass up to 50 tons.
†Heavy Vehicles include all vehicles with a mass over 50 tons, up to 100 tons.
‡Super-Heavy Vehicles include all vehicles with a mass over 100 tons, up to 200 tons.
§This includes all types of mechanized infantry, such that a Mechanized Tracked (Rifle) Platoon of 28 troopers would require 6 bays, equaling 28 unit personnel and 6 technicians.

are being added to the Marine Points Score until the roll is made. Both players should write down the number of crew used and the equivalent Marine Points Scores they provide, and then reveal them simultaneously; this helps to convey the dangers and confusion inherent in infantry vs. infantry actions.

Finally, if a unit has already taken a crew critical hit, that hit represents crew eliminated and must be taken into consideration. Use the Crew Casualties Table (see p. 174) to determine what percentage of the crew has been eliminated, and what percentage remains viable for use in any infantry vs. infantry actions.

Bay Personnel: The term "bay personnel" (as shown on record sheets and in Technical Readout write-ups for various units) includes aerospace pilots, MechWarriors and so on, along with their technicians. If a building mounts a transport bay, it also will have bay personnel. The specific composition of bay personnel does not need to be determined for standard rules or any other advanced-rules situations provided in *Tactical Operations*, and so construction rules do not cover this aspect. However, because such specifics are relevant to infantry vs. infantry actions (as well as converting the Marine Points Score back into individuals once the infantry vs. infantry action is over; see p. 173), the Bay Personnel Table (above) allows a player to specifically determine the bay personnel of a given unit/building (if it is not already determined). For example, if aerospace fighters have been deployed, or 'Mechs or vehicles dismounted, and so on, those warriors cannot be included in a Marine Points Score. However, every such unit also includes a single technician, as shown on the table, that would remain behind and can be used in an infantry vs. infantry action roll.

Civilians: Civilians never willingly join a fight; most would rather be captured than risk death fighting without any training. In every turn that the defender wishes to include civilians in determining a Marine Points Score, the controlling player must roll against a Target Number of 10. In every turn that the attacker wishes to include civilians in determining a Marine Points Score, the controlling player must roll against a Target Number of 12. If a roll fails, civilians cannot be included when determining a Marine Points Score.

Most Technical Readouts note how many civilians a given unit might have on board; the players will need to determine if said civilians are actually on board. Whether a particular building might have civilians, and how many, is completely up to the discretion of a given playing group and would depend on the time of day and the type of building (factory, mall, office and so on).

Large-Scale Infantry Vs. Infantry Actions: Some infantry vs. infantry actions are so large that to determine the exact make-up of an attacking and defending force would take an excessive amount of time. Alternatively, players may simply wish to resolve such actions more quickly than taking the time to determine the specific forces involved.

In such cases, instead of the more detailed Marine Points Score resolution for battle armor provided by the Marine Points Table, players may simply apply the following values across the board: 4 points for each Inner Sphere Battle Armor unit; 5 points for each Clan Battle Armor unit (no battle armor modifiers from the Marine Points Table are applied when using this simplified rule). For all other infantry, apply the standard 1 point for each marine and a half-point for all other non-marine personnel.

An infantry vs. infantry action after breaching the doors of a Castles Brian is underway (much to the player's shock). The defending player didn't think a breach would be possible, and so he deployed all his marines (his standard infantry) onto the playing area where a raging battle is taking place. Given the various weaponry mounted in the Castles Brian and its transport bays, the player knows he has 309 enlisted/non-rated personnel available. However, he did not provide any further detail on these individuals and so the players determine they are not marines. In an effort to stave off the potential fall of the Castles Brian, while not completely depriving the outside battle of the Castles Brian's defenses, he decides to throw 80 crewmen at the fight.

The defender first determines how this will affect the Castles Brian and finds it will add a +2 modifier to all weapon attacks for as long as those crewmen are occupied in the infantry vs. infantry action [80 (crew used in the fight) / 309 (total crew of the Castles Brian*) = 25 percent (checking the Crew Casualties Table, that equates to 2 Crew Hits or a +2 modifier)].*



A large group of conventional infantry join in the defense against pirates.

The defender then determines his Marine Points Score, which is 20 [80 (crew used in the fight) x .25 (non-combat unit crew/fighter pilot modifier) = 20].

The Castles Brian is being attacked by a mixed Star with a Marine Points Score of 100 [15 ((five Clan standard Salamander battle armor; medium weight class = 3 each) + 5 (each mounts a burst-fire weapon) + 5 (each mounts paired claws)) + 10 ((five Clan Aerie battle armor; PA(L) weight class = 2 each) +5 (each mounts Space Operations Adaptation)) + 15 ((five standard Clan Elemental battle armor with machine guns; medium weight class = 3 each) + 5 (each mounts a burst-fire weapon)) + 25 ((five Clan Rock Golems; assault weight class = 5 each) + 5 (each mounts a burst-fire weapon)) + 10 (five Clan Elementals without battle armor) = 100].

Building Modifier

Buildings cover a vast range of sizes, from a single level, single-hex building, to as large as players wish to build them. The different types of buildings are also a factor, with military structures designed with defense in mind. In reality, clearing out a massive, multi-level fortress—where the defenders know every back door and crawl space—could take days, if not weeks. To reflect a defender's intimate knowledge of such large buildings while keeping these events within a time frame that allows them to play out on a game table with other actions, the following rule equates "time" to a defender's bonus for ease of play.

After determining the defender's Marine Points Score as noted above, multiply that value by the value shown on the Building Modifiers Table. These modifiers only apply if all levels are composed of at least 60 hexes. If some of a building's levels are less than 60 hexes, the modifiers would not apply. For example, a Standard building with 30 levels in which only 23 of those levels were composed of at least 60 hexes each (the top of the building tapers upward) would only apply a .3 modifier to the Marine Points Score; if 24 of the levels were composed of at least 60 hexes, then the modifier would be .4. Round all fractions up.

The Castles Brian in the example above has ten levels, each with more than 60 hexes per level. This provides a multiplier of 1.9 (a .1 modifier per Castles Brian level above the first). This results in a final defending Marine Points Score of 38 [20 (initial Marine Points Score) x 1.9 (unit size modifier) = 38).

BUILDING MODIFIERS TABLE

Building Type	Modifier*
Hangar	No Modifier
Standard	.1 Per 6 Levels
Gun Emplacement/Fortress	.1 Per 3 Levels
Castles Brian	.1 Per Level

*Beyond the first level

Ratio of Attackers vs. Defenders

After determining the Marine Points Score for each side, determine the ratio of attackers to defenders. It is unlikely that the ratio will exactly match one of those on the Infantry Vs. Infantry Action Table; in such circumstances, round in favor of the defender. For example, a ratio of 2.1:1 in the attacker's favor would become 2:1, while 1.4:1 would become 1:1.

> *In the above examples of the Castles Brian, the ratio of attacker to defender is 2:1 [100 (attacker Marine Points Score) / 38 (defender Marine Points Score) = 2.6:1 (rounding in the defender's favor to 2:1)].*

Infantry vs. Infantry Action Roll

After determining the final attacker to defender ratio, players can begin to resolve the infantry vs. infantry action. The first infantry vs. infantry action roll is made during the End Phase of the turn in which a successful docking or grappling action occurred (in the case of a unit), or after an infantry unit enters a building hex; for airborne aerospace units in space, this occurs at the end of the space turn. Each subsequent infantry vs. infantry action roll is made during the End Phase of every turn following the first infantry vs. infantry action roll until the boarding action is resolved: the defender is defeated, the attacker is defeated or the attacker decides to withdraw (again, for aerospace units in space, this occurs at the End Phase of every space turn). If multiple infantry vs. infantry actions are underway, randomly determine in what order the various infantry vs. infantry action rolls are made.

For each infantry vs. infantry action roll, roll 2D6 and cross-reference the result with the appropriate column on the Infantry Vs. Infantry Action Table (see p. 173). The number to the left of the slash is the percentage of the defender's total strength subtracted from the attacker's strength as casualties, while the number to the right of the slash is the percentage of the attacker's total strength subtracted from the defender's strength. However, the defender in an infantry vs. infantry action has a decisive advantage and suffers only half damage for as long as defending troops remain in full control of the unit or building (until the attack results in a P or an E; see *Letters on the Infantry Vs. Infantry Action Table;* p. 173). Round all fractions up.

Players must determine a new attacker vs. defender ratio for each subsequent infantry vs. infantry action roll, taking into account the changes due to casualties, or the addition of crew members currently on board either unit, or additional infantry (personnel) entering a building hex of a multi-hex building, but not used previously. A separate Marine Points Score should be calculated for any new crew added for a new infantry vs. infantry action roll, with that value added to the previous Marine Points Score after the casualties from previous turns are removed.

When the defender's Marine Points Score reaches zero (or the defender chooses to surrender), the attacker captures the target unit or building. If an R result occurs (see *Letters on the Infantry Vs. Infantry Action Table;* p. 173), or the attacker's Marine Points Score reaches zero, the infantry vs. infantry action fails.

Even if the defender (or attacker) has additional personnel (marines, crew and so on) that could be added to a Marine Points Score on a subsequent turn, if the Marine Points Score reaches zero as a result of an infantry vs. infantry action roll, the unit or building is captured (or the attack is defeated); any remaining personnel (such as the rest of the crew, any civilians on board, any marines not committed to the attack and so on) are assumed to have surrendered (or in the case of an attack, they are retreating). See *Using Captured Units/Buildings* (p. 175) for more information.

Outside Reinforcements: Both attacker and target may introduce reinforcements in the form of additional combatants (marines, crew and so on) through other units (or, in the case of a fight in a building, through additional combatants entering a hex of the contested multi-hex building). For aerospace units, regardless of whether the attacker or defender is attempting to reinforce, they can use the recovering rules for friendly units (see p. 86, *TW*) or the Docking/Grappling rules (see p. 167). Large Naval Vessels and Mobile Structures use the appropriate grappling rules (see pp. 168 and 169, respectively); the controlling player determines in which fashion he will attempt to reinforce. During the End Phase of a turn (a space turn for aerospace units in space) in which a unit with reinforcement combatants (marines, crew and so on) has successfully docked or grappled (or been recovered) with the defending unit, the combatants may be included in the new ratio determined before making the infantry vs. infantry action roll for that turn.

Withdrawal: During the End Phase of any turn (a space turn for aerospace units in space) in which an infantry vs. infantry action takes place, an attacker may announce that he is withdrawing. This announcement must be made before the infantry vs. infantry action roll is made. An infantry vs. infantry action roll is still made that turn, but the attacker suffers only half damage; any E result becomes a P result and the attacker must withdraw regardless. During the End Phase of the following turn (a space turn for aerospace units in space) after the withdrawal infantry vs. infantry action roll is made, the attacking unit docked or grappled to the defending unit may move normally; in the case of a building, all combatants (that is, infantry) are moved to appropriate adjacent hexes to the building and can move and fight normally.

Structural Integrity/Internal Structure/Construction Factor Damage: Infantry vs. infantry action firefights can be just as dangerous to the boarded units as to the combatants involved. Though many units are designed for combat, it is all too easy for the firefight to stray into critical areas. After every infantry vs. infantry action roll, another 2D6 roll should be made. On a result of 12, the unit/building takes damage.

For Small Craft and DropShips, apply a single point of damage to the target aerospace unit's SI.

For Large Naval Vessels, apply a single point of damage to the internal structure of a randomly determined location.

For buildings, apply a single point of damage to every hex on every level (this is not scaled, but applied as a single point of Construction Factor appropriate to the type of building in question).

Letters on the Infantry vs. Infantry Action Table

An **E** (Eliminated) result replaces some of the percentages shown on the Infantry Vs. Infantry Action Table below. If the E is to the left of the slash, eliminate the attacking force. If the E is to the right of the slash, eliminate the defending force. The non-eliminated force takes damage in the standard way.

Some results may have an additional letter after both percentages. The letters "R" and "P" have the following meanings:

- R = Attacker repulsed. The attacking force takes double casualties this turn and is considered to have retreated to their own unit (or out of the building); the defenders regain full control of their unit/building (if the attacker previously achieved a P result). If the defender wishes, he may immediately make his own infantry vs. infantry action roll to go on the offensive and counter-board a docked/grappled attacking unit (in which case, new ratios must be determined).
- **P** = Partial control. The attacking force has seized control of a large portion of the target unit/building, and the defenders immediately take full damage until an R result occurs or the attackers are eliminated.

Now that the final ratio of attacker to defender is known, the infantry vs. infantry action roll can be made during the End Phase of the turn when the successful grappling occurred.

The attacking player rolls 2D6 with a result of 4. Looking on the Infantry Vs. Infantry Action Table, the player notes that this result indicates combat losses of 55 to 35 percent. The attacking marines lose 21 Marine Points [38 (current defending Marine Points Score) x .55 (percent losses) = 20.9 (rounding to 21)]. The defending marines lose 18 Marine Points [100 (current attacking Marine Point Score) x .35 (percent losses) = 35 / 2 (no P result occurred, so the defenders take half damage) = 17.5 (rounding up to 18)].

During the End Phase of the following turn, the defender decides that despite the additional damage the Castles Brian is doing against other enemy units, he can't afford to lose the fortress before reinforcements might arrive (they're still too far away to make a difference). He throws in an additional 80 crewmen: this inflicts a +4 modifier to all weapon attacks [160 (total crew used in the fight) / 309 (original total crew of the Castles Brian) = 51 percent (checking the Crew Casualties Table, that equates to 4 Crew Hits or a +4 modifier)], and will provide a new Marine Points Score of 58 [80 (additional crew added to the fight) x .25 (non-combat unit crew/fighter pilot modifier) = 20 x 1.9 (building size modifier) = 38 + 20 (current Marine Points Score of original crew used in the first Boarding Action Roll, minus casualties) = 58]. The attacker's current Marine Points Score is 79, which makes the new ratio 3.2:2, rounded in the defender's favor to 3:2.

A new infantry vs. infantry action roll is made with a result of 11. Looking on the Infantry Vs. Infantry Action Table, the player notes this indicates combat losses of 30 percent to 70 percent. The attacking marines lose 24 Marine Points [58 (current defending Marine Points Score) x .30 (percent losses) = 23.2 (rounding to 24)]. However, the "E" result means the defender's Marine Points Score is reduced to 0 and the Castles Brian is captured! Even though the defending player has additional crew, they were not involved in the fight and have surrendered.

RE-CONVERTING MARINE POINTS SCORE

After a infantry vs. infantry action ends, players will likely need to convert the Marine Points Score back into individual combatants: battle armor troopers, marines, crew, including specific bay personnel (as shown on the Bay Personnel Table, p. 170), and so on. If a force is composed of only one type of personnel (all marines or all identical battle armor), determining casualties will be easy. However, boarding actions

INFANTRY VS. INFANTRY ACTION TABLE

	Attacker to Defender Odds Ratio								
2D6 Roll	1 to 3 <	1 to 3	1 to 2	2 to 3	1 to 1	3 to 2	2 to 1	3 to 1	> 3 to 1
2	E/1% (R)	E/1% (R)	E/5% (R)	E/10% (R)	75%/25% (R)	70%/25% (R)	65%/25% (R)	60%/25% (R)	55%/25% (R)
3	E/3% (R)	E/3% (R)	E/7% (R)	E/15% (R)	70%/30% (R)	65%/30%	60%/30%	55%/30%	50%/30%
4	E/5% (R)	E/5% (R)	E/10% (R)	65%/20%	65%/35%	60%/35%	55%/35%	50%/35%	45%/35%
5	E/7% (R)	E/7%	E/15%	60%/25%	60%/40%	55%/40%	50%/40%	45%/40%	40%/40%
6	E/10%	E/10%	E/20%	55%/30%	55%/45%	50%/45%	45%/45%	40%/45%	35%/45%
7	E/15%	E/15%	E/25%	50%/35%	50%/50%	45%/50%	40%/50%	35%/50%	30%/50%
8	E/20%	E/20%	45%/30%	45%/40%	45%/55%	40%/55%	35%/55%	30%/55%	25%/55%
9	E/25%	E/25%	40%/35%	40%/45%	40%/60%	35%/60%	30%/60%	25%/E (P)	20%/E (P)
10	E/30%	E/30%	35%/40%	35%/50%	35%/65%	30%/65% (P)	25%/E (P)	20%/E (P)	15%/E (P)
11	E/35%	30%/35%	30%/45% (P)	30%/55% (P)	30%/70% (P)	25%/E (P)	20%/E (P)	15%/E (P)	10%/E (P)
12	30%/40% (P)	25%/40% (P)	25%/50% (P)	25%/60% (P)	25%/75% (P)	20%/E (P)	15%/E (P)	10%/E (P)	5%/E (P)

Results given as: Percentage of defending strength subtracted from attacker strength as casualties / percentage of attacker strength subtracted from defending strength as casualties. Until a P result occurs, the defenders take only half of the indicated casualties.

are seldom so tidy and instead will likely involve numerous different personnel types.

Players have two options for conversion, one easier to implement and recommended for large-scale infantry vs. infantry actions (especially when the specifics of a force's make-up—for example, battle armor—are unknown). The more complex version provides a slightly more realistic way of determining casualties.

In both conversion methods, the player first determines the percent of casualties suffered by the original force. For example, if a player had a Marine Points Score of 23 and lost 13 points, the percent of casualties is 56 [13 (Marine Points Score casualty value) / 23 (original Marine Points Score) = .56, or 56 percent]. In the case of the defender, the player should use the Marine Points Score *before* the building modifier was applied (see p. 171).

In the simpler conversion method, the percentage of casualties is applied to all different personnel types equally (round all fractions down). For example, if a player deployed 22 crew, 7 marines and 4 battle armor in an infantry vs. infantry action and took 43 percent casualties, he would apply that percent to each type of group to determine how many of each are removed as casualties: 9 crew [22 (original crew deployed) x .43 (percent of casualties) = 9.46 (rounded down to 9)], 3 marines [22 (original marines deployed) x .43 (percent of casualties) = 3.01 (rounded down to 3)] and 1 battle armor [4 (original battle armor deployed) x .43 (percent of casualties) = 1.72 (rounded down to 1)].

The more complex version takes into account that different battle armor can be fielded, with heavier battle armor able to withstand the rigors of combat longer than lighter battle armor (and of course, all battle armor can take more damage than any unarmored personnel). This conversion assumes that the entire make-up of a force involved in an infantry vs. infantry action (specifically the individual battle armor involved) is known.

First, apply casualty percentages to all non-battle armor personnel as shown above, except in the case of Elementals or marines wearing armor with a Damage Divisor of 2 or more (see Marine Points Table, p. 170). In these cases, divide the final casualty number in half (rounding down) to determine how many such troopers were eliminated.

Next, for battle armor, once the number of troopers eliminated has been determined, multiply that value by 10 to determine the total standard-scale damage. Then start applying that damage, 1 point at a time, to each battle armor trooper involved in the infantry vs. infantry action. Always apply the damage to the lightest weight class battle armor first, then move on to the heavier. If there are fewer points to assign than remaining battle armor of the same weight class, randomly determine which troopers receive that damage.

If reinforcements were added, especially from two different sources, some player adjudication will be required. For example, if a unit with a Marine Points Score of 20 was in an infantry vs. infantry action that lasted five turns, and on Turn 3 another Marine Points Score of 20 was added, and at the end of the boarding action more than 20 points of casualties occurred, a good argument could be made that the troopers in the first Marine Points Score of 20 were completely eliminated simply because they were involved in the conflict for a much longer time. Use good judgment and roll a die to resolve any disagreements if the players cannot come to a consensus.

CREW LOSSES AND CREW HITS

The loss of crew members during an infantry vs. infantry action may adversely affect a unit's performance (as well as a building mounting weapons) in combat; the more crew it has lost, the less effective the unit. The Crew Casualties Table provides an equivalency between crew losses and the number of Pilot/Crew hits taken by the unit. Each crew hit inflicts a cumulative +1 weapon attack and Piloting Skill Roll/Control Roll modifier.

These modifiers apply for the rest of the scenario.

CREW CASUALTIES TABLE

Percentage of Crew Casualties	Crew Hits	Percentage of Crew Casualties	Crew Hits
5–20	1	51–65	4
21–35	2	66–80	5
36–50	3	81–100	6



Conventional infantry attempt to hold off an elite squad of Kage by taking shelter in a refueling station.

USING A CAPTURED UNIT/BUILDING

Once a unit is captured, the new controlling player may have a chance to put it into the fight on his side. Use the following rules to govern this situation.

A certain amount of down time will occur as the new crew takes control. Depending on the type of captured unit/building, a number of turns (space turns in the case of aerospace units in space) will occur where the unit cannot expend any MP or fire any weapons, and aerospace units will continue to move at their last velocity and heading.

For aerospace units, a Small Craft has 1 turn of down time and a DropShip 2 turns.

For Large Naval Vessels, a Template A, B and C ship has 1 turn of down time, while Templates D and E ships have 2 turns.

For a building, each 3 levels equals 1 down-time turn. In the case of the Castles Brian from the previous example, down time would take 4 turns.

During this time, the unit is still counted toward Initiative, but for the new controlling player. During the Movement Phase (Aerospace or Ground, as appropriate) of the turn following the required inactive turns, based on its type and size as described above, the unit may move and fire normally, with the additional restrictions noted below. For example, if a DropShip is captured in Space Turn 5, then Space Turns 6 and 7 will elapse with the DropShip traveling at its last velocity and heading each turn. During the Movement Phase (Aerospace) of Turn 8, the captured DropShip can move freely.

Next, the captured crew and crew casualties must be taken into account. Depending upon the crew casualties that have occurred, additional attack and Piloting Skill/Control Roll modifiers are still in place (as noted under *Crew Losses and Crew Hits*, p. 174). An additional +2 modifier is also applied, representing crew that must be held hostage (likely many of the officers), as well as the equivalent of 1 additional crew hit to represent the general uncooperativeness of the captured crew.

The new controlling player can offset these disadvantages by transferring crew onto the captured unit. If the player has the crew available (for example, a DropShip capturing a Small Craft, or a lot of infantry to pour into a building), they can completely replace the original crew and fully eliminate all additional attack and Piloting Skill/Control Roll modifiers; in this case, at least 4 battle armor or 7 marines, or 28 crew/other personnel, must be tasked with controlling the captured crew in a brig or jail. In all cases, the unit losing the transferred crew/personnel must take into account the Crew Casualties Table as well, applying appropriate modifiers for how much crew is lost to the captured unit.

Sabotage: Even with all those precautions, there's still a chance that the belligerent, captured crew will try to sabotage the unit. During the End Phase of any turn in which captured crew/personnel are used to operate the unit (meaning they are not in the brig), roll 2D6. On a result of 12, sabotage occurs. Apply 1 point of damage to the unit's Structural Integrity (for Small Craft or Large Craft), or to the Internal Structure at a randomly determined location; in all instances, a potential critical hit will need to be rolled for such damage. In the case of buildings, randomly determine a critical hit against a weapon system.

In addition, assign a further random critical hit; first randomly determine the location column on the appropriate Hit Location Table and then roll for the specific critical hit.

Finally, the unit may not move or fire in the turn following the sabotage (a building cannot make any attacks), as its new masters attempt to deal with the aftermath. Aerospace units continue with the same velocity and heading during that turn.

MINEFIELDS

The *BattleTech* rules offer the use of four forms of minefields: conventional fields, command-detonated fields, vibrabomb fields and active fields. While an EMP minefield exists, it is treated exactly like a command-detonated or vibrabomb minefield for purposes of how it detonates, except it is always eliminated completely once it explodes (see *EMP Mine*, p. 177, *TO: AUE*)

Players assign minefields to hexes during game setup, secretly writing down the type and location of each field. The number of minefields available to each player may be determined by the scenario or agreed to by all players before beginning play. Though some scenarios may designate minefield locations, only the referee or controlling player should know those locations.

If the players cannot agree, but wish to include mines, each can secretly choose up to 5 hexes on the playing area to place mines. This number is for a playing area composed of four maps. If players are using a truly large area, they may wish to alter this number: a total of 5 hexes per side for every four mapsheets used (for example, a twelve-mapsheet playing area would allow 15 mined hexes per side). However, regardless of the size of the playing area, no player can place more than 5 mined hexes per mapsheet.

Area-Effect Weapon: Minefield attacks are area-effect weapons, and so all rules that apply to such weapons also apply to minefield attacks.

Buildings: Use the Area-Effect Weapons rules (see p. 172, *TW*), as appropriate, for the interaction of minefields and buildings; remember to scale damage if using the building rules from this rulebook, as appropriate (see *Scaled Damage*, p. 124). If a minefield is laid by a weapon system (a bomb, artillery, LRM and so on) in a building hex, it is automatically laid on the building's roof; rolls for determining if the minefield detonates are only made if a unit enters the hex on the building's roof. If a minefield is laid in a bridge hex, randomly determine if it landed on the bridge or is on the underlying terrain.

Different Types of Minefield: While this section covers the basics of minefields as they apply to all situations, different types of minefields provide subtle variations that players can use to different effects (see *Mines* in *Advanced Weapons and Equipment*, p. 176, *TO: AUE*).

Hidden Units: If a unit is hidden in a hex with minefields, the minefields attack if the unit tries to leave the hex via non-jumping movement.

Infantry: All infantry units entering a minefield apply a –1 modifier to any die roll to determine if the minefield explodes.

Vehicles: When a ground vehicle suffers damage from any minefield, it must automatically roll once on the Motive System Damage Table, as though the damage came from the side.

Weapon-Delivered Minefields: Numerous weapon systems (such as LRMs, artillery and bombs) can be used to actively deploy most minefields right in the midst of scenarios. These different weapon systems are all found in the *Advanced Weapons and Equipment* section, starting on p. 86, *TO: AUE*. Use the rules for the weapon system in question until the minefield is successfully deployed in a hex(s), after which use the appropriate rules as follows for the specific type of minefield laid.

Some mines are designed for use in a water hex (sea mines) or a space hex (space mines). Those specific types of mines, and the rules for their use, are also found under *Mines* in the *Advanced Weapons and Equipment* section.

If a weapon-delivered minefield does not exactly match the Minefield Density Table, use the next highest rating. For example, an MML 3 would deliver a 3-point minefield, and since a 5-point minefield is the next highest rating, players would roll on that row (i.e. 9+); an MML 12 would deliver a 12-point minefield, and since a 15-point minefield is the next highest rating, players would roll on that row (i.e. 8+); and so on.

MINEFIELD DENSITY TABLE

Minefield Density*	Target Number
5- or 10-point	9+
15- or 20-point	8+
25- or 30-point	7+

All minefields apply their damage in 5-point Damage Value groupings.
*The EMP mine (see p. 365) cannot be weapon-delivered.



Word of Blake battle armor sweep for minefields ahead of an oncoming force.

CONVENTIONAL MINEFIELDS

Once the players have determined the number of hexes that will be mined before the start of play, they must determine the minefield density, as shown on the Minefield Density Table. This may be designated by the scenario, randomly determined, or the players can agree on a specific density for all minefields to be placed before play begins. This will not only determine how much damage a minefield inflicts, but also the dice roll required to determine if the minefield will inflict damage on a target entering the hex.

Whenever any ground unit ('Mech, ground vehicle or infantry, friend or foe) enters one or more of these designated hexes (whether through voluntary or involuntary movement such as unit displacement and accidental falls from above), the minefield automatically attacks the unit. The player controlling the mines rolls 2D6 and compares the result to the Minefield Density Table. If the result is equal to or greater than the number in the Dice Roll (2D6) column, the minefield has exploded and damaged the target.

Resolve the attack and apply the damage before the unit continues its movement. The player controlling the minefield player may make this roll secretly, so that if the minefield does not explode, its location remains hidden. Damage is inflicted against the Front side of the unit entering the hex. To determine damage to 'Mechs entering a minefield, use the BattleMech Kick Location Table.

Every time a conventional minefield explodes, its density rating may be reduced. The controlling player of the minefield rolls 2D6 against the Dice Roll (2D6) column of the Minefield Density Table. If the result is equal to or greater than the number in that column, the rating is reduced 1 level. For example, a 30-point minefield is reduced to a 25-point minefield, or a 10-point minefield is reduced to a 5-point minefield. Conventional minefields are never reduced in this fashion past a 5-point density throughout the scenario, unless cleared (see *Clearing Minefields*, p. 178).

Finally, players can increase the density rating of a minefield by laying mines through the use of bombs, LRMs and so on (see *Weapon-Delivered Minefields*, p. 178). For example, a 15-point minefield laid into a 10-point minefield hex becomes a 25-point density minefield. No minefield can be greater than a 30-point density in any hex, however.

Command-Denoted, Vibrabomb and Active Minefields: Players can choose two options when determining how often a specific command-detonated (see p. 177), vibrabomb (see p. 177) or active minefield (see p. 177) can be used. As these minefields can be more effective than conventional minefields, the first option is to have it explode only once during a scenario; if it explodes, it is eliminated. The second option follows the standard rules for density depletion as for conventional minefields, except that each type of minefield is automatically reduced; for example, a 20-point vibrabomb minefield that explodes automatically is reduced to a 15-point minefield. Additionally, unlike a conventional minefield, a 5-point command-detonated, vibrabomb or active minefield that explodes will be eliminated. Players should agree before play begins as to which manner of elimination these additional minefields will follow.

EMP Minefields: As indicated above, EMP minefields may detonate only once per scenario. The pulse from the exploding EMP mines will disable all other EMP mines in the same hex (see *EMP Mine*, p. 177, *TO: AUE*).

Crashing Airborne Units: A crashing airborne non-aerospace unit that enters a mined hex detonates the hex on a roll of 7+, but has a chance of clearing the minefield (see *Clearing Minefields*, p. 178); a crashing aerospace unit automatically detonates the hex, applying damage appropriately, but also automatically clears the hex.

Falling: A 'Mech that falls in a mined hex (regardless of whether it started the phase in the hex, or entered the hex and fell during movement) only detonates the hex on a roll of 12 (as opposed to the standard 7+, 8+ or 9+); a 'Mech entering a hex and then falling in that hex during the same movement phase would need to make a roll for entering the hex and one for falling.

Aerospace Units Landing/Lifting Off: If a landing or lifting-off fighter, aerodyne Small Craft, aerodyne DropShip or Fixed-Wing Support Vehicle enters a mined hex, the roll to determine if the minefield attacks that unit is made immediately, resolving all damage, before continuing the landing/lift-off maneuver. In the case of fighters and Fixed-Wing Support Vehicles, if the minefield attacks the unit, the unit in question must make an immediate Control Roll, applying all standard modifiers, to make sure the maneuver in question is a success; a failure means the landing/take-off failed (use the rules on pp. 87-88, *TW*, to resolve such situations).

A landing or lifting-off Airship Support Vehicle will never detonate a conventional minefield (though dismounting units are still required to roll for an attack as described above).

Minesweeping Engineers: These specialized infantry troops never automatically roll to determine if a conventional minefield detonates when they enter a mined hex; the minefield may only detonate when they are attempting to clear the hex (see *Specialized Infantry*, p. 152, *TO: AUE*).

Mobile Structures: A Mobile Structure automatically detonates a conventional minefield—double the standard damage and apply normally—but also clears the minefield (see *Clearing Minefields*, p. 178).

Vehicles: Hover vehicles (and WiGEs moving along the ground, as opposed to moving 1 elevation above the underlying terrain) entering a hex with a conventional minefield only detonate the mines on a roll of 12 (as opposed to 7+, 8+ or 9+ for other types of ground units).

Airborne WiGE and VTOL vehicles entering a minefield hex never detonate the minefield unless they land; in which case, roll for the standard result of 7+, 8+ or 9+ to determine if they detonate the minefield.

COMMAND-DETONATED MINEFIELDS

As with conventional minefields, players should determine the minefield density of any command-detonated minefields to be placed before play begins. Those placed during gameplay require time to arm. Arming occurs automatically and takes the remainder of the turn in which the minefield was placed, as well as the entire turn after, and so the field cannot be detonated until at least the beginning of the turn following this.

At any time during the turn sequence (that includes any phase, from Movement to End Phase) that a defending unit has line of sight to a unit occupying a mined hex (the defending unit does not need to have LOS to the underlying terrain in the hex, as the location of the mine is known), the defender may detonate any or all of these mines. This can interrupt any action other than weapons fire, including movement; all damage and results from a minefield are immediately resolved, before returning to the resolution of any other actions.

Detonating a command-detonated minefield inflicts damage equal to the minefield density determined by the players before the beginning of the game to each unit occupying the target hex, as well as damage equal to half (round down) the minefield density to each unit in each adjacent hex.

Apply damage from command-detonated mines to the Front side of the unit. To determine damage to BattleMechs entering a minefield, use the BattleMech Kick Location Table. Resolve the attack and apply the damage as soon as the explosion occurs.

Minesweeping Engineers: The controlling player can detonate a command-detonated minefield after minesweeping engineers have entered the mined hex but before the controlling players of the engineers attempt to clear the hex, provided all other criteria above are met (see *Specialized Infantry*, p. 152, *TO: AUE*).

VIBRABOMB MINEFIELDS

As with conventional minefields, players should determine the minefield density of any vibrabomb minefields to be placed before play begins.

Treat a vibrabomb like a conventional mine, with the following exceptions.

Vibrabombs can only be set off by the unique vibrations created by an approaching 'Mech. No other units can trigger vibrabombs. Any 'Mech can set off a vibrabomb, and vibrabombs go off automatically.

Vibrabombs have a variable sensitivity, and when placed must be set to respond to a specific mass. 'Mechs massing 10 or more tons lighter than the vibrabomb setting will not set off the minefield. A 'Mech massing more than 10 tons heavier than the setting will set off the minefield at a distance of 1 hex for each 10 full tons by which it is heavier than the bombs' setting.

For example, if a vibrabomb minefield is set to respond to a 40-ton 'Mech, and a 75-ton *Orion* enters a hex three hexes away, the field explodes. A 30-ton *Javelin* walking directly through the hex containing the a vibrabomb mine would not set it off.

A unit occupying the same hex as an exploding vibrabomb takes damage equal to the minefield density determined by the players before the beginning of the game, as shown on the Minefield Density Table, to its Front side. Exploding vibrabombs do not affect adjacent hexes. Use the 'Mech Kick Location Table to determine damage to a BattleMech.

Jumping Units: Units that expend Jumping MP must determine if they set off a vibrabomb minefield when they land in the target hex or any adjacent hexes depending upon the weight of the unit in question (see above), just as if they had moved along the ground to enter that hex.

ACTIVE MINEFIELDS

As with conventional minefields, players should determine the minefield density of any active minefields to be placed before play begins.

Treat an active minefield like a conventional minefield, with the following exceptions.

Any time a ground unit ('Mech, infantry, vehicle and so on, friend or foe) expending Jumping MP passes over a hex with an active minefield, it must make a roll for the hex exactly as

if the unit had entered the hex using non-jumping movement (entering a hex while moving along the ground will not detonate an active minefield). On a 2D6 roll of 9 or greater, the minefield explodes, causing standard damage. Any Piloting Skill Rolls that need to be made as a result of this damage are resolved when the unit reaches the target hex of its jump.

Airborne units (including aerospace units, VTOLs, WiGEs, infantry expending VTOL MP and so on) entering a hex, regardless of elevation, are not affected by active minefields, nor are any other units that enter an active minefield using any other type of movement.

COMBINED MINEFIELDS

Though no specific minefield type can be greater than a 30-point minefield, multiple minefield types can fill the same hex, whether at the same or different densities. For example, a single hex might contain a 30-point conventional minefield, 15-point command-detonated minefield, 15-point vibrabomb minefield and a 5-point active minefield.

Whenever a minefield explodes, in addition to the controlling player rolling to determine if that minefield's density is reduced (see *Conventional Minefields*, p. 176), the controlling player(s) of the additional minefield(s) types must also make rolls to determine if those additional minefields were reduced.

This could mean that a minefield might need to make more than a single dice roll to reduce in a single turn. For example, a command-detonated bomb explodes when a 'Mech enters the hex (the players are using the rule that such bombs have a density, as opposed to being eliminated the first time they are used) and a conventional minefield in that same hex also explodes. The player controlling the minefields will need to make two rolls (one for the conventional minefield's successful detonation and one for the successful detonation of the command-detonated minefield), while the command-detonated minefield is automatically reduced for its own successful explosion and then the player would need to make a roll for a possible reduction due to the successful detonation of the conventional minefield.

Apply a –1 modifier to the die roll if the minefield was a lesser density; apply a +1 modifier if the minefield was of greater density. For example, a 15-point conventional minefield explodes in a hex containing a 5-point active minefield and a 20-point vibrabomb minefield. A +1 modifier is applied to the dice roll result to see if the vibrabomb minefield is reduced, while a –1 modifier is applied to the active minefield roll.

In all instances, if a minefield is reduced due to the explosion of another minefield, it does no damage.

WEAPON-DELIVERED MINEFIELDS

Unlike pre-determined minefields before the start of play, which are always hidden until detonated (unless using the advanced *Active Probe* rules; see p. 97), weapon-delivered minefields may be spotted by an opponent.

As with command-detonated, vibrabomb and active-minefields, players can determine how such weapon-delivered minefields may be spotted in two ways. As usual, players should determine before play begins which rule set they will use.

The first is simple and straightforward. Any weapon-delivered minefield, regardless of which player places it, is automatically visible to all players.

While easy to use and implement, not only is the first option not very realistic, but it cuts down on the tactics that can be employed by players when laying weapon-delivered minefields. The second option, while more complex, allows for more advanced tactics. In most of the instances below, it is up to the player laying the minefield to determine if the opponent can see the minefield, and either make it visible or not (a neutral gamemaster for this type of minefield laying can be very useful).

- If a friendly unit has LOS to the target hex where a weapon-delivered minefield is laid, then that minefield is automatically visible.
- If a friendly unit does not have LOS to the target hex where a weapon-delivered minefield is laid, nor does a friendly unit have LOS to the attacker that laid the minefield, the minefield is hidden just as if it had been placed before play began.
- If a friendly unit does not have LOS to the target hex where a weapon-delivered minefield is laid, but a friendly unit does have LOS to the attacker that laid the minefield, a die roll is made to see if the unit can determine where the minefield was laid. The Base Target Number is 4, modified for terrain between the friendly unit and the attacker, target movement and attacker movement modifiers. Only a single roll is made on a side for each minefield laid, with the controlling player using the unit with the lowest modified target number. If the roll result is equal to or greater than the modified target number, then the minefield is visible. If the roll fails, the minefield is hidden just as if it had been placed before play began.
- Finally, anytime a unit mounting an active probe ends its movement (or at any point during its movement if using the expanded active probe rules; see p. 97) and the effective radius of the probe covers any hex with an enemy minefield, the controlling player of that minefield must make a roll. On a result of 7+, any weapon-delivered minefields are revealed; on a result of 10+, any pre-designated minefields laid at the start of the scenario are revealed (see *Active Probes* in *Advanced Combat*, p. 97).

CLEARING MINEFIELDS

Clearing minefields is a dangerous job requiring great skill and finesse, so it is usually assigned to infantry. If an enemy infantry unit ends its turn on the ground in a mined hex, the opposing player must be informed that his unit has entered a mined hex, even if the field has not been detonated.

Infantry that spends 1 Movement Phase in a mined hex without moving may elect to clear the field instead of attacking during the Weapon and Physical Attack phases. If the infantry unit rolls 2D6 with a result of 10 or higher in the Weapon Attack Phase, they have successfully cleared the field. A dice roll result of 5 or less means the minefield exploded; the infantry takes normal damage. Conventional fields remain active after an accidental detonation, but their density is reduced (though never below 5-points, if using that rule). Accidental detonation clears vibrabomb, command-detonated and active minefields. If multiple infantry units are attempting to clear the same hex, all units must make a successful roll to clear the minefield. If any unit rolls a 5 or less, all units attempting to clear the hex take damage.

Note that such a roll to clear a minefield only applies to a single type of minefield per hex. If a hex contains different types of minefields (see *Combined Minefields*, p. 178), then each minefield type must be cleared separately. While multiple infantry units in a hex can clear multiple minefield types in the same turn, a single infantry unit can only attempt to clear one type of minefield per

turn. A minefield that is accidentally detonated, however, can still potentially reduce other minefield types in the same hex (see *Combined Minefields*, p. 178).

Except in cases where a minefield is automatically cleared—such as landing spheroid aerospace units or Mobile Structures, in which case all types of minefields in a hex are automatically cleared—any die rolls made under any of the following rules to clear a minefield must be made for each type of minefield located in a hex. For example, an LRM-20 is fired into a hex containing conventional, vibrabomb and command-detonated minefields. A separate die roll result of 5 or better must be made three times to see if all three fields have been cleared. Minefields cleared in this fashion do not explode and so do not require a roll for any minefields remaining to see if they were reduced (see *Conventional Minefields*, p. 176).

Artillery: A player may use artillery fire to clear a minefield. The player must designate the fire mission to clear the minefield. When the fire mission hits the hex, the player rolls 2D6. On a result of 5 or better, the strike clears the minefield. Mines cleared in this way do no damage, and clearing artillery fire does not affect adjacent hexes (regardless of the ordnance used). However, artillery fire does normal damage to units occupying the mined hex.

Because artillery is an area effect weapon, however, any time the target hex of an artillery attack (not any adjacent hexes) contains a minefield, even if the artillery was not designated to clear the minefield, the controlling player should roll 2D6. On a result of 10+, the minefield is cleared; the mines do no damage.

Crashing Airborne Units: A crashing aerospace unit automatically clears a minefield, though the hex automatically detonates; apply damage normally. If a crashing non-aerospace unit detonates a minefield, roll another 2D6. On a result of 5 or better, the minefield is cleared.

Landing Aerospace Units: A landing spheroid Small Craft or spheroid DropShip automatically clears a mined hex; no damage is applied to the landing unit.

Missiles: Unless using special Mine Clearance Munitions (see p. 182, *TO: AUE*), a player may use an LRM-20; Rocket Launcher 20; MRM-20, -30 or -40; ATM 12 (HE or standard) or ATM 9 (HE) to clear a minefield (but no other type of missile attack). The player must designate the attack to clear the minefield. When the attack hits the hex, the player rolls 2D6. On a result of 5 or better, the strike clears the minefield. Mines cleared in this way do no damage. Missile salvos fired to clear a minefield do not affect adjacent hexes.

Minesweepers: Use the rules for Minesweepers in the *Advanced Weapons and Equipment* section for clearing a minefield (see *Minesweeper*, p. 138, *TO: AUE*).

Minesweeping Engineers: These specialized infantry troops have their own rules for clearing a minefield (see *Specialized Infantry*, p. 153, *TO: AUE*).

Battle Armor with Mine Clearance Equipment: Battle Armor with Mine Clearance Equipment (see p. 260, *TM*) are superior at clearing minefields. They follow the standard rules for standard infantry clearing minefields, except they clear the field on a 2D6 result of 6 or more. Only on a 2D6 result of 2 does the minefield explode.

Mobile Structures: A Mobile Structure automatically clears a minefield (though it also automatically detonates the minefield; damage is doubled).

MORALE

Common wisdom has it that breaking soldiers' morale is easier than breaking their bodies. In standard play, morale is not an issue. The standard rules assume that every soldier will fight to the death if the player demands it. The following optional rules add the dimension of morale to *BattleTech*, introducing the possibility that a player's troops may flee the field even if ordered to hold their ground.

Mobile Structures: Mobile Structures are never affected by morale.

Tactical Vs. Strategic: The following rules only cover "tactical morale;" morale as it occurs directly in a scenario. However, morale can be even more insidious off the battlefield. Such "strategic morale" rules are covered in *Strategic Operations*.

MORALE CHECKS

Whether a unit must make a Morale Check depends on the unit type and the damage it receives.

Infernos: Given the horrific nature of inferno weapons (and the fact that even MechWarriors have a deep-seated fear of burning alive), a successful inferno attack automatically causes a Morale Check for all units affected (see p. 141, *TW*), applying the appropriate modifier from the Morale Table. An inferno attack is a special case, where even units marked on the Morale Table as never needing to make Morale Checks must still make one (with applicable modifiers); in this instance, the Target Number is 1.

Cruise Missile Attack: A cruise missile attack (see Artillery Ordnance Table, p. 152) automatically requires a Morale Check for all units damaged by the attack. As with an inferno attack, a cruise missile attack is a special case where even units marked on the Morale Table as never needing to make Morale Checks must still make one (with applicable modifiers); in this instance, the Target Number is 1.

Non-Infantry Units

If a non-infantry unit suffers crippling damage (see *Crippling Damage*, p. 258, *TW*), it must make a Morale Check at the end of the phase in which the damage occurred.

Conventional Infantry

A conventional infantry unit must make a Morale Check at the end of any phase in which it lost a quarter (round down) or more of the troopers it had at the start of the phase. For example, a conventional infantry platoon of 25 troopers that starts a phase at full strength must make a Morale Check if it loses 6 [25 troopers (strength at start of phase) x .25 = 6.25, rounded down] or more troopers in that phase.

Battle Armor

A battle armor unit must make a Morale Check at the end of any phase in which it lost half or more of the troopers it had at the start of the phase. For example, a full-strength Clan battle armor Point that lost 2 troopers in a phase would not need to make a Morale Check, but if it lost 3, a Morale Check would be required.

Making the Morale Check

To make a Morale Check, roll 2D6 for the unit type in question and consult the Morale Table. The result must be equal to or greater than the target number shown to avoid the unit breaking (if there is a dash, then a Morale Check is never made; see *Morale Checks*, p. 179, for the exceptions).

For infantry only, apply the modifiers on the table for artillery, fire and attacks from 'Mechs in line of sight—all these attack types are particularly damaging to morale. Apply only the highest relevant modifier to the target number, and apply it only once. For example, if the infantry unit takes damage from attacks by three 'Mechs, the modifier remains +1. An attack by a 'Mech using a flamer would have a +3 modifier, representing the flamer attack. Negative modifiers apply if the unit is equipped with battle armor or if it is inside a building. Negative modifiers are cumulative.

BROKEN MORALE

If the Morale Check fails, the unit's morale is broken. Starting in a subsequent turn, for that unit, the *Forced Withdrawal* rules (see p. 258, *TW*) are in effect.

Additionally, for infantry only, during each turn that a unit's morale is broken and it moves toward its home map edge, it must also move toward cover, assuming cover is available, in order to eliminate LOS between itself and any enemy units. If no concealing hills or woods (or other terrain) are close enough for the unit to reach in a single turn, the infantry will automatically start digging in (see *Digging In*, p. 106). If the unit is damaged again, it will move out of that hex toward the home map edge once more. However, once again, if no concealing hills or woods (or other terrain) are available, the unit starts digging in.

Also, a broken infantry unit cannot act as a spotter for indirect attacks, artillery attacks and so on (they cannot spot or use TAG—if so equipped—to spot and so on). However, any electronics on the unit continue to function normally.

Finally, if a broken infantry unit loses a quarter or more of the troopers it had at the start of the phase, it must make another Morale Check, with an additional +1 modifier to the target number. If a broken unit fails a Morale Check, it is routed. A routed unit is demoralized by panic, and must move as fast as it can away from enemy units in as straight a line as possible, all the while attempting to move toward its home edge. A routed unit may make no attacks, nor take any action except to move its maximum MP allowance away from enemy units and toward its home edge of the playing area.

Forced Withdrawal: If players are already using the *Forced Withdrawal* rules in their scenario and also wish to include the effects of morale, non-infantry units apply a +3 modifier to all weapon and physical attacks, as well as all Piloting Skill Rolls, to reflect how badly the crippling damage and the need to withdraw have affected the unit in question.

MORALE TABLES

Experience Level*	BattleMechs Morale Target†	Combat Vehicles Morale Target‡	Infantry Morale Target§	Support Vehicles Morale Target§§
Green	4	6	9	10
Regular	2	4	6	7
Veteran	—§§	2	4	5
Elite	—§§	—§§	2	2

*Includes ProtoMechs and aerospace fighters.
†Includes military conventional fighters, Small Craft, DropShips and WarShips.
‡Includes military Support Vehicles, JumpShips and Space Stations.
§Includes IndustrialMechs (unless piloted by a military MechWarrior, in which case treat as a Combat Vehicle) and all civilian aerospace units.
§§See *Infernos* and *Cruise Missile Attack* (see p. 211).

Special Source Modifier (All)	Target Modifier
Inferno	+1/+3*
Cruise Missile	+2

*The modifier to the left of the slash is for all non-infantry units, the modifier to the right of the slash for infantry.

Attack Source Modifier (Infantry Only)	Target Modifier
BattleMech in LOS	+1
Artillery	+2
Flamer or Fire	+3
Elite	—§§

Other Modifiers Modifier (Infantry Only)	Target Modifier
Broken Morale	+1
Cumulative Modifiers	
Light or Medium Battle Armor Unit	–1
Heavy or Assault Battle Armor Unit	–2
Anti-'Mech Skill of 5 or less	–1
Conventional Infantry with Armor (see p. 317)	–1
Unit in Building	–2
Unit Dug In	–2

RECOVERING NERVE TABLE

NOTE: These modifiers only apply if a friendly unit/commander is within seventeen hexes of the unit attempting to recover its nerve.

Commanders*	Target Modifier
Sub-force Commander in LOS	–1
Force Commander in LOS	–2

Infantry Only	Target Modifier
Friendly non-'Mech, non-infantry unit in LOS	–1
Friendly 'Mech in LOS	–2
Another Routed Infantry Unit in LOS	+1
Another Routed Non-Infantry Unit in LOS	+2
Routed Unit	+3

*Only applies if Commanders (see p. 191) are in use.

RECOVERING NERVE

A broken unit may attempt to recover its nerve during the End Phase of each turn after the turn in which it broke. Therefore, such a unit will always spend at least one turn broken before it has a chance to recover.

In order to recover its nerve, a broken unit must make a Morale Check against its base morale target number, applying the modifiers found on the Recovering Nerve Table (all modifiers are cumulative). If the roll is successful, the unit recovers its nerve and may function normally. If it fails, the unit stays broken.

Forced Withdrawal: The rules above assume players are not using the *Forced Withdrawal* rules in conjunction with morale rules. If the *Forced Withdrawal* rules are being used, eliminate the +3 modifier for a unit that recovers its nerve, but it still must follow all the standard *Forced Withdrawa*l rules.



A Lyran convoy nears the front lines of battle bringing much needed supplies.

REARMING UNDER FIRE

In the midst of a battle, some commanders may find that the extreme danger to troops attempting to rearm is worth the risk to ensure victory after a long, hard-fought campaign when ammunition is depleted. If a player wishes to load ammunition during a scenario, use the following rules (see *Rearming Aerospace Units*, p. 182**,** for rules concerning rearming airborne aerospace units).

Use the *Loading and Unloading* rules under *Cargo Carriers* (see p. 261, *TW*), with the following changes:

- The correct type of ammunition must be used to rearm (in standard 1-ton or half-ton allotments, depending on the weapon) and must be on a unit in the same or an adjacent hex to the unit being loaded. For example, if attempting to rearm a unit that mounts an LB 10-X AC, only 1-ton lots of LB 10-X AC can be used.
- For each three turns, 1 ton of ammunition is loaded. OS-type weapons require only 1 turn per launcher for reloading. On ground vehicles, a single Cruise Missile can be loaded every 6 turns.
- For each 1 ton of ammunition successfully loaded, the controlling player immediately rolls 2D6. On a result of 11 or 12, the ammunition explodes, just as if it was hit by an attack (see below); this represents the extreme haste with which the ammo is being loaded.
- If a player is attempting to load a 'Mech and no other 'Mech is available to do the loading (or no unit with a lift hoist; see p. 136, *TW*), then it takes five turns to load 1 ton of ammunition. For a 'Mech to be available for this rearming, it must have one of the following: a working hand actuator on an arm where all actuators are active (meaning no actuator in the arm has taken a critical hit), a working lift hoist or a working salvage arm.
- If loading a unit when the loader unit cannot be in the same hex, it must be in the rear arc of any unit it is loading.
- The unit being loaded, as well as any units helping to load, are all considered immobile targets during the entire reloading process; all attacks against these units apply a –4 to-hit modifier.
- Any hit against the unit being loaded on any rear location (including aft for grounded fighters) during the Weapon or Physical Attack phases inflicts normal damage, but it also causes all ammunition in the target unit that can to explode. Apply the damage to the unit being loaded as though it were a standard ammunition explosion. In addition, divide the Damage Value of the explosion by 10 (round down) and apply as an area-effect weapon in the target hex; no damage is applied to adjacent hexes, even if there are adjacent units loading.
- Only grounded fighters can be rearmed this way; no other aerospace units may be loaded during a scenario using these rules (see *Rearming Aerospace Units*, p. 182**,** for rules concerning rearming aerospace units).
- Mobile Structures and Large Naval Vessel Support Vehicles use the rules for *Rearming Aerospace Units* (see p. 182).

- Rearming a unit submerged in a water hex (or in a vacuum) cannot be done using these rules.
- If any of the following Planetary Conditions are in effect, add two additional turns (these are not cumulative): Zero-G, Low-G (more than .2 off Terran standard), High-G (more than .2 off Terran standard), Trace or Very High Pressure Atmosphere, Heavy Snowfall, Ice Storm, Lightning Storm, Strong Gale, Torrential Downpour, Blizzard, Storm, Tornado, Moonless Night, Solar Flare or Pitch Black.
- Any battle armor or ProtoMech weapons that track ammo in a game can be rearmed using these rules. After the required three turns, a single battle armor or ProtoMech squad is completely rearmed (regardless of how many different types of ammo-tracking weapons the squad mounts).

Rearming Aerospace Units

Most Large Craft carry additional stores of ammunition for their weapons and for the Small Craft they transport. Rearming during combat is a difficult and dangerous procedure, but one that many crews and pilots must carry out to prevail. Large Craft may rearm from ammunition stored in their cargo bays. Fighters may rearm by landing on a friendly carrier (Large Craft with fighter/Small Craft bays; see *Launching/Recovering Small Craft*, p. 86, *TW*); or a unit mounting a flight deck (see *Flight Deck*, p. 124, *TO: AUE*) or airfield (see *Landing and Liftoff*, p. 87, *TW*) that has appropriate ammo stores. Rearming a unit uses the same rules, irrespective of unit type. Any number of tons of ammunition may be reloaded in a single attempt. However, the more types of ammunition being moved and the more tons of each type, the greater the chance of a delay or mishap.

Each loading attempt requires 10 space turns (10 minutes; see *Scale*, p. 76, *TW*). At the start of a Movement Phase (Aerospace), before any movement occurs, a controlling player wishing to rearm announces his intention to do so and immediately rolls 2D6 to determine the success or failure of the operation, as described below. Regardless of the roll result, 10 space turns must elapse before the ammunition is available. If the roll is successful, the ammunition is not available for use until the Weapon Attack Phase of Space Turn 11, following the roll. If the roll is a failure, it requires 10 space turns for the crew to clear whatever mishap occurred, after which point the controlling player can attempt to rearm once more.

Roll 2D6 for each ammunition type being moved (SRM, LRM, AC, RAC, NAC and so on), adding 1 to the result for every ton of that type of ammunition beyond the first. On a result of 2 through 7, the reloading is successful and that ammunition is available to the weapon (assuming sufficient space exists in the weapon's magazine—for example, a fighter designed to carry 2 tons of LRM ammo can't be "rearmed" with ammo that would increase the amount carried to more than 2 tons). On a result of 8 through 11, the reloading attempt fails but the ammo remains available for future reloading.

On a modified dice roll result of 12 or greater, an accident occurs and (except in the case of Gauss and Plasma weapons) the ammunition being moved explodes, damaging the unit. The amount of damage caused depends on the type and quantity of ammunition being moved. To determine the base damage, multiply the tonnage of ammunition being reloaded by the number of shots per ton and the Damage Value (not the Attack Value) per shot; a ton of LRM ammo inflicts 120 points of standard-scale damage (the number of missiles it contains), while five tons of AC/5 ammo cause a total of 500 points of standard-scale damage (5 points per shot, 20 shots per ton). If an accident occurs, no other reloading attempts may be made on the Large Craft for at least 10 minutes.

On fighters, Small Craft and DropShips, total this damage, then divide the result by 100 (rounding up). Reduce the unit's SI by this amount. Where the accident relates to a fighter or Small Craft being reloaded, the carrier unit also suffers damage equal to one-fifth (round up) of that inflicted and the Small Craft bay is rendered unusable until repaired.

Rearming that takes place outside of combat automatically succeeds and has no chance of an accident occurring. However, in such cases it takes 10 space turns (10 minutes; see *Scale*, p. 76, *TW*) to load each ton of ammo.

Gauss and Plasma Weapons: Gauss and Plasma ammunition is inert and so cannot accidentally explode. Players should still make checks when loading such ammunition, as an "accident" result prevents other reloading attempts for 10 space turns.

ROLLING MAPS

Standard-rules *BattleTech* usually operates under the condition of a set playing area; a number of maps determined either by a scenario or the players before play begins. A magic line wraps this playing area and if a unit leaves this region, it is immediately out of the game. This is done for simplicity, but also to help facilitate such things as the off-map movement commander ability (see p. 160), withdrawals (see *Forced Withdrawal*, p. 258, *TW*) and so on.

However, such a situation is far from realistic, as battles can often turn into running clashes across vast expanses. More importantly, some situations, such as the use of artillery not directly on the playing area, mean that such artillery units are immune from direct counter-attacks. Using rolling maps means that if artillery starts to fall, the opposing player can attempt to send units to directly attack said artillery units (see *Artillery and Rolling Maps*, p. 147).

Players wishing to add more realism to their games can use the Rolling Maps rules. The very nature of these rules will require players to have a large area of play to allow for any number of maps to be placed. Just as important, this rule assumes that players have access to a large selection of mapsheets to allow for the creation of such large, ever-changing playing areas.

Any time a unit enters a half-hex of the playing area (whether through deliberate movement, displacement and so on), a new mapsheet is placed. The mapsheet must adhere to the standard rules for mapsheet placement (see *Laying Out Mapsheets*, p. 264, *TW*), with the long or short end of the new mapsheet matching up to the current mapsheet. How the players choose that mapsheet is completely up to the individual playing group. It can be randomly chosen, or, if players are using the Selecting Mapsheets method (see p. 262, *TW*), they can use the same table to determine the new mapsheet; for example, if a unit on an Open Terrain #1 mapsheet enters a half-hex, the controlling player would roll on Table 1: Flatlands Terrain (see p. 263, *TW*) to determine the new mapsheet.

To conserve space (since this can quickly turn into a very large playing area), after a new map is placed, if there are any other edge maps that are not currently occupied, the players can choose to remove a mapsheet. Note which mapsheet is removed; the same mapsheet should be replaced if a unit moves into that region again.

If rolling maps are used, players will need to determine how to deal with the rules that rely on a specific edge to the playing area. For example, the off-map movement commander ability (see p. 160) may not be used. Similarly, if using the Forced Withdrawal rules

MOVEMENT RECORD

Turn # _____ Side: _____

Unit ID	Starting Hex	Starting Facing	Movement	Ending Hex	Ending Facing	Torso Facing	# Hexes Moved
Ralph's Locust	1406	4	Run / R / F4 / L / F3	1011	4	5	7

MOVEMENT RECORD SHEET SAMPLE

(see p. 258, *TW*), then a unit must be at least seventeen hexes (one mapsheet) away from any opposing units when it enters its "home edge" half-hex, after which a new map is not added, but instead the unit is allowed to retreat from the playing area. All such decisions should be made before play begins.

Aerospace Units: If airborne aerospace units are in use, anytime such a unit is over a mapsheet not on the playing area (whether using Low Altitude Movement or *Aerospace Units Directly on Ground Mapsheets* rules), the players should determine which ground mapsheet the aerospace unit "spots." When a non-aerospace unit then enters that area—or an aerospace unit lands in that area—that mapsheet(s) should be placed.

SIMULTANEOUS MOVEMENT

In place of standard movement, players can use the following alternate movement system. While it better reflects the reality of simultaneous combat, it requires more record-keeping, as well as a gamemaster to help track movement and resolve various actions, as noted below.

PLOTTING MOVEMENT

Instead of alternating movement back and forth, and moving units singly on the playing area, all players first plot their units' movements on a copy of the double-blind movement chart at the back of this rulebook, using the following guidelines.

List the unit's movement mode, if applicable (Walking/Cruising/Thrust, Running/Flanking/Maximum Thrust, Jumping, VTOL, UMU and so on). Then record the unit's movement for the turn, using the following designations (these do not include all the advanced movement options open to a player, but can be used as a base line for players to determine their own codes for all the optional rules found in this rulebook):

F x = Move forward x number of hexes
R x = Turn right (x hex facing, no number means 1 hexside)
L x = Turn left (x hex facing, no number means 1 hexside)
J = Jump
SU = Stand Up
SL = Sidestep left (four-legged or jumping 'Mechs only)
SR = Sidestep right (four-legged or jumping 'Mechs only)
B x = Move backward x number of hexes
TL = Turn left (free movement for a jumping 'Mech)
TR = Turn right (free movement for a jumping 'Mech)
L x = Landing x number of hexes (airborne aerospace units)
T x = Take-off x number of hexes (grounded aerospace units)
U x = Up x number of level/elevations/depths
D x = Down x number of level/elevations/depths
O = Opportunity fire (see p. 84)

Note the starting and ending hex numbers for each unit, the number of hexes moved and the direction that the unit's torso or turret is facing using the Scatter Diagram (see p. 150).

Time Limit: The gamemaster may wish to impose a time limit for how long players have to plot their movement. If a player does not turn in his plotted movement for a unit before the time expires, that unit is considered not to have moved.

Ralph's Locust *occupies Hex 1406, facing Direction 4. During the Movement Phase, Ralph has the 'Mech run. He turns the 'Mech right 1 hex facing, moves it forward 4 hexes, turns it left 1 hex facing, and moves it forward 3 hexes. He then elects to twist the torso so that it is facing Direction 5. The 'Mech has moved a total of 7 hexes. The notation for the movement would look like the Movement Record Sheet Sample at the bottom of this page.*

MOVEMENT

Once all players have plotted their movement, everyone moves his units and records their positions with unit markers on the mapsheets, with all movement occurring simultaneously. In cases where two or more enemy units would violate the hex stacking limits, the side that won the Initiative occupies the contested hex (see *Stacking*, below).

Once the players have moved all their units, each gives his movement chart to the gamemaster. The gamemaster then moves the units on his mapsheets, first moving all the units of the side that won the Initiative.

The gamemaster resolves all Piloting Skill Rolls for skids and sideslips. The players resolve all other movement- or non-movement related Piloting Skill Rolls.

Stacking

Because movement occurs simultaneously, several units may occupy a single hex at the end of a Movement Phase. Whenever the number of such units exceeds the stacking limit for the hex (see p. 57, *TW*), both players automatically roll Initiative, with the winning player occupying the hex. The enemy unit(s) end their movement in the hex they would have occupied prior to entering the contested hex. Units involved (provided they are not specifically prohibited from doing so) may have the chance to charge their opponents during the Physical Attack Phase of the turn (see below).

Physical Attacks: Any physical attack that requires a unit to have already moved in order to declare such an attack cannot be made under the Simultaneous Movement rules, unless two units will violate the stacking rules, as noted above. The player that wins the Initiative can either occupy the hex or force the other player to occupy it and can immediately announce such a physical attack (Charging, Death From Above and so on), provided the unit could normally make such an attack. All such attacks are resolved per standard rules.

TAKING CONTROL OF A UNIT

During a battle, two opportunities for taking control of a unit may arise: when a unit is abandoned, and during a swarming attack.

Electronic Equipment: As noted under *Ejection and Abandoning Units* (see p. 164), electronics on a unit where the pilot/crew have ejected/abandoned the unit continue to function until the unit is destroyed. For ease of play, as soon as a unit has been taken control of, all electronic equipment on the unit operates only for the side that now controls the unit. This includes such equipment as a C^3, which would stop working for the enemy and, provided the new controlling player has a C^3 network and can plug the unit into that network without violating the C^3 network rules (see *C^3 Computers*, p. 131, *TW*), the C^3 would be immediately usable (this is an exception to the rule that a C^3 network must be established before play begins).

Large Craft and Large Naval Vessel Support Vehicles: Large Craft or Large Naval Vessel Support Vehicles follow their own rules for taking control of a vessel that is not abandoned, in which case a boarding action takes place (see pp. 167 and 168, respectively).

ABANDONED UNITS

In standard-rules play, if a unit is abandoned—say, due to the crew being killed—the unit is usually considered destroyed. Under these rules, a unit is not considered destroyed in such cases. Instead, it becomes a "neutral" unit and so all players' units can move into and out of the hex it occupies until the unit is taken control of by a player once more. Stacking limits still apply, with such abandoned units considered a "third neutral player;" for example, an abandoned 'Mech could still be the only 'Mech in the hex.

If a unit is abandoned but not destroyed—the pilot/crew was killed, the crew voluntarily abandoned the vehicle, and so on, as described above—a controlling player (regardless of which side) has a chance to take control of that unit. The exception are 'Mechs/fighters where the pilot has actually ejected; as the command couch is no longer in the cockpit, the 'Mech/fighter cannot be piloted until the unit is repaired.

First, the appropriate pilot/crew for the unit in question must be available. A MechWarrior must be used to pilot a 'Mech, a vehicle crew to pilot a vehicle and so on (if the pilot/crew have taken damage at a previous point, that damage still applies and the applicable modifiers must be taken into consideration with the new unit). During the End Phase of any turn in which an appropriate pilot/crew are located in an abandoned unit's hex, the controlling player announces he will attempt to take control of the unit. The pilot/crew may not take any other action for the next turn. During the End Phase of the following turn (provided the pilot/crew is still alive and in the hex), the pilot/crew automatically takes control of the unit in question regardless of whether the unit is friend or foe.

The only exceptions are enemy 'Mechs and aerospace fighters, which are heavily coded against such a hack of their systems. During the End Phase after a pilot has been in the hex for a turn, the pilot's controlling player rolls 2D6. On a result of 2-11, the pilot has been unable to hack the system; provided he stays in the hex another turn, he can once again attempt to hack in (there is no limit to the number of times a pilot can try to hack an abandoned 'Mech or fighter). On a result of 12, the pilot has hacked the system. The 'Mech or aerospace fighter is now under the control of the new player and it may move and attack normally on the following turn. However, for 'Mechs, apply a +2 modifier to all Piloting Skill Rolls and all attacks to reflect the difficulty of piloting a machine that has not had its neurohelmet synched with the pilot's specific brain wave pattern.

As soon as a MechWarrior enters the hex of an abandoned 'Mech, he or she is considered in the cockpit for any type of weapons damage inflicted against the abandoned unit (if the 'Mech falls for any reason in this situation, the pilot automatically takes 1 point of damage).

The above rules represent a pilot taking extreme care when attempting to take control of a 'Mech or aerospace fighter to avoid a nasty feedback shock as the safety systems attempt to protect the unit. A player can choose to lower the necessary number from 12 to anything between 9 and 12 to hack into the unit, but must announce his intention to do so before making the roll. Each point below 12 applies a cumulative point of damage to the pilot in the case of a failed roll. For example a failed roll against a target number of 9 would apply 3 points of damage to the hacking pilot.

Infantry: For any unit except 'Mechs and aerospace fighters, conventional infantry can be turned into the pilot/crew, applying a +2 modifier to all Driving Skill Rolls, as well as a +1 to-hit modifier to all weapon attacks. If the infantry in question have an Anti-'Mech Skill Rating of 5 or less, only apply a +1 Driving Skill modifier.

Motorized and mechanized conventional infantry, as well as battle armor (except exoskeletons and PA(L) battle armor, which can be used), cannot be used in this fashion.

If using *Vehicle Crews* (see p. 186), and the number of infantry in the unit taking control is less than the number of crewmen required for a given vehicle tonnage, apply an additional +1 Driving Skill modifier for each trooper less than the minimum requirement. For example, an infantry platoon with an Anti-'Mech Skill Rating of 6 or higher and only 5 troopers left is taking control of a 100-ton vehicle, which normally would require a crew of 7. In addition to the standard +2 Driving Skill and +1 to-hit modifiers for the infantry taking control of a vehicle, an additional +2 Driving Skill modifier would be applied (as well as limiting the number of attacks that can be made against multiple targets). If the infantry had an Anti-'Mech Skill Rating of 5 or less the total modifiers involved would only be a +3 Driving Skill modifier.

For Large Naval Vessel Support Vehicles and Large Craft, the infantry can only take control if they can reach sufficient numbers to make up the large number of crew required for such units (this may require multiple infantry platoons). First, determine the minimum crew requirements of the unit in question (using the Technical Readout write-up, the record sheet or the appropriate construction rules). Once the minimum crew number is determined, divide the number of infantry attempting to take control of the unit by that value. Once that percentage is known, compare it

to the Crew Casualties Table (see p. 174) to determine the modifiers under which the infantry will operate; if the percentage is less than 5, the unit cannot be taken control of (though the infantry can stay in the hex waiting for additional infantry to arrive to boost the crew percentage high enough). In addition, a flat +1 modifier is applied to reflect that the infantry are not intimately familiar with the craft; if the infantry have an Anti-'Mech Skill Rating of 5 or less, ignore that additional +1 modifier.

For such large units, bay personnel are not counted when determining the minimum crew requirements. However, infantry can board such an abandoned unit and attempt to take over control of both the carrying unit and the units being carried, or just the units being carried, as described above; such carried units would be able to dismount the carrier unit, following all standard rules, in the following turn.

In all instances, if there are troopers left over (for example, a full platoon of 28 taking control of a vehicle that only requires 2 crewmen to pilot), the controlling player can simply subtract those troopers from the platoon.

Elite Anti-'Mech-Trained Infantry: If players are fielding infantry that fall into the categories described above for an infantry unit taking control of another unit, and they have a Anti-'Mech Skill Rating of 1, they can be used to pilot 'Mechs and aerospace fighters. In this case, apply a +1 to-hit modifier in addition to the standard +2 Piloting Skill modifier.

SWARMING

If an infantry unit has successfully swarmed an enemy unit, it may attempt to kill the crew with as little damage as possible to the unit, leaving it open for use by that infantry's side (an extremely difficult and rare feat of infantry prowess).

Before the controlling player of a swarming unit rolls on the Swarm Attacks Hit Location Table (see p. 222, *TW*), that player may announce he is attempting to eliminate the pilot/crew while limiting damage. In this instance, the infantry forgoes its full damage and rolls on the Swarm Attacks Hit Location Table (or the appropriate hit location table if the target is a non-'Mech unit). Only a single point of damage is applied to the rolled location. If the location rolled is the head (rear for vehicles), the controlling player immediately rolls 2D6. On a result of 10+, the swarming unit has successfully breached the cockpit and killed the pilot without damaging the 'Mech or vehicle any further; the unit powers down (a 'Mech will not automatically fall, though it does so if a Piloting Skill Roll is required before another pilot takes control) and is considered abandoned. Another MechWarrior or vehicle crew can then take control of it as described above.

TRANSPORT BAYS (EXPANDED)

During standard-rules play, units in transport bays (see p. 239, *TM*)—such as on DropShips or Large Naval Vessels—can dismount at any time (see *Carrying Units*, p. 89, *TW*), entering the scenario as soon as their carrying unit is in a position to allow for legal dismounting. However, this simplicity ignores the reality that such units can be in varying states of readiness, from operational to completely shut down, especially during long voyages or when conflict is not expected. That readiness will determine how quickly such units can be activated, dismounted and put into action.

At the start of a scenario, the controlling player of any occupied transport bays should write down the status of the units in each bay, as shown on the Status column of the Transport Bays Status Table (note that such transport bays can be on another unit—such as a Large Naval Vessel, Large Craft, or Mobile Structure—or in a building). The players should agree on a formula for determining the various status levels. For example, if conflict is imminent and the purpose of the carrying unit is to disembark carried units onto the battlefield, having all units operational might be appropriate. However, if conflict is not expected and an attack surprises a carrying



Swarming battle armor attempt to wrest control of a Fortieth Shadow Division Zeus away from its pilot.

TRANSPORT BAYS STATUS TABLE

1D6 Roll	Status	Turns To Activation**
1-2	Shutdown	4
3-4	Stand By/Empty	3
5	Stand By/Occupied	2
6	Operational*	1

*Conventional Infantry are always considered "operational."

**This is in ground turns; if using space turns, all units are considered "activated" after a single space turn, regardless of the units' status or the availability of technicians (though the lack of a technician still applies the +2 modifier to the Piloting Skill Roll to determine if a shut-down unit activated properly [see *Bay Personnel,* p. 202]).

unit, then a good majority of the carried units would either be at Shutdown or at least in Stand By/Empty status. If players wish, they may simply use the 1D6 Roll column of the table to quickly and randomly determine the status of the various units in transport bays prior to game play (such randomness can help to reflect the reality of different status checks, routine maintenance and so on that would occur at different times for various units in transport bays, particularly on large vessels with many such cubicles).

At the start of any turn, the controlling player may activate any number of units. The number of turns in which the activating unit may take no actions before it is fully active is shown on the Turns to Activation column of the Transport Bays Status Table. For example, at the start of Turn 2 a player nominates an Operational 'Mech, a Stand By/Occupied battle armor squad and a Stand By/Empty Vehicle. Nothing happens during Turn 2 for any of those units. At the start of Turn 3, the 'Mech becomes active and can dismount during the Movement Phase (provided there is a legal hex), or can be used against boarding non-infantry units during the Weapon and Physical Attack phases; no MP are spent, the unit simply makes attacks (see *Boarding Actions (Non-Infantry)*, p. 156). At the start of Turn 4, the battle armor unit is active and can either dismount during the Physical Attack Phase or can be used against boarding non-infantry units during the Weapon and Physical Attack phases, or can be used to defend the carrying unit or building against an infantry action (see *Infantry Vs. Infantry Actions*, p. 167). At the start of Turn 5, finally the vehicle is active and can follow the 'Mech's actions, either dismounting (provided there is a legal hex) or staying on board to fight against boarded units.

At the start of a turn when a non-infantry unit that began a scenario shut down is fully active, the player makes a Piloting/Driving Skill Roll, applying no modifiers. If the roll succeeds, nothing happens. If the roll fails, the unit's computer didn't start properly due to the speed of start-up; apply a +1 modifier to all Piloting/Driving Skill Rolls and all weapon and physical attacks for the following 3 turns. After the 3 turns, the computer resets properly and the modifier is eliminated.

Bay Personnel: If a technician for the type of unit ('Mech technician, vehicle technician and so on) is unavailable (see *Bay Personnel*, p. 170), either due to a previous injury, because the unit is involved in the defense of the carrying unit or building (see *Infantry Vs. Infantry Actions*, p. 167), or for some other reason, all units except those at Operational status require 1 additional turn to reach full activation. In addition, apply a +2 modifier to the Piloting/Driving Skill Roll to determine whether a Shutdown unit activates properly (see above).

Pilots/Crews: If pilots/crews are to be involved in defending the carrying unit or building against infantry (see *Infantry Vs. Infantry Actions*, p. 167), the player should note the specific units whose pilots/crews are being used in such actions. Those pilots/crews are not available for activating units under these rules until they are removed from such defensive actions. Additionally, any infantry in transport bays that the controlling player has assigned to defending against infantry combat cannot be activated until they are removed from such actions.

Hot Zone: As with dismounting and mounting from a DropShip, these rules approximate the activation of a unit within the "hot zone" of a scenario: fast and furious, weapons blazing. Outside of a scenario (that is, outside of direct combat), the safe start-up of a unit will be done across time, under the restrictions noted above.

VEHICLE CREWS

Unlike 'Mechs, which are piloted by a single MechWarrior, all but the smallest vehicles are controlled by a crew of two or more. Many factors determine the number of crewmen a vehicle requires, the most important factor being the number of weapon systems the vehicle mounts. For purposes of game play, however, the number of crewmen relates directly to the size of the vehicle.

To determine the number of crewmen, divide the tonnage of the vehicle by 15, rounding fractions up. The size of a vehicle's crew is rarely important in a single game, but frequently becomes important in campaign play.

CREW NUMBERS AND ABILITIES

Depending on the number of crew it carries, a vehicle may operate under certain restrictions or advantages, as described below.

Single Crewman

Small vehicles (15 tons and lighter) have only one crewman, who must act as the driver, gunner and commander. Such a vehicle may not attack more than a single target each turn. Also, if any of the vehicle's weapons or turrets jam, the vehicle may neither move or fire while clearing the jam.

Two Crewmen

Vehicles with two crewmen (16–30 tons) usually have one driver and one commander/gunner. Such vehicles operate normally.

Multiple Crewmen

Large vehicles (31 tons and heavier) have three or more crewmen, some of whom act as loaders or additional gunners to allow the vehicle to attack multiple targets more easily. For every crewman above two, a vehicle may attack an additional target without suffering the secondary-target modifier.

These additional targets may fall outside the front firing arc. For example, a 50-ton Maxim hovercraft has a crew of four (50 ÷ 15 = 3.33, rounded up to 4). Its two extra crewmen allow it to fire at up to three targets in the same Weapon Attack Phase without penalty. The standard +1 secondary-target modifier would apply to all targets past 3.

ZIP LINES

Conventional Infantry (either foot or jump) and battle armor can dismount from an airborne VTOL using zip lines (instead of using Jumping MP). All the standard rules for infantry with Jumping MP dismounting from a VTOL apply (see p. 225, *TW*), except that each infantry unit dismounting in this fashion must make an Anti-'Mech Skill Roll, adding any applicable modifiers from the Ejecting Modifiers Table (see p. 165; treat each elevation the infantry has to descend as a building level for this purpose). A failure results in a single 5-point Damage Value grouping applied to the unit; against conventional infantry the damage is applied as though the attack originated from another infantry unit.

Airships: Infantry can also dismount from Airships in this fashion, but the Airship must be at Altitude 1 (NOE). Treat this as elevation 4 for the purposes of the infantry's Anti-'Mech Skill Roll.

CONCEALING INFORMATION

In large-scale battles, accurately assessing the condition and strength of an opponent's forces can be quite difficult. These optional rules for concealing certain information from the opposing player simulate the challenges of gathering accurate battlefield intelligence. The system works quite simply—each player conceals most of the information on his record sheets from his opponent until one of the opponent's units manages to obtain the information by visually or electronically determining the configuration and condition of the player's units.

We strongly recommend that these rules be used only in games presided over by an impartial referee. The rules for concealing information allow ample opportunity for cheating and may lead to long, potentially bitter arguments.

Note that these rules differ from the detection rules associated with double-blind play (see p. 188).

RECORD SHEETS AND SET-UP

Each player should conceal his unit's record sheets from his opponent before and during game play. Keeping record sheets on a clipboard with a folding cover is a simple and convenient way to accomplish this.

Before play begins, each player should make sure that each unit's record sheet includes appropriate notations for unit features such as auto-eject status, special ammunition loads, Piloting/Gunnery Skill ratings and so on.

AVAILABLE INFORMATION

Any unit that is not deployed under the Hidden Units rules is visible to an opponent as soon as game play starts.

Consequently, each player can see the location and general type of every opposing unit. For example, an enemy will recognize a CPLT-C1 *Catapult* as a *Catapult*, but he will not know that it is the CPLT-C1 model. Similarly, an opponent will recognize the general type of an infantry unit—foot, motorized, jump, mechanized or battle armor—but not the type of armament the unit carries.

To obtain further information about an opposing unit, a player must have one of his own units examine the opposing unit by successfully scanning it with an active probe or standard sensors, or by visually inspecting it during play.

SCANNING

Active-probe scanning provides the most detailed and accurate information about enemy units. However, when such sensors are unavailable, standard 'Mech or vehicle sensors or a simple visual inspection can reveal a certain amount of information.

Active Sensors

Any unit that has active sensors (is not shut down, its sensors are not destroyed and so on) can always tell the following basic information without any scanning required.

Armor Condition: How much armor is left in a given location. The sensor readings follow a color code, based on the percentage of armor left compared to its standard undamaged condition: 100-90 percent = green; 90-50 percent = yellow; 50-10 percent = red; 10-0 percent = black. For example, a player is facing a *Centurion* that took damage from a medium laser hit to its right arm. When the player asks his opponent what the *Centurion*'s status is, the opponent responds that all locations are green except for the right arm, which is yellow [16 (original armor value) – 5 (damage) = 11 / 16 (original armor value) = .68, or 68 percent (yellow)].

Heat Condition: The unit's current heat level. Once again, the sensors follow a color code: 1-7 = blue; 11-14 = green; 15-21 = yellow; 22+ = red.

Active Probes

Any time a unit enters the range of any type of active probe operated by an opponent, the player must reveal that unit's record sheet to the opponent. The player must leave the sheet face up and available for the opponent to examine as long as the unit remains within the probe's effect radius.

Any unit mounting an ECM suite can potentially defeat an active probe on a 2D6 dice roll against a Target Number of 8. If the roll fails, the unit must reveal its information.

Standard Sensors

Any 'Mech, vehicle, battle armor or aerospace unit can use its standard sensors (radar, magscan, IR and so on) to examine one target (a Large Craft can scan up to four targets) within its line of sight; aerospace units must be grounded, or on the playing area if using the *Aerospace Units on Ground Mapsheets* rules (see p. 91, *TW*), or in the hex corresponding to the ground mapsheet if using Low-Altitude Movement (see p. 80, *TW*) to make a sensor scan. Units may make only one scan per turn, during the End Phase. If a unit's sensors are critically hit, the sensors cannot perform this function.

To scan a target with standard sensors, the scanning unit's controlling player must nominate the target and announce that he is scanning it. The scanning player may ask one question about the target unit, such as how much armor it has in a specific location, its specific model number, the amount of ammunition remaining for a particular weapon or its movement abilities. The target unit's controlling player must answer this question truthfully.

Scanning questions must be easily answerable. Any question that requires the target player to perform lengthy calculations—such as "How much armor is left on your entire 'Mech?"—is prohibited. Scanning players should also be careful about asking questions that require the target player's

opinion, such as, "What's the status on your Gauss rifle?" Target players may interpret such questions as they see fit.

If the target unit is within range of friendly ECM, the target player can force the scanning player to make a 2D6 roll to defeat the ECM before he asks his question. In this case, the scanning player must achieve an 8 or higher on the roll. If the roll fails, no information is revealed. Forcing the scanning player to make this roll, however, reveals the presence of ECM in the area. Rather than revealing that information, the target player may simply choose to let his opponent ask a question based on his unit's sensors.

Visual Inspection

Visually inspecting a unit is the last-ditch way to obtain information about the enemy. Any type of unit, including infantry and units with damaged sensors, can use visual inspection.

Visual inspection works just like standard sensor scanning, with a few exceptions. First, units can visually inspect only targets within three hexes of their position. Second, visual inspection cannot provide information that could not be determined by looking at the outside of a target

Finally, ECM has no effect on visual inspection.

DOUBLE-BLIND RULES

In a double-blind game, neither player can "see" the other's forces until they enter the sensor or visual range of the opponent's units. In this way, double-blind rules inject the uncertainty of real battle into *BattleTech* and force players to anticipate their opponent's movements, much like real battlefield commanders.

The double-blind format requires a minimum of three players, one of whom acts as gamemaster. The gamemaster monitors the status and movement of the two opposing players' forces, informs the players of their spotting sweep results and ensures the smooth play of the game.

Three identical mapsheets and 'Mech sets are needed for a double-blind game—one for each player and one for the gamemaster. Each player uses his maps to record the movement of his own units and any enemy forces his units have detected. The gamemaster uses his mapsheets to record the movement of both sides. Additionally, each player records the movement of his forces on a copy of the double-blind movement chart found at the back of this book.

Hidden Units: Units that start a double-blind game using the *Hidden Units* rules (see p. 259, *TW*) cannot be spotted except by the methods outlined in the standard game rules. If a hidden unit fires, it is spotted only if an enemy unit could have seen it under the visual spotting rules.

Running a Game: To help increase the fun of a double-blind game, during the Weapon and Physical Attack phases the gamemaster can place the units that can be seen by both sides on the playing area of the main table; this allows players to interact and increase excitement as they resolve various attacks. However, this assumes that the area in which play is occurring allows for the main table to be removed some distance from the other two tables.

Note: In a double-blind game, specific rules contradict how equipment (such as the range of ECM and probes) and some situations (determining LOS) are used in standard and advanced-rules game play. These changes enhance the "fog of war" aspects of a double-blind game and increase everyone's enjoyment of this more realistic game play. Any rules in this section are only for use in double-blind games and should never be used in regular games.

Simultaneous Movement

Double-blind rules can be time intensive, and so players may wish to use simultaneous movement (see p. 183) or some other time-saving techniques (such as a computer for dice rolling or tracking movement) to help speed up play.

If simultaneous movement is used with a double blind-game, use the following sequence of play instead of the standard double-blind sequence of play.

1. Initiative Phase
2. Movement Phase
3. Spotting Phase
   Torso and Turret Twist
4. Weapon Attack Phase
   Standard Weapons Fire
5. Physical Attack Phase
6. Heat Phase
7. End Phase

Double-Blind Play on the Space Map

While these rules are specifically designed for play on ground mapsheets, players can easily adapt them for use on a space map, taking into consideration the unique aspects of such games.

SEQUENCE OF PLAY

Double-blind games use the following modified *BattleTech* sequence of play.

1. Initiative Phase
2. Movement Phase
   Spotting Phase
3. Weapon Attack Phase
   Standard Weapons Fire
4. Physical Attack Phase
5. Heat Phase
6. End Phase

The Initiative, Heat and End phases of each turn in the double-blind game follow standard *BattleTech* rules except where noted. Special double-blind rules for the Movement Phase, Weapon Attack Phase and Physical Attack Phase are described in detail below.

INITIATIVE PHASE

During the Initiative Phase, each unit must declare to the gamemaster what sensor system it is using (Radar, IR, Magscan, Seismic and so on) for that turn. The players can write this information down and pass it to the gamemaster, or whatever system the players determine works best.

MOVEMENT PHASE (SPOTTING PHASE)

After each unit moves, the gamemaster decides if the unit is now visible to any opposing units.

First, the gamemaster determines if the moved unit can be detected visually by any enemy unit.

Second, the gamemaster checks to see if the unit can be detected by any enemy unit's sensors.

If the unit is visible, place it on the map. Note that while it may be visible, it may not be able to see the unit that spotted it; if so, the moved unit does not know it has been spotted.

VISUAL RANGE TABLES

Light/Weather Condition	Maximum Visual Range (in hexes)			
	Ground BattleMech/Vehicle*	Infantry	Aerospace†	Large Craft
Pitch Black**	3	1	5	4
Heavy Fog/Moonless Night**	5	2	10	8
Heavy Hail/Sleet/Snowfall/Blowing Sand/Full Moon Night**/Gusting Rain/Ice Storm/Torrential Downpour	10	5	20	15
Dusk/Dawn**/Heavy Rainfall/Snow Flurries	15	8	30	20
Moderate Rainfall/Snowfall	20	10	50	25
Light Fog/Hail/Rainfall/Snowfall	30	15	60	35
Daylight (no conditions)	60	30	120	70

Additional Effects	Modifier
Light Smoke	–1 hex per hex in LOS
Heavy Smoke	–2 hex per hex in LOS
Active Visual Camouflage‡	Half distance, round down§
Void-Signature System	Quarter distance, round down§

*Includes grounded aerospace units (but not Large Craft)

**If the spotter has an active searchlight use the following ranges instead: mounted (30), handheld/infantry (10). If the target is illuminated by another source (such as fire, or another unit's searchlight) use a range of 45 hexes.

†Must be between Altitude 2 and 9; if at Altitude 1 (NOE), the unit is considered grounded. If at Altitude 10 or higher, the unit cannot be used for visual spotting.

‡This includes the following: Chameleon Light Polarization Shield, Mimetic Armor, Sneak/Camo and Battle Armor Camo (the Void-Signature System is also considered an active visual camouflage, though its rules are different; at left)

§The standard visual spotting distance of a unit under a given situation is half, rounded down (or quarter distance, rounded down if using the Void-Signature System active visual camouflage). For example, a BattleMech in daylight would only have a visual spotting range of 30 when trying to visually spot a unit mounting an active visual camouflage (or 15 when trying to visually spot a unit mounting the Void-Signature System).

Visual Spotting

A unit visually detects an enemy unit whenever two conditions are met. First, the spotter must have a clear line of sight to the enemy unit. Second, the enemy unit must be within the visual range of the spotting unit. Use the Visual Range Table to determine maximum visual range under various atmospheric conditions. Note that the combinations of various Planetary Conditions are numerous, such as Heavy Snowfall with Dawn/Dusk. In such situations, players should only use the most restrictive condition.

Except for a vehicle with a single crewman—which can only spot in its forward arc—all units have a 360-degree visual arc; 'Mechs have a 360-degree view compressed into the forward view screen. Vehicles with more than one crewmember can spot in multiple firing arcs (see *Vehicle Crews*, p. 186). Each additional crewmember beyond the first can spot in one additional firing arc, so that a vehicle with 4 or more crewmembers can spot in a 360-degree arc.

If submerged, start on the "Light Fog/Hail/Rainfall/Snowfall" row of the Visual Range Tables above. For every full 10 depths underwater, move up one line on the table. Underwater depth has no effect on Sensor spotting ranges.

Airborne Units: Against other airborne units, use the Visible Range Table as usual. However, against ground units, an airborne unit is only able to visually detect units along its flight path and must be at or below Altitude 8.

Sensor Spotting

Electronic sensors cover a wider field than most visual checks, but they can be fooled by the proper counter-measures. As with visual checks, sensors operate in a 360-degree arc, regardless of the spotting unit's firing arc. Unlike visual spotting, however, sensors do not need to have LOS to a target in order to detect it. However, just because your sensors have picked up a target doesn't mean the target is visible. Detecting a unit with sensors (of any kind) only reveals that unit's location and, if using any sensor other than seismic, its height: i.e. you have a "blip". The unit must still be visually detected as normal before it is fully revealed. Note that height is always returned in levels, even if the unit detected would normally measure its height in elevations (such as a VTOL). It is up to the detecting player to guess what the level returned represents.

With the exception of magscan, sensors will not pass through the surface of a water hex, so a sensor in a location above or below water cannot detect a unit that is below or above water, respectively. The one exception occurs if a sensor is located in the "body" of a naval vessel on the surface (all non-equipment specific sensors are automatically located in the "body"), in which case the sensor can detect units both above and below the surface of the water.

The ranges of various electronic sensor systems appear in the Sensor Range Table, p. 190. To make a Sensor Check, the player rolls 2D6. A result of 7 or 8 means the sensor detects any unit within its short range band. A result of 5 or 6 means the sensor detects units within its medium range band. A result of 2 to 4 means the sensor detects units within its long range band. A roll of 9 to 12 means the sensor failed to detect any units. Remember that a spotting unit may use only one type of sensor per turn, which is declared to the gamemaster at the start of the turn (see *Initiative Phase,* p. 188).

SENSOR RANGE TABLES

Sensor System	Range (in hexes) Short (2D6 = 7–8)	Medium (2D6 = 5–6)	Long (2D6 = 2–4)
Beagle Active Probe*	1–12	13–24	25–36
Bloodhound Active Probe	1–16	17–32	33–48
Clan Active Probe/EW Equipment*	1–15	16–30	31–45
Clan Watchdog/Light Active Probe	1–9	10–18	19–27
'Mech IR/Magscan Sensor†	1–10	11–20	21–30
'Mech Radar/Support Vehicle Basic Fire Control IR	1–8	9–16	17–24
Combat Vehicle/Support Vehicle Advanced Fire Control IR/Magscan†	1–9	10–18	19–27
Heat Sensor‡	1–9	10–18	19–27
Combat Vehicle/Support Vehicle Advanced Fire Control Radar/Improved Sensors§	1–6	7–12	13–18
Support Vehicle Basic Fire Control	1–4	5–8	9–12
'Mech Seismic Sensor	1–2	3–4	5–6
Vehicle Seismic Sensor	1	2	3

Additional Effects (All Sensors except Seismic)	Modifier
Castles Brian	If along LOS, all sensors except Seismic and Active Probes completely blocked
Hill Hex	If along LOS, all sensors except Seismic, MagScan, and Active Probes completely blocked
Electromagnetic Interference	–4 to all range brackets
Lightning Storm	–1 to all range brackets

Additional Effects (Radar Only)	Modifier
Building Hex	If along LOS, sensor completely blocked

Additional Effects (IR/Heat Sensor/Radar only)	Modifier
Heavy Woods/Jungle Hex	–1 hex per range bracket per hex in LOS
Ultra Woods/Jungle Hex	–2 hex per range bracket per hex in LOS
Any Building Hex but Hardened or Castles Brians	–1 hex per range bracket per hex in LOS
Hardened Building Hex	–2 hex per range bracket per hex in LOS
Castles Brian Hex	If in LOS, all sensors completely blocked

Support Vehicles: Support Vehicles without a Basic or Advanced Fire Control cannot use these electronic sensors rules.
*Includes the active probe mounted on battle armor (see p. 228, *TW*)
†An infrared sensor spots a unit that is "hot" more easily than other units (see *Infrared Sensors,* at right); a magscan sensor spots larger units more easily (see *Magscan Sensors,* at right).
‡As mounted on battle armor (see p. 256, *TM*); is used exactly like a 'Mech/vehicle IR sensor (p. 223)
§As mounted on battle armor (see p. 228, *TW*)

Vehicles have access to sensor systems similar to those used on 'Mechs, but in most cases these systems have shorter ranges, reflected in the Sensor Range Table. Conventional infantry units do not have access to sensor systems.

Unless specifically noted otherwise on the Sensor Range Table, no objects (hills, building, trees and so on) block sensors.

Airborne Units: Sensor ranges are considerably curtailed for airborne units. As with visual spotting, airborne units must be at or below Altitude 8 in order to make a sensor roll. Short range indicates that any unit within 1 hex of the flight path is detected, medium range is any unit 2 hexes away from the flight path and long range is any unit 3 hexes away. Any active probes increase this range to 1-2 for short, 3-4 for medium, and 5-6 for long.

Seismic Sensors: A unit must have expended MP (of any type) during the Movement Phase of the turn in which the Sensor Check is made in order to be detected by a seismic sensor (this includes units landing in a hex after expending Jumping MP.

Airborne units (including units expending VTOL MP) and submerged units (provided they are not moving along the bottom of the water hex) cannot use seismic sensors, and they cannot be spotted by seismic sensors.

If using Planetary Conditions, seismic sensors cannot be employed during any turn that an earthquake or meteor shower occurs on the playing area.

Infrared Sensors: When using infrared sensors, any time a unit that tracks heat is "hot," it can be more easily detected. For each heat-induced MP modifier on the target, the range of a sensor is expanded for that unit(s) by 1 hex; add 1 additional hex if the unit has been hit by an inferno attack in the last turn, or is standing in a hex that is on fire. For example, a player is using a 'Mech IR sensor and rolls a 5, resulting in detection of any unit in that sensor's medium range bracket (hexes 11–20). However, a 'Mech with 15 points of heat (inflicting a –3 MP modifier) is at hex range 8, three hexes away from the medium range bracket. The infrared sensor spots the "hot" unit. If the 'Mech only had 14 points of heat, or if it was at hex range 7 (four hexes away from the medium range bracket), it would have remained undetected.

If using Planetary Conditions that affect the temperature of heat-tracking units, also apply the following rules: for each –1 Heat Point applied per turn, the range of a sensor is expanded for that unit(s) by 1 hex; for each +1 Heat Point applied per turn, the range of an IR sensor is shrunk for that unit(s) by 1 hex (as described above).

Units that are not "hot" (i.e. those without one or more heat points on a Heat Scale) cannot be detected by an IR sensor scan.

Magscan Sensors: If magscan sensors are being used, any unit (except conventional foot and jump infantry) within range is spotted regardless of LOS, unless a building blocks LOS, unless a hill or building blocks LOS, in which case the sensor cannot detect the target unit. It can detect a unit through any number of woods/jungle hexes.

When using magscan sensors, the larger a unit is, the more easily it can be detected. For any unit from 80 to 100 tons, the range of the sensor is expanded for that unit(s) alone by 1 hex (as described above for infrared sensors). For any unit from 101 to 1,000 tons, the range of the sensor is expanded for that unit(s) alone by 2 hexes. For any Large Craft or Large Naval Vessel, the range of the sensor is expanded for that unit(s) alone by 3 hexes.

Units that weigh less than 20 tons cannot be detected by a magscan sensor, including all infantry.

If using Planetary Conditions, a magscan will not detect a unit that occupies a Heavy Industrial Zone hex.

ECM/STEALTH MODIFIER TABLE

Spotting Unit's Probe/Sensor	Target Unit's ECM System: Void-Signature System	Angel or Null-Signature System	Standard Clan, Watchdog, or Guardian	Stealth Armor* or EW System	Infantry Sneak, ECM	Infantry Sneak†	Active Visual Camouflage‡
Beagle	+6	+5	+4	+3	+3	+2	NA
Bloodhound	+4	+3	+2	+1	+1	+1	+1
Clan Active Probe	+5	+5	+4	+3	+2	+1	NA
Light Active Probe	+6	+6	+5	+4	+3	+2	NA
Watchdog	+6	+5	+4	+3	+2	+1	NA
EW System	+7	+6	+4	+4	+3	+2	NA
'Mech Sensor	+7	+6	+5	+4	+4	+2	+2
Vehicle Sensor/Improved Sensor§	+7	+7	+6	+5	+3	+1	+3
Communications Equipment/ Command Console	+7	+7	+6	+5	+5	+3	+3
Seismic/IR/Magscan	NA	NA	NA	NA	NA	NA	NA

*Includes any armor with the word "stealth" in its title, regardless of what unit mounts it.
†Includes: DEST Infiltration Suit; Sneak, Camo; and Sneak, IR.
‡See "‡" footnote on the Visual Range Table (p. 221).
§As mounted on battle armor (see p. 228, *TW*)

Commanders: If using commanders (see p. 159), a sub-force commander can make two different types of sensor rolls, while a force commander can make three different types of sensor rolls (this includes rolling for his own sensors and/or rolling to monitor remote sensors).

Communications Equipment: If a unit on a side mounts 3 to 6 tons of communications equipment (see p. 212, *TM*) or a cockpit command console (see p. 172, *TO: AUE*), once the player has rolled the dice to use a sensor, the player then rolls 1D6. On a result of 1–3, the numerical value below the original dice roll result is added to it; on a result of 4–6, the numerical value above the original dice roll result is added. For example, a player with a Beagle Active Probe rolls 2D6 for sensor detection and gets a result of 6, meaning he detects any enemy units in medium range. Because his side has communications equipment, he immediately rolls 1D6 and gets a result of 3. This means that that a 5 is added to the original 6 (5 is one numerical value less than 6). Such a result doesn't change anything in this example; however, if the player had rolled a 4, then 7 would have been added to the 6, meaning the player would detect any units in the medium and short range brackets.

If a unit on a side mounts 7 or more tons of communications equipment, once the player has rolled the dice to use a sensor, the numerical values above and below the original dice roll result are also added. For example, on a result of 5, the values of 4 and 6 are added.

These benefits apply to all units on a side, but the units mounting the equipment must be on the playing area; if they leave the playing area for any reason (to retreat, due to off-map movement (see p. 160) and so on), these benefits are lost. Additionally, if the communications equipment or cockpit command console loses its Initiative bonuses for any reason (see *Communications Equipment* and *Cockpit Command Console*, p. 212, *TM,* and 112, *TO: AUE*, respectively), the benefits of these items for double-blind play are lost as well (if the Initiative bonuses are recovered, these benefits also resume). Only a single communications equipment or cockpit command console bonus can be applied in this fashion.

Note that the 67-hex range for monitoring a remote sensor is not changed, regardless of the communications equipment available to a side (see below).

Remote Sensors: As noted in the *Remote Sensor* rules (see p. 187, *TO: AUE*), if a unit mounts any of the following equipment and is within 67 hexes of a friendly remote sensor, it can monitor that friendly remote sensor: active probe, C^3 master computer, improved C^3 computer, cockpit command console or communications equipment. In place of rolling for its sensors, the controlling player of the unit in question can instead roll for one remote sensor (regardless of how many it can monitor), with all the same results applied as noted above.

Satellites: If a unit on a side has established an uplink with any type of Satellite (see *Establishing Uplink*, p. 162), add 1 hex to all range brackets of all sensors on the Sensor Range Table. Only a single Satellite range bonus is applied, regardless of how many different Satellite uplinks exist.

Note that the 67-hex range for monitoring a remote sensor is not changed (see above).

ECM/Stealth Systems

Just as special sensors can make spotting enemy units easier, special ECM and stealth systems can make units harder to detect.

As a general rule, ECM/stealth systems mask a unit's nature and precise location from enemy sensors, but the systems' powerful jamming devices make it clear to the enemy that something is out there.

In the double-blind game, all ECM and stealth systems modify the die roll results of spotting units attempting to detect an enemy unit equipped with such an ECM system. Because different ECM/stealth systems have different effects against different probes and sensors, the modifiers vary depending on the spotting unit's probe/sensor and the enemy unit's ECM system. These modifiers appear in the ECM/Stealth Modifier Table. Once the sensor detection dice roll has been made (including adding any bonus modifiers from

the controlling player's side), the player consults the ECM/Stealth Modifier Table and adds the applicable modifier to the roll result.

For a stealth system to have an effect, an enemy need only have their stealth system active. For ECM to have an effect, either the spotting unit or a hidden unit must be within the area of effect of any ECM system hostile to the spotter. If a spotting unit and/or its target is within the range of multiple hostile ECM systems, combine the effects of all these ECM systems. In both cases, whether or not LOS exists to the hidden unit is irrelevant.

Though ECM systems can prevent a sensor probe from identifying a unit, they also produce powerful, distinctive electromagnetic signatures. If a spotting unit or any potential target is within the area of effect of active and hostile ECM, and the spotting unit fails to detect the ECM-equipped unit, inform the player that his unit has been jammed by ECM. Any other details beyond this, such as the amount, type, or location of the ECM, are not revealed. Stealth systems do not have such a signature and so the player is not informed if a stealth-equipped unit manages to remain hidden from a probe; if the unit mounts equipment with "ECM" in its title (even if the ECM only affects the target unit's hex), or if the equipment must have an active ECM to operate (such as Stealth Armor or a Void-Signature System), then the player is informed that jamming has occurred.

ECCM: If using the ECCM rules (see p. 98), players can use ECCM to cancel out ECM, thus making it harder or easier to detect various units.

To demonstrate the various interactions of equipment and sensor rolls in a double-blind game, we'll begin with the Line of Sight Diagram on p. 100 of Total Warfare, *modifying as described below. In addition, Dusk and Blowing Sand Planetary Conditions are in play; as the Blowing Sand provides the more severe penalty, only that penalty is used.*

First the gamemaster determines if any visual spotting occurs. Looking on the Visual Range Table for Blowing Sand, the gamemaster notes that the 'Mech in Hex A only has a 10-hex visual range. This will allow it to see the DropShip in Hex B, the WiGE in Hex D and the infantry in Hex C, as they all fall in the 'Mech's forward firing arc. The 'Mech in Hex E is also within 10 hexes, but the light woods and heavy woods in between the two units means that LOS does not exist and so the 'Mech in Hex E remains undetected.

Next, the gamemaster verifies the additional bonuses available to the 'Mech in Hex A in preparation for sensor spotting. The 'Mech is piloted by a force commander (see p. 159) and so will be able to make three separate sensor detection rolls. In addition, 'Mech A's side includes a Mobile HQ on the playing area and is in communication with a Satellite.

The player decides to make a Sensor Check with the Beagle Active Probe the Raven *mounts, as well as a magscan and a seismic Sensor Check. The player makes three rolls for the respective Sensor Checks, with the following results: 3, 5 and 7.*

Now the gamemaster must apply the various benefits.

First, the Satellite provides a 1-hex range increase to all range brackets, so the three sensors used in this example now appear as follows.

Sensor System	Short (2D6 = 7–8)	Medium (2D6 = 5–6)	Long (2D6 = 2–4)
Beagle Active Probe	*1–13*	*14–26*	*27–39*
'Mech Magscan Sensor	*1–11*	*12–22*	*23–33*
'Mech Seismic Sensor	*1–3*	*4–6*	*7–9*

Next, because of the Mobile HQ, the values above and below each dice roll result are also counted, giving the following rolls: 2-3-4, 4-5-6, 6-7-8.

Now it's time to determine how those Sensor Checks stack up against the rest of the units in the Line of Sight Diagram and the equipment they mount. Though it was the last check made, after a quick look at the playing area, the gamemaster knows that even with the Satellite-boosted range on the seismic sensor, only the 'Mech in Hex E falls into that sensor's range bracket. The original die roll result of 7 normally would have meant that only a unit in short range could have been detected: 1–3 hexes. However, the Mobile HQ boosted the roll to a 6-7-8, meaning that both short and medium range brackets are detected: 1–6 hexes. As the 'Mech in Hex E is 5 hexes away, it may be detectable. Even though the 'Mech mounts an Angel ECM, which would normally provide a hefty blocking bonus against sensors, it has no effect against the seismic sensor. However, the 'Mech in Hex E did not expend MP during the Movement Phase of the current turn, and so the 'Mech in Hex E is not revealed.

The next easiest sensor to check is the magscan, as only the units in Hex F and Hex J weigh more than 80 tons. The dice roll result of 4-5-6 means that units in the sensor's long and medium ranges would be detected. The 'Mechs in Hex F and Hex J are in short range, at 11 hexes. However, they both weigh 80 or more tons, which means that if they are within 1 hex of a detection range bracket, they are detected. As both are at 11 hexes, 1 hex away from the medium range detection bracket, both units are detected.

Finally the gamemaster turns to the Beagle Active Probe. The 'Mechs in Hexes E, G and J were not revealed by the previous sensors. However, the 'Mech in Hex J has a hill hex in the LOS and so the probe is blocked. That leaves the units in Hexes H, I, E and G. The 'Mech in Hex H mounts the Void-Signature System, while the VTOL in Hex I mounts a standard Guardian ECM (the 'Mechs in Hexes E and G do not mount special equipment). Checking the original dice roll result, the gamemaster sees that a result of 2-3-4 occurred (the original result was a 3). For the units with the special equipment, he now applies those modifiers, as they work against a Beagle: a +6 and +4 modifier, respectively. For the 'Mech in Hex H, that changes the roll from 2-3-4 to 9-10-11, which means it cannot be detected (though the gamemaster would tell the player that an ECM system defeated the scan). For the VTOL in Hex I, the dice roll result is changed to 6-7-8, which actually moved the sensor detection into the short-range band (meaning the VTOL did not mask well enough), and so the VTOL in Hex I is revealed. Finally, the 'Mechs in hexes E and G both are in the short-range bracket for the Beagle Active Probe and so remain hidden.

WEAPON ATTACK PHASE

After both players have moved their units and the gamemaster has conducted all necessary spotting, the Weapon Attack Phase takes place. Only targets that have been spotted by a friendly unit in that turn may be attacked. All standard weapons-fire rules apply.

Resolve each weapon's fire by going first to one player with the unit record sheets and double-blind movement charts of all potential targets. The player then resolves his attacks and the gamemaster records the results on the proper record sheets. Once all weapons fire has been resolved, the gamemaster returns the record sheets to the appropriate players and has them resolve any Piloting Skill Rolls.

UNDERWATER COMBAT

The following optional rules replace the Underwater Line of Sight rules on page 109 of *Total Warfare*.

Underwater Visual Range

Visibility from one point to another point underwater is 50% (round down) of the appropriate Light/Weather Condition on the Double Blind Visual Range Table (see p. 189). For conditions unique to an underwater environment such as muddy water, choose the most appropriate condition to represent the situation (i.e. in very muddy water use the Pitch Black condition).

Sensor Ranges

With the exception of IR/heat sensors, all sensors operate at the ranges listed on the Double Blind Sensor Range table (see p. 190). IR/heat sensors cut their listed range by 50% (round down).

Water Line LOS

The Water Line is where Depth 1 water meets Level 0 terrain, representing the surface of the water. Under *Total Warfare* rules, a unit at Level 1 has no LOS to a fully submerged unit at Depth 2. Using these advanced rules, units are able to spot units above or below the Water Line with the following conditions.

Water Line Range Modifier: All visual and sensor spotting ranges are automatically halved (round down) when attempting to trace LOS to a unit on the opposite side of the Water Line.

Visual LOS: A ground unit may detect submerged units up to a maximum of 2 Depths beneath the surface, with a maximum visual range equal to one half the worst visual condition in play (round down). A submerged unit must be at Depth 2 or less to detect ground units and may detect a ground unit a maximum of two hexes from the nearest Depth 1 water hex, with a maximum visual range equal to one half the worst visual condition in play (round down). Airborne units (VTOLs, WiGE, aerospace, and so on) may visually spot and be spotted by units up to a maximum of 6 Levels from the Water Line, with a maximum visual range equal to one half (round down) the worst visual condition in play.

Sensor LOS: With the exception of IR/heat sensors, all sensors may detect units beyond the Water Line to one half their maximum range (round down). If using Double Blind spotting rules (see p. 189), divide each range band in half (round down), to determine the spotting ranges for each die result. IR/heat sensors all have a maximum spotting range of seven hexes (Range Band: 1-3, 4-5, 6-7) and may not detect a unit more than 6 hexes/Levels from the Water Line.

Tracing LOS through the Water Line: Trace the Water Line from the Level 0 hex that the submerged unit is located in.

A Marauder *is on the surface is attempting to detect two submarines using visual spotting. The first submarine is at Depth 4 and the second submarine is at Depth 2. The first submarine is outside of visual LOS (greater than Depth 2) so the* Marauder *can use the Water Line LOS rules to determine if the sub is visible.*

The condition on the surface is Snow Flurries, giving a maximum surface visual range of 15 hexes. The water is crystal clear: consulting the Visual Range Tables, the most appropriate condition is daylight, thus providing a maximum underwater visual range of 30 hexes (60/2). The Marauder *is 8 hexes from the hex the submarine is in. Subtracting that from the maximum surface visual range of 15 hexes, it is left with 7 hexes of visual range. Dividing this by 2 gives the* Marauder *a visual range underwater of 3 (7/2=3.5, rounded down to 3) hexes. The submarine is within visual spotting range and the* Marauder *pilot calls in an artillery strike.*

The submarine is unable to spot the Marauder*, because the* Marauder *is on a Level 4 hill and 3 hexes from the edge of the body of water the submarine is in. This places it outside the maximum of 2 hexes from the water's edge that the submarine can detect. Had the* Marauder *been standing at the edge of the water, the submarine would have easily been able to spot the* Marauder *visually.*

The submarine however is able to detect the Marauder *with its Magnetic Anomaly Detections sensor (magscan). Vehicle magscan has a range of 27 hexes, modified to 13 hexes for crossing the Water Line. Subtracting the two Depths the sub is below the surface from this range gives it a maximum detection range above the Water Line of 11 hexes. With the* Marauder *at 8 hexes distance it is well within detection range. If using Double Blind rules (see p. 188), the submarine's player would have to roll a 5 or 6 on 2D6 to detect the* Marauder*, which would be considered at medium range for the magscan (divide the standard 18 hex range by 2 for a medium range of 9).*

Naval Vessels with sensors mounted in the body and any BattleMech standing in Depth 1 water are treated as both above and below the water for the purpose of sensor use. As a result their sensors do not halve their range for crossing the Water Line. Submarines operating at Depth 1 may use their sensor/periscope mast to view as if they were at Depth 0. If employing their sensor/periscope mast, apply a +1 to all Piloting and Gunnery Skill Rolls in the same turn they employ the mast. Aerospace units at Altitude NOE are considered to be at Level 6 and measure range from hex 0909 of the mapsheet they are on.

Attacking Across The Water Line

All physical and weapon attacks—other than torpedoes (see below), Artillery (see p. 147) or Capital-scale Weapons (see p. 103, *SO*) attacks—made from above the Water Line that are directed against a fully submerged target automatically fail.

Fully submerged units may not attack units above the Water Line, unless they are equipped with Capital Missiles (see p. 103, *SO*), Cruise Missiles (see p. 96, *TO: AUE*) or multi-purpose missiles (see p. 229, *TW*).

Torpedoes

Torpedoes are special weapons designed to track and target submerged units. Torpedo launchers (see p. 138, *TW*) may attack submerged and partially submerged targets from above the Water Line, but only if the attacking unit is in contact with or below the surface of water of Depth 1 or more, and if a valid LOS exists between the attacker and target that consists of water Depth 1 or greater. (For the purposes of these rules, a surface-bound attacking unit must be in physical contact with the water surface to fire, including surfaced submarines, displacement hull naval vessels, and hydrofoils, but not including hovercraft or WiGE vehicles that are merely flying above the water surface.)

Airborne units may only attack submerged naval units using Torpedo Bombs (see p. 172, *TO: AUE*).

Damage from Torpedoes and Torpedo Bombs: If the target unit is submerged, the damage it suffers from Torpedo and Torpedo Bomb attacks may be resolved as normal. If the unit is partially submerged or is a surface unit (such as a Displacement Hull naval vessel or a hydrofoil), any hit locations not in direct contact with the water must be re-rolled.

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BATTLETECH

ADVANCED 'MECH RECORD SHEET

'MECH DATA

Type: _____

Movement Points:
- Walking: _____
- Running: _____
- Sprinting: _____
- Jumping: _____
- UMU: _____

Tonnage: _____

Tech Base:
- Clan ☐
- Inner Sphere ☐
- Mixed ☐

Weapons & Equipment Inventory (hexes)

Qty	Type	Loc	Ht	Dmg	Min	Sht	Med	Lng

LRM Status: Standard ☐ Hot Loaded ☐

Cost: _____ BV: _____

WARRIOR DATA

Name: _____

Gunnery Skill: ___ Piloting Skill: ___

Hits Taken	1	2	3	4	5	6
Consciousness#	3	5	7	10	11	Dead

Name: _____

Gunnery Skill: ___ Piloting Skill: ___

Hits Taken	1	2	3	4	5	6
Consciousness#	3	5	7	10	11	Dead

Cockpit Type:
- Standard ☐
- Small ☐
- Dual Cockpit ☐
- Command Console ☐
- Torso Mounted ☐

Auto Eject: ☐

NOTES

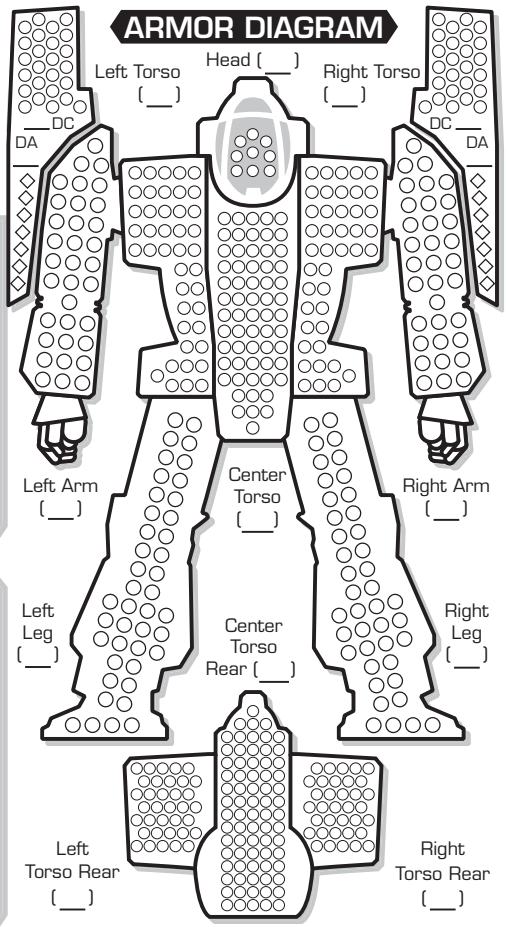
Internal Structure Type:
- Standard (S) ☐
- Endo-Steel (ES) ☐
- Endo-Composite (EC) ☐
- Reinforced (R) ☐
- Composite (C) ☐
- Industrial (I) ☐

Gyro Type:
- Standard ☐
- Compact ☐
- Heavy Duty ☐
- XL ☐

Heat Sink Type:
- Single ☐
- Double ☐
- Compact ☐
- Laser ☐

Armor Type:
- Standard (S) ☐
- Ferro Fibrous (FF) ☐
- Ferro-Lamellor (FL) ☐
- Light Ferro Fibrous (LF) ☐
- Heavy Ferro Fibrous (HF) ☐
- Stealth (ST) ☐
- Hardened (H) ☐
- Reactive (R) ☐
- Laser Reflective (LR) ☐
- Heavy Industrial (HI) ☐
- Industrial (I) ☐
- Commercial (C) ☐

ARMOR DIAGRAM



CRITICAL HIT TABLE

Left Arm

1. Shoulder
2. Upper Arm Actuator
3. Lower Arm Actuator
4. Hand Actuator
5. _____
6. _____

Head

Turret ☐

1. Life Support
2. **Sensors**
3. Cockpit
4. _____
5. **Sensors**
6. Life Support

Full Head Ejection System ☐

Right Arm

1. Shoulder
2. Upper Arm Actuator
3. Lower Arm Actuator
4. Hand Actuator
5. _____
6. _____

Center Torso

1. **Engine**
2. **Engine**
3. **Engine**
4. **Gyro**
5. **Gyro**
6. Gyro

Left Torso

Turret ☐

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Right Torso

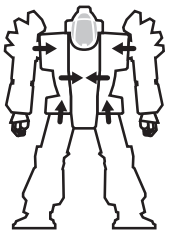
Turret ☐

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Engine Hits	○○○
Gyro Hits	○○○
Sensor Hits	○○
Life Support	○

Left Leg

1. Hip
2. **Upper Leg Actuator**
3. **Lower Leg Actuator**
4. **Foot Actuator**
5. _____
6. _____

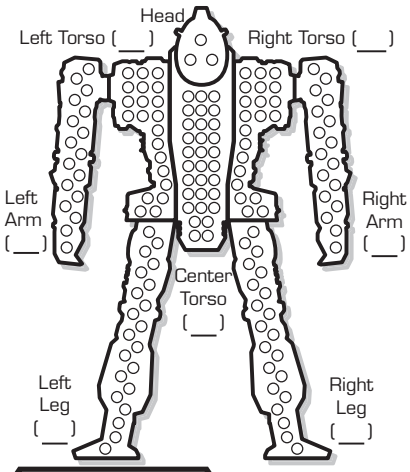


Damage Transfer Diagram

Right Leg

1. Hip
2. **Upper Leg Actuator**
3. **Lower Leg Actuator**
4. **Foot Actuator**
5. _____
6. _____

INTERNAL STRUCTURE DIAGRAM



Heat Scale

Overflow

50* 49* 48* 47* 46* 45* 44* 43* 42* 41* 40* 39* 38* 37* 36* 35* 34* 33* 32* 31* 30* 29 28* 27 26* 25* 24* 23* 22* 21 20* 19* 18* 17* 16 15* 14* 13* 12 11 10* 9 8* 7 6 5* 4 3 2 1 0

HEAT DATA

Heat Sinks: ____ (____)

Heat Level*	Effects
33	+5 Modifier to Fire
32	Pilot Damage, avoid on 8+
31	–6 Movement Points
30	Shutdown, avoid 12+
28	Ammo Exp. avoid on 8+
26	Shutdown, avoid on 10+
25	–5 Movement Points
24	+4 Modifier to Fire
23	Ammo Exp. avoid on 6+
22	Shutdown, avoid on 8+
20	–4 Movement Points
19	Ammo Exp. avoid on 4+
18	Shutdown, avoid on 6+
17	+3 Modifier to Fire
15	–3 Movement Points
14	Shutdown, avoid on 4+
13	+2 Modifier to Fire
10	–2 Movement Points
8	+1 Modifier to Fire
5	–1 Movement Points

Heat Level*	Effects (cont.)
50	SHUTDOWN
49	–9 Movement Points
48	+7 Modifier to Fire
47	Pilot Damage, avoid on 12+
46	Shutdown, avoid 20+
45	AMMO EXPLOSION
44	System Failure. avoid on 10+
43	–8 Movement Points
42	Shutdown, avoid 18+
41	+6 Modifier to Fire
40	Ammo Exp. avoid on 12+
39	Pilot Damage, avoid on 10+
38	Shutdown, avoid 16+
37	–7 Movement Points
36	System Failure. avoid on 8+
35	Ammo Exp. avoid on 10+
34	Shutdown, avoid 14+

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BATTLETECH

ADVANCED FOUR-LEGGED 'MECH RECORD SHEET

'MECH DATA

Type: _____

Movement Points:
- Walking: ____
- Running: ____
- Sprinting: ____
- Jumping: ____
- UMU: ____

Tonnage: _____

Tech Base:
- Clan ☐
- Inner Sphere ☐
- Mixed ☐

Weapons & Equipment Inventory (hexes)

Qty	Type	Loc	Ht	Dmg	Min	Sht	Med	Lng

LRM Status: Standard ☐ Hot Loaded ☐

Cost: _____ BV: _____

WARRIOR DATA

Name: _____

Gunnery Skill: ___ Piloting Skill: ___

Hits Taken	1	2	3	4	5	6
Consciousness#	3	5	7	10	11	Dead

Name: _____

Gunnery Skill: ___ Piloting Skill: ___

Hits Taken	1	2	3	4	5	6
Consciousness#	3	5	7	10	11	Dead

Cockpit Type:
- Standard ☐
- Small ☐
- Dual Cockpit ☐
- Command Console ☐
- Torso Mounted ☐

Auto Eject: ☐

NOTES

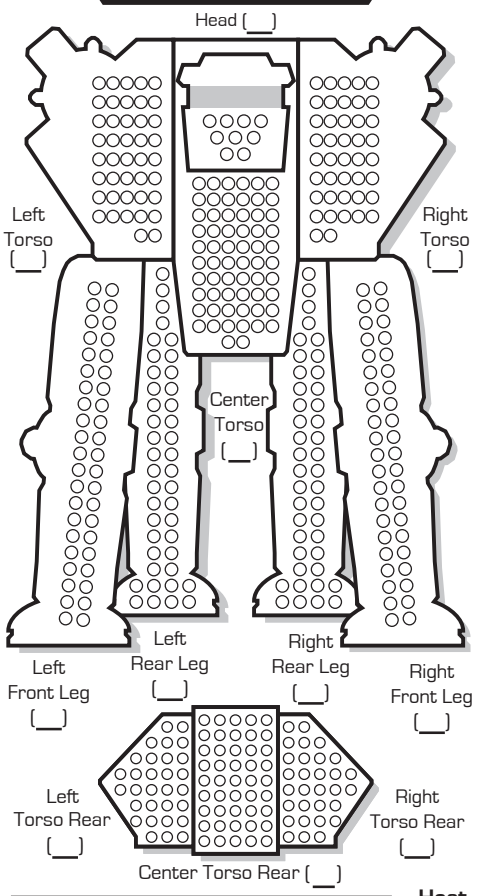
Internal Structure Type:
- Standard (S) ☐
- Endo-Steel (ES) ☐
- Endo-Composite (EC) ☐
- Reinforced (R) ☐
- Composite (C) ☐
- Industrial (I) ☐

Gyro Type:
- Standard ☐
- Compact ☐
- Heavy Duty ☐
- XL ☐

Heat Sink Type:
- Single ☐
- Double ☐

Armor Type:
- Standard (S) ☐
- Ferro Fibrous (FF) ☐
- Ferro-Lamellor (FL) ☐
- Light Ferro Fibrous (LF) ☐
- Heavy Ferro Fibrous (HF) ☐
- Stealth (ST) ☐
- Hardened (H) ☐
- Reactive (R) ☐
- Laser Reflective (LR) ☐
- Heavy Industrial (HI) ☐
- Industrial (I) ☐
- Commercial (C) ☐
- Compact ☐
- Laser ☐

ARMOR DIAGRAM



CRITICAL HIT TABLE

Head (Turret ☐)
1. Life Support
2. **Sensors**
3. Cockpit
4. _____
5. **Sensors**
6. Life Support

Full Head Ejection System ☐

Left Front Leg
1. **Hip**
2. **Upper Leg Actuator**
3. **Lower Leg Actuator**
4. **Foot Actuator**
5. _____
6. _____

Right Front Leg
1. **Hip**
2. **Upper Leg Actuator**
3. **Lower Leg Actuator**
4. **Foot Actuator**
5. _____
6. _____

Center Torso
1-3
1. **Engine**
2. **Engine**
3. **Engine**
4. **Gyro**
5. **Gyro**
6. Gyro

4-6
1. Gyro
2. Engine
3. Engine
4. Engine
5. _____
6. _____

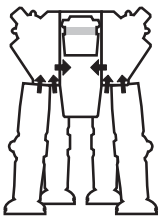
Left Torso (Turret ☐)
1-3
1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

4-6
1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Right Torso (Turret ☐)
1-3
1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

4-6
1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Engine Hits ○○○
Gyro Hits ○○○
Sensor Hits ○○
Life Support ○

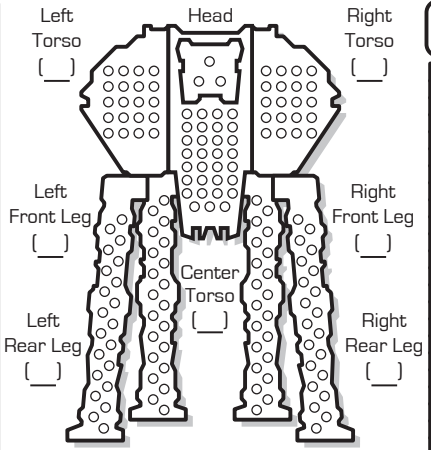


Damage Transfer Diagram

Left Rear Leg
1. **Hip**
2. **Upper Leg Actuator**
3. **Lower Leg Actuator**
4. **Foot Actuator**
5. _____
6. _____

Right Rear Leg
1. **Hip**
2. **Upper Leg Actuator**
3. **Lower Leg Actuator**
4. **Foot Actuator**
5. _____
6. _____

INTERNAL STRUCTURE DIAGRAM



HEAT DATA

Heat Sinks: ____ (____)

Heat Level*	Effects
33	+5 Modifier to Fire
32	Pilot Damage, avoid on 8+
31	–6 Movement Points
30	Shutdown, avoid 12+
28	Ammo Exp. avoid on 8+
26	Shutdown, avoid on 10+
25	–5 Movement Points
24	+4 Modifier to Fire
23	Ammo Exp. avoid on 6+
22	Shutdown, avoid on 8+
20	–4 Movement Points
19	Ammo Exp. avoid on 4+
18	Shutdown, avoid on 6+
17	+3 Modifier to Fire
15	–3 Movement Points
14	Shutdown, avoid on 4+
13	+2 Modifier to Fire
10	–2 Movement Points
8	+1 Modifier to Fire
5	–1 Movement Points

Heat Level*	Effects (cont.)
50	SHUTDOWN
49	–9 Movement Points
48	+7 Modifier to Fire
47	Pilot Damage, avoid on 12+
46	Shutdown, avoid 20+
45	AMMO EXPLOSION
44	System Failure. avoid on 10+
43	–8 Movement Points
42	Shutdown, avoid 18+
41	+6 Modifier to Fire
40	Ammo Exp. avoid on 12+
39	Pilot Damage, avoid on 10+
38	Shutdown, avoid 16+
37	–7 Movement Points
36	System Failure. avoid on 8+
35	Ammo Exp. avoid on 10+
34	Shutdown, avoid 14+

Heat Scale

Overflow
50* 49* 48* 47* 46* 45* 44* 43* 42* 41* 40* 39* 38* 37* 36* 35* 34* 33* 32* 31* 30* 29 28* 27 26* 25* 24* 23* 22* 21 20* 19* 18* 17* 16 15* 14* 13* 12 11 10* 9 8* 7 6 5* 4 3 2 1 0

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BATTLETECH

ADVANCED GROUND VEHICLE RECORD SHEET

VEHICLE DATA

Type: _____

Movement Points:
Cruising: _____
Flank: _____
Jump: _____
Movement Type: _____
Engine Type: _____

Tonnage: _____

Tech Base:
Clan ☐
Inner Sphere ☐

Weapons & Equipment Inventory (hexes)

Qty	Type	Loc	Dmg	Min	Sht	Med	Lng

Cost: _____ BV: _____

CREW DATA

Crew: _____

Gunnery Skill: ___ Driving Skill: ___

Commander Hit +1 ☐
Modifier to all Skill rolls

Driver Hit +2 ☐
Modifier to Driving Skill rolls

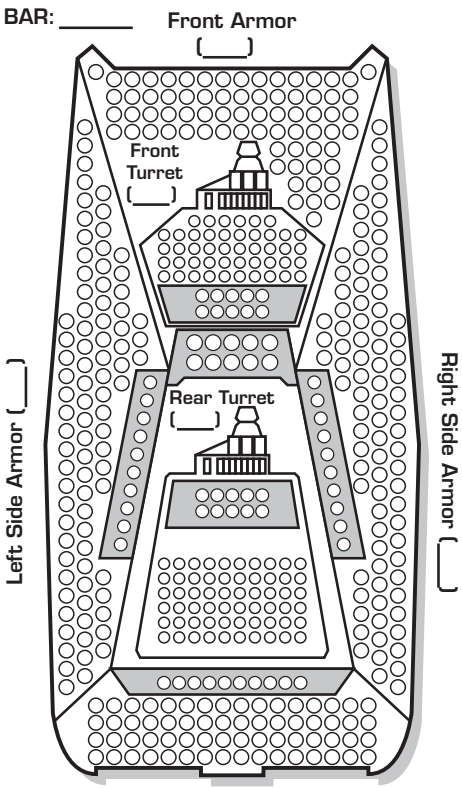
CRITICAL DAMAGE

Front Turret Locked ☐ Engine Hit ☐
Rear Turret Locked ☐
Sensor Hits +1 ☐ +2 ☐ +3 ☐ D ☐
Motive System Hits +1 ☐ +2 ☐ +3 ☐
Stabilizers
Front ☐ Left ☐ Right ☐
Rear ☐ Ft. Turret ☐ Rr. Turret ☐

NOTES

ARMOR DIAGRAM

BAR: _____



GROUND COMBAT VEHICLE HIT LOCATION TABLE

	ATTACK DIRECTION		
2D6 Roll	FRONT	REAR	SIDE§
2*	Front (critical)	Rear (critical)	Side (critical)
3	Front†	Rear†	Side†
4	Front†	Rear†	Side†
5	Right Side†	Left Side†	Front†
6	Front	Rear	Side
7	Front	Rear	Side
8	Front	Rear	Side (critical)*
9	Left Side†	Right Side†	Rear†
10	Turret	Turret	Turret
11	Turret	Turret	Turret
12*	Turret (critical)	Turret (critical)	Turret (critical)

*A result of 2 or 12 (or an 8 if the attack strikes the side) may inflict a critical hit on the vehicle. For each result of 2 or 12 (or 8 for side attacks), apply damage normally to the armor in that section. The attacking player then automatically rolls once on the Ground Combat Vehicle Critical Hits Table below (see *Combat*, p. 192 in *Total Warfare* for more information). A result of 12 on the Ground Combat Vehicles Hit Location Table may inflict critical hit against the turret; if the vehicle has no turret, a 12 indicates the chance of a critical hit on the side corresponding to the attack direction.
†The vehicle may suffer motive system damage even if its armor remains intact. Apply damage normally to the armor in that section, but the attacking player also rolls once on the Motive System Damage Table at right (see *Combat*, p. 192 in *Total Warfare* for more information). Apply damage at the end of the phase in which the damage takes effect.
§Side hits strike the side as indicated by the attack direction. For example, if an attack hits the right side, all Side results strike the right side armor. If the vehicle has no turret, a turret hit strikes the armor on the side attacked.

MOTIVE SYSTEM DAMAGE TABLE

2D6 Roll	EFFECT*
2–5	No effect
6–7	Minor damage; +1 modifier to all Driving Skill Rolls
8–9	Moderate damage; –1 Cruising MP, +2 modifier to all Driving Skill Rolls
10–11	Heavy damage; only half Cruising MP (round fractions up), +3 modifier to all Driving Skill Rolls
12+	Major damage; no movement for the rest of the game. Vehicle is immobile.

Attack Direction Modifier:		Vehicle Type Modifiers:	
Hit from rear	+1	Tracked, Naval	+0
Hit from the sides	+2	Wheeled	+2
		Hovercraft, Hydrofoil	+3
		WiGE	+4

*All movement and Driving Skill Roll penalties are cumulative. However, each Driving Skill Roll modifier can only be applied once. For example, if a roll of 6-7 is made for a vehicle, inflicting a +1 modifier, that is the only time that particular +1 can be applied; a subsequent roll of 6-7 has no additional effect. This means the maximum Driving Skill Roll modifier that can be inflicted from the Motive System Damage Table is +6. If a unit's Cruising MP is reduced to 0, it cannot move for the rest of the game, but is not considered an immobile target. In addition, all motive system damage takes effect at the end of the phase in which the damage occurred. For example, if two units are attacking the same Combat Vehicle during the Weapon Attack Phase and the first unit inflicts motive system damage and rolls a 12, the –4 immobile target modifier would not apply for the second unit. However, the –4 modifier would take effect during the Physical Attack Phase. If a hover vehicle is rendered immobile while over a Depth 1 or deeper water hex, it sinks and is destroyed.

GROUND COMBAT VEHICLE CRITICAL HITS TABLE

	LOCATION HIT			
2D6 Roll	FRONT	SIDE	REAR	TURRET
2–5	No Critical Hit	No Critical Hit	No Critical Hit	No Critical Hit
6	Driver Hit	Cargo/Infantry Hit	Weapon Malfunction	Stabilizer
7	Weapon Malfunction	Weapon Malfunction	Cargo/Infantry Hit	Turret Jam
8	Stabilizer	Crew Stunned	Stabilizer	Weapon Malfunction
9	Sensors	Stabilizer	Weapon Destroyed	Turret Locks
10	Commander Hit	Weapon Destroyed	Engine Hit	Weapon Destroyed
11	Weapon Destroyed	Engine Hit	Ammunition**	Ammunition**
12	Crew Killed	Fuel Tank*	Fuel Tank*	Turret Blown Off

*If Combat Vehicle has ICE engine only. If Combat Vehicle has a fusion engine, treat this result as Engine Hit.
**If Combat Vehicle carries no ammunition, treat this result as Weapon Destroyed.

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BATTLETECH

ADVANCED V.T.O.L. RECORD SHEET

VEHICLE DATA

Type: _____

Movement Points:
Cruising: _____
Flank: _____

Tonnage: _____

Tech Base:
Clan ☐
Inner Sphere ☐

Engine Type: _____

Weapons & Equipment Inventory (hexes)

Qty	Type	Loc	Dmg	Min	Sht	Med	Lng

Cost: _____ BV: _____

CREW DATA

Crew: _____

Gunnery Skill: ___ Driving Skill: ___

Co-Pilot Hit +1
Modifier to all To-Hit rolls

Pilot Hit +2
Modifier to Driving Skill rolls

CRITICAL DAMAGE

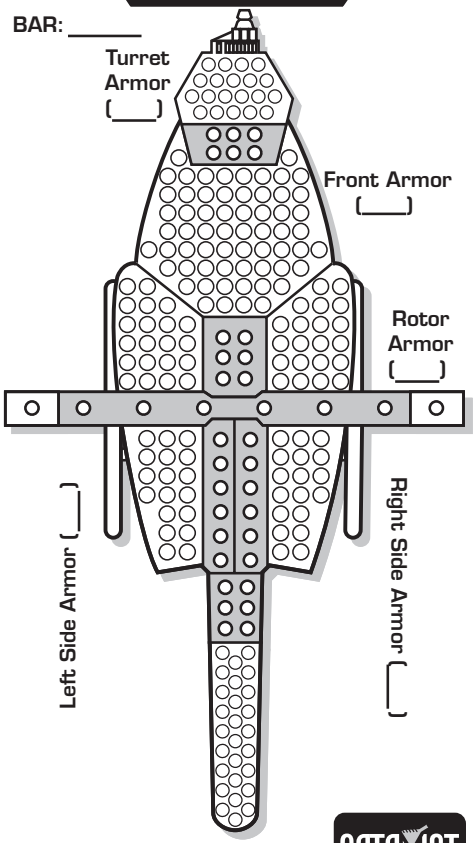
Flight Stabilizer* +3 ☐ Engine Hit ☐
Turret Locked ☐
Sensor Hits +1 +2 +3 D

Stabilizers
Front ☐ Left ☐ Turret ☐
Rear ☐ Right ☐
*Move at Cruising speed only

NOTES

ARMOR DIAGRAM

BAR: _____



VTOL COMBAT VEHICLE HIT LOCATION TABLE

2D6 Roll	ATTACK DIRECTION FRONT	REAR	SIDE
2*	Front (critical)	Rear (critical)	Side (critical)
3	Rotors†	Rotors†	Rotors†
4	Turret‡	Turret‡	Turret‡
5	Right Side	Left Side	Front
6	Front	Rear	Side
7	Front	Rear	Side
8	Front	Rear	Side (critical)*
9	Left Side	Right Side	Rear
10	Rotors†	Rotors†	Rotors†
11	Rotors†	Rotors†	Rotors†
12*	Rotors (critical)†	Rotors (critical)†	Rotors (critical)†

*A result of 2 or 12 (or an 8 if the attack strikes the side) may inflict a critical hit on the VTOL. For each such attack, apply damage normally to the armor in that section. The attacking player then immediately rolls once on the VTOL Combat Vehicle Critical Hits Table, below.

†Damage Value / 10 (round up); see *Rotor Hits*, p. 197, *Total Warfare*. Additionally, damage to rotors slows down the VTOL. Each hit reduces the VTOL's Cruising MP by 1, meaning that the controlling player must also recalculate Flank MP; multiply the new Cruising MP by 1.5 and round up. As with all damage, such movement penalties do not apply until the end of the phase in which the damage occurred.

‡ If the VTOL has no turret, a turret strike hits Rotors†

VTOL ELEVATION TRACK

Turn	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Elevation															

Turn	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Elevation															

PHYSICAL ATTACKS AGAINST VTOL VEHICLES TABLE

DIFFERENCE IN LEVELS	TYPES OF PHYSICAL ATTACK ALLOWED
–1 or lower	None
0	All except Punch
1–2	All except Kick
3	Club and Physical Weapons only
4+	None

VTOL COMBAT VEHICLE CRITICAL HITS TABLE

2D6 Roll	LOCATION HIT FRONT	SIDE	REAR	ROTORS	TURRET
2–5	No Critical Hit	No Critical Hit	No Critical Hit	No Critical Hit	No Critical Hit
6	Co-Pilot Hit	Weapon Malfunction	Cargo/Infantry Hit	Rotor Damage	Stabilizer
7	Weapon Malfunction	Cargo/Infantry Hit	Weapon Malfunction	Rotor Damage	Turret Jam
8	Stabilizer	Stabilizer	Stabilizer	Rotor Damage	Weapon Malfunction
9	Sensors	Weapon Destroyed	Weapon Destroyed	Flight Stabilizer Hit	Turret Lock
10	Pilot Hit	Engine Hit	Sensors	Flight Stabilizer Hit	Weapon Destroyed
11	Weapon Destroyed	Ammunition**	Engine Hit	Rotors Destroyed	Ammunition**
12	Crew Killed	Fuel Tank*	Fuel Tank*	Rotors Destroyed	Turret Blown Off

*Only if the VTOL has an ICE engine. For VTOLs with fusion engines, treat this result as Engine Hit.
**If the VTOL carries no ammunition, treat this result as Weapon Destroyed.

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BATTLETECH™

ADVANCED CONVENTIONAL INFANTRY RECORD SHEET

CONVENTIONAL INFANTRY: PLATOON/POINT 1

Armor Type: _____ Divisor: ____

Experience: _____
Gunnery Skill: ____
Anti-'Mech Skill: ____
Max Weapon Damage*
Notes: _____

30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

RANGE IN HEXES (TO-HIT MODIFIER)

Range	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Range Modifier	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Field Gun Type: _____ Ammo: ____ Disposable Weapon: _____ Ammo: ____
Disposable Weapon: _____ Ammo: ____ Disposable Weapon: _____ Ammo: ____

*Damage is always applied in 2-point Damage Value groupings

Movement MP: _____ Type: _____

CONVENTIONAL INFANTRY: PLATOON/POINT 2

Armor Type: _____ Divisor: ____

Experience: _____
Gunnery Skill: ____
Anti-'Mech Skill: ____
Max Weapon Damage*
Notes: _____

30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

RANGE IN HEXES (TO-HIT MODIFIER)

Range	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Range Modifier	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Field Gun Type: _____ Ammo: ____ Disposable Weapon: _____ Ammo: ____
Disposable Weapon: _____ Ammo: ____ Disposable Weapon: _____ Ammo: ____

*Damage is always applied in 2-point Damage Value groupings

Movement MP: _____ Type: _____

BURST-FIRE WEAPON DAMAGE VS. CONVENTIONAL INFANTRY TABLE

'MECHS, PROTOMECHS AND *VEHICLES*

WEAPON	DAMAGE vs. CONVENTIONAL INFANTRY
AP Gauss Rifle	2D6
Light Machine Gun	1D6
Machine Gun	2D6
Heavy Machine Gun	3D6
Small/Micro Pulse Laser	2D6
Flamer	4D6

BATTLE ARMOR

WEAPON	DAMAGE vs. CONVENTIONAL INFANTRY
Light Machine Gun	1D6/2 (round up)
Machine Gun	1D6
Heavy Machine Gun	2D6
Flamer	3D6
Light Recoilless Rifle	1D6
Medium Recoilless Rifle	2D6
Heavy Recoilless Rifle	2D6
Light Mortar	1D6
Heavy Mortar	1D6
Automatic Grenade Launcher	1D6/2 (round up)
Heavy Grenade Launcher	1D6

NON-INFANTRY WEAPON DAMAGE AGAINST INFANTRY TABLE

WEAPON TYPE*	NUMBER OF CONVENTIONAL TROOPERS HIT†
Direct Fire (Ballistic or Energy)	Damage Value / 10
Cluster (Ballistic)	Damage Value / 10 + 1
Pulse**	Damage Value / 10 + 2
Cluster (Missile)	Damage Value / 5
Area-Effect (AE)	Damage Value / .5
Burst-Fire	See Burst-Fire Weapons Table
Physical Attack††	Damage Value / 10
Heat-Effect Weapons	See Heat-Effect Weapons‡

*See *Combat*, p. 113 in *Total Warfare*, for weapon terminology.
**Except for Small and Micro Pulse Lasers, which are treated as Burst-Fire Weapons.
†This equals the number of conventional infantry troopers hit and eliminated, regardless of armor protection. Attacks by non-infantry weapons against mechanized infantry double the number of troopers eliminated; round all fractions up.
††Unless the physical attack weapon has a stated anti-infantry value (like the Combine), treat any physical attack as a Damage Value/10.
‡Each Heat-Effect Weapon has specific damage against conventional infantry, as noted on either the appropriate Weapon and Equipment Tables or in *Other Combat Weapons and Equipment* (see p. 129 in *Total Warfare*).

MORALE TABLE

Experience Level	BattleMechs* Morale Target	Combat Vehicles† Morale Target	Infantry‡ Morale Target	Support Vehicles§ Morale Target
Green	4	6	9	10
Regular	2	4	6	7
Veteran	—§§	2	4	5
Elite	—§§	—§§	2	2

* Includes ProtoMechs and aerospace fighters.
† Includes military conventional fighters, Small Craft and DropShips.
‡ Includes military Support Vehicles.
§ Includes IndustrialMechs (unless piloted by a military MechWarrior, in which case treat as a Combat Vehicle) and all civilian aerospace units.
§§ See Infernos and Cruise Missile Attack (p. *211*).

SPECIAL SOURCE MODIFIER (ALL)

Inferno	+1/+3*
Cruise Missile	+2

*The modifier to the left of the slash is for all non-infantry units, the modifier to the right of the slash for infantry.

ATTACK SOURCE MODIFIER (INFANTRY ONLY)

BattleMech in LOS	+1
Artillery	+2
Flamer or Fire	+3

OTHER MODIFIERS MODIFIER (INFANTRY ONLY)

Broken Morale	+1
Cumulative Modifiers	
Light or Medium Battle Armor Unit	–1
Heavy or Assault Battle Armor Unit	–2
Anti-'Mech Skill of 5 or less	–1
Conventional Infantry with Armor (see p. *317*)	–1
Unit in Building	–2

RECOVERING NERVE TABLE

NOTE: These modifiers only apply if a friendly unit/commander is within seventeen hexes of the unit attempting to recover its nerve.

COMMANDERS*

Sub-force Commander in LOS	–1
Force Commander in LOS	–2

INFANTRY ONLY

Friendly non-'Mech, non-infantry unit in LOS	–1
Friendly 'Mech in LOS	–2
Another Routed Infantry Unit in LOS	+1
Another Routed Non-Infantry Unit in LOS	+2
Routed Unit	+3

*Only applies if Commanders (see p. *191*) are in use.

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BATTLETECH

STRUCTURE RECORD SHEET

STRUCTURE DATA

Description: _____ Levels: _____

MP: _____ Tech Base:

Movement Type: _____ Clan ☐

Powerplant Type: _____ Inner Sphere ☐

Weapons & Equipment Inventory (hexes)

Qty	Type	Hex/Loc	Dmg	Min	Sht	Med	Lng

Cost: _____ BV: _____

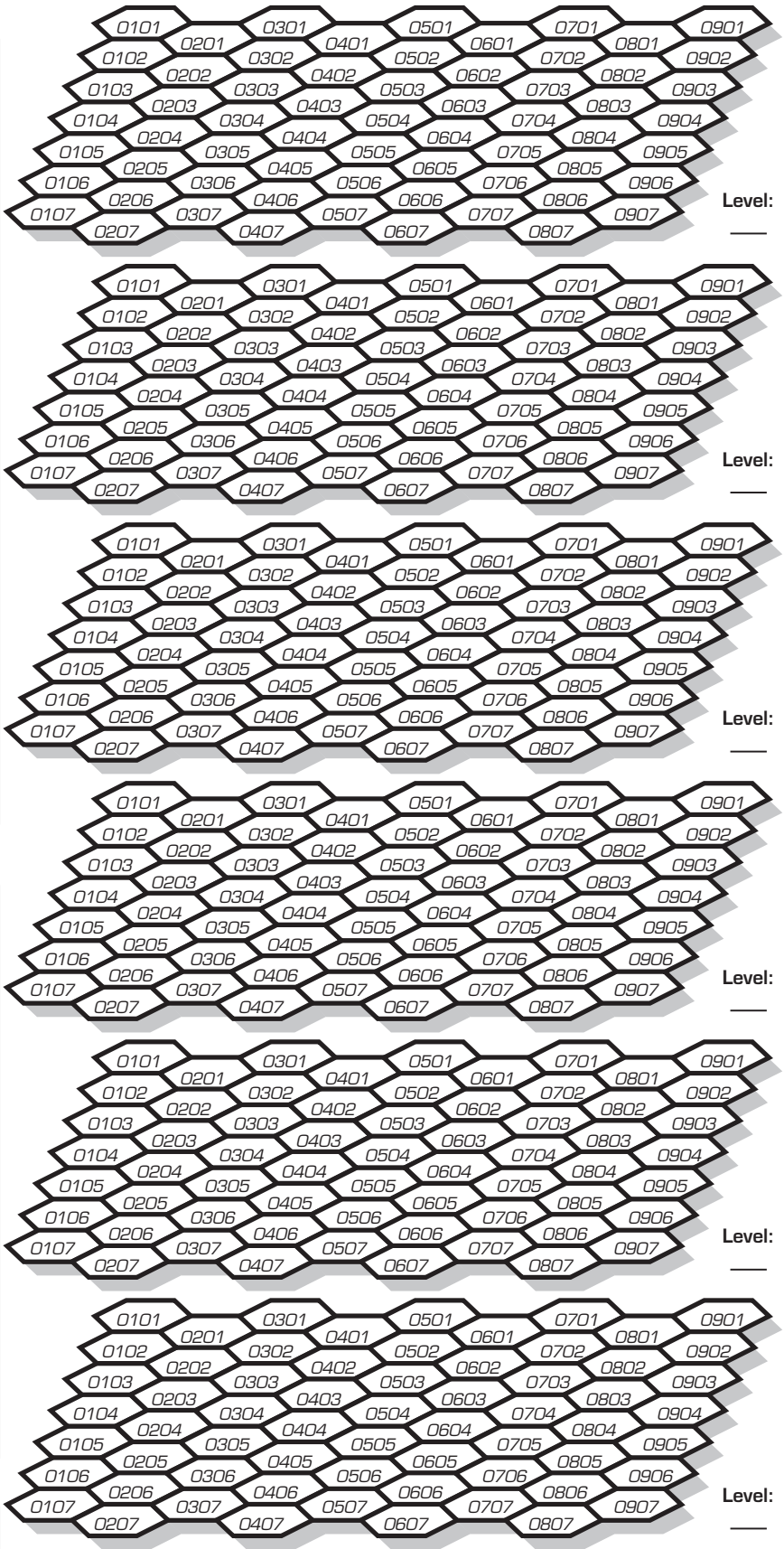
CF & ARMOR

Hex	CF	Armor	Hex	CF	Armor

CREW DATA

Crew: _____ Gunnery Skill: _____

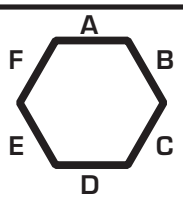
STRUCTURE MAP



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BATTLETECH

Unit Facing Compass



SIMULTANEOUS MOVEMENT RECORD SHEET

MOVEMENT RECORD

Turn # _____ **Side:** _____

Unit ID	Starting Hex	Starting Facing	Movement	Ending Hex	Ending Facing	Torso Facing	# Hexes Moved

Movement Key:-

F x = Move forward *x* number of hexes
R x = Turn right (*x* hex facing, no number means 1 hexside)
L x = Turn left (*x* hex facing, no number means 1 hexside)
J = Jump
SU = Stand Up
SL = Sidestep left (four-legged or jumping 'Mechs only)
SR = Sidestep right (four-legged or jumping 'Mechs only)
B x = Move backward *x* number of hexes
TL x = Turn left (free movement for a jumping 'Mech)
TR x = Turn right (free movement for a jumping 'Mech)
L x = Landing *x* number of hexes (airborne aerospace units)
T x = Take-off *x* number of hexes (grounded aerospace units)
U x = Up *x* number of level/elevations/depths
D x = Down *x* number of level/elevations/depths
O = Opportunity fire (see p. *86*)

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BATTLETECH™

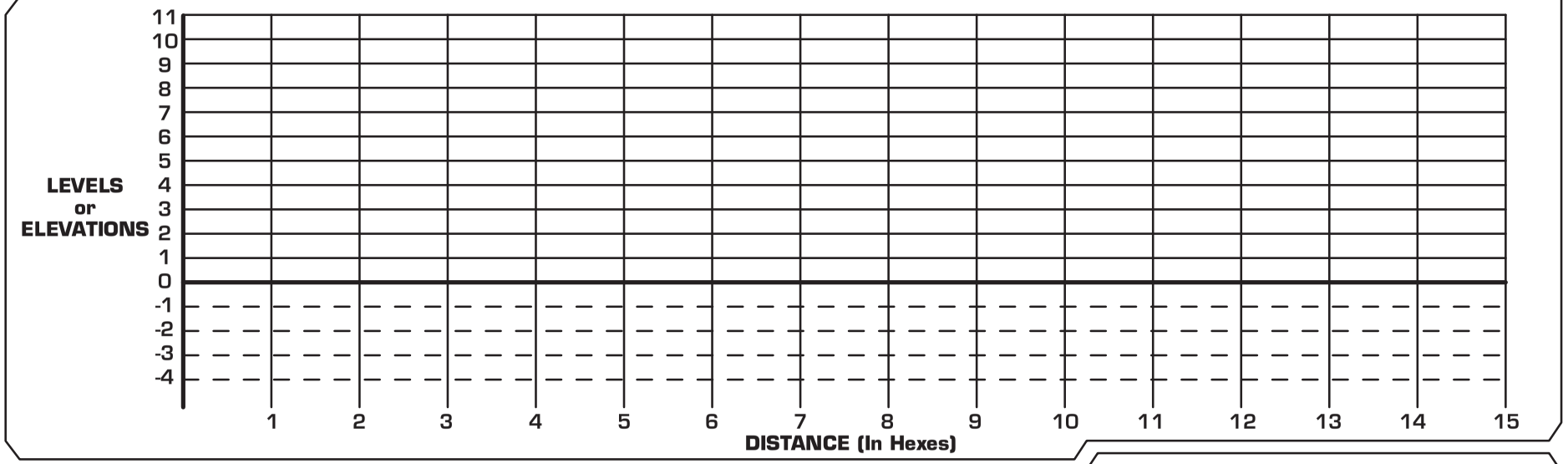
LINE OF SIGHT CHART

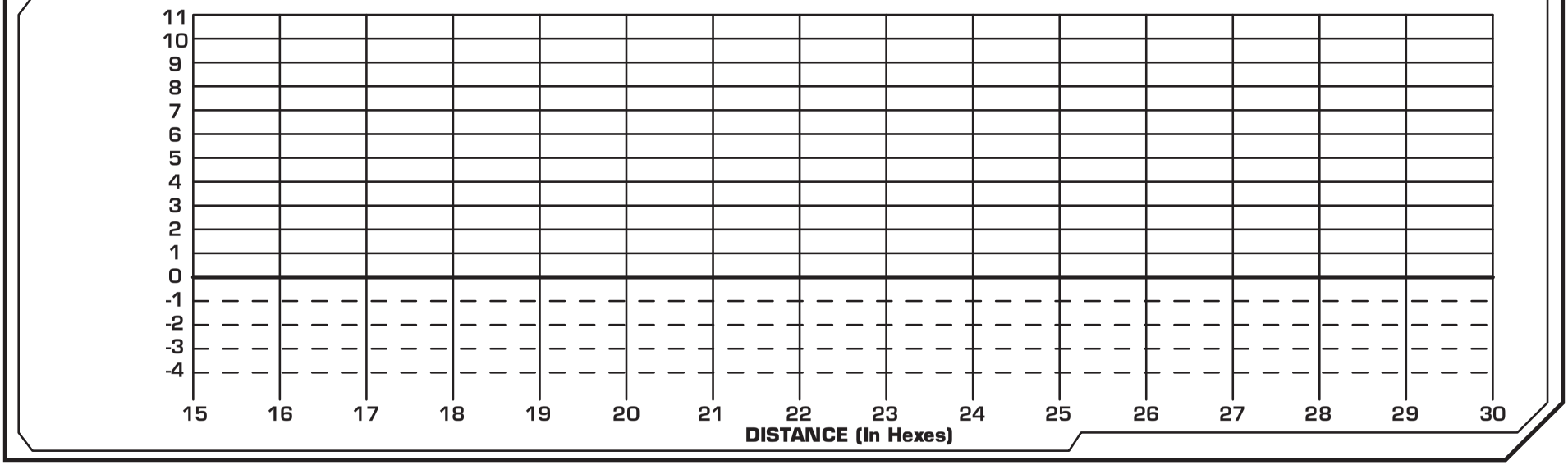
Unit Heights:

Standing 'Mech: 2 levels
Prone 'Mech: 1 level
ProtoMechs, Vehicles and Infantry: 1 level
Airborne Non-Aerospace Units: VTOLs and WiGE vehicles, or other units expending such MP (such as a battle armor unit expending VTOL MP), add their elevation +1 to the level of the underlying hex; airborne Large Support Vehicles add their elevation +2.
Submarines (non-template): A vessel on the surfaces rises1 level above the level of the hex.
Ground Based Mobile Structures: Add 2 levels for "undercarriage"

Support Unit Template A: 0 levels above surface/1 level below surface
Support Unit Template B: 1 levels above surface/1 level below surface
Support Unit Template C: 1 level above surface/2 levels below surface
Support Unit Template D: 2 levels above surface/2 levels below surface
Support Unit Template E: 3 levels above surface/3 levels below surface
Large Support Vehicles: 2 levels
Grounded Fighter: 1 level
Grounded small craft: 2 levels
Grounded Aerodyne DropShip: 5 levels
Grounded Spheroid DropShip: 10 levels

CATALYST game labs





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BUILDING AND MOBILE STRUCTURE COSTS

Base Unit Cost = (Structure Cost + Engine/Generator Cost + Motive System Cost + Armor Cost + Weapon and Equipment Cost) x (1 + CF ÷ 100)*

*In the case of structures using Capital-scale CF, multiply the CF value by 10 to find the "standard" CF

Structure Costs (per hex)

Structure Type	Structure Cost (per Level)
Tent	1,000 x Structure Cost Multiplier x CF
Hangar	8,000 x Structure Cost Multiplier x CF
Standard Building	10,000 x Structure Cost Multiplier x CF
Gun Emplacement	20,000 x Structure Cost Multiplier x CF
Fortress	20,000 x Structure Cost Multiplier x CF
Castle Brian	1,000,000 x Structure Cost Multiplier x CF
Wall*	5,000 x Structure Cost Multiplier x CF
Fence*	800 x CF
Road/Pavement†	7,500
Bridge	12,000 x CF
Standard Rail†	7,000
MagLev Rail†	14,000

*Wall and Fence costs are per hexside, rather than per hex
†These structures have a fixed Level of 1 for structure cost purposes

Engine/Generator Costs

E/G Type	E/G Cost*
Steam	4,000
Internal Combustion	5,000
Fuel Cell	7,000
Solar	8,000
Fission	15,000
Fusion	10,000
External-Source	5,000

*All Engine/Generator Costs are per ton of engine/generator (not including fuel)

Motive System Costs (Mobile Structures Only)

Motive Type	Motive System Cost*
Ground	10,000 x CF x MP
Air	40,000 x CF x MP
Water (Surface)	20,000 x CF x MP
Water (Submersible)	35,000 x CF x MP

*All Motive System Costs are per hex of Mobile Structure; non-mobile Structures receive a Motive System Cost of 0

Structure Armor

Tech Base	Cost (C-bills)
Inner Sphere	10,000 x Armor Tonnage
Clan	15,000 x Armor Tonnage

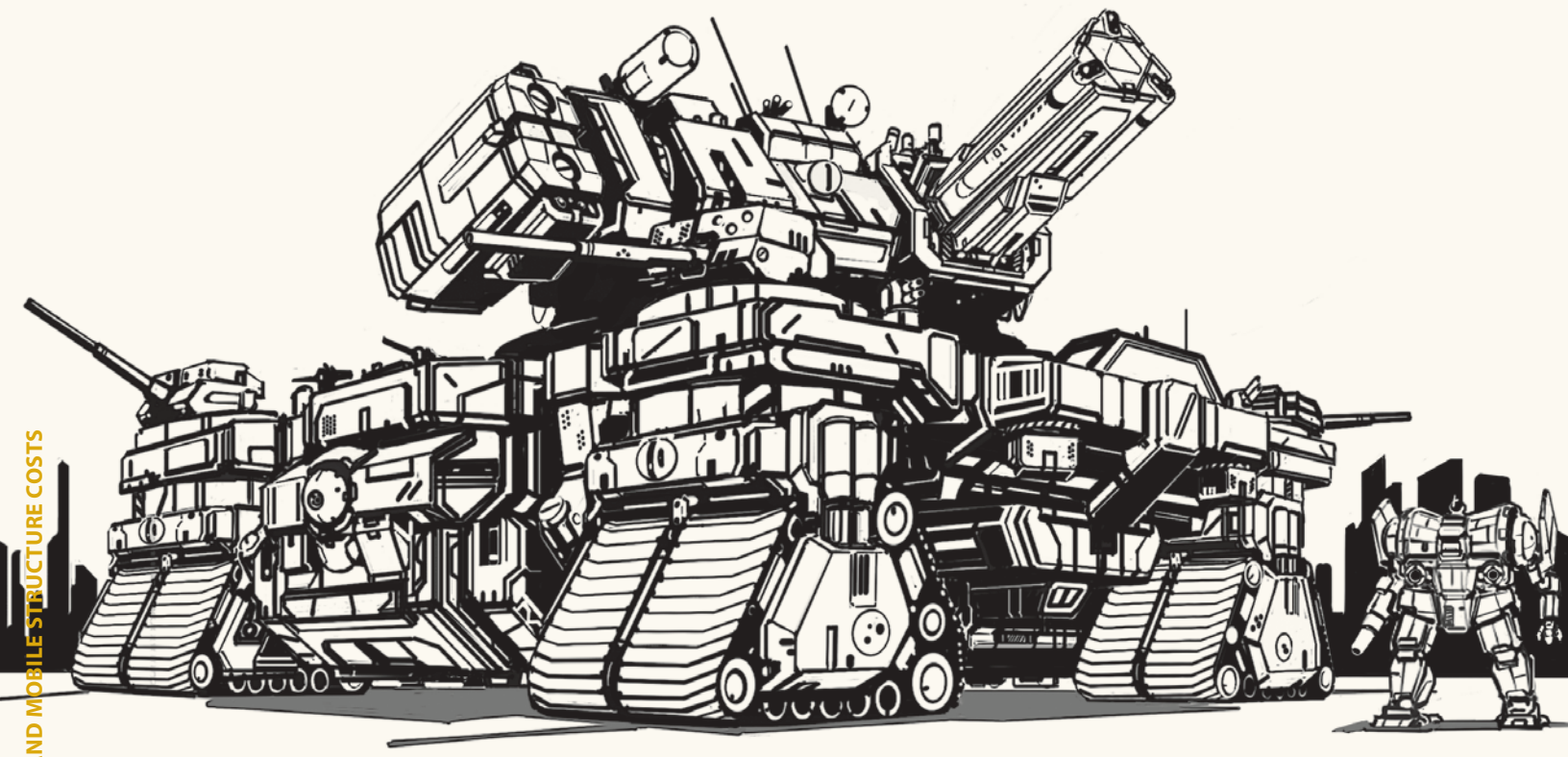
Structure Cost Multipliers

Structural Modifications	Final Cost Multiplier
Environmental Sealing	x1.5
Heavy-Metal Superstructure	x1.25
High/Low Ceilings	x1.1
Open-Space Construction	x2.5
Subsurface (Underwater or Underground)	x5
Tunnel	x1.875

Miscellaneous Structure Equipment Costs

Item	Item Cost
Fuel Storage	100 x Total Storage Tonnage
Large Door	10,000 x Door Height (in Levels)
Industrial Elevators	15,000 x Total Elevator Tonnage
Unspecified Equipment	5,000 x CF (per Hex)
Weapon Automation	1,000 x Total Automated Weapon Tonnage*

*Do not count ammunition, heat sinks, power amplifiers or turret mechanisms



SKILLED EVADING

PAGE 19

Piloting Skill	To-Hit Modifier for Evading
6 or greater	+0
4–5	+1
2–3	+2
0–1	+3

SHIELDING

PAGE 19

Unit Type	Modifier
Vehicle	+1
'Mech, ProtoMech or Mechanized Infantry*	+2
Large Vehicle**	+3

*See below.
**Combat or Support Vehicle. Rail and Large Naval Vessel Support Vehicles cannot use the Shielding movement mode.

TAKING DAMAGE WEIGHT CLASS PSR MODIFIERS

PAGE 23

Weight Class	Modifier
Light (Ultra-Light)	+1
Medium	+0
Heavy	–1
Assault	–2

PILOTING SKILL RATING MOF FALLING

PAGE 24

Piloting Skill Rating	Margin of Failure
6–7	0
2–5	1
0–1	2

TURN MODE

PAGE 25

MP Expended	Turn Mode
1–4	0
5–9	1
10–14	2
15–19	3
Every 5 above 19	+1
Light Vehicle	–1
Medium/Heavy Vehicles	+0
Assault Vehicle	+1
Mud, Sleet, Heavy Fog or Heavy Rainfall	+1*†
Ice, Heavy Snowfall	+2*‡

*Does not apply to Hover, VTOL or WiGE Vehicles.
†Does not apply to tracked vehicles
‡Only apply a +1 to tracked vehicles

FIRE/SMOKE RESOLUTION SEQUENCE

PAGE 46

Follow these steps, in order, during every End Phase:
1. Drift existing smoke clouds
2. Check for dissipation of existing smoke clouds
3. Check for spread of existing fires
4. Place new smoke clouds from existing fires (including any new fires started)
5. Check for weather conditions extinguishing existing fires (including any new fires started)

FAILED MANEUVER

PAGE 26

2D6 Roll	Effect
2–7	**Minor fishtail.** The attempted turn fails, and the MP are expended for the attempt. The vehicle can continue moving normally; it cannot attempt to make the turn in that hex, however, and must enter another hex before making another turn attempt.
8–9	**Moderate fishtail.** The vehicle immediately makes an additional 1-hexside facing change (at no MP cost) in the same direction as the controlling player originally intended. Ground vehicles roll once on the Motive System Damage Table (see p. 193, *TW*), with a –1 modifier.
10–11	**Serious fishtail.** The vehicle immediately makes an additional 1-hexside facing change (at no MP cost) in the same direction as the controlling player originally intended. Ground vehicles roll once on the Motive System Damage Table (see p. 193, *TW*). The vehicle's movement ends immediately.
12–13	**Skid.** The turn fails completely, ending the vehicle's movement. Apply Skidding rules (see *Ground Vehicles*, p. 62, *TW*).
14+	**Major Skid.** The driver loses control of the vehicle. Wheeled vehicles begin to flip over, taking damage to their side armor and turret(s) (see *Flipping Over*, p. 26). Tracked vehicles, VTOLs and hovercraft do not flip over; for them, treat this result as a normal skid (see *Ground Vehicles*, p. 62, *TW*). Naval vessels and hydrofoils capsize and sink, and are effectively destroyed.

Vehicle Type	Modifiers
Tracked, Naval	+0
Wheeled*, VTOL	+2
Hovercraft, WiGE, Hydrofoil	+4

Vehicle Weight Class	Modifiers
Light	+1
Medium	+0
Heavy	–1
Assault	–2

*Apply a –2 modifier if the wheeled vehicle occupies a paved hex when it failed the Driving Skill Roll.

SPREADING FIRES

PAGE 44

Situation	Success Number*
Crossing non-burning hex	+3
No Wind‡‡	
Hex is downwind	9+
Hex is 60° from downwind	11+
Light and Moderate Gale	
Hex is downwind	7+
Hex is 60° from downwind	10+
Heavy Gale and Storm	
Hex is downwind	6+
Hex is 60° from downwind	9+

*All modifiers are cumulative
**For every 10 degrees above 30 degrees Celsius, apply a –1 modifier. For every 10 degrees below –30 degrees Celsius, apply a +1 modifier
†May not use small laser or ER small laser, or any kind of micro laser.
††Includes missile infernos, inferno fuel ammo, inferno-IV artillery, inferno bombs, and incendiary grenades.
‡May not use any type of Gauss rifle, SRM-2 or conventional SRM infantry.
‡‡Roll 1D6 to randomly determine the "down wind" direction each time.
§Except under the following conditions: in Vacuum and Trace Atmospheric Pressures and in Tornado F1-F3 and Tornado F4+, no fire is possible. For Castles Brian hexes, fire is not automatic; instead, divide the standard Heavy and Hardened modifiers in half (round down) and apply a +2 modifier when making the roll to start a fire.

STARTING FIRES

Weapon Type	Success Number*
Flamer	4+
Incendiary LRMs	5+
Pulse or Direct-Fire Energy Weapon†	7+
Missile or Direct-Fire Ballistic‡	9+
Plasma Weapon and Inferno††	Automatic§

Terrain	Modifiers*
Planted Fields	–1
Woods	+0
Jungle	+1
Deep Snow	+2
Buildings	
Hangar	
Light	–2
Medium	–1

Terrain	Modifiers*
Hangers (Cont.)	
Heavy	+0
Hardened	+1
Standard/Wall	
Light	0
Medium	+1
Heavy	+2
Hardened	+3

Terrain	Modifiers*
Fortress	
Medium	+2
Heavy	+3
Hardened	+4
Castles Brian	
Heavy	+5
Hardened	+6

ADVANCED DETERMINING CRITICAL HITS

PAGE 74

Damage Value Grouping	Modifier
1–5	+0
6–10	+1
11–15	+2
16–20	+3
21+	+4

2D6 Roll	Effect
2–8	No Critical Hit
9–10	Roll 1 Critical Hit Location
11–12	Roll 2 Critical Hit Locations
13–14	Roll 3 Critical Hit Locations
15+	Head/Limb Blown Off; Roll 3 Critical Hit Locations*

*Only roll 3 critical hit locations if the attack strikes the torso

MISSILE WEAPONS CRITICAL DAMAGE

PAGE 76

2D6* Roll	Effect
2–3	Minor damage; no effect
4–5	Moderate damage; attacks with weapon add +1 to-hit modifier
6–7	Damage to ranging system; shots at medium and long range suffer an additional +1 to-hit modifier (as well as at extreme and LOS range, if those rules are in use; see p. 85)
8–9	Ammo feed damage; weapons that can fire various types of ammo may no longer switch between them, must fire last ammo type used. To-Hit Roll result of 2 for attacks with weapon causes an ammo explosion in the ammo bin that fed that shot (the controlling player decides which ammo slot explodes; if there is an ammo bin with shots remaining, the player must select that slot, meaning he cannot select an ammo slot that is empty if another slot of the same ammo type is not empty).
10–11	Weapon severely damaged (mark off another critical slot on the weapon, the topmost slot available); cannot fire
12+	Weapon destroyed (mark off all critical slots on the weapon)

*Add number of critical slots damaged to this result

COCKPIT CRITICAL DAMAGE

PAGE 76

2D6 Roll	Effect
2–5	Minor Wound; apply one hit against MechWarrior
6–7	Moderate Wound; apply two hits against MechWarrior
8–9	Severe Wound; apply three hits against MechWarrior
10-11	Critical Wound; apply four hits against MechWarrior
12+	MechWarrior Killed/Cockpit destroyed (mark off slot)

WEIGHT CLASS PHYSICAL ATTACK MODIFIERS

PAGE 88

Weight Class	Modifier
Light (Ultra-Light)	–2
Medium	–1
Heavy/Assault	+0

MAXIMUM ADDITIONAL BATTLE ARMOR

PAGE 97

'Mech Weight Class	Total Number of Battle Armor	'Mech Weight Class	Total Number of Battle Armor
Light	2	Heavy	4
Medium	3	Assault	6

DIRECT-FIRE ENERGY/PULSE WEAPONS CRITICAL DAMAGE

PAGE 75

2D6* Roll	Effect
2–3	Minor damage; no effect
4–5	Moderate damage; attacks with weapon add +1 to-hit modifier
6–7	Focus misaligned; weapon inflicts –1 damage, additional +1 to-hit modifier applies to shots at medium and long range (as well as at extreme and LOS range, if those rules are in use; see p. 85.
8–9	Emitter damage; weapon generates +1 Heat Point. To-Hit Roll result of 2 for an attack with the weapon causes overload with effects identical to an ammo explosion, inflicting damage equal to the damage inflicted by the weapon; for Variable Damage weapons, use the Damage Value at short range.
10–11	Weapon severely damaged (mark off another critical slot on the weapon, the top most slot available); cannot fire
12+	Weapon destroyed (mark off all critical slots on the weapon)

*Add number of critical slots damaged to this result

DIRECT-FIRE BALLISTIC AND ARTILLERY WEAPONS CRITICAL DAMAGE

PAGE 76

2D6* Roll	Effect
2–3	Minor damage; no effect
4–5	Moderate damage; attacks with weapon add +1 to-hit modifier
6–7	Barrel damage; To-Hit Roll result of 2 for attack with weapon causes it to jam
8–9	Ammo feed damage; weapons that can fire various types of ammo may no longer switch between them, must fire last ammo type used. To-Hit Roll result of 2 for attack with weapon causes an ammo explosion in an ammo bin that feeds that shot (the controlling player decides which ammo slot explodes; if there is an ammo bin with shots remaining, the player must select that slot, meaning he cannot select an ammo slot that is empty if another slot of the same ammo type is not empty).
10–11	Weapon severely damaged (mark off another critical slot on the weapon, the topmost slot available); cannot fire
12+	Weapon destroyed (mark off all critical slots on the weapon)

*Add number of critical slots damaged to this result

EQUIPMENT CRITICAL DAMAGE

PAGE 76

2D6* Roll	Effect
2–7	Minor damage; no effect
8–9	Moderate damage; player must roll 7+ before each use for damaged item to work
10–11	Severe damage; player must roll 10+ before each use for damaged item to work
12+	Item destroyed

*Add number of critical slots damaged to this result

SUPPRESSING FIRE

PAGE 87

Weapon Type	Modifier
Direct Fire (Ballistic or Energy), Cluster (Ballistic), Pulse	+0
Cluster (Missile)	+1
Burst Fire Weapon: 1D6 or 2D6	+2
Burst fire Weapon: 3D6 or 4D6+	+3
Area-Effect	+4
Additional Weapons Beyond First	+1

WIND STRENGTH

PAGE 47

1D6 Roll	Wind Strength*
1–2	No Wind
3	Light Gale**
4	Moderate Gale**
5	Strong Gale**
6	Storm**

*Tornado F1–F3 and Tornado F4+ Weather Conditions are not on this table, as smoke does not exist under such conditions.

**See *Weather Conditions* (p. 57) for additional game effects from such wind conditions.

ADVANCED FOUR-LEGGED/PRONE 'MECH HIT LOCATION TABLE

PAGE 77

2D6 Rolls	Left Side	Front	Rear	Right Side
2*	Left Torso [critical]	Center Torso [critical]	Center Torso (R) [critical]	Right Torso [critical]
3	Front Right Leg	Rear Left Leg	Front Left Leg	Front Left Leg
4	Front Left Leg	Front Left Leg	Rear Left Leg	Front Right Leg
5	Front Left Leg	Front Left Leg	Rear Left Leg	Front Right Leg
6	Right Torso	Left Torso	Left Torso (R)	Center Torso
7	Left Torso	Center Torso	Center Torso (R)	Right Torso
8	Center Torso	Right Torso	Right Torso (R)	Left Torso
9	Rear Left Leg	Front Right Leg	Rear Right Leg	Rear Right Leg
10	Rear Left Leg	Front Right Leg	Rear Right Leg	Rear Right Leg
11	Rear Right Leg	Rear Right Leg	Front Right Leg	Rear Left Leg
12	Head	Head	Head	Head

*A result of 2 may inflict a critical hit. Apply damage to the armor in that section in the normal manner, but the attacking player also rolls once on the Determining Critical Hits Table, p. 124, *TW*.

HEAT SINK COOLANT FAILURE MODIFIER

PAGE 105

Heat Level	Modifier
5–10	+0
11–15	+1
16–20	+2
21–25	+3
26–30	+4
31–35	+5
36–40	+6
41–45	+7
46–50	+8

PHYSICAL WEAPON ATTACKS ADDENDUM

PAGE 89

Weapon Type	To-Hit Modifier	Damage Value	To-Hit Location Table	Firing Arc**	Affected by TSM	To-Hit/Damage Value Affected by Actuator Damage
Chain Whip	–2	3	Standard	Arm	No	Yes/No
Claws	+1	1/per 7 tons‡‡	Punch	Arm	Yes	Yes/Yes
Flail	+1	9	Standard	Arm	No	Yes/No
Lance	+1	1/per 5 tons††	Standard	Arm	Yes	Yes/Yes
Mace	+2	1/per 4 tons***	Standard*	Arm	Yes	Yes/Yes
Shields	†	†	Standard	Arm	No	Yes/No
Vibroblade						
Deactivated	–2	1/per 10 tons + 1‡	Standard*	Arm	Yes	Yes/Yes
Activated	–2	§	Standard*	Arm	No	Yes/No

*Roll normally on the 'Mech Hit Location Table. Alternatively, when the controlling player announces the physical weapon attack, he may also announce that he will use the Punch or Kick Hit Location Table to resolve damage if the attack succeeds, in which case apply a +4 modifier in addition to all the standard modifiers, including the standard to-hit modifier for the weapon (this modifier does not apply when attacking on the Punch/Kick Location Table due to attacks from different levels; see p. 150, *TW*).
**The target of the physical weapon attack can be in the 'Mech's forward arc or in the side arc corresponding to the arm in which the equipment is mounted.
***A successful attack does 1 point of damage for every 4 tons that the attacking 'Mech weighs (round up).
†See *Shield*, p. 290
††A successful attack does 1 point of damage for every 5 tons that the attacking 'Mech weighs and may damage the internal structure of the target.
‡A successful attack does 1 point of damage for every 10 tons that the attacking 'Mech weighs (round up), + 1.
‡‡A successful attack does 1 point of damage for every 7 tons that the attacking 'Mech weighs (round up).
§See *Vibroblade*, p. 292

ADVANCED 'MECH HIT LOCATION

PAGE 76

2D6 Rolls	Left Side	Front/Rear	Right Side
2*	Left Torso [critical]	Center Torso [critical]	Right Torso [critical]
3	Left Leg	Right Arm	Right Leg
4	Left Arm	Right Arm	Right Arm
5	Left Arm	Right Leg	Right Arm
6	Left Leg	Right Torso	Right Leg
7	Left Torso	Center Torso	Right Torso
8	Center Torso (R)	Left Torso	Center Torso (R)
9	Right Torso (R)	Left Leg	Left Torso (R)
10	Right Arm	Left Arm	Left Arm
11	Right Leg	Left Arm	Left Leg
12	Head	Head	Head

*A result of 2 may inflict a critical hit. Apply damage to the armor in that section in the normal manner, but the attacking player also rolls once on the Determining Critical Hits Table, p. 124, *TW*.

THROWING DISTANCE

PAGE 92

Percentage of Throwing 'Mech's Weight*	Total Distance
10%	1 Hex
7.5%	2 Hexes
5%	3 Hexes
2.5%	6 Hexes
1% (or less)	9 Hexes

*If TSM is active, divide the weight of the thrown object/unit by 2 (rounding down) before consulting this table.

'MECH THROWING

PAGE 95

Unit Picking Up Is A:	Modifier
ProtoMech	+0
Light 'Mech	+0
Medium 'Mech:	+1
Heavy 'Mech	+2
Assault 'Mech:	+3

Unit Being Picked Up Is A:	Modifier
ProtoMech	+2
'Mech	+0

PPC FEEDBACK

PAGE 103

Target Distance	Avoid Feedback On
1 hex	10+
2 hexes	6+
3 or more hexes	3+

OVERCHARGING PPC

PAGE 103

Weapon Type	Dice Rolled
Light PPC	1D6
PPC, ER PPC, Snub-nose	2D6
Heavy PPC	3D6

AVOID SHUTDOWN PILOT SKILL RATING MODIFIERS

PAGE 104

Pilot Skill Rating	Modifier
6–7	+1
4–5	+0

Pilot Skill Rating	Modifier
2–3	–1
0–1	–2

BUILDING CLASSIFICATION AND TYPE

PAGE 115

Classification/Type	Construction Factor (CF)*	Max Armor (per hex)	Max Size (Hexes/Levels)	MP Cost Per Hex†	Piloting/Driving Skill Modifier	Damage Scaling: Damage to Building/Damage to Units‡
Cost to Enter Any Hex	1					
Tent	1–2	—	1/1	+0	—	x1/x0
Hangar		—				
Light	1–8		10/7	+0	+0†	x1/x0.5
Medium	9–16		14/10	+1	+0†	x1/x0.5
Heavy	17–45		18/13	+2	+1†	x1/x0.5
Hardened	46–75		20/14	+3	+3†	x1/x0.5
Standard§		—				
Light	1–15		6/5	+1	+0	x1/x1
Medium	16–40		8/8	+2	+1	x1/x1
Heavy	41–90		10/10	+3	+2	x1/x1
Fence	1	—	—/3	+1††	—	x1/x0
Wall		CF x 1				
Light	1–15		—/4	+1	+0	x1/x0.5
Medium	16–40		—/6	+2	+0	x1/x0.5
Heavy	41–90		—/8	+3	+1	x1/x0.5
Hardened	91–150		—/10	+4	+3	x1/x0.5
Bridge		—				
Light	1–15		—	NA‡‡	NA‡‡	x1/x1
Medium	16–40		—	NA‡‡	NA‡‡	x1/x1
Heavy	41–90		—	NA‡‡	NA‡‡	x1/x1
Hardened	91–150		—	NA‡‡	NA‡‡	x1/x1
Rail	151-650		—	NA‡‡	NA‡‡	x1/x1
Gun Emplacement		CF x 1				
Light	1–15		1/1	NA	NA	x0.5/x2
Medium	16–40		1/1	NA	NA	x0.5/x2
Heavy	41–90		1/1	NA	NA	x0.5/x2
Hardened	91–150		1/1	NA	NA	x0.5/x2
Fortress		CF x 1				
Medium	16–40		12/15	+3	+2	x0.5/x2
Heavy	41–90		15/20	+4	+3	x0.5/x2
Hardened	91–150		20/30	+5	+4	x0.5/x2
Castles Brian§§		CF x 2**				
Heavy	35–90		20/10	+4	+4	Capital/Capital**
Hardened	91–150		30/15	+5	+5	Capital/Capital**

*See pp. 166-167, *TW*. The listed CFs show the range applicable to each building type. If a scenario does not specify a building's CF, assume that all its hexes have the maximum CF possible for that building type and classification.

†Infantry (except mechanized infantry) pay only 1 MP to enter a building hex regardless of building type; ProtoMechs and mechanized infantry pay only 2 MP to enter any building hex except for tents and fences (which cost only 1 MP). Hangars apply MP and Piloting Skill modifiers only when entering from outside, unless other factors apply (see *Hangars,* p. 116).

‡Round all damage down; if the damage is reduced to 0 or less, no damage is applied.

§As detailed in *TW*, except there is no Hardened type.

††Only applies to conventional infantry using Ground MP.

‡‡Units move over bridges (never through them) as though traveling on a road.

§§Area-effect weapons do not double their damage against Castles Brian hexes.

**Castles Brian use capital-scale damage, as noted under *Scale* (see p. 238, *TW*). See *Scaled Damage* (p. 126) for more information.

ARTILLERY RANGES

PAGE 181

Type	Maximum Range (in mapsheets)
Arrow IV Missile (IS)	8
Arrow IV Missile (Clan)	9
Thumper	21
Sniper	18
Long Tom	30

Type	Maximum Range (in mapsheets)
BA Tube	2
Cruise Missile/50	50
Cruise Missile/70	90
Cruise Missile/90	120
Cruise Missile/120	150

INDIRECT ARTILLERY FLIGHT TIMES

PAGE 181

Distance from Battlefield (in mapsheets)	Artillery† Flight Time (in turns)
Less than 1*	0
1–8	1
9–15	2
16–21	3
22–26	4
27–30	5
Cruise Missile‡ Flight Time (in turns)	
1 + (Number of mapsheets ÷ 5, round down)	

*See *Direct-Fire Artillery*, p. 185.

†Arrow IV, Thumper, Sniper and Long Tom

‡Cruise Missile/50, Cruise Missile/70, Cruise Missile/90 and Cruise Missile/120

ADVANCED BUILDING MOVEMENT

PAGE 120

Building Features	MP Cost/Hex*	Piloting Modifier**	Notes
Empty Hangar/Tunnel/Open-Space Hex	1	NA	Treat as Paved Terrain†
Hangar/Tunnel/Empty Cargo Hex	–1	–3	To a Minimum MP cost per hex of 1††
Non-Liquid Cargo Hex	+0	–2	
Liquid Cargo Hex	+1	+2	See *Liquid Fuel/Chemical Storage Tanks* (p. 134)
High Ceilings	+0	–1	Half all damage from movement (round down)‡
Low Ceilings	+1	+1	Double all damage from movement (round up)‡
Unspecified Equipment Hex‡‡	+0	+0	+1 to-hit modifier for weapon attacks (per hex)
Specified Equipment Hex‡‡	+1	+1	+2 to-hit modifier for weapon attacks (per hex)
Generator/Weapon Hex‡‡	+2	+2	+2 to-hit modifier for weapon attacks (per hex)
Heavy Metal Superstructure	+1	+2	Double damage to unit from failed Piloting Skill

*In addition to all other applicable MP costs for the building type (see *Building Classification and Type Table,* p. 115)
**In addition to all other applicable modifiers for the building type (see *Building Classification and Type Table,* p. 115)
†See *Open-Space Construction,* p. 138. Hangars and tunnels apply these rules only if they are as high as or taller than the moving unit, feature no equipment, and the unit is not moving through the building's outer walls (otherwise, apply the standard hangar MP and Piloting modifiers.
††Hangars and tunnels apply these costs and modifiers only if they are as high as or taller than the moving unit and feature interior equipment of any kind. (Do not apply normal hangar MP and Piloting costs if already inside.)
‡Applies to damage done both to the building and to the unit moving through it.
‡‡Do not count turreted or rooftop-based equipment.

ADVANCED BUILDING CRITICAL HITS

PAGE 121

2D6 Roll	Effect
2–5	No Critical Hit
6	Weapon Malfunction
7	Gunners Stunned
8	Weapon Destroyed
9	Gunners Killed
10	Turret Jammed/Turret Locked*
11	Ammunition
12	Other

*When rolling these critical hit results, roll 1D6. On a result of 1–3, the effect to the left of the slash occurs; on a 4–6 result, the effect to the right of the slash occurs.

ARTILLERY ORDNANCE

PAGE 184

		Weapon Type Damage Values (Radius)					
Ordnance Type	Damage Type	Long Tom	Sniper	Thumper	BA Tube	Arrow IV	Cruise Missile
Air-Defense Arrow (ADA)*	F	—	—	—	—	20	—
Arrow IV Homing Missile*	AE	—	—	—	—	20	—
Arrow IV Non-Homing Missile*	AE, F	—	—	—	—	20/10 (R1)	—
Cluster*	AE, F	20/10 (R1)	15/5 (R1)	10/1 (R1)	—	20/10 (R1)	—
Copperhead*	AE	15 (R0)	10 (R0)	5 (R0)	—	—	—
Flechette*	AE, AI	*	*	*	—	—	—
High-Explosive (standard)	AE, F	25/15/5 (R2)	20/10 (R1)	15/5 (R1)	3/1 (R1)	—	
Minefield Rounds							
Thunder Active-IV*	AE	—	—	—	—	20 (R0)	—
Thunder FASCAM (Inner Sphere)*	AE	25 (R0)	20 (R0)	—	—	20 (R0)	—
Thunder FASCAM (Clan)*	AE	25 (R0)	20 (R0)	15 (R0)	—	30 (R0)	—
Thunder Vibrabomb-IV*	AE	—	—	—	—	20 (R0)	—
Non-Explosive Rounds**							
Illumination*	—	(Radius 3)	(Radius 2)	(Radius 1)	—	(Radius 4)	—
Inferno IV-Missiles*	AE, H, AI	—	—	—	—	(Radius 1)	—
Laser-Inhibiting Arrow Missile*	—	—	—	—	—	(Radius 0)	—
Smoke*	—	(Radius 1)	(Radius 1)	(Radius 1)	(Radius 1)	(Radius 1)	—
Cruise Missiles							
Cruise Missile/50	AE	—	—	—	—	—	50/25 (R1)
Cruise Missile/70	AE	—	—	—	—	—	70/45/20 (R2)
Cruise Missile/90	AE	—	—	—	—	—	90/65/40/15 (R3)
Cruise Missile/120	AE	—	—	—	—	—	120/95/70/45/20 (R4)

*See additional rules for the specific ordnance in the *Advanced Weapons and Equipment* section.
**The effect radius describes the area affected by a non-explosive shell. For example, an illumination round fired by a Long Tom has an effect radius of 3, so it affects the target hex, as well as any unit within 3 hexes of the target hex. Ordnance with an effect radius of 0 affects only the target hex.

MINEFIELD DENSITY

PAGE 208

Minefield Density*	Target Number
5- or 10-point	9+
15- or 20-point	8+
25- or 30-point	7+

*The EMP mine (see p. 365) cannot be weapon-delivered.

ARTILLERY MODIFIERS

PAGE 180

Condition	Modifier
For every 2 points of Gunnery Skill less than 4 possessed by the spotting unit*	–1
For every 2 points of Gunnery Skill greater than 4 possessed by the spotting unit*	+1
Adjusting fire: for each previous shot fired at the target hex by the artillery unit*	–1

*See *Artillery Spotters,* p. 181; Round any fractions down.

ADVANCED BATTLE ARMOR WEIGHTS

PAGE 187

Weight Class	Tons of Cargo Space Occupied	Battle Armor Units (total occupied cargo space) 4 troopers	5 troopers	6 troopers
PA(L)/Exoskeleton	.25 tons	1 ton	1.25 tons	1.5 tons
Light	.5 tons	2 tons	2.5 tons	3 tons
Medium	1 ton	4 tons	5 tons	6 tons
Heavy	1.5 tons	6 tons	7.5 tons	9 tons
Assault	2 tons	8 tons	10 tons	12 tons

EJECTION MODIFIERS

PAGE 197

Landing Terrain	Modifier
Clear	–2
Water	–1
Snow	–1
Deep Snow	–2
Rough	0
Rubble	0
Light Jungle/Woods/Ultra Rough	+2
Heavy Jungle/Woods/Ultra Rubble	+3
Ultra Jungle/Woods	+4
Per Level of Building	+1

Planetary Conditions	Modifier
Zero-G	+3
Low-G (more than .2 off Terran standard)	+2
High-G (more than .2 off Terran standard)	+3
Vacuum or Tainted Atmosphere*	+3
Trace or Very High Pressure Atmosphere	+2
Heavy Snowfall/Ice Storm/Lightning Storm/Strong Gale/Torrential Downpour	+2
Blizzard/Storm/Tornado	+3

Situation	Modifier
BattleMech Prone	+5
Pilot Unconscious	+3
Per Point of Head Internal Structure Damage	+1
Automatic Ejection	+1

*Assumes the pilot is wearing a suit to protect against vacuum or a tainted atmosphere; the pilot is killed immediately if in vacuum with no protection (see p. 56 for rules governing a tainted atmosphere and no protection).

MORALE

PAGE 212

Experience Level*	BattleMechs Morale Target†	Combat Vehicles Morale Target‡	Infantry Morale Target§	Support Vehicles Morale Target§§
Green	4	6	9	10
Regular	2	4	6	7
Veteran	—§§	2	4	5
Elite	—§§	—§§	2	2

*Includes ProtoMechs and aerospace fighters.
†Includes military conventional fighters, Small Craft, DropShips and WarShips.
‡Includes military Support Vehicles, JumpShips and Space Stations.
§Includes IndustrialMechs (unless piloted by a military MechWarrior, in which case treat as a Combat Vehicle) and all civilian aerospace units.
§§See *Infernos* and *Cruise Missile Attack* (see p. 211).

Special Source Modifier (All)	Target Modifier
Inferno	+1/+3*
Cruise Missile	+2

*The modifier to the left of the slash is for all non-infantry units, the modifier to the right of the slash for infantry.

Attack Source Modifier (Infantry Only)	Target Modifier
BattleMech in LOS	+1
Artillery	+2
Flamer or Fire	+3
Elite	—§§

Other Modifiers Modifier (Infantry Only)	Target Modifier
Broken Morale	+1
Cumulative Modifiers	
Light or Medium Battle Armor Unit	–1
Heavy or Assault Battle Armor Unit	–2
Anti-'Mech Skill of 5 or less	–1
Conventional Infantry with Armor (see p. 317)	–1
Unit in Building	–2
Unit Dug In	–2

BATTLEFIELD WRECKAGE

PAGE 187

Tonnage: In all instances, a unit must be 40 tons or greater to modify terrain upon destruction.

Unit Type	Terrain Type
'Mech	Rough
ProtoMech/Infantry	—
Combat Vehicles	Rough
Medium Support Vehicles	Rough
Large Support Vehicles/ Super-Heavy Vehicles	Ultra Rough
Rail	Ultra Rough
Fighters/Small Craft	Rough
DropShips/Mobile Structure	Ultra Rubble

TRANSPORT BAYS STATUS

PAGE 218

1D6 Roll	Status	Turns To Activation**
1-2	Shutdown	4
3-4	Stand By/Empty	3
5	Stand By/Occupied	2
6	Operational*	1

*Conventional Infantry are always considered "operational."
**This is in ground turns; if using space turns, all units are considered "activated" after a single space turn, regardless of the units' status or the availability of technicians (though the lack of a technician still applies the +2 modifier to the Piloting Skill Roll to determine if a shut-down unit activated properly [see *Bay Personnel*, p. 202]).

FATIGUE

PAGE 198

Piloting Skill Rating	Turn When Modifier Starts
6–7	Starting on Turn 10
4–5	Starting on Turn 14
2–3	Starting on Turn 17
0–1	Starting on Turn 20

RECOVERING NERVE

PAGE 213

NOTE: These modifiers only apply if a friendly unit/commander is within seventeen hexes of the unit attempting to recover its nerve.

Commanders*	Target Modifier
Sub-force Commander in LOS	–1
Force Commander in LOS	–2

Infantry Only	Target Modifier
Friendly non-'Mech, non-infantry unit in LOS	–1
Friendly 'Mech in LOS	–2
Another Routed Infantry Unit in LOS	+1
Another Routed Non-Infantry Unit in LOS	+2
Routed Unit	+3

*Only applies if Commanders (see p. 191) are in use.



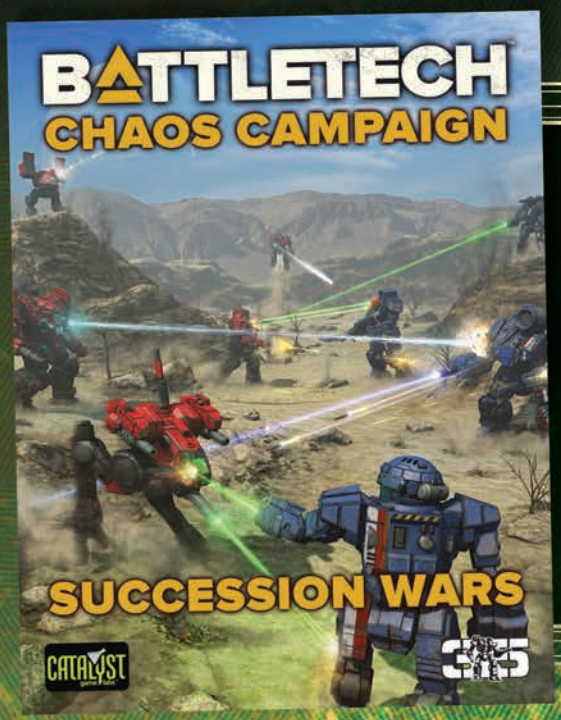
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