# TWILIGHT 2000

**Twilight 2000 is a Role playing game set in a fictional future, one where World war 3 began in the late 1990's and eventually slipped into a nuclear exchange changing society as we know it. The players assume the roles of survivors trying to live through the aftermath of the war. Twilight 2000 was published in the mid 1980's by Game Designers Workshop who unfortunately closed their doors in the early 1990's. The copyright was purchased by Tantalus, Inc but there are no stated plans to revive the game. Despite the lack of any new material from a publisher the game continues to expand through the players on websites such as this.**

**This is my contribution to the game, this site will be in a constant state of change, I plan to add material as I get it finished. This will include new equipment, optional rules, alternate game backgrounds and other material as it accumulates, currently I am working on source material for a World war 2 background, but I also have been completing some optional rules of my own as well as modern equipment. For other perspectives on Twilight 2000 visit the links listed at the bottom of this page.**

## Twilight 2000 World war 2 material

**World war 2 source book**

## Twilight 2000 Modern equipment

**Modern equipment**

## Optional rules for Twilight 2000

Fire

## Links to other Twilight 2000 pages

Antennas T2K Page: Focusing on Sweden's forces, equipment and background, also includes archives of discontinued sites and web discussions.

The Dark place: Includes material for several RPG's including Twilight 2000 and Behind Enemy Lines.

Crazy Chuck's Vehicle Emporium: Civilian vehicles, also has information on radios and accessories.

Damian's T2K Page: Australian Sourcebook,Australian and South African vehicles.

Dan Cooper's Site :Some adventures and a Yugoslav source book.

Dawgs Command Post: The OICW, and two adventures, including a World war 2 adventure for Twilight or Behind Enemy Lines.

Ed's Home Page: Coast Guard career path, some vehicles and an adventure.

Grimace997's Page: Careers, source material for Korea and an adventure.

Here there be dragons: Air rules, equipment, vehicles and weapons. Includes a detailed development history of several vehicles including the M1 Abrams, BTR-80 and MI-24 Hind.

Kens Twilight 2000 Page: Material for 1st edition Twilight 2000. Includes many downloadable files.

Loonz's page: Lots of stuff including a Virginia source book, new equipment, new careers, background material and house rules. Also includes information which can help in the search for GDW books and modules. Extensive listings in the links section. Loonz also has sites for Aftermath and The Morrow Project.

Matt Geisler's Page : Optional rules on damage and recovery, stealth, salvage, and zombies.

Megavolt: Optional combat rules.

Michel Boucher's Barebones Homepage: A list of GDW material and Challenge articles.

Mitch Berg's Page : Extensive World Military careers, alternate damage rules, new skills.

Mitchell Schwartz's site: MERC adventures, a WWII adventure and Yugoslav data.

Orrin Ladd's Site:House rules, links and PBEM resources.

Paul Mulcahy's Twilight 2000 site: Includes many files for download.

Peter Vieth's site: Source Materials, Military and Civilian vehicles.

Peter Himbergs site: House rules.

Oly's world: Includes a listing of Twilight players world wide available for regional information, helpful for planning a campaign. Also includes house rules, plans for a missile silo and some mini adventures.

T.R's Site: Lots of material, weapons, equipment, optional rules etc. Also includes material for Merc and Dark Conspiracy.

## Other sites of interest

Fist full of games: Includes several free war games, in particular Fist full of Tow's may be of interest for running those large scale battles.

GHQ miniatures: 1/285 scale military miniatures for war gaming.

Osprey military books: Osprey has several series of books detailing military units and equipment. Useful for background research.

Quick reaction force: 15mm military miniatures,includes personnel and vehicles from World war 2 to the present.

Home

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# TWILIGHT 2000

## WORLD WAR 2

World war 2 officially started in September 1939 with the German invasion of Poland and ended in August 1945 with the only operational use of atomic weapons. It quickly grew from a localized "European" war to a true global conflict, spanning the Atlantic and Pacific oceans, Europe, Asia, Africa, Australia, North and South America. The war changed the face of modern warfare, starting with the German blitzkrieg tactics and ending with the use of atomic weapons. In between many new forms of weapons and warfare were invented or improved including the amphibious landing, modern armored tactics, mechanized infantry, rockets, guided missiles and self propelled artillery. The aircraft came into its own through strategic and dive bombing, aerial torpedoes, parachute delivered infantry, aerial reconnaisance and the first operational jet aircraft. The war cost more than fifty million people thier lives and once again brought the terms genocide and war criminal to the worlds vocabulary.

P47-D Thunderbolt

I have been interested in the history of World war 2 for many years and have often thought it made a great background for a roleplaying game, one only needs to read some of the accounts of the soldiers involved to see the posibilities. Over the years there have been few RPG's in this vein, the only one that received any success that I am aware of was Behind enemy lines, long out of print and now difficult to find. Twilight with its military basis seemed the ideal starting point,

**there was a supplement for an alternate timeline "Twilight: The Iron Dream" planned to cover this very subject at one point but unfortunately GDW the publisher of Twilight 2000 went out of buisness before this came to be. As I found there were many others out there that seemed to have a similar interest in seeing such a supplement I have taken it upon myself to create one.**

**This is a work in progress, please check back from time to time if you like what you see.**

**Tiger I**

# Vehicles

| | | |
|---|---|---|
| American Tanks | German Tanks | Soviet Armored Vehicles |
| American Armored Vehicles | German Armored Vehicles | Soviet Aircraft |
| American Aircraft | German Aircraft | Armored vehicles of other nations |
| British Tanks | Italian Armored Vehicles | Aircraft of other nations |
| British Armored Vehicles | Italian Aircraft | Light vehicles and transports |
| British Aircraft | Japanese Armored Vehicles | Ships and other watercraft |
| French Armored Vehicles | Japanese Aircraft | Vehicle weapons |
| French Aircraft | Soviet Tanks | |

## Artillery

| | | |
|---|---|---|
| American Artillery | German Artillery | Soviet Artillery |
| British Artillery | Italian Artillery | Artillery of other nations |
| French Artillery | Japanese Artillery | |

## Infantry weapons

| | | |
|---|---|---|
| American Small Arms | German Small Arms | Soviet Small Arms |
| American Support Weapons | German Support Weapons | Soviet Support Weapons |
| British Small Arms | Italian Small Arms | Small Arms of other nations |
| British Support Weapons | Italian Support Weapons | Support Weapons of other nations |
| French Small Arms | Japanese Small Arms | Civilian Small Arms |
| French Support Weapons | Japanese Support Weapons | |

## Additional material

| | | |
|---|---|---|
| A brief history of World war 2 | Soviet Military organizations | Japanese Military organizations |
| World war 2 careers | Other Allied Military organizations | Other Axis military organizations |
| U.S. Military organizations | German Military organizations | Suggested reading |
| British Military organizations | Italian Military organizations | |

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Twilight 2000 / MERC 2000

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# UNITED STATES

## LIGHT TANKS

# LVT(A)1

The LVT(A)1 is a light amphibious tank used by the US Army and Marine Corps. Most were used in the Pacific theater against the Japanese. It uses a turret similar to the M3 Stuart and has two machine guns mounted by hatches on the rear deck. The machine guns are provided with gun shields (AV:2). Due to the high casualty rates of the machine gunners these positions were often deleted. It uses the engine and many drive line components from the M3 Stuart and is propelled through the water by its tracks.

**Fire control:** +1 **Stabilization:** Basic **Fuel:** Gasoline **Weight:** 14.9 tons **Load:** 400kg **Crew:** 6 **Maint:** 6
**Armament:** 37mm M6 gun, M1919A5 coaxial, 2x M1919A4 (MG1, MG2)
**Ammo:** 104x 37mm, 6000x .30-06
**Night Vision:** headlights **Radiological:** open **NBC system:** no
**Introduced:** 1944 **In service:** USA, UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 / 25 | **Com Mov:** 20 / 15 / 5 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 410 liters | **Fuel Cons:** 330 | **Susp:** Track:2 | Turret | 2 | 2 | 2 |
| | | | Hull | 2 | 2 | 2 |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **M1919A4** | 5 | 4 | 2-3-Nil | Belt 250 | SS 1 Brst 3 | 125 |
| **M1919A5** | 5 | 4 | 2-3-Nil | Belt 250 | SS - Brst - | 125 |
| | | | | | | |

# M2A4

This is the last version of the 1930's M2 light tank series and was the only one used in combat during World war 2. It was in service with the U.S. Army and Marine corps at the start of the war. They were used in the Pacific against the Japanese until late 1942 when the M3 series became available in sufficient numbers to replace it. It has 2 machineguns in forward fixed mounts operated by the driver.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 10.4 tons **Load:** 200kg **Crew:** 4 **Maint:** 5
**Armament:** 37mm M5 gun, M1919A5 coaxial, M1919A5 hull, 2x M1919A5 fixed (D)
**Ammo:** 103x 37mm, 8270x .30-06
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1939 **In service:** USA

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 100 / 65 | **Com Mov:** 25 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 215 liters | **Fuel Cons:** 300 | **Susp:** Track:2 | Turret | 5 | 3 | 3 |
| | | | Hull | 5 | 3 | 3 |

| **37mm M5** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 370 | 8 | 6 / 5 / 4 / 2 |
| HE | 275 | C:2 B:9 | -6C |
| APERS | 100 | Special | 1-Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **M1919A5** | 5 | 4 | 2-3-Nil | Belt 250 | SS - Brst - | 125 |

# M3 Stuart

The M3 light tank was evolved from the earlier M2 series developed during the 1930's. Many of these tanks were supplied to the British and the Soviet Union. The British used them during the North African campaigns of 1941-42 where they gained the designation Stuart. They were popular with the British troops who used them as they were reliable, easy to maintain, had good mobility and more space for the crew than most British tanks. These attributes led to the nickname "Honey" by the British as they were considered to be "one honey of a tank". The M3 was used by US forces until 1943 when they were replaced by improved versions. About 500 were built with a diesel engine which

had identical performance to the standard gasoline powered versions. In U.S. service these were known as M3(diesel) while the British designated the gasoline powered version Stuart I and the diesel powered version Stuart II. Many M3's in the Pacific were converted into flamethrower vehicles by replacing the 37mm gun with a flamegun. External fuel tanks may be fitted to extend the range.

**Fire control:** +1 **Stabilization:** Basic **Fuel:** Gasoline **Weight:** 11.1 tons **Load:** 200kg **Crew:** 4 **Maint:** 5
**Armament:** 37mm M6 gun, M1919A5 coaxial, M1919A5 hull, 2x M1919A5 fixed (D), M1919A4 (C)
**Ammo:** 103x 37mm, 8270x .30-06
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1940 **In service:** USA, UK, USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 120 / 80 | **Com Mov:** 30 / 20 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 215+170 liters | **Fuel Cons:** 450 | **Susp:** Track:2 | Turret | 8 | 6 | 6 |
| | | | Hull | 12 | 5 | 5 |

| **37mm M6** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 395 | 8 | 6 / 5 / 4 / 2 |
| HE | 295 | C:2 B:9 | -6C |
| APERS | 100 | Spcl | 1-Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **M1919A4** | 5 | 4 | 2-3-Nil | Belt 250 | SS 1 Brst 3 | 125 |
| **M1919A5** | 5 | 4 | 2-3-Nil | Belt 250 | SS - Brst - | 125 |

# M3 Satan

The M3 Satan is a field modification made to many old or damaged M3 light tanks, the 37mm gun is replaced with a flame gun and fuel storage. Similar conversions were made to later models of the M3 and M5. The majority of these conversions were made by the U.S. Marine Corps for use against fortified Japanese positions.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 11.1 tons **Load:** 200kg **Crew:** 4 **Maint:** 5
**Armament:** Flame gun, M1919A5 coaxial, M1919A5 hull, M1919A4 (C)
**Ammo:** 60 seconds of flame gun fuel, 8270x .30-06
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** USA

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 120 / 80 | **Com Mov:** 30 / 20 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 215+170 liters | **Fuel Cons:** 450 | **Susp:** Track:2 | Turret | 8 | 6 | 6 |
| | | | Hull | 12 | 5 | 5 |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **M1919A4** | 5 | 4 | 2-3-Nil | Belt 250 | SS 1 Brst 3 | 125 |
| **M1919A5** | 5 | 4 | 2-3-Nil | Belt 250 | SS - Brst - | 125 |
| **Flamegun** | SA | Fire | Nil | 60 | SS - Brst - | 15 |
| | | | | | | |

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# M3A1 Stuart

The M3A1 is an improved version of the M3 light tank, it has a new turret and removes the fixed machine guns to provide more storage space. It remained in U.S. service until 1944. Approximately 200 were built with a diesel engine and had similar performance to the gasoline powered version. In U.S. service these were designated M3A1(diesel) while the British designated the gasoline version Stuart III and the diesel version Stuart IV.

**Fire control:** +1 **Stabilization:** Basic **Fuel:** Gasoline **Weight:** 11.5 tons **Load:** 200kg **Crew:** 4 **Maint:** 5
**Armament:** 37mm M6 gun, M1919A5 coaxial, M1919A5 hull, M1919A4 (C)
**Ammo:** 116x 37mm, 6400x .30-06
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1941 **In service:** USA, Australia, Canada, New Zealand, UK, USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 120 / 80 | **Com Mov:** 30 / 20 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 215+170 liters | **Fuel Cons:** 450 | **Susp:** Track:2 | Turret | 8 | 6 | 6 |
| | | | Hull | 12 | 5 | 5 |

| 37mm M6 | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 395 | 8 | 6 / 5 / 4 / 2 |
| HE | 295 | C:2 B:9 | -6C |
| APERS | 100 | Spcl | 1-Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **M1919A4** | 5 | 4 | 2-3-Nil | Belt 250 | SS 1 Brst 3 | 125 |
| **M1919A5** | 5 | 4 | 2-3-Nil | Belt 250 | SS - Brst - | 125 |

# M3A3 Stuart

The M3A3 is an improved version of the M3A1 light tank, it has a new turret and the hull is slightly enlarged. It remained in service with U.S. forces until the end of the war but was classified limited standard in 1943. After the war the M24 completely replaced the M3 series in U.S. service but M3's could still be found in service with smaller militaries into the 1980's.

**Fire control:** +1 **Stabilization:** Basic **Fuel:** Gasoline **Weight:** 14.4 tons **Load:** 200kg **Crew:** 4 **Maint:** 6
**Armament:** 37mm M6 gun, M1919A5 coaxial, M1919A5 hull, M1919A4 (C)
**Ammo:** 174x 37mm, 7500x .30-06
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** USA, Australia, Canada, New Zealand, UK, USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 120 / 80 | **Com Mov:** 30 / 20 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 390 liters | **Fuel Cons:** 450 | **Susp:** Track:3 | Turret | 8 | 6 | 6 |
| | | | Hull | 12 | 5 | 5 |

| 37mm M6 | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 395 | 8 | 6 / 5 / 4 / 2 |
| HE | 295 | C:2 B:9 | -6C |
| APERS | 100 | Spcl | 1-Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **M1919A4** | 5 | 4 | 2-3-Nil | Belt 250 | SS 1 Brst 3 | 125 |
| **M1919A5** | 5 | 4 | 2-3-Nil | Belt 250 | SS - Brst - | 125 |

# M5 Stuart

The M5 is a modified version of the M3A1, it uses twin cadillac automobile engines in place of the radial aircraft engine used in the M3. It also uses an automatic transmission. The M5 uses a turret which is lower and has slightly heavier armor. The hull is redesigned to improve storage space and has slightly thicker frontal armor. It was reclassified as limited standard in U.S. service in 1943. The British designated this tank Stuart VI.

**Fire control:** +1 **Stabilization:** Basic **Fuel:** Gasoline **Weight:** 15 tons **Load:** 200kg **Crew:** 4 **Maint:** 6
**Armament:** 37mm M6 gun, M1919A5 coaxial, M1919A5 hull, M1919A4 (C)
**Ammo:** 123x 37mm, 6250x .30-06
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** USA, Australia, Canada, New Zealand, UK, USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 120 / 80 | **Com Mov:** 30 / 20 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 345 liters | **Fuel Cons:** 510 | **Susp:** Track:3 | Turret | 10 | 6 | 6 |
| | | | Hull | 15 | 5 | 5 |

| 37mm M6 | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 395 | 8 | 6 / 5 / 4 / 2 |
| HE | 295 | C:2 B:9 | -6C |
| APERS | 100 | Spcl | 1-Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **M1919A4** | 5 | 4 | 2-3-Nil | Belt 250 | SS 1 Brst 3 | 125 |
| **M1919A5** | 5 | 4 | 2-3-Nil | Belt 250 | SS - Brst - | 125 |

# M5A1 Stuart

The M5A1 replaced the M5 in production and includes most of the improvements of the M3A3. The M5A1 was reclassified as substitute standard in U.S. service in 1944. Although the M5 series was replaced in U.S. service after the war, it remained in service with many of the worlds smaller militaries into the 1980's. The British did not distinguish the M5 from the M5A1 designating both as Stuart VI.

**Fire control:** +1 **Stabilization:** Basic **Fuel:** Gasoline **Weight:** 15.4 tons **Load:** 200kg **Crew:** 4 **Maint:** 6
**Armament:** 37mm M6 gun, M1919A5 coaxial, M1919A5 hull, M1919A4 (C)
**Ammo:** 147x 37mm, 6500x .30-06
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** USA, Australia, Canada, New Zealand, UK, USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 120 / 80 | **Com Mov:** 30 / 20 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 345 liters | **Fuel Cons:** 510 | **Susp:** Track:3 | Turret | 10 | 6 | 6 |
| | | | Hull | 15 | 5 | 5 |

| 37mm M6 | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 395 | 8 | 6 / 5 / 4 / 2 |
| HE | 295 | C:2 B:9 | -6C |
| APERS | 100 | Spcl | 1-Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **M1919A4** | 5 | 4 | 2-3-Nil | Belt 250 | SS 1 Brst 3 | 125 |
| **M1919A5** | 5 | 4 | 2-3-Nil | Belt 250 | SS - Brst - | 125 |

# M22 Locust

The M22 is a light air portable tank designed around a specification for an American glider that never entered service. It did fit into a British glider and many were used by the British following the 1944 Normandy invasion. It could be air transported by the C-54 Skymaster but the turret had to be removed to be carried as cargo while the chassis was slung beneath the aircraft. Due to the difficulty in transport it saw little use with U.S. forces the bulk of the production going to Britain. In order to meet the weight restrictions imposed by the air portable mission the gun stabilization system used on most U.S. tanks was not included.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 7.2 tons **Load:** 100kg **Crew:** 3 **Maint:** 4
**Armament:** 37mm M6 gun, M1919A5 coaxial
**Ammo:** 50x 37mm, 2500x .30-06
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** USA, UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 115 / 75 | **Com Mov:** 25 / 20 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 210 liters | **Fuel Cons:** 270 | **Susp:** Track:1 | Turret | 5 | 5 | 5 |
| | | | Hull | 5 | 4 | 3 |

| 37mm M6 | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 395 | 8 | 6 / 5 / 4 / 2 |
| HE | 295 | C:2 B:9 | -6C |
| APERS | 100 | Spcl | 1-Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **M1919A5** | 5 | 4 | 2-3-Nil | Belt 250 | SS - Brst - | 125 |

# M24 Chaffee

The M24 was introduced to provide a light tank with a more powerful gun than the 37mm gun of the M3 and M5 series. It mounts a 75mm gun with low recoil developed for use in aircraft. The M24 was also a new concept in American armor as it was planned to be part of a "combat family" the chassis being designed for use as the basis for several vehicles, although it was not uncommon for tanks to be converted for other uses the chassis of the M24 was designed from the start for use in other vehicles making these conversions easier. The M24 remained in service with U. S. forces into the 1950's and can be found in service to the present with the militaries of several nations.

**Fire control:** +1 **Stabilization:** Basic **Fuel:** Gasoline **Weight:** 17.6 tons **Load:** 200kg **Crew:** 5 **Maint:** 7
**Armament:** 75mm M4 gun, M1919A5 coaxial, M1919A5 hull, M2HB (C), 2" mortar
**Ammo:** 48x 75mm, 3750x .30-06, 440x .50 Browning, 14x 2"
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1944 **In service:** USA

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 115 / 75 | **Com Mov:** 25 / 20 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 415 liters | **Fuel Cons:** 340 | **Susp:** Track:3 | Turret | 10 | 8 | 6 |
| | | | Hull | 13 | 6 | 4 |

| 75mm M4 | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 335 | 17 | 16 / 14 / 12 / 6 |
| HE | 250 | C:7 B:19 | 0C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **M1919A4** | 5 | 4 | 2-3-Nil | Belt 250 | SS 1 Brst 3 | 125 |
| **M1919A5** | 5 | 4 | 2-3-Nil | Belt 250 | SS - Brst - | 125 |
| **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |

| 2" Mortar | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| CHEM | 150 | C:2 B:3 | Nil |

# MEDIUM TANKS

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## M3 Lee / Grant

The M3 medium tank was designed to provide a tank armed with a 75mm gun in as short a time as possible. It used the hull of the 1930's M2 medium tank modified to allow a 75mm gun to be mounted in the hull while retaining the 37mm gun in the turret. There is a cupola on the turret top for the Commander which also includes a machine gun, this cupola has a 360' traverse independent of the turret, 2 machine guns are fixed to fire forward in the hull operated by the Driver and a kit was available which replaced the Commanders machine gun with a flamethrower. Both the 37mm gun and the 75mm gun are stabilized. Many of these tanks were used by the British in North Africa where they were designated Lee. A modified version used only by the British was designated Grant, it used a different turret without the Commanders cupola and machine gun, reducing the overall height of the vehicle. The M3 became a substitute standard with U.S. forces in 1943 when the M4 entered service in substantial numbers, it was declared obsolete and

removed from service in 1944. An escape hatch is provided in the hull floor which may be used by the entire crew. There were several versions built which differed in construction methods and / or powerplant. The standard engine was an aircooled radial aircraft engine, the following are the production versions M3 ( rivited hull), M3A1 (cast hull), M3A2 (welded hull), M3A3 (welded hull and a diesel engine), M3A4 (rivited hull and a Chrysler multibank 30 cylinder engine), M3A5 (rivited hull and a diesel engine). These all had identical performance except for the A3 and A5 diesel powered versions which had more power and better fuel economy.

**Fire control:** +1 **Stabilization:** Basic **Fuel:** Gasoline **Weight:** 27.2 tons **Load:** 300kg **Crew:** 6 **Maint:** 10
**Armament:** 37mm M6 gun, 75mm M3 gun, M1919A5 coaxial(37mm), 2x M1919A5 fixed (D), M1919A5 (C)
**Ammo:** 178x 37mm, 46x 75mm, 9200x .30-06
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1941 **In service:** USA, UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 675 liters | **Fuel Cons:** 570 | **Susp:** Track:5 | Turret | 11 | 11 | 11 |
| | | | Hull | 15 | 8 | 8 |

| **37mm M6** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 395 | 8 | 6 / 5 / 4 / 2 |
| HE | 295 | C:2 B:9 | -6C |
| APERS | 100 | Spcl | 1-Nil |

| **75mm M3** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 340 | 17 | 17 / 14 / 12 / 7 |
| HE | 255 | C:7 B:19 | 0C |
| WP | 255 | C:2 B:15 | Nil |
| CHEM | 255 | C:2 B:7 | Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **M1919A5** | 5 | 4 | 2-3-Nil | Belt 250 | SS - Brst - | 125 |
| **Flamethrower** | SA | Fire | Nil | 30 | SS 1 Brst 1 | 5 |

# M3A3 (M3A5) Lee / Grant

This is the M3 with a diesel engine, the M3A3 and M3A5 differ only in hull construction.

**Fire control:** +1 **Stabilization:** Basic **Fuel:** Diesel **Weight:** 27.2 tons **Load:** 300kg **Crew:** 6 **Maint:** 10
**Armament:** 37mm M6 gun, 75mm M3 gun, M1919A5 coaxial(37mm), 2x M1919A5 fixed (D), M1919A5 (C)
**Ammo:** 178x 37mm, 46x 75mm, 9200x .30-06
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1941 **In service:** USA, UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 95 / 60 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 580 liters | **Fuel Cons:** 420 | **Susp:** Track:5 | Turret | 11 | 11 | 11 |
| | | | Hull | 15 | 8 | 8 |

| **37mm M6** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 395 | 8 | 6 / 5 / 4 / 2 |
| HE | 295 | C:2 B:9 | -6C |
| APERS | 100 | Spcl | 1-Nil |

| **75mm M3** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 340 | 17 | 17 / 14 / 12 / 7 |
| HE | 255 | C:7 B:19 | 0C |
| WP | 255 | C:2 B:15 | Nil |
| CHEM | 255 | C:2 B:7 | Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **M1919A5** | 5 | 4 | 2-3-Nil | Belt 250 | SS - Brst - | 125 |
| **Flamethrower** | SA | Fire | Nil | 30 | SS 1 Brst 1 | 5 |

# M4 (M4A1) Sherman

The M4 was the most numerous tank used by the Allies during World war 2. More M4's were built than any other tank of the war. Many were used by the British who designated them Shermans. The U.S. military had decided to focus on a limited number of tank models to ease production and logistical needs. It had been decided early in the war to base U.S. armored forces on the M4 medium tank as it would be easier to transport medium tanks to Europe than heavy tanks and the need for heavy tanks was also felt to be unneccessary as anti-tank work was to be performed by tank-destroyers not tanks. The Sherman was not equal to the later German tanks in firepower or armor protection but it was available in larger numbers and was very reliable. An escape hatch is provided in the floor which can be used by the entire crew. A kit was available which replaced the hull machine gun with a flamethrower and in 1944 a roof mounted smoke mortar was added, this mortar could be reloaded from inside the turret. Due to the large demand there were several versions of the M4 which differed mainly in the construction methods and the power plant used. All versions used a welded hull except for the M4A1 which had a cast hull, this gave the M4A1 a rounded appearance compared to the angular welded hulls. The British designated the M4 Sherman I and the M4A1 Sherman II, they also added a suffix for the optional guns, A for the 76mm gun, B for the 105mm howitzer and C for the 17 pounder.. The M4 was used as the basis for several combat and support vehicles.

**Fire control:** +1 **Stabilization:** Basic **Fuel:** Gasoline **Weight:** 27 tons **Load:** 300kg **Crew:** 5 **Maint:** 9
**Armament:** 75mm M3 gun, M1919A5 coaxial, M1919A5 hull, M2HB (C), 2" mortar
**Ammo:** 97x 75mm, 4750x .30-06, 500x .50 Browning, 20x 2"
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** USA, Australia, Canada, New Zealand, UK, USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 675 liters | **Fuel Cons:** 570 | **Susp:** Track:5 | Turret | 15 | 10 | 10 |
| | | | Hull | 15 | 10 | 8 |

| **75mm M3** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 340 | 17 | 17 / 14 / 12 / 7 |
| HE | 255 | C:7 B:19 | 0C |
| WP | 255 | C:2 B:15 | Nil |
| CHEM | 255 | C:2 B:7 | Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **M1919A5** | 5 | 4 | 2-3-Nil | Belt 250 | SS - Brst - | 125 |
| **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |
| **Flamethrower** | SA | Fire | Nil | 30 | SS 1 Brst 1 | 5 |

| 2" Mortar | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| CHEM | 150 | C:2 B:3 | Nil |

# M4(76mm) Sherman

When initially introduced the tactics employed by the U.S. military saw the tank primarily as an infantry support weapon and the tank destroyer as the primary anti-tank weapon. After gaining some experience and realizing that the tank was being used against other tanks it was decided to improve the anti-armor capability of the M4. This was done by replacing the 75mm gun with a high velocity 76mm gun based on the 3" anti-tank gun. The entire turret was replaced with the turret from an experimental tank which had not entered service. M4(76mm)'s in British service were designated Sherman I-A. The M4A1 was also available with this gun and it has identical performance, it was designated Sherman II-A by the British.

**Fire control:** +1 **Stabilization:** Basic **Fuel:** Gasoline **Weight:** 28.9 tons **Load:** 300kg **Crew:** 5 **Maint:** 9
**Armament:** 76mm M1 gun, M1919A5 coaxial, M1919A5 hull, M2HB (C), 2" mortar
**Ammo:** 71x 76mm, 4750x .30-06, 500x .50 Browning, 20x 2"
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1944 **In service:** USA, Australia, Canada, New Zealand, UK, USSR

| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
|---|---|---|---|---|---|---|
| **Fuel Cap:** 675 liters | **Fuel Cons:** 570 | **Susp:** Track:5 | Turret | 19 | 13 | 13 |
| | | | Hull | 15 | 10 | 8 |

| 76mm M1 | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 415 | 17 | 34 / 30 / 25 / 13 |
| AP | 415 | 17 | 26 / 23 / 19 / 10 |
| HE | 310 | C:7 B:19 | 0C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **M1919A5** | 5 | 4 | 2-3-Nil | Belt 250 | SS - Brst - | 125 |
| **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |
| **Flamethrower** | SA | Fire | Nil | 30 | SS 1 Brst 1 | 5 |
| | | | | | | |

| | | | |
|---|---|---|---|
| CHEM | 310 | C:2 B:8 | Nil |
| | | | |

| 2" Mortar | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| CHEM | 150 | C:2 B:3 | Nil |

# M4(105mm) Sherman

This is a support version of the M4 with a 105mm howitzer in place of the 75mm gun. The British designated it Sherman I-B.

**Fire control:** +1 **Stabilization:** Basic **Fuel:** Gasoline **Weight:** 31.2 tons **Load:** 300kg **Crew:** 5 **Maint:** 10
**Armament:** 105mm M4 howitzer, M1919A5 coaxial, M1919A5 hull, M2HB (C), 2" mortar
**Ammo:** 66x 105mm, 4000x .30-06, 300x .50 Browning, 18x 2"
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** USA, Australia, Canada, New Zealand, UK, USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 675 liters | **Fuel Cons:** 570 | **Susp:** Track:5 | Turret | 15 | 10 | 10 |
| | | | Hull | 15 | 10 | 8 |

| 105mm M4 | ROF: SS | Magazine: Rld: 1 | IFR: 11.1km |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HEAT | 175 | C:9 B:13 | 35C |
| HE | 175 | C:14 B:26 | 5C |
| WP | 175 | C:3 B:32 | Nil |
| ILLUM | N/A | B:1000 | Nil |
| | | | |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **M1919A5** | 5 | 4 | 2-3-Nil | Belt 250 | SS - Brst - | 125 |
| **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |
| **Flamethrower** | SA | Fire | Nil | 30 | SS 1 Brst 1 | 5 |
| | | | | | | |

| 2" Mortar | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| CHEM | 150 | C:2 B:3 | Nil |

# M4A2 Sherman

Due to the high demand for the M4 several variations on the basic vehicle were tried, most of these centered on the power plant. This allowed limited experimentation as well as providing relief to the engine manufacturing industry. The standard engine used in the M4 was an aircooled radial aircraft engine, the M4A2 uses a diesel engine. Many of these vehicles were sent to the Soviet Union who used diesel in most of thier native tanks. It is similar to the M4 but has better performance due to a more powerful engine. The British designated this version Sherman III.

**Fire control:** +1 **Stabilization:** Basic **Fuel:** Diesel **Weight:** 27 tons **Load:** 300kg **Crew:** 5 **Maint:** 9
**Armament:** 75mm M3 gun, M1919A5 coaxial, M1919A5 hull, M2HB (C), 2" mortar
**Ammo:** 97x 75mm, 4750x .30-06, 500x .50 Browning, 20x 2"
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** USA, Australia, Canada, New Zealand, UK, USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 100 / 65 | **Com Mov:** 25 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 570 liters | **Fuel Cons:** 460 | **Susp:** Track:5 | Turret | 15 | 10 | 10 |
| | | | Hull | 15 | 10 | 8 |

| **75mm M3** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 340 | 17 | 17 / 14 / 12 / 7 |
| HE | 255 | C:7 B:19 | 0C |
| WP | 255 | C:2 B:15 | Nil |
| CHEM | 255 | C:2 B:7 | Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **M1919A5** | 5 | 4 | 2-3-Nil | Belt 250 | SS - Brst - | 125 |
| **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |
| **Flamethrower** | SA | Fire | Nil | 30 | SS 1 Brst 1 | 5 |

| **2" Mortar** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| CHEM | 150 | C:2 B:3 | Nil |

# M4A2(76mm) Sherman

This is the M4A2 with the 76mm gun. The British designated this version Sherman III-A.

**Fire control:** +1 **Stabilization:** Basic **Fuel:** Gasoline **Weight:** 28.9 tons **Load:** 300kg **Crew:** 5 **Maint:** 9
**Armament:** 76mm M1 gun, M1919A5 coaxial, M1919A5 hull, M2HB (C), 2" mortar
**Ammo:** 71x 76mm, 4750x .30-06, 500x .50 Browning, 20x 2"
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1944 **In service:** USA, Australia, Canada, New Zealand, UK, USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 100 / 65 | **Com Mov:** 25 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 570 liters | **Fuel Cons:** 460 | **Susp:** Track:5 | Turret | 19 | 13 | 13 |
| | | | Hull | 15 | 10 | 8 |

| **76mm M1** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 415 | 17 | 34 / 30 / 25 / 13 |
| AP | 415 | 17 | 26 / 23 / 19 / 10 |
| HE | 310 | C:7 B:19 | 0C |
| CHEM | 310 | C:2 B:8 | Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **M1919A5** | 5 | 4 | 2-3-Nil | Belt 250 | SS - Brst - | 125 |
| **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |
| **Flamethrower** | SA | Fire | Nil | 30 | SS 1 Brst 1 | 5 |

| **2" Mortar** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| CHEM | 150 | C:2 B:3 | Nil |

# M4A3 Sherman

This was the most successful of the Sherman series and was produced in the largest numbers. It uses a Ford V-8 engine which was designed for use as a tank engine, not converted from another source which resulted in good performance and reliability. The M4A3 was the preferred choice of the U.S. Army and the majority of its production went to them. The British designated this version Sherman IV.

**Fire control:** +1 **Stabilization:** Basic **Fuel:** Gasoline **Weight:** 27 tons **Load:** 300kg **Crew:** 5 **Maint:** 9
**Armament:** 75mm M3 gun, M1919A5 coaxial, M1919A5 hull, M2HB (C), 2" mortar
**Ammo:** 97x 75mm, 4750x .30-06, 500x .50 Browning, 20x 2"
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** USA, Australia, Canada, New Zealand, UK, USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 100 / 65 | **Com Mov:** 25 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 670 liters | **Fuel Cons:** 600 | **Susp:** Track:5 | Turret | 15 | 10 | 10 |
| | | | Hull | 15 | 10 | 8 |

| **75mm M3** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 340 | 17 | 17 / 14 / 12 / 7 |
| HE | 255 | C:7 B:19 | 0C |
| WP | 255 | C:2 B:15 | Nil |
| CHEM | 255 | C:2 B:7 | Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **M1919A5** | 5 | 4 | 2-3-Nil | Belt 250 | SS - Brst - | 125 |
| **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |
| **Flamethrower** | SA | Fire | Nil | 30 | SS 1 Brst 1 | 5 |

| **2" Mortar** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| CHEM | 150 | C:2 B:3 | Nil |

# M4A3(76mm) Sherman

This is the M4A3 with the 76mm gun. This version was the best of the U.S. Shermans and was the only one to remain in service with the U.S. military after the war, it continued in front line use until 1956. Preproduction versions were designated M4A3E8, once it was standardized it became the M4A3(76mm), but the experimental suffix E8 stuck and it is still commonly known as the M4A3E8, this also resulted in the nickname "easy eight". The British designated this version Sherman IV-A

**Fire control:** +1 **Stabilization:** Basic **Fuel:** Gasoline **Weight:** 28.9 tons **Load:** 300kg **Crew:** 5 **Maint:** 9
**Armament:** 76mm M1 gun, M1919A5 coaxial, M1919A5 hull, M2HB (C), 2" mortar
**Ammo:** 71x 76mm, 4750x .30-06, 500x .50 Browning, 20x 2"
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1944 **In service:** USA, Australia, Canada, New Zealand, UK, USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 100 / 65 | **Com Mov:** 25 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 670 liters | **Fuel Cons:** 600 | **Susp:** Track:5 | Turret | 19 | 13 | 13 |
| | | | Hull | 15 | 10 | 8 |

| 76mm M1 | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 415 | 17 | 34 / 30 / 25 / 13 |
| AP | 415 | 17 | 26 / 23 / 19 / 10 |
| HE | 310 | C:7 B:19 | 0C |
| CHEM | 310 | C:2 B:8 | Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **M1919A5** | 5 | 4 | 2-3-Nil | Belt 250 | SS - Brst - | 125 |
| **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |
| **Flamethrower** | SA | Fire | Nil | 30 | SS 1 Brst 1 | 5 |

| 2" Mortar | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| CHEM | 150 | C:2 B:3 | Nil |

# M4A3(105mm) Sherman

This is a support version of the M4A3 with a 105mm howitzer in place of the 75mm gun. The British designated it Sherman IV-B.

**Fire control:** +1 **Stabilization:** Basic **Fuel:** Gasoline **Weight:** 31.2 tons **Load:** 300kg **Crew:** 5 **Maint:** 10
**Armament:** 105mm M4 howitzer, M1919A5 coaxial, M1919A5 hull, M2HB (C), 2" mortar
**Ammo:** 66x 105mm, 4000x .30-06, 300x .50 Browning, 18x 2"
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** USA, Australia, Canada, New Zealand, UK, USSR

| **TrMOV:** 100 / 65 | **Com Mov:** 25 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
|---|---|---|---|---|---|---|
| **Fuel Cap:** 670 liters | **Fuel Cons:** 600 | **Susp:** Track:5 | Turret | 15 | 10 | 10 |
| | | | Hull | 15 | 10 | 8 |

| 105mm M4 | ROF: SS | Magazine: Rld: 1 | IFR: 11.1km |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HEAT | 175 | C:9 B:13 | 35C |
| HE | 175 | C:14 B:26 | 5C |
| WP | 175 | C:3 B:32 | Nil |
| ILLUM | N/A | B:1000 | Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **M1919A5** | 5 | 4 | 2-3-Nil | Belt 250 | SS - Brst - | 125 |
| **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |
| **Flamethrower** | SA | Fire | Nil | 30 | SS 1 Brst 1 | 5 |

| 2" Mortar | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| CHEM | 150 | C:2 B:3 | Nil |

# M4A3E2 Sherman "Jumbo"

This is an assault tank based on the M4A3, it was unofficially known as the Jumbo. It is a heavily armored version of the M4 created for the Normandy invasion. It is actually a kit which was applied to tanks in the field, it includes additional armor for the front and sides along with heavier tracks and other suspension modifications to handle the additional weight. The kit was to be used with 75mm armed versions but as this was a field modification a small number of conversions may have been made to 76mm and 105mm versions. Few of these kits were supplied and less than 300 were built, as it was never standardized for production and it retained the experimental suffix E2.

**Fire control:** +1 **Stabilization:** Basic **Fuel:** Gasoline **Weight:** 38.2 tons **Load:** 300kg **Crew:** 5 **Maint:** 12
**Armament:** 75mm M3 gun, M1919A5 coaxial, M1919A5 hull, M2HB (C), 2" mortar
**Ammo:** 97x 75mm, 4750x .30-06, 500x .50 Browning, 20x 2"
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1944 **In service:** USA

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 70 / 45 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 670 liters | **Fuel Cons:** 600 | **Susp:** Track:6 | Turret | 45 | 20 | 10 |
| | | | Hull | 45 | 20 | 8 |

| 75mm M3 | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 340 | 17 | 17 / 14 / 12 / 7 |
| HE | 255 | C:7 B:19 | 0C |
| WP | 255 | C:2 B:15 | Nil |
| CHEM | 255 | C:2 B:7 | Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **M1919A5** | 5 | 4 | 2-3-Nil | Belt 250 | SS - Brst - | 125 |
| **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |
| **Flamethrower** | SA | Fire | Nil | 30 | SS 1 Brst 1 | 5 |

| 2" Mortar | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| CHEM | 150 | C:2 B:3 | Nil |

# M4A4 Sherman

This version used a Chrysler multibank engine, this was a 30 cylinder engine created by connecting five 6 cylinder automobile engines to a common crank shaft. Due to the length of this engine the hull was lengthend slightly. The majority of the production of M4A4's went to Britain who designated it Sherman V. This version was later modified to mount the British 17 pounder anti-tank gun resulting in the Sherman V-C Firefly.

**Fire control:** +1 **Stabilization:** Basic **Fuel:** Gasoline **Weight:** 27 tons **Load:** 300kg **Crew:** 5 **Maint:** 9
**Armament:** 75mm M3 gun, M1919A5 coaxial, M1919A5 hull, Weapons mount (C), 2" mortar
**Ammo:** 97x 75mm, 4750x .30-06, 500x .50 Browning, 20x 2"
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** USA, UK

| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
|---|---|---|---|---|---|---|
| **Fuel Cap:** 580 liters | **Fuel Cons:** 580 | **Susp:** Track:5 | Turret | 15 | 10 | 10 |
| | | | Hull | 15 | 10 | 8 |

| 75mm M3 | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 340 | 17 | 17 / 14 / 12 / 7 |
| HE | 255 | C:7 B:19 | 0C |
| WP | 255 | C:2 B:15 | Nil |
| CHEM | 255 | C:2 B:7 | Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **M1919A5** | 5 | 4 | 2-3-Nil | Belt 250 | SS - Brst - | 125 |
| **Flamethrower** | SA | Fire | Nil | 30 | SS 1 Brst 1 | 5 |

| 2" Mortar | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| CHEM | 150 | C:2 B:3 | Nil |

# HEAVY TANKS

## M6

The M6 was designed as a heavy tank intended to serve along side the M4 Sherman. It mounts a 3" gun with a coaxial 37mm gun, there are 2 hull mounted .50 caliber machine guns fixed to fire forward operated by the Driver and a ball mounted machine gun also in the hull front. A decision to focus production on the M4 Sherman led to the cancellation of the M6 after approximately 100 had been built. It was never used in combat and was declared obsolete in 1944.

**Fire control:** +1 **Stabilization:** Basic **Fuel:** Gasoline **Weight:** 57.5 tons **Load:** 600kg **Crew:** 6 **Maint:** 14
**Armament:** 3" M7 gun, 37mm M6 gun coaxial, M1919A5 hull, 2x M2HB fixed (D), M1919A4 (C)
**Ammo:** 75x 3", 202x 37mm, 7500x .30-06, 5700x .50 Browning
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** USA

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 70 / 45 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 1785 liters | **Fuel Cons:** 1580 | **Susp:** Track:5 | Turret | 16 | 16 | 16 |
| | | | Hull | 20 | 9 | 10 |

| **3" M7** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 405 | 17 | 33 / 27 / 23 / 13 |
| AP | 405 | 17 | 25 / 21 / 18 / 10 |
| HE | 300 | C:7 B:19 | 0C |

| **37mm M6** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 395 | 8 | 6 / 5 / 4 / 2 |
| HE | 295 | C:2 B:9 | -6C |
| APERS | 100 | Spcl | 1-Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **M1919A4** | 5 | 4 | 2-3-Nil | Belt 250 | SS 1 Brst 3 | 125 |
| **M1919A5** | 5 | 4 | 2-3-Nil | Belt 250 | SS - Brst - | 125 |
| **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS - Brst - | 150 |

# M26 Pershing

The M26 was introduced to counter the German Panther and Tiger tanks. Less than 200 arrived in Europe before the wars end and few of those saw combat. The M26 finally gave the U.S. army a tank that could meet the German heavy tanks on equal terms. It remained in service with U.S. forces into the 1950's although after World war 2 it was reclassified as a medium tank. The M26 formed the basic design for American Main Battle tanks through the 1980's being closely related to the M46 and M47 which in turn led to the M48 and M60.

**Fire control:** +1 **Stabilization:** Basic **Fuel:** Gasoline **Weight:** 38.2 tons **Load:** 300kg **Crew:** 5 **Maint:** 12
**Armament:** 90mm M3 gun, M1919A5 coaxial, M1919A5 hull, M2HB (C)
**Ammo:** 70x 90mm, 5000x .30-06, 550x .50 Browning
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1945 **In service:** USA

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 70 / 45 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 715 liters | **Fuel Cons:** 640 | **Susp:** Track:6 | Turret | 22 | 15 | 15 |
| | | | Hull | 35 | 15 | 10 |

| **90mm M3** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 405 | 20 | 49 / 43 / 36 / 20 |
| AP | 405 | 20 | 38 / 33 / 28 / 15 |
| HE | 305 | C:10 B:22 | 3C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **M1919A5** | 5 | 4 | 2-3-Nil | Belt 250 | SS - Brst - | 125 |
| **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |

# M45

This is a support tank based on the M26, it replaces the 90mm gun with a 105mm howitzer. Few were built before the war ended.

**Fire control:** +1 **Stabilization:** Basic **Fuel:** Gasoline **Weight:** 38.2 tons **Load:** 300kg **Crew:** 5 **Maint:** 12
**Armament:** 105mm M4 howitzer, M1919A5 coaxial, M1919A5 hull, M2HB (C)
**Ammo:** 55x 105mm, 5000x .30-06, 550x .50 Browning
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1945 **In service:** USA

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 70 / 45 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 715 liters | **Fuel Cons:** 640 | **Susp:** Track:6 | Turret | 22 | 15 | 15 |
| | | | Hull | 35 | 15 | 10 |

| **105mm M4** | **ROF:** SS | **Magazine:** Rld: 1 | **IFR:** 11.1km |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HEAT | 175 | C:9 B:13 | 35C |
| HE | 175 | C:14 B:26 | 5C |
| WP | 175 | C:3 B:32 | Nil |
| ILLUM | N/A | B:1000 | Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **M1919A5** | 5 | 4 | 2-3-Nil | Belt 250 | SS - Brst - | 125 |
| **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |

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# UNITED STATES

## ARMORED CARS

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## M3A1 Scout car

This is a 4x4 Reconnaissance vehicle which was also used as a light APC. The M3A1 is commonly known as the White scout car after the manufacturer White motor co. There is a gun rail system around the open top which allows both machine guns to fire in a 360' arc. The M3A1 remained in limited use until the end of World war 2.

**Fire control:** None **Stabilization:** None **Fuel:** Gasoline **Weight:** 5.6 tons **Load:** 1.5 tons **Crew:** 2+6 **Maint:** 3
**Armament:** M2HB (C), M1919A4 (P)
**Ammo:** 750x .50 Browning, 8000x .30-06
**Night Vision:** headlights **Radiological:** open **NBC system:** no
**Introduced:** 1939 **In service:** USA, Austrailia, Canada, China, New Zealand, UK, USSR, Yugoslavia

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **TrMOV:** 185 / 75 | **Com Mov:** 45 / 15 | | **Config:** Stnd | | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 115 liters | **Fuels Cons:** 110 | | **Susp:** Wheel:(2) | | Hull | 3 | 2 | 2 |
| | | | | | | | | |

| | Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|---|
| | **M1919A4** | 5 | 4 | 2-3-Nil | Belt 250 | SS 1 Brst 3 | 125 |
| | **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |
| | | | | | | | |

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# M8 Greyhound

The M8 is a 6x6 armored reconnaisance / light anti armor vehicle introduced in 1942. The Greyhound was criticized as being too lightly armored and the 37mm gun was not adequate for anti tank work. Despite the failures of the design the M8 was popular due in part to the fact that it was fast, reliable and available in large numbers. Like the M4 Sherman the thin armor was often improved by the addition of sandbags on the hull sides, front and floor. The 37mm gun is mounted in an open topped turret also occupied by the Commander, Gunner and Loader. The Driver is protected by armor in the hull front. The M8 remained in service until the end of the war and could still be found in use through the 1970's with many smaller nations.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 7.9 tons **Load:** 500kg **Crew:** 4 **Maint:** 4
**Armament:** 37mm M6 gun, M1919A5 coaxial, M2HB (C)
**Ammo:** 80x 37mm, 1500x .30-06, 400x .50 Browning
**Night Vision:** headlights **Radiological:** open **NBC system:** no
**Introduced:** 1942 **In service:** USA, Austrailia, Canada, China, New Zealand, UK, USSR, Yugoslavia

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 185 / 75 | **Com Mov:** 45 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 215 liters | **Fuels Cons:** 130 | **Susp:** Wheel:(3) | Turret | 4 | 4 | 4 |
| | | | Hull | 6 | 3 | 2 |

| **37mm M6** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 395 | 8 | 6 / 5 / 4 / 2 |
| HE | 295 | C:2 B:9 | -6C |
| APERS | 100 | Spcl | 1-Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **M1919A5** | 5 | 4 | 2-3-Nil | Belt 250 | SS - Brst - | 125 |
| **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |

# M20

The M20 is a 6x6 multipurpose armored car based on the M8 Greyhound. The turret is replaced with a single M2HB on a ring mount over the open crew compartment. The M20 was designed to be used as a light reconnaisance vehicle, command vehicle, APC or an armored cargo carrier. It remained in US service into the 1950's and could still be found in use through the 1970's with many smaller militaries.

**Fire control:** None **Stabilization:** None **Fuel:** Gasoline **Weight:** 6.5 tons **Load:** 2.0 tons **Crew:** 2+4 **Maint:** 4
**Armament:** M2HB (C)
**Ammo:** 1000x .50 Browning
**Night Vision:** headlights **Radiological:** open **NBC system:** no
**Introduced:** 1943 **In service:** USA, Austrailia, Canada, China, New Zealand, UK, USSR, Yugoslavia

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **TrMOV:** 185 / 75 | **Com Mov:** 45 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 215 liters | **Fuels Cons:** 130 | **Susp:** Wheel:(3) | Hull | 6 | 3 | 2 |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |

# ARMORED PERSONNEL CARRIERS

## LVT(A)2

The LVT(A)2 is a tracked armored amphibious personnel carrier used by the US Army and Marine Corps. Most were used in the Pacific theater against the Japanese but a small number were used in Europe after D-Day for river crossings. The LVT(A)2 is based on LVT(A)1. The crew / cargo compartment is open topped, the Driver is protected by an armored cab at the hull front. A gun rail system allowing both machine guns a full 360' arc of fire is provided. The machineguns are protected with gun shields (AV:2).

**Fire control:** None **Stabilization:** None **Fuel:** Gasoline **Weight:** 13.7 tons **Load:** 2.0 tons **Crew:** 2+7 **Maint:** 6
**Armament:** M2HB (C), M1919A4 (P)
**Ammo:** 700x .50 Browning, 7750x .30-06
**Night Vision:** headlights **Radiological:** open **NBC system:** no
**Introduced:** 1944 **In service:** USA, UK

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 / 25 | **Com Mov:** 20 / 15 / 5 | | **Config:** Stnd | | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 410 liters | **Fuel Cons:** 330 | | **Susp:** Track:2 | | Hull | 2 | 2 | 2 |
| | | | | | | | | |

| | Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|---|
| | **M1919A4** | 5 | 4 | 2-3-Nil | Belt 250 | SS 1 Brst 3 | 125 |
| | **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |
| | | | | | | | |

# M2 (M2A1) half track

The M2 is a half tracked APC developed from the M3A1 scout car. It was designed for use as an artillery prime mover and gun crew carrier. It uses the gun rail system of the M3A1 Scout car. The passengers exit over the sides through the open top or out the front passengers door. Racks for six anti-tank mines are mounted on the exterior of each side (12 total). In 1943 after receiving many complaints from the field about the gun rail system a modified version of the M2 was introduced. The M2A1 removed the gun rail and replaced it with a ring mount and 3 pintle mounts (1 each right, left and rear). Production of the M2A1 ended in 1944 but they remained in service until the end of the war.

**Fire control:** None **Stabilization:** None **Fuel:** Gasoline **Weight:** 8.9 tons **Load:** 3.0 tons **Crew:** 2+8 **Maint:** 5
**Armament:** M2HB (C), M1919A4 (P)
**Ammo:** 700x .50 Browning, 7750x .30-06, 12 anti-tank mines
**Night Vision:** headlights **Radiological:** open **NBC system:** no
**Introduced:** 1941 **In service:** USA, Austrailia, Canada, China, New Zealand, UK, USSR, Yugoslavia

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **TrMOV:** 130 / 70 | **Com Mov:** 30 / 15 | | **Config:** Stnd | | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 230 liters | **Fuel Cons:** 180 | | **Susp:** Track:1 | | Hull | 3 | 2 | 2 |
| | | | | | | | | |

| | Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|---|
| | **M1919A4** | 5 | 4 | 2-3-Nil | Belt 250 | SS 1 Brst 3 | 125 |
| | **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |
| | | | | | | | |

# M3 (M3A1) half track

The M3 is a half tracked APC developed from the M2, it is slightly larger to accomodate an infantry squad and a large door was added in the rear this eased access to the troop compartment and made exiting quicker and safer under combat conditions. The Commanders machine gun is mounted on a pedestal in the front of the open topped compartment, 3 additional pintle mounts are located around the sides (1 each right, left and rear). Racks to carry up to 12 anti-tank mines are provided on the exterior of each side (24 total). In 1943 an improved version was introduced as the M3A1, this replaced the pedestal mount with a ring mount. Production of the M3A1 ended in 1944 but they continued to serve until the end of the war.

**Fire control:** None **Stabilization:** None **Fuel:** Gasoline **Weight:** 9.3 tons **Load:** 3.0 tons **Crew:** 2+11 **Maint:** 5
**Armament:** M2HB (C), M1919A4 (P)
**Ammo:** 700x .50 Browning, 7750x .30-06, 24 anti-tank mines
**Night Vision:** headlights **Radiological:** open **NBC system:** no
**Introduced:** 1941 **In service:** USA, Austrailia, Canada, China, New Zealand, UK, USSR, Yugoslavia

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **TrMOV:** 130 / 70 | **Com Mov:** 30 / 15 | | **Config:** Stnd | | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 230 liters | **Fuel Cons:** 180 | | **Susp:** Track:1 | | Hull | 3 | 2 | 2 |
| | | | | | | | | |

| | Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|---|
| | **M1919A4** | 5 | 4 | 2-3-Nil | Belt 250 | SS 1 Brst 3 | 125 |
| | **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |
| | | | | | | | |

# M5 (M5A1) half track

The M5 / M5A1 are similar to the M3 / M3A1. After the U.S. entered the war the production requirements for half tracks grew beyond the capabilities of the factories producing them, International Harvestor started production of a simplified version of the M3. It has a slightly different appearance and many of the components (engine, transmission etc) are replaced with parts built by International Harvester, also the face hardend armor plate of the M3 / M3A1 is replaced with thicker homogenous steel plate which offers slightly less protection and more weight. The M5A1 has the same changes as the M3A1. The majority of the production of the M5 and M5A1 went to allied nations under lend-lease.

**Fire control:** None **Stabilization:** None **Fuel:** Gasoline **Weight:** 9.8 tons **Load:** 2.5 tons **Crew:** 2+11 **Maint:** 5
**Armament:** M2HB (C), M1919A4 (P)
**Ammo:** 700x .50 Browning, 7750x .30-06, 24 anti-tank mines
**Night Vision:** headlights **Radiological:** open **NBC system:** no
**Introduced:** 1942 **In service:** USA, Austrailia, Canada, China, New Zealand, UK, USSR, Yugoslavia

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **TrMOV:** 130 / 70 | **Com Mov:** 30 / 15 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 230 liters | **Fuel Cons:** 180 | **Susp:** Track:1 | Hull | 2 | 2 | 2 |
| | | | | | | |

| | Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|---|
| | **M1919A4** | 5 | 4 | 2-3-Nil | Belt 250 | SS 1 Brst 3 | 125 |
| | **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |
| | | | | | | | |

# M9 (M9A1) half track

The M9 and M9A1 are similar to the M2 and M2A1 but are built by International Harvestor using simplified construction methods and replacing many of the components with their own. Unlike the M2 and M2A1, the M9 and M9A1 include a rear door for access to the troop compartment. The majority of M9 and M9A1 production went to allied nations under lend-lease.

**Fire control:** None **Stabilization:** None **Fuel:** Gasoline **Weight:** 9.4 tons **Load:** 2.5 tons **Crew:** 2+8 **Maint:** 5
**Armament:** M2HB (C), M1919A4 (P)
**Ammo:** 700x .50 Browning, 7750x .30-06, 12 anti-tank mines
**Night Vision:** headlights **Radiological:** open **NBC system:** no
**Introduced:** 1942 **In service:** USA, Austrailia, Canada, China, New Zealand, UK, USSR, Yugoslavia

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **TrMOV:** 130 / 70 | **Com Mov:** 30 / 15 | | **Config:** Stnd | | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 230 liters | **Fuel Cons:** 180 | | **Susp:** Track:1 | | Hull | 2 | 2 | 2 |
| | | | | | | | | |

| | Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|---|
| | **M1919A4** | 5 | 4 | 2-3-Nil | Belt 250 | SS 1 Brst 3 | 125 |
| | **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |
| | | | | | | | |

# M33 Prime mover

The M33 is an armored gun crew carrier converted from the M31 ARV. It is designed to tow artillery up to the 240mm howitzer and 8 inch gun. The turret is removed as are all weapons, an M2HB is fitted to the open top in a ring mount.

**Fire control:** None **Stabilization:** None **Fuel:** Gasoline **Weight:** 27 tons **Load:** 300kg **Crew:** 2+4 **Maint:** 9
**Armament:** M2HB (C)
**Ammo:** 300x .30-06
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1944 **In service:** USA

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | | **Config:** Stnd | | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 700 liters | **Fuel Cons:** 570 | | **Susp:** Track:5 | | Hull | 15 | 8 | 8 |
| | | | | | | | | |

| | Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|---|
| | **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |
| | | | | | | | |

# M34 Prime mover

The M34 is a gun crew carrier designed to tow artillery up to the 240mm howitzer or 8 inch gun. It is based on the M32B1 ARV, the mortar and hull machine gun are removed.

**Fire control:** None **Stabilization:** None **Fuel:** Gasoline **Weight:** 27 tons **Load:** 300kg **Crew:** 2+4 **Maint:** 9
**Armament:** M2HB (C)
**Ammo:** 300x .50 Browning
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1944 **In service:** USA

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | | **Config:** Turret | | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 660 liters | **Fuel Cons:** 570 | | **Susp:** Track:5 | | Turret | 6 | 6 | 6 |
| | | | | | Hull | 15 | 10 | 8 |

| | Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|---|
| | **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |
| | | | | | | | |

# M35 Prime mover

The M35 is a gun crew carrier based on the M10A1 tank destroyer. It is designed to tow artillery up to the 240mm howitzer and 8 inch gun. The turret is removed and a mount for the M2HB is provided over the open crew compartment.

**Fire control:** +1 **Stabilization:** Basic **Fuel:** Gasoline **Weight:** 25 tons **Load:** 300kg **Crew:** 2+4 **Maint:** 9
**Armament:** M2HB (C)
**Ammo:** 300x .50 Browning
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1944 **In service:** USA

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **TrMOV:** 100 / 65 | **Com Mov:** 25 / 15 | | **Config:** Stnd | | **Armor** | Front | Side | Rear |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Fuel Cap:** 725 liters | **Fuel Cons:** 600 | **Susp:** Track:5 | Hull | 15 | 10 | 8 |
| | | | | | | |

| | Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|---|
| | **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |
| | | | | | | | |

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# T41 Armored Utility Vehicle

The T41 is gun crew carrier based on the M18 Hellcat, it is designed to tow the 3" M5 anti tank gun. The turret is removed and a mount for an M2HB machine gun is provided over the open crew compartment. The T41 was only put into limited production and was not available in large numbers.

**Fire control:** None **Stabilization:** None **Fuel:** Gasoline **Weight:** 15.9 tons **Load:** 2.3 tons **Crew:** 3+6 **Maint:** 6
**Armament:** M2HB (C)
**Ammo:** 800x .50 Browning
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1944 **In service:** USA

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 165 / 105 | **Com Mov:** 40 / 25 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 635 liters | **Fuel Cons:** 810 | **Susp:** Track:3 | Hull | 3 | 3 | 3 |
| | | | | | | |

| | Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|---|
| | **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |
| | | | | | | | |

# ASSAULT GUNS AND TANK DESTROYERS

## M3 75mm GMC

The M3 75mm Gun Motor Carriage is a self propelled anti-tank gun based on the chassis of the M3 half track. A 75mm M1897 field gun is mounted in the rear compartment aimed over the front of the vehicle. The gun is provided with a gun shield and has a limited traverse. Three pintle mounts are included (1 each right, left and rear). The M3 remained in service until the end of the war but most were converted back into APC's after the M10 and M18 tank destroyers entered service.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 10.8 tons **Load:** 1.5 tons **Crew:** 5 **Maint:** 5
**Armament:** 75mm M1897A2, M2HB (C)
**Ammo:** 59x 75mm, 300x .50 Browning
**Night Vision:** headlights **Radiological:** open **NBC system:** no
**Introduced:** 1941 **In service:** USA

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 130 / 70 | **Com Mov:** 30 / 15 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 230 liters | **Fuel Cons:** 180 | **Susp:** Track:1 | Gun shield | 3 | 2 | 0 |
| | | | Hull | 3 | 2 | 2 |

| **75mm M1897A2** | **ROF:** SS | **Magazine:** Rld: 1 | **IFR:** 5.8km |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 200 | 16 | 17 / 8 / 4 / 0 |
| APHE | 200 | C:2 B:4 | 14 / 7 / 3 / -1 |
| HE | 200 | C:10 B:14 | -4C |
| WP | 200 | C:2 B:12 | Nil |
| APERS | 100 | Spcl | 1-Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |

# M10

The M10 is a tank destroyer based on the chassis of the M4A2 Sherman. During the 1930's the US Army began planning a tank destroyer force seperate from tank units, it was believed fast lightly armored self propelled anti-tank guns would be the best defence against enemy tanks, tanks being used primarily for infantry support. During World war 2 it was found that this theory was flawed and tanks were improved with the addition of more powerful guns. The seperate tank destroyer force began to fade in importance and most were redistributed to regular armored formations by 1945. The 3" gun is mounted in an open topped turret and a machine gun is provided located on the turret rear.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 30 tons **Load:** 300kg **Crew:** 5 **Maint:** 10
**Armament:** 3" M7 Gun, M2HB (C)
**Ammo:** 54x 3", 300x .50 Browning
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** USA, Austrailia, Canada, China, New Zealand, UK, USSR, Yugoslavia

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 100 / 65 | **Com Mov:** 25 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 570 liters | **Fuel Cons:** 460 | **Susp:** Track:5 | Turret | 23 | 9 | 9 |
| | | | Hull | 15 | 10 | 8 |

| **3" M7** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 405 | 17 | 33 / 27 / 23 / 13 |
| AP | 405 | 17 | 25 / 21 / 18 / 10 |
| HE | 300 | C:7 B:19 | 4C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |

# M10A1

The M10A1 is similar to the M10 but is based on the chassis of the M4A3 in place of the M4A2.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 29.1 tons **Load:** 300kg **Crew:** 5 **Maint:** 9
**Armament:** 3" M7 gun, M2HB (C)
**Ammo:** 54x 3", 300x .50 Browning
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** USA, Austrailia, Canada, China, New Zealand, UK, USSR, Yugoslavia

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 100 / 65 | **Com Mov:** 25 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 670 liters | **Fuel Cons:** 600 | **Susp:** Track:5 | Turret | 23 | 9 | 9 |
| | | | Hull | 15 | 10 | 8 |

| **3" M7** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 405 | 17 | 33 / 27 / 23 / 13 |
| AP | 405 | 17 | 25 / 21 / 18 / 10 |
| HE | 300 | C:7 B:19 | 4C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |

# M18 Hellcat

The M18 was designed to meet the US Armies concept of a tank destroyer. Unlike the M10 series which was based on the M4 Sherman tank the M18 was designed specifically to be smaller, faster, and lighter in weight than a tank while armed with a more powerful gun. The M18 has an open topped turret. The Hellcat also has the distinction of being the fastest tracked vehicle to enter service during World war 2.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 18.2 tons **Load:** 200kg **Crew:** 5 **Maint:** 7
**Armament:** 76mm M1 gun, M2HB (C)
**Ammo:** 45x 76mm, 800x .50 Browning
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1944 **In service:** USA

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 165 / 105 | **Com Mov:** 40 / 25 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 635 liters | **Fuel Cons:** 810 | **Susp:** Track:3 | Turret | 5 | 3 | 3 |
| | | | Hull | 3 | 3 | 3 |

| **76mm M1** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 415 | 17 | 34 / 30 / 25 / 13 |
| AP | 415 | 17 | 26 / 23 / 19 / 10 |
| HE | 310 | C:7 B:19 | 0C |
| CHEM | 310 | C:2 B:8 | Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |

# M36 Jackson

The M36 is a tank destroyer based on the chassis of the M4A3 Sherman. It is very similar to the M10A1 but mounts a 90mm gun in place of the 3" gun.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 28.2 tons **Load:** 300kg **Crew:** 5 **Maint:** 9
**Armament:** 90mm M3 gun, M2HB (C)
**Ammo:** 47x 90mm, 1000x .50 Browning
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1944 **In service:** USA

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 100 / 65 | **Com Mov:** 25 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 670 liters | **Fuel Cons:** 600 | **Susp:** Track:5 | Turret | 22 | 8 | 8 |
| | | | Hull | 15 | 10 | 8 |

| **90mm M3** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 405 | 20 | 49 / 43 / 36 / 20 |
| AP | 405 | 20 | 38 / 33 / 28 / 15 |
| HE | 305 | C:10 B:22 | 3C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |

# SELF PROPELLED ARTILLERY

# LVT(A)4

The LVT(A)4 is a light amphibious fire support vehicle used by the US Army and Marine Corps. Most were used in the Pacific theater against the Japanese. It uses a turret based on the M8 self propelled 75mm howitzer and the chassis of the LVT(A)1. The LVT(A)1's machine gun positions on the rear deck are not included on the LVT(A) 4.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 14.9 tons **Load:** 400kg **Crew:** 4 **Maint:** 6
**Armament:** 75mm M2 howitzer, M2HB (C)
**Ammo:** 46x 75mm, 400x .50 Browning
**Night Vision:** headlights **Radiological:** open **NBC system:** no
**Introduced:** 1944 **In service:** USA, UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 / 25 | **Com Mov:** 20 / 15 / 5 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 410 liters | **Fuel Cons:** 330 | **Susp:** Track:2 | Turret | 2 | 2 | 2 |
| | | | Hull | 2 | 2 | 2 |

| **75mm M2** | **ROF:** SS | **Magazine:** Rld: 1 | **IFR:** 8.8km |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HEAT | 150 | C:8 B:11 | 18C |
| HE | 150 | C:10 B:14 | -3C |
| CHEM | 150 | C:3 B:20 | Nil |
| WP | 150 | C:2 B:12 | Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |

# M4 (M4A1) half track mortar carrier

The M4 is an 81mm mortar carrier based on the M2 halftrack. The mortar faces the rear of the passenger compartment, it may be fired from the vehicle but it has a limited arc (less than 10 degrees off center) and is generally used from the ground. The M4A1 is a modified version of the M4 introduced in 1942. The M4A1 is modified to give the mortar a 60' traverse over the rear of the vehicle. This allows almost full use of the mortar from inside the vehicle. A gun rail system is provided allowing the machine gun a 360' arc of fire.

**Fire control:** None **Stabilization:** None **Fuel:** Gasoline **Weight:** 8.9 tons **Load:** 3.0 tons **Crew:** 6 **Maint:** 5
**Armament:** 81mm M1 mortar, M1919A4 (C)
**Ammo:** 97x 81mm, 2000x .30-06
**Night Vision:** headlights **Radiological:** open **NBC system:** no
**Introduced:** 1941 **In service:** USA, Austrailia, Canada, China, New Zealand, UK, USSR, Yugoslavia

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **TrMOV:** 130 / 70 | **Com Mov:** 30 / 15 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 230 liters | **Fuel Cons:** 180 | **Susp:** Track:1 | Hull | 3 | 2 | 2 |

| **81mm M1** | **ROF:** SS | **Magazine:** Rld 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| HE | 2.9km | C:8 B:28 | -4C |
| CHEM | 2.9km | C:2 B:12 | Nil |
| WP | 2.9km | C:2 B:20 | Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **M1919A4** | 5 | 4 | 2-3-Nil | Belt 250 | SS 1 Brst 3 | 125 |

# M7 Priest

The M7 is a self propelled howitzer based on the chassis of the M3 Lee / Grant medium tank. An open topped superstructure is built on the hull of the M3, the gun is mounted near the front with a wide traverse and elevation. The British named the M7 "Priest" as the machine gun position at the hull front was thought to resemble a pulpit. The M7 was first used in 1943 during the Italian campaign. The M7 was replaced in US service shortly after the war but it remained in service with many smaller nations into the 1980's.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 23.0 tons **Load:** 300kg **Crew:** 7 **Maint:** 8
**Armament:** 105mm M2 howitzer, M2HB (C)
**Ammo:** 69x 105mm, 300x .50 Browning
**Night Vision:** headlights **Radiological:** open **NBC system:** no
**Introduced:** 1942 **In service:** USA, Australia, Canada, New Zealand, UK, USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 675 liters | **Fuel Cons:** 570 | **Susp:** Track:5 | Hull | 15 | 8 | 8 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | Superstructure | 3 | 2 | 2 |

| 105mm M2 | ROF: SS | Magazine: Rld: 1 | IFR: 11.1km |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HEAT | 150 | C:6 B:12 | 23C |
| HE | 150 | C:10 B:20 | 1C |
| CHEM | 150 | C:3 B:24 | Nil |
| WP | 150 | C:3 B:32 | Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |

# M7B1 Priest

This is the M7 Priest built on the chassis of the M4A3 Sherman medium tank. When production of the M3 ended the M7 was modified to use the chassis of the M4. Both version of the M7 remained in service through the end of the war.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 22.7 tons **Load:** 300kg **Crew:** 7 **Maint:** 8
**Armament:** 105mm M2 howitzer, M2HB (C)
**Ammo:** 69x 105mm, 300x .50 Browning, 20x 2"
**Night Vision:** headlights **Radiological:** open **NBC system:** no
**Introduced:** 1943 **In service:** USA, Australia, Canada, New Zealand, UK, USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 100 / 65 | **Com Mov:** 25 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 670 liters | **Fuel Cons:** 600 | **Susp:** Track:5 | Hull | 15 | 10 | 8 |
| | | | Superstructure | 3 | 2 | 2 |

| 105mm M2 | ROF: SS | Magazine: Rld: 1 | IFR: 11.1km |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HEAT | 150 | C:6 B:12 | 23C |
| HE | 150 | C:10 B:20 | 1C |
| CHEM | 150 | C:3 B:24 | Nil |
| WP | 150 | C:3 B:32 | Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |

# M8

The M8 is a self propelled 75mm howitzer based on the chassis of the M5 Stuart light tank. The main gun is mounted in an open topped turret.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 15.7 tons **Load:** 200kg **Crew:** 4 **Maint:** 6
**Armament:** 75mm M2 howitzer, M2HB (C)
**Ammo:** 46x 75mm, 400x .50 Browning
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** USA, Australia, Canada, New Zealand, UK, USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 120 / 80 | **Com Mov:** 30 / 20 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 345 liters | **Fuel Cons:** 510 | **Susp:** Track:3 | Turret | 8 | 5 | 5 |
| | | | Hull | 15 | 5 | 5 |

| 75mm M2 | ROF: SS | Magazine: Rld: 1 | IFR: 8.8km |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HEAT | 150 | C:8 B:11 | 18C |
| HE | 150 | C:10 B:14 | -3C |
| CHEM | 150 | C:3 B:20 | Nil |
| WP | 150 | C:2 B:12 | Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |

# M21 half track mortar carrier

The M21 is an 81mm mortar carrier based on the M3 halftrack. It is similar to the M4A1 but the mortar faces the front of the vehicle. An M2HB is provided on a pedistal mount at the rear of the vehicle and it has a 360' arc of fire. The mortar can be removed from the vehicle and used from the ground.

**Fire control:** None **Stabilization:** None **Fuel:** Gasoline **Weight:** 8.9 tons **Load:** 3.0 tons **Crew:** 6 **Maint:** 5
**Armament:** 81mm M1 mortar, M2HB (C)
**Ammo:** 97x 81mm, 400x .50 Browning
**Night Vision:** headlights **Radiological:** open **NBC system:** no
**Introduced:** 1943 **In service:** USA, Austrailia, Canada, China, New Zealand, UK, USSR, Yugoslavia

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 130 / 70 | **Com Mov:** 30 / 15 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 230 liters | **Fuel Cons:** 180 | **Susp:** Track:1 | Hull | 3 | 2 | 2 |

| | 81mm M1 | ROF: SS | Magazine: Rld 1 | |
|---|---|---|---|---|
| | **Round** | **IFR** | **Damage** | **Pen** |
| | HE | 2.9km | C:8 B:28 | -4C |
| | CHEM | 2.9km | C:2 B:12 | Nil |
| | WP | 2.9km | C:2 B:20 | Nil |
| | | | | |

| | Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|---|
| | **M1919A4** | 5 | 4 | 2-3-Nil | Belt 250 | SS 1 Brst 3 | 125 |
| | | | | | | | |

# M37

The M37 is a self propelled howitzer based on the chassis of the M24 Chaffee light tank. It is similar to the M7 Priest but is lighter and faster. The M37 remained in service with the US Army into the 1950's and can still be found in use with several of the worlds smaller militaries.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 17.5 tons **Load:** 200kg **Crew:** 6 **Maint:** 7
**Armament:** 105mm M2 howitzer, M2HB (C)
**Ammo:** 90x 105mm, 900x .50 Browning
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1945 **In service:** USA

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **TrMOV:** 115 / 75 | **Com Mov:** 25 / 20 | | **Config:** Turret | | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 415 liters | **Fuel Cons:** 340 | | **Susp:** Track:3 | | Hull | 8 | 5 | 4 |
| | | | | | Superstructure | 5 | 2 | 2 |

| 105mm M2 | ROF: SS | Magazine: Rld: 1 | IFR: 11.1km |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HEAT | 150 | C:6 B:12 | 23C |
| HE | 150 | C:10 B:20 | 1C |
| CHEM | 150 | C:3 B:24 | Nil |
| WP | 150 | C:3 B:32 | Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |

# ANTI-AIRCRAFT VEHICLES

## M13 MGMC

The M13 Multiple Gun Motor Carriage is a half tracked anti-aircraft vehicle based on the M3. Twin M2HB machine guns are mounted in an open power turret located in the passenger compartment. Each of the guns is fed from a 200 round drum. The M13 was declared substitute standard in 1943 but remained in service until the end of the war. When the M16 was introduced many M13s were rebuilt as M16s. The turret armor only protects the Gunner, the Loaders generally take cover in the vehicle but are partially exposed while reloading.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 9.8 tons **Load:** 2.5 tons **Crew:** 5 **Maint:** 5
**Armament:** 2x M2HB
**Ammo:** 5000x .50 Browning
**Night Vision:** headlights **Radiological:** open **NBC system:** no
**Introduced:** 1942 **In service:** USA, Austrailia, Canada, China, UK, USSR, Yugoslavia

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 130 / 70 | **Com Mov:** 30 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 230 liters | **Fuel Cons:** 180 | **Susp:** Track:1 | Turret | 2 | 1 | 0 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Hull | 3 | 2 | 2 |

| | Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|---|
| | **M2HB** | 5 | 8 | 2-2-3 | Drum 200 | SS - Brst - | 150 |
| | | | | | | | |

# M14 MGMC

The M14 is nearly identical to the M13 but is built on the M5 half track in place of the M3.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 10.3 tons **Load:** 2.0 tons **Crew:** 5 **Maint:** 5
**Armament:** 2x M2HB
**Ammo:** 5000x .50 Browning
**Night Vision:** headlights **Radiological:** open **NBC system:** no
**Introduced:** 1942 **In service:** USA, Austrailia, Canada, China, UK, USSR, Yugoslavia

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **TrMOV:** 130 / 70 | **Com Mov:** 30 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 230 liters | **Fuel Cons:** 180 | **Susp:** Track:1 | Turret | 2 | 1 | 0 |
| | | | Hull | 2 | 2 | 2 |

| | Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|---|
| | **M2HB** | 5 | 8 | 2-2-3 | Drum 200 | SS - Brst - | 150 |
| | | | | | | | |

# M15A1 CGMC

The M15A1 Combination Gun Motor Carriage is an anti-aircraft vehicle based on the M3 half track. It combines twin M2HB machine guns with a 37mm automatic cannon in a powered turret. Most of the production of the M15A1 went to U.S. forces but a small number were provided to the Soviet Union. In addition to its anti-aircraft role the M15A1 proved popular as an infantry fire support vehicle.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 10.0 tons **Load:** 2.3 tons **Crew:** 5 **Maint:** 5
**Armament:** 2x M2HB, 37mm M1A2 autocannon
**Ammo:** 1200x .50 Browning, 200x 37mm
**Night Vision:** headlights **Radiological:** open **NBC system:** no
**Introduced:** 1943 **In service:** USA, USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 130 / 70 | **Com Mov:** 30 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 230 liters | **Fuel Cons:** 180 | **Susp:** Track:1 | Turret | 3 | 3 | 0 |
| | | | Hull | 3 | 2 | 2 |

| **37mm M1A2** | **ROF:** 2 | **Magazine:** Clip 10 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 300 | 16 | 3 / 1 / 0 / -3 |
| HE | 300 | C:2 B:3 | -6C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **M2HB** | 5 | 8 | 2-2-3 | Drum 200 | SS - Brst - | 150 |

# M16 MGMC

The M16 is similar to the M13 but uses a turret mounting four M2HB machine guns. The M16 proved popular with the U.S. army. In addition to its role as an anti-aircraft vehicle the M16 became popular for use as an infantry fire support vehicle. The fire power of the quad .50's led to the nick name "meat chopper" which described its effect against ememy infantry. The M16 was the only version of the M3 to remain in front line service after the war. It remained in use with US reserve units into the 1960's.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 10.0 tons **Load:** 2.3 tons **Crew:** 5 **Maint:** 5
**Armament:** 4x M2HB
**Ammo:** 5000x .50 Browning
**Night Vision:** headlights **Radiological:** open **NBC system:** no
**Introduced:** 1942 **In service:** USA, Austrailia, Canada, China, UK, USSR, Yugoslavia

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 130 / 70 | **Com Mov:** 30 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Fuel Cap:** 230 liters | **Fuel Cons:** 180 | | **Susp:** Track:1 | | Turret | 2 | 1 | 0 |
| | | | | | Hull | 3 | 2 | 2 |

| | Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|---|
| | **M2HB** | 5 | 8 | 2-2-3 | Drum 200 | SS - Brst - | 150 |
| | | | | | | | |

# M17 MGMC

The M17 is nearly identical to the M16 but is built on the M5 half track in place of the M3.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 10.5 tons **Load:** 1.8 tons **Crew:** 5 **Maint:** 5
**Armament:** 4x M2HB
**Ammo:** 5000x .50 Browning
**Night Vision:** headlights **Radiological:** open **NBC system:** no
**Introduced:** 1942 **In service:** USA, Austrailia, Canada, China, UK, USSR, Yugoslavia

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **TrMOV:** 130 / 70 | **Com Mov:** 30 / 15 | | **Config:** Turret | | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 230 liters | **Fuel Cons:** 180 | | **Susp:** Track:1 | | Turret | 2 | 1 | 0 |
| | | | | | Hull | 2 | 2 | 2 |

| | Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|---|
| | **M2HB** | 5 | 8 | 2-2-3 | Drum 200 | SS - Brst - | 150 |
| | | | | | | | |

# M19

The M19 is an anti aircraft vehicle based on the chassis of the M24 Chaffee light tank. It is armed with two 40mm guns in an open topped turret. The M19 remained in service into the 1950's when it was replaced by the similar M42 Duster.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 17.5 tons **Load:** 200kg **Crew:** 6 **Maint:** 7
**Armament:** 2x 40mm M2
**Ammo:** 336x 40mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1944 **In service:** USA

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **TrMOV:** 115 / 75 | **Com Mov:** 25 / 20 | | **Config:** Turret | | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 415 liters | **Fuel Cons:** 340 | | **Susp:** Track:3 | | Turret | 2 | 2 | 2 |
| | | | | | Hull | 3 | 2 | 2 |

| | | | | |
|---|---|---|---|---|
| | **40mm M2** | **ROF:** 3 | **Magazine:** Clip 4 | |
| | **Round** | **Range** | **Damage** | **Pen** |
| | AP | 420 | 9 | 6 / 6 / 5 / 3 |
| | HE | 315 | C:2 B:10 | -6C |
| | | | | |

# ENGINEER VEHICLES

## M31 ARV

The M31 is an armored recovery vehicle based on the M3 Lee. The turret is fixed in place and all the weapons are removed except for one fixed hull machine gun. Dummy guns are added to conceal the nature of the vehicle and a machine gun is mounted on the turret top. A 12 ton boom crane is located over the hull rear, a 30 ton winch and lockers for tools are added.

**Fire control:** None **Stabilization:** None **Fuel:** Gasoline **Weight:** 27 tons **Load:** 300kg **Crew:** 6 **Maint:** 9
**Armament:** M1919A5 hull (fixed), M1919A4 (C)
**Ammo:** 2000x .30-06
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1941 **In service:** USA, Austrailia, Canada, China, New Zealand, UK, USSR, Yugoslavia

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 675 liters | **Fuel Cons:** 570 | **Susp:** Track:5 | Turret | 11 | 11 | 11 |
| | | | Hull | 15 | 8 | 8 |

| | Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|---|
| | **M1919A4** | 5 | 4 | 2-3-Nil | Belt 250 | SS 1 Brst 3 | 125 |
| | **M1919A5** | 5 | 4 | 2-3-Nil | Belt 250 | SS - Brst - | 125 |
| | | | | | | | |

---

# M32 (M32B1)ARV

The M32 is an armored recovery vehicle based on the M4 Sherman. The Turret is replaced by an armored box, a 12 ton A frame crane which folds over the hull, a 30 ton winch and lockers for tools are added. An 81mm mortar is mounted on the hull front which is generally provided with White Phosphorus rounds. The M32B1 is similar but is based on the M4A1.

**Fire control:** None **Stabilization:** None **Fuel:** Gasoline **Weight:** 27 tons **Load:** 300kg **Crew:** 4 **Maint:** 9
**Armament:** 81mm M1 mortar, M1919A5 hull, M2HB (C)
**Ammo:** 30x 81mm, 2000x .30-06, 300x .50 Browning
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** USA, Austrailia, Canada, China, New Zealand, UK, USSR, Yugoslavia

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 675 liters | **Fuel Cons:** 570 | **Susp:** Track:5 | Turret | 6 | 6 | 6 |
| | | | Hull | 15 | 10 | 8 |

| 81mm M1 | ROF: SS | Magazine: Rld 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| HE | 2.9km | C:8 B:28 | -4C |
| CHEM | 2.9km | C:2 B:12 | Nil |
| WP | 2.9km | C:2 B:20 | Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **M1919A5** | 5 | 4 | 2-3-Nil | Belt 250 | SS - Brst - | 125 |
| **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |

# M32B2 ARV

The M32B2 is similar to the M32 but is based on the diesel powered M4A2.

**Fire control:** None **Stabilization:** None **Fuel:** Gasoline **Weight:** 27 tons **Load:** 300kg **Crew:** 4 **Maint:** 9
**Armament:** 81mm M1 mortar, M1919A5 hull, M2HB (C)
**Ammo:** 30x 81mm, 2000x .30-06, 300x .50 Browning
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** USA, Austrailia, Canada, China, New Zealand, UK, USSR, Yugoslavia

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 100 / 65 | **Com Mov:** 25 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 570 liters | **Fuel Cons:** 460 | **Susp:** Track:5 | Turret | 6 | 6 | 6 |
| | | | Hull | 15 | 10 | 8 |


| 81mm M1 | ROF: SS | Magazine: Rld 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| HE | 2.9km | C:8 B:28 | -4C |
| CHEM | 2.9km | C:2 B:12 | Nil |
| WP | 2.9km | C:2 B:20 | Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **M1919A5** | 5 | 4 | 2-3-Nil | Belt 250 | SS - Brst - | 125 |
| **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |

# M32B3 ARV

The M32B3 is similar to the M32 but is based on the M4A3.

**Fire control:** None **Stabilization:** None **Fuel:** Gasoline **Weight:** 27 tons **Load:** 300kg **Crew:** 4 **Maint:** 9
**Armament:** 81mm M1 mortar, M1919A5 hull, M2HB (C)
**Ammo:** 30x 81mm, 2000x .30-06, 300x .50 Browning
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** USA, Austrailia, Canada, China, New Zealand, UK, USSR, Yugoslavia

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 100 / 65 | **Com Mov:** 25 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 670 liters | **Fuel Cons:** 600 | **Susp:** Track:5 | Turret | 6 | 6 | 6 |
| | | | Hull | 15 | 10 | 8 |

| **81mm M1** | **ROF:** SS | **Magazine:** Rld 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| HE | 2.9km | C:8 B:28 | -4C |
| CHEM | 2.9km | C:2 B:12 | Nil |
| WP | 2.9km | C:2 B:20 | Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **M1919A5** | 5 | 4 | 2-3-Nil | Belt 250 | SS - Brst - | 125 |
| **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |

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# GERMANY

# LIGHT TANKS

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## Pz.Kpfw I Ausf. B

The Panzer I was developed in part to provide an inexpensive vehicle which could be used to train the new German armored divisions and to allow German industry to gain experience with tank manufacture. It was used operationally during the Spanish civil war along with the Panzer II. The experience in Spain had shown that the armor was too thin and heavier fire power was needed but due to the lack of a replacement it remained in service until 1941.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 5.9 tons **Load:** 100kg **Crew:** 2 **Maint:** 4
**Armament:** 2x MG-13
**Ammo:** 3125x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1934 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 80 / 50 | **Com Mov:** 20 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 145liters | **Fuels Cons:** 160 | **Susp:** Track:1 | Turret | 3 | 2 | 2 |
| | | | Hull | 3 | 2 | 2 |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **MG-13** | 5 | 4 | 2-3-Nil | Belt 75 | SS 1 Brst 3 | 125 |

# Pz.Kpfw II Ausf. C

The Panzer II is a light tank which was developed to replace the Panzer I. In actuality due to a lack of tanks the Panzer I and II served along side each other until 1941. During the invasion of France the Panzer II was the most numerous tank in the German military. Production ended in 1942 but the chassis was used for combat and support vehicles until the end of the war.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 9.6 tons **Load:** 200kg **Crew:** 3 **Maint:** 4
**Armament:** 2cm KwK 30 gun, MG-34 coaxial
**Ammo:** 180x 2cm, 2250x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1937 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 80 / 50 | **Com Mov:** 20 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 200liters | **Fuels Cons:** 170 | **Susp:** Track:1 | Turret | 9 | 6 | 3 |
| | | | Hull | 7 | 4 | 3 |

| **2cm KwK 30** | **ROF:** 3 | **Magazine:** Strip 10 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 360 | 4 | 3 / 2 / 2 / 1 |
| AP | 360 | 4 | 2 / 2 / 1 / 1 |
| HE | 270 | C:1 B:4 | -8C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

# Pz.Kpfw II Ausf. F

The Panzer II Ausf F is an improved version of the Ausf C. It includes a more powerful engine, heavier armor and a faster firing 2cm gun.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 10.5 tons **Load:** 200kg **Crew:** 3 **Maint:** 4
**Armament:** 2cm KwK 38 gun, MG-34 coaxial
**Ammo:** 180x 2cm, 2550x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1940 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 200liters | **Fuels Cons:** 180 | **Susp:** Track:2 | Turret | 10 | 6 | 3 |
| | | | Hull | 8 | 4 | 3 |

| **2cm KwK 38** | **ROF:** 5 | **Magazine:** Strip 10 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 360 | 4 | 3 / 2 / 2 / 1 |
| AP | 360 | 4 | 2 / 2 / 1 / 1 |
| HE | 270 | C:1 B:4 | -8C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

# Pz.Kpfw II Ausf. L - Lynx

This is the final production version of the Panzer II. It was designed for reconnasance and includes a more powerful engine for increased speed. Less than 200 were built before production of the Panzer II was stopped late in 1942. Those produced were almost exclusively used on the Eastern front.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 13 tons **Load:** 200kg **Crew:** 3 **Maint:** 5
**Armament:** 2cm KwK 38 gun, MG-34 coaxial
**Ammo:** 180x 2cm, 2550x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 130 / 85 | **Com Mov:** 30 / 20 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 200liters | **Fuels Cons:** 330 | **Susp:** Track:2 | Turret | 10 | 6 | 3 |
| | | | Hull | 8 | 4 | 3 |

| **2cm KwK 38** | **ROF:** 5 | **Magazine:** Strip 10 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 360 | 4 | 3 / 2 / 2 / 1 |
| AP | 360 | 4 | 2 / 2 / 1 / 1 |
| HE | 270 | C:1 B:4 | -8C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

# Pz.Kpfw II Ausf. L - Leopard

This is version of the Panzer II Ausf L armed with a 5cm gun. It is believed that less than 50 were built. The turret of this tank was used on the SdKfz 234/2 Puma 8 wheeled armored car.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 13 tons **Load:** 200kg **Crew:** 3 **Maint:** 5
**Armament:** 5cm KwK 39 L/42, MG-34 coaxial
**Ammo:** 60x 5cm, 2550x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 130 / 85 | **Com Mov:** 30 / 20 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 200liters | **Fuels Cons:** 330 | **Susp:** Track:2 | Turret | 20 | 3 | 3 |
| | | | Hull | 8 | 4 | 3 |

| 5cm KwK 39 L/60 | ROF: SS | Magazine: Rld 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 425 | 10 | 14 / 13 / 10 / 5 |
| AP | 425 | 10 | 11 / 10 / 8 / 4 |
| HE | 320 | C:3 B:12 | -4C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

# Pz.Kpfw 38(t) Ausf. D

The Panzer 38(t) is a light tank developed in Czechoslovakia. When Germany invaded Czechoslovakia in 1939 production of this tank was continued for use by German armored forces. The Panzer 38(t) was modified to use German weapons resulting in the Panzer 38(t) Ausf. D. Panzer 38(t)'s equipped 2 panzer divisions until 1942 and the chassis was used for several combat and support vehicles until the end of the war.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 8 tons **Load:** 200kg **Crew:** 4 **Maint:** 4
**Armament:** 3.7cm KwK gun, MG-34 coaxial, MG-34 hull
**Ammo:** 90x 3.7cm, 2550x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1939 **In service:** Germany

| **TrMOV:** 115 / 75 | **Com Mov:** 25 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
|---|---|---|---|---|---|---|
| **Fuel Cap:** 225liters | **Fuels Cons:** 250 | **Susp:** Track:1 | Turret | 5 | 4 | 3 |
| | | | Hull | 5 | 4 | 4 |

| 3.7cm KwK | ROF: SS | Magazine: Rld 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 350 | 8 | 7 / 6 / 5 / 3 |
| AP | 350 | 8 | 5 / 5 / 4 / 2 |
| HE | 260 | C:2 B:9 | -6C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

# Pz.Kpfw 38(t) Ausf. G

The Panzer 38(t) was found to be lacking in armor protection. The Ausf. G adds armor to the front and sides and replaces the engine with a more powerful one to offset the extra weight. Despite the increase in power the vehicles performance suffered.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 9.7 tons **Load:** 200kg **Crew:** 4 **Maint:** 4
**Armament:** 3.7cm KwK gun, MG-34 coaxial, MG-34 hull
**Ammo:** 90x 3.7cm, 2550x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1940 **In service:** Germany

| | | | | | |
|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 225liters | **Fuels Cons:** 250 | **Susp:** Track:2 | Turret | 10 | 6 | 3 |
| | | | Hull | 10 | 6 | 4 |

| 3.7cm KwK | ROF: SS | Magazine: Rld 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 350 | 8 | 7 / 6 / 5 / 3 |
| AP | 350 | 8 | 5 / 5 / 4 / 2 |
| HE | 260 | C:2 B:9 | -6C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

# MEDIUM TANKS

## Pz.Kpfw III Ausf. E

German tank design at the beginning of World war 2 was based largely on concepts developed by the British army, this included the idea of designing tanks as either "cruiser" tanks used for anti-tank duties or "infantry" tanks designed to support the infantry. The Panzer III was intended to be used in the anti-tank role supported by the Panzer IV. When designed the 3.7cm gun was the standard anti-tank weapon of the German army and it was specified as the armament for the Panzer III, the designers were aware of the rapid increase in the armor thickness of their opponents tanks and designed the chassis and turret around the 5cm gun looking ahead to the time the 3.7cm would no longer be acceptable, this allowed the Panzer III to remain in service several years longer than most of its rivals developed at the same time. The Ausf E version was the first production version built. The chassis served as the basis for many combat and support vehicles.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 19.8 tons **Load:** 300kg **Crew:** 5 **Maint:** 6
**Armament:** 3.7cm KwK gun, MG-34 coaxial, MG-34 hull
**Ammo:** 150x 3.7cm, 4950x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1938 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 320liters | **Fuels Cons:** 330 | **Susp:** Track:3 | Turret | 6 | 6 | 6 |
| | | | Hull | 6 | 6 | 6 |

| **3.7cm KwK** | **ROF:** SS | **Magazine:** Rld 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 350 | 8 | 7 / 6 / 5 / 3 |
| AP | 350 | 8 | 5 / 5 / 4 / 2 |
| HE | 260 | C:2 B:9 | -6C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

# Pz.Kpfw III Ausf. H

By 1939 it was apparent that the 3.7cm gun was becoming obsolete as a tank weapon. The Panzer III Ausf. H replaces the 3.7cm gun of the earlier Panzer III's with a 5cm gun and adds a machinegun operated by the Commander. Additional armor was included on the turret and hull front. In addition to the crews hatches on the turret and hull top, there are escape hatches on the left and right sides of the hull.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 21.6 tons **Load:** 300kg **Crew:** 5 **Maint:** 7
**Armament:** 5cm KwK 39 L/42 gun, MG-34 coaxial, MG-34 hull, MG-42 (C)
**Ammo:** 99x 5cm, 4950x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1940 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 80 / 50 | **Com Mov:** 20 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Fuel Cap:** 320liters | **Fuels Cons:** 330 | **Susp:** Track:4 | Turret | 10 Sp | 6 | 6 |
| | | | Hull | 10 Sp | 6 | 6 |

| **5cm KwK 39 L/42** | **ROF:** SS | **Magazine:** Rld 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 335 | 10 | 9 / 8 / 7 / 4 |
| AP | 335 | 10 | 7 / 6 / 5 / 3 |
| HE | 250 | C:3 B:12 | -4C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |
| **MG-42** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

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# Pz.Kpfw III Ausf. J

The Panzer III Ausf. J uses a long barreled version of the 5cm KwK 39. Additional armor was included on the turret and hull front. Due to the increased weight of the gun and armor, ammunition carried was reduced.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 21.6 tons **Load:** 300kg **Crew:** 5 **Maint:** 7
**Armament:** 5cm KwK 39 L/60 gun, MG-34 coaxial, MG-34 hull, MG-42 (C)
**Ammo:** 84x 5cm, 4950x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1941 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 75 / 50 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 320liters | **Fuels Cons:** 330 | **Susp:** Track:4 | Turret | 14 Sp | 6 | 6 |
| | | | Hull | 14 Sp | 6 | 10 |

| 5cm KwK 39 L/60 | ROF: SS | Magazine: Rld 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 425 | 10 | 14 / 13 / 10 / 5 |
| AP | 425 | 10 | 11 / 10 / 8 / 4 |
| HE | 320 | C:3 B:12 | -4C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |
| **MG-42** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

# Pz.Kpfw III Ausf. L

The fighting on the East front against the Soviets was starting to show the limitations of the Panzer III. In order to provide additional protection from hollow charge anti-tank weapons, German tank crews began adding armored shields to the turret and hull of their tanks. With the Ausf. L these shields were included at the factory before the tanks were shipped. These shields prevent the use of the side escape hatches. Due to the weight of this additional armor ammunition carried was again reduced.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 22.3 tons **Load:** 300kg **Crew:** 5 **Maint:** 7
**Armament:** 5cm KwK 39 L/60 gun, MG-34 coaxial, MG-34 hull, MG-42 (C)
**Ammo:** 78x 5cm, 4950x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 75 / 50 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 320liters | **Fuels Cons:** 330 | **Susp:** Track:4 | Turret | 14 Sp | 7 Sp | 7 Sp |
| | | | Hull | 14 Sp | 8 Sp | 10 |

| 5cm KwK 39 L/60 | ROF: SS | Magazine: Rld 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 425 | 10 | 14 / 13 / 10 / 5 |
| AP | 425 | 10 | 11 / 10 / 8 / 4 |
| HE | 320 | C:3 B:12 | -4C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |
| **MG-42** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

# Pz.Kpfw III Ausf. M

The Panzer III Ausf. M was designed to simplify the production methods used. The side escape hatches were removed as the armored shields prevented their use, this and other changes resulted in a savings in the weight of the chassis. This weight reduction along with the removal of approximately half the machinegun ammunition allowed an increase in the amount of ammunition carried for the main gun. Additional improvements allowed deeper wading and improved cold weather operation. A small number were designed to be submersible up to 7.5 meters, these were intended to be used for amphibious landings in the proposed invasion of England, while this never came about several were used for river crossings on the East front.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 22.3 tons **Load:** 300kg **Crew:** 5 **Maint:** 7
**Armament:** 5cm KwK 39 L/60 gun, MG-34 coaxial, MG-34 hull, MG-42 (C)
**Ammo:** 98x 5cm, 2550x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 75 / 50 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 320liters | **Fuels Cons:** 330 | **Susp:** Track:4 | Turret | 14 Sp | 7 Sp | 7 Sp |
| | | | Hull | 14 Sp | 8 Sp | 10 |

| 5cm KwK 39 L/60 | ROF: SS | Magazine: Rld 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 425 | 10 | 14 / 13 / 10 / 5 |
| AP | 425 | 10 | 11 / 10 / 8 / 4 |
| HE | 320 | C:3 B:12 | -4C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |
| **MG-42** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

# Pz.Kpfw III Ausf. N

The Panzer III Ausf. N was the final production version of the Panzer III series. By 1942 the 5cm gun was no longer capable of reliably penetrating the armor of Soviet tanks even at close range, as it was not possible to mount a more powerful gun in the turret the decision was made to change the Panzer III into a support tank by replacing its 5cm gun with the short barreled 7.5cm gun first used on the Panzer IV. Production of the Panzer III stopped in 1943 but the chassis remained in service for use in support and combat vehicles until the end of the war.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 21.3 tons **Load:** 300kg **Crew:** 5 **Maint:** 7
**Armament:** 7.5cm KwK gun, MG-34 coaxial, MG-34 hull, MG-42 (C)
**Ammo:** 64x 7.5cm, 3450x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 80 / 50 | **Com Mov:** 20 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 320liters | **Fuels Cons:** 330 | **Susp:** Track:4 | Turret | 14 Sp | 6 | 6 |
| | | | Hull | 14 Sp | 6 | 10 |

| 7.5cm KwK | ROF: SS | Magazine: Rld 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 260 | 17 | 12 / 10 / 9 / 5 |
| HEAT | 195 | C:5 B:10 | 23C |
| HE | 195 | C:7 B:19 | 0C |
| CHEM | 195 | C:2 B:7 | Nil |
| APERS | 100 | Spcl | 1-Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |
| **MG-42** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

---

# Pz.Kpfw III - Flammpanzer III

The Flammpanzer III is a Panzer III armed with a flamegun in place of the 5cm gun.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 22.3 tons **Load:** 300kg **Crew:** 5 **Maint:** 7
**Armament:** Flamegun, MG-34 coaxial, MG-34 hull, MG-42 (C)
**Ammo:** 100 seconds of flamegun fuel, 4950x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 75 / 50 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 320liters | **Fuels Cons:** 330 | **Susp:** Track:4 | Turret | 14 Sp | 7 Sp | 7 Sp |
| | | | Hull | 14 Sp | 8 Sp | 10 |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **Flamegun** | AL | Spcl | Nil | 100 | SS 1 | 15 |
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |
| **MG-42** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

# Pz.Kpfw IV Ausf. D

The Panzer IV was developed as a support tank to fill the "Infanrty" tank role. It was intended to support the infantry and the Panzer III battle tanks. This was the first version to reach the production stage. The Panzer IV was upgunned and uparmored throughout the war and in its various forms it was the most numerous tank used by the German armored forces during World war 2. In addition to the hatches on the turret and hull top there are escape hatches on the left and right hull sides. The chassis served as the basis for many combat and support vehicles.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 20 tons **Load:** 300kg **Crew:** 5 **Maint:** 6
**Armament:** 7.5cm KwK gun, MG-34 coaxial, MG-34 hull
**Ammo:** 80x 7.5cm, 2800x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1939 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 470liters | **Fuels Cons:** 390 | **Susp:** Track:4 | Turret | 6 | 6 | 6 |
| | | | Hull | 6 | 6 | 4 |

| **7.5cm KwK** | **ROF:** SS | **Magazine:** Rld 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 260 | 17 | 12 / 10 / 9 / 5 |
| HEAT | 195 | C:5 B:10 | 23C |
| HE | 195 | C:7 B:19 | 0C |
| CHEM | 195 | C:2 B:7 | Nil |
| APERS | 100 | Spcl | 1-Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

# Pz.Kpfw IV Ausf. F (F1, F2)

During the fighting in North Africa it was determined that the Panzer IV needed to be improved. Additional armor was added to the front and the gun was to be replaced by a longer barreled 7.5cm gun. This gun was not available until 1942 at which time tanks armed with the short 7.5cm gun were designated F1 while those with the longer barreled gun received the designation F2. When first encountered in North Africa the British troops designated the Panzer IV's with long barreled 7.5cm guns "Panzer IV Special" to distiguish them from the earlier short barrel versions.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 22.3 tons **Load:** 300kg **Crew:** 5 **Maint:** 7
**Armament:** 7.5cm KwK gun(F1) or 7.5cm KwK 40 L/43(F2), MG-34 coaxial, MG-34 hull
**Ammo:** 87x 7.5cm, 2800x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1941(F1), 1942(F2) **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 80 / 50 | **Com Mov:** 20 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 470liters | **Fuels Cons:** 360 | **Susp:** Track:4 | Turret | 10 | 6 | 6 |
| | | | Hull | 12 | 6 | 4 |

| **7.5cm KwK** | **ROF:** SS | **Magazine:** Rld 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 260 | 17 | 12 / 10 / 9 / 5 |
| HEAT | 195 | C:5 B:10 | 23C |
| HE | 195 | C:7 B:19 | 0C |
| CHEM | 195 | C:2 B:7 | Nil |
| APERS | 100 | Spcl | 1-Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

| 7.5cm KwK 40 L/43 | ROF: SS | Magazine: Rld 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 355 | 17 | 23 / 21 / 18 / 9 |
| AP | 355 | 17 | 18 / 16 / 14 / 7 |
| HEAT | 265 | C:5 B:10 | 23C |
| HE | 265 | C:7 B:19 | 0C |
| CHEM | 265 | C:2 B:7 | Nil |

# Pz.Kpfw IV Ausf. G

Like the Panzer III the armor of the Panzer IV was found to be vulnerable to hollow charge anti tank weapons, in an attempt to defeat these weapons armored shields were added to the turret and hull by the crews in the field. This version is otherwise very similar to the F2 version.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 24.5 tons **Load:** 300kg **Crew:** 5 **Maint:** 7
**Armament:** 7.5cm KwK 40 L/43, MG-34 coaxial, MG-34 hull
**Ammo:** 87x 7.5cm, 3000x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 75 / 50 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 470liters | **Fuels Cons:** 340 | **Susp:** Track:4 | Turret | 10 | 8 Sp | 8 Sp |
| | | | Hull | 12 | 8 Sp | 4 |

| 7.5cm KwK 40 L/43 | ROF: SS | Magazine: Rld 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 355 | 17 | 23 / 21 / 18 / 9 |
| AP | 355 | 17 | 18 / 16 / 14 / 7 |
| HEAT | 265 | C:5 B:10 | 23C |
| HE | 265 | C:7 B:19 | 0C |
| CHEM | 265 | C:2 B:7 | Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

# Pz.Kpfw IV Ausf. H

The Panzer IV Ausf. H is similar to the Ausf. G version but includes a longer barreled 7.5cm gun and additional armor including shields for the turret and hull. A machinegun is also included for the Commander.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 25 tons **Load:** 300kg **Crew:** 5 **Maint:** 7
**Armament:** 7.5cm KwK 40 L/48, MG-34 coaxial, MG-34 hull, MG-42 (C)
**Ammo:** 87x 7.5cm, 3000x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 75 / 50 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 470liters | **Fuels Cons:** 340 | **Susp:** Track:4 | Turret | 14 Sp | 8 Sp | 8 Sp |
| | | | Hull | 16 Sp | 8 Sp | 4 |

| 7.5cm KwK 40 L/48 | ROF: SS | Magazine: Rld 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 380 | 17 | 27 / 23 / 21/ 10 |
| AP | 380 | 17 | 21 / 18 / 16 / 8 |
| HEAT | 285 | C:5 B:10 | 23C |
| HE | 285 | C:7 B:19 | 0C |
| CHEM | 285 | C:2 B:7 | Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |
| **MG-42** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

# Pz.Kpfw IV Ausf. J

The Panzer IV Ausf. J was the final production version of the Panzer IV it is similar to the Ausf. H version but includes factory installed armored shields which reduces the overall weight compared to the field modified Ausf. G and H versions. Late in 1943 it was decided to terminate production of the Panzer IV in favor of the Panzer V Panther. After a short time it was determined that production of the Panther was not going to meet the needs of the German armored forces and the Panzer IV Ausf. J was put into production early in 1944.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 23.8 tons **Load:** 300kg **Crew:** 5 **Maint:** 7
**Armament:** 7.5cm KwK 40 L/48, MG-34 coaxial, MG-34 hull, MG-42 (C)
**Ammo:** 87x 7.5cm, 3000x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 75 / 50 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 470liters | **Fuels Cons:** 340 | **Susp:** Track:4 | Turret | 16 Sp | 8 Sp | 8 Sp |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | Hull | 16 Sp | 8 Sp | 4 |

| 7.5cm KwK 40 L/48 | ROF: SS | Magazine: Rld 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 380 | 17 | 27 / 23 / 21/ 10 |
| AP | 380 | 17 | 21 / 18 / 16 / 8 |
| HEAT | 285 | C:5 B:10 | 23C |
| HE | 285 | C:7 B:19 | 0C |
| CHEM | 285 | C:2 B:7 | Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |
| **MG-42** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

# HEAVY TANKS

## Pz.Kpfw V Ausf. D - Panther

The arrival of the Soviet T-34 took the German military by surprise, it combined good armor protection and fire power with mobility and out classed the current German medium tanks in the form of the Panzer III and IV. The response of the German high command was to order into production a tank to counter the T-34, the result was the Panther which borrowed heavily from the Soviet design. The Ausf. D was the first production version and was first used in combat at Kursk, the largest tank battle of World war 2. The Panther was rushed into production and

suffered from numerous mechanical failures, those serving during the battle of Kursk performed well when they ran but were available in such small numbers and suffered so many breakdowns that it only served to warn the Soviets of the potential of the new weapon. Several combat and support vehicles were based on the chassis of the Panther.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 44.3 tons **Load:** 500kg **Crew:** 5 **Maint:** 11
**Armament:** 7.5cm KwK 42, MG-34 coaxial
**Ammo:** 79x 7.5cm, 4500x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 90 / 60 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 730liters | **Fuels Cons:** 660 | **Susp:** Track:6 | Turret | 18 | 12 | 12 |
| | | | Hull | 24 | 10 | 10 |

| **7.5cm KwK 42** | **ROF:** SS | **Magazine:** Rld 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 490 | 17 | 39 / 34 / 29 / 16 |
| AP | 490 | 17 | 30 / 26 / 22 / 12 |
| HE | 365 | C:7 B:19 | 0C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

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# Pz.Kpfw V Ausf. G - Panther

This was the final production version of the Panther and it solved most of the problems encountered with the Ausf. D version. Many consider this to be the best tank fielded during World war 2. In addition to the improvements in reliability, many other changes were made to include the lessons learned from the experiences of the crews. The Armor was increased and side skirts were added, a hull mounted machinegun, a machinegun

for the Commander, and the 9.2cm mortar from the Tiger were also included. The Panther served until the end of the war and many surviving Panthers equipped the French army into the 1950's.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 45.5 tons **Load:** 500kg **Crew:** 5 **Maint:** 12
**Armament:** 7.5cm KwK 42, MG-34 coaxial, MG-34 hull, MG-42 (C), 9.2cm Mortar
**Ammo:** 82x 7.5cm, 4800x 7.92mm, 20x 9.2cm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1944 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 90 / 60 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 730liters | **Fuels Cons:** 660 | **Susp:** Track:6 | Turret | 33 | 12 | 12 |
| | | | Hull | 32 | 12 Sp | 10 |

| **7.5cm KwK 42** | **ROF:** SS | **Magazine:** Rld 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 490 | 17 | 39 / 34 / 29 / 16 |
| AP | 490 | 17 | 30 / 26 / 22 / 12 |
| HE | 365 | C:7 B:19 | 0C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |
| **MG-42** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

| **9.2cm Mortar** | **ROF:** SS | **Magazine:** Rld 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| HE | 200m | C:11 B:33 | 3C |
| Smoke | 200m | C:2 B:11 | Nil |

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# Pz.Kpfw VI Ausf. E - Tiger

The Tiger was one of the most feared tanks Allied tank crews faced, the crew of one Tiger alone being credited with 119 tank kills over a two year period. In 1943 a 9.2cm close defense mortar was added to the turret top, this weapon is a traversable mortar which may be controlled and reloaded from within the turret. The Tiger was designed before sloped armor was commonly used and so the armor protection offered is not as great as the later Panther tank which was over 10 tons lighter in weight. While having thick armor and one of the most powerful tank guns fielded during the war, the Tiger does have several faults. It's mass limits it's mobility due both to size

and fuel consumption. The engine is over worked leading to many mechanical problems and breakdowns. The suspension consists of interleaved road wheels, while these give a smooth ride and good cross country performance they collect mud and slush between them which leads to the tracks freezing solid when parked in cold climates, this was common on the East front and led to attacks early in the morning by the Soviets as the Tigers were often immobile at this time. Production of the Tiger ended in 1944 being replaced on the factory lines by the Tiger II. Despite the end of production the Tiger remained in front line service until the end of the war.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 56.9 tons **Load:** 600kg **Crew:** 5 **Maint:** 14
**Armament:** 8.8cm KwK 36 gun, MG-34 coaxial, MG-34 hull, MG-42(C), 9.2cm mortar
**Ammo:** 92x 8.8cm, 5100x 7.92mm, 20x 9.2cm mortar
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 75 / 50 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 570 liters | **Fuels Cons:** 720 | **Susp:** Track:6 | Turret | 24 | 16 | 16 |
| | | | Hull | 25 | 16 | 16 |

| **8.8cm KwK.36** | **ROF:** SS | **Magazine:** Rld 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 425 | 19 | 51 / 44 / 38 / 20 |
| AP | 425 | 19 | 39 / 34 / 29 / 15 |
| HEAT | 320 | C:7 B:11 | 28C |
| HE | 320 | C:10 B:22 | 2C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |
| **MG-42** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

| **9.2cm Mortar** | **ROF:** SS | **Magazine:** Rld 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| HE | 200m | C:11 B:33 | 3C |
| Smoke | 200m | C:2 B:11 | Nil |

---

# Pz.Kpfw VI Ausf. B - Tiger II

The Tiger II is based on the earlier Tiger, but also uses many of the construction methods of the Panther, the most

important of these is the use of sloped armor. The Tiger II was commonly known to German troops as the Konigstiger, which was translated by Allied troops as the King Tiger or Royal Tiger. In addition to the improved armor it included a longer barreled version of the 8.8cm gun. The Tiger II was the largest, most powerfully armed tank to serve in World war 2. As it used the same engine and running gear the problems encountered with the Tiger were only increased by the additional mass of the Tiger II.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 69.8 tons **Load:** 700kg **Crew:** 5 **Maint:** 16
**Armament:** 8.8cm KwK 43 gun, MG-34 coaxial, MG-34 hull, MG-42(C), 9.2cm mortar
**Ammo:** 84x 8.8cm, 4800x 7.92mm, 20x 9.2cm mortar
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1944 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 75 / 50 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 865 liters | **Fuels Cons:** 1200 | **Susp:** Track:6 | Turret | 45 | 24 | 24 |
| | | | Hull | 60 | 20 | 24 |

| **8.8cm KwK 43** | **ROF:** SS | **Magazine:** Rld 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 500 | 19 | 53 / 47 / 40 / 21 |
| AP | 500 | 19 | 41 / 36 / 31 / 16 |
| HEAT | 375 | C:7 B:11 | 28C |
| HE | 375 | C:10 B:22 | 2C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |
| **MG-42** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

| **9.2cm Mortar** | **ROF:** SS | **Magazine:** Rld 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| HE | 200m | C:11 B:33 | 3C |
| Smoke | 200m | C:2 B:11 | Nil |

---

# Pz.Kpfw MAUS

The Maus (mouse) was designed as a super heavy tank. Work began in 1943 and it is believed up to 9 prototypes may have been completed by the end of the war. During testing it performed well although tactics for its use were

never developed. As the weight was greater than German bridges could support it was capable of submersible river crossings to a depth of 8 meters. External fuel tanks were added on the rear to increase the range. The German military spent a great deal of time and effort on "super" weapons at the expense of production on their current weapons, the Maus was one of these but it stands out as one of the more successful attempts, most never achieving any chance for production. The Maus was expected to enter production towards the end of 1945 and an order for 150 had been placed before the war ended.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 188 tons **Load:** 1800kg **Crew:** 6 **Maint:** 40
**Armament:** 12.8cm KwK 44 gun, 7.5cm KwK 44 gun coaxial, 20mm MG151/20 coaxial, MG-34 hull, MG-42 (C)
**Ammo:** 32x 12.8cm, 200x 7.5cm, 400x 20mm, 2500x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** N/A **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 40 / 25 | **Com Mov:** 10 / 5 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 2700+1500 liters | **Fuels Cons:** 1120 | **Susp:** Track:6 | Turret | 72 | 50 | 40 |
| | | | Hull | 60 | 36 | 36 |

| **12.8cm KwK 44** | **ROF:** SS | **Magazine:** Rld 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 440 | 28 | 75 / 66 / 56 / 30 |
| AP | 440 | 28 | 58 / 51 / 43 / 23 |
| HE | 330 | C:21 B:32 | 8C |

| **20mm MG151/20** | **ROF:** 10 | **Magazine:** Belt 100 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 280 | 4 | 2 / 1 / 1 / 0 |
| HE | 210 | C:1 B:4 | -8C |

| 7.5cm KwK 44 | ROF: SS | Magazine: Rld 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 320 | 17 | 19 / 16 / 14 / 7 |
| AP | 320 | 17 | 14 / 13 / 11 / 6 |
| HEAT | 240 | C:5 B:10 | 23C |
| HE | 240 | C:7 B:19 | 0C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |
| **MG-42** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

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# SOVIET UNION

# ARMORED CARS

## BA-10

The BA-10 is a 6x6 armored car designed around the chassi of a Soviet GAZ commercial heavy truck. The engine is in the front under a long armored hood, the driver and hull machine gunner are at the front of the raised rear hull area, a turret is located at the rear of the vehicle. The wheel configuration is standard for a six wheeled truck with a single stearing axle front and twin axles rear. A spare tire is located on each side behind the front axle, these are mounted low to allow them to roll over obstructions that could high center the vehicle improving the cross country ability. The BA-10 remained in use until 1942 when many were converted into armored personnel carriers. Large numbers of BA-10's were captured by the Germans and used for anti-partisan duties in the USSR and Eastern Europe, the Germans designated these captured vehicles Panzerspahwagen BAF 203(r).

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 7.5 tons **Load:** 300kg **Crew:** 4 **Maint:** 4
**Armament:** 37mm M1930 gun, DT (H)
**Ammo:** 96x 37mm, 2394x 7.62mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1932 **In service:** USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 170 / 60 | **Com Mov:** 40 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 95 liters | **Fuel Cons:** 95 | **Susp:** Wheel:(3) | Turret | 5 | 3 | 3 |
| | | | Hull | 5 | 3 | 3 |

| 37mm M1930 | ROF: SS | Magazine: Rld 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 350 | 8 | 5 / 5 / 4 / 2 |
| HE | 260 | C:2 B:9 | -6C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **DT** | 5 | 4 | 2-3-Nil | Drum 60 | SS 1 Brst 3 | 125 |

## BA-10M

This is an improved version of the BA-10, it uses a new turret armed with a 45mm gun in place of the original 37mm. This vehicle is also known as the BA-32.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 7.5 tons **Load:** 300kg **Crew:** 4 **Maint:** 4
**Armament:** 45mm M1932 gun, DT (H)
**Ammo:** 72x 45mm, 2394x 7.62mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1937 **In service:** USSR

| | | | | | |
|---|---|---|---|---|---|
| **TrMOV:** 170 / 60 | **Com Mov:** 40 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 95 liters | **Fuel Cons:** 95 | **Susp:** Wheel:(3) | Turret | 5 | 5 | 5 |
| | | | Hull | 5 | 3 | 3 |

| 45mm M1932 | ROF: SS | Magazine: Rld: 2 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 355 | 9 | 7 / 6 / 5 / 3 |
| HE | 285 | C:2 B:10 | -5C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **DT** | 5 | 4 | 2-3-Nil | Drum 60 | SS 1 Brst 3 | 125 |

## BA-64

The BA-64 is a light 4x4 armored car used by the Soviet army from 1942 into the 1960's. The machine gun is mounted in a small turret. A rail road version was built (BA-64ZhD), it had the tires replaced with flanged wheels allowing it to travel on rail road tracks, this version was used to scout for armored trains.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 2.4 tons **Load:** 100kg **Crew:** 2 **Maint:** 3
**Armament:** DT
**Ammo:** 1260x 7.62mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** USSR

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **TrMOV:** 160 / 70 | **Com Mov:** 35 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 120 liters | **Fuel Cons:** 65 | **Susp:** Wheel:(2) | Turret | 3 | 2 | 2 |
| | | | Hull | 3 | 2 | 2 |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **DT** | 5 | 4 | 2-3-Nil | Drum 60 | SS 1 Brst 3 | 125 |
| | | | | | | |

## BA-64DShK

This is the BA-64 armed with the DShK heavy machine gun in place of the DT.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 2.4 tons **Load:** 100kg **Crew:** 2 **Maint:** 3
**Armament:** DShK
**Ammo:** 500x 12.7mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 160 / 70 | **Com Mov:** 35 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 120 liters | **Fuel Cons:** 65 | **Susp:** Wheel:(2) | Turret | 3 | 2 | 2 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | Hull | 3 | 2 | 2 |

| | Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|---|
| | **DShK** | 5 | 8 | 2-2-3 | Belt 50 | SS 2 Brst 7 | 150 |
| | | | | | | | |

# ASSAULT GUNS AND TANK DESTROYERS

## ISU-122

The ISU-122 is a self propelled anti-tank gun based on the chassis of the IS-2 heavy tank. It is similar to the SU-152 which it was based, the primary differance being the gun used, it has no relation to the SU-122 which is based on the T-34 medium tank and uses a howitzer.. The main gun is mounted with a limited traverse at the front of the hull, a machine gun is provided for the Commander on the hull top. The ISU-122 was not as common as the ISU-152 which was built in much larger numbers, probably due to the fact that the ISU-122 carried the same 122mm gun of the IS-2 tank, while being tactically limited, its only advantage being a slightly larger ammunition supply.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 52.5 tons **Load:** 500kg **Crew:** 5 **Maint:** 15
**Armament:** 122mm D-25 gun, DShK (C)
**Ammo:** 30x 122mm, 450x 12.7mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1944 **In service:** USSR

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **TrMOV:** 75 / 50 | **Com Mov:** 15 / 10 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 525 + 730 liters | **Fuel Cons:** 440 | **Susp:** Track:6 | Hull | 36 | 19 | 12 |
| | | | | | | |

| 122mm D-25 | ROF: SS | Magazine: Rld: 2 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 405 | 27 | 68 / 58 / 49 / 26 |
| AP | 405 | 27 | 52 / 45 / 38 / 20 |
| HE | 305 | C: 19 B:30 | 7C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **DShK** | 5 | 8 | 2-3-4 | Belt 50 | SS 3 Brst 7 | 150 |

## ISU-152

The ISU-152 is a self propelled assault gun based on the chassis of the IS-2 heavy tank. The main gun is mounted with a limited traverse at the front of the hull, a machine gun is provided for the Commander on the hull top. It is very similar to the earlier SU-152 which was based on the KV-1 heavy tank chassis but uses a more powerful gun. Due to the weapon mounting maximum indirect fire range is reduced.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 52.5 tons **Load:** 500kg **Crew:** 5 **Maint:** 15
**Armament:** 152mm ML-20 gun, DShK (C)
**Ammo:** 20x 152mm, 450x 12.7mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1944 **In service:** USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 75 / 50 | **Com Mov:** 15 / 10 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 525 + 730 liters | **Fuel Cons:** 440 | **Susp:** Track:6 | Hull | 36 | 19 | 12 |

| 152mm ML-20 | ROF: SS | Magazine: Rld: 2 | IFR: 8.7km |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 335 | 33 | 67 / 59 / 50 / 26 |
| HE | 250 | C:29 B:38 | 12C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **DShK** | 5 | 8 | 2-3-4 | Belt 50 | SS 3 Brst 7 | 150 |

## SU-76

The SU-76 is a self propelled anti-tank / assault gun based on the chassis of the T-70 light tank. It uses 76.2mm field gun mounted in an open topped superstructure. The SU-76 was not popular with crews and it was known to them as the Sukami (bitch) due largely to the fact that was a wartime expedient and no consideration was made for crew comfort. The Driver sits between the two engines with no bulkhead isolating them from the crew compartment and the only protection from the weather is provided by placing a tarp over the open top. When first introduced it was intended for use as an anti-tank gun but by the end of 1943 the 76.2mm gun had lost much of its capability in this role due to the increasing weight of armor on German tanks. The SU-76 remained in use as a self propelled artillery piece and assault gun through the end of the war, although by 1945 many were converted for other uses including artillery tractors and supply carriers.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 11.2 tons **Load:** 200kg **Crew:** 4 **Maint:** 5
**Armament:** 76.2mm ZIS-3 gun, DT (C)
**Ammo:** 60x 76.2mm, 600x 7.62mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** USSR

| **TrMOV:** 90 / 60 | **Com Mov:** 20 / 15 | **Config:** Stnd | **Armor** | Front | Side | Rear |
|---|---|---|---|---|---|---|
| **Fuel Cap:** 460 liters | **Fuel Cons:** 210 | **Susp:** Track:2 | Hull | 5 | 5 | 3 |

| 76.2mm ZIS-3 | ROF: SS | Magazine: Rld: 1 | IFR: 13.3km |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 395 | 17 | 31 / 27 / 23 / 12 |
| AP | 395 | 17 | 24 / 21 / 18 / 9 |
| HEAT | 295 | C:4 B:10 | 23C |
| HEAT | 295 | C:7 B:19 | 0C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **DT** | 5 | 4 | 2-3-Nil | Drum 60 | SS 1 Brst 3 | 125 |

## SU-85

The SU-85 is an anti-tank / assault gun based on the chassis of the T-34 medium tank. The gun is located in a limited traverse mount at the hull front. It was developed to increase the fire power of Soviet tank units and to supplement the SU-122 which was found to have poor anti-armor capabilities. The T-34 was upgunned to mount an 85mm gun soon after the introduction of the SU-85 which resulted in the development of the SU-100 to provide a vehicle to filling the original role. The SU-85 remained in service until the end of the war often assigned to units equipped with the T-34/76.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 29.2 tons **Load:** 300kg **Crew:** 4 **Maint:** 10
**Armament:** 85mm D-5T gun, DT (C)
**Ammo:** 48x 85mm, 600x 7.62mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** USSR

| **TrMOV:** 110 / 70 | **Com Mov:** 25 / 15 | **Config:** Stnd | **Armor** | Front | Side | Rear |
|---|---|---|---|---|---|---|
| **Fuel Cap:** 500 + 140 liters | **Fuel Cons:** 240 | **Susp:** Track:6 | Hull | 23 | 14 | 14 |

| 85mm D-5T | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 415 | 19 | 51 / 44 / 38 / 20 |
| AP | 415 | 19 | 39 / 34 / 29 / 15 |
| HEAT | 310 | C:6 B:11 | 27C |
| HE | 310 | C:9 B:21 | 2C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **DT** | 5 | 4 | 2-3-Nil | Drum 60 | SS 1 Brst 3 | 125 |

## SU-100

The SU-100 is a self propelled anti-tank / assault gun based on the chassis of the T-34 medium tank. When the T-34/85 was introduced it made the SU-85 obsolete in its intended role and a new vehicle was needed to replace it. A 100mm gun developed from a naval weapon was used in place of the earlier vehicle 85mm gun. The SU-100 was used to support tank units as a heavy tank destroyer, it remained in service with the Soviet Union into the 1960's.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 31.6 tons **Load:** 300kg **Crew:** 4 **Maint:** 10
**Armament:** 100mm D-10T gun, DT (C)
**Ammo:** 52x 85mm, 600x 7.62mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1944 **In service:** USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 110 / 70 | **Com Mov:** 25 / 15 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 500 + 140 liters | **Fuel Cons:** 240 | **Susp:** Track:6 | Hull | 23 | 14 | 14 |

| 100mm D-10T | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 445 | 22 | 61 / 53 / 46 / 25 |
| AP | 445 | 22 | 47 / 41 / 35 / 19 |
| HE | 335 | C: 14 B:16 | 4C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **DT** | 5 | 4 | 2-3-Nil | Drum 60 | SS 1 Brst 3 | 125 |

## SU-122

The SU-122 is an assault gun based on the chassis of the T-34 combined with a 122mm howitzer in a limited traverse mount at the front of the hull. It performed well in the infantry support role but was found to have poor anti-armor capabilities, the SU-85 was developed to provide an anti-tank vehicle leaving the SU-122 for the assault gun role. The SU-122 remained in service until the end of the war.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 30.9 tons **Load:** 300kg **Crew:** 4 **Maint:** 10
**Armament:** 122mm M-30 howitzer, DT (C)
**Ammo:** 40x 122mm, 600x 7.62mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 110 / 70 | **Com Mov:** 25 / 15 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 635 + 135 liters | **Fuel Cons:** 240 | **Susp:** Track:6 | Hull | 23 | 14 | 14 |

| 122mm M-30 | ROF: SS | Magazine: Rld: 2 | IFR: 5.9km |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HEAT | 205 | C:13 B:15 | 42C |
| HE | 205 | C:19 B:30 | 7C |
| WP | 205 | C:3 B:37 | Nil |
| CHEM | 205 | C:3 B:19 | Nil |
| ILLUM | N/A | B:1500 | Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **DT** | 5 | 4 | 2-3-Nil | Drum 60 | SS 1 Brst 3 | 125 |

## SU-152

The SU-152 is an assault gun based on the KV-1 heavy tank, it combines the chassis of the KV-1 with the 152mm howitzer of the KV-2. The KV-2 had proven to be an easy target dispite its heavy armor due to its high profile and poor mobility. The SU-152 mounted the howitzer with a limited traverse in the hull front greatly reducing the over all height, this provided a smaller target and made the vehicle less top heavy improving its mobility. The SU-152 remained in service until the end of the war but production ended in 1944 when the KV-1 was discontinued. The ISU-152 based on the IS-2 heavy tank replaced the SU-152 in production, it was very similar in appearance but mounted a more powerful 152mm gun in place of the howitzer. Due to the limited traverse of the gun the indirect fire range is reduced.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 47.4 tons **Load:** 500kg **Crew:** 5 **Maint:** 14
**Armament:** 152mm M-10T howitzer, DT (C)
**Ammo:** 20x 152mm, 600x 7.62mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** USSR

| **TrMOV:** 70 / 45 | **Com Mov:** 15 / 10 | **Config:** Stnd | **Armor** | Front | Side | Rear |
|---|---|---|---|---|---|---|
| **Fuel Cap:** 595 liters | **Fuel Cons:** 370 | **Susp:** Track:6 | Hull | 23 | 12 | 12 |

| 152mm M-10T | ROF: SS | Magazine: Rld: 2 | IFR: 6.2km |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APHE | 275 | C:7 B:9 | 36 / 31 / 27 / 14 |
| HE | 205 | C:29 B:38 | 12C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **DT** | 5 | 4 | 2-3-Nil | Drum 60 | SS 1 Brst 3 | 125 |

# SUPPORT VEHICLES

## T-34-T

This is an armored recovery vehicle based on the chassis of the T-34 tank. The turret has been removed, a five ton crane, 10 ton winch and assorted tools for repairing armored vehicles have been added. A platform for carrying a spare engine has also been added over the rear deck of the hull.

**Fire control:** None **Stabilization:** None **Fuel:** Diesel **Weight:** 25.1 tons **Load:** 300kg **Crew:** 4 **Maint:** 8
**Armament:** DT (H), DT (C)
**Ammo:** 1200x 7.62mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1940 **In service:** USSR

| **TrMOV:** 100 / 65 | **Com Mov:** 25 / 15 | **Config:** Stnd | **Armor** | Front | Side | Rear |
|---|---|---|---|---|---|---|
| **Fuel Cap:** 500 + 140 liters | **Fuel Cons:** 240 | **Susp:** Track:6 | Hull | 14 | 14 | 14 |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **DT** | 5 | 4 | 2-3-Nil | Drum 60 | SS 1 Brst 3 | 125 |
| | | | | | | | |

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# GERMANY

# ARMORED CARS

## SdKfz 221

The SdKfz 221 is a light 4x4 armored scout car. It has a small open topped turret with wire mesh anti-grenade screens. A radio car version was built as the SdKfz 223, it is similar but includes additional radio equipment and has a large "bed-frame" antenna above the vehicle.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 4.1 tons **Load:** 100kg **Crew:** 2 **Maint:** 3
**Armament:** MG-34
**Ammo:** 5000x 7.92mm
**Night Vision:** headlights **Radiological:** open **NBC system:** no
**Introduced:** 1936 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 165 / 75 | **Com Mov:** 40 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 310 liters | **Fuel Cons:** 350 | **Susp:** Wheel:(2) | Turret | 3 | 3 | 2 |
| | | | Hull | 3 | 2 | 2 |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |
| | | | | | | |

# SdKfz 222

The SdKfz 222 is a light 4x4 armored car similar to the 221 but armed with a 2cm gun. It has an open topped turret with wire mesh screens. It also includes a third crew member as the Gunner, relieving the Commander of this task. A machine gun is provided on the turret top for local air defence.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 5 tons **Load:** 100kg **Crew:** 3 **Maint:** 3
**Armament:** 2cm KwK 30, MG-34 coaxial, MG-34 (C)
**Ammo:** 200x 2cm, 3000x 7.92mm
**Night Vision:** headlights **Radiological:** open **NBC system:** no
**Introduced:** 1936 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 165 / 75 | **Com Mov:** 40 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 310 liters | **Fuel Cons:** 350 | **Susp:** Wheel:(2) | Turret | 3 | 3 | 2 |
| | | | Hull | 3 | 2 | 2 |

| **2cm KwK 30** | **ROF:** 3 | **Magazine:** Strip 10 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 360 | 4 | 3 / 2 / 2 / 1 |
| AP | 360 | 4 | 2 / 2 / 1 / 1 |
| HE | 270 | C:1 B:4 | -8C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

# SdKfz 231 - 6 Rad

The SdKfz 231 is a six wheeled heavy armored scout car based on the chassis of a heavy truck. It has a Driver in each end and may be driven forward or backward equally well, the rear driver also acts as the Radio operator. It uses an open turret similar to the SdKfz 222. The German army was not fully satisfied with the performance of this vehicle and development of an eight wheeled armored car resulted in its replacement in 1937. The eight wheeled

vehicle was also designated SdKfz 231 so an additional designation 6 Rad (6 wheel) and 8 rad (8 wheel) was added to these vehicles to reduce confusion. Production of this vehicle was stopped when the eight wheeled vehicle was introduced but it remained in service through the early years of World war 2.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 6.4 tons **Load:** 100kg **Crew:** 4 **Maint:** 4
**Armament:** 2cm KwK 30, MG-34 coaxial, MG-34 (C)
**Ammo:** 200x 2cm, 3000x 7.92mm
**Night Vision:** headlights **Radiological:** open **NBC system:** no
**Introduced:** 1932 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 130 / 60 | **Com Mov:** 30 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 405 liters | **Fuel Cons:** 350 | **Susp:** Wheel:(3) | Turret | 3 | 3 | 2 |
| | | | Hull | 3 | 2 | 2 |

| **2cm KwK 30** | **ROF:** 3 | **Magazine:** Strip 10 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 360 | 4 | 3 / 2 / 2 / 1 |
| AP | 360 | 4 | 2 / 2 / 1 / 1 |
| HE | 270 | C:1 B:4 | -8C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

---

# SdKfz 231 - 8 Rad

The SdKfz 231 is an eight wheeled heavy armored scout car. Although it shares the same designation as the earlier 6 wheel SdKfz 231 it is an all new vehicle. It has a more powerful engine, eight wheel drive and all wheel steering. It retains the ability to be driven forward or backward with a driver in each end and the open turret protected by screens. A radio car version the SdKfz 232 was also built, it has additional radio equipment and a large "bed frame" antenna above the hull.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 8.2 tons **Load:** 100kg **Crew:** 4 **Maint:** 4
**Armament:** 2cm KwK 30, MG-34 coaxial, MG-34 (C)
**Ammo:** 200x 2cm, 3000x 7.92mm
**Night Vision:** headlights **Radiological:** open **NBC system:** no
**Introduced:** 1937 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 175 / 90 | **Com Mov:** 40 / 20 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 395 liters | **Fuel Cons:** 520 | **Susp:** Wheel:(3) | Turret | 3 | 3 | 2 |
| | | | Hull | 5 Sp | 2 | 2 |

| **2cm KwK 30** | **ROF:** 3 | **Magazine:** Strip 10 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 360 | 4 | 3 / 2 / 2 / 1 |
| AP | 360 | 4 | 2 / 2 / 1 / 1 |
| HE | 270 | C:1 B:4 | -8C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

---

# SdKfz 234/1

The SdKfz 234/1 is an eight wheeled heavy armored scout car based on the earlier SdKfz 231. It uses more advanced construction methods which reduces the weight of the chassis allowing an increase in armor and fuel capacity without increasing the over all weight of the vehicle. It retains the open turret and 2 Driver system of the SdKfz 231.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 8.2 tons **Load:** 100kg **Crew:** 4 **Maint:** 4
**Armament:** 2cm KwK 38, MG-34 coaxial, MG-34 (C)
**Ammo:** 200x 2cm, 3000x 7.92mm
**Night Vision:** headlights **Radiological:** open **NBC system:** no
**Introduced:** 1941 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 175 / 90 | **Com Mov:** 40 / 20 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 1490 liters | **Fuel Cons:** 520 | **Susp:** Wheel:(3) | Turret | 3 | 3 | 2 |
| | | | Hull | 8 Sp | 2 | 2 |

| **2cm KwK 38** | **ROF:** 5 | **Magazine:** Strip 10 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 360 | 4 | 3 / 2 / 2 / 1 |
| AP | 360 | 4 | 2 / 2 / 1 / 1 |
| HE | 270 | C:1 B:4 | -8C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

---

# SdKfz 234/2 Puma

This is the SdKfz 234 with the turret from the cancelled PzKpfw II Leopard light tank. It proved to be an exceptional vehicle remaining in production right up to the end of the war despite its high cost in time and materials. It uses the long barreled 5cm gun of the PzKpfw III and the turret has an enclosed armored top. It was used extensively on the Eastern front against the Soviets although many were used in Western Europe as well.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 10.5 tons **Load:** 100kg **Crew:** 4 **Maint:** 4
**Armament:** 5cm KwK 39 L/60, MG-34 coaxial
**Ammo:** 40x 5cm, 3000x 7.92mm
**Night Vision:** headlights **Radiological:** open **NBC system:** no
**Introduced:** 1943 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 175 / 90 | **Com Mov:** 40 / 20 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 1490 liters | **Fuel Cons:** 520 | **Susp:** Wheel:(3) | Turret | 20 | 3 | 2 |
| | | | Hull | 8 Sp | 2 | 2 |

| 5cm KwK 39 L/60 | ROF: SS | Magazine: Rld 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 425 | 10 | 14 / 13 / 10 / 5 |
| AP | 425 | 10 | 11 / 10 / 8 / 4 |
| HE | 320 | C:3 B:12 | -4C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

# ARMORED PERSONNEL CARRIERS

## SdKfz 250

The SdKfz 250 is a 1 ton armored half track introduced as an armored gun crew carrier and artillery prime mover. It also became popular for use as a Command vehicle equipped with additional radio equipment, map boards and a "bed frame" antenna. There is an armored gun shield for the Commanders machine gun mounted at the front of the open crew compartment and a second machine gun mounted on the top of the rear hull wall. A large door is provided at the hull rear for exit along with two side doors for the Driver and front passenger. The SdKfz was used as the basis for many combat and support vehicles. After 1942 the MG-34 was often replaced with the MG-42.

**Fire control:** None **Stabilization:** None **Fuel:** Gasoline **Weight:** 4.8 tons **Load:** 1000kg **Crew:** 2+4 **Maint:** 3
**Armament:** MG-34 (C), MG-34 (P)
**Ammo:** 4000x 7.92mm
**Night Vision:** headlights **Radiological:** open **NBC system:** no
**Introduced:** 1939 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 130 / 70 | **Com Mov:** 30 / 15 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 150 liters | **Fuel Cons:** 120 | **Susp:** Track:1 | Hull | 3 | 2 | 2 |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |
| **MG-42** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

## SdKfz 251

The SdKfz 251 is a 3 ton armored half track introduced as an armored personnel carrier to be used by the mechanized infantry of Panzer units. There is an armored gun shield (AV:2) for the Commanders machine gun mounted at the front of the open crew compartment and a second machine gun mounted on the top of the rear hull wall. A large door is provided in the rear hull for exit along with the Driver and front passengers side doors. The SdKfz 251 was used as the basis for many combat and support vehicles. After 1942 the MG-34 was often replaced with the MG-42.

**Fire control:** None **Stabilization:** None **Fuel:** Gasoline **Weight:** 8.2 tons **Load:** 3000kg **Crew:** 3+10 **Maint:** 4
**Armament:** MG-34 (C), MG-34 (P)
**Ammo:** 5000x 7.92mm
**Night Vision:** headlights **Radiological:** open **NBC system:** no
**Introduced:** 1938 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 115 / 65 | **Com Mov:** 25 / 15 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 185 liters | **Fuel Cons:** 140 | **Susp:** Track:1 | Hull | 3 | 2 | 2 |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **MG-42** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |
| | | | | | | | |

# ASSAULT GUNS AND TANK DESTROYERS

## Jagdpanther

The Jagdpanther (Hunting panther) is a self propelled anti-tank gun / tank destroyer based on the chassis of the Panther tank. It mounts an 8.8cm gun in a limited traverse mount. It retains the Panthers hull machine gun and a machine gun is provided on the roof of the vehicle operated by the Commander.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 40.7 tons **Load:** 500kg **Crew:** 6 **Maint:** 12
**Armament:** 8.8cm KwK 43, MG-34 hull, MG-42 (L)
**Ammo:** 60x 8.8cm, 2500x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1944 **In service:** Germany

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **TrMOV:** 90 / 60 | **Com Mov:** 20 / 15 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 745 liters | **Fuel Cons:** 740 | **Susp:** Track:6 | Hull | 24 | 15 | 12 |
| | | | | | | |

| 8.8cm KwK 43 | ROF: SS | Magazine: Rld 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 500 | 19 | 53 / 47 / 40 / 21 |
| AP | 500 | 19 | 41 / 36 / 31 / 16 |
| HEAT | 375 | C:7 B:11 | 28C |
| HE | 375 | C:10 B:22 | 2C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |
| **MG-42** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

---

# Jagdpanzer IV

The Jagdpanzers (hunting tanks) were developed from the earlier assault guns like the Sturmgeshutz but were designed from the start for the tank destroyer role. The Jagdpanzer IV was based on the chassis of the Panzer IV medium tank and combined it with the long barreled 7.5cm gun used by the Panther tank. The hull machinegun of the Panzer IV is retained and a machine gun is provided for the Commander.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 25.8 tons **Load:** 300kg **Crew:** 4 **Maint:** 9
**Armament:** 7.5cm KwK42, MG-34 hull, MG-42 (C)
**Ammo:** 48x 7.5cm, 2500x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 485 liters | **Fuel Cons:** 400 | **Susp:** Track:5 | Hull | 24 | 6 | 6 |

| 7.5cm KwK 42 | ROF: SS | Magazine: Rld 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 490 | 17 | 39 / 34 / 29 / 16 |
| AP | 490 | 17 | 30 / 26 / 22 / 12 |
| HE | 365 | C:7 B:19 | 0C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |
| **MG-42** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

# Jagdpanzer 38(t) Hetzer

The Hetzer (Baiter) is a light Jagdpanzer (Hunting tank) based on the Czech LT-38 (PzKpfw 38(t). The Jagdpanzers were a series of self propelled anti tank guns based on the chassis of obsolete tanks fitted with additional armor and more a powerful gun in a limited traverse mount. Late in the war the Jagdpanther and Jagdtiger were developed from this same concept to provide two of the most powerful AFV's used during the war. Tactically limited compared to turreted tanks they proved their worth particularly when used from prepared defensive positions. The Hetzer was at first scorned by the German military due to its size and weight but they soon proved to be popular with their crews and the infantry they supported. They were fast, highly mobile, easy to build and available in greater numbers than the larger Jagdpanzers. A machine gun is provided on the vehicle roof operated by the Commander, this machine gun may be remotely controlled from inside the vehicle.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 14.3 tons **Load:** 200kg **Crew:** 4 **Maint:** 5
**Armament:** 7.5cm KwK 40 L/48, MG-42 (C)
**Ammo:** 41x 7.5cm, 600x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 190 liters | **Fuel Cons:** 170 | **Susp:** Track:2 | Hull | 18 | 6 | 3 |

| 7.5cm KwK 40 L/48 | ROF: SS | Magazine: Rld 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 380 | 17 | 27/ 23/ 21/ 10 |
| AP | 380 | 17 | 21 / 18 / 16/ 8 |
| HEAT | 285 | C:5 B:10 | 23C |
| HE | 285 | C:7 B:19 | 0C |
| CHEM | 285 | C:2 B:7 | Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **MG-42** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

# Jagdpanzer 38(t) Flammpanzer

This is the Hetzer armed with a flamegun in place of the 7.5cm gun. It is similar in appearance and with the exception of the flamethrower is nearly identical.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 14.3 tons **Load:** 200kg **Crew:** 4 **Maint:** 5
**Armament:** Flamegun, MG-42 (C)
**Ammo:** 80 seconds of flamegun fuel, 1250x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 190 liters | **Fuel Cons:** 170 | **Susp:** Track:2 | Hull | 18 | 6 | 3 |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **Flamegun** | AL | Spcl | Nil | 80 | SS 1 | 15 |

| | | | | | | |
|---|---|---|---|---|---|---|
| **MG-42** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

# Jagdpanzer Tiger (P) Elefant

The Elefant (Elephant) is a tank destroyer based on the chassis of the Porsche designed version of the Tiger tank. The Porsche design was not chosen for the production version of the Tiger but as much pre-production work had been completed the chassis was modified for use as a self propelled gun. The gasoline engine provides electrical power to electric motors which propel the vehicle. Although the Elefant mounts a more powerful version of the 8.8cm gun than the Tiger it was not very successful. While able to engage tanks at long range before becoming vulnerable to return fire it was very slow and early versions had no machine gun making it an easy target for infantry anti-tank teams.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 59.1 tons **Load:** 600kg **Crew:** 6 **Maint:** 14
**Armament:** 8.8cm KwK 43, MG-34 hull
**Ammo:** 90x 8.8cm, 3000x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 55 / 35 | **Com Mov:** 15 / 10 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 615 liters | **Fuel Cons:** 720 | **Susp:** Track:6 | Hull | 60 | 16 | 16 |

| **8.8cm KwK 43** | **ROF:** SS | **Magazine:** Rld 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 500 | 19 | 53 / 47 / 40 / 21 |
| AP | 500 | 19 | 41 / 36 / 31 / 16 |
| HEAT | 375 | C:7 B:11 | 28C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

| | | | |
|---|---|---|---|
| HE | 375 | C:10 B:22 | 2C |

## Jagdtiger

The Jagdtiger (Hunting tiger) is a tank destroyer based on the chassis of the Tiger II. It mounts a 12.8cm gun in a limited traverse mount and includes the 9.2cm close defense weapon of the Tiger. The Jagdtiger was the most powerful AFV fielded during the war. Less than 200 were completed by the end of the war.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 64.2 tons **Load:** 700kg **Crew:** 6 **Maint:** 15
**Armament:** 12.8cm KwK44, MG-34 hull, MG-42 (L), 9.2cm mortar
**Ammo:** 38x 12.8cm, 2950x 7.92mm, 20x 9.2cm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1944 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 70 / 45 | **Com Mov:** 15 / 10 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 865 liters | **Fuel Cons:** 960 | **Susp:** Track:6 | Hull | 75 | 24 | 24 |

| **12.8cm KwK 44** | **ROF:** SS | **Magazine:** Rld 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 440 | 28 | 75 / 66 / 56 / 30 |
| AP | 440 | 28 | 58 / 51 / 43 / 23 |
| HE | 330 | C:21 B:32 | 8C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |
| **MG-42** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

| **9.2cm Mortar** | **ROF:** SS | **Magazine:** Rld 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| HE | 200m | C:11 B:33 | 3C |
| Smoke | 200m | C:2 B:11 | Nil |

## Panzerjager I 4.7cm PAK(t)

This is one of the first of the many hybrid self propelled guns used by Germany during World war 2. It uses the chassis of the Panzer I and combines it with a Czech anti-tank gun. This is one of the few vehicles to be successfully built on the chassis of the Panzer I as it was too light for most weapons. The gun crew is protected by a gun shield from the front only and no machine gun is provided. The Marder I was used into the early part of 1941 before it was found to be lacking the firepower and protection needed to face the Allied tanks coming into service.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 6.4 tons **Load:** 100kg **Crew:** 3 **Maint:** 4
**Armament:** 4.7cm PAK(t)
**Ammo:** 86x 4.7cm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1940 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 80 / 50 | **Com Mov:** 20 / 10 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 145liters | **Fuels Cons:** 160 | **Susp:** Track:1 | Hull | 3 | 2 | 2 |
| | | | Gun Shield | 3 | 0 | 0 |

| **4.7cm PAK(t)** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 375 | 10 | 7 / 6 / 5 / 3 |
| HE | 280 | C:3 B:12 | -4C |

## Panzerjager II 7.5cm PAK40 Marder II

The Panzerjager (tank hunter) Marder II (martin) is another self propelled anti-tankgun based on the chassis of an obsolete tank, in this case the Panzer II. The Marder II mounts a 7.5cm anti-tank gun on the hull top of the Panzer II, an open topped superstructure is provided to protect the crew from the front and sides. It proved to be successful and was widely used particularly on the Eastern front. Due to a shortage of materials many were built using captured Soviet 76.2mm anti-tank guns which the Germans designated 7.62cm PAK36(r). A machinegun is provided for the Commander on the superstructure top. There was a Marder I built using the chassis of the French Lorraine tractor and armed with the 7.5cm Pak 40 but it was not very successful and the few built were used for training and anti-partisan duties in France.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 10.8 tons **Load:** 200kg **Crew:** 4 **Maint:** 5
**Armament:** 7.5cm Pak 40, MG-42 (C)
**Ammo:** 37x 7.5cm, 600x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 210 liters | **Fuel Cons:** 220 | **Susp:** Track:2 | Hull | 7 | 4 | 3 |
| | | | Superstructure | 3 | 3 | 0 |

| **7.5cm Pak 40** | **ROF:** SS | **Magazine:** Rld 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 380 | 17 | 27/ 23/ 21/ 10 |
| AP | 380 | 17 | 21 / 18 / 16/ 8 |
| HEAT | 285 | C:5 B:10 | 23C |
| HE | 285 | C:7 B:19 | 0C |
| CHEM | 285 | C:2 B:7 | Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **MG-42** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

---

# Panzerjager II 7.62cm PAK36(r) Marder II

This is the Marder II armed with a modified Soviet 76.2mm anti-tank gun. Large numbers of these guns were captured by Germany, they were modified to accept ammuntion using components from the German 7.5cm round, this was done to ease the supply difficulties generally encountered when using captured equipment. These modified guns proved to be superior to both the German PAK40 and the Soviet M1936 gun it was developed from. The vehicle is otherwise identical to the version armed with the 7.5cm gun.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 10.8 tons **Load:** 200kg **Crew:** 4 **Maint:** 5
**Armament:** 7.5cm PAK40, MG-42 (C)
**Ammo:** 30x 7.5cm, 600x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 210 liters | **Fuel Cons:** 220 | **Susp:** Track:2 | Hull | 7 | 4 | 3 |
| | | | Superstructure | 3 | 3 | 0 |

| **76.2mm PAK36 (r)** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 415 | 17 | 34 / 30 / 25 / 13 |
| AP | 415 | 17 | 26 / 23 / 19 / 10 |
| HEAT | 310 | C:5 B:10 | 23C |
| HE | 310 | C:7 B:19 | 0C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **MG-42** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

# Panzerjager III/IV Nashorn (Hornisse)

The Panzerjager III/IV is a self propelled anti-tank gun based on a chassis combining features from both the Panzer III and IV. It was originally designated Hornisse (hornet) but this designation was changed to Nashorn (rhinoceros) a short time into the production run. The 8.8cm gun is mounted on the hull top and the crew is protected by an open topped superstructure. A machine gun is provided for the Commander on the top of the superstructure. The Nashorn was generally used at long range as its high silhouette made it difficult to conceal and its light armor gave little protection from anything heavier than small arms.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 24.5 tons **Load:** 300kg **Crew:** 5 **Maint:** 8
**Armament:** 8.8cm PAK43, MG-42 (C)
**Ammo:** 48x 8.8cm, 600x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 485 liters | **Fuel Cons:** 220 | **Susp:** Track:4 | Hull | 6 | 6 | 4 |
| | | | Superstructure | 3 | 2 | 2 |

| **8.8cm KwK 43** | **ROF:** SS | **Magazine:** Rld 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 500 | 19 | 53 / 47 / 40 / 21 |
| AP | 500 | 19 | 41 / 36 / 31 / 16 |
| HEAT | 375 | C:7 B:11 | 28C |
| HE | 375 | C:10 B:22 | 2C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **MG-42** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

# Panzerjager 38(t) 7.5cm PAK40 Marder III

The Marder III is similar to the Marder II but is based on the chassis of the Panzer 38(t), like the Marder II it was available armed with the German 7.5cm PAK40 or a captured Soviet 76.2mm gun.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 10.5 tons **Load:** 200kg **Crew:** 4 **Maint:** 5
**Armament:** 7.5cm Pak 40, MG-42 (C)
**Ammo:** 27x 7.5cm, 600x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 190 liters | **Fuel Cons:** 170 | **Susp:** Track:2 | Hull | 10 | 4 | 4 |
| | | | Superstructure | 3 | 3 | 0 |

| **7.5cm Pak 40** | **ROF:** SS | **Magazine:** Rld 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 380 | 17 | 27/ 23/ 21/ 10 |
| AP | 380 | 17 | 21 / 18 / 16/ 8 |
| HEAT | 285 | C:5 B:10 | 23C |
| HE | 285 | C:7 B:19 | 0C |
| CHEM | 285 | C:2 B:7 | Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **MG-42** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

# Panzerjager 38(t) 7.62cm PAK36(r) Marder III

This is the Marder III armed with a modified Soviet anti-tankgun. It is otherwise identical to the Marder III armed with the 7.5cm gun.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 10.5 tons **Load:** 200kg **Crew:** 4 **Maint:** 5
**Armament:** 7.5cm PAK40, MG-42 (C)
**Ammo:** 27x 7.5cm, 600x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 190 liters | **Fuel Cons:** 170 | **Susp:** Track:2 | Hull | 10 | 4 | 4 |
| | | | Superstructure | 3 | 3 | 0 |

| 76.2mm PAK36 (r) | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 415 | 17 | 34 / 30 / 25 / 13 |
| AP | 415 | 17 | 26 / 23 / 19 / 10 |
| HEAT | 310 | C:5 B:10 | 23C |
| HE | 310 | C:7 B:19 | 0C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **MG-42** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

# SdKfz 234/3

This is the SdKfz 234 with the turret replaced by an open topped superstructure. A short barreled 7.5cm gun is mounted with a limited traverse to the front. The Sdkfz 234/3 was intended to provide a highly mobile fire support vehicle.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 8.9 tons **Load:** 100kg **Crew:** 4 **Maint:** 4
**Armament:** 7.5cm KwK
**Ammo:** 55x 7.5cm
**Night Vision:** headlights **Radiological:** open **NBC system:** no
**Introduced:** 1943 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 175 / 90 | **Com Mov:** 40 / 20 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 1490 liters | **Fuel Cons:** 520 | **Susp:** Wheel:(3) | Hull | 8 Sp | 3 | 2 |

| 7.5cm KwK | ROF: SS | Magazine: Rld 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 260 | 17 | 12 / 10 / 9 / 5 |

| | | | |
|---|---|---|---|
| HEAT | 195 | C:5 B:10 | 23C |
| HE | 195 | C:7 B:19 | 0C |
| CHEM | 195 | C:2 B:7 | Nil |
| APERS | 100 | Spcl | 1-Nil |

## SdKfz 234/4

The SdKfz 234/4 is similar to the 234/3 but it replaces the 7.5cm L/24 gun with the longer barreled 7.5cm KwK40 L/43 gun. It was intended to provide a fast mobile tank destroyer.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 8.9 tons **Load:** 100kg **Crew:** 4 **Maint:** 4
**Armament:** 7.5cm KwK 40 L/43
**Ammo:** 55x 7.5cm
**Night Vision:** headlights **Radiological:** open **NBC system:** no
**Introduced:** 1943 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 175 / 90 | **Com Mov:** 40 / 20 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 1490 liters | **Fuel Cons:** 520 | **Susp:** Wheel:(3) | Hull | 8 Sp | 3 | 2 |

| **7.5cm KwK 40 L/43** | **ROF:** SS | **Magazine:** Rld 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 355 | 17 | 23 / 21 / 18 / 9 |
| AP | 355 | 17 | 18 / 16 / 14 / 7 |
| HEAT | 265 | C:5 B:10 | 23C |
| HE | 265 | C:7 B:19 | 0C |
| CHEM | 265 | C:2 B:7 | Nil |

# SdKfz 250/7

This is a mortar carrier version of the SdKfz 250. The SdKfz was larger than what was needed for use as a mortar carrier so when the smaller SdKfz 250 became available this version became more common, later in the war the option was most often decided by which chassis was available. The mortar is mounted facing the rear and was generally removed and fired from the ground, it could be used in the vehicle but the firing arc was severely limited. A machine gun is provided mounted on the rear wall of the passenger compartment.

**Fire control:** None **Stabilization:** None **Fuel:** Gasoline **Weight:** 4.8 tons **Load:** 1000kg **Crew:** 6 **Maint:** 3
**Armament:** 8cm S.Gr.W.34, MG-34 (L)
**Ammo:** 65x 8cm, 1000x 7.92mm
**Night Vision:** headlights **Radiological:** open **NBC system:** no
**Introduced:** 1939 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 130 / 70 | **Com Mov:** 30 / 15 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 150 liters | **Fuel Cons:** 120 | **Susp:** Track:1 | Hull | 3 | 2 | 2 |

| **8cm S. Gr. W.34** | **ROF:** SS | **Magazine:** Rld 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| HE | 2.4km | C:8 B:28 | -4C |
| CHEM | 2.4km | C:2 B:12 | Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |
| **MG-42** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

# SdKfz 250/8

This is a fire support vehicle based on the chassis of the SdKfz 250. It mounts a 7.5cm infantry gun in a limited traverse mount, a gun shield (AV:3) is provided to protect the crew.

**Fire control:** None **Stabilization:** None **Fuel:** Gasoline **Weight:** 5.2 tons **Load:** 600kg **Crew:** 3 **Maint:** 3
**Armament:** 7.5cm le IG18
**Ammo:** 20x 7.5cm
**Night Vision:** headlights **Radiological:** open **NBC system:** no
**Introduced:** 1940 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 130 / 70 | **Com Mov:** 30 / 15 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 150 liters | **Fuel Cons:** 120 | **Susp:** Track:1 | Hull | 3 | 2 | 2 |

| **7.5cm le IG18** | **ROF:** SS | **Magazine:** Rld 1 | **IFR:** 3.5km |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HEAT | 150 | C:5 B:10 | 23C |
| HE | 150 | C:7 B:19 | 0C |

---

# SdKfz 250/10

This is a fire support vehicle based on the chassis of the SdKfz 250. It mounts a 2cm gun in a limited traverse mount, a gun shield (AV:3) is provided to protect the crew. A machine gun is provided on the rear wall of the passenger compartment.

**Fire control:** None **Stabilization:** None **Fuel:** Gasoline **Weight:** 5.0 tons **Load:** 800kg **Crew:** 3 **Maint:** 3
**Armament:** 2cm KwK38, MG-34
**Ammo:** 4200x 2cm, 2000x 7.92mm
**Night Vision:** headlights **Radiological:** open **NBC system:** no
**Introduced:** 1940 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 130 / 70 | **Com Mov:** 30 / 15 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 150 liters | **Fuel Cons:** 120 | **Susp:** Track:1 | Hull | 3 | 2 | 2 |

| 2cm KwK 38 | ROF: 5 | Magazine: Strip 10 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 360 | 4 | 3 / 2 / 2 / 1 |
| AP | 360 | 4 | 2 / 2 / 1 / 1 |
| HE | 270 | C:1 B:4 | -8C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |
| **MG-42** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

# SdKfz 251/2

This is a mortar carrier version of the SdKfz 251. It carries an 8cm mortar and crew, the mortar faces the rear. It may be fired from within the vehicle but the normal practice is to remove the mortar and fire it from the ground as it has a very limited arc of fire in the vehicle. A machine gun is provided on a mount at the rear of the crew compartment.

**Fire control:** None **Stabilization:** None **Fuel:** Gasoline **Weight:** 8.2 tons **Load:** 3000kg **Crew:** 8 **Maint:** 4
**Armament:** 8cm S.Gr.W.34, MG-34 (L)
**Ammo:** 65x 8cm, 1000x 7.92mm
**Night Vision:** headlights **Radiological:** open **NBC system:** no
**Introduced:** 1938 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 115 / 65 | **Com Mov:** 25 / 15 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 185 liters | **Fuel Cons:** 140 | **Susp:** Track:1 | Hull | 3 | 2 | 2 |

| 8cm S. Gr. W.34 | ROF: SS | Magazine: Rld 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| HE | 2.4km | C:8 B:28 | -4C |
| CHEM | 2.4km | C:2 B:12 | Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |
| **MG-42** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

# SdKfz 251/9

This is a fire support version of the SdKfz 251, it mounts the short barreled 7.5cm gun used in the early Panzer IV. The gun faces forward and has a limited traverse. A gun shield is included (AV:3) to protect the crew and a machine gun is provided on the rear wall of the passenger compartment.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 9.3 tons **Load:** 1900kg **Crew:** 3 **Maint:** 5
**Armament:** 7.5cm KwK, MG-34 (L)
**Ammo:** 52x 7.5cm, 2000x 7.92mm
**Night Vision:** headlights **Radiological:** open **NBC system:** no
**Introduced:** 1940 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 115 / 65 | **Com Mov:** 25 / 15 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 185 liters | **Fuel Cons:** 140 | **Susp:** Track:1 | Hull | 3 | 2 | 2 |

| 7.5cm KwK | ROF: SS | Magazine: Rld 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 260 | 17 | 12 / 10 / 9 / 5 |
| HEAT | 195 | C:5 B:10 | 23C |
| HE | 195 | C:7 B:19 | 0C |
| CHEM | 195 | C:2 B:7 | Nil |
| APERS | 100 | Spcl | 1-Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |
| **MG-42** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

## SdKfz 251/10

This is a self propelled anti-tank gun based on the SdKfz 251. It mounts the 3.7cm Pak 36 with a limited traverse to the front. A gun shield is included (AV:3) to protect the crew and a machine gun is provided on the rear wall of the passenger compartment.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 9.0 tons **Load:** 2200kg **Crew:** 6 **Maint:** 5
**Armament:** 3.7cm Pak 36, MG-34 (L)
**Ammo:** 168x 3.7cm, 2000x 7.92mm
**Night Vision:** headlights **Radiological:** open **NBC system:** no
**Introduced:** 1940 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 115 / 65 | **Com Mov:** 25 / 15 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 185 liters | **Fuel Cons:** 140 | **Susp:** Track:1 | Hull | 3 | 2 | 2 |

| 3.7cm Pak 36 | ROF: SS | Magazine: Rld 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 350 | 8 | 7 / 6 / 5 / 3 |
| AP | 350 | 8 | 5 / 5 / 4 / 2 |
| HEAT | 175 | C:19 B:37 | 53C |
| HE | 260 | C:2 B:9 | -6C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |
| **MG-42** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

# SdKfz 251/16

This is a flamethrower vehicle based on the SdKfz 251. The Commanders machine gun is retained and is provided with gun shield (AV:2). A flamethrower is mounted on each side and each is provided with a gun shield (AV:2).

**Fire control:** None **Stabilization:** None **Fuel:** Gasoline **Weight:** 9.6 tons **Load:** 1600kg **Crew:** 8 **Maint:** 4
**Armament:** MG-34 (C), 2x flamethrower
**Ammo:** 8000x 7.92mm, 160 seconds of flamethrower fuel
**Night Vision:** headlights **Radiological:** open **NBC system:** no
**Introduced:** 1943 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 115 / 65 | **Com Mov:** 25 / 15 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 185 liters | **Fuel Cons:** 140 | **Susp:** Track:1 | Hull | 3 | 2 | 2 |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **Flamethrower** | AL | Spcl | Nil | 80 | SS 1 | 5 |
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |
| **MG-42** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

# SdKfz 251/22

This is another self propelled anti-tank gun based on the SdKfz 251. It mounts the 7.5cm PAK 40 in a limited traverse mount facing the front. A gun shield (AV:3) is included to protect the crew, a machine gun is provided on the rear wall of the passenger compartment.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 9.3 tons **Load:** 1900kg **Crew:** 5 **Maint:** 5
**Armament:** 7.5cm PAK40, MG-34 (L)
**Ammo:** 22x 7.5cm, 1000x 7.92mm
**Night Vision:** headlights **Radiological:** open **NBC system:** no
**Introduced:** 1943 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 115 / 65 | **Com Mov:** 25 / 15 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 185 liters | **Fuel Cons:** 140 | **Susp:** Track:1 | Hull | 3 | 2 | 2 |

| **7.5cm Pak 40** | **ROF:** SS | **Magazine:** Rld 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 380 | 17 | 27/ 23/ 21/ 10 |
| AP | 380 | 17 | 21 / 18 / 16/ 8 |
| HEAT | 285 | C:5 B:10 | 23C |
| HE | 285 | C:7 B:19 | 0C |
| CHEM | 285 | C:2 B:7 | Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |
| **MG-42** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

## StuG III Ausf B

The Sturmgeshutz (storm gun) is an assault gun based on the chassis of the Panzer III medium tank. It was intended to provide mobile fire support to infantry and armored units. The gun is mounted in the hull front and has a limited traverse. There is a machine gun on the hull top operated by the Commander, it is provided with a gun shield (AV:2).

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 21.8 tons **Load:** 300kg **Crew:** 4 **Maint:** 8
**Armament:** 7.5cm KwK, MG-42 (C)
**Ammo:** 44x 7.5cm, 600x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1939 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 395 liters | **Fuel Cons:** 400 | **Susp:** Track:4 | Hull | 24 | 6 | 10 |

| **7.5cm KwK** | **ROF:** SS | **Magazine:** Rld 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 260 | 17 | 12 / 10 / 9 / 5 |
| HEAT | 195 | C:5 B:10 | 23C |
| HE | 195 | C:7 B:19 | 0C |
| CHEM | 195 | C:2 B:7 | Nil |
| APERS | 100 | Spcl | 1-Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **MG-42** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

## StuG III Ausf F

This is an improved version of the Sturmgeshutz, it replaces the short barreled 7.5cm gun with the long barreled gun used in late versions of the Panzer IV. Fighting on the East front during 1941 revealed the superiority of the Soviet KV-1 and T-34 over the current German medium tanks. One of the results of this realization was to arm the Sturmgeshutz with a more powerful gun allowing it to perform anti-armor duties in addition to its original role of assault gun. With the new gun the Sturmgeshutz became an exteremely versitile weapon and as the war progressed it was increasingly used to replace tanks destroyed in combat. While it was a very capable vehicle it was not a tank and the limited traverse of the gun became a severe tactical liability.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 21.9 tons **Load:** 300kg **Crew:** 4 **Maint:** 8
**Armament:** 7.5cm KwK 40 L/48, MG-42 (C)
**Ammo:** 44x 7.5cm, 600x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1941 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 395 liters | **Fuel Cons:** 400 | **Susp:** Track:4 | Hull | 24 | 6 | 10 |

| **7.5cm KwK 40 L/48** | **ROF:** SS | **Magazine:** Rld 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 380 | 17 | 27/ 23/ 21/ 10 |
| AP | 380 | 17 | 21 / 18 / 16/ 8 |
| HEAT | 285 | C:5 B:10 | 23C |
| HE | 285 | C:7 B:19 | 0C |
| CHEM | 285 | C:2 B:7 | Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **MG-42** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

# StuG III Ausf G

This is the final version of the Sturmgeshutz, like the Ausf F it uses a long barreled 7.5cm gun. The fighting compartment is slightly larger allowing more room for ammunition storage and armored shields have been added to the sides and front in an attempt to provide improved protection from hollow charge anti-tank weapons. In 1943 a 9.2cm close defense weapon was added.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 23.6 tons **Load:** 300kg **Crew:** 4 **Maint:** 8
**Armament:** 7.5cm KwK 40 L/48, MG-42 (C), 9.2cm mortar
**Ammo:** 54x 7.5cm, 600x 7.92mm, 20x 9.2cm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 395 liters | **Fuel Cons:** 400 | **Susp:** Track:4 | Hull | 27 Sp | 8 Sp | 10 |

| **7.5cm KwK 40 L/48** | **ROF:** SS | **Magazine:** Rld 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 380 | 17 | 27/ 23/ 21/ 10 |
| AP | 380 | 17 | 21 / 18 / 16/ 8 |
| HEAT | 285 | C:5 B:10 | 23C |
| HE | 285 | C:7 B:19 | 0C |
| CHEM | 285 | C:2 B:7 | Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **MG-42** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

| **9.2cm Mortar** | **ROF:** SS | **Magazine:** Rld 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| HE | 200m | C:11 B:33 | 3C |
| Smoke | 200m | C:2 B:11 | Nil |

# StuH 42

The Sturmhaubitze 42 (storm howitzer) is based on the Sturmgeshutz III Ausf G. The two vehicles are very similar with the exception of the main gun. The Sturmhaubitze 42 replaces the 7.5cm gun of the Sturmgeshutz with a 10.5cm howitzer. The howitzer is a modified 10.5cm le FH 18, due to the shorter barrel and the limited elevation permitted by the mount, indirect fire is considerably reduced in range. A 9.2cm close defense weapon was added in 1943.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 23.6 tons **Load:** 300kg **Crew:** 4 **Maint:** 8
**Armament:** 10.5cm StuH42, MG-42 (C), 9.2cm mortar
**Ammo:** 40x 10.5cm, 600x 7.92mm, 20x 9.2cm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 395 liters | **Fuel Cons:** 400 | **Susp:** Track:4 | Hull | 27 Sp | 8 Sp | 10 |

| **10.5cm StuH 42** | **ROF:** SS | **Magazine:** Rld 1 | **IFR:** 6.1km |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HEAT | 220 | C:9 B:13 | 35C |
| HE | 220 | C:14 B:26 | 5C |
| CHEM | 220 | C:3 B:14 | Nil |
| ILLUM | N/A | B:1000 | Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **MG-42** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

| **9.2cm Mortar** | **ROF:** SS | **Magazine:** Rld 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| HE | 200m | C:11 B:33 | 3C |
| Smoke | 200m | C:2 B:11 | Nil |

## StuH 43 Brummbar

The Brummbar (grizzly bear) is an assault gun based on the chassis of the Panzer IV medium tank. It is similar in appearance to the Sturmgeshutz and mounts a modified sIG 33 15cm infantry gun in the hull front. A machine gun is provided on the hull top operated by the Commander, a second machine gun in a ball mount is located in the hull front operated by one of the Loaders. Early production models did not include a hull machine gun but combat experience soon proved that the Brummbar was vulnerable to infantry attacks during the close quarter urban fighting it was designed for and the second machine gun was added.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 27.6 tons **Load:** 300kg **Crew:** 5 **Maint:** 9
**Armament:** 15cm StuH43, MG-34 hull, MG-42 (C)
**Ammo:** 38x 15cm, 2500x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 485 liters | **Fuel Cons:** 400 | **Susp:** Track:5 | Hull | 29 Sp | 15 Sp | 6 |

| **15cm StuH43** | **ROF:** SS | **Magazine:** Rld 2 | **IFR:** 4.7km |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HEAT | 175 | C:19 B:19 | 53C |
| HE | 175 | C:28 B:37 | 12C |
| CHEM | 175 | C:3 B:28 | Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |
| **MG-42** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

## Sturmmorser Tiger

The Sturmmorser Tiger is an assault gun based on the chassis of the Tiger tank. It has a rough similarity to the Sturmgeshutz having an armored superstructure in place of a turret. A 38cm rocket launcher is mounted in the hull front, this weapon is actually a modified naval depth charge launcher. Each round weighs 345kg and only 14 are carried in the vehicle. A roof mounted crane is provided to help handle the ammunition. The Sturmmorser Tiger was designed for urban combat support, the explosive charge of one round was generally sufficient to demolish an entire building and there was one report of a Sturmmorser Tiger destroying three M4 Sherman tanks with a single round. It is believed that no more than 20 of these vehicles were completed before the war ended. A machine gun in a ball mount is provided in the hull front operated by one of the Loaders.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 65 tons **Load:** 600kg **Crew:** 5 **Maint:** 18
**Armament:** 38cm Raketenwerfer 61, MG-34 hull
**Ammo:** 14x 38cm, 2500x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1944 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 75 / 50 | **Com Mov:** 15 / 10 | **Config:** Stnd | **Armor** | Front | Side | Rear |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Fuel Cap:** 570 liters | **Fuels Cons:** 830 | **Susp:** Track:6 | Hull | 45 | 24 | 16 |

| **38cm RW61** | **ROF:** SS | **Magazine:** Rld 2 | **IFR:** 4.7km |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HE | 80 | C:180 B:94 | 46C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

# SELF PROPELLED ARTILLERY

## Hummel

The Hummel (Bumble bee) is a self propelled 15cm howitzer based on a hybrid chassis combing features from the Panzer III and IV. The gun and crew are located in an open topped superstructure at the rear of the vehicle. A single machine gun operated by one of the Loaders is provided on the top of this superstructure for local defence from aircraft and infantry.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 22.9 tons **Load:** 300kg **Crew:** 6 **Maint:** 8
**Armament:** 15cm sFH 18, MG-42 (L)
**Ammo:** 18x 15cm, 600x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 485 liters | **Fuel Cons:** 220 | **Susp:** Track:4 | Hull | 6 | 6 | 4 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | Superstructure | 3 | 2 | 2 |

| 15cm sFH18 | ROF: SS | Magazine: Rld 2 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 325 | 33 | 53 / 47 / 40 / 21 |
| HE | 245 | C:28 B:37 | 12C |
| CHEM | 245 | C:3 B:28 | Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **MG-42** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

---

# Wespe

The Wespe (wasp) is a self propelled howitzer based on the Panzer II chassis. The gun and crew are located in an open topped superstructure at the rear of the vehicle. A machine gun is provided on the top of the superstructure operated by one of the Loaders.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 11.2 tons **Load:** 200kg **Crew:** 5 **Maint:** 5
**Armament:** 10.5cm le FH18, MG-42 (L)
**Ammo:** 40x 10.5cm, 600x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** Germany

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 210 liters | **Fuel Cons:** 180 | **Susp:** Track:2 | Hull | 7 | 4 | 3 |
| | | | Superstructure | 3 | 2 | 2 |

| 10.5cm le FH18 | ROF: SS | Magazine: Rld 1 | IFR: 12.3km |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HEAT | 220 | C:9 B:13 | 35C |
| HE | 220 | C:14 B:26 | 5C |
| CHEM | 220 | C:3 B:14 | Nil |
| ILLUM | N/A | B:1000 | Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **MG-42** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

# ANTI-AIRCRAFT VEHICLES

## Flakpanzer IV Ostwind

The Ostwind (Eastwind) is an anti-aircraft tank based on the chassis of the PzKpfw IV armed with a 3.7cm gun mounted in an open topped turret.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 19.7 tons **Load:** 300kg **Crew:** 5 **Maint:** 6
**Armament:** 3.7cm Flak 43 gun, MG-34 hull
**Ammo:** 1200x 3.7cm, 1350x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** Germany

| **TrMOV:** 90 / 60 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
|---|---|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| **Fuel Cap:** 485 liters | **Fuel Cons:** 220 | **Susp:** Track:4 | Turret | 5 | 5 | 5 |
| | | | Hull | 6 | 6 | 4 |

| **3.7cm Flak 43** | **ROF:** 3 | **Magazine:** Strip 8 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 565 | 8 | 7 / 6 / 5 / 3 |
| HE | 425 | C:2 B:9 | -6C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

---

# Flakpanzer IV Wirbelwind

The Wirbelwind (Whirlwind) is an anti-aircraft tank based on the chassis of the PzKpfw IV armed with four 2cm guns mounted in an open topped turret.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 19.7 tons **Load:** 300kg **Crew:** 5 **Maint:** 6
**Armament:** 4x 2cm Flak 38 guns, MG-34 hull
**Ammo:** 3200x 2cm, 1350x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 90 / 60 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 485 liters | **Fuel Cons:** 220 | **Susp:** Track:4 | Turret | 5 | 5 | 5 |
| | | | Hull | 6 | 6 | 4 |

| 2cm Flak 38 | ROF: 5 | Magazine: Strip 20 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 360 | 4 | 3 / 2 / 2 / 1 |
| AP | 360 | 4 | 2 / 2 / 1 / 1 |
| HE | 270 | C:1 B:4 | -8C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

# Flakpanzer 38(t)

This was the first of the Flakpanzers (anti aircraft tanks). It is based on the chassis of the PzKpfw 38(t) light tank and is armed with a single 2cm Flak 38 gun in an open mount on the hull top. A folding platform provides some protection to the gun and crew during travel but the gun is limited to the forward arc until the platform is lowered, once lowered the gun has a full 360' arc but the crew is exposed. Due to the blocky appearance when this platform is raised for travel the vehicle was commonly known as the mobilwagen (moving van).

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 8.5 tons **Load:** 200kg **Crew:** 4 **Maint:** 4
**Armament:** 2cm Flak 38 gun, MG-34 hull
**Ammo:** 800x 2cm, 1350x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 225liters | **Fuels Cons:** 250 | **Susp:** Track:2 | Hull | 6 | 4 | 4 |
| | | | Platform (folded) | 2 | 2 | 2 |

| 2cm KwK 38 | ROF: 5 | Magazine: Strip 10 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 360 | 4 | 3 / 2 / 2 / 1 |
| AP | 360 | 4 | 2 / 2 / 1 / 1 |
| HE | 270 | C:1 B:4 | -8C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

# SdKfz 251/17

This is a self propelled anti-aircraft gun based on the SdKfz 251. The 2cm gun is mounted in an open turret, a gun shield (AV:2) is provided to protect the Gunner.

**Fire control:** None **Stabilization:** None **Fuel:** Gasoline **Weight:** 10.5 tons **Load:** 700kg **Crew:** 5 **Maint:** 5
**Armament:** 2cm Flak 38
**Ammo:** 600x 2cm
**Night Vision:** headlights **Radiological:** open **NBC system:** no
**Introduced:** 1944 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 115 / 65 | **Com Mov:** 25 / 15 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 185 liters | **Fuel Cons:** 140 | **Susp:** Track:1 | Hull | 3 | 2 | 2 |

| 2cm KwK 38 | ROF: 5 | Magazine: Strip 10 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 360 | 4 | 3 / 2 / 2 / 1 |
| AP | 360 | 4 | 2 / 2 / 1 / 1 |
| HE | 270 | C:1 B:4 | -8C |

## SdKfz 251/21

This is a self propelled anti-aircraft gun based on the SdKfz 251, it was commonly known as the Flakdrilling. The three guns are mounted in an open turret, a gun shield (AV:2) is provided to protect the Gunner. The SdKfz 251/22 uses 15mm or 20mm aircraft guns which were being replaced by the Luftwaffe, due to this some were built using the MG151/15 15mm machinegun while others used the MG151/20 20mm cannon, the guns were not mixed on the same vehicle. The ammunition is fed from a drum to each gun, the center gun has a 500 round drum while each of the side guns use a 250 round drum. A machine gun is provided on the rear wall of the passenger compartment.

**Fire control:** None **Stabilization:** None **Fuel:** Gasoline **Weight:** 10.5 tons **Load:** 700kg **Crew:** 4 **Maint:** 5
**Armament:** 3x MG151/15 or MG151/20, MG-42 (L)
**Ammo:** 1000x 15mm or 20mm, 600x 7.92mm
**Night Vision:** headlights **Radiological:** open **NBC system:** no
**Introduced:** 1944 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 115 / 65 | **Com Mov:** 25 / 15 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 185 liters | **Fuel Cons:** 140 | **Susp:** Track:1 | Hull | 3 | 2 | 2 |

| **20mm MG151/20** | **ROF:** 10 | **Magazine:** Belt 100 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 280 | 4 | 2 / 1 / 1 / 0 |
| HE | 210 | C:1 B:4 | -8C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **MG151/15** | 5 | 8 | 2-2-3 | Belt 50 | SS 2 Brst 7 | 150 |
| **MG-42** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

# ENGINEER VEHICLES

# SdKfz 179 Bergepanzer Panther

The Bergepanzer is an armored recovery vehicle based on the Panther tank. The turret is replaced with an open superstructure, a 60 ton winch, 3 ton crane, a rear mounted plow and lockers for tools are added. The use of the plow allows the Bergepanzer to pull vehicle heavier than itself. A 2cm cannon is mounted at the front of the open crew compartment and is capable of being used against ground or air targets, the hull machine gun is also retained providing additional protection against ground targets.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 45.5 tons **Load:** 500kg **Crew:** 5 **Maint:** 12
**Armament:** 2cm Flak 38, MG-34 hull
**Ammo:** 200x 2cm, 1200x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1944 **In service:** Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 90 / 60 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 730liters | **Fuels Cons:** 660 | **Susp:** Track:6 | Turret | 4 | 4 | 4 |
| | | | Hull | 32 | 12 Sp | 10 |

| **2cm KwK 38** | **ROF:** 5 | **Magazine:** Strip 20 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 360 | 4 | 3 / 2 / 2 / 1 |
| AP | 360 | 4 | 2 / 2 / 1 / 1 |
| HE | 270 | C:1 B:4 | -8C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **MG-34** | 10 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 3 | 125 |

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# UNITED KINGDOM

# LIGHT TANKS

## A17 Tetrarch

The Tetrarch was designed as a small airmobile light tank. Although available in 1940 it did not get much use until 1944. A glider was developed around the dimensions of this tank to allow its use in the D-day landings. The Tetrarch remained in service with airborne forces until the wars end.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 7.6 tons **Load:** 100kg **Crew:** 3 **Maint:** 4
**Armament:** 2 pounder gun, Besa Mk 2 coaxial
**Ammo:** 50x 2 pounder, 2025x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1940 **In service:** UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 130 / 85 | **Com Mov:** 30 / 20 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 205 liters | **Fuels Cons:** 240 | **Susp:** Track:1 | Turret | 4 | 3 | 3 |
| | | | Hull | 4 | 3 | 2 |

| **2 Pounder** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 380 | 9 | 8 / 7 / 6 / 3 |
| AP | 380 | 9 | 6 / 5 / 4 / 2 |
| HE | 285 | C:2 B:10 | -5C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **Besa Mk 2** | 5 | 4 | 2-3-Nil | Belt 225 | SS 1 Brst 3 | 125 |

## Vickers Mk VI

The Mk VI was the standard British light tank in service at the start of World war 2. At the start of the war this tank formed the bulk of British armored units, due to this it was used for roles it was completely unsuited for and suffered heavy losses. Once the heavier "infantry" and "cruiser" tanks became available in sufficient numbers the Mk VI was used primarily for reconnaisance, a role it was much more capable of performing. It remained in service into 1942 when it was replaced by the American M3 Stuart.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 4.9 tons **Load:** 100kg **Crew:** 3 **Maint:** 3
**Armament:** Vickers Mk 5, Vickers Mk 1 coaxial
**Ammo:** 400x .50 Vickers, 2500x .303
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1936 **In service:** UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 115 / 75 | **Com Mov:** 25 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 150 liters | **Fuel Cons:** 160 | **Susp:** Track:1 | Turret | 3 | 3 | 3 |
| | | | Hull | 5 | 3 | 3 |

| | Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|---|
| | **Mk 5** | 5 | 7 | 2-3-4 | Belt 100 | SS 2 Brst 6 | 150 |

| | Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|---|
| | **Mk 1** | 5 | 4 | 2-3-Nil | Belt 250 | SS 1 Brst 3 | 125 |

## Vickers 6 Ton

The Vickers 6 ton was popular with several foriegn countries but was never ordered by the British army. With the outbreak of war the British found themselves short of tanks and many of the 6 tons in production for other countries were impressed into British service. This tank also formed the basis for several foriegn designs including the Polish 7TP and the Soviet T-26.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 7.1 tons **Load:** 100kg **Crew:** 3 **Maint:** 4
**Armament:** 3 pounder gun, Vickers Mk 1 coaxial
**Ammo:** 50x 3 pounder, 4000x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1929 **In service:** UK, Bolivia, China, Finland, Greece, Poland, Portugal, Thailand, USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 130 / 85 | **Com Mov:** 30 / 20 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 205 liters | **Fuels Cons:** 240 | **Susp:** Track:1 | Turret | 4 | 3 | 3 |
| | | | Hull | 4 | 3 | 2 |

| 3 Pounder | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 280 | 10 | 6 / 5 / 4 / 2 |
| HE | 210 | C:3 B:12 | -4C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **Mk 1** | 5 | 4 | 2-3-Nil | Belt 250 | SS 1 Brst 3 | 125 |

# CRUISER TANKS

## A13 Cruiser Mk III

During World war 2 the British divided thier medium tanks into "cruiser" tanks, fast lightly armored tanks designed for destroying enemy armor and "infantry" tanks, slower tanks with heavier armor designed for supporting the infantry. This is an early "cruiser" tank in service with the British at the start of World war 2.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 14.4 tons **Load:** 200kg **Crew:** 4 **Maint:** 6
**Armament:** 2 pounder gun, Vickers Mk 1 coaxial
**Ammo:** 110x 2 pounder, 3000x .303
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1938 **In service:** UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 100 / 65 | **Com Mov:** 25 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 290 liters | **Fuels Cons:** 350 | **Susp:** Track:2 | Turret | 3 | 3 | 3 |
| | | | Hull | 3 | 3 | 2 |

| 2 Pounder | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 380 | 9 | 8 / 7 / 6 / 3 |
| AP | 380 | 9 | 6 / 5 / 4 / 2 |
| HE | 285 | C:2 B:10 | -5C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **Mk 1** | 5 | 4 | 2-3-Nil | Belt 250 | SS 1 Brst 3 | 125 |

# A13 Cruiser Mk IV

This is the Cruiser tank Mk III with heavier armor. This tank along with the Mk III was used extensively in France and North Africa until 1941 when better tanks became available.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 17.5 tons **Load:** 200kg **Crew:** 4 **Maint:** 6
**Armament:** 2 pounder gun, Vickers Mk 1 coaxial
**Ammo:** 110x 2 pounder, 3000x .303
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1939 **In service:** UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 100 / 65 | **Com Mov:** 25 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 290 liters | **Fuels Cons:** 350 | **Susp:** Track:2 | Turret | 6 | 4 | 3 |
| | | | Hull | 6 | 4 | 3 |

| 2 Pounder | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 380 | 9 | 8 / 7 / 6 / 3 |
| AP | 380 | 9 | 6 / 5 / 4 / 2 |
| HE | 285 | C:2 B:10 | -5C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **Mk 1** | 5 | 4 | 2-3-Nil | Belt 250 | SS 1 Brst 3 | 125 |

# A15 Crusader I

The Crusader was designed as a heavy "cruiser" tank designed to fall between the "cruiser" tank and "infantry" tank concepts. The experience gained from the Cruiser Mk III and IV was used in the development of the Crusader. There is a small turret on the hull front for the forward machinegun, a 2" mortar is mounted in the roof which may be fired and reloaded from inside the turret and external fuel tanks may be added for extended range. The Crusader was one of the most important British tanks of the 1941-42 period. By 1943 it was being replaced by new vehicles but the chassis remained in use for a number of combat and support vehicles until the wars end.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 19.3 tons **Load:** 200kg **Crew:** 5 **Maint:** 7
**Armament:** 2 pounder gun, Besa Mk 2 coaxial, Besa Mk 2 hull, BREN Mk 2 (C), 2" mortar
**Ammo:** 110x 2 pounder, 4500x 7.92mm, 600x .303, 26x 2"
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1940 **In service:** UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 500+140 liters | **Fuels Cons:** 350 | **Susp:** Track:3 | Turret | 8 | 6 | 6 |
| | | | Hull | 8 | 6 Sp | 6 |

| **2 Pounder** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 380 | 9 | 8 / 7 / 6 / 3 |
| AP | 380 | 9 | 6 / 5 / 4 / 2 |
| HE | 285 | C:2 B:10 | -5C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **Besa Mk 2** | 5 | 4 | 2-3-Nil | Belt 225 | SS 1 Brst 3 | 125 |
| **BREN Mk 2** | 5 | 4 | 2-3-Nil | Box 30 | SS 1 Brst 2 | 125 |

| **2" Mortar** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| CHEM | 150 | C:2 B:3 | Nil |

# A15 Crusader I CS

This is a close support version of the Crusader I, it replaces the 2 Pounder with a 3" howitzer.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 19.3 tons **Load:** 200kg **Crew:** 5 **Maint:** 7
**Armament:** 3" Howitzer, Besa Mk 2 coaxial, Besa Mk 2 hull, BREN Mk 2 (C), 2" mortar
**Ammo:** 57x 3", 4500x 7.92mm, 600x .303, 26x 2"
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1940 **In service:** UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 500+140 liters | **Fuels Cons:** 350 | **Susp:** Track:3 | Turret | 8 | 6 | 6 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | Hull | 8 | 6 Sp | 6 |

| 3" Howitzer | ROF: SS | Magazine: Rld: 1 | IFR: 2.1km |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APHE | 180 | C:1 B:2 | 14 / 12 / 10 / 5 |
| HE | 135 | C:7 B:19 | 0C |
| CHEM | 135 | C:2 B:7 | Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **Besa Mk 2** | 5 | 4 | 2-3-Nil | Belt 225 | SS 1 Brst 3 | 125 |
| **BREN Mk 2** | 5 | 4 | 2-3-Nil | Box 30 | SS 1 Brst 2 | 125 |

| 2" Mortar | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| CHEM | 150 | C:2 B:3 | Nil |

## A15 Crusader II

This is the Crusader with improved armor and the machinegun turret has been replaced with a more conventional ball mounting. The weight saved by the turrets removal equals that of the additional armor resulting in no overall weight increase or reduction of performance.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 19.3 tons **Load:** 200kg **Crew:** 5 **Maint:** 7
**Armament:** 2 pounder gun, Besa Mk 2 coaxial, Besa Mk 2 hull, BREN Mk 2 (C), 2" mortar
**Ammo:** 110x 2 pounder, 4500x 7.92mm, 600x .303, 26x 2"
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1941 **In service:** UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 500+140 liters | **Fuels Cons:** 350 | **Susp:** Track:3 | Turret | 10 | 6 | 6 |
| | | | Hull | 10 | 6 Sp | 6 |

| 2 Pounder | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 380 | 9 | 8 / 7 / 6 / 3 |
| AP | 380 | 9 | 6 / 5 / 4 / 2 |
| HE | 285 | C:2 B:10 | -5C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **Besa Mk 2** | 5 | 4 | 2-3-Nil | Belt 225 | SS 1 Brst 3 | 125 |
| **BREN Mk 2** | 5 | 4 | 2-3-Nil | Box 30 | SS 1 Brst 2 | 125 |

| 2" Mortar | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| CHEM | 150 | C:2 B:3 | Nil |

## A15 Crusader II CS

This is a close support version of the Crusader II.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 19.3 tons **Load:** 200kg **Crew:** 5 **Maint:** 7
**Armament:** 3" Howitzer, Besa Mk 2 coaxial, Besa Mk 2 hull, BREN Mk 2 (C), 2" mortar
**Ammo:** 57x 3", 4500x 7.92mm, 600x .303, 26x 2"
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1941 **In service:** UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 500+140 liters | **Fuels Cons:** 350 | **Susp:** Track:3 | Turret | 10 | 6 | 6 |
| | | | Hull | 10 | 6 Sp | 6 |

| 3" Howitzer | ROF: SS | Magazine: Rld: 1 | IFR: 2.1km |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APHE | 180 | C:1 B:2 | 14 / 12 / 10 / 5 |
| HE | 135 | C:7 B:19 | 0C |
| CHEM | 135 | C:2 B:7 | Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **Besa Mk 2** | 5 | 4 | 2-3-Nil | Belt 225 | SS 1 Brst 3 | 125 |
| **BREN Mk 2** | 5 | 4 | 2-3-Nil | Box 30 | SS 1 Brst 2 | 125 |

| 2" Mortar | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| CHEM | 150 | C:2 B:3 | Nil |

## A15 Crusader III

By 1939 it was realized that the 2 pounder was becoming obsolete but its replacement , the 6 pounder was not available until 1942. This is the Crusader with a 6 Pounder in place of the 2 Pounder. Due to the size and weight of this gun the Loader was removed from the crew leaving this task to the Commander.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 20.1 tons **Load:** 200kg **Crew:** 4 **Maint:** 8
**Armament:** 6 pounder gun, Besa Mk 2 coaxial, Besa Mk 2 hull, BREN Mk 2 (C), 2" mortar
**Ammo:** 63x 6 pounder, 4500x 7.92mm, 600x .303, 26x 2"
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 500+140 liters | **Fuels Cons:** 350 | **Susp:** Track:3 | Turret | 10 | 6 | 6 |
| | | | Hull | 10 | 6 Sp | 6 |

| **6 Pounder** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APDS | 390 | 13 | 27 / 24 / 20 / 10 |
| HVAP | 390 | 13 | 21 / 18 / 15 / 8 |
| AP | 390 | 13 | 16 / 14 / 12 / 6 |
| HE | 250 | C:6 B:7 | -2C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **Besa Mk 2** | 5 | 4 | 2-3-Nil | Belt 225 | SS 1 Brst 3 | 125 |
| **BREN Mk 2** | 5 | 4 | 2-3-Nil | Box 30 | SS 1 Brst 2 | 125 |

| **2" Mortar** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| CHEM | 150 | C:2 B:3 | Nil |

# A27L Centaur IV

The Cromwell was designed to use the new Rolls Royce meteor engine, this engine was not available when planned and as an interim measure the lower performing Liberty engine was used in the chassis. The resulting vehicle was designated Centaur, these vehicles were used primarily for training the crews of the Cromwell and many were converted to Cromwell's when the Meteor engine did become available. The Centaur IV is the only version that was used in combat being issued to the Royal marines to provide fire support during the 1944 Normandy landings. In this role it was only expected to be used for the actual landings but they performed so well in this role that they continued in use for several weeks following the invasion.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 27.9 tons **Load:** 300kg **Crew:** 5 **Maint:** 9
**Armament:** 95mm Howitzer, Besa Mk 2 coaxial, Besa Mk 2 hull, BREN Mk 2 (C), 2" mortar
**Ammo:** 51x 94mm, 4950x 7.92mm, 600x .303, 20x 2"
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 530 liters | **Fuel Cons:** 320 | **Susp:** Track:5 | Turret | 15 | 12 | 12 |
| | | | Hull | 18 | 8 | 6 |

| **95mm Howitzer** | **ROF:** SS | **Magazine:** Rld: 1 | **IFR:** 5.5km |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HEAT | 195 | C:7 B:12 | 31C |
| HE | 195 | C:11 B:24 | 3C |
| CHEM | 195 | C:2 B:11 | Nil |
| ILLUM | 195 | B:800 | Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **Besa Mk 2** | 5 | 4 | 2-3-Nil | Belt 225 | SS 1 Brst 3 | 125 |
| **BREN Mk 2** | 5 | 4 | 2-3-Nil | Box 30 | SS 1 Brst 2 | 125 |

| **2" Mortar** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| CHEM | 150 | C:2 B:3 | Nil |

---

## A27M Cromwell I

The Cromwell was first designed in 1941 but due to a lack of a suitable engine production was delayed until 1943. The Rolls Royce Meteor engine planned for the Cromwell was developed from the Merlin aircraft engine used in the Spitfire and P51 Mustang. There were several delays in the production of this engine resulting in 2 interim versions of the Cromwell being produced, the Cavalier and Centaur. With the exception of the Centaur IV few of these interim designs were used in combat, most being used for training. Many Centaurs were later converted into Cromwells as the Liberty engine was easily replaced by the Meteor. The Cromwell was one of Britains most successful tanks of the war and it remained in service into the 1950's.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 27.9 tons **Load:** 300kg **Crew:** 5 **Maint:** 9
**Armament:** 6 Pounder gun, Besa Mk 2 coaxial, Besa Mk 2 hull, BREN Mk 2 (C), 2" mortar
**Ammo:** 83x 6 pounder, 4950x 7.92mm, 600x .303, 30x 2"
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 120 / 80 | **Com Mov:** 30 / 20 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 530 liters | **Fuel Cons:** 460 | **Susp:** Track:5 | Turret | 15 | 12 | 12 |
| | | | Hull | 18 | 8 | 6 |

| 6 Pounder | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APDS | 390 | 13 | 27 / 24 / 20 / 10 |
| HVAP | 390 | 13 | 21 / 18 / 15 / 8 |
| AP | 390 | 13 | 16 / 14 / 12 / 6 |
| HE | 250 | C:6 B:7 | -2C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **Besa Mk 2** | 5 | 4 | 2-3-Nil | Belt 225 | SS 1 Brst 3 | 125 |
| **BREN Mk 2** | 5 | 4 | 2-3-Nil | Box 30 | SS 1 Brst 2 | 125 |

| 2" Mortar | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| CHEM | 150 | C:2 B:3 | Nil |

## A27M Cromwell V

Many British officers who had fought in North Africa with the American M3 and M4 medium tanks were pushing the army to adopt a dual purpose gun similar to the American 75mm gun. In 1943 the British adopted the 75mm Mk 5 a gun which used many parts from the 6 Pounder and fired American 75mm ammunition. The Cromwell V is the Cromwell armed with this 75mm gun, the use of this gun was not as a replacement for the 6 pounder or close support howitzer armed versions. It was intended to provide a dual purpose tank, something with a high explosive capability (which the 6 Pounder lacked until 1944) and better anti-armor performance than the howitzer armed close support tanks.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 27.9 tons **Load:** 300kg **Crew:** 5 **Maint:** 9
**Armament:** 75mm Mk 5 gun, Besa Mk 2 coaxial, Besa Mk 2 hull, BREN Mk 2 (C), 2" mortar
**Ammo:** 64x 75mm, 4950x 7.92mm, 600x .303, 30x 2"
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 120 / 80 | **Com Mov:** 30 / 20 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 530 liters | **Fuel Cons:** 460 | **Susp:** Track:5 | Turret | 15 | 12 | 12 |
| | | | Hull | 18 | 8 | 6 |

| 75mm Mk 5 | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 330 | 17 | 16 / 14 / 12 / 6 |
| HE | 250 | C:7 B:19 | 0C |
| WP | 250 | C:2 B:15 | Nil |
| CHEM | 250 | C:2 B:7 | Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **Besa Mk 2** | 5 | 4 | 2-3-Nil | Belt 225 | SS 1 Brst 3 | 125 |
| **BREN Mk 2** | 5 | 4 | 2-3-Nil | Box 30 | SS 1 Brst 2 | 125 |

| 2" Mortar | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| CHEM | 150 | C:2 B:3 | Nil |

# A27M Cromwell VI

This is a close support version of the Cromwell armed with a 95mm howitzer.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 27.9 tons **Load:** 300kg **Crew:** 5 **Maint:** 9
**Armament:** 95mm howitzer, Besa Mk 2 coaxial, Besa Mk 2 hull, BREN Mk 2 (C), 2" mortar
**Ammo:** 51x 94mm, 4950x 7.92mm, 600x .303, 20x 2"
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** UK

| **TrMOV:** 120/ 80 | **Com Mov:** 30 / 20 | **Config:** Turret | **Armor** | Front | Side | Rear |
|---|---|---|---|---|---|---|
| **Fuel Cap:** 530 liters | **Fuel Cons:** 460 | **Susp:** Track:5 | Turret | 15 | 12 | 12 |
| | | | Hull | 18 | 8 | 6 |

| 95mm Howitzer | ROF: SS | Magazine: Rld: 1 | IFR: 5.5km |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HEAT | 195 | C:7 B:12 | 31C |
| HE | 195 | C:11 B:24 | 3C |
| CHEM | 195 | C:2 B:11 | Nil |
| ILLUM | 195 | B:800 | Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **Besa Mk 2** | 5 | 4 | 2-3-Nil | Belt 225 | SS 1 Brst 3 | 125 |
| **BREN Mk 2** | 5 | 4 | 2-3-Nil | Box 30 | SS 1 Brst 2 | 125 |

| 2" Mortar | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| CHEM | 150 | C:2 B:3 | Nil |

## A27M Cromwell VII

This is the Cromwell V with improved armor and reduced gearing. The gear reduction reduced the top speed but improved reliability.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 28.5 tons **Load:** 300kg **Crew:** 5 **Maint:** 9
**Armament:** 75mm Mk 5 gun, Besa Mk 2 coaxial, Besa Mk 2 hull, BREN Mk 2 (C), 2" mortar
**Ammo:** 64x 75mm, 4950x 7.92mm, 600x .303, 30x 2"
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 100 / 65 | **Com Mov:** 25 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 530 liters | **Fuel Cons:** 460 | **Susp:** Track:5 | Turret | 20 | 12 | 12 |
| | | | Hull | 18 | 8 | 6 |

| **75mm Mk 5** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 330 | 17 | 16 / 14 / 12 / 6 |
| HE | 250 | C:7 B:19 | 0C |
| WP | 250 | C:2 B:15 | Nil |
| CHEM | 250 | C:2 B:7 | Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **Besa Mk 2** | 5 | 4 | 2-3-Nil | Belt 225 | SS 1 Brst 3 | 125 |
| **BREN Mk 2** | 5 | 4 | 2-3-Nil | Box 30 | SS 1 Brst 2 | 125 |

| **2" Mortar** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| CHEM | 150 | C:2 B:3 | Nil |

## A27M Cromwell VIII

This is the close support version of the Cromwell with the improved armor and gear reduction of the Cromwell VII.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 28.5 tons **Load:** 300kg **Crew:** 5 **Maint:** 9
**Armament:** 95mm howitzer, Besa Mk 2 coaxial, Besa Mk 2 hull, BREN Mk 2 (C), 2" mortar
**Ammo:** 51x 94mm, 4950x 7.92mm, 600x .303, 20x 2"
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 100/ 65 | **Com Mov:** 25/ 15 | **Config:** Turret | **Armor** | Front | Side | Rear |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Fuel Cap:** 530 liters | **Fuel Cons:** 460 | **Susp:** Track:5 | Turret | 20 | 12 | 12 |
| | | | Hull | 18 | 8 | 6 |

| **95mm Howitzer** | **ROF:** SS | **Magazine:** Rld: 1 | **IFR:** 5.5km |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HEAT | 195 | C:7 B:12 | 31C |
| HE | 195 | C:11 B:24 | 3C |
| CHEM | 195 | C:2 B:11 | Nil |
| ILLUM | 195 | B:800 | Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **Besa Mk 2** | 5 | 4 | 2-3-Nil | Belt 225 | SS 1 Brst 3 | 125 |
| **BREN Mk 2** | 5 | 4 | 2-3-Nil | Box 30 | SS 1 Brst 2 | 125 |

| **2" Mortar** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| CHEM | 150 | C:1 B:8 | Nil |

## A34 Comet

The British were very pleased with the performance of the Cromwell but they knew the firepower would have to be increased to keep pace with the new German tanks entering service. There were several attempts to mount the 17 Pounder anti-tank gun on the Cromwell these all failed as the power of the gun was too much for the chassis. The Comet was developed from the Cromwell and uses a short barreled version of the 17 Pounder which uses a reduced charge round. Many consider the Comet to be the best British tank of the war and it remained in service with the British army until 1958.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 33.2 tons **Load:** 300kg **Crew:** 5 **Maint:** 11
**Armament:** 77mm Mk 2 gun, Besa Mk 2 coaxial, Besa Mk 2 hull, BREN Mk 2 (C), 2" mortar
**Ammo:** 61x 77mm, 5175x 7.92mm, 600x .303, 20x 2"
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1944 **In service:** UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 120 / 80 | **Com Mov:** 30 / 20 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 530 liters | **Fuel Cons:** 550 | **Susp:** Track:6 | Turret | 20 | 12 | 12 |
| | | | Hull | 18 | 8 | 6 |

| 77mm Mk 2 | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APDS | 385 | 17 | 39 / 34 / 29 / 15 |
| HVAP | 385 | 17 | 30 / 26 / 22 / 12 |
| AP | 385 | 17 | 23 / 20 / 17 / 9 |
| HE | 290 | C:7 B:19 | 0C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **Besa Mk 2** | 5 | 4 | 2-3-Nil | Belt 225 | SS 1 Brst 3 | 125 |
| **BREN Mk 2** | 5 | 4 | 2-3-Nil | Box 30 | SS 1 Brst 2 | 125 |

| 2" Mortar | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| CHEM | 150 | C:2 B:3 | Nil |

## A41 Centurion

Development of the Centurion was started in 1944 as the result of the British military's desire for a tank armed with the 17 Pounder anti-tank gun. Attempts to upgun existing British tanks had failed, so an all new design was called for. The Centurion was designed to mount the 17 Pounder but it was specified that it shound have the ability to have the armament increased as new weapons were developed, this feature has led to the Centurion being one of the most successful tank designs ever built. It was intended to be used alongside the A45 Conqueror Infantry tank which did not enter production until the late 1940's. The Centurion entered production in 1945 but only a small number made it to Germany by the wars end and none were used in Combat. After the war production was stopped to allow for further development before entering full scale production. It re-entered British service in 1949 as the Centurion Mk 2.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 49 tons **Load:** 500kg **Crew:** 4 **Maint:** 14
**Armament:** 17 Pounder gun, Besa Mk 2 coaxial, Weapons mount (C)
**Ammo:** 70x 17 Pounder, 2500x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1945 **In service:** UK

| **TrMOV:** 70 / 50 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
|---|---|---|---|---|---|---|
| **Fuel Cap:** 455 liters | **Fuel Cons:** 600 | **Susp:** Track:6 | Turret | 20 | 12 | 12 |
| | | | Hull | 18 | 8 | 6 |

| 17 Pounder | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APDS | 430 | 17 | 48 / 41 / 34 / 19 |
| HVAP | 430 | 17 | 36 / 31 / 26 / 14 |
| AP | 430 | 17 | 28 / 24 / 20 / 11 |
| HE | 320 | C:7 B:19 | 0C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **Besa Mk 2** | 5 | 4 | 2-3-Nil | Belt 225 | SS 1 Brst 3 | 125 |

## Sherman V-C Firefly

The British used large numbers of American M4 medium tanks, primarily the M4A4. the British tried mounting the 17 pounder in a number of thier tanks unsuccessfully. In 1943 an unofficial attempt to mount the 17 pounder in the Sherman at the Royal Armored Corps gunnery school resulted in success creating the Sherman Firefly. It entered service a short time later and became one of Britains most successful anti-tank vehicles of the war and is considered by most to be the best version of the Sherman. In order to provide more storage space for ammunition the hull machine gun and gunner were removed.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 34.8 tons **Load:** 300kg **Crew:** 4 **Maint:** 11
**Armament:** 17 Pounder gun, M1919 coaxial, weapon mount (C), 2" mortar
**Ammo:** 78x 17 pounder, 5000x .30-06, 20x 2"
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1944 **In service:** UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 580 liters | **Fuel Cons:** 580 | **Susp:** Track:5 | Turret | 23 | 10 | 10 |
| | | | Hull | 15 | 10 | 8 |

| 17 Pounder | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APDS | 430 | 17 | 48 / 41 / 34 / 19 |
| HVAP | 430 | 17 | 36 / 31 / 26 / 14 |
| AP | 430 | 17 | 28 / 24 / 20 / 11 |
| HE | 320 | C:7 B:19 | 0C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **M1919** | 5 | 4 | 2-3-Nil | Belt 250 | SS 1 Brst 3 | 125 |

| 2" Mortar | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| CHEM | 150 | C:2 B:3 | Nil |

# INFANTRY TANKS

## A12 Matilda II

The Matilda II was the standard British "Infantry" tank at the start of World war 2, although production had just started when Germany invaded Poland in September 1939. The Matilda was one of the most important British tanks during the North African campaigns of 1940-41 as its armor was nearly invulnerable to the guns of its opponents.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 26.9 tons **Load:** 300kg **Crew:** 4 **Maint:** 9
**Armament:** 2 pounder gun, Vickers Mk 1 coaxial
**Ammo:** 93x 2 pounder, 3000x .303
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1939 **In service:** UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 45 / 30 | **Com Mov:** 10 / 5 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 210 liters | **Fuels Cons:** 75 | **Susp:** Track:5 | Turret | 15 | 15 | 15 |
| | | | Hull | 24 | 14 Sp | 11 |

| **2 Pounder** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 380 | 9 | 8 / 7 / 6 / 3 |
| AP | 380 | 9 | 6 / 5 / 4 / 2 |
| HE | 285 | C:2 B:10 | -5C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **Mk 1** | 5 | 4 | 2-3-Nil | Belt 250 | SS 1 Brst 3 | 125 |

---

# A12 Matilda IICS

This is a close support version of the Matilda, it replaces the 2 Pounder gun with a 3" howitzer.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 26.9 tons **Load:** 300kg **Crew:** 4 **Maint:** 9
**Armament:** 3" Howitzer, Vickers Mk 1 coaxial
**Ammo:** 48x 3", 3000x .303
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1939 **In service:** UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 45 / 30 | **Com Mov:** 10 / 5 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 210 liters | **Fuels Cons:** 75 | **Susp:** Track:5 | Turret | 15 | 15 | 15 |
| | | | Hull | 24 | 14 Sp | 11 |

| **3" Howitzer** | **ROF:** SS | **Magazine:** Rld: 1 | **IFR:** 2.1km |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APHE | 180 | C:1 B:2 | 14 / 12 / 10 / 5 |
| HE | 135 | C:7 B:19 | 0C |
| CHEM | 135 | C:2 B:7 | Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **Mk 1** | 5 | 4 | 2-3-Nil | Belt 250 | SS 1 Brst 3 | 125 |

## A12 Matilda III

The Matilda III is an improved version of the Matilda II and was main production type. The primary changes being more reliable engines of slightly higher power, an air cooled Besa machine gun in place of the water cooled Vickers and a machine gun on the turret roof for the Commander. The Matilda remained in production until 1943 when the inability to mount a larger gun limited its use. The chassis was used for a number of special purpose vehicles including mine clearing vehicles and flamethrower tanks.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 26.9 tons **Load:** 300kg **Crew:** 4 **Maint:** 9
**Armament:** 2 pounder gun, Besa Mk 2 coaxial, BREN Mk 2 (C)
**Ammo:** 93x 2 pounder, 2950x 7.92mm, 600x .303
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1940 **In service:** UK, Australia, USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 55 / 35 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 210 liters | **Fuels Cons:** 80 | **Susp:** Track:5 | Turret | 15 | 15 | 15 |
| | | | Hull | 24 | 14 Sp | 11 |

| **2 Pounder** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 380 | 9 | 8 / 7 / 6 / 3 |
| AP | 380 | 9 | 6 / 5 / 4 / 2 |
| HE | 285 | C:2 B:10 | -5C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **Besa Mk 2** | 5 | 4 | 2-3-Nil | Belt 225 | SS 1 Brst 3 | 125 |
| **BREN Mk 2** | 5 | 4 | 2-3-Nil | Box 30 | SS 1 Brst 2 | 125 |

## A12 Matilda III CS

This is a close support version of the Matilda III armed with a 3" howitzer in place of the 2 Pounder gun.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 26.9 tons **Load:** 300kg **Crew:** 4 **Maint:** 9
**Armament:** 3" Howitzer, Besa Mk 2 coaxial, BREN Mk 2 (C)
**Ammo:** 48x 3", 2950x 7.92mm, 600x .303
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1940 **In service:** UK, Australia, USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 55 / 35 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 210 liters | **Fuels Cons:** 80 | **Susp:** Track:5 | Turret | 15 | 15 | 15 |
| | | | Hull | 24 | 14 Sp | 11 |

| **3" Howitzer** | **ROF:** SS | **Magazine:** Rld: 1 | **IFR:** 2.1km |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APHE | 180 | C:1 B:2 | 14 / 12 / 10 / 5 |
| HE | 135 | C:7 B:19 | 0C |
| CHEM | 135 | C:2 B:7 | Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **Besa Mk 2** | 5 | 4 | 2-3-Nil | Belt 225 | SS 1 Brst 3 | 125 |
| **BREN Mk 2** | 5 | 4 | 2-3-Nil | Box 30 | SS 1 Brst 2 | 125 |

## A22 Churchill I

The Churchill was designed to meet the conditions of the World war 1 battle field. The ability to cross cratered landscape and trenches being given a high priority. Due to this the Churchill resembled tanks of the first world war more than those of the 1940's. It mounts a 2 Pounder gun in the turret and a 3" howitzer in the hull front. External fuel tanks may be added to extend the range. Despite an apparent lack of modern design the Churchill went on to become one of the most successful British tanks of the war being built in large numbers and remaining in service into the 1950's. The chassis was used for many special purpose vehicles including flamethrower tanks, armored engineer vehicles, bridge layers and mine clearing vehicles.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 39.1 tons **Load:** 400kg **Crew:** 5 **Maint:** 12
**Armament:** 2 pounder gun, Besa Mk 2 coaxial, 3" Howitzer hull
**Ammo:** 150x 2 pounder, 2950x 7.92mm, 58x 3" Howitzer
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1941 **In service:** UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 55 / 35 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 680+150 liters | **Fuels Cons:** 430 | **Susp:** Track:6 | Turret | 21 | 18 | 18 |
| | | | Hull | 21 | 15 | 13 |

| 2 Pounder | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 380 | 9 | 8 / 7 / 6 / 3 |
| AP | 380 | 9 | 6 / 5 / 4 / 2 |
| HE | 285 | C:2 B:10 | -5C |

| 3" Howitzer | ROF: SS | Magazine: Rld: 1 | IFR: 2.1km |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APHE | 180 | C:1 B:2 | 14 / 12 / 10 / 5 |
| HE | 135 | C:7 B:19 | 0C |
| CHEM | 135 | C:2 B:7 | Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **Besa Mk 2** | 5 | 4 | 2-3-Nil | Belt 225 | SS 1 Brst 3 | 125 |

## A22 Churchill II

The Churchill had been ordered directly from the drawing board with out any pre-production trials. Due to this it suffered from many mechanical failures. In an attempt to reduce its complexity the Churchill II was introduced with the hull mounted howitzer replaced with a machine gun. The Churchill I, II and II CS served side by side until replaced by the Churchill III.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 38.5 tons **Load:** 400kg **Crew:** 5 **Maint:** 12
**Armament:** 2 pounder gun, Besa Mk 2 coaxial, Besa Mk 2 hull
**Ammo:** 150x 2 pounder, 4950x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1941 **In service:** UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 55 / 35 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 680+150 liters | **Fuels Cons:** 430 | **Susp:** Track:6 | Turret | 21 | 18 | 18 |
| | | | Hull | 21 | 15 | 13 |

| 2 Pounder | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 380 | 9 | 8 / 7 / 6 / 3 |
| AP | 380 | 9 | 6 / 5 / 4 / 2 |
| HE | 285 | C:2 B:10 | -5C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **Besa Mk 2** | 5 | 4 | 2-3-Nil | Belt 225 | SS 1 Brst 3 | 125 |

# A22 Churchill II CS

This is a close support version of the Churchill II. It replaces the 2 Pounder with a 3" Howitzer.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 38.5 tons **Load:** 400kg **Crew:** 5 **Maint:** 12
**Armament:** 3" Howitzer, Besa Mk 2 coaxial, Besa Mk 2 hull
**Ammo:** 58x 3", 4950x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1941 **In service:** UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 55 / 35 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 680+150 liters | **Fuels Cons:** 430 | **Susp:** Track:6 | Turret | 21 | 18 | 18 |
| | | | Hull | 21 | 15 | 13 |

| 3" Howitzer | ROF: SS | Magazine: Rld: 1 | IFR: 2.1km |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APHE | 180 | C:1 B:2 | 14 / 12 / 10 / 5 |
| HE | 135 | C:7 B:19 | 0C |
| CHEM | 135 | C:2 B:7 | Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **Besa Mk 2** | 5 | 4 | 2-3-Nil | Belt 225 | SS 1 Brst 3 | 125 |

## A22 Churchill III

The Churchill III is similar to the Churchill II but replaced the 2 Pounder with the more powerful 6 Pounder gun. It also added a machine gun to the turret roof for the Commander and a 2" smoke mortar. The early Churchill's had suffered from poor reliability and numerous breakdowns. By the time the Churchill III had entered service these had been solved and the series began to earn the reputation of being very dependable tanks. The Churchill IV is very similar to the Churchill III but has a welded turret.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 39.6 tons **Load:** 400kg **Crew:** 5 **Maint:** 12
**Armament:** 6 pounder gun, Besa Mk 2 coaxial, Besa Mk 2 hull, BREN Mk 2 (C), 2" mortar
**Ammo:** 84x 6 pounder, 4950x 7.92mm, 600x .303, 30x 2"
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 55 / 35 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 680+150 liters | **Fuels Cons:** 430 | **Susp:** Track:6 | Turret | 21 | 18 | 18 |
| | | | Hull | 21 | 15 | 13 |

| **6 Pounder** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APDS | 390 | 13 | 27 / 24 / 20 / 10 |
| HVAP | 390 | 13 | 21 / 18 / 15 / 8 |
| AP | 390 | 13 | 16 / 14 / 12 / 6 |
| HE | 250 | C:6 B:7 | -2C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **Besa Mk 2** | 5 | 4 | 2-3-Nil | Belt 250 | SS 1 Brst 3 | 125 |
| **BREN Mk 2** | 5 | 4 | 2-3-Nil | Box 30 | SS 1 Brst 2 | 125 |

| **2" Mortar** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| CHEM | 150 | C:2 B:3 | Nil |

## A22 Churchill V

The Churchill V is a close support version of the Churchill III. It replaces the 6 pounder gun with a 95mm howitzer.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 39.6 tons **Load:** 400kg **Crew:** 5 **Maint:** 12
**Armament:** 95mm Howitzer, Besa Mk 2 coaxial, Besa Mk 2 hull, BREN Mk 2 (C), 2" mortar
**Ammo:** 50x 95mm, 4950x 7.92mm, 600x .303, 30x 2"
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 55 / 35 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 680+150 liters | **Fuels Cons:** 430 | **Susp:** Track:6 | Turret | 21 | 18 | 18 |
| | | | Hull | 21 | 15 | 13 |

| **95mm Howitzer** | **ROF:** SS | **Magazine:** Rld: 1 | **IFR:** 5.5km |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HEAT | 195 | C:7 B:12 | 31C |
| HE | 195 | C:11 B:24 | 3C |
| CHEM | 195 | C:2 B:11 | Nil |
| ILLUM | 195 | B:800 | Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **Besa Mk 2** | 5 | 4 | 2-3-Nil | Belt 250 | SS 1 Brst 3 | 125 |
| **BREN Mk 2** | 5 | 4 | 2-3-Nil | Box 30 | SS 1 Brst 2 | 125 |

| **2" Mortar** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| CHEM | 150 | C:2 B:3 | Nil |

---

## A22 Churchill VI

During the fighting in North Africa several Churchill IV's were field modified by mounting the 75mm gun from the American M3 Lee / Grant and M4 Sherman tanks. These tanks were designated Churchill IV (NA75). The Churchill VI is the official response to requests for a Churchill with a dual purpose gun. It mounts the British 75mm Mk 5 gun, this gun uses many parts from the 6 pounder and fires American 75mm ammunition.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 39.6 tons **Load:** 400kg **Crew:** 5 **Maint:** 12
**Armament:** 75mm Mk 5 gun, Besa Mk 2 coaxial, Besa Mk 2 hull, BREN Mk 2 (C), 2" mortar
**Ammo:** 63x 75mm, 4950x 7.92mm, 600x .303, 30x 2"
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 55 / 35 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 680+150 liters | **Fuels Cons:** 430 | **Susp:** Track:6 | Turret | 21 | 18 | 18 |
| | | | Hull | 21 | 15 | 13 |

| 75mm Mk 5 | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 330 | 17 | 16 / 14 / 12 / 6 |
| HE | 250 | C:7 B:19 | 0C |
| WP | 250 | C:2 B:15 | Nil |
| CHEM | 250 | C:2 B:7 | Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **Besa Mk 2** | 5 | 4 | 2-3-Nil | Belt 250 | SS 1 Brst 3 | 125 |
| **BREN Mk 2** | 5 | 4 | 2-3-Nil | Box 30 | SS 1 Brst 2 | 125 |

| 2" Mortar | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| CHEM | 150 | C:2 B:3 | Nil |

## A22 Churchill VII

This is the Churchill VI with improved armor.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 40.6 tons **Load:** 400kg **Crew:** 5 **Maint:** 12
**Armament:** 75mm Mk 5 gun, Besa Mk 2 coaxial, Besa Mk 2 hull, BREN Mk 2 (C), 2" mortar
**Ammo:** 63x 75mm, 4950x 7.92mm, 600x .303, 30x 2"
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** UK

| **TrMOV:** 40 / 25 | **Com Mov:** 10 / 5 | **Config:** Turret | **Armor** | Front | Side | Rear |
|---|---|---|---|---|---|---|
| **Fuel Cap:** 680+150 liters | **Fuels Cons:** 430 | **Susp:** Track:6 | Turret | 30 | 25 | 21 |
| | | | Hull | 30 | 18 | 13 |

| 75mm Mk 5 | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 330 | 17 | 16 / 14 / 12 / 6 |
| HE | 250 | C:7 B:19 | 0C |
| WP | 250 | C:2 B:15 | Nil |
| CHEM | 250 | C:2 B:7 | Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **Besa Mk 2** | 5 | 4 | 2-3-Nil | Belt 250 | SS 1 Brst 3 | 125 |
| **BREN Mk 2** | 5 | 4 | 2-3-Nil | Box 30 | SS 1 Brst 2 | 125 |

| 2" Mortar | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| CHEM | 150 | C:2 B:3 | Nil |

## A22 Churchill VIII

This is a close support version of the Churchill VII.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 40.6 tons **Load:** 400kg **Crew:** 5 **Maint:** 12
**Armament:** 75mm Mk 5 gun, Besa Mk 2 coaxial, Besa Mk 2 hull, BREN Mk 2 (C), 2" mortar
**Ammo:** 63x 75mm, 4950x 7.92mm, 600x .303, 30x 2"
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 40 / 25 | **Com Mov:** 10 / 5 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 680+150 liters | **Fuels Cons:** 430 | **Susp:** Track:6 | Turret | 30 | 25 | 21 |
| | | | Hull | 30 | 18 | 13 |

| **95mm Howitzer** | **ROF:** SS | **Magazine:** Rld: 1 | **IFR:** 5.5km |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HEAT | 195 | C:7 B:12 | 31C |
| HE | 195 | C:11 B:24 | 3C |
| CHEM | 195 | C:2 B:11 | Nil |
| ILLUM | 195 | B:800 | Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **Besa Mk 2** | 5 | 4 | 2-3-Nil | Belt 250 | SS 1 Brst 3 | 125 |
| **BREN Mk 2** | 5 | 4 | 2-3-Nil | Box 30 | SS 1 Brst 2 | 125 |

| **2" Mortar** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| CHEM | 150 | C:2 B:3 | Nil |

## A22 Churchill Crocodile

This is the Churchill VII with a flamethrower in place of the hull machinegun. It tows an armored trailer (AV:3) with 1818 liters of fuel.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 40.6 tons **Load:** 400kg **Crew:** 5 **Maint:** 12
**Armament:** 75mm Mk 5 gun, Besa Mk 2 coaxial, Flamegun hull, BREN Mk 2 (C), 2" mortar
**Ammo:** 63x 75mm, 2950x 7.92mm, 365 seconds of fuel, 600x .303, 30x 2"
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 40 / 25 | **Com Mov:** 10 / 5 | **Config:** Turret | **Armor** | Front | Side | Rear |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Fuel Cap:** 680+150 liters | **Fuels Cons:** 430 | **Susp:** Track:6 | Turret | 30 | 25 | 21 |
| | | | Hull | 30 | 18 | 13 |

| **75mm Mk 5** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 330 | 17 | 16 / 14 / 12 / 6 |
| HE | 250 | C:7 B:19 | 0C |
| WP | 250 | C:2 B:15 | Nil |
| CHEM | 250 | C:2 B:7 | Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **Besa Mk 2** | 5 | 4 | 2-3-Nil | Belt 250 | SS 1 Brst 3 | 125 |
| **BREN Mk 2** | 5 | 4 | 2-3-Nil | Box 30 | SS 1 Brst 2 | 125 |
| **Flamegun** | SA | Fire | Nil | 365 | SS 1 Brst 1 | 15 |

| **2" Mortar** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| CHEM | 150 | C:2 B:3 | Nil |

## Valentine I

The Valentine was developed privately by Vickers and not to a General Staff specification, therefore it has no number. Despite having a 2 man turret it was accepted for service early in 1940. There are several stories of what led to the chioce for the name Valentine, the most popular is that it was introduced on February 14, 1940 (Valentines day), another is that it was named in honor of John Valentine Carden (an early British tank designer) and the last is that it was an accronym for the manufacturer and the factory location. The Valentine was built in larger numbers than any other British tank of World war 2 remaining in production until 1944. Nearly 1/3 of all Valentine production went to the Soviet Union.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 16.2 tons **Load:** 200kg **Crew:** 3 **Maint:** 6
**Armament:** 2 pounder gun, Besa Mk 2 coaxial, BREN Mk 2 (C)
**Ammo:** 79x 2 pounder, 1575x 7.92mm, 600x .303
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1940 **In service:** UK, USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 55 / 35 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 165 liters | **Fuels Cons:** 110 | **Susp:** Track:3 | Turret | 13 | 12 | 4 |
| | | | Hull | 18 | 12 | 2 |

| 2 Pounder | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 380 | 9 | 8 / 7 / 6 / 3 |
| AP | 380 | 9 | 6 / 5 / 4 / 2 |
| HE | 285 | C:2 B:10 | -5C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **Besa Mk 2** | 5 | 4 | 2-3-Nil | Belt 250 | SS 1 Brst 3 | 125 |
| **BREN Mk 2** | 5 | 4 | 2-3-Nil | Box 30 | SS 1 Brst 2 | 125 |

# Valentine II

This is an improved version of the Valentine which substitutes diesel engines for the gasoline engines of the Valentine I. The similar Valentine IV uses GMC diesel engines in place of the AEC diesels. The Valentine VI was a Canadian built version of the Valentine IV with a Browning M1919A4 coaxial machine gun in place of the Besa Mk 2.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 16.2 tons **Load:** 200kg **Crew:** 3 **Maint:** 6
**Armament:** 2 pounder gun, Besa Mk 2 coaxial, BREN Mk 2 (C)
**Ammo:** 79x 2 pounder, 1575x 7.92mm, 600x .303
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1940 **In service:** UK, Canada, USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 55 / 35 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 165 liters | **Fuels Cons:** 80 | **Susp:** Track:3 | Turret | 13 | 12 | 4 |
| | | | Hull | 18 | 12 | 2 |

| 2 Pounder | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 380 | 9 | 8 / 7 / 6 / 3 |
| AP | 380 | 9 | 6 / 5 / 4 / 2 |
| HE | 285 | C:2 B:10 | -5C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **Besa Mk 2** | 5 | 4 | 2-3-Nil | Belt 225 | SS 1 Brst 3 | 125 |
| **M1919A4** | 5 | 4 | 2-3-Nil | Belt 250 | SS 1 Brst 3 | 125 |
| **BREN Mk 2** | 5 | 4 | 2-3-Nil | Box 30 | SS 1 Brst 2 | 125 |

## Valentine III

This is an improved version of the Valentine II, it has a new turret with room for a Loader. It also adds a 2" smoke mortar. The similar Valentine V uses GMC diesel engines in place of the AEC diesels. The Valentine VII is another Canadian version similar to the Valentine V but the coaxial Besa machine gun is replaced with a Browning M1919.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 16.2 tons **Load:** 200kg **Crew:** 4 **Maint:** 6
**Armament:** 2 pounder gun, Besa Mk 2 coaxial, BREN Mk 2 (C), 2" mortar
**Ammo:** 60x 2 pounder, 1575x 7.92mm, 600x .303, 18x 2"
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1940 **In service:** UK, Canada, USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 55 / 35 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 165 liters | **Fuels Cons:** 80 | **Susp:** Track:3 | Turret | 13 | 12 | 4 |
| | | | Hull | 18 | 12 | 2 |

| **2 Pounder** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 380 | 9 | 8 / 7 / 6 / 3 |
| AP | 380 | 9 | 6 / 5 / 4 / 2 |
| HE | 285 | C:2 B:10 | -5C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **Besa Mk 2** | 5 | 4 | 2-3-Nil | Belt 225 | SS 1 Brst 3 | 125 |
| **M1919A4** | 5 | 4 | 2-3-Nil | Belt 250 | SS 1 Brst 3 | 125 |
| **BREN Mk 2** | 5 | 4 | 2-3-Nil | Box 30 | SS 1 Brst 2 | 125 |

| **2" Mortar** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| CHEM | 150 | C:2 B:3 | Nil |

## Valentine VIII

The Valentine VIII a 6 pounder armed version of the Valentine III. Due to the size of the gun the Loader and the coaxial machine gun had to be removed. The Valentine IX is identical except for the GMC diesel engines used in place of the AEC diesels.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 17.2 tons **Load:** 200kg **Crew:** 3 **Maint:** 7
**Armament:** 6 Pounder, BREN Mk 2 (C), 2" mortar
**Ammo:** 55x 6 pounder, 600x .303, 18x 2"
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** UK, USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 55 / 35 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 165 liters | **Fuels Cons:** 80 | **Susp:** Track:3 | Turret | 13 | 12 | 4 |
| | | | Hull | 18 | 12 | 2 |

| **6 Pounder** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APDS | 390 | 13 | 27 / 24 / 20 / 10 |
| HVAP | 390 | 13 | 21 / 18 / 15 / 8 |
| AP | 390 | 13 | 16 / 14 / 12 / 6 |
| HE | 250 | C:6 B:7 | -2C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **Besa Mk 2** | 5 | 4 | 2-3-Nil | Belt 225 | SS 1 Brst 3 | 125 |
| **BREN Mk 2** | 5 | 4 | 2-3-Nil | Box 30 | SS 1 Brst 2 | 125 |

| **2" Mortar** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| CHEM | 150 | C:2 B:3 | Nil |

---

# Valentine X

The Valentine X is similar to the Valentine VIII but the turret has been modified to allow the use of a coaxial machine gun.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 17.2 tons **Load:** 200kg **Crew:** 3 **Maint:** 7
**Armament:** 6 Pounder, Besa Mk 2 coaxial, BREN Mk 2 (C)
**Ammo:** 55x 6 pounder, 1575x 7.92mm, 600x .303, 18x 2"
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** UK, USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 55 / 35 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 165 liters | **Fuels Cons:** 80 | **Susp:** Track:3 | Turret | 13 | 12 | 4 |
| | | | Hull | 18 | 12 | 2 |

| 6 Pounder | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APDS | 390 | 13 | 27 / 24 / 20 / 10 |
| HVAP | 390 | 13 | 21 / 18 / 15 / 8 |
| AP | 390 | 13 | 16 / 14 / 12 / 6 |
| HE | 250 | C:6 B:7 | -2C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **Besa Mk 2** | 5 | 4 | 2-3-Nil | Belt 225 | SS 1 Brst 3 | 125 |
| **BREN Mk 2** | 5 | 4 | 2-3-Nil | Box 30 | SS 1 Brst 2 | 125 |

| 2" Mortar | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| CHEM | 150 | C:2 B:3 | Nil |

# Valentine XI

The Valentine XI is a version of the Valentine X with the British 75mm gun in place of the 6 Pounder.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 17.2 tons **Load:** 200kg **Crew:** 3 **Maint:** 7
**Armament:** 75mm Mk 5, Besa Mk 2 coaxial, BREN Mk 2 (C)
**Ammo:** 41x 75mm, 1575x 7.92mm, 600x .303, 18x 2"
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** UK, USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 55 / 35 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 165 liters | **Fuels Cons:** 80 | **Susp:** Track:3 | Turret | 13 | 12 | 4 |
| | | | Hull | 18 | 12 | 2 |

| 75mm Mk 5 | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 330 | 17 | 16 / 14 / 12 / 6 |
| HE | 250 | C:7 B:19 | 0C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **Besa Mk 2** | 5 | 4 | 2-3-Nil | Belt 225 | SS 1 Brst 3 | 125 |
| **BREN Mk 2** | 5 | 4 | 2-3-Nil | Box 30 | SS 1 Brst 2 | 125 |

| | | | |
|---|---|---|---|
| WP | 250 | C:2 B:15 | Nil |
| CHEM | 250 | C:2 B:7 | Nil |
| | | | |

| **2" Mortar** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| CHEM | 150 | C:2 B:3 | Nil |

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# ITALY

# LIGHT TANKS

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## CARRO ARMATO L.6/40

The L.6/40 was the replacement for the obsolete L.3 series which Italy had used from the start of the war. While the L.6/40 was a definite improvement it was still not the equal of the American and British light tanks it faced. Less than 300 had been built when production stopped in 1942.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 6.9 tons **Load:** 100kg **Crew:** 2 **Maint:** 4
**Armament:** 20mm M35 gun, M38 coaxial
**Ammo:** 296x 20mm, 1560x 8mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1941 **In service:** Italy

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV: 85 / 55** | **Com Mov: 20 / 15** | **Config: Turret** | **Armor** | **Front** | **Side** | **Rear** |
| **Fuel Cap: 145 liters** | **Fuel Cons: 120** | **Susp: Track:1** | **Turret** | 6 | 4 | 4 |
| | | | **Hull** | 9 | 4 | 3 |

| **20mm M35** | **ROF:** 5 | **Magazine:** Belt 100 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 360 | 4 | 2 / 2 / 2 / 1 |
| HE | 270 | C:1 B:4 | -8C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **M38** | 5 | 4 | 2-3-Nil | Box 20 | SS 1 Brst 3 | 125 |

## CARRO VELOCE L.3/33

The L.3/33 is a tankette designed in the early 1930's. While it was obsolete by the start of World war 2 the L.3/33 was the standard Italian light tank at the start of the war, a role it was not really designed for and as a result it suffered heavy losses against the British in North Africa. The chassis was also used for several combat and support vehicles.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 3.3 tons **Load:** 100kg **Crew:** 2 **Maint:** 3
**Armament:** Fiat / Revelli M14
**Ammo:** 2240x 6.5mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1933 **In service:** Italy, Hungary, Spain

| TrMOV: 85 / 55 | Com Mov: 20 / 15 | Config: Stnd | Armor | Front | Side | Rear |
|---|---|---|---|---|---|---|
| Fuel Cap: 65 liters | Fuel Cons: 60 | Susp: Track:1 | Hull | 3 | 2 | 2 |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| M14 | 5 | 4 | 1-2-3 | Strip 5x 10 | SS 1 Brst 2 | 110 |

## CARRO VELOCE L.3/35

The L.3/35 is an improved version of the L.3/33, it uses a pair of Breda M38 machineguns in place of the vintage World war 1 era watercooled Fiat / Revelli. Many L.3/33 were also upgraded to this standard and designated L.3/33 serie II.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 3.3 tons **Load:** 100kg **Crew:** 2 **Maint:** 3
**Armament:** 2x M38
**Ammo:** 2240x 8mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1935 **In service:** Italy, Hungary, Spain

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV: 85 / 55** | **Com Mov: 20 / 15** | **Config: Stnd** | **Armor** | **Front** | **Side** | **Rear** |
| **Fuel Cap: 65 liters** | **Fuel Cons: 60** | **Susp: Track:1** | **Hull** | 3 | 2 | 2 |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **M38** | 5 | 4 | 2-3-Nil | Box 20 | SS 1 Brst 3 | 125 |

---

# CARRO VELOCE L.3/38

This is a version of the L.3/35 with a 13.2mm heavy machinegun in place of the M38 machineguns.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 3.3 tons **Load:** 100kg **Crew:** 2 **Maint:** 3
**Armament:** M31
**Ammo:** 800x 13.2mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1938 **In service:** Italy

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV: 85 / 55** | **Com Mov: 20 / 15** | **Config: Stnd** | **Armor** | **Front** | **Side** | **Rear** |
| **Fuel Cap: 65 liters** | **Fuel Cons: 60** | **Susp: Track:1** | **Hull** | 3 | 2 | 2 |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **M31** | 5 | 8 | 2-3-4 | Box 20 | SS 2 Brst 7 | 190 |

---

# CARRO D'ASSALTO LANCIAFLAMME L.3-35/LF

This is a flamethrower vehicle based on the L.3 series tankette, it tows an armored trailer with 500 liters of fuel for the flamegun.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 3.3 tons **Load:** 100kg **Crew:** 2 **Maint:** 3
**Armament:** Flamegun
**Ammo:** 125 seconds of fuel
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1933 **In service:** Italy

| TrMOV: 85 / 55 | Com Mov: 20 / 15 | Config: Stnd | Armor | Front | Side | Rear |
|---|---|---|---|---|---|---|
| Fuel Cap: 65 liters | Fuel Cons: 60 | Susp: Track:1 | Hull | 3 | 2 | 2 |
| | | | Trailer | 3 | 3 | 3 |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| Flamegun | SA | Fire | Nil | 125 | SS 1 Brst 1 | 15 |

# MEDIUM TANKS

---

# CARRO ARMATO M.11/39

The M11/39 entered service early in 1940. The 37mm gun is mounted in the hull with a limited traverse and there is a turret for the 2 machineguns operated by the Commander. Once the M.11/39 was used in combat against the British in North Africa the design was immediately revealed as totally obsolete in design by its high loss rate, and was quickly replaced by the more conventional M.13/40.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 11.2 tons **Load:** 200kg **Crew:** 3 **Maint:** 5
**Armament:** 37mm M36 gun, 2x M38 (C)
**Ammo:** 80x 37mm, 2808x 8mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1940 **In service:** Italy

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV: 65 / 40** | **Com Mov: 15 / 10** | **Config: Turret** | **Armor** | **Front** | **Side** | **Rear** |
| **Fuel Cap: 145 liters** | **Fuel Cons: 100** | **Susp: Track:2** | **Turret** | 6 | 4 | 4 |
| | | | **Hull** | 6 | 4 | 3 |

| **37mm M36** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APHE | 280 | C:1 B:2 | 3 / 3 / 2 / 1 |
| HE | 210 | C:2 B:9 | -6C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **M38** | 5 | 4 | 2-3-Nil | Box 20 | SS 1 Brst 3 | 125 |

---

# CARRO ARMATO M.13/40

The M13/40 entered service in 1940 to replace the M.11/39 as the standard Italian medium tank. It was a definate improvement over the M.11/39 it replaced but during the Western Desert campaigns of 1940 the M.13/40 was found lacking in firepower and armor protection. The Italian 47mm gun compared favorably with the British 2 pounder and the M.13/40 was able to hold its own against the British "cruiser" tanks, however against the heavily armored Matilda "infantry" tanks it was practically helpless, the Matilda being nearly immune to the 47mm gun at all but close range.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 14 tons **Load:** 200kg **Crew:** 4 **Maint:** 6
**Armament:** 47mm M37 gun, 2x M38 hull, M38 (C)
**Ammo:** 87x 47mm, 3040x 8mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1940 **In service:** Italy

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV: 65 / 40** | **Com Mov: 15 / 10** | **Config: Turret** | **Armor** | **Front** | **Side** | **Rear** |
| **Fuel Cap: 180 liters** | **Fuel Cons: 120** | **Susp: Track:2** | **Turret** | 8 | 5 | 5 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | **Hull** | 9 | 5 | 5 |

| **47mm M37** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 285 | 10 | 6 / 5 / 4 / 2 |
| HE | 215 | C:3 B:12 | -4C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **M38** | 5 | 4 | 2-3-Nil | Box 20 | SS 1 Brst 3 | 125 |

---

# CARRO ARMATO M.14/41

This is an improved version of the M.13/40. The most significant changes are to the engine which has been replaced with a slightly more powerful one, this resulted in a small increase in performance but this along with other changes resulted in enhanced reliability.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 14 tons **Load:** 200kg **Crew:** 4 **Maint:** 6
**Armament:** 47mm M37 gun, 2x M38 hull, M38 (C)
**Ammo:** 87x 47mm, 3040x 8mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1941 **In service:** Italy

| **TrMOV: 70 / 45** | **Com Mov: 15 / 10** | **Config: Turret** | **Armor** | **Front** | **Side** | **Rear** |
|---|---|---|---|---|---|---|
| **Fuel Cap: 180 liters** | **Fuel Cons: 120** | **Susp: Track:2** | **Turret** | 8 | 5 | 5 |
| | | | **Hull** | 9 | 5 | 5 |

| 47mm M37 | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 285 | 10 | 6 / 5 / 4 / 2 |
| HE | 215 | C:3 B:12 | -4C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **M38** | 5 | 4 | 2-3-Nil | Box 20 | SS 1 Brst 3 | 125 |

---

# CARRO ARMATO M.15/42

The M.15/42 was the final version of the M.13/40 and M.14/41 series. It has a lengthend hull which accepts a more powerful gasoline engine. It also has a new long barrelled 47mm gun. Less than 100 were completed before production was changed to allow the chassis to be used for self propelled guns.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 15.5 tons **Load:** 200kg **Crew:** 4 **Maint:** 6
**Armament:** 47mm M42 gun, 2x M38 hull, M38 (C)
**Ammo:** 87x 47mm, 3040x 8mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** Italy

| TrMOV: 80 / 55 | Com Mov: 20 / 15 | Config: Turret | Armor | Front | Side | Rear |
|---|---|---|---|---|---|---|
| Fuel Cap: 200 liters | Fuel Cons: 180 | Susp: Track:3 | Turret | 8 | 5 | 5 |
| | | | Hull | 9 | 5 | 5 |

| 47mm M42 | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 325 | 10 | 7 / 6 / 5 / 3 |
| HE | 245 | C:3 B:12 | -4C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **M38** | 5 | 4 | 2-3-Nil | Box 20 | SS 1 Brst 3 | 125 |

# ARMORED CARS

---

## AUTOBLINDA 40

The Autoblinda 40 is a wheeled 4x4 armored scout car. There is a driving position in each end and it may be driven in either direction equally well. The rear driver also operates the radio and the rear hull mounted machinegun. A small turret armed with machineguns is located near the front of the vehicle.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 7.5 tons **Load:** 100kg **Crew:** 3 **Maint:** 4
**Armament:** 2x M38, M38 hull
**Ammo:** 4008x 8mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1940 **In service:** Italy

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV: 160 / 65** | **Com Mov: 35 / 15** | **Config: Turret** | **Armor** | **Front** | **Side** | **Rear** |
| **Fuel Cap: 200 liters** | **Fuel Cons: 315** | **Susp: Wheel:(2)** | **Turret** | 6 | 3 | 3 |
| | | | **Hull** | 3 | 3 | 3 |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **M38** | 5 | 4 | 2-3-Nil | Box 20 | SS 1 Brst 3 | 125 |

---

## AUTOBLINDA 41

The Autoblinda 41 is similar to the Autoblinda 40 but includes a larger turret armed with a 20mm cannon and the

crew is enlarged by the addition of a Gunner. One out of four vehicles were equipped with a machinegun mounted on the turret top by the Commanders hatch to provide protection from aircraft. The Autoblinda 41 retains the 2 driver system used in the Autoblinda 40.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 7.5 tons **Load:** 100kg **Crew:** 4 **Maint:** 4
**Armament:** 20mm M35 gun, M38 coaxial, M38 hull, M38 (C)
**Ammo:** 456x 20mm, 1992x 8mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1941 **In service:** Italy

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV: 160/ 65** | **Com Mov: 35 / 15** | **Config: Turret** | **Armor** | **Front** | **Side** | **Rear** |
| **Fuel Cap: 200 liters** | **Fuel Cons: 315** | **Susp: Wheel:(2)** | **Turret** | 6 | 3 | 3 |
| | | | **Hull** | 3 | 3 | 3 |

| **20mm M35** | **ROF:** 5 | **Magazine:** Belt 100 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 360 | 4 | 2 / 2 / 2 / 1 |
| HE | 270 | C:1 B:4 | -8C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **M38** | 5 | 4 | 2-3-Nil | Box 20 | SS 1 Brst 3 | 125 |

---

# CARRO COMMANDO M40

This is a tracked armored car based on the M.11/39 medium tank. It is designed to perform reconaisance for artillery battalions and is equipped with additional radio equipment for directing artillery fire.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 12.5 tons **Load:** 200kg **Crew:** 3 **Maint:** 5
**Armament:** 2x M38
**Ammo:** 1512x 8mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1940 **In service:** Italy

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV: 70/ 45** | **Com Mov: 15/ 10** | **Config: Stnd** | **Armor** | **Front** | **Side** | **Rear** |
| **Fuel Cap: 180 liters** | **Fuel Cons: 100** | **Susp: Track:2** | **Hull** | 9 | 5 | 5 |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **M38** | 5 | 4 | 2-3-Nil | Box 20 | SS 1 Brst 3 | 125 |

---

## CARRO COMMANDO M41

This is the Carro Commando M40 armed with a single 13.2mm heavy machinegun in place of the twin 8mm machineguns.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 12.5 tons **Load:** 200kg **Crew:** 3 **Maint:** 5
**Armament:** M31
**Ammo:** 420x 13.2mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1941 **In service:** Italy

| TrMOV: 70/ 45 | Com Mov: 15/ 10 | Config: Stnd | Armor | Front | Side | Rear |
|---|---|---|---|---|---|---|
| Fuel Cap: 180 liters | Fuel Cons: 100 | Susp: Track:2 | Hull | 9 | 5 | 5 |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **M31** | 5 | 8 | 2-3-4 | Box 20 | SS 2 Brst 7 | 190 |

# SELF PROPELLED GUNS

## SEMOVENTE L.3

This is a self propelled anti-tank gun based on the chassis of the L.3/33. It is open topped and the gun is placed in a limited traverse mount in the hull front.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 4.5 tons **Load:** 100kg **Crew:** 3 **Maint:** 3
**Armament:** 47mm M35 gun
**Ammo:** 30x 47mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1937 **In service:** Italy

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV: 80 / 50** | **Com Mov: 20 / 10** | **Config: Stnd** | **Armor** | **Front** | **Side** | **Rear** |
| **Fuel Cap: 65 liters** | **Fuel Cons: 60** | **Susp: Track:1** | **Hull** | 5 | 5 | 2 |

| **47mm M35** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 305 | 10 | 6 / 6 / 5 / 3 |
| HE | 230 | C:3 B:12 | -4C |

## SEMOVENTE L.40

This is a self propelled anti-tank gun based on the chassis of the L.6/40 light tank. The 47mm gun is mounted on the chassis top, armor protection for the gun crew is provided by a gun shield.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 6.5 tons **Load:** 100kg **Crew:** 2 **Maint:** 4
**Armament:** 47mm M42 gun
**Ammo:** 70x 47mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** Italy

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV: 85 / 55** | **Com Mov: 20 / 15** | **Config: Turret** | **Armor** | **Front** | **Side** | **Rear** |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Fuel Cap: 145 liters** | **Fuel Cons: 120** | **Susp: Track:1** | **Hull** | 8 | 4 | 4 |
| | | | **Gun shield** | 10 | no | no |

| **47mm M42** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 325 | 10 | 7 / 6 / 5 / 3 |
| HE | 245 | C:3 B:12 | -4C |

---

## SEMOVENTE 75 / 18

This is an assault gun based on the chassis of the Carro Armato M.11/39 medium tank. The turret is removed and the hull mounted 37mm gun replaced by a 75mm howitzer. Due to the limited traverse and elevation of the mount no indirect fire is possible.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 13.1 tons **Load:** 200kg **Crew:** 4 **Maint:** 5
**Armament:** 75mm Cannone da 75-18
**Ammo:** 44x 75mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1940 **In service:** Italy

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV: 65 / 40** | **Com Mov: 15 / 10** | **Config: Turret** | **Armor** | **Front** | **Side** | **Rear** |
| **Fuel Cap: 145 liters** | **Fuel Cons: 100** | **Susp: Track:2** | **Hull** | 5 | 5 | 4 |

| **75mm Cannone da 75-18** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HE | 170 | C:7 B:19 | 0C |

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# UNITED KINGDOM

# ARMORED CARS

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## Daimler Mk 1

The Daimler armored car is based on the Daimler Scout car, but includes the turret from the Tetrarch light tank. It was first used in North Africa and proved to be an excellent reconnaissance vehicle. It remained in service with British forces into the early 1950's.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 7.5 tons **Load:** 200kg **Crew:** 3 **Maint:** 4
**Armament:** 2 Pounder, Besa Mk 2 coaxial
**Ammo:** 50x 2 Pounder, 2025x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1941 **In service:** UK

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **TrMOV:** 160 / 70 | **Com Mov:** 35 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 215 liters | **Fuel Cons:** 210 | **Susp:** Wheel:(2) | Turret | 4 | 3 | 3 |
| | | | Hull | 3 | 3 | 3 |

| 2 Pounder | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 380 | 9 | 8 / 7 / 6 / 3 |
| AP | 380 | 9 | 6 / 5 / 4 / 2 |
| HE | 285 | C:2 B:10 | -5C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **Besa Mk 2** | 5 | 4 | 2-3-Nil | Belt 225 | SS 1 Brst 3 | 125 |

# Daimler Mk 4

This is the Daimler armored car armed with the 6 pounder gun in place of the 2 pounder. Due to the size of this weapon the coaxial machine gun was removed.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 7.5 tons **Load:** 200kg **Crew:** 3 **Maint:** 4
**Armament:** 6 Pounder
**Ammo:** 34x 6 Pounder
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 160 / 70 | **Com Mov:** 35 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 215 liters | **Fuel Cons:** 210 | **Susp:** Wheel:(2) | Turret | 4 | 3 | 3 |
| | | | Hull | 3 | 3 | 3 |

| 6 Pounder | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APDS | 390 | 13 | 27 / 24 / 20 / 10 |
| HVAP | 390 | 13 | 21 / 18 / 15 / 8 |
| AP | 390 | 13 | 16 / 14 / 12 / 6 |
| HE | 250 | C:6 B:7 | -2C |

## Daimler Scout car

The Daimler Scout car is a 4x4 armored reconnaisance vehicle. It proved itself to be an excellent vehicle for its designed task. Although lightly armed and armored it was successful because it was fast, highly mobile and was fairly inconspicuous. Also its intended mission was to gather reconnaisance intelligence and was not expected to engage enemy units except in self defence. A machine gun is mounted through the front armor and is operated by the Commander. The vehicle is open topped, early models included a folding roof but this was discontinued as it was rarely used and was often removed in service anyway.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 3.0 tons **Load:** 200kg **Crew:** 2 **Maint:** 4
**Armament:** BREN Mk 2
**Ammo:** 600x .303
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1938 **In service:** UK, Australia, Canada, India, New Zealand, South Africa

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 160 / 70 | **Com Mov:** 35 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 215 liters | **Fuel Cons:** 210 | **Susp:** Wheel:(2) | Hull | 3 | 3 | 3 |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **BREN Mk 2** | 5 | 4 | 2-3-Nil | Box 30 | SS 1 Brst 2 | 125 |

## Humber Mk 1

The Humber is an armored car built on the chassis of a 4x4 truck. It was built in larger numbers than any other British armored car and was used extensively during the fighting in North Africa. It remained in service with British forces until the late 1950's.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 6.8 tons **Load:** 200kg **Crew:** 3 **Maint:** 4
**Armament:** 15mm Besa, Besa Mk 2 coaxial
**Ammo:** 600x 15mm, 3000x 7.92mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1940 **In service:** UK,Australia, Canada, India, New Zealand, South Africa

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **TrMOV:** 150 / 60 | **Com Mov:** 35 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 300 liters | **Fuel Cons:** 220 | **Susp:** Wheel:(2) | Turret | 3 | 3 | 3 |
| | | | Hull | 3 | 2 | 2 |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **Besa Mk 2** | 5 | 4 | 2-3-Nil | Belt 225 | SS 1 Brst 3 | 125 |
| **15mm Besa** | 5 | 12 | 2-2-3 | Belt 25 | SS - Brst - | 150 |
| | | | | | | |

---

## T17E1 Staghound

The Staghound was developed in the United States but the U.S. army decided it was too heavy and accepted the M8 in its place, all of the production vehicles were sent to the British and commonwealth countries. The Staghound was first used in Italy and proved to be popular. It remained in service with the British army into the 1950's.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 13.9 tons **Load:** 300kg **Crew:** 5 **Maint:** 6
**Armament:** 37mm M6 gun, M1919A4 coaxial, M1919A4 hull, M1919A4 (C)
**Ammo:** 103x 37mm, 5250x .30-06
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** UK,Australia, Canada, India, New Zealand, South Africa

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 180 / 80 | **Com Mov:** 40 / 20 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 520 liters | **Fuel Cons:** 260 | **Susp:** Wheel:(2) | Turret | 9 | 6 | 6 |
| | | | Hull | 6 | 4 | 2 |

| 37mm M6 | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 395 | 8 | 6 / 5 / 4 / 2 |
| HE | 295 | C:2 B:9 | -6C |
| APERS | 100 | Spcl | 1-Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **M1919A4** | 5 | 4 | 2-3-Nil | Belt 250 | SS 1 Brst 3 | 125 |

# T17E2

This vehicle is very similar to the Staghound using the same chassis but it includes a new turret mounting twin .50 caliber machine guns.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 12.1 tons **Load:** 300kg **Crew:** 3 **Maint:** 5
**Armament:** 2x M2HB
**Ammo:** 2610x .50 Browning
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** UK, Australia, Canada, India, New Zealand, South Africa

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 180 / 80 | **Com Mov:** 40 / 20 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 520 liters | **Fuel Cons:** 260 | **Susp:** Wheel:(2) | Turret | 6 | 6 | 6 |
| | | | Hull | 6 | 4 | 2 |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |

## Universal Carrier

This is a light tracked armored car with an open top, it was also known as the BREN carrier. A weapon mount protected by the front armor is operated by the Commander, generally this is provided with a BREN Mk 2 but this was occasionally replaced with the Boys anti-tank rifle. A second weapons mount is provided at the top of the vehicle operated by a passenger, this also was generally provided with a BREN Mk 2 or Boys anti-tank rifle but other weapons could be fitted to this mount. The Universal carrier is amphibious propelled through the water by its tracks.

**Fire control:** None **Stabilization:** None **Fuel:** Gasoline **Weight:** 4.8 tons **Load:** 500kg **Crew:** 2+2 **Maint:** 3
**Armament:** BREN Mk 2 or Boys Mk 1(C), weapons mount(P)
**Ammo:** 600x .303 or 50x .55 Boys
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1932 **In service:** UK, Australia, Canada, India, New Zealand, South Africa

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **TrMOV:** 100 / 65 | **Com Mov:** 25 / 15 | | **Config:** Stnd | | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 90 liters | **Fuel Cons:** 70 | | **Susp:** Track:1 | | Hull | 2 | 2 | 2 |
| | | | | | | | | |

| | Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|---|
| | **BREN Mk 2** | 5 | 4 | 2-3-Nil | Box 30 | SS 1 Brst 3 | 125 |
| | **Boys Mk 1** | BA | 11 | 2-2-3 | Box 5 | SS 5 | 125 |
| | | | | | | | |

# ARMORED PERSONNEL CARRIERS

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## Crusader Gun Tractor

This is the Crusader tank modified for use as an armored gun tractor and used with the 17 pounder anti-tank gun. It carries the gun crew along with ammunition for the gun.

**Fire control:** None **Stabilization:** None **Fuel:** Gasoline **Weight:** 15.5 tons **Load:** 200kg **Crew:** 3+5 **Maint:** 6
**Armament:** Besa Mk 2 hull, BREN Mk 2 (C)
**Ammo:** 40x 17 pounder, 1000x 7.92mm, 600x .303
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 500+140 liters | **Fuel Cons:** 350 | **Susp:** Track:3 | Hull | 10 | 6 Sp | 6 |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **BREN Mk 2** | 5 | 4 | 2-3-Nil | Box 30 | SS 1 Brst 3 | 125 |
| **Besa Mk 2** | 5 | 4 | 2-3-Nil | Belt 225 | SS 1 Brst 3 | 125 |

# ASSAULT GUNS AND TANK DESTROYERS

## Achilles I-C

The British used the U.S. M10 tank destroyer under the designation Achilles I, this is a version armed with the 17 pounder in place of the 76mm gun originally fitted, the designation C is added to identify this change.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 30 tons **Load:** 300kg **Crew:** 5 **Maint:** 10
**Armament:** 17 Pounder, M2HB (C)
**Ammo:** 54x 17 Pounder, 300x .50 Browning
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1944 **In service:** UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 100 / 65 | **Com Mov:** 25 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 570 liters | **Fuel Cons:** 460 | **Susp:** Track:5 | Turret | 23 | 9 | 9 |
| | | | Hull | 15 | 10 | 8 |

| **17 Pounder** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APDS | 430 | 17 | 48 / 41 / 34 / 19 |
| HVAP | 430 | 17 | 36 / 31 / 26 / 14 |
| AP | 430 | 17 | 28 / 24 / 20 / 11 |
| HE | 320 | C:7 B:19 | 0C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |

# Achilles II-C

The Achilles II is the designation used by the British for the M10A1. This is the Achilles II armed with the 17 Pounder in place of the 76mm gun. The designation C is added to identify this change.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 29.1 tons **Load:** 300kg **Crew:** 5 **Maint:** 9
**Armament:** 17 Pounder, M2HB (C)
**Ammo:** 54x 17 Pounder, 300x .50 Browning
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1944 **In service:** UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 100 / 65 | **Com Mov:** 25 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 670 liters | **Fuel Cons:** 600 | **Susp:** Track:5 | Turret | 23 | 9 | 9 |
| | | | Hull | 15 | 10 | 8 |

| **17 Pounder** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APDS | 430 | 17 | 48 / 41 / 34 / 19 |
| HVAP | 430 | 17 | 36 / 31 / 26 / 14 |
| AP | 430 | 17 | 28 / 24 / 20 / 11 |
| HE | 320 | C:7 B:19 | 0C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |

# Archer

The Archer was developed as a stop gap weapon providing a self propelled mount for the 17 pounder gun until a tank mounting this gun became available. The gun is mounted facing the rear with a limited traverse, an open topped superstructure provides protection to the gun and crew. Some concern was initially raised about the unusual facing of the gun but this was soon proved to be unfounded, its low profile made the Archer easy to conceal making it ideal for ambushes and due to it firing over the rear of the vehicle it could quickly move from its location to avoid return fire. The Archer became a very successful anti-tank vehicle and it remained in service

with the British into the 1950's.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 15.5 tons **Load:** 200kg **Crew:** 4 **Maint:** 6
**Armament:** 17 pounder gun, BREN Mk 2 (C)
**Ammo:** 55x 17 pounder, 600x .303
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 55 / 35 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 165 liters | **Fuel Cons:** 80 | **Susp:** Track:3 | Turret | 13 | 12 | 4 |
| | | | Hull | 18 | 12 | 2 |

| **17 Pounder** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APDS | 430 | 17 | 48 / 41 / 34 / 19 |
| HVAP | 430 | 17 | 36 / 31 / 26 / 14 |
| AP | 430 | 17 | 28 / 24 / 20 / 11 |
| HE | 320 | C:7 B:19 | 0C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **BREN Mk 2** | 5 | 4 | 2-3-Nil | Box 30 | SS 1 Brst 2 | 125 |

# SELF PROPELLED ARTILLERY

# Bishop

The Bishop is a self propelled version of the 25 Pounder field gun based on the chassis of the Valentine tank. The gun and crew are protected by a large enclosed superstructure which gives the appearance of a fixed turret. It was designed during 1941 to meet the needs of the British forces in North Africa, due to many delays it was not available until 1942. The mounting of the gun limits the traverse and elevation of the gun, due to this maximum indirect fire range is severely reduced. The Bishop was not a very popular vehicle and it was quickly replaced by the American M7 Priest when that vehicle became available in sufficient numbers. The Bishop served in North Africa and in the early Italian campaigns. A machine gun is provided on the superstructure top operated by the Commander.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 17.7 tons **Load:** 200kg **Crew:** 3 **Maint:** 7
**Armament:** 25 pounder gun, BREN Mk 2 (C)
**Ammo:** 32x 25 pounder, 600x .303
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 55 / 35 | **Com Mov:** 15 / 10 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 165 liters | **Fuel Cons:** 80 | **Susp:** Track:3 | Hull | 18 | 12 | 2 |
| | | | Superstructure | 3 | 3 | 2 |

| **25 Pounder** | **ROF:** SS | **Magazine:** Rld: 1 | **IFR:** 6.2km |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 285 | 19 | 37 / 32 / 27 / 14 |
| HEAT | 215 | C:7 B:11 | 28C |
| HE | 215 | C:9 B:21 | 2C |
| APERS | 100 | Special | 1-Nil |
| CHEM | 215 | C:2 B:9 | Nil |
| ILLUM | N/A | B:700 | Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **BREN Mk 2** | 5 | 4 | 2-3-Nil | Box 30 | SS 1 Brst 2 | 125 |

# ANTI-AIRCRAFT VEHICLES

## Crusader III AA Mk I

This is an anti aircraft tank built on the chassis of the Crusader III. The Mk I is armed with a single Bofors 40mm gun in a new turret which allows the high elevation required for the gun.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 18.5 tons **Load:** 200kg **Crew:** 4 **Maint:** 8
**Armament:** 40mm Bofors L/60 gun, Besa Mk 2 hull, BREN Mk 2 (C)
**Ammo:** 112x 40mm, 1500x 7.92mm, 600x .303
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 500+140 liters | **Fuel Cons:** 350 | **Susp:** Track:3 | Turret | 4 | 3 | 3 |
| | | | Hull | 10 | 6 Sp | 6 |

| **40mm Bofors L/60** | **ROF:** 3 | **Magazine:** Clip 4 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 420 | 9 | 6 / 6 / 5 / 3 |
| HE | 315 | C:2 B:10 | -6C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **BREN Mk 2** | 5 | 4 | 2-3-Nil | Box 30 | SS 1 Brst 3 | 125 |
| **Besa Mk 2** | 5 | 4 | 2-3-Nil | Belt 225 | SS 1 Brst 3 | 125 |

## Crusader III AA Mk II

This is an anti aircraft tank built on the chassis of the Crusader III. The Mk II is armed with twin Oerlikon 20mm guns in a new turret which allows the high elevation required for the guns.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 18.5 tons **Load:** 200kg **Crew:** 4 **Maint:** 8
**Armament:** 2x 20mm Oerlikon, Besa Mk 2 hull, BREN Mk 2 (C)
**Ammo:** 360x 20mm, 1500x 7.92mm, 600x .303
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 500+140 liters | **Fuel Cons:** 350 | **Susp:** Track:3 | Turret | 4 | 3 | 3 |
| | | | Hull | 10 | 6 Sp | 6 |

| **20mm Oerlikon** | **ROF:** 5 | **Magazine:** Drum 60 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 330 | 4 | 2 / 1 / 1 / 1 |
| HE | 250 | C:1 B:4 | -8C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **BREN Mk 2** | 5 | 4 | 2-3-Nil | Box 30 | SS 1 Brst 3 | 125 |
| **Besa Mk 2** | 5 | 4 | 2-3-Nil | Belt 225 | SS 1 Brst 3 | 125 |

# ENGINEER VEHICLES

## Churchill AVRE

The Churchill AVRE (Armored Vehicle Royal Engineers) is a Churchill modified to accept a 290mm mortar, this weapon fires a large High explosive round designed to destroy barricades and bunkers. The large size of the round led to the nick name of the flying dustbin. The Churchill AVRE was developed as a result of the failed 1942 Dieppe raid and was designed to support Engineer units during amphibious landings. It was commonly used as the carrier for other specialized equipment including facine loads (bundles of logs used to cross obstacles), mine clearing devices, a "carpet layer" this was a large spool which deployed a heavy mesh "carpet" allowing vehicles to cross soft ground or wire obstacles and explosive charge placing devices which were used to destroy obstacles.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 40.6 tons **Load:** 400kg **Crew:** 5 **Maint:** 12
**Armament:** 290mm Mortar, Besa Mk 2 coaxial, Besa Mk 2 hull, 2" mortar
**Ammo:** 30x 290mm, 4950x 7.92mm, 30x 2"
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1944 **In service:** UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 40 / 25 | **Com Mov:** 10 / 5 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 680+150 liters | **Fuel Cons:** 430 | **Susp:** Track:6 | Turret | 21 | 18 | 15 |
| | | | Hull | 21 | 15 | 13 |

| **290mm Mortar** | **ROF:** SS | **Magazine:** Rld: 1 | **IFR:** 300m |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HE | 70 | C:105 B:72 | 33C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **Besa Mk 2** | 5 | 4 | 2-3-Nil | Belt 250 | SS 1 Brst 3 | 125 |

| **2" Mortar** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| CHEM | 150 | C:2 B:3 | Nil |

## Churchill Bridge Layer

This is an armored bridgelayer based on the chassis of the Churchill. A 9.2m bridge is carried above the hull and the turret has been removed. The bridge remains horozontal throughout the deployment and will support up to 80 tons. A machine gun is provided for the Commander but it may not be mounted until the bridge has been deployed.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 45 tons **Load:** 400kg **Crew:** 2 **Maint:** 13
**Armament:** BREN Mk 2 (C)
**Ammo:** 600x .303
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1944 **In service:** UK

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **TrMOV:** 55 / 35 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 680+150 liters | **Fuel Cons:** 430 | **Susp:** Track:6 | Hull | 21 | 15 | 13 |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **BREN Mk 2** | 5 | 4 | 2-3-Nil | Box 30 | SS 1 Brst 3 | 125 |

---

## Crusader ARV

This is an armored recovery vehicle based on the chassis of the Crusader Mk III. The turret is replaced with a small armored box like superstructure. It includes a 5 ton crane and a 10 ton winch as well as storage for the tools and supplies needed to repair vehicles.

**Fire control:** None **Stabilization:** None **Fuel:** Gasoline **Weight:** 15.5 tons **Load:** 200kg **Crew:** 4 **Maint:** 6
**Armament:** Besa Mk 2 hull, BREN Mk 2 (C)
**Ammo:** 1000x 7.92mm, 600x .303
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** UK

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 85 / 55 | **Com Mov:** 20 / 15 | **Config:** Stnd | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 500+140 liters | **Fuel Cons:** 350 | **Susp:** Track:3 | Hull | 10 | 6 Sp | 6 |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **BREN Mk 2** | 5 | 4 | 2-3-Nil | Box 30 | SS 1 Brst 3 | 125 |
| | **Besa Mk 2** | 5 | 4 | 2-3-Nil | Belt 225 | SS 1 Brst 3 | 125 |
| | | | | | | | |

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# JAPAN

# LIGHT TANKS

## TYPE 2 KA-MI

The Ka-Mi is a light amphibious tank designed by the Japanese navy for use by thier Marines. It is based on the Type 95 Ha-Go but has buoyancy pontoons on the hull front and rear added for amphibious landings. The Bow unit is boat shaped while the stern section includes a snorkel for the engine along with propellers and rudders. The floatation units are designed to be ejected once the tank reaches the shore. The Crew is enlarged by one adding a Loader to assist the Commander, the machinegun in the turret rear is removed and a coaxial machinegun is added. This last is unusual for Japanese tanks of the period and the Ka-Mi is one of the few war time examples of a Japanese tank using a coaxial weapon.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 11.3 tons **Load:** 100kg **Crew:** 4 **Maint:** 5
**Armament:** 37mm Type 1 gun, Type 97 coaxial, Type 97 hull
**Ammo:** 132x 37mm, 3500x 7.7mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** Japan

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **TrMOV:** 75 / 50 / 20 | **Com Mov:** 15/ 10 / 5 | | **Config:** Turret | | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 240 liters | **Fuels Cons:** 180 | | **Susp:** Track:2 | | Turret | 3 | 2 | 2 |
| | | | | | Hull | 3 | 2 | 2 |

| 37mm Type 1 | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APHE | 350 | C:1 B:2 | 5 / 5 / 4 / 2 |
| HE | 260 | C:2 B:9 | -6C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **Type 97** | 5 | 4 | 2-3-Nil | Hopper 50 | SS 1 Brst 3 | 100 |

# TYPE 95 HA-GO

The HA-GO was the standard Japanese light tank in service during World war 2. The Commander is the only occupant of the turret and so is tasked with the duties of Gunner and Loader for the 37mm gun in addition to directing the tank crew. There is a machinegun located in the rear of the turret operated by the Commander and a machinegun mounted in the hull front.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 7.4 tons **Load:** 100kg **Crew:** 3 **Maint:** 4
**Armament:** 37mm Type 94 gun (or 37mm Type 98 gun), Type 91 (or Type 97) hull, Type 91 (or Type 97) (C)
**Ammo:** 119x 37mm, 2940x 6.5mm (or 7.7mm)
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1935 **In service:** Japan

| **TrMOV:** 90 / 60 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
|---|---|---|---|---|---|---|
| **Fuel Cap:** 100 liters | **Fuels Cons:** 70 | **Susp:** Track:1 | Turret | 3 | 2 | 2 |
| | | | Hull | 3 | 2 | 2 |

| 37mm Type 94 | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APHE | 290 | C:1 B:2 | 4 / 3 / 3 / 1 |
| HE | 215 | C:2 B:9 | -6C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **Type 91** | 5 | 3 | 2-Nil | Hopper 50 | SS 1 Brst 3 | 100 |
| **Type 97** | 5 | 4 | 2-3-Nil | Hopper 50 | SS 1 Brst 3 | 100 |

| 37mm Type 98 | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APHE | 350 | C:1 B:2 | 5 / 5 / 4 / 2 |
| HE | 260 | C:2 B:9 | -6C |

# TYPE 97 TE-KE

The Te-Ke is a tankette designed in the 1930's. It was obsolete by the start of World war 2, but remained in service until the wars end. Most were used in China where they performed adequately. Some were armed with a machinegun in place of the 37mm gun.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 4.8 tons **Load:** 100kg **Crew:** 2 **Maint:** 3
**Armament:** 37mm Type 94 gun (or Type 97)
**Ammo:** 96x 37mm (2940x 7.7mm)
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1937 **In service:** Japan

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 90 / 60 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 90 liters | **Fuels Cons:** 60 | **Susp:** Track:1 | Turret | 3 | 2 | 2 |
| | | | Hull | 3 | 2 | 2 |

| 37mm Type 94 | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APHE | 290 | C:1 B:2 | 4 / 3 / 3 / 1 |
| HE | 215 | C:2 B:9 | -6C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **Type 97** | 5 | 4 | 2-3-Nil | Hopper 50 | SS 1 Brst 3 | 100 |

# MEDIUM TANKS

## TYPE 1 CHI-HE

The Chi-He is a modified version of the Shinhoto Chi-Ha, it has a slightly longer hull and improved armor. It also provides a fifth crew member freeing the Commander from the task of loading the gun. This tank was never available in the numbers needed to replace the Chi-Ha or Shinhoto Chi-Ha.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 17.5 tons **Load:** 200kg **Crew:** 4 **Maint:** 7
**Armament:** 47mm Type 1 gun, Type 97 hull, Type 97 (C)
**Ammo:** 104x 47mm, 2575x 7.7mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** Japan

| **TrMOV:** 90 / 60 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
|---|---|---|---|---|---|---|
| **Fuel Cap:** 200 liters | **Fuels Cons:** 140 | **Susp:** Track:3 | Turret | 10 | 5 | 5 |
| | | | Hull | 10 | 4 | 4 |

| 47mm Type 1 | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 395 | 10 | 8 / 7 / 6 / 3 |
| HE | 295 | C:3 B:12 | -4C |
| | | | |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **Type 97** | 5 | 4 | 2-3-Nil | Hopper 50 | SS 1 Brst 3 | 100 |
| | | | | | | |

# TYPE 3 CHI-NU

The Chi-Nu is the Chi-He with a larger turret designed to accept a 75mm gun. Few of these tanks were used in combat as less than 100 are believed to have been completed by the wars end. The performance of the Type 1 75mm gun combined with the proven chassis of the Type 1 tank would have finally provided the Japanese with a tank which could have met the Allied tanks on equal terms.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 18.8 tons **Load:** 200kg **Crew:** 5 **Maint:** 7
**Armament:** 75mm Type 1 gun, Type 97 hull
**Ammo:** 50x 75mm, 2575x 7.7mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1944 **In service:** Japan

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 80 / 55 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 200 liters | **Fuels Cons:** 160 | **Susp:** Track:3 | Turret | 10 | 5 | 5 |
| | | | Hull | 10 | 4 | 4 |

| 75mm Type 1 | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 330 | 17 | 16 / 14 / 12 / 6 |
| HE | 250 | C:7 B:19 | 0C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **Type 97** | 5 | 4 | 2-3-Nil | Hopper 50 | SS 1 Brst 3 | 100 |

# TYPE 89B CHI-RO

The Type 89 was introduced in 1929 with a gasoline powered engine, in 1934 after several years of testing in Manchuria this engine was found to be troublesome in cold weather. A new version was developed with a diesel engine and designated Type 89B, this version is also known as the Type 94. Although replaced by the Type 97 Chi-Ha in 1938, the Type 89B continued to serve well into 1943. Like most Japanese tanks of the 1930's and 40's it was designed for the infantry support role and was armed with a low velocity 57mm gun. A machine gun is mounted in the hull front and one is provided for the Commander in the turret rear.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 13 tons **Load:** 200kg **Crew:** 4 **Maint:** 5
**Armament:** 57mm Type 90 gun, Type 91 hull, Type 91 (C)
**Ammo:** 100x 57mm, 2745x 6.5mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1934 **In service:** Japan

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 55 / 35 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 195 liters | **Fuels Cons:** 130 | **Susp:** Track:2 | Turret | 3 | 2 | 2 |
| | | | Hull | 3 | 2 | 2 |

| 57mm Type 90 | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HE | 170 | C:4 B:14 | -2C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **Type 91** | 5 | 3 | 2-Nil | Hopper 50 | SS 1 Brst 3 | 100 |

# TYPE 97 CHI-HA

The Type 97 was the standard medium tank in service with the Japanese at the start of World war 2. Although it was meant to replace the Type 89B in 1938 it was not available in sufficient numbers until 1943. Early on it was found that the 57mm gun was not adequate to counter contemporary armored vehicles and it was replaced by a high velocity 47mm gun in the later versions. There is a hull mounted machinegun and a machinegun mounted in the turret rear operated by the Commander. This chassis was also used as the basis for several combat and support vehicles.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 15 tons **Load:** 200kg **Crew:** 4 **Maint:** 5
**Armament:** 57mm Type 97 gun, Type 97 hull, Type 97 (C)
**Ammo:** 120x 57mm, 2350x 7.7mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1938 **In service:** Japan

| **TrMOV:** 75 / 50 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
|---|---|---|---|---|---|---|
| **Fuel Cap:** 200 liters | **Fuels Cons:** 140 | **Susp:** Track:3 | Turret | 5 | 5 | 5 |
| | | | Hull | 5 | 4 | 4 |

| 57mm Type 97 | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APHE | 240 | C:1 B:2 | 6 / 5 / 4 / 2 |
| HE | 180 | C:4 B:14 | -2C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **Type 97** | 5 | 4 | 2-3-Nil | Hopper 50 | SS 1 Brst 3 | 100 |

# TYPE 97 SHINHOTO CHI-HA

The Shinhoto Chi-Ha was the best medium tank fielded by the Japanese during World war 2, it replaced the 57mm gun of the Chi-Ha with a high velocity 47mm gun. Even with the improved performance of the 47mm gun this tank was barely able to hold its own against the American and British tanks it faced. It is otherwise the same as the standard Chi-Ha.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 16 tons **Load:** 200kg **Crew:** 4 **Maint:** 6
**Armament:** 47mm Type 1 gun, Type 97 hull, Type 97(C)
**Ammo:** 104x 47mm, 2575x 7.7mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1941 **In service:** Japan

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 75 / 50 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 200 liters | **Fuels Cons:** 140 | **Susp:** Track:3 | Turret | 5 | 5 | 5 |
| | | | Hull | 5 | 4 | 4 |

| 47mm Type 1 | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 395 | 10 | 8 / 7 / 6 / 3 |
| HE | 295 | C:3 B:12 | -4C |
| | | | |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **Type 97** | 5 | 4 | 2-3-Nil | Hopper 50 | SS 1 Brst 3 | 100 |
| | | | | | | |

# SELF PROPELLED ARTILLERY

## TYPE 1 HO-NI

The Ho-Ni is a self propelled gun based on the chassis of the Type 97 Chi-Ha. It mounts a 75mm field gun with a limited traverse in the open superstructure. Armor protection is provided to the crew from the front and sides, the top and rear being open, The Type 1 is similar in appearance to the German Marder series of tank destroyers. Due to the limited elevation permited by the mount no indirect fire is possible.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 13.6 tons **Load:** 200kg **Crew:** 3 **Maint:** 5
**Armament:** 75mm Type 90 gun
**Ammo:** 35x 75mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1941 **In service:** Japan

| **TrMOV:** 80 / 55 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
|---|---|---|---|---|---|---|
| **Fuel Cap:** 240 liters | **Fuels Cons:** 180 | **Susp:** Track:3 | Hull | 5 | 4 | 4 |
| | | | Gun Shield | 10 | 5 | no |

| | 75mm Type 90 | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|---|
| | **Round** | **Range** | **Damage** | **Pen** |
| | AP | 330 | 17 | 16 / 14 / 12 / 6 |
| | HE | 250 | C:7 B:19 | 0C |
| | | | | |

---

# TYPE 4

The Type 4 is a self propelled howitzer based on the chassis of the Type 97 medium tank. It uses an older 150mm howitzer which is mounted on the hull top behind a large gun shield. The Type 4 was built in small numbers and was mainly used for island defence.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 13.6 tons **Load:** 200kg **Crew:** 3 **Maint:** 5
**Armament:** 75mm Type 90 gun
**Ammo:** 35x 75mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** Japan

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **TrMOV:** 80 / 55 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 240 liters | **Fuels Cons:** 180 | **Susp:** Track:3 | Hull | 5 | 4 | 4 |
| | | | Gun Shield | 5 | 5 | no |

| | 150mm Type 4 | ROF: SS | Magazine: Rld: 2 | IFR: 7.0km |
|---|---|---|---|---|
| | **Round** | **Range** | **Damage** | **Pen** |
| | HE | 190 | C:28 B:37 | 12C |
| | | | | |

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# FRANCE

# ARMORED CARS

## Panhard 178

The Panhard 178 is a 4x4 armored car which entered service with the French army shortly before World war 2. Many of these vehicles were captured by the Germans after the invasion of France. The 178 was found to be a sound and reliable design and was pressed into German service designated Panzerspahwagen P204(f). These armored cars were used throughout Europe and in the Soviet Union by German forces for anti-partisan and security duties. Many were converted for use with armored trains their tires replaced with flanged steel wheels and were used to scout the tracks ahead of trains. After the Liberation of France in 1944 production was resumed for use by the Free French.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 8.5 tons **Load:** 200kg **Crew:** 4 **Maint:** 5
**Armament:** 25mm SA-25 gun, M1931 coaxial
**Ammo:** 55x 25mm, 1500x 7.5mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1935 **In service:** France

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **TrMOV:** 145 / 65 | **Com Mov:** 35 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 150 liters | **Fuel Cons:** 145 | **Susp:** Wheel:(2) | Turret | 3 | 3 | 3 |
| | | | Hull | 4 | 3 | 3 |

| 25mm SA-35 | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 475 | 6 | 3 / 2 / 2 / 1 |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **M1931** | 5 | 4 | 2-3-Nil | Drum 150 | SS 1 Brst 3 | 125 |

# Panhard 178B

This is an improved version of the Panhard 178, it entered production after the Liberation of France in 1944. It uses a larger turret to mount a 47mm gun. The Panhard 178B remained in use with French forces into the 1960's.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 8.7 tons **Load:** 200kg **Crew:** 4 **Maint:** 5
**Armament:** 47mm SA-35 gun, M1931 coaxial
**Ammo:** 25x 47mm, 1500x 7.5mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1944 **In service:** France

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 145 / 65 | **Com Mov:** 35 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 150 liters | **Fuel Cons:** 145 | **Susp:** Wheel:(2) | Turret | 3 | 3 | 3 |
| | | | Hull | 4 | 3 | 3 |

| 47mm SA-35 | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 285 | 10 | 6 / 5 / 4 / 2 |
| HE | 215 | C:3 B:12 | -4C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **M1931** | 5 | 4 | 2-3-Nil | Drum 150 | SS 1 Brst 3 | 125 |

# LIGHT TANKS

## AMC-34R

The AMC-34R is a light cavalry tank in service with French forces during World war 2. It was designed for making fast hit and run attacks behind enemy lines to cause disruption of enemy formations and supply lines.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 10.8 tons **Load:** 200kg **Crew:** 3 **Maint:** 5
**Armament:** 25mm SA-25 gun, M1931 coaxial
**Ammo:** 75x 25mm, 1750x 7.5mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1934 **In service:** France

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 80 / 50 | **Com Mov:** 20 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 190 liters | **Fuel Cons:** 170 | **Susp:** Track:2 | Turret | 4 | 4 | 3 |
| | | | Hull | 4 | 3 | 3 |

| **25mm SA-35** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 475 | 6 | 3 / 2 / 2 / 1 |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **M1931** | 5 | 4 | 2-3-Nil | Drum 150 | SS 1 Brst 3 | 125 |

# AMC-35R

The AMC-35R is another light cavalry tank in service with France at the start of World war 2, its primary mission was causing disruption behind enemy lines.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 14.5 tons **Load:** 200kg **Crew:** 3 **Maint:** 6
**Armament:** 47mm SA-35 gun, M1931 coaxial
**Ammo:** 35x 47mm, 1750x 7.5mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1935 **In service:** France, Belgium

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 80 / 50 | **Com Mov:** 20 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 190 liters | **Fuel Cons:** 190 | **Susp:** Track:2 | Turret | 5 | 5 | 4 |
| | | | Hull | 5 | 4 | 3 |

| **47mm SA-35** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 285 | 10 | 6 / 5 / 4 / 2 |
| HE | 215 | C:3 B:12 | -4C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **M1931** | 5 | 4 | 2-3-Nil | Drum 150 | SS 1 Brst 3 | 125 |

# AMR-35

The AMR-35 is a light reconnaisance tank in service with French forces during World war 2.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 6.6 tons **Load:** 100kg **Crew:** 2 **Maint:** 4
**Armament:** 13.2mm Hotchkiss, M1931 coaxial
**Ammo:** 900x 13.2mm, 1750x 7.5mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1935 **In service:** France

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 110 / 75 | **Com Mov:** 25 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Fuel Cap:** 140 liters | **Fuel Cons:** 130 | **Susp:** Track:1 | Turret | 3 | 3 | 2 |
| | | | Hull | 3 | 2 | 2 |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **Hotchkiss** | 5 | 8 | 2-3-4 | Strip 25 | SS 3 Brst 7 | 190 |
| **M1931** | 5 | 4 | 2-3-Nil | Drum 150 | SS 1 Brst 3 | 125 |
| | | | | | | |

---

# Char Canon Renault FT-17

The FT-17 was the most successful light tank designed during World war 1, it was used in large numbers by the French and was issued to the U.S. Army. It was still in service in 1940 and remained a major part of the French armored forces. After the German occupation it entered service with the German army for anti-partisan operations as the PzKpfw 18R 730(f). While clearly obsolecent by 1944 it was still in service and was encountered by the Allies after D-day. The FT-17 was widely exported, and it was still in limited service with many nations at the start of World war 2. It was known by several designations including, Fiat 3000 (Italy), Type 79 Ko-Gata Sensha (Japan), 6 ton M1917 (USA), KS (USSR). It was also used as the basis for several support vehicles including bridge layers, cargo carriers, mine clearing vehicles, wireless (radio) vehicle and a searchlight vehicle with mast mounted searchlights.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 6.8 tons **Load:** 200kg **Crew:** 3 **Maint:** 6
**Armament:** 37mm SA-18 gun
**Ammo:** 237x 37mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1918 **In service:** France, Belgium, Brazil, Canada, China, Czechoslovakia, Finland, Greece, Italy, Japan, Manchuria, Netherlands, Poland, Spain, UK, USA, USSR, Yugoslavia

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 15 / 10 | **Com Mov:** 3 / 2 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 100 liters | **Fuel Cons:** 90 | **Susp:** Track:1 | Turret | 4 | 4 | 4 |
| | | | Hull | 4 | 3 | 2 |

| **37mm SA-18** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 225 | 8 | 2 / 1 / 1 / 1 |
| HE | 170 | C:2 B:9 | -6C |

## Char Mitrailleuse Renault FT-31

The FT-17 was built in 2 types, a connon armed version and a machine gun armed version they were built at a ratio of 2 machine gun armed FT-17's for each cannon armed version. This is the machine gun armed version, in 1931 all French machine gun armed FT-17's were upgraded with 7.5mm machine guns in place of the earlier 8mm machine guns, at this time they were redesignated FT-31. Large numbers were in service in 1940 and many were used by the German army for internal security duties after the occupation of France.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 6.8 tons **Load:** 200kg **Crew:** 3 **Maint:** 6
**Armament:** M1931
**Ammo:** 4500x 7.5mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1918 **In service:** France, Belgium, Brazil, Canada, China, Czechoslovakia, Finland, Greece, Italy, Japan, Manchuria, Netherlands, Poland, Spain, UK, USA, USSR, Yugoslavia

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 15 / 10 | **Com Mov:** 3 / 2 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 100 liters | **Fuel Cons:** 90 | **Susp:** Track:1 | Turret | 4 | 4 | 4 |
| | | | Hull | 4 | 3 | 2 |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **M1931** | 5 | 4 | 2-3-Nil | Drum 150 | SS 1 Brst 3 | 125 |

## Hotchkiss H-35

The H-35 was introduced as a light cavalry tank, it was later accepted for use by the infantry as well. After the German occupation many of these tanks were used for internal security operations. One popular use for this tank in German service was to load several on train flat cars for defence against partisan attacks, used in this way they could provide defensive fire from the train and then be unloaded to pursue the attackers.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 11.4 tons **Load:** 200kg **Crew:** 2 **Maint:** 5
**Armament:** 37mm SA-18 gun, M1931 coaxial
**Ammo:** 100x 37mm, 2400x 7.5mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1936 **In service:** France, Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 60 / 40 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 240 liters | **Fuel Cons:** 180 | **Susp:** Track:2 | Turret | 11 | 11 | 11 |
| | | | Hull | 11 | 8 | 8 |

| **37mm SA-18** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 225 | 8 | 2 / 1 / 1 / 1 |
| HE | 170 | C:2 B:9 | -6C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **M1931** | 5 | 4 | 2-3-Nil | Drum 150 | SS 1 Brst 3 | 125 |

---

# Hotchkiss H-39

The H-39 is an improved version of the H-35, it includes a more powerful engine and heavier armor.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 12.5 tons **Load:** 200kg **Crew:** 2 **Maint:** 5
**Armament:** 37mm SA-18 gun, M1931 coaxial
**Ammo:** 100x 37mm, 2400x 7.5mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1936 **In service:** France, Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 75 / 50 | **Com Mov:** 20 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 240 liters | **Fuel Cons:** 230 | **Susp:** Track:2 | Turret | 14 | 14 | 14 |
| | | | Hull | 12 | 8 | 8 |

| 37mm SA-18 | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 225 | 8 | 2 / 1 / 1 / 1 |
| HE | 170 | C:2 B:9 | -6C |
| | | | |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **M1931** | 5 | 4 | 2-3-Nil | Drum 150 | SS 1 Brst 3 | 125 |
| | | | | | | |

# Renault R-35

The R-35 is a light infantry tank designed to support the Somua S-35. In 1940 this was the most numerous tank in French service. Many were exported to Eastern Europe before the war. After the German occupation many of these tanks were sent to the Italians for use against the British in North Africa, a small number were used by the German army against the Soviets.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 10 tons **Load:** 200kg **Crew:** 2 **Maint:** 5
**Armament:** 37mm SA-18 gun, M1931 coaxial
**Ammo:** 100x 37mm, 2400x 7.5mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1936 **In service:** France, Germany, Italy, Poland, Romania, Turkey, Yugoslavia

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 40 / 25 | **Com Mov:** 10 / 5 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 170 liters | **Fuel Cons:** 100 | **Susp:** Track:2 | Turret | 14 | 14 | 14 |
| | | | Hull | 12 | 8 | 8 |

| 37mm SA-18 | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 225 | 8 | 2 / 1 / 1 / 1 |
| HE | 170 | C:2 B:9 | -6C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **M1931** | 5 | 4 | 2-3-Nil | Drum 150 | SS 1 Brst 3 | 125 |

# Renault R-40

This is an improved version of the R-35, it includes a more powerful 37mm gun.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 10 tons **Load:** 200kg **Crew:** 2 **Maint:** 5
**Armament:** 37mm SA-38 gun, M1931 coaxial
**Ammo:** 100x 37mm, 2400x 7.5mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1939 **In service:** France, Germany, Italy, Poland, Romania, Turkey, Yugoslavia

| **TrMOV:** 40 / 25 | **Com Mov:** 10 / 5 | **Config:** Turret | **Armor** | Front | Side | Rear |
|---|---|---|---|---|---|---|
| **Fuel Cap:** 170 liters | **Fuel Cons:** 100 | **Susp:** Track:2 | Turret | 14 | 14 | 14 |
| | | | Hull | 12 | 8 | 8 |

| 37mm SA-38 | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 285 | 8 | 3 / 3 / 2 / 1 |
| HE | 215 | C:2 B:9 | -6C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **M1931** | 5 | 4 | 2-3-Nil | Drum 150 | SS 1 Brst 3 | 125 |

# MEDIUM TANKS

## Somua S35

The S35 was one of the best tanks in service with any nation when it was introduced in the mid 1930's, by 1940 it was still superior to the German tanks it faced but due to the French tactics at the time it was not used to its best effect. After the German occupation many of these tanks were taken into German service and many were sent to Italy for use in North Africa against the British. A machine gun was often provided for the Commander on the turret top for local air defence.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 20.1 tons **Load:** 300kg **Crew:** 3 **Maint:** 7
**Armament:** 47mm SA-35 gun, M1931 coaxial, M1931 (C)
**Ammo:** 118x 47mm, 3000x 7.5mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1935 **In service:** France, Germany, Italy

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 80 / 55 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 410 liters | **Fuel Cons:** 250 | **Susp:** Track:3 | Turret | 16 | 14 | 14 |
| | | | Hull | 12 | 8 Sp | 7 |

| **47mm SA-35** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 285 | 10 | 6 / 5 / 4 / 2 |
| HE | 215 | C:3 B:12 | -4C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **M1931** | 5 | 4 | 2-3-Nil | Drum 150 | SS 1 Brst 3 | 125 |

# HEAVY TANKS

## Char B1 bis

The B1 bis was one of the most powerfully armed tanks in 1940. It mounts a 47mm gun in a turret along with a coaxial machine gun and has a 75mm gun in a limited traverse mounting in the hull front. There is an escape hatch in the floor of the hull which may be used by the entire crew. Many of these tanks were taken into German service after the occupation for use in internal security operations.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 32 tons **Load:** 400kg **Crew:** 4 **Maint:** 10
**Armament:** 47mm SA-35 gun, 75mm SA-35, M1931 coaxial (47mm), M1931 hull
**Ammo:** 50x 47mm, 74x 75mm, 5100x 7.5mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1937 **In service:** France, Germany

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 60 / 40 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 570 liters | **Fuel Cons:** 450 | **Susp:** Track:6 | Turret | 16 | 14 | 14 |
| | | | Hull | 18 | 12 Sp | 11 |

| **47mm SA-35** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 285 | 10 | 6 / 5 / 4 / 2 |
| HE | 215 | C:3 B:12 | -4C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **M1931** | 5 | 4 | 2-3-Nil | Drum 150 | SS 1 Brst 3 | 125 |

| 75mm SA-35 | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 225 | 17 | 6 / 5 / 4 / 2 |
| HE | 165 | C:7 B:19 | 0C |
| | | | |

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# SOVIET UNION

# LIGHT TANKS

## T-26B

The T-26 is based on the Vickers six ton tank. It was used during the Spanish Civil war where it gained the respect of the German crews it faced and at the start of World war 2 it formed a significant part of the Soviet tank force. By 1942 it was showing its age and most of the remaining T-26's were withdrawn to be used on the quiet far eastern borders until the end of the war. Many of these tanks were captured by the Finn's in the 1939-40 Winter war between the USSR and Finland. Germany also captured many T-26's after invading the USSR, these were often used for anti-partisan operations behind the German lines.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 10.1 tons **Load:** 200kg **Crew:** 3 **Maint:** 5
**Armament:** 45mm M1932 gun, DT coaxial, DT (C)
**Ammo:** 165x 45mm, 3654x 7.62mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1937 **In service:** USSR, Finland, Germany

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **TrMOV:** 55 / 35 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 285 liters | **Fuel Cons:** 140 | **Susp:** Track:2 | Turret | 5 | 5 | 5 |
| | | | Hull | 8 | 3 | 3 |

| 45mm M1932 | ROF: SS | Magazine: Rld: 2 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 355 | 9 | 7 / 6 / 5 / 3 |
| HE | 285 | C:2 B:10 | -5C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **DT** | 5 | 4 | 2-3-Nil | Drum 60 | SS 1 Brst 3 | 125 |

# T-40

The Soviet Union consists of wide open plains with numerous lake and rivers, early on the need for a light reconnaisance tank with amphipbious capabilities was felt by the Soviet military. The T-40 was developed to meet this need, it has a bulky hull due to the buoyancy tanks. It was used in the 1939-40 Winter war against Finland where it suffered heavy losses due to its thin armor which was easily penetrated by anti-tank rifles. After the German invasion the T-40 was withdrawn from regular service, remaining in limited service until 1946 for use in areas which required its amphibious qualities.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 6.3 tons **Load:** 100kg **Crew:** 2 **Maint:** 4
**Armament:** DShK
**Ammo:** 1000x 12.7mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1936 **In service:** USSR

| **TrMOV:** 90 / 60 / 15 | **Com Mov:** 20 / 15 / 5 | **Config:** Turret | **Armor** | Front | Side | Rear |
|---|---|---|---|---|---|---|
| **Fuel Cap:** 210 liters | **Fuel Cons:** 100 | **Susp:** Track:1 | Turret | 4 | 4 | 4 |
| | | | Hull | 4 | 3 | 2 |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **DShK** | 5 | 8 | 2-3-4 | Belt 50 | SS 3 Brst 7 | 150 |

# T-40S

After the experience in Finland, the Soviet military decided the earlier designs of light reconnaisance tanks which sacrificed firepower and armor for mobility was an error and that they should have a more balanced blend. The T-40S was a result of this thinking and is a modified version of the T-40. The buoyancy tanks were removed, the armor was increased and a 20mm cannon replaced the DShK machinegun.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 6.5 tons **Load:** 100kg **Crew:** 2 **Maint:** 4
**Armament:** 20mm ShVAK gun
**Ammo:** 550x 20mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1940 **In service:** USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 90 / 60 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 210 liters | **Fuel Cons:** 100 | **Susp:** Track:1 | Turret | 5 | 5 | 4 |
| | | | Hull | 5 | 4 | 2 |

| **20mm ShVAK** | **ROF:** 5 | **Magazine:** Belt 50 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 520 | 4 | 4 / 3 / 3 / 2 |
| AP | 520 | 4 | 3 / 3 / 2 / 1 |
| HE | 390 | C:1 B:4 | -8C |

---

# T-60

The T-60 was introduced as a replacement for the T-40, it has heavier armor and a 20mm cannon. It was a reliable vehicle but its armor was still to thin and the 20mm gun was inadequate resulting it its being replaced by the T-70.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 5.2 tons **Load:** 100kg **Crew:** 2 **Maint:** 3
**Armament:** 20mm ShVAK gun, DT coaxial
**Ammo:** 550x 20mm, 2016x 7.62mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1941 **In service:** USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 90 / 60 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 210 liters | **Fuel Cons:** 100 | **Susp:** Track:1 | Turret | 6 | 6 | 6 |
| | | | Hull | 6 | 3 | 3 |

| **20mm ShVAK** | **ROF:** 5 | **Magazine:** Belt 50 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 520 | 4 | 4 / 3 / 3 / 2 |
| AP | 520 | 4 | 3 / 3 / 2 / 1 |
| HE | 390 | C:1 B:4 | -8C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **DT** | 5 | 4 | 2-3-Nil | Drum 60 | SS 1 Brst 3 | 125 |

# T-70

The T-70 was introduced to replace the T-60, it has improved armor and a 45mm gun, it remained in service until the end of the war although production stopped in 1943 to use the chassis for the SU-76 self propelled gun. The T-70 was a capable light tank and probably would have found more success but once the T-34 became available in sufficient numbers it began to perform many of the traditional light tank duties, making the T-70 somewhat redundant.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 9.2 tons **Load:** 200kg **Crew:** 2 **Maint:** 5
**Armament:** 45mm M1935 gun, DT coaxial
**Ammo:** 70x 45mm, 945x 7.62mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1941 **In service:** USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 100 / 65 | **Com Mov:** 25 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 460 liters | **Fuel Cons:** 210 | **Susp:** Track:2 | Turret | 15 | 7 | 7 |
| | | | Hull | 14 | 3 | 5 |

| **45mm M1935** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 355 | 9 | 9 / 8 / 7 / 4 |
| AP | 355 | 9 | 7 / 6 / 5 / 3 |
| HE | 285 | C:2 B:10 | -5C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **DT** | 5 | 4 | 2-3-Nil | Drum 60 | SS 1 Brst 3 | 125 |

# MEDIUM TANKS

## BT-5

The BT-5 formed a significant part of the Soviet tank force in 1941. In combat it was found to be lacking in armor protection and firepower but the experience gained from it was used in the development of the T-34. An unusual feature of the BT series is the ability to remove the tracks and run on the wheels for higher road speeds. The BT-5 was withdrawn from service in 1942. Speeds listed in ( ) are for wheeled travel.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 11.7 tons **Load:** 200kg **Crew:** 3 **Maint:** 5
**Armament:** 45mm M1935 gun, DT coaxial
**Ammo:** 94x 45mm, 2394x 7.62mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1935 **In service:** USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 130(225) / 85(45) | **Com Mov:** 30(55) / 20 (10) | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 400 liters | **Fuel Cons:** 350 | **Susp:** Track:2 | Turret | 5 | 3 | 3 |
| | | | Hull | 5 | 3 | 3 |

| **45mm M1935** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 355 | 9 | 9 / 8 / 7 / 4 |
| AP | 355 | 9 | 7 / 6 / 5 / 3 |
| HE | 285 | C:2 B:10 | -5C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **DT** | 5 | 4 | 2-3-Nil | Drum 60 | SS 1 Brst 3 | 125 |

# BT-5A

The BT-5A is a support version of the BT-5, it replaces the 45mm gun with a 76.2mm gun.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 11.7 tons **Load:** 200kg **Crew:** 3 **Maint:** 5
**Armament:** 76.2mm PS-3 gun, DT coaxial
**Ammo:** 25x 76.2mm, 2394x 7.62mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1935 **In service:** USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 130(225) / 85(45) | **Com Mov:** 30(55) / 20 (10) | **Config:** Turret | **Armor** | Front | Side | Rear |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Fuel Cap:** 400 liters | **Fuel Cons:** 350 | **Susp:** Track:2 | Turret | 5 | 3 | 3 |
| | | | Hull | 5 | 3 | 3 |

| **76.2mm PS-3** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 240 | 17 | 9 / 8 / 7 / 4 |
| HE | 180 | C:7 B:19 | 1C |
| CHEM | 180 | C:2 B:8 | Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **DT** | 5 | 4 | 2-3-Nil | Drum 60 | SS 1 Brst 3 | 125 |

## BT-7

The BT-7 is an improved version of the BT-5. It was used in the campaigns against Finland and Poland and several thousand were in service with the Soviets when Germany invaded in 1941. By 1942 it was completely outclassed by the German Panzer III and IV and it was withdrawn from service. It adds a machine gun in the turret rear operated by the Commander and it retains the ability to be run on wheels or tracks.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 14 tons **Load:** 200kg **Crew:** 3 **Maint:** 6
**Armament:** 45mm M1935 gun, DT coaxial, DT (C)
**Ammo:** 188x 45mm, 2394x 7.62mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1937 **In service:** USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 105(145) / 70(60) | **Com Mov:** 25(35) / 15 (15) | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 790 liters | **Fuel Cons:** 460 | **Susp:** Track:2 | Turret | 8 | 5 | 4 |
| | | | Hull | 8 | 4 | 3 |

| 45mm M1935 | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 355 | 9 | 9 / 8 / 7 / 4 |
| AP | 355 | 9 | 7 / 6 / 5 / 3 |
| HE | 285 | C:2 B:10 | -5C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **DT** | 5 | 4 | 2-3-Nil | Drum 60 | SS 1 Brst 3 | 125 |

## BT-7A

This is a support version of the BT-7, it replaces the 45mm gun with a short barrelled 76.2mm gun.

**Fire control:** +1 **Stabilization:** None **Fuel:** Gasoline **Weight:** 14 tons **Load:** 200kg **Crew:** 3 **Maint:** 6
**Armament:** 76.2mm PS-3 gun, DT coaxial
**Ammo:** 50x 76.2mm, 2394x 7.62mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1937 **In service:** USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 105(145) / 70(60) | **Com Mov:** 25(35) / 15 (15) | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 790 liters | **Fuel Cons:** 460 | **Susp:** Track:2 | Turret | 8 | 5 | 4 |
| | | | Hull | 8 | 4 | 3 |

| 76.2mm PS-3 | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 240 | 17 | 9 / 8 / 7 / 4 |
| HE | 180 | C:7 B:19 | 1C |
| CHEM | 180 | C:2 B:8 | Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **DT** | 5 | 4 | 2-3-Nil | Drum 60 | SS 1 Brst 3 | 125 |

# T-34/76A

The T-34 is generally considered to be the best tank built during World war 2. It had a major impact on tank design during and following the war. It was first available in 1940 but was a carefully guarded secret until 1941 when Germany invaded the Soviet Union. When first encountered the current German tanks were completely outclassed by it. The Germans reacted by ordering a tank into production to counter it, this resulted in the Panther. Several captured T-34's were studied by the German design team and the Panther borrowed heavily from its design. Auxilliary fuel tanks may be fitted on the hull rear to extend the range. The T-34 is not without faults, the turret only has a crew of two which forces the Commander to act as the Loader distracting him from his duties directing the crew and locating targets, also the transmission of these early T-34's was prone to failure and it was common to see an extra transmission strapped to the rear deck of the tank. The T-34 was upgraded several times during the war and it can be found in service with the militaries of several countries.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 26.7 tons **Load:** 300kg **Crew:** 4 **Maint:** 9
**Armament:** 76.2mm M1939 gun, DT coaxial, DT hull
**Ammo:** 77x 76.2mm, 2394x 7.62mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1940 **In service:** USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 110 / 70 | **Com Mov:** 25 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 420 + 140 liters | **Fuel Cons:** 260 | **Susp:** Track:5 | Turret | 14 | 14 | 14 |
| | | | Hull | 14 | 14 | 14 |

| 76.2mm M1939 | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 295 | 17 | 18 / 16 / 13 / 7 |
| AP | 295 | 17 | 14 / 12 / 10 / 5 |
| HE | 220 | C:7 B:19 | 0C |
| APERS | 100 | Special | 1-Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **DT** | 5 | 4 | 2-3-Nil | Drum 60 | SS 1 Brst 3 | 125 |

## T-34/76B

This is an improved version of the T-34. It mounts a more powerful version of the 76.2mm gun, additional turret armor, mechanical changes to improve reliability, a more fuel efficient engine and increased fuel capacity.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 28.5 tons **Load:** 300kg **Crew:** 4 **Maint:** 9
**Armament:** 76.2mm M1940 gun, DT coaxial, DT hull
**Ammo:** 77x 76.2mm, 2394x 7.62mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1942 **In service:** USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 110 / 70 | **Com Mov:** 25 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 500 + 140 liters | **Fuel Cons:** 240 | **Susp:** Track:5 | Turret | 18 | 14 | 14 |
| | | | Hull | 14 | 14 | 14 |

| 76.2mm M1940 | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 345 | 17 | 23 / 20 / 17 / 9 |
| AP | 345 | 17 | 18 / 15 / 13 / 7 |
| HEAT | 260 | C: 5 B:10 | 23C |
| HE | 260 | C:7 B:19 | 0C |
| APERS | 100 | Special | 1-Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **DT** | 5 | 4 | 2-3-Nil | Drum 60 | SS 1 Brst 3 | 125 |

# T-34/85

This is the last production version of the T-34, it mounts an 85mm gun in place of the earlier 76.2mm gun and uses the turret from the short lived KV-85. This version included a fifth crew member relieving the Commander from the task of Loading the gun.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 32 tons **Load:** 300kg **Crew:** 5 **Maint:** 10
**Armament:** 85mm D-5T gun, DT coaxial, DT hull
**Ammo:** 55x 85mm, 2394x 7.62mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1944 **In service:** USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 100 / 65 | **Com Mov:** 25 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 635 + 135 liters | **Fuel Cons:** 240 | **Susp:** Track:6 | Turret | 23 | 23 | 15 |
| | | | Hull | 14 | 14 | 14 |

| 85mm D-5T | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 415 | 19 | 51 / 44 / 38 / 20 |
| AP | 415 | 19 | 39 / 34 / 29 / 15 |
| HEAT | 310 | C:6 B:11 | 27C |
| HE | 310 | C:9 B:21 | 2C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **DT** | 5 | 4 | 2-3-Nil | Drum 60 | SS 1 Brst 3 | 125 |

# HEAVY TANKS

## KV-1

The KV-1 was entering service with the Soviet Union at the beginning of World war 2. When introduced it was one of the most powerful tanks in the world, like the later Tiger it was built without using the benefits of sloped armor and its armor protection was not as good as later tanks of lighter weight. The KV series was never as successful as the T-34 medium tank, while the KV-1 had heavier armor their firepower was equal and the T-34 was faster, more fuel efficient and easier to produce. A machine gun is provided in the turret rear operated by the Commander.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 45.5 tons **Load:** 500kg **Crew:** 5 **Maint:** 14
**Armament:** 76.2mm M1939 gun, DT coaxial, DT hull, DT (C)
**Ammo:** 111x 76.2mm, 3024x 7.62mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1939 **In service:** USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 70 / 45 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 595 liters | **Fuel Cons:** 370 | **Susp:** Track:6 | Turret | 15 | 15 | 15 |
| | | | Hull | 15 | 12 | 12 |

| **76.2mm M1939** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 295 | 17 | 18 / 16 / 13 / 7 |
| AP | 295 | 17 | 14 / 12 / 10 / 5 |
| HE | 220 | C:7 B:19 | 0C |
| APERS | 100 | Special | 1-Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **DT** | 5 | 4 | 2-3-Nil | Drum 60 | SS 1 Brst 3 | 125 |

# KV-1A

This is an improved version of the KV-1. During the fighting against Finland in the 1939-40 Winter war the KV-1 had proven its ability, however it was felt that the armor needed improvement and additional armor was added to the front and sides. The longer barreled M1940 76.2mm gun was also added in place of the earlier gun.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 47.1 tons **Load:** 500kg **Crew:** 5 **Maint:** 14
**Armament:** 76.2mm M1940 gun, DT coaxial, DT hull, DT (C)
**Ammo:** 111x 76.2mm, 3024x 7.62mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1940 **In service:** USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 70 / 45 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 595 liters | **Fuel Cons:** 370 | **Susp:** Track:6 | Turret | 19 | 19 | 15 |
| | | | Hull | 19 | 12 | 12 |

| **76.2mm M1940** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 345 | 17 | 23 / 20 / 17 / 9 |
| AP | 345 | 17 | 18 / 15 / 13 / 7 |
| HEAT | 260 | C: 5 B:10 | 23C |
| HE | 260 | C:7 B:19 | 0C |
| APERS | 100 | Special | 1-Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **DT** | 5 | 4 | 2-3-Nil | Drum 60 | SS 1 Brst 3 | 125 |

# KV-1B

This is the KV-1A with additional armor bolted or welded to the turret and hull.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 48.7 tons **Load:** 500kg **Crew:** 5 **Maint:** 14
**Armament:** 76.2mm M1940 gun, DT coaxial, DT hull, DT (C)
**Ammo:** 111x 76.2mm, 3024x 7.62mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1941 **In service:** USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 70 / 45 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 595 liters | **Fuel Cons:** 370 | **Susp:** Track:6 | Turret | 24 | 24 | 19 |
| | | | Hull | 26 | 12 | 12 |

| **76.2mm M1940** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 345 | 17 | 23 / 20 / 17 / 9 |
| AP | 345 | 17 | 18 / 15 / 13 / 7 |
| HEAT | 260 | C: 5 B:10 | 23C |
| HE | 260 | C:7 B:19 | 0C |
| APERS | 100 | Special | 1-Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **DT** | 5 | 4 | 2-3-Nil | Drum 60 | SS 1 Brst 3 | 125 |

# KV-1s

This is the KV-1 with reduced armor and a more powerful engine. It was meant to be a fast heavy tank, the s designates skorostnoy (fast).

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 43.2 tons **Load:** 500kg **Crew:** 5 **Maint:** 13
**Armament:** 76.2mm M1940 gun, DT coaxial, DT hull, DT (C)
**Ammo:** 111x 76.2mm, 3024x 7.62mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1941 **In service:** USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 90 / 60 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 595 liters | **Fuel Cons:** 300 | **Susp:** Track:6 | Turret | 15 | 15 | 12 |
| | | | Hull | 15 | 12 | 12 |

| **76.2mm M1940** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 345 | 17 | 23 / 20 / 17 / 9 |
| AP | 345 | 17 | 18 / 15 / 13 / 7 |
| HEAT | 260 | C: 5 B:10 | 23C |
| HE | 260 | C:7 B:19 | 0C |
| APERS | 100 | Special | 1-Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **DT** | 5 | 4 | 2-3-Nil | Drum 60 | SS 1 Brst 3 | 125 |

# KV-2

The KV-2 is a support tank based on the chassis of the KV-1. It mounts a 152mm howitzer in a large slab sided turret. It met with limited success in the early campaigns against Finland and Poland but it was heavy, slow and unstable on anything but flat ground. The large turret was slow to traverse and its high profile made it an obvious target for enemy gunners. Production ceased in 1941 when the factories building it were captured by the Germans and the remaining KV-2's were phased out of service by 1942.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 53.9 tons **Load:** 500kg **Crew:** 6 **Maint:** 16
**Armament:** 152mm M-10T howitzer, DT hull
**Ammo:** 38x 152mm, 1200x 7.62mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1940 **In service:** USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 70 / 45 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 595 liters | **Fuel Cons:** 370 | **Susp:** Track:6 | Turret | 24 | 24 | 19 |
| | | | Hull | 26 | 12 | 12 |

| **152mm M-10T** | **ROF:** SS | **Magazine:** Rld: 2 | **IFR:** 12.4km |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APHE | 275 | C:7 B:9 | 36 / 31 / 27 / 14 |
| HE | 205 | C:29 B:38 | 12C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **DT** | 5 | 4 | 2-3-Nil | Drum 60 | SS 1 Brst 3 | 125 |

# KV-85

The KV-85 is an upgunned version of the KV-1, it uses a new turret mounting an 85mm gun. Most KV-85's were built by fitting KV-1's with the new turret. It was only in production for a short time because at the end of 1943 the T-34 was fitted with this turret, once again making the T-34 equal in firepower with better mobility than the KV series.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 48.7 tons **Load:** 500kg **Crew:** 5 **Maint:** 14
**Armament:** 85mm D-5T gun, DT coaxial, DT hull, DT (C)
**Ammo:** 111x 76.2mm, 3024x 7.62mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1943 **In service:** USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 70 / 45 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 595 liters | **Fuel Cons:** 370 | **Susp:** Track:6 | Turret | 23 | 23 | 15 |
| | | | Hull | 26 | 12 | 12 |

| 85mm D-5T | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 415 | 19 | 51 / 44 / 38 / 20 |
| AP | 415 | 19 | 39 / 34 / 29 / 15 |
| HEAT | 310 | C:6 B:11 | 27C |
| HE | 310 | C:9 B:21 | 2C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **DT** | 5 | 4 | 2-3-Nil | Drum 60 | SS 1 Brst 3 | 125 |

## IS-2

The KV series had been designed in the late 1930's and was nearing the end of its ability to be improved. It was out classed by the German Panther and Tiger tanks and was being made redundant by the Soviets own T-34 series. In 1943 the Soviets started work on a new heavy tank which took advantage of the experience gained during the first years of the war. The IS-1 was introduced late in 1943, it took advantage of the principles of sloped armor and had a lower profile than the KV series. It was armed with an 85mm gun in the turret of the KV-85, the introduction of the T-34/85 made this gun unsuitable to the Soviet military which had decided that it was inappropriate for a heavy tank to have the same gun as a medium tank. Few IS-1's were built and it is not known whether any were used in combat, the IS-1B introduced a 100mm naval gun but few of these were built either. The first production version was the IS-2 which mounted a 122mm field gun. The IS-2 was named in honor of Joseph Stalin (spelled with an I in the Soviet alphabet). A machine gun is provided in the turret rear operated by the Loader and a DShK machine gun is provided for air defence on the turret top operated by the Commander. While providing tremendous firepower the 122mm gun also proved to be the IS-2's weak point, due to the size of the ammunition it was only able to carry 1/3 as many rounds as the German Tiger, this ammunition was also of the seperate loading type which slowed the rate of fire. External fuel tanks may be fitted to extend the range. The IS-2 could still be found in service with Soviet client states into the 1970's.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 45.2 tons **Load:** 500kg **Crew:** 4 **Maint:** 14
**Armament:** 122mm D-25 gun, DT coaxial, DT (L), DShK (C)
**Ammo:** 28x 122mm, 2330x 7.62mm, 945x 12.7mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1944 **In service:** USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 75 / 50 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 525 + 730 liters | **Fuel Cons:** 420 | **Susp:** Track:6 | Turret | 48 | 30 | 27 |
| | | | Hull | 36 | 19 | 12 |

| **122mm D-25** | **ROF:** SS | **Magazine:** Rld: 2 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 405 | 27 | 68 / 58 / 49 / 26 |
| AP | 405 | 27 | 52 / 45 / 38 / 20 |
| HE | 305 | C: 19 B:30 | 7C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **DT** | 5 | 4 | 2-3-Nil | Drum 60 | SS 1 Brst 3 | 125 |
| **DShK** | 5 | 8 | 2-3-4 | Belt 50 | SS 3 Brst 7 | 150 |

# IS-3

This is an improved version of the IS-2, it has a new turret with improved ballistic qualities. This turret introduced the inverted bowl shape which has been used on nearly all Soviet tanks since the introduction of the IS-3. It entered service shortly before the end of the war and remained in front line service with the Soviets into the 1950's, it could still be found in service with Soviet client states into the 1970's.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 46.5 tons **Load:** 500kg **Crew:** 4 **Maint:** 14
**Armament:** 122mm D-25 gun, DT coaxial, DShK (C)
**Ammo:** 28x 122mm, 1000x 7.62mm, 945x 12.7mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1945 **In service:** USSR

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 75 / 50 | **Com Mov:** 15 / 10 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 480 + 730 liters | **Fuel Cons:** 340 | **Susp:** Track:6 | Turret | 69 | 45 | 40 |
| | | | Hull | 69 | 24 | 15 |

| **122mm D-25** | **ROF:** SS | **Magazine:** Rld: 2 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAP | 405 | 27 | 68 / 58 / 49 / 26 |
| AP | 405 | 27 | 52 / 45 / 38 / 20 |
| HE | 305 | C: 19 B:30 | 7C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **DT** | 5 | 4 | 2-3-Nil | Drum 60 | SS 1 Brst 3 | 125 |
| **DShK** | 5 | 8 | 2-3-4 | Belt 50 | SS 3 Brst 7 | 150 |

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# UNITED STATES

## ANTI-TANK GUNS

## 37mm Gun M3A1

The M3A1 was the standard anti tank weapon in service with U.S. forces at the start of World war 2. Production was stopped in 1943 when the 57mm M1 became available in sufficient numbers. The 37mm remained in service as a substitute standard weapon until the end of the war, most being used in the Pacific where its performance was acceptable as Japanese tanks had much thinner armor than German tanks. The carriage is designed for high travel speeds and includes a gun shield. The ammunition is the same as that used in the 37mm tank guns M5 and M6.

| | | | |
|---|---|---|---|
| **Crew: 4** | **Ammunition: 37mm M3** | **ROF: SS** | **Introduced: 1938** |
| **Weapon Wt: 430kg** | **Ammunition Wt: 1.5 kg** | **Reload: 1** | **Gun Shield: AV:3** |

| Round | Range | Damage | Pen |
|---|---|---|---|
| APC | 395 | 8 | 6 / 5 / 4 / 2 |
| HE | 295 | C:2 B:9 | -6C |
| APERS | 100 | Special | 1-Nil |

# 57mm Gun M1

The M1 is based on the British 6 pounder. The U.S. started building the 6 pounder for Britain in 1941 and when the U.S. entered the war it was soon found that a gun with more power than the 37mm was needed. The M1 is very similar to the British gun the most significant change is a slightly longer barrel, the measurements are changed to suit U.S. manufacture so parts will not interchange with the 6 pounder. The carriage is designed for high speed travel and includes a gun shield.

| | | | |
|---|---|---|---|
| **Crew: 4** | **Ammunition: 57mm M1** | **ROF: SS** | **Introduced: 1942** |
| **Weapon Wt: 1.3 tons** | **Ammunition Wt: 5.7 kg** | **Reload: 1** | **Gun Shield: AV:3** |

| Round | Range | Damage | Pen |
|---|---|---|---|
| HVAP | 390 | 13 | 21 / 18 / 15 / 8 |
| AP | 390 | 13 | 16 / 14 / 12 / 6 |
| HE | 290 | C:4 B:14 | -2C |

---

# 3" Gun M5

The M5 is based on the M3 3" anti-aircraft gun and uses the carriage of the M2 105mm howitzer. In 1940 it was decided to design a heavy anti-tank gun capable of destroying any tank then in service. The design was ready late in 1941 but the Army had then decided that they wanted a self propelled version, due to delays in that project the M5 was ordered into production late in 1942 as the standard U.S. heavy anti-tank gun. The carriage is designed for high speed travel and includes a gun shield.

| | | | |
|---|---|---|---|
| **Crew: 5** | **Ammunition: 3" Gun M3** | **ROF: SS** | **Introduced: 1942** |
| **Weapon Wt: 2.2 tons** | **Ammunition Wt: 12.4 kg** | **Reload: 1** | **Gun Shield: AV:3** |

| Round | Range | Damage | Pen |
|---|---|---|---|
| HVAP | 405 | 17 | 33 / 27 / 23 / 13 |
| AP | 405 | 17 | 25 / 21 / 18 / 10 |
| HE | 300 | C:7 B:19 | 0C |

---

# 90mm Gun M2

The M2 is based on the M1A1 anti-aircraft gun but has been modified to enhance its performance against ground vehicles and small watercraft, it is intended for use as a dual purpose weapon. The primary changes include a new mount which is lower and can be put into action faster, increased depression for the gun to allow its use against targets at a lower elevation than the gun position and a gun shield to provide protection for the crew. The carriage is designed for high travel speeds and includes a platform and outriggers for the gun, unlike the earlier carriage the gun may be fired without removing the wheels.

| | | | |
|---|---|---|---|
| **Crew: 7** | **Ammunition: 90mm Gun M1** | **ROF: SS** | **Introduced: 1943** |
| **Weapon Wt: 14.7 tons** | **Ammunition Wt: 19.1 kg** | **Reload: 1** | **Gun Shield: AV:3** |

| Round | Range | Damage | Pen |
|---|---|---|---|
| HVAP | 405 | 20 | 49 / 43 / 36 / 20 |
| AP | 405 | 20 | 38 / 33 / 28 / 15 |
| HE | 305 | C:10 B:22 | 3C |

# ANTI-AIRCRAFT GUNS

# .50 Machine-gun Carriage M51

The M51 is a trailer mounted power operated turret containing four M2HB machine guns. There is armor protecting the gunner from the front and sides, the remainder of the crew may take cover nearby and no protection is provided for them. Each of the machine guns are fed from 200 round drums. A small gasoline generator re-charges the batteries used to power the turret. In case of a power failure manual control of the guns is provided. Jacks are provided to stabilize the guns.

| | | | |
|---|---|---|---|
| **Crew: 4** | **Ammunition: .50 Browning** | **ROF: 20 (4x 5)** | **Introduced: 1941** |
| **Weapon Wt: 3.1 tons** | **Ammunition Wt: 27 kg (200 Rd. Drum)** | **Armor: AV:3** | |

| Weapon | ROF | Damage | Pen | Magazine | Range |
|---|---|---|---|---|---|
| **M2HB** | 5 | 8 | 2-2-3 | Drum 200 | 150 |

---

# .50 Machine-gun Carriage M55

The M55 is a light trailer mounted power operated turret containing four M2HB machine guns, similar to the M51 but designed for use by airborne and other light troops. The trailer may be transported in an airplane or glider and may be towed by light vehicles. Unlike the M51 the M55 requires the trailer to be raised on jacks and the wheels removed before firing, also no generator is provided, the tow vehicle often being used to provide power to the batteries. During the Korean and Vietnam wars the hardware was removed from the trailer and placed in the cargo bed of a modified lightly armored 2.5 ton truck for convoy escort duties, creating a vehicle similar to the M16 half track.

| | | | |
|---|---|---|---|
| **Crew: 4** | **Ammunition: .50 Browning** | **ROF: 20 (4x 5)** | **Introduced: 1942** |

| | | |
|---|---|---|
| **Weapon Wt: 2.7 tons** | **Ammunition Wt: 27 kg (200 Rd. Drum)** | **Armor: AV:3** |

| Weapon | ROF | Damage | Pen | Magazine | Range |
|---|---|---|---|---|---|
| **M2HB** | 5 | 8 | 2-2-3 | Drum 200 | 150 |

---

# 37mm Gun M1A2

The M1A2 is a light automatic anti-aircraft gun and was the standard light anti-aircraft weapon until 1941, it remained in service as a substitute standard weapon until the end of the war. The ammunition is based on that used by the M3A1 anti-tank gun and so was used against ground vehicles as well as aircraft. It uses 10 round clips fed from the top. The gun is mounted on a platform and has a 360' traverse. The carriage has wheels at each end and outrigger jacks are provided to stabilize the platform. The carriage is designed for high speed travel and no gun shield is provided.

| | | | |
|---|---|---|---|
| **Crew: 5** | **Ammunition: 37mm M1** | **ROF: 1** | **Introduced: 1938** |
| **Weapon Wt: 2.8 tons** | **Ammunition Wt: 16 kg (10 Rd. Clip)** | **Gun Shield: No** | |

| Round | Range | Damage | Pen |
|---|---|---|---|
| AP | 390 | 8 | 6 / 5 / 4 / 2 |
| HE | 290 | C:2 B:9 | -6C |

---

# 40mm Gun M1

The 40mm M1 is an American built version of the Swedish Bofors. It was adopted by the Navy in 1938 and the Army adopted it as the thier standard anti aircraft gun in 1941. The gun uses 4 round clips fed from the top. The carriage is similar to that of the M1A2, it has wheels on each end and includes a platform allowing the gun a 360' traverse. Outriggers are provided to stabilize the platform and the carriage is designed for high speed travel, no gun shield is provided.

| | | | |
|---|---|---|---|
| **Crew: 7** | **Ammunition: 40mm Bofors** | **ROF: 1** | **Introduced: 1938** |
| **Weapon Wt: 2.5 tons** | **Ammunition Wt: 9.6 kg (4 Rd. Clip)** | **Gun Shield: No** | |

| Round | Range | Damage | Pen |
|---|---|---|---|
| AP | 420 | 9 | 6 / 6 / 5 / 3 |
| HE | 315 | C:2 B:10 | -6C |

---

# 40mm Gun M1 (Airborne)

This is the 40mm M1 on a light mount designed for use by airborne and other light troops. The mount may be transported in an airplane or glider, and it may be towed by a light vehicle. The carriage is not designed for high travel speeds and is limited to a speed of less than 10km/h off road. The gun barrel must be removed from the mount before transporting by air but the gun can be put into service in about 5 minutes after being unloaded.

| | | | |
|---|---|---|---|
| **Crew: 7** | **Ammunition: 40mm Bofors** | **ROF: 1** | **Introduced: 1938** |
| **Weapon Wt: 2.1 tons** | **Ammunition Wt: 9.6 kg (4 Rd. Clip)** | **Gun Shield: No** | |

| Round | Range | Damage | Pen |
|---|---|---|---|
| AP | 420 | 9 | 6 / 6 / 5 / 3 |
| HE | 315 | C:2 B:10 | -6C |

# 3" Gun M3

The M3 was the standard U.S. medium anti-aircraft gun used in World war 2. The carriage is designed for high travel speeds and includes a platform allowing the gun a 360' traverse. Outriggers are provided to stabilize the platform and the carriage has wheels at each end. No gun shield is provided. It uses the same ammunition as the M5 anti-tank gun and so was used against ground vehicles in addition to aircraft.

| | | | |
|---|---|---|---|
| **Crew: 6** | **Ammunition: 3" Gun M3** | **ROF: SS** | **Introduced: 1938** |
| **Weapon Wt: 7.6 tons** | **Ammunition Wt: 11.2 kg** | **Reload: 1** | **Gun Shield: No** |

| Round | Range | Damage | Pen |
|---|---|---|---|
| HVAP | 405 | 17 | 33 / 27 / 23 / 13 |
| AP | 405 | 17 | 25 / 21 / 18 / 10 |
| HE | 300 | C:7 B:19 | 0C |

# 90mm Gun M1A1

The M1A1 was designed to cope with increases in aviation particularly high altitude bombing. The 90mm M1A1 was used along side the 3" M3 as the standard medium anti-aircraft weapons at the start of World war 2. In 1943 a dual purpose anti-aircraft / anti-tank weapon was adopted and production of the M1A1 was stopped, it remained in service as a substitute standard weapon until the end of the war. The carriage is similar to that of the M3 3" gun with wheels at each end, a platform for the gun and outriggers to stabilize it.

| | | | |
|---|---|---|---|
| **Crew: 7** | **Ammunition: 90mm Gun M1** | **ROF: SS** | **Introduced: 1940** |
| **Weapon Wt: 8.6 tons** | **Ammunition Wt: 19.1 kg** | **Reload: 1** | **Gun Shield: No** |

| Round | Range | Damage | Pen |
|---|---|---|---|
| HVAP | 405 | 20 | 49 / 43 / 36 / 20 |
| AP | 405 | 20 | 38 / 33 / 28 / 15 |
| HE | 305 | C:10 B:22 | 3C |

---

# 120mm Gun M1

The 120mm M1 was the standard U.S. Heavy anti-aircraft gun used throughout World war 2. The carriage is designed for high speed travel and includes a platform and outriggers for the gun.

| | | | |
|---|---|---|---|
| **Crew: 8** | **Ammunition: 120mm Gun M1** | **ROF: SS** | **Introduced: 1939** |
| **Weapon Wt: 28 tons** | **Ammunition Wt: 44.7 kg** | **Reload: 1** | **Gun Shield: No** |

| Round | Range | Damage | Pen |
|---|---|---|---|
| HE | 345 | C:19 B:30 | 7C |

# ARTILLERY

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# 75mm Pack Howitzer M1A1

The M1A1 is a light gun originally designed for transport by draft or pack animal. During World war 2 it was the standard gun used by U.S. mountain infantry and similar troops needing a light portable gun. The M1A1 may be broken down into 6 loads for transport, the heaviest load weighing 100kg. It may be re-assembled by the crew in about 3 minutes.

| | | | |
|---|---|---|---|
| **Crew: 4** | **Ammunition: 75mm Howitzer M1** | **ROF: SS** | **Introduced: 1927** |
| **Weapon Wt: 580kg** | **Ammunition Wt: 6.25 kg** | **Reload: 1** | **Gun Shield: No** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|
| HEAT | 195 | 8.8km | C:5 B:10 | 23C |
| HE | 195 | 8.8km | C:7 B:19 | 0C |
| CHEM | 195 | 8.8km | C:2 B:7 | Nil |
| WP | 195 | 8.8km | C:2 B:15 | Nil |

---

# 75mm Field Howitzer M1A1

The M1A1 was the standard light howitzer used by the U.S. during World war 2. It is a modification of the M1A1 Pack Howitzer and uses a carriage designed for higher travel speeds, it also adds a gun shield to protect the crew.

| | | | |
|---|---|---|---|
| **Crew: 4** | **Ammunition: 75mm Howitzer M1** | **ROF: SS** | **Introduced: 1936** |
| **Weapon Wt: 980kg** | **Ammunition Wt: 6.25kg** | **Reload: 1** | **Gun Shield: AV:3** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|
| HEAT | 195 | 8.8km | C:5 B:10 | 23C |
| HE | 195 | 8.8km | C:7 B:19 | 0C |

| | | | | |
|---|---|---|---|---|
| CHEM | 195 | 8.8km | C:2 B:7 | Nil |
| WP | 195 | 8.8km | C:2 B:15 | Nil |

---

# 75mm Howitzer M1A1 (Airborne)

This is the M1A1 Field Howitzer on a light carriage designed for use by airborne troops. It is similar to the M1A1 Pack Howitzer but uses a more modern carriage designed for higher towing speeds. It may be broken into 8 loads and loaded into paracrates for air drop or may be transported whole in an airplane or glider. It takes approximately 7 minutes for the crew to unpack and re-assemble the gun when air dropped. A light air portable cart is usually dropped with the gun along with 18 rounds of ammunition.

| | | | |
|---|---|---|---|
| **Crew: 4** | **Ammunition: 75mm Howitzer M1** | **ROF: SS** | **Introduced: 1936** |
| **Weapon Wt: 650kg** | **Ammunition Wt: 6.25 kg** | **Reload: 1** | **Gun Shield: No** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|
| HEAT | 195 | 8.8km | C:5 B:10 | 23C |
| HE | 195 | 8.8km | C:7 B:19 | 0C |
| CHEM | 195 | 8.8km | C:2 B:7 | Nil |
| WP | 195 | 8.8km | C:2 B:15 | Nil |

---

# 75mm Gun M1897A2

This is a modernization of the World war 1 French 75mm M1897 gun. Most of the improvements were directed at the carriage to permit higher towing speeds and greater elevation for the gun increasing the range. This was the standard light gun with in service with U.S. forces during World war 2. Many were converted for use with the M3 half track as self propelled guns. It is provided with an armored shield for the crew.

| | | | |
|---|---|---|---|
| **Crew: 6** | **Ammunition: 75mm M1897** | **ROF: SS** | **Introduced: 1934** |
| **Weapon Wt: 1.6 tons** | **Ammunition Wt: 8.9 kg** | **Reload: 1** | **Gun Shield: AV:3** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|
| AP | 320 | N/A | 17 | 14 / 13 / 11 / 6 |
| APHE | 320 | N/A | C:1 B:2 | 14 / 13 / 11 / 6 |
| HE | 240 | 11.6km | C:7 B:19 | 0C |
| WP | 240 | 11.6km | C:2 B:15 | Nil |
| APERS | 100 | N/A | Special | 1-Nil |

---

# 105mm Howitzer M2

The M2 was the standard field artillery piece used by the U.S. during World war 2. It is based on the M1 105mm howitzer designed in 1927, the M1 was not adopted but the ammunition and several other features were. The carriage is designed for high travel speeds and includes a gun shield to protect the crew.

| | | | |
|---|---|---|---|
| **Crew: 6** | **Ammunition: 105mm Howitzer M1** | **ROF: SS** | **Introduced: 1934** |
| **Weapon Wt: 2.3 tons** | **Ammunition Wt: 15.9 kg** | **Reload: 1** | **Gun Shield: AV:3** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|
| HEAT | 210 | 11.1km | C:9 B:13 | 35C |
| HE | 210 | 11.1km | C:14 B:26 | 5C |
| CHEM | 210 | 11.1km | C:3 B:14 | Nil |
| WP | 210 | 11.1km | C:3 B:32 | Nil |

| | | | | |
|---|---|---|---|---|
| ILLUM | N/A | 11.1km | B:1000 | Nil |

---

# 105mm Howitzer M3

The M3 is a light weight version of the M2 Howitzer designed for use by airborne troops. The barrel is shortend, the gun shield removed and the carriage lightend. It may fire the same ammunition as the M2 in an emergency but it may not use the full charge limiting it's range. The standard ammunition is similar to the M2 but uses a faster burning powder to get the best performance from the short barrel.

| | | | |
|---|---|---|---|
| **Crew: 6** | **Ammunition: 105mm Howitzer M3** | **ROF: SS** | **Introduced: 1943** |
| **Weapon Wt: 1.1 tons** | **Ammunition Wt: 15 kg** | **Reload: 1** | **Gun Shield: No** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|
| HEAT | 180 | 7.5km | C:9 B:13 | 35C |
| HE | 180 | 7.5km | C:14 B:26 | 5C |
| CHEM | 180 | 7.5km | C:3 B:14 | Nil |
| WP | 180 | 7.5km | C:3 B:32 | Nil |
| ILLUM | N/A | 7.5km | B:1000 | Nil |

---

# 155mm Howitzer M1918A3

The M1918 is a modified version of the 155mm French howitzers which equipped the U.S. forces in World war 1. It was the standard medium howitzer serving with U.S. forces at the beginning of World war 2. It was replaced by the M1 in mid 1941. The carriage is designed for high speed travel and includes a gun shield.

| | | | |
|---|---|---|---|
| **Crew: 11** | **Ammunition: 155mm Howitzer M1917** | **ROF: SS** | **Introduced: 1936** |
| **Weapon Wt: 3.7 tons** | **Ammunition Wt: 46 kg** | **Reload: 2** | **Gun Shield: AV:3** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|
| HE | 185 | 11.3km | C:30 B:38 | 12C |
| WP | 185 | 11.3km | C:3 B:47 | Nil |
| CHEM | 185 | 11.3km | C:3 B:30 | Nil |

---

# 155mm Howitzer M1

The M1 replaced the M1918 in mid 1941 as the standard U.S. medium howitzer. It has a longer barrel which increases the range by almost 25%. The carriage is designed for high speed travel but does not include a gun shield.

| | | | |
|---|---|---|---|
| **Crew: 11** | **Ammunition: 155mm Howitzer M1** | **ROF: SS** | **Introduced: 1941** |
| **Weapon Wt: 5.4 tons** | **Ammunition Wt: 49.3 kg** | **Reload: 2** | **Gun Shield: No** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|
| HE | 210 | 14.5km | C:30 B:38 | 12C |
| WP | 210 | 14.5km | C:3 B:47 | Nil |
| CHEM | 210 | 14.5km | C:3 B:30 | Nil |

---

# 155mm Gun M1918M1

The M1918 is a modified version of the 155mm French guns which equipped the U.S. forces in World war 1. It was the standard medium gun serving with U.S. forces at the beginning of World war 2. It was replaced by the M1A1 in mid 1941. The carriage is designed for high speed travel but does not include a gun shield.

| | | | |
|---|---|---|---|
| **Crew: 14** | **Ammunition: 155mm Gun M1917** | **ROF: SS** | **Introduced: 1934** |
| **Weapon Wt: 10.6 tons** | **Ammunition Wt: 54.3 kg** | **Reload: 2** | **Gun Shield: No** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|
| AP | 330 | N/A | 34 | 60 / 52 / 44 / 23 |
| HE | 245 | 18.3km | C:30 B:38 | 12C |
| WP | 245 | 18.3km | C:3 B:47 | Nil |
| CHEM | 245 | 18.3km | C:3 B:30 | Nil |

---

# 155mm Gun M1A1

The M1A1 replaced the M1918 as the standard medium gun with U.S. forces in mid 1941. It has a longer barrel to increase the range and a modern carriage designed for high travel speeds.

| | | | |
|---|---|---|---|
| **Crew: 14** | **Ammunition: 155mm Gun M1** | **ROF: SS** | **Introduced: 1918** |
| **Weapon Wt: 13.9 tons** | **Ammunition Wt: 57.7 kg** | **Reload: 2** | **Gun Shield: No** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|
| AP | 405 | N/A | 34 | 67 / 58 / 50 / 26 |
| HE | 300 | 23.1km | C:30 B:38 | 12C |

| | | | | |
|---|---|---|---|---|
| WP | 300 | 23.1km | C:3 B:47 | Nil |
| CHEM | 300 | 23.1km | C:3 B:30 | Nil |

---

# 8" Howitzer M1

The M1 is based on the British 8" howitzers used by U.S. forces in World war 1. It includes a modern carriage designed for high travel speeds.

| | | | |
|---|---|---|---|
| **Crew: 14** | **Ammunition: 8" Howitzer M1** | **ROF: SS** | **Introduced: 1934** |
| **Weapon Wt: 14.4 tons** | **Ammunition Wt: 103.9 kg** | **Reload: 4** | **Gun Shield: No** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|
| HE | 245 | 16.8km | C:52 B:50 | 20C |
| WP | 245 | 16.8km | C:3 B:61 | Nil |
| CHEM | 245 | 16.8km | C:3 B:52 | Nil |

---

# 8" Gun M1

During World war 1 the U.S. Army determined that an 8" field gun would be desirable, in 1919 a specification for this weapon was founded but all work was suspended in 1924. In 1939 the project was resumed and in mid 1940 the M1 entered service. It shares many parts with the 240mm Howitzer M1. The wheels are removed from the carriage when in use and it takes some time to prepare the M1 for travel or to place into a new firing position. the carriage is designed for high speed travel.

| | | | |
|---|---|---|---|
| **Crew: 14** | **Ammunition: 8" Gun M1** | **ROF: SS** | **Introduced: 1940** |

| | | | |
|---|---|---|---|
| **Weapon Wt: 31.5 tons** | **Ammunition Wt: 157.7 kg** | **Reload: 4** | **Gun Shield: No** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|
| HE | 340 | 31.8km | C:52 B:50 | 20C |

---

# 8" Gun Mk VI M3A2

This is an 8" Naval gun mounted on a railway car. it takes several hours to prepare this gun for firing upon reaching its destination but once in place it may fire in all directions.

| | | | |
|---|---|---|---|
| **Crew: 14** | **Ammunition: 8" U.S. Naval gun** | **ROF: SS** | **Introduced: 1938** |
| **Weapon Wt: 104.5 tons** | **Ammunition Wt: 157.2 kg** | **Reload: 4** | **Gun Shield: No** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|
| APHE | 425 | 29.0km | C:13 B:13 | 161 / 140 / 119 / 63 |
| HE | 320 | 29.0km | C:52 B:50 | 20C |

---

# 240mm Howitzer M1

During World war 1 the U.S. Army determined that a 240mm Howitzer was needed. Approximately 300 weapons based on a French design were built after the war and in 1934 it was decided to design an all new weapon to rectify the short comings of the French weapon, the new howitzer entered service in 1940. the carriage is the same as that used on the 8" gun M1 and requires extensive preparations to transition the gun to or from its firing position.

| | | | |
|---|---|---|---|
| **Crew: 14** | **Ammunition: 8" Gun M1** | **ROF: SS** | **Introduced: 1940** |
| **Weapon Wt: 29.4 tons** | **Ammunition Wt: 199 kg** | **Reload: 4** | **Gun Shield: No** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|
| HE | 260 | 22.9km | C:72 B:59 | 25C |

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# GERMANY

# ANTI-TANK GUNS

## 2.8cm s.Pz.B41

This is a light anti-tank gun, it fires a 28mm projectile through a 20mm bore which results in good armor penetration from a fairly small weapon. The tapered bore creates an effect similar to a discarding sabot type armor piercing round. Due to the high cost and the need to use a number of scarce materials production of the sPzB41 was discontinued in 1943, it remained in use until the end of the war. Ammunition for the gun was always in short supply after 1943 but a small amount remained in production until the wars end as the small rounds made few demands on the limited tungsten supply. It is equipped with a light wheeled mount which includes a gun shield and is designed for high speed towing. It was also often deployed mounted on light vehicles and trucks.

| | | | |
|---|---|---|---|
| **Crew: 2** | **Ammunition: 2.8 / 2.0cm taper bore** | **ROF: SS** | **Introduced: 1941** |
| **Weapon Wt: 227 kg** | **Ammunition Wt: 0.4 kg** | **Reload: 1** | **Gun Shield: AV:2** |

| **Round** | **Range** | **Damage** | **Pen** |
|---|---|---|---|
| AP | 420 | 4 | 6 / 5 / 4 / 2 |
| HE | 315 | C:1 B:4 | -8C |

# 2.8cm s.Pz.B41 (Airborne)

This is a light weight version of the 2.8cm taper bore gun developed for use by airborne and other light troops. This version uses a light alloy cradle with small wheels and is not designed for towing. No gun shield is provided.

| | | | |
|---|---|---|---|
| **Crew: 2** | **Ammunition: 2.8 / 2.0 cm taper bore** | **ROF: SS** | **Introduced: 1941** |
| **Weapon Wt: 118 kg** | **Ammunition Wt: 0.4 kg** | **Reload: 1** | **Gun Shield: No** |

| Round | Range | Damage | Pen |
|---|---|---|---|
| AP | 420 | 4 | 6 / 5 / 4 / 2 |
| HE | 315 | C:1 B:4 | -8C |

---

# 3.7cm Pak 35

The 3.7cm Pak 35 was the standard German infantry anti-tank weapon at the start of World war 2. By 1940 it was proving insufficient against the current tanks being fielded against it. Despite this it remained in use throughout the war as a light anti-armor weapon, often used by airborne and other light troops as well as reserve and garrison units. In 1940 two rounds were developed to extend the guns useful life the first was a tungsten cored HVAP round, the second was a "stick bomb" HEAT round, this was a muzzle loaded 160mm round with a smaller diameter "stick" actually a tube which slid over the muzzle of the gun in a fashion similar to a large rifle grenade. The HVAP was always in short supply due to the use of tungsten, the "stick bomb" had a short range and poor accuracy but provided good anti-armor performance, it also was effective as a High Explosive round against personnel and for obstacle clearing. The Pak 35 influenced the design of several nations anti-tank guns including the U.S. M3, Soviet M1930, Japanese Type 97, and the Italian Cannone contracarro da 37/45. The carriage is designed for high speed travel and includes a gun shield.

| | | | |
|---|---|---|---|
| **Crew: 3** | **Ammunition: 3.7cm Pak 35** | **ROF: SS** | **Introduced: 1934** |
| **Weapon Wt: 328kg** | **Ammunition Wt: 1.1 kg** | **Reload: 1** | **Gun Shield: AV:2** |

| Round | Range | Damage | Pen |
|---|---|---|---|
| HVAP | 350 | 8 | 7 / 6 / 5 / 3 |
| AP | 350 | 8 | 5 / 5 / 4 / 2 |
| HEAT | 175 | C:19 B:37 | 57C |
| HE | 260 | C:2 B:9 | -6C |

---

# 4.2cm le. Pak 41

This is a light anti-tank gun, it is the second of the tapered bore anti-tank gun series designed for use with airborne troops. It fires a 42mm projectile through a 28mm bore and is mounted on the same carriage as the 3.7cm Pak 35. The gun shield has had an additional layer added creating a spaced armor effect. Like the other taper bore guns the high cost of this weapon led to its cancellation in 1943 although remaining guns were used on a limited basis until the ammunition ran out.

| | | | |
|---|---|---|---|
| **Crew: 3** | **Ammunition: 4.2 / 2.9cm taper bore** | **ROF: SS** | **Introduced: 1941** |
| **Weapon Wt: 560 kg** | **Ammunition Wt: 1.0 kg** | **Reload: 1** | **Gun Shield: AV:3Sp** |

| Round | Range | Damage | Pen |
|---|---|---|---|
| AP | 400 | 7 | 12 / 10 / 9 / 5 |
| HE | 300 | C:1 B:7 | -7C |

---

# 5cm Pak 38

The 5cm Pak 38 was introduced to replace the 3.7cm Pak 35. By 1937 it was becoming clear that the 37mm gun

was soon to become obsolete and the development of the new 5cm gun started in 1938. The Pak 38 was first used in the invasion of the Soviet Union where it was the only gun available which could defeat the T-34, it was replaced by the 7.5cm Pak 40 but remained in front line service until the end of the war. The carriage is designed for high travel speeds and includes a gun shield with spaced armor.

| | | | |
|---|---|---|---|
| **Crew: 4** | **Ammunition: 5cm Pak38** | **ROF: SS** | **Introduced: 1940** |
| **Weapon Wt: 1.0 tons** | **Ammunition Wt: 6.2 kg** | **Reload: 1** | **Gun Shield: AV:3Sp** |

| **Round** | **Range** | **Damage** | **Pen** |
|---|---|---|---|
| HVAP | 425 | 10 | 14 / 13 / 10 / 5 |
| AP | 425 | 10 | 11 / 10 / 8 / 4 |
| HE | 320 | C:3 B:12 | -4C |

---

# 7.5cm Pak 40

The 7.5cm Pak 40 was the standard German medium anti-tank gun, it was developed to supplement the 5cm Pak 38. As the Pak 38 was entering service it was realized that a heavier gun would be needed to keep pace with new heavy tanks being developed. To meet this need design of the Pak 40 was started. It is basically a scaled up version of the Pak 38 but some changes were made to reduce the use of critical materials, the Pak 38 had used many light weight alloys, these were replaced with steel in the Pak 40 resulting in a heavier weapon. The carriage is designed for high speed travel and includes a gunshield with spaced armor.

| | | | |
|---|---|---|---|
| **Crew: 5** | **Ammunition: 7.5cm Pak40** | **ROF: SS** | **Introduced: 1941** |
| **Weapon Wt: 1.4 tons** | **Ammunition Wt: 20.4 kg** | **Reload: 1** | **Gun Shield: AV:3Sp** |

| **Round** | **Range** | **Damage** | **Pen** |
|---|---|---|---|
| HVAP | 380 | 17 | 27 / 23 / 21 / 10 |
| AP | 380 | 17 | 21 / 18 / 16 / 8 |

| | | | |
|---|---|---|---|
| HEAT | 285 | C:5 B:10 | 23C |
| HE | 285 | C:7 B:19 | 0C |
| CHEM | 285 | C:2 B:7 | Nil |

---

# 7.5cm Pak 41

The 7.5cm Pak 41 is the third and largest of the taper bore anti-tank guns. It showed much promise and was planned to replace the Pak 40 but the critical shortage of tungsten needed for the rounds resulted in its cancellation after about 150 guns had been built. The guns built remained in limited service until the ammunition ran out. The carriage is designed for high speed travel and includes a gunshield with spaced armor.

| | | | |
|---|---|---|---|
| **Crew: 5** | **Ammunition: 7.5 / 5.5cm taper bore** | **ROF: SS** | **Introduced: 1941** |
| **Weapon Wt: 1.4 tons** | **Ammunition Wt: 7.5 kg** | **Reload: 1** | **Gun Shield: AV:3Sp** |

| Round | Range | Damage | Pen |
|---|---|---|---|
| AP | 430 | 10 | 45 / 39 / 33 / 18 |
| HE | 200 | C:3 B:12 | -4C |

---

# 7.5cm Pak 97 / 38

The 7.5cm Pak 97 / 38 was a modification of the French 75mm Mle 97 field gun mounted on the carriage of the Pak 38. After Germany invaded the Soviet Union in 1941, the T-34 was encountered for the first time. The 3.7cm Pak 35 was not capable of defeating the T-34's heavy armor and the 5cm Pak 38 was not available in the quantities needed. The 7.5cm Pak 40 was just entering production and would not be in the hands of the troops until the end of the year, in order to provide additional anti-tank guns many captured French 75mm Mle 97 guns were modified for use as anti-tank guns by adding strengthening bands around the barrel and a muzzle brake, this gun was then mounted on the carriage of the Pak 38. Armor piercing and HEAT rounds were quickly developed

and these guns were shipped to the Eastern front where they served until sufficient quantities of the Pak 38 and Pak 40 were available.

| | | | |
|---|---|---|---|
| **Crew: 5** | **Ammunition: 7.5cm Pak97** | **ROF: SS** | **Introduced: 1941** |
| **Weapon Wt: 1.2 tons** | **Ammunition Wt: 18.6 kg** | **Reload: 1** | **Gun Shield: AV:3Sp** |

| Round | Range | Damage | Pen |
|---|---|---|---|
| AP | 320 | 17 | 14 / 13 / 11 / 6 |
| HEAT | 240 | C:5 B:10 | 23C |
| HE | 240 | C:7 B:19 | 0C |

---

# 7.62cm Pak 36(r)

This is the Soviet 76.2mm M1936 field gun modified to use German ammunition. During the German invasion of the Soviet Union large numbers of M1936 guns were captured along with the factory which built them. Many of these guns were used unmodified as the 7.62cm FK 296(r), but others had the chamber rebored to fire new ammunition using German 7.5cm Pak 40 components, these were designated Pak 36(r) and were used as anti-tank guns, these guns proved to be one of the best anti-tank guns used during the war and were in service with German forces as far away as North Africa. The carriage is designed for high speed travel and includes a gunshield.

| | | | |
|---|---|---|---|
| **Crew: 5** | **Ammunition: 7.5cm Pak40** | **ROF: SS** | **Introduced: 1941** |
| **Weapon Wt: 1.35 tons** | **Ammunition Wt: 20.4 kg** | **Reload: 1** | **Gun Shield: AV:2** |

| Round | Range | Damage | Pen |
|---|---|---|---|
| HVAP | 415 | 17 | 34 / 30 / 25 / 13 |
| AP | 415 | 17 | 26 / 23 / 19 / 10 |

| | | | |
|---|---|---|---|
| HEAT | 310 | C:5 B:10 | 23C |
| HE | 310 | C:7 B:19 | 0C |

---

# 8.8cm Pak 43

The Pak 43 is a version of the 8.8cm anti-aircraft gun modified for use as an anti-tank gun. It had been found during the Spanish civil war that the 8.8cm Flak had potential as an anti-tank gun, against the light tanks encountered in Spain the high velocity rounds were very effective. From the reports received in Spain it was decided to develop a round intended for the anti armor role. The fighting in North Africa found both sides equipped with anti-tank guns which were becoming obsolete. The German forces took many 8.8cm Flak 36 anti-aircraft guns and placed them into service in the anti-armor role. These guns proved the "88" was a capable dual purpose gun but the carriages intended for anti-aircraft work were not particularly well suited for anti-tank work as they were high and required preparation before they could be used. The Pak 43 was introduced to provide a carriage more suited to this new role. The gun is mounted on a similar cruciform mount to that of the Flak 36, this allows the gun a 360' arc of fire. The gun sits much lower to the ground and a gun shield is provided. The carriage is designed for high speed towing and wheels are mounted at the front and back of the carriage. The axles and wheels are generally removed before firing, but the gun may be fired in a 30' arc to the front or back of the mount with the wheels in place.

| | | | |
|---|---|---|---|
| **Crew: 5** | **Ammunition: 8.8cm Flak 36** | **ROF: SS** | **Introduced: 1943** |
| **Weapon Wt: 3.6 tons** | **Ammunition Wt: 28 kg** | **Reload: 1** | **Gun Shield: AV:3** |

| Round | Range | Damage | Pen |
|---|---|---|---|
| HVAP | 500 | 19 | 53 / 47 / 40 / 21 |
| AP | 500 | 19 | 41 / 36 / 31 / 16 |
| HEAT | 375 | C:7 B:11 | 28C |
| HE | 375 | C:10 B:22 | 2C |

---

# 8.8cm Pak 43 / 41

The Pak 43 / 41 is the 8.8cm gun mounted on a conventional wheeled carriage with a split trail, it also has a slightly longer barrel providing a small increase in performance. This carriage provides a much lower outline making it easier to conceal and is faster into action as it requires less preparation than the cruciform mount. The Pak 43 / 41 was the preferred weapon for mobile anti-tank crews while the Pak 43 with its 360' traverse was more suited for semi-fixed positions. Due to the weight of the gun several self propelled versions of the "88" were developed during the war including the Nashorn and the Elefant.

| | | | |
|---|---|---|---|
| **Crew: 5** | **Ammunition: 8.8cm Flak 36** | **ROF: SS** | **Introduced: 1943** |
| **Weapon Wt: 4.4 tons** | **Ammunition Wt: 28 kg** | **Reload: 1** | **Gun Shield: AV:3** |

| Round | Range | Damage | Pen |
|---|---|---|---|
| HVAP | 520 | 19 | 53 / 47 / 40 / 21 |
| AP | 390 | 19 | 41 / 36 / 31 / 16 |
| HEAT | 390 | C:7 B:11 | 28C |
| HE | 390 | C:10 B:22 | 2C |

# ANTI-AIRCRAFT GUNS

# 2cm Flak 30

The Flak 30 was the standard light anti aircraft weapon in service with German forces at the start on World war 2. As aircraft speeds increased the rate of fire of the Flak 30 was found to be to slow and an improved weapon the Flak 38 was introduced, despite being replaced in production the Flak 30 was never withdrawn from service and remained in use until the end of the war. It was generally used from its ground mount but was also used by the

German navy for ship air defence and several self propelled versions were developed using half tracks and trucks. It was also commonly mounted on armored trains for defence from both air and ground forces. It uses the same ammunition as the 2cm KwK 30 and so has a moderate ability in the light anti armor role. The carriage has two wheels and is designed for high speed towing, when placed for use the wheels are raised and the gun has a 360' traverse, no gun shield is provided.

| | | | |
|---|---|---|---|
| **Crew: 4** | **Ammunition: 2cm Flak 30** | **ROF: 3** | **Introduced: 1935** |
| **Weapon Wt: 450kg** | **Ammunition Wt: 7.1 kg (20 Rd. Clip)** | **Gun Shield: No** | |

| Round | Range | Damage | Pen |
|---|---|---|---|
| HVAP | 360 | 4 | 3 / 2 / 2 / 1 |
| AP | 360 | 4 | 2 / 2 / 1 / 1 |
| HE | 270 | C:1 B:4 | -8C |

---

# 2cm Flak 38

The Flak 38 is an improved version of the Flak 30, the primary change being an increased rate of fire. Despite having nearly almost twice firing speed of the Flak 30 by 1940 the Flak 38 was also beginning to lose effectiveness in the anti aircraft role. This was due both to increasing armor being carried on aircraft as well as increasing speeds. The solution which developed was a four barreled version of the Flak 38, this ensured a greater weight of fire on target and this became a very effective weapon against low flying aircraft. The Flak 38 remained in production until the wars end and a light version for airborne and mountain troops was also developed. Like the Flak 30 the Flak 38 was used by the German navy and several self propelled versions were developed, it was also used on armored trains. The carriage has two wheels and is designed for high speed towing, when placed for use the wheels are raised and the gun has a 360' traverse, no gun shield is provided.

| | | | |
|---|---|---|---|
| **Crew: 4** | **Ammunition: 2cm Flak 30** | **ROF: 5** | **Introduced: 1938** |
| **Weapon Wt: 420kg** | **Ammunition Wt: 7.1 kg (20 Rd. Clip)** | **Gun Shield: No** | |

| Round | Range | Damage | Pen |
|---|---|---|---|
| HVAP | 360 | 4 | 3 / 2 / 2 / 1 |
| AP | 360 | 4 | 2 / 2 / 1 / 1 |
| HE | 270 | C:1 B:4 | -8C |

---

# 2cm Gebirgsflak 38

This is a light weight version of the Flak 38 designed for airborne and mountain troops as a light dual purpose gun for use against air or ground targets. The primary differance is in the carriage which is much lighter and smaller than that of the Flak 38. The gun and carriage are also designed to allow the weapon to be broken into several pack loads for transport. The carriage has two wheels and when raised the gun has a 360' traverse, unlike the Flak 38 the light carriage is not designed for high towing speeds.

| | | | |
|---|---|---|---|
| **Crew: 4** | **Ammunition: 2cm Flak 30** | **ROF: 5** | **Introduced: 1940** |
| **Weapon Wt: 360kg** | **Ammunition Wt: 7.1 kg (20 Rd. Clip)** | **Gun Shield: No** | |

| Round | Range | Damage | Pen |
|---|---|---|---|
| HVAP | 360 | 4 | 3 / 2 / 2 / 1 |
| AP | 360 | 4 | 2 / 2 / 1 / 1 |
| HE | 270 | C:1 B:4 | -8C |

---

# 2cm Flakvierling 38

The Flakvierling is simply a modification of the Flak 38's carriage to allow four guns to be mounted, all the guns fire together greatly increasing the weight of fire. It was one of the most effective low level anti aircraft weapons

used in the war and it came to be dreaded by pilots who had to fly against it. Its only failing was that there were never enough available. Several self propelled versions were developed as well as a version for mounting on armored trains. The carriage is basically the same as the one used with the Flak 38, and a light armored shield is provided protecting the gunner from the front.

| | | | |
|---|---|---|---|
| **Crew: 7** | **Ammunition: 2cm Flak 30** | **ROF: 5 (x4)** | **Introduced: 1940** |
| **Weapon Wt: 1.5 tons** | **Ammunition Wt: 7.1 kg (20 Rd. Clip)** | **Gun Shield: AV:2** | |

| Round | Range | Damage | Pen |
|---|---|---|---|
| HVAP | 360 | 4 | 3 / 2 / 2 / 1 |
| AP | 360 | 4 | 2 / 2 / 1 / 1 |
| HE | 270 | C:1 B:4 | -8C |

---

# 3.7cm Flak 36

The Flak 36 was the standard medium anti aircraft weapon in service with German forces at beginning of World war 2. It used a mount similar to that of the 2cm Flak 30 / 38 which allowed towing on a single axle. By removing the wheels the gun had a 360' traverse on a small platform. In addition to its ground mount several self propelled versions were developed and many were used by the German navy. The Flak 36 had a moderate anti armor capability and was occasionally used in this role.

| | | | |
|---|---|---|---|
| **Crew: 6** | **Ammunition: 3.7cm Flak 36** | **ROF: 3** | **Introduced: 1936** |
| **Weapon Wt: 1.6 tons** | **Ammunition Wt: 15.4 kg (8 Rd. Clip)** | **Gun Shield: No** | |

| Round | Range | Damage | Pen |
|---|---|---|---|
| AP | 620 | 8 | 7 / 6 / 5 / 3 |
| HE | 270 | C:2 B:9 | -6C |

# 3.7cm Flak 43

The Flak 43 uses the same ammunition as the Flak 36 bu the gun was designed for ease of production. The Flak 36 had proven itself to be an effective weapon but there were never enough available as production could not keep up with the demand. In 1942 a simplified version was developed but due to political maneuvering among the German high command the gun did not begin coming off production lines until 1944. To counter the increasing armor being carried as well as higher aircraft speeds a twin barreled version of the Flak 43 was developed known as the Flakzwilling 43, this gun did enter service and was quite effective but less than 300 were completed by the wars end.

| | | | |
|---|---|---|---|
| **Crew: 6** | **Ammunition: 3.7cm Flak 36** | **ROF: 3** | **Introduced: 1944** |
| **Weapon Wt: 1.4 tons** | **Ammunition Wt: 15.4 kg (8 Rd. Clip)** | **Gun Shield: No** | |

| Round | Range | Damage | Pen |
|---|---|---|---|
| AP | 565 | 8 | 7 / 6 / 5 / 3 |
| HE | 425 | C:2 B:9 | -6C |

# 8.8cm Flak 36

The Flak 36 is an improved version of the Flak 18 and was the main production type through the war. The two guns have identical performance but the Flak 36 was designed to ease production and had several changes made to conserve materials, many parts are inter changable between the two weapons. The Flak 18 was introduced in 1933 and was used during the Spanish civil war where it gained a reputaion of being a capable dual purpose weapon. The both the Flak 18 and Flak 36 were in service through out the war in both the anti aircraft and anti armor role. Several self propelled mountings were developed and it was a common practice to mount these guns on rail road flat cars creating a mobile air defence system which could be relocated as the Allies concentrated on differant bombing targets. Both these weapons were also used in static positions and as coastal defence guns. The "88" is considered by many to be one of the most successful weapons used during the war. The Flak 18 and Flak

36 both use the same carriage, this carriage uses a two axle arrangement and requires the wheels to be removed before use, the gun sits on a cruciform mount which allows it a 360' traverse.

| | | | |
|---|---|---|---|
| **Crew: 6** | **Ammunition: 8.8cm Flak 36** | **ROF: SS** | **Introduced: 1937** |
| **Weapon Wt: 5.2 tons** | **Ammunition Wt: 28kg** | **Reload: 1** | **Gun Shield: No** |

| Round | Range | Damage | Pen |
|---|---|---|---|
| HVAP | 500 | 19 | 53 / 47 / 40 / 21 |
| AP | 500 | 19 | 41 / 36 / 31 / 16 |
| HEAT | 375 | C:7 B:11 | 28C |
| HE | 375 | C:10 B:22 | 2C |

---

# 10.5cm Flak 39

The Flak 39 is an improved version of the Flak 38, the Flak 38 has identical performance but was more complex and time consuming to produce. The Flak 39 was intended to be the primary German heavy anti aircraft gun but its performance was not much better than that of the 8.8cm flak guns which were faster to produce and considerably more mobile. While technically the 10.5cm gun was on a mobile mount it was used in the static role more often as the war progressed although many were mounted on rail road flat cars to be relocated as needs dictated. The mobile mount was similar to that of the 8.8cm Flak 36 but was larger to handle the increased weight, it has an axle at each end and when the wheels are removed it forms a cruciform mount with a turntable allowing a 360' traverse.

| | | | |
|---|---|---|---|
| **Crew: 10** | **Ammunition: 10.5cm Flak 38** | **ROF: SS** | **Introduced: 1939** |
| **Weapon Wt: 10.2 tons** | **Ammunition Wt: 45kg** | **Reload: 1** | **Gun Shield: No** |

| Round | Range | Damage | Pen |
|---|---|---|---|
| AP | 415 | 23 | 50 / 44 / 37 / 20 |

| | | | |
|---|---|---|---|
| HE | 310 | C:14 B:26 | 5C |

---

# 12.8cm Flak 40

The Flak 40 was the largest anti aircraft gun to enter service in Germany during the war. It was initially designed as a mobile field piece but due to the size and weight this idea was quickly dropped. A small number were built with a mobile carriage and were briefly used but the logistics of transporting the weapon resulted in most of this service being more related to propaganda work than combat. A modified carriage allowing the weapon to be broken down into two loads was also developed but even this idea was too cumbersome in actual use. The gun had excellent performance despite these shortcomings and by 1942 most were used in static positions providing defence around important production and population centers. Some were mounted to rail road flat cars providing the gun with a reasonable amount of mobility. To keep pace with improvements in Allied bombers a twin version was developed as the 12.8cm Flakzwilling 40. The Flakzwilling 40 mounts two guns side by side and had excellent performance but it was complicated to build and only 30 or so of these twin guns were completed by the wars end.

| | | | |
|---|---|---|---|
| **Crew: 14** | **Ammunition: 12.8cm Flak 40** | **ROF: SS** | **Introduced: 1940** |
| **Weapon Wt: 17 tons** | **Ammunition Wt: 78kg** | **Reload: 2** | **Gun Shield: No** |

| Round | Range | Damage | Pen |
|---|---|---|---|
| AP | 420 | 28 | 58 / 51 / 43 / 23 |
| HE | 315 | C:21 B:32 | 8C |

# HOWITZERS AND FIELD GUNS

# 7.5cm FK16nA

The Feld Kanone (field gun) 16 neuer Artillerie (new model) was developed from the 7.7cm FK16 of World war 1. It was simply the original gun with a new 7.5cm barrel, it remained on the old carriage which was designed to be towed by horses. Many of these guns were in still in service in 1940 but they were heavy and were showing thier age most were replaced in front line units by the 7.5cm leFK 18 or the 10.5cm le FH18. Despite thier elderly design they remained in service until the wars end. Many were encountered by the Allies after the June 1944 invasion of Normandy and one was credited with the destruction of at least 10 Allied tanks before it was itself destroyed. The carriage is not designed for high speed travel and has spoked wooden wheels, a gun shield is included.

| | | | |
|---|---|---|---|
| **Crew: 5** | **Ammunition: 7.5cm FK16** | **ROF: SS** | **Introduced: 1934** |
| **Weapon Wt: 1.5 tons** | **Ammunition Wt: 17.5 kg** | **Reload: 1** | **Gun Shield: AV:2** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|
| AP | 320 | N/A | 17 | 14 / 13 / 11 / 6 |
| HE | 240 | 12.9km | C:7 B:19 | 0C |
| CHEM | 240 | 12.9km | C:2 B:7 | Nil |
| APERS | 100 | N/A | Special | 1-Nil |

---

# 7.5cm leFK 18

The leichte Feld Kanone (light field gun) 18 was designed to replace the FK16nA. It was a modern design with good performance, it entered service with Germany shortly before the war but due to a decision to replace the 7.5cm field guns with a 10.5cm howitzer not many were produced. The leFK 18 did remain in production for export until 1940 and some can still be found in use, particularly in South America. The carriage is designed for high speed towing and a gun shield is included.

| | | | |
|---|---|---|---|
| **Crew: 5** | **Ammunition: 7.5cm leFK18** | **ROF: SS** | **Introduced: 1938** |

| | | | |
|---|---|---|---|
| **Weapon Wt: 1.1 tons** | **Ammunition Wt: 17.5 kg** | **Reload: 1** | **Gun Shield: AV:2** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|
| HEAT | 195 | 9.4km | C:5 B:10 | 23C |
| HE | 195 | 9.4km | C:7 B:19 | 0C |
| CHEM | 195 | 9.4km | C:2 B:7 | Nil |

---

# 7.5cm Geb G36

The Geb G36 is a light howitzer designed for use with mountain infantry. The weapon can be broken down into several loads for transport. The carriage is designed for high speed towing but no gun shield is provided.

| | | | |
|---|---|---|---|
| **Crew: 5** | **Ammunition: 7.5cm Geb G36** | **ROF: SS** | **Introduced: 1936** |
| **Weapon Wt: 750kg** | **Ammunition Wt: 17.2 kg** | **Reload: 1** | **Gun Shield: No** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|
| HEAT | 175 | 9.2km | C:5 B:10 | 23C |
| HE | 175 | 9.2km | C:7 B:19 | 0C |

---

# 10.5cm leFH 18

The leichte Feld Haubitze (light field howitzer) 18 was the standard German field artillery piece when World war 2 started. It was well built but heavy, this was not generally a problem as most were towed by a truck or half

track but during the invasion of the Soviet Union many had to be abandoned when they became stuck in the thick mud common on the East front. The carriage is designed for high speed towing and a gun shield is included.

| | | | |
|---|---|---|---|
| **Crew: 5** | **Ammunition: 10.5cm leFK18** | **ROF: SS** | **Introduced: 1935** |
| **Weapon Wt: 2.0 tons** | **Ammunition Wt: 44 kg** | **Reload: 1** | **Gun Shield: AV:2** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|
| HEAT | 220 | 12.4km | C:9 B:13 | 35C |
| HE | 220 | 12.4km | C:7 B:19 | 0C |
| CHEM | 220 | 12.4km | C:2 B:7 | Nil |
| ILLUM | N/A | 12.4km | B:1000 | Nil |

---

# 10.5cm Geb H40

The Geb H40 is a light howitzer designed for use with mountain infantry. The weapon may be broken down into several loads for transport. The carriage is designed for high speed transport but no gun shield is provided.

| | | | |
|---|---|---|---|
| **Crew: 5** | **Ammunition: 10.5cm Geb H40** | **ROF: SS** | **Introduced: 1940** |
| **Weapon Wt: 1.7 tons** | **Ammunition Wt: 44 kg** | **Reload: 1** | **Gun Shield: No** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|
| HEAT | 225 | 12.5km | C:9 B:13 | 35C |
| HE | 225 | 12.5km | C:7 B:19 | 0C |
| CHEM | 225 | 12.5km | C:2 B:7 | Nil |
| ILLUM | N/A | 12.5km | B:1000 | Nil |

# 10.5cm K18

The 10.5cm Kanone (cannon) 18 was developed as a long range medium artillery piece. It was the standard weapon of German medium artillery battalions when the war started but it was soon found that the shell was really to light for the weight of the gun and by 1941 they were being replaced by other weapons. These guns remained in service until the wars end most being used for coastal defence. The carriage is designed for high speed towing. No gun shield is provided.

| | | | |
|---|---|---|---|
| **Crew: 10** | **Ammunition: 10.5cm K18** | **ROF: SS** | **Introduced: 1934** |
| **Weapon Wt: 5.6 tons** | **Ammunition Wt: 45 kg** | **Reload: 1** | **Gun Shield: No** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|
| AP | 415 | 19.1km | 23 | 46 / 40 / 34 / 18 |
| HE | 310 | 19.1km | C:14 B:26 | 5C |

# 15cm sFH 18

The 15cm schwere Feld Haubitze 18 was the standard German heavy howitzer during World war 2. It was used on a self propelled mount as the Hummel. The sFH18 was not only used by the German army, many were under the control of the German navy in coastal defence positions and some were issued to the Italy and Finland. It was built in large numbers and remained in service after the war with several countries including Czechoslovakia, Portugal and parts of South America. The carriage is a conventional split trail arrangement and is designed for high speed towing. No gun shield is provided.

| | | | |
|---|---|---|---|
| **Crew: 12** | **Ammunition: 15cm sFH 18** | **ROF: SS** | **Introduced: 1933** |
| **Weapon Wt: 5.5 tons** | **Ammunition Wt: 130 kg** | **Reload: 2** | **Gun Shield: No** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|
| AP | 325 | N/A | 33 | 53 / 47 / 40 / 21 |
| HE | 245 | 13.3km | C:28 B:37 | 12C |
| CHEM | 245 | 13.3km | C:3 B:28 | Nil |

---

# 15cm K18

The 15cm Kanone 18 was the standard German heavy gun at the start of World war 2. It had excellent performance but the gun had to be broken into two loads for transport, this resulted in the gun being very slow to get into and out of action. Despite this short coming the K18 remained in use through the war but many of these guns were transferred for use as coastal artillery later in the war. The carriage is designed for high speed travel and has a rotating platform which allows the gun to rotate 360'. No gun shield is provided.

| | | | |
|---|---|---|---|
| **Crew: 12** | **Ammunition: 15cm K 18** | **ROF: SS** | **Introduced: 1938** |
| **Weapon Wt: 12.5 tons** | **Ammunition Wt: 129 kg** | **Reload: 2** | **Gun Shield: No** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|
| AP | 500 | N/A | 33 | 53 / 47 / 40 / 21 |
| HE | 340 | 24.5km | C:28 B:37 | 12C |
| CHEM | 340 | 24.5km | C:3 B:28 | Nil |

---

# 17cm K18

The 17cm Kanone 18 was introduced after the start of the war to supplement the 21cm Morser 18. The 17cm gun proved to be an excellent weapon and in 1942 it replaced the Morser 18 on the production line. Captured K 18's were used by the Allies on several occasions during 1942 in North Africa and again during 1944 in Europe when British and American forces exceeded the limits of thier supply line. Like the 15cm K18 the 17cm gun also had to be broken into two loads for transport, however this was considered to be more acceptable in a weapon of this size. The carriage is designed for high speed travel and has a rotating platform which allows the gun to rotate 360'. Due to the design of this platform a single person can rotate the gun. No gun shield is provided.

| | | | |
|---|---|---|---|
| **Crew: 12** | **Ammunition: 17cm K 18** | **ROF: SS** | **Introduced: 1941** |
| **Weapon Wt: 17.5 tons** | **Ammunition Wt: 204 kg** | **Reload: 4** | **Gun Shield: No** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|
| HE | 325 | 29.6km | C:36 B:42 | 15C |

---

# 21cm Morser 18

The 21cm Morser (Mortar) 18 was introduced shortly before the start of the war, the Germans used the common European practice of calling heavy howitzers Mortars. In 1941 the 17cm Kanone 18 was introduced to supplement the Morser 18. Due to the much longer range of the 17cm weapon production of the Morser 18 was halted in favor of the smaller gun. The Morser 18 remained in service until the end of the war. The carriage is the same as that used on the K18, and this has several advanced features including a rotating platform and a dual recoil system. No gun shield is provided.

| | | | |
|---|---|---|---|
| **Crew: 12** | **Ammunition: 21cm Morser 18** | **ROF: SS** | **Introduced: 1939** |
| **Weapon Wt: 16.7 tons** | **Ammunition Wt: 363 kg** | **Reload: 5** | **Gun Shield: No** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|
| HE | 270 | 16.7km | C:55 B:52 | 21C |

# 28cm Lg Br K

This is a large railway gun operated by the German army during World war 2, it is representitive of several types of German heavy artillery operated from rail road cars. One of these guns harrassed Allied forces for weeks after the invasion of Italy. This particular weapon known as Leopold to its crew and as Anzio Annie to the Allies was concealed in a rail way tunnel except when firing to protect it from Allied air attack. It was eventually abandoned when the Germans retreated from the area.

| | | | |
|---|---|---|---|
| **Crew: 12** | **Ammunition: 28cm Lg Br K** | **ROF: SS** | **Introduced: 1941** |
| **Weapon Wt: 135 tons** | **Ammunition Wt: 854 kg** | **Reload: 16** | **Gun Shield: No** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|
| HE | 350 | 36.8km | C:98 B:69 | 31C |

# 54cm Morser G41 Karl

The 54cm Karl was also known as the Thor. These were very large weapons designed to demolish fortifications such as the Maginot line although no Karls were used during the invasion of France. There was an earlier weapon with a 60cm bore but most of the production was of the 54cm weapon. The howitzer is mounted on a tracked self propelled carriage for moving short distances but it is usually carried slung between two rail road cars for transportation, the tracked carriage being used to get the weapon from the tracks to the target.

| | | | |
|---|---|---|---|
| **Crew: 30** | **Ammunition: 54cm Karl** | **ROF: SS** | **Introduced: 1940** |
| **Weapon Wt: 124 tons** | **Ammunition Wt: 3750 kg** | **Reload: 115** | **Gun Shield: No** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|
| HE | 325 | 6.2km | C:365 B:134 | 70C |

# ROCKETS AND RECOILESS GUNS

## 7.5cm L G 40

This is a light recoilless weapon designed for use with airborne forces. This weapon was in service in time for the airborne invasion of Crete where it proved to be successful. It is air dropped in two loads each contained in a wicker container. This weapon was also adopted for use with other light troops such as mountain infantry as its airborne origin made it satisfactory as a pack weapon. Like all recoilless weapons the LG40 has a substantial back blast creating a hazardous cone behind the weapon. The carriage is not designed for high towing speeds and no gun shield is provided.

| | | | |
|---|---|---|---|
| **Crew: 3** | **Ammunition: 7.5cm LG40** | **ROF: SS** | **Introduced: 1940** |
| **Weapon Wt: 146 kg** | **Ammunition Wt: 16.4 kg** | **Reload: 2** | **Gun Shield: No** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|
| AP | 215 | N/A | 17 | 6 / 5 / 4 / 2 |
| HEAT | 160 | 8.9km | C:5 B:10 | 23C |
| HE | 160 | 8.9km | C:7 B:19 | 0C |

# 10.5cm L G 40

The 10.5cm LG40 is very similar to the 7.5cm LG40 with the exception of the size of the weapon. It was also used during the invasion of Crete and proved its usefulness. The LG40 was also used by other light troops such as mountain infantry as it made a good pack weapon. The weapon and carriage are designed for rapid dismantling and assembly. The carriage is not designed for high speed travel and no gun shield is provided.

| | | | |
|---|---|---|---|
| **Crew: 4** | **Ammunition: 10.5cm LG40** | **ROF: SS** | **Introduced: 1940** |
| **Weapon Wt: 389 kg** | **Ammunition Wt: 35 kg** | **Reload: 2** | **Gun Shield: No** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|
| HEAT | 160 | 8.6km | C:9 B:13 | 35C |
| HE | 160 | 8.6km | C:14 B:26 | 5C |

# 15cm Nebelwerfer 41

The Nebelwerfer 41 is a six barrel rocket launcher developed early in the war. Initially used for launching smoke rockets (nebelwerfer translates as smoke thrower) a high explosive rocket was quickly developed. The German rocket launchers were commonly known to the Allies as Moaning minnies due to the distictive sound they made when fired. The rockets are launched one at a time and may launch a single rocket or a salvo of all six rockets one after another. A self propelled version using 10 launching tubes was developed as the panzerwerfer 42, these were generally mounted on halftracks. The Nebelwerfer is mounted on the same carriage as the Pak 35 but no gun shield is provided.

| | | | |
|---|---|---|---|
| **Crew: 3** | **Ammunition: 15cm Nebelwerfer** | **ROF: 1** | **Introduced: 1941** |
| **Weapon Wt: 543 kg** | **Ammunition Wt: 35 kg** | **Reload: 1 (x6)** | **Gun Shield: No** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|
| HE | 130 | 6.9km | C:28 B:53 | 12C |
| CHEM | 130 | 6.9km | C:3 B:28 | Nil |

---

# 21cm Nebelwerfer 42

The Nebelwerfer 42 is based on the 15cm Nebelwerfer 41 but uses larger rockets. Due to the larger size of the rockets it only has five tubes. The smaller 15cm rockets may be fired from the larger 21cm tubes by fitting internal rails. The carriage is the same as the Nebelwerfer 41.

| | | | |
|---|---|---|---|
| **Crew: 3** | **Ammunition: 21cm Nebelwerfer** | **ROF: 1** | **Introduced: 1943** |
| **Weapon Wt: 936 kg** | **Ammunition Wt: 113 kg** | **Reload: 2 (x5)** | **Gun Shield: No** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|
| HE | 155 | 7.8km | C:55 B:74 | 21C |

---

# 28cm Werfkorper

The 28cm werfkorper is a simple rocket system and was one of the earliest German rockets to enter service. The rockets were packed in wooden frames which included a simple elevation device at the front. The rocket was launched using the frame as the launcher. These weapons were inaccurate and were generally used in large groups, the large explosive payload and numbers of rockets making up for the poor accuracy. Often these rockets were mounted on the sides of half tracks, three per side. Aiming was achieved by pointing the vehicle in the direction of the target. Half tracks armed with these rockets were nicknamed foot stuka or howling cow. A trailer carrying six rockets was introduced in 1941 as the 28/32cm Nebelwerfer 41 this was simply six of the rockets in

thier frames arranged in two rows of three to provide better mobility.

| | | | |
|---|---|---|---|
| **Crew: 2** | **Ammunition: 28cm werfkorper** | **ROF: SS** | **Introduced: 1940** |
| **Weapon Wt: 82 kg** | **Ammunition Wt: 82 kg** | **Reload: N/A** | **Gun Shield: No** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|
| HE | 180 | 2.1km | C:98 B:99 | 31C |

---

# 32cm Werfkorper

The 32cm werfkorper is similar to the 28cm version but uses an incediary warhead in place of the high explosive warhead. In all other respects the two are almost identical. The payload of the 32cm rocket is made up of flammable liquids.

| | | | |
|---|---|---|---|
| **Crew: 2** | **Ammunition: 32cm werfkorper** | **ROF: SS** | **Introduced: 1940** |
| **Weapon Wt: 79 kg** | **Ammunition Wt: 79 kg** | **Reload: N/A** | **Gun Shield: No** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|
| Incendiary | 180 | 2.0km | C:3 B:96 | Nil |

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# UNITED KINGDOM

## ANTI-TANK GUNS

## 2 Pounder

The 2 Pounder was developed in 1934 and began to enter service with the British in 1938. When introduced it was one of the best anti-tank guns available, however due to the rapid increase in tank armor by 1940 it was becoming obsolete. Due to a lack of a better weapon it remained in service with British forces until 1942 when the 6 Pounder was introduced. It remained in use until the end of the war in the Pacific as it remained a useful weapon against the much lighter armor used by the Japanese. It is mounted on a carriage designed for high speed travel and includes a gun shield. When in position the wheels are raised and the gun sits on a tripod, this arrangement allows the gun a 360' traverse.

| | | | |
|---|---|---|---|
| **Crew: 5** | **Ammunition: 2 Pounder (40mm)** | **ROF: SS** | **Introduced: 1938** |
| **Weapon Wt: 831 kg** | **Ammunition Wt: 1 kg** | **Reload: 1** | **Gun Shield: AV:3** |

| Round | Range | Damage | Pen |
|---|---|---|---|
| APHV | 380 | 9 | 8 / 7 / 6 / 3 |
| AP | 380 | 9 | 6 / 5 / 4 / 2 |
| HE | 285 | C:2 B:10 | -5C |

# 6 Pounder

The 6 Pounder was introduced to replace the 2 Pounder and remained in service through the end of the war. Development of the 6 Pounder began in 1938 shortly after the introduction of the 2 Pounder as it was realized that with the pace of tank improvement that gun would soon become obsolete, production began late in 1941 and the new guns began reaching the troops early in 1942. It was first used in North Africa and it was well received proving itself capable of defeating all enemy tanks in service until the introduction of the Tiger. The 6 Pounder was used by most of the Allied nations and many were supplied to the Soviet Union, the Americans used a Copy known to them as the 57mm gun M1. The gun was effective against all the German medium tanks through the end of the war but with the increased use of heavy tanks such as the Tiger and Panther the 6 Pounder was outclassed, by 1943 it was gradually being replaced by the 17 Pounder. The introduction of an APDS round in 1944 gave a great improvement in armor penetration and the 6 Pounder remained in service until the end of the war, its light weight in comparison to the 17 Pounder being an advantage for many situations. One failing of the weapon was the lack of a High explosive round through most of its service life, it was not until 1944 that such a round was introduced although the Americans had one for thier version from the start. The complex carriage of the 2 Pounder was replaced by a conventional split trail type, it is designed for high speed travel and includes a gun shield. An airborne version with a narrow carriage and collapsable trail legs was built for use in gliders, many of these conversions were used during Operation Market Garden. The 6 pounder has a 57mm bore.

| | | | |
|---|---|---|---|
| **Crew: 5** | **Ammunition: 6 Pounder** | **ROF: SS** | **Introduced: 1942** |
| **Weapon Wt: 1.1 tons** | **Ammunition Wt: 2.9 kg** | **Reload: 1** | **Gun Shield: AV:3** |

| Round | Range | Damage | Pen |
|---|---|---|---|
| APDS | 390 | 13 | 27 / 24 / 20 / 10 |
| HVAP | 390 | 13 | 21 / 18 / 15 / 8 |
| AP | 390 | 13 | 16 / 14 / 12 / 6 |
| HE | 290 | C:6 B:7 | -2C |

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# 17 Pounder

The 17 Pounder was introduced towards the end of 1942 but a suitable carriage was not ready until 1943. With the discovery of the Tiger tank being used in North Africa a decision was made to rush the 100 available

prototype 17 Pounders into service mounted on the carriage of the 25 Pounder field gun, these early guns were known as the 17 / 25 Pounder. These guns arrived a short time before the Tiger was available in numbers and the 17 / 25 Pounder proved itself capable of defeating the thick armor of the Tiger. The production 17 Pounders began entering service in 1943 and were first used in the Italian campaigns. An APDS round was introduced in 1944 which increased the guns effectiveness dramatically. The 17 pounder was the last anti-tank gun to be used by the British army as it was replaced by a 120mm recoiless gun after the war although it can still be found in service with a number of countries. It is mounted on a carriage designed for high speed travel and includes a gun shield. The 17 Pounder has a 76.2mm bore.

| | | | |
|---|---|---|---|
| **Crew: 7** | **Ammunition: 17 Pounder** | **ROF: SS** | **Introduced: 1943** |
| **Weapon Wt: 2.9 tons** | **Ammunition Wt: 7.7 kg** | **Reload: 1** | **Gun Shield: AV:3** |

| Round | Range | Damage | Pen |
|---|---|---|---|
| APDS | 430 | 17 | 48 / 41 / 34 / 19 |
| HVAP | 430 | 17 | 36 / 31 / 26 / 14 |
| AP | 430 | 17 | 28 / 24 / 20 / 11 |
| HE | 320 | C:7 B:19 | 0C |

# ANTI-AIRCRAFT GUNS

## 20mm Oerlikon

The Oerlikon is a Swiss automatic cannon which is based on a World war 1 German cannon. The British obtained a license to build the gun and many were in service at the start of World war 2. It was used as an aircraft weapon and as a naval or ground anti-aircraft gun. For mobile ground use a light wheeled carriage was used, this was designed to allow 360' traverse and is capable of high speed travel, no gun shield is provided.

| | | | |
|---|---|---|---|
| **Crew: 2** | **Ammunition: 20mm Oerlikon** | **ROF: 5** | **Introduced: 1935** |
| **Weapon Wt: 230 kg** | **Ammunition Wt: 9 kg (60 Rd. Drum)** | **Gun Shield: No** | |

| Round | Range | Damage | Pen |
|---|---|---|---|
| AP | 330 | 4 | 2 / 1 / 1 / 1 |
| HE | 250 | C:1 B:4 | -8C |

---

# 20mm Polsten

The Polsten was developed in Poland from the Oerlikon gun. It is similar in many ways and fires the same ammunition, but where the Oerlikon was difficult and time consuming to build the Polsten was designed to be simple to build without reducing the effectiveness of the weapon. The resulting weapon had less than half as many parts and cost slightly more than 1/4 of the price of an Oerlikon. The Polsten was just about to enter production in Poland when Germany invaded in 1939, the Polish design team escaped to England with the plans and resumed work on the project working with the Sten company (resulting in the name Pol for Poland and sten for the Sten company). It was available for service early in 1944 and began to be issued along side the Oerlikon. One major change is the magazine, the Oerlikon uses a Drum, in use this was difficult to reload and expensive to produce so on the Polsten a 30 round box magazine was substituted. Like the Oerlikon the Polsten proved to be a rugged durable weapon and it remained in service with the British into the 1950's. Both weapons can still be found in service with many of the worlds smaller nations. The Carriage is the same as that used with the Oerlikon, desiged to allow 360' traverse and high speed towing, no gun shield is fitted.

| | | | |
|---|---|---|---|
| **Crew: 2** | **Ammunition: 20mm Oerlikon** | **ROF: 5** | **Introduced: 1944** |
| **Weapon Wt: 218 kg** | **Ammunition Wt: 4.5 kg (30 Rd. Box)** | **Gun Shield: No** | |

| Round | Range | Damage | Pen |
|---|---|---|---|
| AP | 330 | 4 | 2 / 1 / 1 / 1 |

| | | | |
|---|---|---|---|
| HE | 250 | C:1 B:4 | -8C |

---

# 40mm AA Mk I

This is a British license built version of the Swedish 40mm Bofors, it is fed from 4 round clips. The gun is mounted on a two axle wheeled carriage with a platform which allows a 360' arc of fire, outriggers are fitted to stabilize the weapon during firing. This carriage is designed to allow high speed towing. No gun shield is provided.

| | | | |
|---|---|---|---|
| **Crew: 7** | **Ammunition: 40mm Bofors** | **ROF: 1** | **Introduced: 1938** |
| **Weapon Wt: 2.5 tons** | **Ammunition Wt: 9.6 kg (4 Rd. Clip)** | **Gun Shield: No** | |

| Round | Range | Damage | Pen |
|---|---|---|---|
| AP | 420 | 9 | 6 / 6 / 5 / 3 |
| HE | 315 | C:2 B:10 | -5C |

---

# 3" QF Ordnance

The 3" gun was first issued during World war 1 and was one of the first gus designed for the anti-aircraft role. Many of these weapons were still in service with the British in 1940. This was a popular weapon with crews who prefered it to the heavier 3.7" gun which was entering service to replace it. Most of these guns were lost in France after the Dunkirk evacuation, the few that remained were soon phased out of front line service. Many were captured by the Germans where they were used by units in France as the 7.5cm Flak Vickers (e). The gun is mounted on a two axle wheeled carriage with a platform and outriggers. The carriage is designed for high speed travel and no gun shield is provided.

| | | | |
|---|---|---|---|
| **Crew: 6** | **Ammunition: 3" QF** | **ROF: SS** | **Introduced: 1914** |

| | | | |
|---|---|---|---|
| **Weapon Wt: 8 tons** | **Ammunition Wt: 7.2 kg** | **Reload: 1** | **Gun Shield: No** |

| Round | Range | Damage | Pen |
|---|---|---|---|
| HE | 275 | C:7 B:19 | 0C |

---

# 3.7" QF Ordnance

The 3.7" gun was developed in 1936 but did not enter production until 1938 due to problems with the carriage, early mobile versions were at best semi-mobile by 1941 an improved carriage became available and this weapon went on to become the standard British heavy anti-aircraft weapon until the 1950's. Many are still in service with the worlds smaller nations. The mobile version is mounted on a two axle wheeled carriage with a platform and out riggers, no gun shield is provided and it is designed for high speed travel. The wheels must be removed after the gun is placed before it may be fired. During the fighting in North Africa this gun was often pressed into service as an anti-tank weapon but while it had the power to destroy any tank that happend into its sights its poor mobility reduced its capabilities in this role so it was retained in the anti-aircraft role while development into a dual purpose weapon like the German 8.8cm gun was not pursued. The Germans gained respect for this weapon and many captured examples were used in coastal defenses along the French coast, in this role it was known to the Germans as the 9.4cm Flak Vickers M.39 (e). These captured guns were used in both the anti-aircraft and the coastal defence role. In this second role it proved itself capable and many Allied landing craft were sunk by some of these weapons during the 1944 invasion. The Germans went so far as to manufacture ammunition for these guns when the captured supplies ran low.

| | | | |
|---|---|---|---|
| **Crew: 8** | **Ammunition: 3.7" QF** | **ROF: SS** | **Introduced: 1938** |
| **Weapon Wt: 9.3 tons** | **Ammunition Wt: 13 kg** | **Reload: 1** | **Gun Shield: No** |

| Round | Range | Damage | Pen |
|---|---|---|---|
| AP | 400 | 21 | 40 / 35 / 30 / 16 |
| HE | 300 | C:11 B:24 | 3C |

# HOWITZERS AND FIELD GUNS

## 18 Pounder Mk IV

The 18 Pounder was introduced in 1904 and was the standard British field piece during World war 1. It was a very advanced gun for its time and the Mark IV was the final version built, the major changes being a new carriage and a faster breech mechanism. The only change between the wars was the addition of pnuematic tires during the 1930's. By the start of World war 2 its age was beginning to show, despite this it remained in service through the early years of the war only being declared obsolete in 1944. The carriage is similar to that used on the 25 Pounder and in fact early 25 Pounders used this carriage designated as 18 / 25 Pounders. The carriage has a circular base plate which is lowered for firing, this raises the wheels off the ground allowing the weapon a 360' traverse. It is designed for high speed travel and a gun shield is provided. The 18 Pounder has an 84mm bore.

| | | | |
|---|---|---|---|
| **Crew: 5** | **Ammunition: 18 Pounder** | **ROF: SS** | **Introduced: 1916** |
| **Weapon Wt: 1.4 tons** | **Ammunition Wt: 8.4 kg** | **Reload: 1** | **Gun Shield: AV:3** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|
| HE | 215 | 8.5km | C:9 B:21 | 2C |
| APERS | 100 | N/A | Special | 1-Nil |
| CHEM | 215 | 8.5km | C:2 B:9 | Nil |
| ILLUM | N/A | 8.5km | B:700 | Nil |

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## 25 Pounder

The 25 Pounder was the standard British field piece in service throughout World war 2. It entered service shortly before the war and proved itself to be one of the best weapons of its type during the war. It was one of the first weapons designed as a gun / howitzer combining the best features of these weapon types. It uses variable charges allowing it the ability to fire its projectiles in a high arc similar to a howitzer but also may fire at high velocities for a flat trajectory. During the fighting in North Africa during 1941-42 it was pressed into use as an anti-tank weapon where it proved itself in that role as well. The 25 Pounder remained in Service with the Brtish army into the 1960's and it can still be found in service with a number of countries world wide. The carriage has a circular base plate which is lowered for firing, this raises the wheels off the ground and allows the weapon a 360' traverse. It is designed for high speed travel and a gun shield is provided. Some of these guns were captured and used by the Germans who gave it the designation 8.76cm FK 280(e).

| | | | |
|---|---|---|---|
| **Crew: 6** | **Ammunition: 25 Pounder (88mm)** | **ROF: SS** | **Introduced: 1939** |
| **Weapon Wt: 1.8 tons** | **Ammunition Wt: 11.3 kg** | **Reload: 1** | **Gun Shield: AV:3** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|
| AP | 285 | N/A | 19 | 37 / 32 / 27 / 14 |
| HEAT | 215 | 12.3km | C:7 B:11 | 28C |
| HE | 215 | 12.3km | C:9 B:21 | 2C |
| APERS | 100 | N/A | Special | 1-Nil |
| CHEM | 215 | 12.3km | C:2 B:9 | Nil |
| ILLUM | -- | 12.3km | B:700 | Nil |

---

# 3.7" Pack Howitzer

The 3.7" Pack Howitzer entered service with the British army at the end of World war 1. It was one of the first British weapons to utilize a split trail which allows a high elevation. It uses an independent suspension designed to allow the use of the howitzer on uneven terrain. The Pack Howitzer is designed for use with pack animals and may be broken into six loads for transport. The 3.7" howitzer proved to be a useful weapon which continued to serve the British until 1945. The standard carriage was designed for travel behind a two horse team, during the war some carriages had the wooden spoked wheels replaced with pnuematic tires allowing high speed travel behind a small truck. A gun shield is provided but was often discarded to save weight when used in mountainous

or other difficult terrain.

| | | | |
|---|---|---|---|
| **Crew: 5** | **Ammunition: 3.7" Howitzer** | **ROF: SS** | **Introduced: 1917** |
| **Weapon Wt: 730 kg** | **Ammunition Wt: 9.1 kg** | **Reload: 2** | **Gun Shield: AV:3** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|
| HE | 160 | 5.4km | C:11 B:24 | 3C |
| CHEM | 160 | 5.4km | C:2 B:11 | Nil |

---

# 4.5" Howitzer

The 4.5" Howitzer entered service before World war 1 and served with the British army until 1944. The only major change in the weapon was the addition of a new carriage which it shared with the 5.5" gun. The carriage is designed for high speed travel, no gun shield is provided.

| | | | |
|---|---|---|---|
| **Crew: 7** | **Ammunition: 4.5" Howitzer** | **ROF: SS** | **Introduced: 1909** |
| **Weapon Wt: 1.4 tons** | **Ammunition Wt: 15.9 kg** | **Reload: 2** | **Gun Shield: No** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|
| HE | 175 | 6.7km | C:16 B:28 | 6C |
| CHEM | 175 | 6.7km | C:3 B:16 | Nil |

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# 5.5" Gun

The 5.5" gun entered service during World war 2 providing a medium artillery piece for the British army. It proved to be a successful design remaining in service with the British into the 1970's. Like the 25 Pounder the 5.5" was designed as a gun / howitzer exploiting the advantages of both these weapons. It uses seperate loading charges which slows the rate of fire but this also allows for flexibility in the tactical use of this gun. The carriage is a standard split trail type and is designed for high speed travel, no gun shield is provided.

| | | | |
|---|---|---|---|
| **Crew: 10** | **Ammunition: 5.5" Gun** | **ROF: SS** | **Introduced: 1942** |
| **Weapon Wt: 5.9 tons** | **Ammunition Wt: 36.3 kg** | **Reload: 2** | **Gun Shield: No** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|
| HE | 240 | 16.4km | C:25 B:35 | 10C |
| CHEM | 240 | 16.4km | C:3 B:25 | Nil |
| ILLUM | -- | 16.4km | B:1700 | Nil |

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# 7.2" Howitzer

The 7.2" Howitzer was developed from World war 1 8" Howitzers. After World war 1 Britain neglected thier artillery, particularly heavy artilery so when World war 2 started the army found itself without a suitable heavy artillery piece, they had a stock of 8" Howitzers from World war 1 but these had too short a range to be useful. The solution was found by relining the barrels to 7.2" this increase the range and the carriages were modernized with pnuematic tires and improved suspensions to allow high speed towing, later inthe war American 155mm carriages were used in place of the older carriages and the 7.2mm Howitzer proved itself to be a very servicable weapon despite its origin and it remained in service with the British for many years after the war. No gun shield is provided.

| | | | |
|---|---|---|---|
| **Crew: 14** | **Ammunition: 7.2" Howitzer** | **ROF: SS** | **Introduced: 1940** |
| **Weapon Wt: 13.2 tons** | **Ammunition Wt: 91.6 kg** | **Reload: 2** | **Gun Shield: No** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|
| HE | 235 | 18.0km | C:42 B:45 | 17C |
| WP | 235 | 18.0km | C:3 B:55 | Nil |
| CHEM | 235 | 18.0km | C:3 B:42 | Nil |

# ROCKET WEAPONS

## LILO

The LILO is a simple tube launched rocket developed as an anti-bunker weapon. It was used primarily in the Pacific against the Japanese who often had bunkers set in locations that made it difficult to use artillery or armor support. In use the LILO would be set up as close as possible to the target as the accuracy was poor. Generally one man would carry the launcher, each additional man carrying a rocket. It was soon found that to obtain a hit 4 to 5 rockets were needed even with the target as close as 40 to 50 meters. Despite the inaccuracy of the LILO it was often a more practical method than trying to bring in artillery.

| | | | |
|---|---|---|---|
| **Crew: 2+** | **Ammunition: 6" rocket** | **ROF: SS** | **Introduced: 1944** |
| **Weapon Wt: 8.3 kg** | **Ammunition Wt: 27.2 kg** | **Reload: 2** | **Gun Shield: No** |

| Round | Range | Damage | Pen |
|---|---|---|---|
| HE | 15 | C:29 B:54 | 12C |

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# UNITED STATES

## Handguns

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### Colt Government Model 1911A1

The Model 1911A1 was the standard sidearm issued to U.S. military forces in World war 2. It is based on the World war 1 M1911 and includes some minor improvements which were added in the 1920's. During both wars several companies other than Colt built these pistols due to the high demand.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .45 ACP | SA | 2 | Nil | 1 | Box 7 | 3 | 12 | 1.3kg |

---

### Colt Model 1917

During World war 1 there was a shortage of Model 1911 pistols, the government contracted with Colt and Smith & Wesson to build their commercial revolvers chambered for the .45 ACP. The Colt entry was based on the New Service double action revolver. The use of a rimless round designed for an autoloading pistol required the use of half moon clips to hold the rounds. These clips were shaped in a C and each held 3 rounds, 2 clips being used to load the cylinder, these work in a similar way to modern speed loaders except they are not removed before use. During World war 2 many of these revolvers were sent to England and the U.S. military used many to arm the military police. Between the wars a rimmed .45 caliber round was designed for these revolvers removing the need for the half moon clips. The .45 Auto-rim as it was named is otherwise similar to the .45 ACP.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .45 ACP | DAR | 2 | Nil | 1 | SwCyl 6 | 3 | 12 | 1.2kg |

---

## Smith & Wessen Model 10 Military & Police

During World war 2 the Colt M1911A1 was the standard issue side arm of the US military but there were not enough to meet the needs. Because of this the US Navy purchased a large number of commercial Smith and Wessen revolvers. This was the most common side arm in the U.S. Navy as most of the production of M1911A1's went to the the U.S. Army or Marine Corps.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .38 Special | DAR | 2 | Nil | 1 | SwCyl 6 | 3 | 12 | 1.2kg |

---

## Smith & Wesson Model 1917

This is Smith & Wessons contribution to the US war effort during World war 1 when the M1911 was not available in sufficient quantity. Like the Colt it required the use of half moon clips. During World war 2 many of these revolvers were sent to England to arm the Home Guard and the U.S. military used many to arm the military police. The .45 Auto rim round could also be used in this revolver.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .45 ACP | DAR | 2 | Nil | 1 | SwCyl 6 | 3 | 12 | 1.2kg |

---

## High Standard Model B

This is a .22 caliber sporting pistol introduced in 1931. During World war 2 a modified version of this weapon

was built for the U.S. military for pistol training. Due to the low report of the .22 Long Rifle some of these weapons were used for clandestine missions.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .22 Long Rifle | SA | -1 | Nil | 1 | Box 10 | 2 | 10 | 1.0kg |

# Submachineguns

---

## M3

The M3 and the similar M3A1 were developed to replace the Thompson submachineguns in service with U.S. forces at the start of the war. The Thompson was popular but was very expensive and time consuming to produce, the M3 was designed to provide a reliable submachinegun at a fraction of the price. Initially it had a cool reception and was given the nickname "Greasegun" or "Cake Decorator" due to its resemblance to those items. It soon improved its reputation after it was found to be a reliable and handy weapon. The low rate of fire made it easy to control and it also had the advantage that it could be converted to 9mm Parabellum using a simple kit and Sten magazines. While this last feature appears useful it was rarely used. The M3A1 is a modification designed to reduce the cost of manufacture, it is nearly identical to the M3 but is simple in the extreme, as an example the charging lever is replaced with a hole in the bolt and the action is cocked by placing a finger in the hole and pulling back. Both weapons include a wire folding stock. Most U.S. tanks and armored vehicles were issued at least one of these weapons for the crews defense.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .45 ACP | 5 | 2 | Nil | 3/4 | Box 30 | 2 / 4 | 30 | 4.5kg |

---

# OSS M3

This is a version of the M3 with an integral sound suppressor, it was developed by the Office of Strategic Services for use on clandestine missions. The .45ACP cartridge proved to be a good choice for such a weapon because it is normally subsonic and does not require special ammunition to obtain the best results.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .45 ACP | 5 | 2 | Nil | 4 / 5 | Box 30 | 1/ 4 | 30 | 5.3kg |

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# Reising M50

The M50 was in limited issue to the U.S. Marine Corps at the start of the war. It was intended as a replacement for the M1928A1 but proved to be unreliable, most were withdrawn from service during 1942 and replaced with the Thompson M1A1 or the M3. A small number of M50's were supplied with folding wire stocks and designated M55, they are identical except weight is 3.8kg and Blk 3/4.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .45 ACP | 5 | 2 | Nil | 4 | Box 20 | 2 / 5 | 30 | 4.0kg |

---

# Thompson M1A1

The Thompson M1 was the standard submachinegun of the U.S. Army at the start of the war. The M1 was developed from the M1928 in an attempt to reduce the time and cost of manufacture, it uses the same magazines as the M1928 but the drum was dropped as it proved to be unpopular in combat conditions. The M1A1 was introduced in 1942 and is nearly identical to the M1 but has some minor changes to further simplify the design and reduce the cost. Both the M1 and M1A1 proved to be very popular and they remained in service until the end of the war although both were officially replaced by the M3 in 1943.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .45 ACP | 5 | 2 | Nil | 4 | Box 20, 30 | 1 / 4 | 30 | 5.5kg |

## Thompson M1928

The Thompson M1928 was in service with the U.S. military at the start of the war. The drum magazines were rarely used by the Army or Marines as they proved to be bulky, noisy and prone to stopages when exposed to dirt. The Marine Corps was evaluating a replacement for the M1928 when the war started and had issued a number of weapons. In 1940 a small number of these weapons were bought by the British until the Sten was ready for production. The Thompson was a popular weapon with both U.S. and British troops, and could be found in use until the wars end despite being officially replaced years earlier. Navy models generally included a vertical forward grip in place of the horizontal foregrip used by the other services.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .45 ACP | 5 | 2 | Nil | 5 | Box 20, 30 Drum 50,100 | 1 / 3 | 30 | 5.8kg (7.0kg w/ 50rd drum) |

## United Defense M42

The M42 started as a commercial weapon but large quanities were purchased by the Office of Strategic Services and issued to resistance groups and OSS operatives. The M42 gained a reputation for reliability and was a popular weapon, it was not adopted by any regular U.S. forces due primarily to the fact that it was chambered for the 9mm Parabellum. This feature made it ideal for unconventional forces because it used the same ammunition as British and German weapons.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 9mm P | 5 | 2 | Nil | 4 | Box 20 | 1 / 4 | 30 | 4.5kg |

# Rifles

## M1 Carbine

The M1 Carbine was developed to create a weapon which fit between the M1911A1 pistol and the M1 Garand rifle. It was intended for use by secondary combat troops such as gun crews, clerks or drivers who needed a weapon with more range and fire power than that offered by a pistol, without being encumbered by a full power rifle. The M1 was introduced in 1942, light weight and reliable it proved to be a popular weapon. It was soon in service as a front line weapon being issued to squad leaders, assistant BAR gunners, Rangers, Airborne infantry, Mountain infantry and the Marine Corps. The M1's weakest feature was its low powered round, despite this it was a popular weapon particularly in the close combat found in cities and jungles. It remained in service through the Korean war and more than 5 million were produced. A grenade launching attachment was available allowing the M1 to use rifle grenades. A 30 round magazine became available in 1945 along with the introduction of the M2 Carbine.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .30 Carbine | SA | 2 | 1-Nil | 4 | Box 15 or 30 | 3 | 45 | 2.4kg |

## M1A1 Carbine

This is the M1 Carbine with a wire folding stock developed for Airborne operations.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .30 Carbine | SA | 2 | 1-Nil | 3/4 | Box 15 or 30 | 3 | 45 | 2.5kg |

## M2 Carbine

The M2 Carbine is a selective fire weapon developed from the M1 Carbine. The original specification for the M1

had included the capacity for automatic fire but with the start of U.S. involvement in the war this requirement was dropped in exchange for getting the M1 into immediate service. The M2 was introduced early in 1945 but few were in service before the war ended. It was a popular weapon and remained in use with U.S. forces through the 1950's.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .30 Carbine | 5 | 2 | 1-Nil | 4 | Box 15 or 30 | 3 / 8 | 45 | 2.4kg |

---

## M1 Garand

The M1 Garand was adopted by the U.S. Army in 1936 and has the distinction of being the first semi automatic military service rifle adopted by any nation. When the Japanese attacked Pearl Harbor in 1941 the U.S Army had issued the M1 in large numbers but it did not completely replace the M1903 until 1943. During the war it was also used by the U.S. Marine Corps but the number issued was small until 1943. The M1 uses an 8 round En Bloc clip, this clip holds the ammunition while in the gun unlike most stripper clips which are discarded after reloading. When the last round is fired the clip is ejected making a loud ping which could announce to the enemy that the rifle was empty. This clip also prevented topping up the rifle with spare rounds unless the clip was ejected, refilled and then reloaded into the rifle. Despite these drawbacks the M1 was popular with the troops and provided much greater firepower than that of the Bolt action rifles most other nations were using. A grenade launching attachment was made for the M1 which allowed the use of rifle grenades. Due to the need to reload the rifle with a clip full of blank cartridges and shut off the gas system the M1903 Springfield was often retained for use by a squad Grenadier.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .30-06 | SA | 4 | 2-3-Nil | 5 | Strip 8 | 3 | 70 | 4.3kg |

---

## M1D Garand

The M1D is a sniper rifle based on the M1, it is a standard M1 selected for accuracy and includes a telescopic sight. The M1D was introduced late in 1943 but was not as popular as sniper rifles based on the M1903 Springfield which most believed were more accurate. A similar weapon was built designated M1C, it used a different telescopic sight and mounting but was basically the same as the M1D. The telescopic sight adds 15 to the basic range for aimed shots.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .30-06 | SA | 4 | 2-3-Nil | 5 | Strip 8 | 3 | 70 | 4.9kg |

---

## M1903A3 Springfield

The M1903 Springfield was the standard U.S. service rifle during World war 1 and remained in use into World war 2, the M1 Garand was introduced in 1936 as a replacement for the U.S. Army but this was not complete until 1943. The U.S Marine Corps started replacing the M1903 with the Garand in 1941 but this was not complete until 1944. There were several versions of the M1903, in 1929 it recieved a modified stock and was designated the M1903A1, in 1942 the design was modified to simplify production and was designated M1903A3, this design was the most common version used during World war 2. A sniper version was developed from the M1903A3 designated M1903A4. All versions may be reloaded with 5 round chargers. The M1903 remained in use through the end of the war as a snipers weapon due to its accuracy and as a Grenadiers weapon as it was better suited for launching rifle grenades than the semi auto Garand. A grenade launching adaptor was developed for the M1903 before World war 2.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .30-06 | BA | 4 | 2-3-Nil | 5 | Int 5 | 4 | 75 | 4.2kg |

---

## M1903A4 Springfield

This is a sniper rifle based on the M1903A3, it was the standard snipers weapon of the U.S. Army and Marine Corps throughout World war 2. The M1903A4 is a standard M1903A3 selected for accuracy and equipped with a telescopic sight. The telescopic sight adds 15 to the basic range for aimed shots.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .30-06 | BA | 4 | 2-3-Nil | 5 | Int 5 | 4 | 75 | 4.4kg |

## M1941 Johnson

The Johnson was adopted by the U.S. Marine Corps as a supplement to the M1 Garand which was only being allocated in small numbers until the U.S. Army received thier complete order in 1943. The Johnson proved to be less reliable and more easily damaged than the M1. It became popular with Airborne troops due the the ease which the barrel could be removed, thus reducing the length of the weapon by almost one half. This made it easier to pack for parachute drops and only took about 90 seconds to bring it back into service. It remained in use until the wars end and was used by US Army Rangers and Airborne units in addition to the Marine Corps. It may be reloaded from 5 round charger strips.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .30-06 | SA | 4 | 2-3-Nil | 5 | Int 10 | 3 | 65 | 4.3kg |

# Shotguns

## Ithaca M37

The M37 is a pump action shotgun and is one of the several types of commercial shotgun purchased by the U.S. military during World war 2. The majority of shotguns were used for training, hunting or for arming guards. They were occasionally issued for combat in urban areas or jungle fighting. Due to different battlefield conditions they were more common in the Pacific theater and were popular with the U.S. Marine Corps. Most issued for combat were modified to accept a bayonet. The Ithaca has no trigger disconnect which allows the weapon to fire as fast as the pump action is worked when the trigger is held back. This speeds the rate of fire and allow the weapon to be fired almost as fast as a semi auto.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 12 Gauge | PA | 4 | 3-Nil | 5 | Tub 4 | 4 | 40 | 3.0kg |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| close | PA | 9 | Nil | | | | | |
| medium | 10 | 1 | Nil | | | | | |

---

## Remington M31

The M31 is a pump action shotgun purchased by the U.S. military during World war 2.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 12 Gauge | PA | 4 | 3-Nil | 5 | Tub 4 | 4 | 40 | 3.2kg |
| close | PA | 9 | Nil | | | | | |
| medium | 10 | 1 | Nil | | | | | |

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## Remington M11

The M11 is a semi auto shotgun purchased by the U.S. military during World war 2.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 12 Gauge | SA | 4 | 3-Nil | 5 | Tub 4 | 3 | 40 | 3.7kg |
| close | SA | 9 | Nil | | | | | |
| medium | 10 | 1 | Nil | | | | | |

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## Stevens M620A

The M620A is a pump action shotgun purchased by the U.S. military during World war 2.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 12 Gauge | PA | 4 | 3-Nil | 5 | Tub 5 | 3 | 40 | 3.5kg |
| close | PA | 9 | Nil | | | | | |
| medium | 10 | 1 | Nil | | | | | |

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## Winchester M12

The M12 is a pump action shotgun purchased by the U.S. military during World war 2.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 12 Gauge | PA | 4 | 3-Nil | 5 | Tub 5 | 3 | 40 | 3.3kg |
| close | PA | 9 | Nil | | | | | |
| medium | 10 | 1 | Nil | | | | | |

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## Winchester M97

The M97 is a pump action shotgun used by the U.S. military during World war 1, due to a shortage of weapons many were re-issued during World war 2. Like the Ithaca it has no trigger disconnect allowing the gun to fire as fast as a semi auto.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 12 Gauge | PA | 4 | 3-Nil | 5 | Tub 5 | 3 | 40 | 3.9kg |
| close | PA | 9 | Nil | | | | | |
| medium | 10 | 1 | Nil | | | | | |

# Machineguns

## M2

The M2 is an improved version of the M1921 introduced in 1933. It is a water cooled heavy machine gun primarily used as an anti-aircraft weapon. The M2 remained in service through the war primarily with anti-aircraft units and on naval vessels. The weapon weighs 58.4kg, the tripod weighs 170.1kg and the gun is cooled by 8 liters of water weighing 8kg.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .50 BMG | 5 | 8 | 2-2-3 | 9 | Belt 105 | 2 / 6 | 150 | 223.5kg |

## M2HB

The M2HB is an air cooled version of the M2 also introduced in 1933. An early version also known as the M2 was developed but the barrel over heated when the rate of fire exceeded approximately 75 rounds per minute, a heavy barrel was designed to remedy this problem which created the M2HB. The power of the .50 caliber round is largely responsible for the U.S. Army never adopting an anti-tank rifle, it was felt that the M2HB could be used as an anti-tank machine gun and made a seperate anti-tank rifle redundant. The M2HB proved to be a solid reliable weapon which was used in large numbers during World war 2 and which has continued in service to the present. There have been several designs offered to replace the M2HB but these have all failed, the only real competition coming from the Soviet DShK 12.7mm and KPV 14.5mm machine guns both also World war 2 designs. The weapon weighs 51.1kg and the tripod weighs 20kg.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| .50 BMG | 5 | 8 | 2-2-3 | 8 | Belt 105 | 2 / 7 | 150 | 71.1kg |

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## M1917A1

The M1917A1 is a water cooled machine gun developed from the World war 1 M1917 during the 1920's. It was in service with the U.S. military at the start of World war 2 and remained in use until the wars end. It was well suited for use in defensive emplacements due to its ability to sustain long periods of automatic fire and was particularly popular in the Pacific theater. The weapon weighs 24.5kg, the tripod weighs 25kg and the gun is cooled by 6 liters of water weighing 6kg.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .30-06 | 5 | 4 | 2-3-Nil | 5 | Fabric Belt 250 | 1 / 1 | 150 | 55.5kg |

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## M1918A2 BAR

The BAR or Browning Automatic Rifle was developed at the end of World war 1. It was improved between the wars and was adopted by the U.S Army during the 1920's. The M1918A2 was the standard light machine gun of the U.S. military at the start of World war 2 and it remained in service through the 1950's. The BAR is often criticized as a compromise, the critics claim the magazine is to small to be useful in the light machine gun role and the weapon is to heavy to be a rifle. Despite these claims it had a successful war career gaining a reputation for reliability, most importantly it was highly regarded by the U.S. troops to whom it was issued. The BAR is equipped with a bipod.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .30-06 | 5 | 4 | 2-3-Nil | 6 | Box 20 | 1 / 5 | 65 | 9.5kg |
| bipod | | | | | | 1 / 2 | 90 | |

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# M1919A4

The M1919A4 was developed after World war 1 from the M1917 and was the standard medium machinegun in service with the U.S. military at the start of World war 2. It was also used in modified form as the M1919A5 providing the secondary armament on all U.S. armored vehicles during the war. A light machinegun was developed which added a stock and bipod. The weapon weighs 21.9kg and the tripod weighs 26.3kg. The M1919A4 proved to be a popular weapon and it remained in service with the U.S. into the 1950's.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .30-06 | 5 | 4 | 2-3-Nil | 5 | Fabric Belt 250 | 1 / 1 | 125 | 48.2kg |

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# M1919A6

The M1919A6 was introduced in 1943 developed from the M1919A4 to provide a light machine gun for U.S. forces. It was basically the M1919A4 with a shoulder stock and bipod added in place of the tripod arrangement. The M1919A6 was not popular as it was nearly as heavy as the M1919A4 and was considerably heavier than the BAR or BREN. It was reliable though and provided the fire support of a belt fed machinegun. In service it was generally used more as a light weight medium machine gun not as a squad automatic weapon like the BAR or BREN.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .30-06 | 5 | 4 | 2-3-Nil | 5 | Fabric Belt 250 | 1 / 2 | 90 | 22.6kg |
| Bipod | | | | | | 1 / 4 | 65 | |

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# M1941 Johnson

The M1941 or Johnson light machine gun was adopted at the start of World war 2 by the U.S. Marine Corps, it was never standardized as the U.S. Ordnance Dept. would not allow the Marine Corps to standardize on a weapon the U.S. Army had not adopted. It remained in use throughout the war in small numbers and became popular with Airborne troops as it could be dismantled for packing and quickly reassembled for use. It has a side mounted magazine and a bipod. The M1941 can be reloaded from 5 round charger strips, this feature was

requested by the Marine Corps. It was felt that the ability to quickly reload without removing the magazine would enable the gunner to maintain a full magazine by topping up during lulls in combat. The M1941 was used by the U.S Army Airborne and Rangers in addition to the Marine Corps.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .30-06 | 5 | 4 | 2-3-Nil | 6 | Box 20 | 3 / 8 | 65 | 6.4kg |
| bipod | | | | 6 | | 1 / 4 | 90 | |

# GERMANY

# Handguns

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## Luger P-08

The Luger was the standard German side arm during World war 1, it was still in service at the start of World war 2. The Luger was a popular weapon and it remained in use until the wars end although it was officially replaced by the P-38 before the war. It was also a popular war trophy and was used unofficially by many Allied soldiers.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 9mm P | SA | 2 | Nil | 1 | Box 8 | 3 | 12 | 1.1kg |

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## Mauser C96

The C96 was one of the first successful semi auto pistols made and had been issued during World war 1. When World war 2 began Germany had a shortage of pistols, they had many of the Mausers in storage so the C96 was once again issued. It has a detachable wooden stock which doubles as a holster for the weapon. The C96 is often called the broom handle because of its odd shape.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 7.63mm Mauser | SA | 2 | Nil | 1 | Strip 10 | 3 | 12 | 1.2kg |
| w/stock | | | | 3 | | 2 | 20 | 1.7kg |
| 9mm Para | SA | 2 | Nil | 1 | Strip 10 | 3 | 12 | 1.2kg |
| w/stock | | | | 3 | | 2 | 20 | 1.7kg |

---

## Mauser HSc

The HSc was developed to compete against the Walther PP. It was adopted as the official side arm of the Luftwaffe and the German Navy. Production was never sufficient and several other designs were also issued to supplement the HSc.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .32 ACP | SA | 1 | Nil | 1 | Box 8 | 3 | 10 | 0.7kg |

---

## Walther P-38

The P-38 was introduced shortly before the start of World war 2. It was to replace the Luger in service but due to the Lugers popularity and a shortage of weapons the P-38 never fully replaced it. The P-38 never attained the fame and popularity of the Luger despite being more rugged and reliable, it was eventually recognized for these characteristics however and survived the war remaining in production to the present. The P-38 was one of the first double action semi auto pistols to be adopted as a military weapon.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 9mm P | SA | 2 | Nil | 1 | Box 8 | 3 | 12 | 1.0kg |

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## Walther PP

The PP was developed as a police pistol and was the first successful double action semi auto pistol. It soon became popular with German officers and was one of several pistols issued to the Luftwaffe for air crews.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .32 ACP | SA | 1 | Nil | 1 | Box 8 | 3 | 10 | 0.9kg |
| .380 ACP | SA | 1 | Nil | 1 | Box 8 | 3 | 10 | 0.9kg |

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## Walther PPK

The PPK was developed as a small concealable pistol based on the PP. It was designed for police detectives and was popular with German officers and the SS. It was also issued to the Luftwaffe.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .32 ACP | SA | 1 | Nil | 1 | Box 7 | 3 | 10 | 0.8kg |
| .380 ACP | SA | 1 | Nil | 1 | Box 7 | 3 | 10 | 0.8kg |

# Submachineguns

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## Mauser M-712

The M-712 is a selective fire version of the Mauser C96 developed during the 1930's. It was not officially adopted but with the German militaries chronic shortage of weapons small numbers of the M-712 were issued. It has a detachable wooden stock which doubles as a holster for the weapon.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 7.63mm Mauser | 5 | 2 | Nil | 1 | Box 10, 20 | 3 / 9 | 12 | 1.3kg |
| w/stock | | | | 3 | | 2 / 5 | 20 | 1.8kg |
| 9mm Para | 5 | 2 | Nil | 1 | Box 10, 20 | 3 / 9 | 12 | 1.3kg |
| w/stock | | | | 3 | | 2 / 5 | 20 | 1.8kg |

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## MP-28

The MP-28 is an improved version of the World war 1 MP18, after World war 1 the MP-28 was sold throughout the world, with many being used by European countries. Large numbers had been captured by 1940 and these were re-issued to German units.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 9mm P | 5 | 2 | Nil | 4 | Box 24, 32 | 1 / 4 | 30 | 4.5kg |

---

## MP-35

The MP-35 was the standard submachine gun of the German SS at the start of World war 2. It is similar in design to the World war 1 MP18 but was not simply a modified copy. It has a wooden stock and a side mounted magazine. It was only used by the SS and served through the end of the war.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 9mm P | 5 | 2 | Nil | 4 | Box 24, 32 | 1 / 4 | 30 | 4.5kg |

---

## MP-40

The MP-40 was the standard submachine gun of the German Army at the start of World war 2. Similar to the MP-38, the MP-40 was developed to simplify production and reduce the cost of manufacture. It proved to be a reliable weapon and it served through the war with little modification. The MP-40 was often called the Schmeisser. It was one of the first submachine guns to include a folding stock.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 9mm P | 5 | 2 | Nil | 3/4 | Box 32 | 1 / 4 | 30 | 4.4kg |

# Rifles

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## FG-42

The FG-42 was designed for German Airborne units and is often credited with being the first assault rifle. It was time consuming and expensive to produce which prevented it from being issued in large numbers. It uses a side mounted magazine and includes a bipod.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 7.92mm Mauser | 5 | 4 | 2-3-Nil | 5 | Box 20 | 4 / 9 | 65 | 5.7kg |
| bipod | | | | | | 2 / 5 | 75 | |

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## Gew 33/40(t)

The Gew 33/40(t) is a short barreled Czech rifle. (Gew is short for Gewehr or rifle, the (t) indicates it is a Czech design). Due to rifle shortages production of this weapon was restarted after the invasion of Czechoslovakia and was it was issued to German mountain infantry units. It was a light handy weapon but had a violent recoil and muzzle blast due to the short barrel. It may be reloaded from 5 round charger strips.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 7.92mm Mauser | BA | 4 | 2-3-Nil | 5 | Int 5 | 5 | 60 | 3.7kg |

---

## Gew 41

The Gew 41 was introduced in 1941 and was the first semi auto rifle adopted by the German Army during World war 2. It was not issued in large numbers and most went to the East front for use against the Soviets. It was not a great success due in part to being heavy and poorly balanced. It also has a non detachable magazine which has to be reloaded from 5 round charger strips slowing reloading.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 7.92mm Mauser | SA | 4 | 2-3-Nil | 5 | Int 10 | 3 | 65 | 5.6kg |

---

## Gew 43

The Gew 43 was introduced in 1943 and is an improved version of the Gew 41. The Soviet Tokarev Model 40 had been encountered by units on the East front and many concepts were copied from it when designing the new rifle. The Gew 43 is a much better weapon which includes a removable box magazine and was designed to accept a mount for a telescopic sight. It was issued more widely than the Gew41 and could be found on all fronts. Most were used as snipers weapons and it was adopted by the Czech Army after the war for this purpose. When equipped with a telescopic sight add 15 meters to the base range and 0.5kg to the weight.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 7.92mm Mauser | SA | 4 | 2-3-Nil | 5 | Int 10 | 3 | 65 | 4.9kg |

## Gew 98/40

This is a modified version of the Hungarian 35M. In 1940 Germany had a shortage of rifles and they modified the current Hungarian service rifle to accept the German ammunition and accessories. This rifle was built in Hungarian factories under German supervision and was issued to the Luftwaffe. It may be reloaded from 5 round charger strips.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 7.92mm Mauser | BA | 4 | 2-3-Nil | 5 | Int 5 | 4 | 65 | 4.1kg |

## Mauser Kar 98k

The Kar 98k was the standard German infantry rifle at the start of World war 2. It is basically a shortend version of the World war 1 Kar 98. It remained in service through the war and a cup grenade launcher was developed allowing it to launch rifle grenades. It may be reloaded from 5 round charger strips. Small numbers of these rifles were fitted with telescopic sights for use as snipers weapons. When so equipped add 15 meters to the basic range for aimed fire and 0.5kg to the weight.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 7.92mm Mauser | BA | 4 | 2-3-Nil | 5 | Int 5 | 4 | 65 | 4.0kg |

## StG 44

The Sturmgewehr 44 was introduced in 1943, it uses a shortend, less powerful cartridge than the standard 7.92mm Mauser round. The StG 44 was known under several designations during its development, the first was MK43 (machine carbine) and then MP43 and MP44. Hitler did not approve of the project initially which resulted in the changing designations, this was done in an attempt to keep it away from his attention. The rifle was first used on the East front against the Soviets and it was an immediate success, with proof of the concept it is said

Hitler bestowed the final title of Sturmgewehr (storm rifle). The StG44 was used on all fronts and there were few changes made from the original weapon. It is credited as being the first modern assault rifle and has many similarities to the Soviet AK-47 which was influenced by it. A cup type grenade launcher was developed for the rifle allowing it to fire rifle grenades. An unusual development based on this rifle was a small number of curved barrel attachments produced. These ranged from a 30-90 degree turn and were fitted with periscopic sights, it is not known what the intent of these attachments were. Several possibilities have been suggested, the most popuar are that they were for clearing out tanks, clearing infantry off the tops of tanks or for firing from around corners and out of trenches, what ever the intended purpose few were made and even less used.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 7.92mm Kurz | 5 | 3 | 1-Nil | 5 | Box 30 | 3 / 7 | 55 | 5.3kg |

# Anti-tank Rifles

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## PzB 39

The PzB39 was the standard Anti-tank rifle of the German Army when World war 2 began. It uses a modified 13mm anti tank round developed during World war 1. The 13mm cartridge is necked down to 7.92mm and the bullet has a tungsten core. The PzB39 was a useful anti tank weapon during the invasion of Poland but by 1940 it was only capable of defeating the lightest tanks. It is a single shot weapon but it includes a box holding 5 rounds beside the breach providing a ready source of ammunition. It also includes a bipod.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 7.92/13mm | SS | 14 | 2-2-3 | 8 | Single | 13 | 40 | 12.7kg |
| bipod | | | | | | 6 | 75 | |

---

## PzB 41

The PzB41 is one of the largest anti-tank rifles produced during World war 2. By the time it entered service in 1941 the anti-tank rifle was an ineffective weapon even when chambered for a 20mm round. The first PzB41's were sent to the East front and were incapable of stopping all but the lightest Soviet tanks, the rest were sent to the Italian front in 1943 and were only slightly more effective. The PzB41 was expensive to build and had little effect as an anti-tank weapon, due to this few were built. A bipod is included.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 20mm Solothurn | BA | 15 | 2-2-3 | 9 | Box 5, 10 | 13 | 55 | 49.0kg |
| bipod | | | | | | 6 | 90 | |

# Machineguns

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## MG-30(t)

The MG-30(t) is the Czech ZB vz30 and was the weapon used as a starting point for the British BREN. After the invasion of Czechoslovakia Germany re-issued many of these weapons captured from the Czech Army. The factory which produced them was even restarted at one point to produce more as the German Army was always short of weapons. The MG-30(t) was one of the best of the captured weapons used and was popular when issued, often being used by the SS. It is very similar to the BREN with a top feeding magazine and a bipod.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 7.92mm Mauser | 5 | 4 | 2-3-Nil | 6 | Box 30 | 1/ 4 | 60 | 11.8kg |
| Bipod | | | | | | 1 / 2 | 75 | |

## MG-34

The MG-34 was the standard machine gun of the German Army at the start of World war 2. It was also the first General Purpose machine gun being used in the light, medium and heavy roles. It can be used from the shoulder or a bipod like a light machine gun, or from a tripod like a medium or heavy machine gun. The MG-34 proved to be a rugged, reliable weapon admired by both sides, many captured examples were used by Allied troops. The MG-34 has a much higher rate of fire than any Allied machine guns and the sound of its firing was very distictive. The production of the MG-34 was time consuming and expensive resulting in its replacement as an infantry weapon by the MG-42. The MG-34 remained in production for use in armored vehicles until the wars end, and was never withdrawn from infantry use. A saddle drum was developed for the MG-34 which could be used in place of the belt. The tripod weighs 19kg.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 7.92mm Mauser | 10 | 4 | 2-3-Nil | 6 | Belt 50, Drum 75 | 1 / 7 | 65 | 14.1kg |
| Bipod | | | | | | 1 / 4 | 90 | |
| Tripod | | | | | | 1 / 2 | 125 | |

## MG-42

The MG-42 was introduced in 1942 as a simplified version of the MG-34. The weapons are similar but the MG-42 has a square barrel shroud while the MG-34's is round. The MG-42 was initially considered to be an inferior weapon but it soon proved to be better than the MG-34, it was more reliable, had a higher rate of fire and introduced a quick barrel change. The high rate of fire of the MG-42 made a distinctive sound sound like tearing cloth as the individual shots blurred into one. The performance of the two weapons is similar but the design of the MG-34 made it more suitable for mounting in armored vehicles. As a result of this was that most armored vehicles used the MG-34 in hull and coaxial positions and the MG-42 on anti-aircraft roof mountings. The 75 round saddle drum may also be used. The tripod weighs 19kg. The MG-42 was a very influential weapon on post war machine gun design and it is still in service in a slightly modified form as the MG-3.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 7.92mm Mauser | 10 | 4 | 2-3-Nil | 6 | Belt 50, Drum 75 | 2 / 8 | 65 | 13.5kg |
| Bipod | | | | | | 1 / 4 | 90 | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Tripod | | | | | | 1 / 2 | 125 | |

# SOVIET UNION

## Handguns

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### Nagant M1895

The Nagant was the standard pistol of the Tsar's army before the 1917 revolution. Following the revolution it remained in service with the Red army. Production of the Nagant continued until the end of World war 2. It was an overly complex reveolver which used an unusual method of camming the cylinder forward with each shot to fully seal the cylinder gap, the gas leak on conventional revolvers is minimal and little advantage is gained from this extra complication.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 7.62mm M95 | DAR | 1 | Nil | 1 | SwCyl 7 | 1 | 10 | 1.0kg |

---

### TT33 Tokarev

The Tokarev was introduced in the early 1930's as a replacement for the Nagant revolver. Due to demand and the low priority afforded to pistol production the Tokarev was used alongside the Nagant not replacing it until after the war. Pistols were issued to the Soviet infantry at a much lower rate than in most other armies, the majority of Tokarev production was used to arm the crews of aircraft and armored vehicles.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 7.62mm M30 | AL | 2 | Nil | 1 | Box 8 | 4 | 12 | 0.9kg |

# Submachineguns

---

## PPD-1934/38

The PPD-34/38 is little more than a copy of the German MP-28 although features from the Finnish m/1931 Suomi are also present, the 71 round drum being a direct copy. The Soviets used a small number of these weapons during the Spanish Civil war and again during the Russo-Finnish Winter war. The Soviets decided the submachinegun was to be an important weapon in future wars. An improved design the PPD-1940 was introduced in 1940 but like the earlier designs it was too complicated for mass production. A less complex weapon was desired and the result was the PPSh-41.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 7.62mm M30 | 5 | 2 | Nil | 4 | Box 25, Drum 71 | 1 / 4 | 30 | 5.7kg |

---

## PPSh-41

The PPSh-41 entered service shortly before the German invasion of the Soviet Union. Earlier designs had been to difficult to produce in large numbers and a simple design was called for. The PPSh-41 was designed to be as simple as possible using a minimum number of parts. It entered service shortly before the German invasion. The PPSh-41 soon proved itself to be both effective as a weapon as well as easy to build. Factories and workshops throughout the Soviet Union began turning out the weapon and more than 5 million were completed by the wars end. The Germans were impressed with the weapon particularly the large ammunition supply, several attempts to

increase the capacity of the MP-40 were made but none were very successful. Large numbers of captured PPSh-41's were issued to German troops on the East Front including some rechambered for the 9mm Parabellum.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 7.62mm M30 | 10 | 2 | Nil | 4 | Box 35, Drum 71 | 1 / 6 | 30 | 5.4kg |

---

## PPS-43

The PPS-43 was first used during the siege of Leningrad and it is not clear whether it was intended to replace the PPSh-41 or was simply a back up design. Whatever its intended purpose during 1942 Leningrad was cut off and weapons were in short supply. Factories in the city were used to produce the weapon and they went directly from the production lines to front line combat. After the siege was lifted the PPS-43 remained in production until at least 1944. Approximately 500,000 were produced and it remained in service until the wars end. It uses a 35 round box magazine and this magazine was later adopted for use with the PPSh-41.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 7.62mm M30 | 5 | 2 | Nil | 4 | Box 35 | 1 / 4 | 30 | 3.7kg |

# Rifles

---

## Mosin-Nagant M1891/30

The M1891 served with the Tsar's army until the 1917 revolution, it remained in use by the Red army until the 1930's. In 1930 a program to modernize the M1891 began resulting in the M1891/30, this consisted of shortening the barrel and on new rifles several changes to simplify production. The M1891/30 served through the war as the

standard rifle of the Soviet army. Some were issued with telescopic sights and used as snipers weapons, add 15 meters and 0.5kg to rifles so equipped. It was also used by Finland (m27) and Poland (karabin wz 91). Many were captured by the Germans who designated them Gewehr 254(r) and issued them to second line, garrison and militia units. The M1891/30 may be reloaded from 5 round charger clips.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 7.62mm M91 | BA | 4 | 2-3-Nil | 6 | Box 5 | 3 | 75 | 4.2kg |

---

## Mosin-Nagant M1938 Carbine

The M1891/30 was still a rather long and awkward weapon by 1940 standards. Several attempts were made to provide a shorter version of the rifle, the M1938 was the result. The barrel was shortend by 22cm (8") making a lighter and handier weapon, a disadvantage was the loss of the ability to mount a bayonet. In 1944 this was addressed with the introduction of the M1944 Carbine, this was identical to the M1938 but included a folding bayonet.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 7.62mm M91 | BA | 4 | 2-3-Nil | 5 | Box 5 | 4 | 60 | 3.7kg |

---

## Tokarev SVT40

During the 1930's the Soviet army experimented with several semi-auto rifles, while several designs were fielded in limited numbers none survived to 1940. The problems encounted by these rifles centered on their durability, the SVT40 is an improved version of an earlier Tokarev design the SVT38. Although the SVT40 was made more robust than the earlier weapons it was still found to require more care than the typical Soviet soldier would give to their weapon. In order to get the most from the weapon it was generally issued to NCO's or carefully trained soldiers who could use their increased firepower to good effect. It also became common to issue the SVT40 with a telescopic sight as a snipers weapon. The ability to get a rapid second shot was seen as an asset to snipers and generally they took better care of their weapons. When Germany invaded the Soviet Union in 1941 they soon encountered the SVT40 and used any they captured as the Selbstladegewehr 259(r). Examples sent back to Germany were studied an influenced the design of the Gewehr 43.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 7.62mm M91 | BA | 4 | 2-3-Nil | 6 | Box 10 | 5 | 70 | 4.3kg |

# Anti-Tank Rifles

## PTRD-41

The PTRD-41 is a single shot anti-tank rifle introduced shortly before the German invasion of the Soviet Union. Due to the rapid increase of tank armor the PTRD-41 was soon ineffective as an anti-tank weapon although it remained in use until 1945 for use against soft skin targets and light armored vehicles. It was also mounted on many lend lease vehicles such as Universal carriers. Many were captured and used by the Germans until 1943, those in German service were designated 14.5mm Panzerabwehrbuchse 783(r). The PTRD-41 includes a muzzle brake and a folding bipod.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 14.5mm M41 | BA | 12 | 2-2-3 | 11 | Single | 10 | 40 | 17.4kg |
| bipod | | | | | | 5 | 75 | |

## PTRS-41

The PTRS-41 is a semi-automatic anti tank rifle which entered service shortly before the German invasion of the Soviet Union. The semi-auto operation gave the PTRS-41 greater fire power than the PTRD-41 but paid for it with increased weight and reduced reliability. The barrel may be removed reducing the length and allowing the weapon to be carried in two loads. Like the PTRD-41 it was often mounted on many lend lease vehicles. Many were captured and used by the Germans until 1943, those in German service were designated 14.5mm

Panzerabwehrbuchse 784(r). The PTRS-41 includes a muzzle brake and a folding bipod. It may be loaded from 5 round charger clips.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 14.5mm M41 | BA | 12 | 2-2-3 | 11 | Box 5 | 10 | 40 | 21.0kg |
| bipod | | | | | | 5 | 75 | |

# Machineguns

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## DP-28

The DP-28 was the standard Soviet light machine gun from the early 1930's through the end of World war 2. It proved to be simple to produce, rugged and reliable in action. It feeds from a top mounted horizontal drum and includes a light folding bipod. A tank version was developed which uses a larger 60 round drum.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 7.62mm M91 | 5 | 4 | 2-3-Nil | 6 | Drum 47 | 1 / 4 | 65 | 10.8kg |
| bipod | | | | | | 1 / 2 | 90 | |

---

## DShK-38

The DShK-38 was the standard Soviet Heavy machinegun during World war 2. It was usually found mounted on a wheeled carriage and occasionally included a gun shield to protect the gun crew (AV:2). It could be found on vehicle mounts but this was not nearly as common in the Soviet army as the Browning was in the U.S. military.

Beginning with the IS-2 heavy tank the DShK-38 became a fixture on Soviet tanks as an anti-aircraft weapon. The wheeled carriage weighs 81.3kg and the weapon weighs 46.7kg.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 12.7mm M38 | 5 | 9 | 2-2-3 | 8 | Belt 50 | 3 / 8 | 150 | 128kg |

---

## PM M1910

The PM M1910 is a copy of the Maxim 1910 used during World war 1 and it remained in use through World war 2. It is mounted on a wheeled carriage and is water cooled. The carriage weighs 50kg and the weapon weighs 30.8kg, it holds 8 liters of water which adds an additional 8kg. When originally issued many included a gun shield (AV:2) to protect the gun crew but these were often discarded to save weight.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 7.62mm M91 | 5 | 4 | 2-3-Nil | 6 | Fabric Belt 250 | 1 / 1 | 125 | 88.8kg |

---

## SG-43

The SG-43 was developed to replace the PM M1910 machinegun. While the M1910 was a servicable weapon it was costly and time consuming to produce. The SG-43 was designed with production in mind and was a mush simpler weapon, it was air cooled and could use either the M1910's fabric belt or a 50 round metal link belt. It uses the same wheeled carriage as the M1910 or may use a tripod. Due to the demand for machineguns during the war the SG-43 did not replace the M1910 until 1946. The weapon weighs 8.9kg and the tripod weighs 13.8kg.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 7.62mm M91 | 5 | 4 | 2-3-Nil | 6 | Belt 50 | 1/ 1 | 125 | 22.7kg |

# UNITED STATES

## Mortars

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## 60mm M2

The M2 was the standard light mortar used by the U.S. military during World war 2. It uses a smooth bore tube, base plate and bipod. It can be broken into 3 loads for transport.

| | | |
|---|---|---|
| **Crew: 3** | **Ammunition: 60mm M2** | **ROF: SS** |
| **Weapon Wt: 19.1kg** | **Ammunition Wt: 1.4 kg** | **Reload: 1** |

| Round | IFR | Damage | Pen |
|---|---|---|---|
| HE | 1.8km | C:5 B:20 | Nil |
| ILLUM | 1.8km | B:400 | Nil |

---

## 81mm M1

The M1 was the standard medium mortar used by the U.S. military during World war 2. It uses a smooth bore tube, base plate and bipod. It can be broken into 3 loads for transport.

| | | |
|---|---|---|
| **Crew: 3** | **Ammunition: 81mm M1** | **ROF: SS** |
| **Weapon Wt: 61.7kg** | **Ammunition Wt: 3.1 kg** | **Reload: 1** |

| Round | IFR | Damage | Pen |
|---|---|---|---|
| HE | 2.9km | C:8 B:28 | -4C |
| CHEM | 2.9km | C:2 B:12 | Nil |
| WP | 2.9km | C:2 B:20 | Nil |

---

# 4.2" (107mm) M1

The M1 was the standard heavy mortar used by the U.S. military during World war 2. It has a rifled barrel. The barrel, monopod and base plate can be seperated for transport. It was originally designed for laying smoke and chemicals but a High Explosive round was developed before the war.

| | | |
|---|---|---|
| **Crew: 4** | **Ammunition: 4.2" M1** | **ROF: SS** |
| **Weapon Wt: 149.7kg** | **Ammunition Wt: 14.5 kg** | **Reload: 1** |

| Round | IFR | Damage | Pen |
|---|---|---|---|
| HE | 4.0km | C:12 B:36 | -2C |
| CHEM | 4.0km | C:3 B:12 | Nil |
| WP | 4.0km | C:3 B:36 | Nil |
| ILLUM | 4.0km | B:1500 | Nil |

# Grenade and Rocket Launchers

## Grenade Launcher M1

The M1 is a spigot grenade launching adaptor used with the M1903 Springfield, in the spigot style launcher the grenade is placed over the launcher and range is adjusted by placing the base over the proper range ring. Due to the difficulty of converting the Semi Automatic M1 Garand for grenade launching the M1903 with the M1 adaptor served through most of the war as a squad grenadiers weapon. The M1 adaptor clamps over the muzzle of the rifle. The rifle may be fired with the adaptor (without a grenade) in place but a blank cartridge must be used to launch a rifle grenade.

Several rifle grenades were produced during the war, the M9A1 Anti tank grenade, M17 Fragmentation grenade and M22 Colored smoke grenade were all introduced prior to the U.S. entry to the war and are impact fused. The M22 is available in the same colors as the M18. The M1A1 is an adaptor for the Mk 2A1 Fragmentation grenade, a standard Mk 2A1 is fitted to this adaptor creating a rifle grenade, the M2A1 is similar but is for the AN-M8 smoke grenade or M18 colored smoke grenade. Both of these adaptors were introduced in 1942 and use the grenades time fuses, this allows the option of an air burst for the M1A1 if properly timed (this generally requires a range of 55 to 115 meters). The M19A1 is a White Phosphorus rifle grenade introduced in 1944, it has an impact fuse.

| **Weapon Wt: 0.2kg** | **Rng: 15** | **IFR: 150** | | |
|---|---|---|---|---|
| **Grenade** | **Type** | **Damage** | **Pen** | **Wt** |
| M1A1 adaptor | Frag | C:3 B:8 | Nil | 0.8kg |
| M2A1 adaptor | CHEM | C:1 B:12 | Nil | 0.8kg |
| M9A1 Anti-tank | HEAT | C:3 B:4 | 20C | 0.6kg |
| M17 Fragmentation | Frag | C:3 B:8 | Nil | 0.7kg |
| M19A1 | WP | C:1 B:8 | Nil | 0.7kg |
| M22 Colored smoke | CHEM | C:1 B:12 | Nil | 0.6kg |

# Grenade Launcher M7

The M7 is a spigot grenade launching adaptor used with the M1 Garand. The M1 adaptor clamps over the muzzle of the rifle. During the development of the adaptor it was found that the M1 generated dangerous pressure while launching grenades, due to this a vent was included in the adaptor which prevents the rifle from firing semi automatically while the adaptor is in place. The rifle may be fired with the adaptor in place but it should be treated as a bolt action rifle. Removing the adaptor immediately returns the rifle to its normal semi auto operation. A blank cartridge is required to launch a rifle grenade, these may be single loaded or a clip of eight may be loaded into the weapon.

| **Weapon Wt: 0.3kg** | **Rng: 15** | **IFR: 150** | | |
|---|---|---|---|---|
| **Grenade** | **Type** | **Damage** | **Pen** | **Wt** |
| M1A1 adaptor | Frag | C:3 B:8 | Nil | 0.8kg |
| M2A1 adaptor | CHEM | C:1 B:12 | Nil | 0.8kg |
| M9A1 Anti-tank | HEAT | C:3 B:4 | 20C | 0.6kg |
| M17 Fragmentation | Frag | C:3 B:8 | Nil | 0.7kg |
| M19A1 | WP | C:1 B:8 | Nil | 0.7kg |
| M22 Colored smoke | CHEM | C:1 B:12 | Nil | 0.6kg |

# Grenade Launcher M8

The M8 is a spigot style grenade launching adaptor for the M1 Carbine. Unlike the M7 launcher on the M1 Garand it was not neccessary to defeat the semi auto operation of the Carbine. The adaptor clamps over the muzzle of the weapon and the rifle may be fired with the adaptor in place. A blank cartridge is required to launch a rifle grenade.

| Weapon Wt: 0.3kg | Rng: 15 | IFR: 135 | | |
|---|---|---|---|---|
| **Grenade** | **Type** | **Damage** | **Pen** | **Wt** |
| M1A1 adaptor | Frag | C:3 B:8 | Nil | 0.8kg |
| M2A1 adaptor | CHEM | C:1 B:12 | Nil | 0.8kg |
| M9A1 Anti-tank | HEAT | C:3 B:4 | 20C | 0.6kg |
| M17 Fragmentation | Frag | C:3 B:8 | Nil | 0.7kg |
| M19A1 | WP | C:1 B:8 | Nil | 0.7kg |
| M22 Colored smoke | CHEM | C:1 B:12 | Nil | 0.6kg |

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# 2.36" Rocket Launcher M1

The M1 was the worlds first infantry anti-tank rocket launcher to enter service. Commonly known as the Bazooka it was named after a comedians musical instrument that was similar in appearance. The M1 was first used in 1942 during the invasion of French North Africa, in the rush to get it into service many U.S. soldiers had their first training with the weapon while on the landing craft headed for the beach. Captured Bazookas influenced the design of many German anti-tank rocket launchers. Like most rocket and recoiless weapons the M1 has a danger area behind the weapon.

| Crew: 2 | Ammunition: 2.36" M1 | ROF: SS |
|---|---|---|
| **Weapon Wt: 6.0kg** | **Ammunition Wt: 1.5 kg** | **Reload: 2** |

| Round | Range | Damage | Pen |
|---|---|---|---|
| HEAT | 25 | C:3 B:4 | 24C |
| WP | 25 | C:2 B:12 | Nil |

# 2.36" Rocket Launcher M9

The M9 is an improved version of the M1 rocket launcher introduced in 1943. It may be folded in half for storage or transport and includes a hand powered generator in the trigger mechanism in place of the batteries used in the M1.

| | | |
|---|---|---|
| **Crew: 2** | **Ammunition: 2.36" M1** | **ROF: SS** |
| **Weapon Wt: 6.6kg** | **Ammunition Wt: 1.5 kg** | **Reload: 2** |

| Round | Range | Damage | Pen |
|---|---|---|---|
| HEAT | 25 | C:3 B:4 | 24C |
| WP | 25 | C:2 B:12 | Nil |

# Grenades

# AN-M8 HC Smoke Grenade

The AN-M8 was the standard U.S. smoke grenade during World war 2. It has a cylindrical body and is a burning type smoke grenade, the smoke is created by burning a chemical composition. This is a safer type of grenade than white phosphorus type grenades and produces a longer lasting smoke screen.

| Type | Damage | Pen | Weight |
|---|---|---|---|
| CHEM | C:1 B:12 | Nil | 0.7kg |

---

# M15 White Phosphorus Grenade

The M15 was used primarily for creating smoke to screen troop movement, the effect of the white phosphorus however also gave this grenade a useful anti-personnel and incendiary effect. As with other white phosphorus munitions this grenade was often called "willie peter" after the letters WP.

| Type | Damage | Pen | Weight |
|---|---|---|---|
| WP | C:1 B:12 | Nil | 0.9kg |

---

# M18 Colored Smoke Grenade

The M18 was introduced in 1942. It is similar to the AN-M8 but produces brightly colored smoke, it was generally used for signalling or target marking purposes, although it is fully capable of being used to screen troops like other smoke grenades. The M18 is available in Red, Green, Yellow and Violet.

| Type | Damage | Pen | Weight |
|---|---|---|---|
| CHEM | C:1 B:12 | Nil | 0.7kg |

---

# Mk 2A1 Fragmentation Grenade

The Mk 2A1 was the standard U.S. Fragmentation grenade during World war 2. It has a heavy iron case with external segmentation intended to guide the fracture of the case. Due to its appearance it was often known as the "pineapple".

| Type | Damage | Pen | Weight |
|---|---|---|---|
| Frag | C:3 B:8 | Nil | 0.6kg |

---

# Mk 3A2 Offensive Grenade

The Mk 3A1 was a substitute standard grenade with U.S. forces during World war 2. It has a cylindrical sheet metal body filled with high explosive. Due to the design it causes little fragmentation and is safer to use in the open. It was also used as a small demolition charge.

| Type | Damage | Pen | Weight |
|---|---|---|---|
| HE | C:5 | Nil | 0.4kg |

# Flamethrowers

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# M1 Flamethrower

The M1 was introduced early in 1942, it includes a flame gun, pressure tank and fuel tank. It contains 18 liters of fuel, enough for approximately five two second "bursts". The ignition system is electric using sparks to ignite the fuel, this system was troublesome and often alternate sources of ignition were required. The M1 uses gasoline.

| ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|
| SA | Flame | Nil | 4 | Tank 5 | 4 | 3 | 31.8kg |

---

# M1A1 Flamethrower

The M1A1 is an improved version of the M1 introduced in 1943. It is very similar to the M1 but uses napalm in place of gasoline which increases the range by approximately 50%.

| ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|
| SA | Flame | Nil | 4 | Tank 5 | 4 | 5 | 31.8kg |

---

# M2-2 Flamethrower

The M2-2 is an improved version of the M1A1 introduced in 1944. The primary improvements were reduced weight and the troublesome electric ignition was replaced with a more reliable cartridge system. The ignition system uses special cartridges in a revolving cylinder to ignite the fuel.

| ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|
| SA | Flame | Nil | 4 | Tank 5 | 4 | 5 | 28.1kg |

# GERMANY

## Mortars & Infantry Guns

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# 5cm leGr 36

The 5cm leichte Granatwerfer 36 (light grenade thrower) was introduced in 1936. It was designed as a light infantry mortar used at the squad level. It was a complex design which mounted the tube and monopod directly to the baseplate, it was trigger fired in place of the more common drop fire method. The leGr36 included a very precise traversing mechanism and a telescopic sight. While the design of the leGr 36 was impressive from an engineers viewpoint it was not a very practical weapon in use. It was a solid unit which could not be broken into smaller loads like most mortars and was costly in production resources. This last fault doomed the weapon and production stopped in 1941. It was gradually withdrawn from front line service and replaced with other designs. It remained in use until the wars end most serving with second line and garrisson units.

| | | |
|---|---|---|
| **Crew: 2** | **Ammunition: 5cm leGr 36** | **ROF: SS** |
| **Weapon Wt: 14kg** | **Ammunition Wt: 0.9 kg** | **Reload: 1** |

| **Round** | **IFR** | **Damage** | **Pen** |
|---|---|---|---|
| HE | 500m | C:3 B:10 | Nil |

# 7.5cm leIG 18

During World war 1 the German army determined that all infantry battalions should have some measure of artillery support available at all times. During the 1920's the German army put a high priority on the development of a light weapon which could be attached to infantry battalions, this resulted in the leichte Infantriegeschutz 18 (light infantry gun). A pack version was developed for Mountain infantry units, the leichte Gebirgs Infantriegeschutz 18 or leGebIG 18 (light mountain infantry gun) it could be broken into 10 loads for transport by pack animal. Early models had wooden spoke wheels but later versions had metal rims and rubber tires designed for motorized towing. A gun shield is provided for the crew on both versions although it was often discarded on the leGebIG 18 to save weight.

| | | | |
|---|---|---|---|
| **Crew: 4** | **Ammunition: 7.5cm leIG18** | **ROF: SS** | **Introduced: 1932** |
| **Weapon Wt: 400kg** | **Ammunition Wt: 9 kg** | **Reload: 1** | **Gun Shield: AV:2** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|
| HEAT | 50 | 3.5km | C:5 B:12 | 15C |
| HE | 50 | 3.5km | C:7 B:18 | 0C |

# 8cm s Gr W 34

The 8cm schwere Granatwerfer 34 (heavy grenade launcher) was the standard German medium mortar throughout the war. It gained a reputation for extreme accuracy and rapid rate of fire although much of the credit should go to the training of the crews. The design of the weapon follows standard mortar design and it may be broken into three loads (barrel, bipod, baseplate) for transport.

| | | |
|---|---|---|
| **Crew: 3** | **Ammunition: 8cm sGrW34** | **ROF: SS** |

| | | |
|---|---|---|
| **Weapon Wt: 56.7kg** | **Ammunition Wt: 3.5 kg** | **Reload: 1** |

| Round | IFR | Damage | Pen |
|---|---|---|---|
| HE | 2.4km | C:8 B:28 | -4C |
| CHEM | 2.4km | C:2 B:12 | Nil |
| ILLUM | 2.4km | B:1000 | Nil |

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# 8cm k Gr W 42

The 8cm kurzer Granatwerfer 42 is a light weight version of the sGrW34 originally developed for airborne infantry. It saw little use as an airborne weapon but quickly found a place as a light mortar replacing the 5cm leGr36. It fires the same ammunition as the 8cm sGrW34 but is limited to a smaller propelling charge which cuts the range in half.

| | | |
|---|---|---|
| **Crew: 2** | **Ammunition: 8cm sGrW34** | **ROF: SS** |
| **Weapon Wt: 28.2kg** | **Ammunition Wt: 3.5 kg** | **Reload: 1** |

| Round | IFR | Damage | Pen |
|---|---|---|---|
| HE | 1.1km | C:8 B:28 | -4C |
| CHEM | 1.1km | C:2 B:12 | Nil |
| ILLUM | 1.1km | B:1000 | Nil |

---

# 12cm Gr W 42

The 12cm Granatwerfer 42 is a copy of the Soviet 120-HM 38. Following the German invasion of the Soviet Union the German army was impressed with the effectiveness of the Soviet 120mm mortars, many were captured and used as the Granatwerfer 378(r) but eventually an exact copy was produced as the Gr W 42. It proved to be a popular weapon and often replaced infantry guns at the battalion level. A wheeled carriage can be fitted to the baseplate allowing the unit to be towed intact. It can be disassembled into 3 loads for transport (barrel, bipod, baseplate).

| | | |
|---|---|---|
| **Crew: 4** | **Ammunition: 12cm GrW42** | **ROF: SS** |
| **Weapon Wt: 280.1kg** | **Ammunition Wt: 16 kg** | **Reload: 1** |

| Round | IFR | Damage | Pen |
|---|---|---|---|
| HE | 6.0km | C:16 B:44 | 0C |
| CHEM | 6.0km | C:3 B:12 | Nil |

---

# 15cm sIG 33

The 15cm schwere Infantriegeschutz 33 (heavy infantry gun) is a howitzer designed as the heavier counterpart to the 7.5cm leIG18. It did not use any light weight materials in its construction which led to its being rather heavy for its intended role and it required a horse team, truck or halftrack for mobility. An anti-armor "stick bomb" was produced, this is a muzzle loaded HEAT round similar in effect to a giant rifle grenade, due to the inaccuracy of this round it was generally used against static targets like fortifications and obstacles.

| | | | |
|---|---|---|---|
| **Crew: 5** | **Ammunition: 15cm sIG33** | **ROF: SS** | **Introduced: 1936** |
| **Weapon Wt: 1750kg** | **Ammunition Wt: 57 kg** | **Reload: 2** | **Gun Shield: AV:2** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| HEAT | 45 | 1.2km | C:33 B:40 | 73C |
| HE | 80 | 4.7km | C:28 B:37 | 3C |
| CHEM | 80 | 4.7km | C:3 B:28 | Nil |

# Grenade & Rocket Launchers

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## Granatbuchse 39

This is the PzB39 anti-tank rifle modified for use as a grenade launcher. With the rapid increase of tank armor the PzB39 was made obsolete early in the war, in an attempt to provide infantry units some anti-armor capability many were converted into grenade launchers. It fires standard German rifle grenades but has a longer range. It retains the ability to fire as a rifle although it was rarely used this way. The Granatbuchse was not a great success and when rocket propelled anti-tank weapons became available the Granatbuchse was largly removed from service. It includes a bipod which is generally used. Special cartridges are required for launching grenades.

| **Weapon Wt: 12.7kg** | | | | | | |
|---|---|---|---|---|---|---|
| **Grenade** | **Type** | **Damage** | **Pen** | **Wt** | **Rng** | **IFR** |
| Gewehr Sprenggranate | Frag | C:2 B:7 | Nil | 0.3kg | 30 | 500 |
| Gewehr Sprenggranate mit Gesteigerter Reichweite | HE | C:4 | Nil | 0.3kg | 50 | 1.3km |

| | | | | | | |
|---|---|---|---|---|---|---|
| Gewehr Panzergranate 30 | HEAT | C:1 B:5 | 5C | 0.3kg | 30 | 300 |
| Gross Gewehr Panzergranate 40 | HEAT | C:2 B:7 | 9C | 0.4kg | 30 | 400 |
| SS Gewehr Panzergranate 46 | HEAT | C:3 B:10 | 14C | 0.5kg | 30 | 400 |
| SS Gewehr Panzergranate 61 | HEAT | C:3 B:12 | 20C | 0.6kg | 30 | 400 |
| Gewehr Fellschirmlechtgranate | ILLUM | B:100 | Nil | 0.3kg | -- | 1.0km |
| Gewehr Propagandagranate | Leaflet | 4 | 2-3-Nil00000 | 0.3kg | 30 | 1.0km |

---

# 8.8cm RPzB 43

The Raketenpanzerbuchse 43 was introduced in 1943 and was the first German rocket propelled anti-tank weapon, it was heavily influenced by the American Bazooka which had been encountered in 1942. The trigger unit includes a self powered electrical generator to fire the rocket motor. The RpzB43 uses a larger rocket than the Bazooka but was less refined, the rocket motor was still burning when the rocket left the barrel so the operator had to wear protective clothing and a gas mask. The Raketenpanzerbuchse series were nicknamed Panzerschrek (tank terror) or Ofenrohr (stove pipe or oven chimney). Like other rocket weapons the RPzB has a danger area behind the weapon.

| | | |
|---|---|---|
| **Crew: 2** | **Ammunition: 8.8cm RPzB** | **ROF: SS** |
| **Weapon Wt: 13.1kg** | **Ammunition Wt: 3.9 kg** | **Reload: 2** |

| Round | Range | Damage | Pen |
|---|---|---|---|
| HEAT | 20 | C:4 B:4 | 30C |

---

# 8.8cm RPzB 54

This is an improved version of the Raketenpanzerbuchse introduced late in 1943, it includes a shield to protect the firer from the effects of the rocket exhaust. Due to the shield special protective clothing was not required.

| | | |
|---|---|---|
| **Crew: 2** | **Ammunition: 8.8cm RPzB** | **ROF: SS** |
| **Weapon Wt: 14.9kg** | **Ammunition Wt: 3.9 kg** | **Reload: 2** |

| Round | Range | Damage | Pen |
|---|---|---|---|
| HEAT | 20 | C:4 B:4 | 30C |

---

# 8.8cm RPzB 54/1

This is was the final production version of the Raketenpanzerbuchse introduced in 1944, it is similar to the RPzB54 but has a more advanced rocket. The rocket requires a shorter launch tube, has a longer range and improved penetration.

| | | |
|---|---|---|
| **Crew: 2** | **Ammunition: 8.8cm RPzB** | **ROF: SS** |
| **Weapon Wt: 14.5kg** | **Ammunition Wt: 3.8 kg** | **Reload: 2** |

| Round | Range | Damage | Pen |
|---|---|---|---|
| HEAT | 25 | C:4 B:4 | 32C |

# Panzerfaust 30 klein

The Panzerfaust (armored fist or tank devil) is a single shot disposable anti-tank weapon introduced in 1942. It is a recoiless weapon which fires a fin stabilized anti-tank grenade. Like most recoiless weapons the Panzerfaust has a danger zone behind the weapon when fired. The different models of Panzerfaust are rated by the effective range in meters. The klein (small) version was the first model issued and has a smaller warhead than the later versions.

| | |
|---|---|
| **Crew: 1** | **ROF: 1** |
| **Weapon Wt: 1.5kg** | **Reload: N/A** |

| Round | Range | Damage | Pen |
|---|---|---|---|
| HEAT | 5 | C:6 B:6 | 32C |

# Panzerfaust 30

The Panzerfaust 30 was introduced in 1943. It is similar to the Panzerfaust 30 klein but uses a larger warhead for increased penetration. The trade off is greatly increased weight.

| | |
|---|---|
| **Crew: 1** | **ROF: 1** |
| **Weapon Wt: 5kg** | **Reload: N/A** |

| Round | Range | Damage | Pen |
|---|---|---|---|
| HEAT | 5 | C:10 B:10 | 40C |

---

# Panzerfaust 60

The Panzerfaust 60 was introduced in 1944, it is similar to the Panzerfaust 30 but uses a larger propellant charge to increase the range.

| | |
|---|---|
| **Crew: 1** | **ROF: 1** |
| **Weapon Wt: 6.8kg** | **Reload: N/A** |

| Round | Range | Damage | Pen |
|---|---|---|---|
| HEAT | 10 | C:10 B:10 | 40C |

---

# Panzerfaust 100

The Panzerfaust 100 was introduced in 1945. It is similar to the other Panzerfaust weapons but uses a larger propellant charge to increase the range.

| | |
|---|---|
| **Crew: 1** | **ROF: 1** |
| | |

| Weapon Wt: 8.2kg | Reload: N/A |
|---|---|

| Round | Range | Damage | Pen |
|---|---|---|---|
| HEAT | 15 | C:10 B:10 | 40C |

---

# Schiessbecher

This is a 30mm cup type rifle grenade adaptor, it can be used on any German bolt action rifle firing 7.92mm ammunition or the Stg44. A special cartridge is required and each grenade type has its own cartridge (they are not universal). There were several types of rifle grenade available.

The following grenades were available before the war.
Gewehr Sprenggranate, this is a fragmentation grenade, it has both an impact and time fuse so airbursts are possible. It also includes a pull igniter allowing it to be used as a hand thrown grenade. The time fuse and pull igniter were later ommited to simplify production.
Gewehr Sprenggranate mit Gesteigerter Reichweite, this is a long range high explosive grenade, it is similar to the Gewehr Spreggranate but has no timed fuse or pull igniter.
Gewehr Panzergranate 30, this is an Anti armor grenade, it is a straight sided 30mm grenade similar in appearance to the Fragmentation and HE grenades. It is impact fused.
Gewehr Fellschirmlechtgranate, this is an Illumination grenade, when fired a parachute flare is released at altitude.
Gewehr Propagandagranate, this is a leaflet grenade, the grenade disburses a number of propaganda leaflets.

The following grenades were introduced during 1941-42.
Gross Gewehr Panzergranate40, this is an improved anti-armor grenade, it has a slightly enlarged head (40mm) on a 30mm "stem".
SS Gewehr Panzergranate 46, this is another anti-armor grenade, the head diameter is increased to 46mm.
SS Gewehr Panzergranate 61, this is the largest anti-armor rifle grenade developed by Germany during the war, with the introduction of rocket propelled anti-tank weapons further development of anti armor rifle grenades stopped although those in service remained in production.

| Weapon Wt: 0.2kg | | | | | | |
|---|---|---|---|---|---|---|

| Grenade | Type | Damage | Pen | Wt | Rng | IFR |
|---|---|---|---|---|---|---|
| Gewehr Sprenggranate | Frag | C:2 B:7 | Nil | 0.3kg | 15 | 250 |
| Gewehr Sprenggranate mit Gesteigerter Reichweite | HE | C:4 | Nil | 0.3kg | 25 | 650 |
| Gewehr Panzergranate 30 | HEAT | C:1 B:5 | 5C | 0.3kg | 15 | 150 |
| Gross Gewehr Panzergranate 40 | HEAT | C:2 B:7 | 9C | 0.4kg | 15 | 200 |
| SS Gewehr Panzergranate 46 | HEAT | C:3 B:10 | 14C | 0.5kg | 15 | 200 |
| SS Gewehr Panzergranate 61 | HEAT | C:3 B:12 | 20C | 0.6kg | 15 | 200 |
| Gewehr Fellschirmlechtgranate | ILLUM | B:100 | Nil | 0.3kg | -- | 500 |
| Gewehr Propagandagranate | Leaflet | 2 | Nil | 0.3kg | 15 | 500 |

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# 2.7cm Sturmpistole

The Sturmpistole is a small grenade launcher introduced in 1944. It is based on a 2.7cm flare pistol, it has a folding stock and an adjustable sight. In concept it is similar to modern 40mm grenade launchers like the M79 or HK69A1 but the grenades used are much smaller. Three grenades are available, the Wurfgranatpatrone 326 is a small high explosive grenade, it is impact fused with a 10 meter safety delay. The Wurfkorper 361 uses the standard Eihandgranate modified for use in this weapon, it retains the time fuse of the grenade, this results in detonation after travelling approximately 75 meters. The Panzerwurfkorper 42 is the SS Gewehr Panzergranate 61 modified for use in this weapon, it is impact fused and arms when fired. In addition to the grenades standard 2.7cm signal flares may be launched by removing the rifled sleeve from the bore.

| **Weapon Wt: 2.6kg** | **ROF:** SS | **Rld:** 1 | | | | |
|---|---|---|---|---|---|---|
| **Grenade** | **Type** | **Damage** | **Pen** | **Wt** | **Rng** | **IFR** |
| Wurfgranatpatrone 326 | HE | C:2 | Nil | 0.1kg | 15 | 100 |
| Wurfkorper 361 | HE | C:4 | Nil | 0.4kg | 15 | 75 |
| SS Gewehr Panzergranate 61 | HEAT | C:3 B:12 | 20C | 0.6kg | 15 | 135 |

# Grenades

## Blendkorper 1H

This is a glass bulb smoke grenade, it looks similar to a lightbulb filled with a smoke producing liquid. It is carried in a cardboard carton until needed. In use it is pulled from the carton by a tape and thrown at the target, it produces a thick smoke cloud on impact. It is intended for use against vehicles and pillboxes.

| Type | Damage | Pen | Weight |
|---|---|---|---|
| CHEM | B:12 | Nil | 0.3kg |

## Eihandgranate 39

The Eihandgranate (egg grenade) is an egg shaped high explosive grenade. It was introduced shortly before the war and was used along with the Steilhandgranate 24.

| Type | Damage | Pen | Weight |
|---|---|---|---|
| HE | C:4 | Nil | 0.3kg |

## Geballte Ladung

This is an improvised anti-tank grenade. It uses the heads of six Steilhandgranate grenades attached to a seventh intact grenade. In use the Grenade is thrown onto the rear deck of a tank, the resulting blast hopefully damaging the engine. This type of grenade was also used as a demolition charge against fortified positions or bunkers (DP 7).

| Type | Damage | Pen | Weight |
|---|---|---|---|
| HE | C:9 | 5C | 2.1kg |

---

# Nebeleihandgranate 42

This is an egg shaped smoke grenade similar in appearance to the Eihandgranate. It has three white bands to identify it as a smoke grenade.

| Type | Damage | Pen | Weight |
|---|---|---|---|
| CHEM | C:1 B:12 | Nil | 0.3kg |

---

# Nebelhandgranate 39

This is a stick type smoke grenade similar in appearance to the Stielhandgranate 24 HE grenade. It has a white band painted around the head and three grooves in the handle to assist in identification.

| Type | Damage | Pen | Weight |
|---|---|---|---|
| CHEM | C:1 B:12 | Nil | 0.6kg |

---

# Panzerwurfmine (L)

This is a hand thrown anti-tank grenade. It looks similar to the Stielhandgranate 24 but is more streamlined, when thrown cloth fins deploy to stabilize the grenade nose first. The impact fuse is armed when the grenade is thrown.

| Type | Damage | Pen | Weight |
|---|---|---|---|
| HEAT | C:3 B:4 | 30C | 1.4kg |

---

# Stielhandgranate 24

This was the standard hand grenade in service with German forces at the start of the war. It is a stick type grenade similar to the type used during World war 1. It was nicknamed the "potato masher". A fragmentation sleeve was available but not commonly used (with the sleeve add 0.1kg to weight and B:10)

| Type | Damage | Pen | Weight |
|---|---|---|---|
| HE (Frag) | C:4 (B:10) | Nil | 0.6kg |

# Flamethrowers

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# Flammenwerfer 35

The Flammenwerfer 35 was the standard German flamethrower at the start of World war 2. It was basically just

an improved version of flamethrowers used during World war 1. It uses gasoline ignited by a hydrogen torch. It holds 12 liters of fuel for about 10 seconds worth of use. Due to the torch system it may only fire "hot" shots. A one second burst will cover a 2x2 area for approximately 40 seconds.

| ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|
| SA | Flame | Nil | 4 | Tank 10 | 2 | 3 | 35.8kg |

---

# Flammenwerfer 41

This is an improved version of the Flammenwerfer 35. It only holds 6 liters of fuel resulting in less weight and the hydrogen torch is replaced by a cartridge ignition system. 10 cartridges are loaded and the Flammenwerfer provides approximately 10 seconds of use. Unlike the American cartridge system a cartridge is fired each time the trigger is pulled so only "hot" shots may be fired. A one second burst will cover a 2x2 area for approximately 25 seconds.

| ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|
| SA | Flame | Nil | 4 | Tank 10 | 2 | 3 | 18.4kg |

# UNITED KINGDOM

## Handguns

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### Browning HP-35

The Browning was issued in limited numbers during World war 2, primarily to Airborne and Commando units. The HP-35 was very popular and was officially adopted by the British Army as thier standard sidearm in 1946. Prior to the war HP-35's were built in Belgium, when Germany invaded in 1940 the factory was captured and production was continued for the German military where the pistol was designated P640(b). A licensed factory was built in Canada who produced the HP-35 for the British, Canadian and Chinese armies during the war. Some early versions were designed with the ability to accept a holster / shoulder stock similar to the Mauser C96. This was rare on most pistols built after 1940 but it was a standard item on the pistols ordered by China.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 9mm Para | SA | 2 | Nil | 1 | Box 13 | 2 | 12 | 1.1kg |
| w/stock | | | | 3 | | 1 | 20 | 1.6kg |

---

### Enfield Revolver #2

The Enfield #2 was the standard sidearm issued by the British Army in World war 2, it was not as popular as the earlier .455 caliber Webleys of World war 1 and there was concern over the effectiveness of the .38 caliber round. The revolver itself was very rugged and reliable, it has a top break cylinder like most British military revolvers. The Enfield was widely issued and it remained in service until the end of the war.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .380 SAA | DAR | 1 | Nil | 1 | Break 6 | 2 | 10 | 0.9kg |

---

## Smith & Wesson Revolver #2 .38 Cal.

This is the commercial S&W M10 Military and Police revolver modified to British specifications, primarily the use of the British standard .380 ammunition. It was not as durable as the Enfield revolver but it was more popular due to better handling characteristics. A large number of these revolvers were issued and they remained in service until the end of the war.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .380 SAA | DAR | 1 | Nil | 1 | SwCyl 6 | 2 | 10 | 0.9kg |

---

## Webley Mk 5

The Webley in .455 caliber was the standard issue British sidearm during World war 1. It was replaced in 1936 when the Enfield revolver was adopted along with the .380 round. During World war 2 the British had a shortage of pistols and many of the Webleys remained in service most being issued to home guard units. It is a rugged revolver with a top break cylinder.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .455 SAA | DAR | 2 | Nil | 1 | Break 6 | 3 | 10 | 1.2kg |

---

## Webley Mk 6

This is another version of the Webley revolver which was also used from World war 1 into the 1930's. It is identical to the Mk 5 except for the barrel which is 5.1cm (2") longer.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .455 SAA | DAR | 2 | Nil | 1 | Break 6 | 3 | 12 | 1.3kg |

# Submachineguns

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## Lanchester Mk 1

In 1940 Britain found itself with no native submachinegun designs, prior to World war 2 the British military had shunned submachineguns as a criminals weapon with no place in the military. After the fall of France with a German invasion of England expected the submachine gun suddenly found acceptance. A number of Thompson M1928's were issued and several weapons were in development, this later resulted in the adoption of the Sten by the British Army. The Lanchester was ordered by the Royal Navy and Air Force, it is basically a copy of the MP-28, the Air Force had ordered the Lanchester for air field defence from paratroopers, after the Battle of Britain ended and the threat of air assault passed these weapons were given to the Navy. The Lanchester was an expensive weapon to produce which resulted in a small production run. It was also heavy and included a solid brass magazine housing. The Lanchester may use a bayonet.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 9mm Para | 5 | 2 | Nil | 4 | Box 32 | 2 / 5 | 30 | 3.4kg |

---

## Sten Mk 2

The Sten was designed in 1940 and became the standard submachinegun of the British Army throughout World war 2. Before the Sten was introduced a small quantity of Thompson M1928's had been purchased and issued. The Thompson was very popular which led to resistance in accepting the new weapon. The Sten had been designed with low cost in mind and when compared to earlier weapons like the Thompson and MP-28 it looked and felt "cheap" leading to a number of unflatering nicknames including "stenchgun" and "woolworth gun". A large number were supplied to resistance groups who found it could easily be dismantled aiding concealment. Nearly 4 million were made and it remained in common use into the 1960's.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 9mm Para | 5 | 2 | Nil | 4 | Box 32 | 2 / 5 | 30 | 3.4kg |

---

## Sten Mk 2S

This is a suppressed version of the Sten Mk 2. The 9mm is not the best round for a suppressed weapon as it is normally supersonic and either requires special low powered ammunition or a more complex suppressor to gain the maximum noise reduction, both of these methods result in a weapon with less range and effect than the standard weapon. The suppressor on the Sten Mk 2S uses the second method, it uses standard ammunition and slows the bullet below the speed of sound by cutting the barrel short and bleeding off gasses. The suppressor was designed for single shots and automatic fire will quickly wear it out. The suppressor is not removable except for maintenance.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 9mm Para | 5 | 1 | Nil | 5 | Box 32 | 2 / 5 | 20 | 3.6kg |

---

## Sten Mk 5

The Sten was never really popular with British troops and they used other weapons whenever possible. The Mk 5 was introduced in 1944 in an attempt to improve the image of the Sten. It was produced to a higher standard and included a wooden stock and pistol grip. The abilty to mount a bayonet was included and early versions had a vertical forward hand grip. The quality and performance of the Mk 5 was slightly better than earlier versions but

it did little to improve its reputation. The Mk 5 remained in service until replaced by the Sterling in the 1960's.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 9mm Para | 5 | 2 | Nil | 4 | Box 32 | 2 / 5 | 30 | 4.3kg |

---

## Sten Mk 6

This is a suppressed version of the Mk 5, it uses the same suppressor design as the Mk 2S.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 9mm Para | 5 | 2 | Nil | 5 | Box 32 | 2 / 5 | 30 | 4.5kg |

---

## Patchett Mk 1

The Patchett was introduced in 1944 for use with airborne troops. It is similar to the Sterling submachinegun which it closely resembles and it includes a folding stock. It was only a small number were produced (less than 200) but it was issued and used by British paratroopers during the D-Day landings and later at Arnhem during Operation Market Garden.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 9mm Para | 5 | 2 | Nil | 3 / 4 | Box 32 | 2 / 5 | 30 | 3.2kg |

# Rifles

## De Lisle Carbine

The De Lisle carbine was developed for use as a silent weapon for use with clandestine units. It uses the stock and action of the Lee Enfield #3 Mk 1 rifle, this is combined it with a .45 caliber barrel and the magazine from the Colt M1911A1. An integral suppressor is fitted to the weapon. The .45 ACP round was selected despite being a non standard cartridge, due to its characteristics which make it ideal for use in suppressed weapons. It is normally sub sonic in flight and so retains full lethality when suppressed without compromising the noise reduction of the suppressor. The De Lisle is one of the quietest weapons ever built, the noise of firing being reduced to the sound of the firing pin striking the round, this was offset however by the noise of working the bolt to chamber a new round. A small number of these weapons were produced with a metal folding stock (Blk 3/4).

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .45 ACP | BA | 2 | 1-Nil | 4 | Box 7 | 3 | 45 | 3.5kg |

## Enfield #4 Mk 1

The Enfield #4 Mk 1 was the standard rifle of the British Army during World war 2. It is an improved version of the Lee Enfield #1 Mk 3 of World war 1 but is modified to reduce the cost of production. The #4 Mk 1 remained in service into the 1960's. It can be reloaded from 5 round charger strips. A grenade launcher was developed for the #4 Mk 1 which allows it to fire rifle grenades.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .303 British | BA | 4 | 2-3-Nil | 6 | Box 10 | 4 | 65 | 4.4kg |

## Enfield #4 Mk 1(T)

This is a sniper rifle version of the #4 Mk 1 introduced in 1942. The rifle is selected for accuracy and a telescopic

sight is added. The telescopic sight adds 15 meters to the base range for aimed fire.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .303 British | BA | 4 | 2-3-Nil | 6 | Box 10 | 4 | 70 | 4.9kg |

---

## Enfield #5 Mk 1

This is a short barreled version of the #4 Mk 1 rifle introduced in 1944, it was commonly known as the "Jungle carbine". It was initially well recieved as it was light and handy compared to the full sized rifle. It was soon discovered however that this was paid for with excessive recoil and muzzle flash which resulted in a rapid decline of its popularity. It can be reloaded from 5 round charger strips.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .303 British | BA | 4 | 2-3-Nil | 5 | Box 10 | 5 | 55 | 3.5kg |

---

## Lee - Enfield #3 Mk 1

The Lee Enfield #3 Mk 1 or SMLE (Short, Magazine, Lee Enfield) was the standard rifle of the British Army during World war 1. It was a popular rifle and it remained in service through World war 2. The Lee Enfield was time consuming and costly to build which resulted in a modified design (the #4 Mk 1) which entered production in 1939. The #3 Mk 1 was also built in Australia where it remained in production a few years longer not being replaced by the #4 Mk 1 until 1943. Although the two rifles are very similar the Lee Enfield was more popular, many soldiers believing the #4 Mk 1 was inferior since it was designed to be less expensive. The #3 Mk 1 has a better fit and finish but the two rifles are about equal in quality and durability. A grenade launcher was developed for the Lee Enfield which allows it to fire rifle grenades. It can be reloaded from 5 round charger strips.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .303 British | BA | 4 | 2-3-Nil | 6 | Box 10 | 4 | 65 | 4.0kg |

# Anti-Tank Rifles

## Boys Mk 1

The Boys was the only anti tank rifle used by the British during World war 2, it was introduced in 1937 and remained in production until 1942 when the PIAT was introduced. The Boys was originally to be named the Stanchion but the rifles designer Captain Boys died shortly before production was to begin and the rifle was renamed in his honor. The Boys was moderately successful during 1940 against the early German tanks but remained useful against the thin armor on most Japanese and Italian tanks. It remained in service through the war but was gradually phased out by the PIAT after 1942. The Boys was one of the most successful anti-tank rifles ever designed with more than 60,000 produced, it was also used by the U.S. Marine Corps and has the distinction of being the only anti-tank rifle officially adopted by the U.S. military. A large muzzle brake is fitted and a bipod is included.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .55 Boys | BA | 11 | 2-2-3 | 8 | Box 5 | 9 | 20 | 17.2kg |
| bipod | | | | | | 5 | 75 | |

# Machineguns

## BREN Mk 2

The BREN was developed from a Czech light machine gun the ZB vz/30, the name was derived from Brno the Czech company that designed it and Enfield where it was built. It was a popular weapon which gained a reputaion for durability and reliability, in modified forms it remained in service with the British military into the 1990's. The Bren first entered production in 1937 but the main production version was the Mk 2 which entered service in 1941. The Mk 1 and Mk 2 are nearly identical and most of the changes were minor modifications to speed production. A tripod was made for the BREN but it was rarely used, most were left in France after Dunkirk. The BREN was commonly used as an anti-aircraft weapon on vehicle mounts.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .303 British | 5 | 4 | 2-3-Nil | 6 | Box 30 | 2 / 4 | 60 | 11.8kg |
| bipod | | | | | | 1 / 2 | 75 | |
| tripod | | | | | | 1 / 1 | 100 | |

---

## BREN Mk 3

The Mk 3 is a light weight version of the BREN introduced in 1944. The barrel is 2.75" (70mm) shorter than the standard barrel.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .303 British | 5 | 4 | 2-3-Nil | 6 | Box 30 | 2 / 4 | 55 | 10.9kg |
| bipod | | | | | | 1 / 2 | 70 | |

---

## Lewis Mk 1

The Lewis gun was the standard light machine gun of the British Army during World war 1. It was re-issued during World war 2 primarily to Home guard units, the Lewis was also a common anti-aircraft weapon on merchant marine vessels. It has a top mounted horizontal drum magazine and an unusual radiator system around the barrel which gives it the appearance of being a water cooled gun.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .303 British | 5 | 4 | 2-3-Nil | 6 | Drum 47, 97 | 1/ 3 | 60 | 14 kg |
| bipod | | | | | | 1 / 2 | 75 | |
| mount | | | | | | 1 / 1 | 100 | |

---

## Vickers Mk 1

The Vickers is one of the most successful machine guns ever developed. It was introduced in 1912 and it remained in service with the British Army until 1968. It is a water cooled machine gun and it gained a reputation for reliability. The weapon weighs 25.1kg, the tripod weighs 22.7kg and the gun is cooled by 6 liters of water weighing 6.0kg

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .303 British | 5 | 4 | 2-3-Nil | 6 | Fabric Belt 250 | 1 / 1 | 125 | 53.8kg |

---

## Vickers 0.5" Mk 3

The Vickers .50 caliber machine gun was adopted for use as a Naval anti-aircraft weapon in the 1930's. By the start of World war 2 it was being replaced with 20mm cannons but it remained in use as a reserve weapon and some were used on merchant marine vessels. It was occasionally found in use as a ground or vehicle weapon primarily with the Special Air Service or the Long Range Desert Group. It is very similar to the .303 caliber Vickers Mk 1 and is watercooled by 10 liters of water.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .303 British | 5 | 7 | 2-3-4 | 8 | Belt 100 | 2/ 6 | 150 | 44.6kg |

---

# Vickers K

The Vickers K or VGO (Vickers Gas Operated) was originally designed as an aircraft gun for use as an open cockpit observers weapon, with the adoption of the powered turret and enclosed cockpit these weapons were withdrawn from RAF service in 1941 and offered to the Army. Initially they saw little use as they had no ground application until they were discovered by the Special Air Service and the Long Range Desert Group. These units were conducting hit and run raids behind the lines in heavily armed Jeeps and trucks, the high rate of fire provided by the Vickers was ideal for this purpose. They were mounted on single and twin flexible mounts and remained in service for this purpose into the 1960's. The Vickers K has a top mounted horizontal drum.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| .303 British | 10 | 4 | 2-3-Nil | 6 | Drum 100 | 1/ 1 | 100 | 12.5kg |

# UNITED KINGDOM

## Mortars

---

# ML Mortar 2" Mk 2

This is a light mortar introduced for British service during the 1930's. It is a simple design consisting of a tube and baseplate. The firer aims by tilting the barrel and lining up the sights, this is not as accurate as designs with a bipod but at the ranges the 2" was designed for this is not a problem. One advantage of this system is the ability to fire at very low angles allowing direct fire. The 2" mortar is trigger fired with a lanyard.

| | | |
|---|---|---|
| **Crew: 2** | **Ammunition: 2" Mk2** | **ROF: SS** |
| **Weapon Wt: 4.1kg** | **Ammunition Wt: 1.0 kg** | **Reload: 1** |

| Round | Rng | IFR | Damage | Pen |
|---|---|---|---|---|
| HE | 15 | 500 | C:3 B:17 | Nil |
| CHEM | 15 | 500 | C:1 B:4 | Nil |
| ILLUM | -- | 500 | B:150 | Nil |

---

# ML Mortar 3" Mk 2

The 3" mortar was the standard medium mortar of British forces during World war 2. When first issued the ammunition was short ranged compared to similar weapons, improved propellant charges became available in 1943 which gave a substantial increase to range. The 3" mortar remained in service with British forces into the 1960's.

| | | |
|---|---|---|
| **Crew: 3** | **Ammunition: 81mm M1** | **ROF: SS** |
| **Weapon Wt: 61.7kg** | **Ammunition Wt: 3.1 kg** | **Reload: 1** |

**1930-1942**

| Round | IFR | Damage | Pen |
|---|---|---|---|
| HE | 1.4km | C:6 B:24 | -4C |
| CHEM | 1.4km | C:2 B:8 | Nil |
| ILLUM | 1.4km | B:360 | Nil |

**1943+**

| Round | IFR | Damage | Pen |
|---|---|---|---|
| HE | 2.5km | C:6 B:24 | -4C |
| CHEM | 2.5km | C:2 B:8 | Nil |
| ILLUM | 2.5km | B:360 | Nil |

---

# SB Mortar 4.2"

The 4.2" mortar was introduced in 1942, it was the standard British heavy mortar used during World war 2. The 4.2" can be broken into three loads for transport (barrel, bipod, baseplate), a light wheeled carriage was available allowing the mortar to be moved short distances by the crew or towed behind a light vehicle, use of this carriage allowed the mortar to get in and out of action quickly. When first introduced the ammunition manufacture resulted in a heavy cast round, this resulted in a rather short range. Improved rounds became available in 1944 which increased the range.

| | | |
|---|---|---|
| **Crew: 4** | **Ammunition: 4.2" SB** | **ROF: SS** |
| **Weapon Wt: 599kg** | **Ammunition Wt: 9.1 kg** | **Reload: 1** |

**1942-43**

| Round | IFR | Damage | Pen |
|---|---|---|---|
| HE | 3.0km | C:12 B:36 | -2C |
| CHEM | 3.0km | C:3 B:12 | Nil |

**1944+**

| Round | IFR | Damage | Pen |
|---|---|---|---|
| HE | 3.8km | C:12 B:36 | -2C |
| CHEM | 3.8km | C:3 B:12 | Nil |

# Grenade Launchers

---

## PIAT Mk 1

The PIAT (Projector Infantry Anti Tank) was introduced in 1941 as the standard British infantry anti armor weapon. Unlike many anti-tank weapons it is not recoiless and has no back blast, the muzzle blast is also fairly light similar to firing a rifle grenade. The PIAT is a spigot mortar which fires a heavy "grenade", the round is placed over a rod and is protected by a shroud. A heavy spring powers the firing pin used to trigger the rounds

propelling charge. When fired the recoil recocks the spring, unfortunately in the case of a misfire or if the weapon is not properly braced the spring must be recocked manually. This spring was the worst feature of the weapon, it takes a 100kg pull over 0.6 meters to cock the weapon. The procedure used to cock the spring was to stand on the butt plate and pull with both hands, in combat standing is not a popular position with the result that the gunner had to attempt this laying on the ground. Despite this the PIAT was capable of destroying tanks and it remained in service for several years after the war. High explosive and smoke rounds were also issued for the PIAT increasing its capabilities, it also has a limited indirect fire capability allowing it to be used like a mortar. The PIAT was occasionally used as the main armament on light vehicles such as the universal carrier, some were armed with several weapons as a multiple mortar carriage. If the weapon must be cocked during combat the gunner must roll against AVG: STR if standing or DIF:STR if laying down, each attempt takes one action.

| | | |
|---|---|---|
| **Crew: 2** | **Ammunition: 3.5" PIAT** | **ROF: SS** |
| **Weapon Wt: 15.8kg** | **Ammunition Wt: 1.4 kg** | **Reload: 1** |

| Round | Range | IFR | Damage | Pen |
|---|---|---|---|---|
| HEAT | 15 | 340 | C:5 B:8 | 29C |
| HE | 15 | 340 | C:8 B:20 | 1C |
| CHEM | 15 | 340 | C:2 B:10 | Nil |

---

# Rifle Grenade Launcher

The British used a cup type rifle grenade adaptor which could be fitted to any Enfield rifle. Special blank cartridges are used to launch the grenades. The No.36 is the standard hand thrown fragmentation grenade fitted with an adaptor, it uses a timed fuse. The No.68 is an anti-armor HEAT grenade, it is impact fused.

| | | | | |
|---|---|---|---|---|
| **Weapon Wt: 0.2kg** | **Rng: 15** | **IFR: 150** | | |
| **Grenade** | **Type** | **Damage** | **Pen** | **Wt** |

| | | | | |
|---|---|---|---|---|
| No.36 | Frag | C:3 B:8 | Nil | 0.8kg |
| No.68 | HEAT | C:3 B:6 | 15C | 0.8kg |

# Grenades

---

## No.36 Fragmentation Grenade

The No.36 was the standard British fragmentation grenade used during World war 2. It has a heavy metal case with external segmentation. An adaptor was available allowing the No.36 to be used as a rifle grenade. The No.36 was also called the Mills bomb.

| Type | Damage | Pen | Weight |
|---|---|---|---|
| Frag | C:3 B:8 | Nil | 0.7kg |

---

## No.69 Offensive Grenade

The No.69 has a plastic body filled with high explosive, it causes little fragmentation.

| Type | Damage | Pen | Weight |
|---|---|---|---|
| HE | C:5 | Nil | 0.4kg |

# No.75 Antitank grenade

The No.75 is a high explosive grenade with a pressure trigger, it is basically a small mine. The grenade is thrown into the path of an armored vehicle to blow off a track. It is also known as the Hawkens bomb. Many of these grenades were left behind at Dunkirk and the Germans used them in the Atlantic wall defenses as the Panzerabwehrmine 429/1(e).

| Type | Damage | Pen | Weight |
|---|---|---|---|
| HE | C:8 | 8C | 1.0kg |

# No.80 White Phosphorus Grenade

The No.80 is a white phosphorus grenade used to create smoke or as an incendiary weapon.

| Type | Damage | Pen | Weight |
|---|---|---|---|
| WP | C:1 B:12 | Nil | 0.9kg |

# No.82 Anti-tank Grenade

The No.82 is a bag set with an igniter, it is filled with 0.7kg of explosive, several charges can be combined to increase the blast. In use it is thrown onto the rear deck, into the tracks or under a vehicle. Generally this weapon was used to blow off a track or damage the engine of a tank. It was also known a Gammon bomb and was commonly issued to British Paratroops. When used as a demolition charge it has a DP:4, the penetration varies if thrown onto the deck or under the vehicle Pen is 4C, if it is thrown under the tracks Pen increases to 7C.

| Type | Damage | Pen | Weight |
|---|---|---|---|

| | | | |
|---|---|---|---|
| HE | C:7 | 4(7)C | 0.8kg |

# JAPAN

# Handguns

## Nambu Type B

The Type B or Baby Nambu was originally designed for commercial sales but was instead adopted by the Japanese Air Force and was also used by Staff officers. It is similar to the larger Nambu Taisho 14 but uses a different cartridge. The magazine had to be pulled out by two small knobs at the base of the magazine and was difficult to remove when the users hands were wet or cold.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 7mm Nambu | SA | 1 | Nil | 1 | Box 8 | 3 | 8 | 0.8kg |

## Nambu Taisho 14

The Taisho 14 was the standard issue Japanese sidearm during World war 2. It is somewhat similar in appearance to the German Luger but is completely different in operation. It is a simple design which suffered from numerous faults and poor reliability. It shared the magazine extraction difficulty of all the Baby Nambu.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 8mm Nambu | SA | 1 | Nil | 1 | Box 8 | 3 | 10 | 1.0kg |

## Nambu Type 94

The Type 94 was designed as a less expensive replacement for the Taisho 14. It was poorly constructed and could easily be fired accidently through rough handling. It was not popular and most appear to have been issued to the Japanese Air Force. The magazine was a slightly different design but was still difficult to remove.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 8mm Nambu | SA | 1 | Nil | 1 | Box 6 | 3 | 8 | 0.9kg |

# Submachineguns

## Type 100

The Type 100 was the only submachine gun used by the Japanese during World war 2. It was time consuming and expensive to build. The Type 100 was not built in large numbers compared to most other nations, less than 30,000 being completed by the wars end. It has a side mounted magazine and includes a bayonet mount.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 8mm Nambu | 5 | 2 | Nil | 4 | Box 30 | 1 / 4 | 25 | 4.1kg |

# Rifles

## Arisaka Meiji 38th year

The Meiji 38th year rifle was the standard Japanese rifle from 1905 until the start of World war 2. It was to be replaced by the 7.7mm Type 99 but due to a shortage of the new rifle the Meiji remained in service until the wars end. It may be reloaded from 5 round charger strips.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 6.5mm Type 30 | BA | 3 | 1-2-Nil | 6 | Int 5 | 3 | 60 | 4.4kg |

## Arisaka Meiji 44th year

This is a carbine based on the Meiji 38th year rifle and includes a folding bayonet. It may be reloaded from 5 round charger strips.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 6.5mm Type 30 | BA | 3 | 1-2-Nil | 5 | Int 5 | 3 | 55 | 4.3kg |

## Arisaka Type 97

The Type 97 is a sniper rifle based on the Meiji 38th year rifle. It has adds a telescopic sight and a light bipod. Add 15 meters to the base range for aimed fire when the telescopic sight is used.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 6.5mm Type 30 | BA | 3 | 1-2-Nil | 6 | Int 5 | 3 | 60 | 5.0kg |
| Bipod | | | | | | 1 | 70 | |

---

## Arisaka Type 99

The Type 99 was introduced in 1939 as the standard Japanese rifle. Fighting in Manchuria during the Sino-Japanese war had led the Japanese military to the conclusion that the 6.5mm round was not lethal enough and that a new more powerful cartridge was needed. This led to a more powerful 7.7mm round and a redesign of the Meiji 38th year rifle. In addition to the new cartridge the rifle was modernized, creating a "short rifle" comparable to those being issued by other nations. Although the Type 99 was to be the standard rifle of the Japanese Army it was never produced in sufficient quanties to meet the demand and served along side the Meiji 38th year rifle. It may be reloaded from 5 round charger strips.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 7.7mm Type 99 | BA | 4 | 2-3-Nil | 6 | Int 5 | 4 | 65 | 4.4kg |

# Anti-Tank Rifles

---

## Model 97

The Model 97 is a 20mm anti-tank rifle developed in 1937. It is one of the largest weapons of its type and it required a crew of 4. It is a selective fire weapon which is unusual in an anti-tank rifle. It had some success early on but was rarely encountered after 1942. Due to the recoil it had to be fired from the bipod. A 20mm cannon was later developed from this rifle.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 20mm Type 97 | 5 | 15 | 2-2-3 | 8 | Box 7 | 7 / 12 | 75 | 73.5kg |

# Machineguns

---

## Taisho 3

The Taisho 3 was introduced in 1914 and remained in service through World war 2. It is based on the French Hotchkiss Modele 1900. A feature unique to Japanese machine guns is sockets in the feet of the tripod which allows the crew to insert poles and carry the gun and tripod in one load ready for use. The ammunition feed is a flexible metal strip common to Hotchkiss weapons. The cartridges must be oiled before use which can lead to dirt fouling the weapon, failure to oil the cartridges generally results in torn cases jamming the weapon. The weapon weighs 29.1kg, the tripod weighs 27.2kg.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 6.5mm Type 30 | 5 | 3 | 1-2-Nil | 6 | Strip 30 | 1 / 1 | 100 | 55.3kg |

---

## Taisho 11th year

The Taisho 11th year is a light machine gun introduced in 1922, it remained in service until the end of World war 2. It has an unusual feed system consisting of a hopper mounted on the left side of the weapon. Five round charger strips are placed into the hopper and the gun strips out the rounds as they are fired, these chargers are the same as those issued to 6.5mm rifles, this was to allow any rifleman to supply ammunition to the machine gunner. This feed system turned out to be complicated and prone to stopages, in addition an integral oiler was

included as the weapon required oiled cartridges for proper operation. A bipod is included.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 6.5mm Type 30 | 5 | 3 | 1-2-Nil | 6 | Hopper 30 | 1 / 4 | 55 | 10.5kg |
| bipod | | | | | | 1 / 2 | 70 | |

---

## Type 92

The Type 92 is an improved version of the Taisho 3 introduced in 1932. It is very similar to the earlier weapon but was modified to fire a more powerful 7.7mm round. This was the most common machine gun used by the Japanese during World war 2, due to a distinctive stuttering effect while firing this gun was nicknamed the wood pecker. The weapon weighs 29.1kg and the tripod weighs 27.2kg.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 7.7mm Type 99 | 5 | 4 | 2-3-Nil | 6 | Strip 30 | 1 / 1 | 125 | 55.3kg |

---

## Type 96

The Type 96 was introduced in 1936 to replace the Taisho 11. It is very similar but the hopper is replaced by a top mounted box magazine. The oiler was removed and the cartridges were oiled before loaded into the magazine.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 6.5mm Type 30 | 5 | 3 | 1-2-Nil | 6 | Box 30 | 1 / 3 | 55 | 10.1kg |
| bipod | | | | | | 1 / 2 | 70 | |

---

# Type 99

The Type 99 was introduced in 1939 as a companion weapon to the Type 99 rifle. It is closely related to the Type 96 but uses the more powerful 7.7mm round and does not require oiled ammunition. The Type 99 was intended to replace the earlier Taisho 11 and Type 96 but the production was never sufficient for this and all 3 weapons served side by side through the war. A bipod is included.

| Caliber | ROF | Damage | Pen | Blk | Magazine | Recoil | Range | Weight |
|---|---|---|---|---|---|---|---|---|
| 7.7mm Type 99 | 5 | 4 | 2-3-Nil | 6 | Box 30 | 2 / 4 | 60 | 11.4kg |
| bipod | | | | | | 1 / 2 | 75 | |

# CAREERS

| NATION | ARMY CAREERS | NAVAL CAREERS | AVIATION CAREERS | ESPIONAGE CAREERS |
|---|---|---|---|---|
| **FRANCE** | French Army | French Navy | French Air Corps | |
| **GERMANY** | German Army | Kriegsmarine | Luftwaffe | Sicherhietsdienst (SD) |
| **ITALY** | Italian Army | Supermarina | Italian Air Force | |
| **JAPAN** | Japanese Army | Japanese Navy<br><br>Japanese Marines | Japanese Air Army<br><br>Japanese Air Fleet | |
| **USSR** | Soviet Army | Soviet Navy | Soviet Air Army | |
| **UK** | British Army | Royal Navy<br><br>Royal Marines | Royal Air Force<br><br>Royal Navy Fleet Air Arm | MI-5<br><br>MI-6<br><br>MI-9<br><br>Special Operations Executive (SOE) |
| **USA** | U.S. Army | U.S. Navy<br><br>U.S. Marine Corps | U.S. Army Air Force<br><br>U.S. Marine Air Wing<br><br>U.S. Navy Naval Aviation | Office of Strategic Services (OSS) |

| | | | | |
|---|---|---|---|---|
| **OTHER** | Australia<br><br>Belgium<br><br>Denmark<br><br>New Zealand | | | |

# TWILIGHT 2000

**Twilight 2000** This is my collection of material that I have developed for the standard Twilight 2000 / MERC 2000 timelines. I have used the Version 2.2 rules for the most part as I feel that this version handles some of the earlier rules in a manor more suited to my ideas. These rules are fairly easily converted between the two. The main changes are the inclusion of stats for NBC (Nuclear, Biological, Chemical) warfare protection, a Fire control bonus of +1 / +2 in place of the Range finder bonus of +1 to +4 and a change in Weapon stabilization classes. If you use Version 2.0 the Fire control bonus can be converted easily to a Range finder stat a FC +1 will be a RF +1 or +2 and a FC +2 will be a RF +3 or +4, you will have to make the decision of when to use the higher stat based on the vehicle. The Weapon stabilization changes are simply this V.2.2 uses None, Basic or Good compared to V.2.0's None, Fair and Good. I have chosen not to include prices / availability for military equipment as I never used the ones included in the game much and don't really have much access to the real world prices anyway, as far as availability for the most part the text for the individual items should give some idea of how common it is (just entering service / widely exported etc). Vehicles and equipment from World war 2 which remained in service after 1945 have only been duplicated from my World war 2 site if they were in wide spread use long after the war. (such as the M4A3 (76mm) Sherman, T-34/85 or the British 25 Pounder).

I have not completed all the material below, that which is not ready is listed in text. As I finish new material I will change the text to links.

## Ground Vehicles

| | | | | |
|---|---|---|---|---|
| American Tanks | French Tanks | Japanese Tanks | South African Tanks | Civilian autos |
| American AFV's | French AFV's | Japanese Tanks | South African AFV's | Civilian trucks |
| British Tanks | German Tanks | South Korean Tanks | Soviet Tanks | Heavy civilian vehicles |

| | | | | |
|---|---|---|---|---|
| British AFV's | German AFV's | South Korean AFV's | Soviet AFV's | Other civilian vehicles |
| Chinese Tanks | Israeli Tanks | NATO Surplus Tanks | Tanks of other nations | Emergency vehicles |
| Chinese AFV's | Israeli AFV's | NATO Surplus AFV's | AFV's of other nations | Other vehicles |
| Export Tanks | Italian Tanks | Soviet Surplus Tanks | Light vehicles | |
| Export AFV's | Italian AFV's | Soviet Surplus AFV's | Transport vehicles | |

## Aircraft

| | | |
|---|---|---|
| American fixed wing aircraft | NATO fixed wing aircraft | Fixed wing aircraft of other nations |
| American helicopters | NATO helicopters | Helicopters of other nations |
| British fixed wing aircraft | Israeli aircraft | Civilian fixed wing aircraft |
| British helicopters | Soviet fixed wing aircraft | Civilian helicopters |
| Chinese aircraft | Soviet helicopters | Other aircraft |

## Naval Vessels

| | | |
|---|---|---|
| American Naval vessels | French Naval vessels | Naval vessels of other nations |
| British Naval vessels | NATO Naval vessels | Civilian watercraft |
| Chinese Naval vessels | Soviet Naval vessels | Other watercraft |

## Artillery

| | | |
|---|---|---|
| American artillery | French artillery | South African artillery |
| British artillery | Israeli artillery | Soviet artillery |
| Chinese artillery | NATO artillery | Artillery of other nations |

## Small arms

| | | |
|---|---|---|
| Pistols | Sniper rifles | Machineguns |
| Submachineguns | Anti-tank / Anti-material rifles | Shotguns |
| Assault rifles | Other rifles | Misc. other weapons |

## Infantry weapons

| | | |
|---|---|---|
| Grenades and explosives | Recoiless weapons | Mortars |
| Grenade launchers | Anti-armor missile launchers | Flame weapons |
| Rocket launchers | Anti-aircraft missile launchers | Other weapons |

Back to Twilight 2000 main page

Twilight 2000 World war 2 material

Comments email me snotrplr@onemain.com

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# SOUTH AFRICA

# MAIN BATTLE TANKS

## Oliphant

The Oliphant (Elefant) is a modernized version of the British Centurion MBT. It includes a diesel engine and additional fuel capacity to increase its range. A 105mm gun, improved armor, a new fire control system, night vision and an NBC system have been added to increase the Oliphants effectiveness.

**Fire control:** +2 **Stabilization:** Good **Fuel:** Diesel **Weight:** 56 tons **Load:** 500kg **Crew:** 4 **Maint:** 16
**Armament:** 105mm NATO gun, FN-MAG coaxial, FN-MAG (C)
**Ammo:** 72x 105mm, 5600x 7.62mm
**Night Vision:** passive IR **Radiological:** enclosed **NBC system:** yes
**Introduced:** 1990 **In service:** South Africa

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **TrMOV:** 90 / 70 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 1240 liters | **Fuel Cons:** 450 | **Susp:** Track:6 | Turret | 45 | 15 | 10 |
| | | | Hull | 45 | 15 Sp | 10 |

| 105mm NATO | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APFSDSDU | 500 | 26 | 100 / 90 / 80 / 60 |
| APFSDS | 500 | 26 | 80 / 70 / 60 / 40 |
| HEAT | 400 | C: 6 B:12 | 80C |
| HESH | 400 | C:8 B:16 | 70C |
| HE | 400 | C:10 B:20 | 5C |
| WP | 400 | C:3 B:20 | Nil |
| APERS | 100 | Special | 1-Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **FN-MAG** | 10 | 4 | 2-3-Nil | Belt 100 | SS 1 Brst 2 | 125 |

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# SOUTH AFRICA

# ARMORED CARS

## Eland Mk 7

This is a license built version of the French AML 60-7 armored car. It is now in limited service with South African Forces.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 5.5 tons **Load:** 500kg **Crew:** 3 **Maint:** 4
**Armament:** 60mm gun mortar, 2x FN-MAG coaxial
**Ammo:** 53x 60mm, 3800x 7.62mm
**Night Vision:** passive IR **Radiological:** enclosed **NBC system:** yes
**Introduced:** 1962 **In service:** South Africa

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 180 / 130 | **Com Mov:** 40 / 30 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 155 liters | **Fuel Cons:** 70 | **Susp:** Wheel:(2) | Turret | 4 | 3 | 2 |
| | | | Hull | 3 | 3 | 2 |

| **60mm gun / mortar** | **ROF:** SS | **Rld:** 1 | **IFR:** 4.0km |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HE | 150 | C: 5 B:20 | Nil |
| WP | 150 | C:2 B:12 | Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **FN-MAG** | 10 | 4 | 2-3-Nil | Belt 100 | SS 1 Brst 2 | 125 |

## Eland 90

The Eland 90 is a license built version of the French AML H 90 armored car. It is now in limited service with South African Forces.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 6.0 tons **Load:** 500kg **Crew:** 3 **Maint:** 4
**Armament:** 90mm GIAT F1 gun, FN-MAG coaxial, FN-MAG (C)
**Ammo:** 21x 90mm, 2000x 7.62mm
**Night Vision:** passive IR **Radiological:** enclosed **NBC system:** yes
**Introduced:** 1962 **In service:** South Africa

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 180 / 130 | **Com Mov:** 40 / 30 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 155 liters | **Fuel Cons:** 70 | **Susp:** Wheel:(2) | Turret | 4 | 3 | 2 |
| | | | Hull | 3 | 3 | 2 |

| **90mm GIAT F1** | **ROF:** SS | **Rld:** 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HEAT | 300 | C:5 B:10 | 65C |
| HE | 300 | C:14 B:19 | 4C |
| CHEM | 300 | C:2 B:12 | Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **FN-MAG** | 10 | 4 | 2-3-Nil | Belt 100 | SS 1 Brst 2 | 125 |

## Rooikat (76mm)

The Rooikat was developed in the late 1980's to replace the Eland armored cars then in service with the South African Army. It is an eight wheeled armored car armed with a turret mounted 76mm naval gun. An APFSDS round was developed for this weapon, with this round the gun is capable of defeating the armor of most Soviet tanks which are in common use with many African nations.

**Fire control:** +2 **Stabilization:** Basic **Fuel:** Diesel **Weight:** 28 tons **Load:** 800kg **Crew:** 4 **Maint:** 9
**Armament:** 76mm Armscor gun, FN-MAG coaxial, FN-MAG (C)
**Ammo:** 48x 76mm, 3600x 7.62mm
**Night Vision:** image intensifier **Radiological:** enclosed **NBC system:** yes
**Introduced:** 1990 **In service:** South Africa

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 240 / 105 | **Com Mov:** 55 / 25 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 540 liters | **Fuel Cons:** 260 | **Susp:** Wheel:(3) | Turret | 15 | 8 | 6 |
| | | | Hull | 15 | 8 | 6 |

| **76mm Armscor** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APFSDS | 400 | 22 | 50 / 45 / 40 / 25 |
| HE | 300 | C:8 B:14 | -2C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **FN-MAG** | 10 | 4 | 2-3-Nil | Belt 100 | SS 1 Brst 2 | 125 |

---

# Rooikat (105mm)

This is the Rooikat armed with a 105mm gun. It is primarily intended for export as the South African Army is currently satisfied with the performance of the gun on the Rooikat (76mm).

**Fire control:** +2 **Stabilization:** Basic **Fuel:** Diesel **Weight:** 28 tons **Load:** 800kg **Crew:** 4 **Maint:** 9
**Armament:** 105mm NATO gun, FN-MAG coaxial, FN-MAG (C)
**Ammo:** 32x 76mm, 3200x 7.62mm
**Night Vision:** image intensifier **Radiological:** enclosed **NBC system:** yes
**Introduced:** 1995 **In service:** Export

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 240 / 105 | **Com Mov:** 55 / 25 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 540 liters | **Fuel Cons:** 260 | **Susp:** Wheel:(3) | Turret | 15 | 8 | 6 |
| | | | Hull | 15 | 8 | 6 |

| 105mm NATO | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APFSDSDU | 500 | 26 | 100 / 90 / 80 / 60 |
| APFSDS | 500 | 26 | 80 / 70 / 60 / 40 |
| HEAT | 400 | C: 6 B:12 | 80C |
| HESH | 400 | C:8 B:16 | 70C |
| HE | 400 | C:10 B:20 | 5C |
| WP | 400 | C:3 B:20 | Nil |
| APERS | 100 | Special | 1-Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **FN-MAG** | 10 | 4 | 2-3-Nil | Belt 100 | SS 1 Brst 2 | 125 |

# ARMORED PERSONNEL CARRIERS

## Ratel 20

The Ratel is a 6x6 Infantry Fighting Vehicle developed for the South African Defense Force in the 1970's. Like

most South African APC's the crew is well protected from land mines, the shape of the hull deflecting much of the blast to the sides. A small turret armed with a 20mm cannon is mounted near the front of the hull, a machine gun is located on the turret top for the Commander, a second machine gun is located on the rear hull top operated by a passenger. There are three large doors for the passengers, one each left, right and rear. Weapon firing ports are located on either side for the passengers.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 18.5 tons **Load:** 2 tons **Crew:** 4+7 **Maint:** 7
**Armament:** 20mm autocannon, FN-MAG coaxial, FN-MAG (C), FN-MAG (P)
**Ammo:** 1200x 20mm, 6000x 7.62mm
**Night Vision:** image intensifier **Radiological:** enclosed **NBC system:** yes
**Introduced:** 1979 **In service:** South Africa, Morocco

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 210 / 95 | **Com Mov:** 50 / 20 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 430 liters | **Fuel Cons:** 180 | **Susp:** Wheel:(3) | Turret | 6 | 6 | 4 |
| | | | Hull | 6 | 4 | 4 |

| **20mm Autocannon** | **ROF:** 10 | **Magazine:** Belt 100 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| AP | 250 | 10 | 3 / - 2 / - 5 |
| HE | 250 | C:1 B:2 | -8C |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **FN-MAG** | 10 | 4 | 2-3-Nil | Belt 100 | SS 1 Brst 2 | 125 |

---

# Ratel 60

This is a version of the Ratel armed with a 60mm gun / mortar in place of the 20mm cannon.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 18.5 tons **Load:** 2 tons **Crew:** 4+7 **Maint:** 7
**Armament:** 60mm gun mortar, FN-MAG coaxial, FN-MAG (C), FN-MAG (P)
**Ammo:** 50x 60mm, 6000x 7.62mm
**Night Vision:** image intensifier **Radiological:** enclosed **NBC system:** yes
**Introduced:** 1979 **In service:** South Africa, Morocco

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 210 / 95 | **Com Mov:** 50 / 20 | **Config:** Turret | **Armor** | Front | Side | Rear |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Fuel Cap:** 430 liters | **Fuel Cons:** 180 | **Susp:** Wheel:(3) | Turret | 6 | 6 | 4 |
| | | | Hull | 6 | 4 | 4 |

| **60mm gun / mortar** | **ROF:** SS | **Rld:** 1 | **IFR:** 4.0km |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HE | 150 | C: 5 B:20 | Nil |
| WP | 150 | C:2 B:12 | Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **FN-MAG** | 10 | 4 | 2-3-Nil | Belt 100 | SS 1 Brst 2 | 125 |

---

# Ratel 90

This is a Fire Support version of the Ratel armed with a 90mm gun. The turret used is the same as the French AML (Eland) armored car. The passenger capacity is reduced by one to allow additional 90mm ammunition to be carried.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 19 tons **Load:** 1.5 tons **Crew:** 4+6 **Maint:** 7
**Armament:** 90mm GIAT F1 gun, FN-MAG coaxial, FN-MAG (C), FN-MAG (P)
**Ammo:** 69x 90mm, 6000x 7.62mm
**Night Vision:** image intensifier **Radiological:** enclosed **NBC system:** yes
**Introduced:** 1979 **In service:** South Africa, Morocco

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 210 / 95 | **Com Mov:** 50 / 20 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 430 liters | **Fuel Cons:** 180 | **Susp:** Wheel:(3) | Turret | 4 | 3 | 2 |
| | | | Hull | 6 | 4 | 4 |

| 90mm GIAT F1 | ROF: SS | Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HEAT | 300 | C:5 B:10 | 65C |
| HE | 300 | C:14 B:19 | 4C |
| CHEM | 300 | C:2 B:12 | Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| FN-MAG | 10 | 4 | 2-3-Nil | Belt 100 | SS 1 Brst 2 | 125 |

# SELF PROPELLED ARTILLERY

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## G6

The G6 is a 6x6 turreted self propelled 155mm gun which entered service with the South African army in the late 1980's. The howitzer used is a modified version of the South African built G5. The Driver sits at the front of the vehicle while the gun crew have positions in the turret at the rear of the hull, all are protected by armor. A machine gun is provided for the Commander on the turret top. The howitzer is provided with a power assited loader which speeds reloading, four outrigger stabilizers are used during firing. A base bleed HE round is available which extends the maximum range to 39km.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 47 tons **Load:** 600 kg **Crew:** 6 **Maint:** 14
**Armament:** 155mm G5 howitzer, M2HB (C)
**Ammo:** 45x 155mm, 1000x .50 Browning
**Night Vision:** passive IR **Radiological:** enclosed **NBC system:** yes
**Introduced:** 1988 **In service:** South Africa, Oman, United Arab Emirates

| **TrMOV:** 180 / 80 | **Com Mov:** 40 / 20 | **Config:** Turret | **Armor** | Front | Side | Rear |
|---|---|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| **Fuel Cap:** 700 liters | **Fuel Cons:** 370 | **Susp:** Wheel:(3) | Turret | 6 | 4 | 4 |
| | | | Hull | 6 | 4 | 4 |

| **155mm G5 howitzer** | **ROF:** SS | **Rld:** 1 | **IFR:** 30.0km |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HE | 350 | C:30 B:36 | 3C |
| HE-BB (IFR: 39.0km) | 350 | C:30 B:36 | 3C |
| WP | 350 | C:3 B:44 | Nil |
| CHEM | 350 | C:3 B:28 | Nil |
| ILLUM | --- | B:2000 | Nil |
| ICMDP | --- | B:60 | DP / Grenade |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |

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# Peoples Republic of China

## LIGHT TANKS

### Type 62

The Type 62 is a light tank based on the Type 59 MBTand is basically a scaled down version of that vehicle. It was designed for use in rugged terrain. The Type 62 is available for export sales and can be found in service with several nations. A machine gun operated by the Driver is mounted in the hull front, it is fixed and is aimed by moving the vehicle.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 21 tons **Load:** 300kg **Crew:** 4 **Maint:** 7
**Armament:** 85mm Soviet gun, Type 59 coaxial, Type 59 hull (fixed), Type 54 (C)
**Ammo:** 47x 85mm, 1750x 7.62mm, 1250x 12.7mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1962 **In service:** China, Albania, Bangladesh, Congo, North Korea, Mali, Sudan, Tanzania, Vietnam, Zaire

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **TrMOV:** 120 / 70 | **Com Mov:** 30 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 730 liters | **Fuel Cons:** 350 | **Susp:** Track:4 | Turret | 5 | 5 | 3 |
| | | | Hull | 8 | 3 | 2 |

| 85mm Soviet | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APC | 300 | 22 | 36 / 18 / 9 / 3 |
| AP | 250 | 22 | 25 / 12 / 6 / 2 |
| HE | 250 | C: 14 B:16 | 3C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **Type 59** | 5 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 2 | 125 |
| **Type 54** | 5 | 8 | 2-3-4 | Belt 50 | SS 3 Brst 7 | 150 |

# Type 63

The Type 63 is a light tank based on the Soviet PT-76 and the Chinese Type 77 APC. It is very similar to the PT-76 in appearance but has a more powerful engine providing better performance. The Type 63 is amphibious propelled through the water by 2 water jets. External fuel tanks may be fitted on the rear deck.

**Fire control:** +1 **Stabilization:** None **Fuel:** Diesel **Weight:** 18.7 tons **Load:** 300kg **Crew:** 4 **Maint:** 6
**Armament:** 85mm Soviet gun, Type 59 coaxial, Type 54 (C)
**Ammo:** 47x 85mm, 1000x 7.62mm, 500x 12.7mm
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** yes
**Introduced:** 1963 **In service:** China, North Korea, Vietnam

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 130 / 85 / 25 | **Com Mov:** 30 / 20 / 5 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 545 + 180 liters | **Fuel Cons:** 380 | **Susp:** Track:3 | Turret | 5 | 5 | 3 |
| | | | Hull | 8 | 3 | 2 |

| 85mm Soviet | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APC | 300 | 22 | 36 / 18 / 9 / 3 |
| AP | 250 | 22 | 25 / 12 / 6 / 2 |
| HE | 250 | C: 14 B:16 | 3C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **Type 59** | 5 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 2 | 125 |
| **Type 54** | 5 | 8 | 2-3-4 | Belt 50 | SS 3 Brst 7 | 150 |

# MAIN BATTLE TANKS

## Type 59-I

The Type 59 is a Chinese version of the Soviet T-54 MBT. During the 1950's the Soviet Union supplied China with large numbers of T-54's. Production of the T-54 was soon started in China as the Type 59. Early versions were identical to the T-54 and had no weapon stabilization system or night vision. External fuel tanks may be fitted to the rear deck.

**Fire control:** +1 **Stabilization:** Basic **Fuel:** Diesel **Weight:** 36 tons **Load:** 400kg **Crew:** 4 **Maint:** 11
**Armament:** 100mm Soviet gun, Type 59 coaxial, Type 54 (C)
**Ammo:** 34x 100mm, 3500x 7.62mm, 200x 12.7mm
**Night Vision:** passive IR **Radiological:** enclosed **NBC system:** no
**Introduced:** 1959 **In service:** China, Albania, Bangladesh, Congo, North Korea, Pakistan, Tanzania, Vietnam, Zimbabwe

| **TrMOV:** 95 / 60 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
|---|---|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| **Fuel Cap:** 815 + 280 liters | **Fuel Cons:** 390 | **Susp:** Track:6 | Turret | 41 | 26 | 12 |
| | | | Hull | 40 | 15 | 12 |

| **100mm Soviet** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HVAPDS | 350 | 22 | 70 / 60 / 50 / 30 |
| APC | 300 | 22 | 35 / 17 / 8 / 2 |
| HEAT | 250 | C: 4 B:10 | 60C |
| HE | 250 | C:10 B:18 | 5C |
| WP | 250 | C:3 B:20 | Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **Type 59** | 5 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 2 | 125 |
| **Type 54** | 5 | 8 | 2-3-4 | Belt 50 | SS 3 Brst 7 | 150 |

# Type 59-II

This is an improved version of the Type 59-I. During the 1980's many Chinese Type 59-I's were upgraded to include a gun firing the NATO 105mm round and improved fire control. Upgrade packages have also been exported to the many countries using the Type 59 to bring them up to this standard.

**Fire control:** +2 **Stabilization:** Basic **Fuel:** Diesel **Weight:** 36 tons **Load:** 400kg **Crew:** 4 **Maint:** 11
**Armament:** 105mm NATO gun, Type 59 coaxial, Type 54 (C)
**Ammo:** 34x 105mm, 3500x 7.62mm, 200x 12.7mm
**Night Vision:** passive IR **Radiological:** enclosed **NBC system:** no
**Introduced:** 1984 **In service:** China, Albania, Bangladesh, Congo, North Korea, Pakistan, Tanzania, Vietnam, Zimbabwe

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 95 / 60 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 815 + 280 liters | **Fuel Cons:** 390 | **Susp:** Track:6 | Turret | 41 | 26 | 12 |
| | | | Hull | 40 | 15 | 12 |

| 105mm NATO | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APFSDSDU | 500 | 26 | 100 / 90 / 80 / 60 |
| APFSDS | 500 | 26 | 80 / 70 / 60 / 40 |
| HEAT | 400 | C: 6 B:12 | 80C |
| HESH | 400 | C:8 B:16 | 70C |
| HE | 400 | C:10 B:20 | 5C |
| WP | 400 | C:3 B:20 | Nil |
| APERS | 100 | Special | 1-Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **Type 59** | 5 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 2 | 125 |
| **Type 54** | 5 | 8 | 2-3-4 | Belt 50 | SS 3 Brst 7 | 150 |

# Type 69

The Type 69 is an improved version of the Type 59, it includes a new 100mm gun with enhanced performance, an NBC system, a more powerful engine and better fire control. A large number of these tanks were sold to Iraq.

**Fire control:** +2 **Stabilization:** Basic **Fuel:** Diesel **Weight:** 36 tons **Load:** 400kg **Crew:** 4 **Maint:** 11
**Armament:** 100mm Chinese gun, Type 59 coaxial, Type 54 (C)
**Ammo:** 43x 100mm, 3500x 7.62mm, 250x 12.7mm
**Night Vision:** passive IR **Radiological:** shielded **NBC system:** yes
**Introduced:** 1982 **In service:** China, Iran, Iraq, Pakistan, Thailand

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 110 / 65 | **Com Mov:** 25 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 815 + 280 liters | **Fuel Cons:** 420 | **Susp:** Track:6 | Turret | 41 | 26 | 12 |
| | | | Hull | 40 | 15 | 12 |

| 100mm Chinese | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APFSDS | 400 | 22 | 80 / 70 / 60 / 40 |
| APDS | 350 | 22 | 70 / 60 / 50 / 30 |
| HEAT | 250 | C: 4 B:10 | 70C |
| HE | 250 | C:10 B:18 | 5C |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **Type 59** | 5 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 2 | 125 |
| **Type 54** | 5 | 8 | 2-3-4 | Belt 50 | SS 3 Brst 7 | 150 |

# Type 80

The Type 80 is similar to the Type 69 from which it was developed but it is a new design. The turret is that of the Type 69 while the hull is completely new and uses composite armor over the front. A 105mm gun which uses standard NATO ammunition is mounted and an advanced fire control system is included. The Type 80 has better performance than the Type 69 due to increased fuel capacity and a more powerful engine.

**Fire control:** +2 **Stabilization:** Good **Fuel:** Diesel **Weight:** 38 tons **Load:** 400kg **Crew:** 4 **Maint:** 12
**Armament:** 105mm NATO gun, Type 59 coaxial, Type 54 (C)
**Ammo:** 44x 105mm, 2250x 7.62mm, 550x 12.7mm
**Night Vision:** passive IR **Radiological:** shielded **NBC system:** yes
**Introduced:** 1984 **In service:** China

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 120 / 80 | **Com Mov:** 30 / 20 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 1400 liters | **Fuel Cons:** 780 | **Susp:** Track:6 | Turret | 41 | 26 | 12 |
| | | | Hull | 50 Cp | 16 | 12 |

| 105mm NATO | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APFSDSDU | 500 | 26 | 100 / 90 / 80 / 60 |
| APFSDS | 500 | 26 | 80 / 70 / 60 / 40 |
| HEAT | 400 | C: 6 B:12 | 80C |
| HESH | 400 | C:8 B:16 | 70C |
| HE | 400 | C:10 B:20 | 5C |
| WP | 400 | C:3 B:20 | Nil |
| APERS | 100 | Special | 1-Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **Type 59** | 5 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 2 | 125 |
| **Type 54** | 5 | 8 | 2-3-4 | Belt 50 | SS 3 Brst 7 | 150 |

# Type 85

The Type 85 is a new tank developed from the earlier Type 80 in cooperation with Pakistan. It has improved armor including composite armor in the turret and hull front and it mounts a 125mm autoloading gun firing standard Soviet ammunition.

**Fire control:** +2 **Stabilization:** Good **Fuel:** Diesel **Weight:** 41 tons **Load:** 400kg **Crew:** 3 **Maint:** 12
**Armament:** 125mm Soviet autoloading gun, Type 59 coaxial, Type 54 (C)
**Ammo:** 40x 125mm, 2000x 7.62mm, 300x 12.7mm
**Night Vision:** passive IR **Radiological:** shielded **NBC system:** yes
**Introduced:** 1989 **In service:** China, Pakistan

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 115 / 75 | **Com Mov:** 25 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 1000 liters | **Fuel Cons:** 480 | **Susp:** Track:6 | Turret | 55 Cp | 24 | 20 |
| | | | Hull | 75 Cp | 16 | 10 |

| 125mm Soviet | ROF: SS | Magazine: Rld: 2 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APFSDSDU | 450 | 28 | 110 / 100 / 90 / 70 |
| APFSDS | 450 | 28 | 100 / 90 / 80 / 60 |
| HEAT | 400 | C: 10 B:20 | 110C |
| HE | 400 | C:14 B:28 | 1C |
| | | | |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **Type 59** | 5 | 4 | 2-3-Nil | Belt 50 | SS 1 Brst 2 | 125 |
| **Type 54** | 5 | 8 | 2-3-4 | Belt 50 | SS 3 Brst 7 | 150 |
| | | | | | | |

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# ISRAEL

# MAIN BATTLE TANKS

## Isherman

When Israel was recognized in 1947 the U.S. and Britain gave the new military large numbers of M4 Sherman tanks. In the early 1960's these tanks were still in service but were clearly outdated so several upgrades were considered. The Isherman is one of the modernized versions of the M4 which then entered service. A French 105mm gun and a new diesel engine were added, the hull machine gunner / radio operator was removed along with the hull machine gun, the space saved being used for additional ammunition. Although long out of front line service Shermans are still in use with reserve and training units.

**Fire control:** +1 **Stabilization:** Basic **Fuel:** Diesel **Weight:** 40 tons **Load:** 300kg **Crew:** 4 **Maint:** 12
**Armament:** 105mm GIAT gun, M1919A4 coaxial, M2HB (C)
**Ammo:** 55x 105mm, 4250x .30-06, 600x .50 Browning
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1960 **In service:** Israel

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 90 / 60 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 670 liters | **Fuel Cons:** 520 | **Susp:** Track:6 | Turret | 15 | 10 | 10 |
| | | | Hull | 15 | 10 | 8 |

| **105mm GIAT** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| HEAT | 400 | C:6 B:12 | 72C |
| HE | 400 | C:10 B:20 | 5C |
| CHEM | 400 | C:2 B:20 | Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **M1919A4** | 5 | 4 | 2-3-Nil | Belt 250 | SS 1 Brst 3 | 125 |
| **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |

## Magach-7

This is an improved version of the American M60 MBT. It has undergone an extensive refit, a more powerful engine, improved night vision and a new fire control system are included along with the standard changes made to Israeli M60's.

**Fire control:** +2 **Stabilization:** Good **Fuel:** Diesel **Weight:** 58 tons **Load:** 500kg **Crew:** 4 **Maint:** 17
**Armament:** 105mm NATO gun, M2HB coaxial, FN-MAG coaxial, FN-MAG (C), FN-MAG (L)
**Ammo:** 63x 105mm, 600x .50 Browning, 8000x 7.62mm
**Night Vision:** passive IR / thermal **Radiological:** shielded **NBC system:** yes
**Introduced:** 1990 **In service:** Israel

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 110 / 65 | **Com Mov:** 25 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 1420 liters | **Fuel Cons:** 420 | **Susp:** Track:6 | Turret | 50 (+80) | 15 (+80) | 15 |
| | | | Hull | 50 (+80) | 24 | 24 |

| **105mm NATO** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APFSDSDU | 500 | 26 | 100 / 90 / 80 / 60 |
| APFSDS | 500 | 26 | 80 / 70 / 60 / 40 |
| HEAT | 400 | C: 6 B:12 | 80C |
| HESH | 400 | C:8 B:16 | 70C |
| HE | 400 | C:10 B:20 | 5C |
| WP | 400 | C:3 B:20 | Nil |
| APERS | 100 | Special | 1-Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **FN-MAG** | 10 | 4 | 2-3-Nil | Belt 100 | SS 1 Brst 2 | 125 |
| **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |

## Merkava Mk 2

The Merkava was developed in the late 1970's using the experience gained during the many Arab / Israeli wars, it was

designed with crew survival as the highest priority, firepower second and mobility third. The Merkava Mark 1entered service in 1979, the Mark 2 version was introduced in 1983, it added improved fire control and reactive armor. All Mark 1's in service were upgraded to the Mark 2 standard in the mid 1980's. The Merkava has serveral unusual features including an engine mounted in the front and a large ammunition compartment in the rear which may be accessed through two large hatches in the hull rear. By removing some of the stored ammunition personnel may be transported within the tank. A 3 person squad may be carried by reducing the ammunition by 25 rounds, if 45 rounds (total) are removed up to 10 personnel may be carried for short periods. While this cargo area allows the transport of personnel it is cramped and uncomfortable as no provision is made for passenger comfort, it is intended only for use in an emergency or for short duration missions, not to replace an armored personnel carrier. A 60mm mortar is mounted in the turret top, it may be loaded, aimed and fired from within the turret.

**Fire control:** +2 **Stabilization:** Good **Fuel:** Diesel **Weight:** 60 tons **Load:** 600kg **Crew:** 4 **Maint:** 17
**Armament:** 105mm NATO gun, M2HB coaxial, FN-MAG coaxial, FN-MAG (C), FN-MAG (L), 60mm mortar
**Ammo:** 85x 105mm, 1000x .50 Browning, 10,000x 7.62mm, 30x 60mm mortar
**Night Vision:** passive IR / thermal **Radiological:** shielded **NBC system:** yes
**Introduced:** 1983 **In service:** Israel

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 90 / 70 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 1000 liters | **Fuel Cons:** 370 | **Susp:** Track:6 | Turret | 90 (+80) | 25 (+80) | 16 |
| | | | Hull | 120 (+80) | 24 Sp | 16 |

| **105mm NATO** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APFSDSDU | 500 | 26 | 100 / 90 / 80 / 60 |
| APFSDS | 500 | 26 | 80 / 70 / 60 / 40 |
| HEAT | 400 | C: 6 B:12 | 80C |
| HESH | 400 | C:8 B:16 | 70C |
| HE | 400 | C:10 B:20 | 5C |
| WP | 400 | C:3 B:20 | Nil |
| APERS | 100 | Special | 1-Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **FN-MAG** | 10 | 4 | 2-3-Nil | Belt 100 | SS 1 Brst 2 | 125 |
| **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |

| **60mm Mortar** | **ROF:** SS | **Magazine:** Rld 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| HE | 4.0km | C:5 B:20 | Nil |
| WP | 4.0km | C:2 B:12 | Nil |
| ILLUM | 4.0km | B:400 | Nil |

# Merkava Mk 3

This is an improved version of the Merkava, although it is similar in layout and appearance it is an all new design. It includes a 120mm smooth bore gun, improved armor, a more powerful engine and a heavier suspension. It retains the ammunition compartment in the rear, removing 15 rounds allows a 3 person squad to be carried while removing 30 rounds allows 10 people to be carried.

**Fire control:** +2 **Stabilization:** Good **Fuel:** Diesel **Weight:** 61 tons **Load:** 600kg **Crew:** 4 **Maint:** 17
**Armament:** 120mm NATO gun, M2HB coaxial, FN-MAG coaxial, FN-MAG (C), FN-MAG (L), 60mm mortar
**Ammo:** 50x 120mm, 1000x .50 Browning, 10,000x 7.62mm, 30x 60mm mortar
**Night Vision:** passive IR / thermal **Radiological:** shielded **NBC system:** yes
**Introduced:** 1989 **In service:** Israel

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 115 / 95 | **Com Mov:** 25 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 1000 liters | **Fuel Cons:** 450 | **Susp:** Track:6 | Turret | 120 Cp | 40 | 20 |
| | | | Hull | 200 Cp | 25 Sp | 20 |

| **120mm NATO** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APFSDSDU | 500 | 28 | 150/140/130/110 |
| APFSDS | 500 | 28 | 110 / 100 / 90 / 70 |
| HEAT | 400 | C: 10 B:20 | 110C |
| WP | 400 | C:3 B:36 | Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **FN-MAG** | 10 | 4 | 2-3-Nil | Belt 100 | SS 1 Brst 2 | 125 |
| **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |

| **60mm Mortar** | **ROF:** SS | **Magazine:** Rld 1 | |
|---|---|---|---|
| **Round** | **IFR** | **Damage** | **Pen** |
| HE | 4.0km | C:5 B:20 | Nil |
| WP | 4.0km | C:2 B:12 | Nil |
| ILLUM | 4.0km | B:400 | Nil |

---

## M48 (Israeli)

This is an improved version of the M48. Israel received large numbers of M48's through U.S. foriegn aid programs, many were improved during the late 1970's and are still in service. The gasoline engine was replaced with a diesel, a 105mm gun with a new fire control system was added and reactive armor was fitted.

**Fire control:** +2 **Stabilization:** Basic **Fuel:** Diesel **Weight:** 49 tons **Load:** 500kg **Crew:** 4 **Maint:** 15
**Armament:** 105mm NATO gun, FN-MAG coaxial, FN-MAG (C), FN-MAG (L)
**Ammo:** 54x 105mm, 10,000x 7.62mm
**Night Vision:** passive IR **Radiological:** shielded **NBC system:** yes
**Introduced:** 1980 **In service:** Israel

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 95 / 70 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 1420 liters | **Fuel Cons:** 570 | **Susp:** Track:6 | Turret | 44 (+80) | 15 (+80) | 15 |
| | | | Hull | 48 (+80) | 22 | 22 |

| **105mm NATO** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APFSDSDU | 500 | 26 | 100 / 90 / 80 / 60 |
| APFSDS | 500 | 26 | 80 / 70 / 60 / 40 |
| HEAT | 400 | C: 6 B:12 | 80C |
| HESH | 400 | C:8 B:16 | 70C |
| HE | 400 | C:10 B:20 | 5C |
| WP | 400 | C:3 B:20 | Nil |
| APERS | 100 | Special | 1-Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **FN-MAG** | 10 | 4 | 2-3-Nil | Belt 100 | SS 1 Brst 2 | 125 |

## M51 Super Sherman

The Super Sherman is another modernized M4 in service with Israel. The modifications were similar to those of the Isherman but a French 75mm gun was used in place of the 105mm gun.

**Fire control:** +1 **Stabilization:** Basic **Fuel:** Diesel **Weight:** 30 tons **Load:** 300kg **Crew:** 4 **Maint:** 10
**Armament:** 75mm GIAT gun, M1919A4 coaxial, M2HB (C)
**Ammo:** 71x 75mm, 4250x .30-06, 600x .50 Browning
**Night Vision:** headlights **Radiological:** enclosed **NBC system:** no
**Introduced:** 1960 **In service:** Israel

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 100 / 65 | **Com Mov:** 25 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 670 liters | **Fuel Cons:** 460 | **Susp:** Track:6 | Turret | 15 | 10 | 10 |
| | | | Hull | 15 | 10 | 8 |

| **75mm GIAT** | **ROF:** SS | **Magazine:** Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APC | 350 | 16 | 34 / 17 / 8 / 4 |
| HEAT | 300 | C:4 B:8 | 40C |
| HE | 300 | C:10 B:14 | -3C |
| CHEM | 300 | C:2 B:12 | Nil |

| **Type** | **ROF** | **Damage** | **Pen** | **Magazine** | **Recoil** | **Range** |
|---|---|---|---|---|---|---|
| **M1919A4** | 5 | 4 | 2-3-Nil | Belt 250 | SS 1 Brst 3 | 125 |
| **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |

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## M60 (Israeli)

This is a modified version of the M60. Israel received large numbers of M60's through U.S. foriegn aid programs. The large Commanders cupola / turret of the M60 was found to be unpopular with Israeli tank commanders. A new cupola was developed and retrofitted, it is a lower profile more inline with conventional cupolas. The Commanders machine gun is no longer included within the armor of the cupola and is replaced by an FN-MAG. Additional machine guns were added, an FN-MAG at the loaders hatch and an M2HB .50 caliber ranging machine gun is mounted coaxially on top of the gun barrel. Attachment points for reactive armor were added at this time as well.

**Fire control:** +1 **Stabilization:** Basic **Fuel:** Diesel **Weight:** 53 tons **Load:** 500kg **Crew:** 4 **Maint:** 16
**Armament:** 105mm NATO gun, M2HB coaxial, FN-MAG coaxial, FN-MAG (C), FN-MAG (L)
**Ammo:** 63x 105mm, 600x .50 Browning, 8000x 7.62mm
**Night Vision:** passive IR **Radiological:** shielded **NBC system:** yes
**Introduced:** 1980 **In service:** Israel

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 95 / 70 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 1420 liters | **Fuel Cons:** 570 | **Susp:** Track:6 | Turret | 50 (+80) | 15 (+80) | 15 |
| | | | Hull | 50 (+80) | 24 | 24 |

| 105mm NATO | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APFSDSDU | 500 | 26 | 100 / 90 / 80 / 60 |
| APFSDS | 500 | 26 | 80 / 70 / 60 / 40 |
| HEAT | 400 | C: 6 B:12 | 80C |
| HESH | 400 | C:8 B:16 | 70C |
| HE | 400 | C:10 B:20 | 5C |
| WP | 400 | C:3 B:20 | Nil |
| APERS | 100 | Special | 1-Nil |
| | | | |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **FN-MAG** | 10 | 4 | 2-3-Nil | Belt 100 | SS 1 Brst 2 | 125 |
| **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |
| | | | | | | |

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# Rhino

The Rhino is a modernized version of the American M47 MBT. Large numbers of M47's were sent to Israel through foriegn aid programs, these were upgraded during the 1970's and can still be found in use with reserve units of the Israeli military. The improvement program replaced the engine, fuel tanks and gun bringing the vehicle to a standard similar to the M60 MBT.

**Fire control:** +1 **Stabilization:** Basic **Fuel:** Diesel **Weight:** 47 tons **Load:** 500kg **Crew:** 4 **Maint:** 14
**Armament:** 105mm NATO gun, M1919A4 coaxial, M2HB (C)
**Ammo:** 63x 105mm, 440x .50 Browning, 4125x 7.62mm
**Night Vision:** passive IR **Radiological:** enclosed **NBC system:** yes
**Introduced:** 1975 **In service:** Israel

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 95 / 70 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 1420 liters | **Fuel Cons:** 470 | **Susp:** Track:6 | Turret | 20 | 12 | 10 |
| | | | Hull | 20 | 12 | 10 |

| 105mm NATO | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APFSDSDU | 500 | 26 | 100 / 90 / 80 / 60 |
| APFSDS | 500 | 26 | 80 / 70 / 60 / 40 |
| HEAT | 400 | C: 6 B:12 | 80C |
| HESH | 400 | C:8 B:16 | 70C |
| HE | 400 | C:10 B:20 | 5C |
| WP | 400 | C:3 B:20 | Nil |
| APERS | 100 | Special | 1-Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **M1919A4** | 5 | 4 | 2-3-Nil | Belt 250 | SS 1 Brst 3 | 125 |
| **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |

## S'hot

The S'hot is a modernized version of the British Centurion MBT. It includes a diesel engine and additional fuel capacity, a 105mm gun, improved armor (including reactive armor), a new fire control system, night vision and an NBC system.

**Fire control:** +2 **Stabilization:** Good **Fuel:** Diesel **Weight:** 56 tons **Load:** 500kg **Crew:** 4 **Maint:** 16
**Armament:** 105mm NATO gun, M2HB coaxial, FN-MAG coaxial, FN-MAG (C)
**Ammo:** 72x 105mm, 600x .50 Browning, 5600x 7.62mm
**Night Vision:** passive IR **Radiological:** shielded **NBC system:** yes
**Introduced:** 1985 **In service:** Israel

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 95 / 70 | **Com Mov:** 20 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 1240 liters | **Fuel Cons:** 400 | **Susp:** Track:6 | Turret | 45 (+80) | 15 (+80) | 10 |
| | | | Hull | 45 (+80) | 15 Sp | 10 |

| 105mm NATO | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APFSDSDU | 500 | 26 | 100 / 90 / 80 / 60 |
| APFSDS | 500 | 26 | 80 / 70 / 60 / 40 |
| HEAT | 400 | C: 6 B:12 | 80C |
| HESH | 400 | C:8 B:16 | 70C |
| HE | 400 | C:10 B:20 | 5C |
| WP | 400 | C:3 B:20 | Nil |
| APERS | 100 | Special | 1-Nil |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **FN-MAG** | 10 | 4 | 2-3-Nil | Belt 100 | SS 1 Brst 2 | 125 |
| **M2HB** | 5 | 8 | 2-2-3 | Belt 105 | SS 2 Brst 7 | 150 |

# TI-67

This is an improved version of the Soviet T-54 / T-55. During the many Arab / Israeli wars, the Israeli's have captured large numbers of T-54's and T-55's. many of these have been upgraded and are used to supplement the israeli tank forces. The gun and fire control are replaced with a 105mm gun and Israeli night vision and fire control systems.

**Fire control:** +2 **Stabilization:** Basic **Fuel:** Diesel **Weight:** 36 tons **Load:** 400kg **Crew:** 4 **Maint:** 11
**Armament:** 105mm NATO gun, FN-MAG coaxial, FN-MAG (L)
**Ammo:** 40x 105mm, 3500x 7.62mm
**Night Vision:** passive IR **Radiological:** shielded **NBC system:** yes
**Introduced:** 1980 **In service:** Israel

| | | | | | | |
|---|---|---|---|---|---|---|
| **TrMOV:** 110 / 65 | **Com Mov:** 25 / 15 | **Config:** Turret | **Armor** | Front | Side | Rear |
| **Fuel Cap:** 960 + 200 liters | **Fuel Cons:** 420 | **Susp:** Track:6 | Turret | 41 | 26 | 12 |
| | | | Hull | 40 | 16 | 12 |

| 105mm NATO | ROF: SS | Magazine: Rld: 1 | |
|---|---|---|---|
| **Round** | **Range** | **Damage** | **Pen** |
| APFSDSDU | 500 | 26 | 100 / 90 / 80 / 60 |
| APFSDS | 500 | 26 | 80 / 70 / 60 / 40 |
| HEAT | 400 | C: 6 B:12 | 80C |
| HESH | 400 | C:8 B:16 | 70C |
| HE | 400 | C:10 B:20 | 5C |
| WP | 400 | C:3 B:20 | Nil |
| APERS | 100 | Special | 1-Nil |
| | | | |

| Type | ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|---|
| **FN-MAG** | 10 | 4 | 2-3-Nil | Belt 100 | SS 1 Brst 2 | 125 |
| | | | | | | |

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# TWILIGHT 2000

**FIRE** has been closely associated with humanity since the dawn of civillization. It is a force of nature which is often seen as destructive, but which also has its positive features. It is required as part of the ecosystem in many parts of the world, it cleans the wilderness of dead organic matter recycling the nutrients and releasing them back into the soil, many plants are dependent on fire for reproduction releasing thier seeds after a fire passes when the forest floor is clear of debris and rich in nutrients. Fire has been used for centures as a tool for heating, cooking and in agriculture. But fire as a destroyer is the form most often recalled, images of Yellowstone and Southern California, nature at its most destructive. Images of Tokyo and Dresden during World war 2, fire as one of humanities oldest and most powerful weapons.

Fire is a powerful force which I feel has long been ignored in game rules, I have written what I believe is a simple method of generating wildfires for use by the players or as a plot device by the referee. Fire is generally seperated into structural fires (buildings) and wildland fire (grass, brush and forest fires). I am beginning with wildfire as I feel it has more use by the players as a weapon or barrier to pursuit and is of more use to the GM as a plot device or backdrop to a scenario. I am also adding a section on fire equipment, fire careers and some generalized of methods of fire control. My intention is not to make Twilight a game about fire but I think it could add a unique experience. My own experience in the field is based around the Western United States and this has influenced me while writing these rules, other areas of the world are different but hopefully I have included a wide enough variety of fuel types to include all of your games.


Wildfire calculator

Wildfire equipment

Structure fire equipment

Fire careers

Fire links

# Wildfire

Some general rules of wildfires.
Fire burns uphill faster than it does downhill.
Fire is heavily influenced by wind, a small slow burning fire can instantly blow up with an increase in wind speed. A change in wind direction will also change the direction the fire burns.
Light fuels burn faster but cooler than heavy fuels, they are also consumed quickly, heavy fuels burn hotter and burn for a longer duration than light fuels leaving a dangerous hot zone behind. (grasses are light fuels, trees are heavy fuels). Brush falls in the middle making it one of the most dangerous fuel types, it burns hot, moves fast and leaves a lingering hot zone behind.
Light fuels are strongly influenced by air temperature and humidity changes, they can show behavior changes within an hour of a change, brush may take several hours to days before these effects show and heavy fuels such as trees can take more than a month before significant changes occur.
As an example one hot day during the winter could result in a large grass fire, it would take about a week of hot weather to have a similar brush fire. The reverse is also true a summer rain storm would have an almost immediate effect on grass, but it would take much longer before it would noticably change the flammability of brush or trees ( a week of wet weather for brush, a month or more for timber).

**Temperature:** Cold 0-10 deg. C (32-50 deg. F), 50% humidity, Warm 25 deg. C (80 deg. F), 35% humidity, Hot 35 deg. C (95 deg. F), 20% humidity, Very Hot 44+ deg C (110+ deg. F), 10% humidity.

**Fuel Types and wind speed:** Burning vegetation rate of spread in meters per combat turn, (slower burning fuels are listed at 1 minute intervals) and the average flame height in meters, these figures assume a standard wind speed of 0-8kph and high wind speed of 24+ kph.
**Grass:** grasses 0.15-3m (6-12") tall. Examples: annual and perinnial grasses.
**Tall Grass:** grasses 0.75m + (2.5 + feet) tall. Examples: unharvested or wild grains, prairie and marsh grasses.
**Live Brush:** living green brush approximately 0.6 - 1.8m (2-6 feet) tall. Examples: green forest undergrowth, marsh or swamp vegetation.
**Dry Brush:** dead or dry brush approximately 0.6-1.8m (2-6 feet) tall. Examples: sagebrush, juniper, young manzanita, small dead trees.
**Chaparral:** fast burning brush 1.8m + (6 + feet) tall. Examples: Southern California brush types (chamise, chaparral, manzanita), Eastern United States high pocosin (fetterbush, gallberry, bay trees), jack pine stands or dry marsh brush types.
**Timber Litter:** slow burning leaf and needle cast, light forest undergrowth. Examples: forest or woodland floor, pine needles, oak leaves etc, with occasional light brush or small trees.
**Timber:** Trees or timber slash (the residual wood products left after a timber harvest, limbs, stumps etc).

**Ignition Probability:** The chance that an ignition source (ember, hot metal, open flame etc) will start a fire, percentage chance is per source or attempt.

| Fuel Type | Cold | Warm | Hot | Very Hot |
|---|---|---|---|---|
| Grass | 1.5m/cr, 1.0m flame | 2m/cr, 1.2m flame | 2.5m/cr, 1.5m flame | 3m/cr, 2.0m flame |
| w/high wind | 8.5m/cr, 2.4m flame | 11m/cr, 2.7m flame | 14m/cr, 3.3m flame | 24m/cr, 4.5m flame |
| Tall Grass | 1.5m/cr, 2.7m flame | 2m/cr, 3.3m flame | 2.5m/cr, 3.9m flame | 3m/cr, 4.6m flame |
| w/high wind | 12m/cr, 7.6m flame | 15m/cr, 9m flame | 18m/cr, 10m flame | 22m/cr, 11.5m flame |
| Live Brush | 0.5m/min, 0.5m flame | 4m/min, 1.4m flame | 5m/min, 1.7m flame | 8.5m/min, 2.4m flame |
| w/high wind | 3m/min, 1m flame | 3m/cr, 3.9m flame | 3.5m/cr, 4.5m flame | 6.5m/cr, 6.1m flame |
| Dry Brush | 5m/min, 1.4m flame | 0.5m/cr, 1.6m flame | 0.75m/cr, 1.8m flame | 1m/cr, 2.1m flame |
| w/high wind | 3m/cr, 3m flame | 4m/cr, 3.6m flame | 5m/cr, 4.2m flame | 6m/cr, 4.5m flame |
| Chaparral brush | 0.5m/cr, 3.3m flame | 1m/cr, 4.2m flame | 1.5m/cr, 5.2m flame | 2m/cr, 6.4m flame |
| w/high wind | 7m/cr, 10.6m flame | 10m/cr, 12.1m flame | 12.5m/cr, 13.6m flame | 16.5m/cr, 18.2m flame |
| Timber Litter | 1.25m/min, 0.6m flame | 1.5m/min, 0.75m flame | 3m/min, 0.9m flame | 3.5m/min, 1m flame |
| w/high wind | 1.25m/cr, 1m flame | 1.5m/cr, 2.4m flame | 2m/cr, 2.7m flame | 3m/cr, 3.3m flame |
| Timber | 3m/min, 2.7m flame | 4.5m/min, 3.3m flame | 0.5m/cr, 3.9m flame | 1m/cr, 4.2m flame |
| w/high wind | 1.5m/cr, 5.2m flame | 2m/cr, 6.1m flame | 2.5m/cr, 7m flame | 3m/cr, 8.2m flame |
| Ignition Probability | 50% | 70% | 90% | 100% |

**Modifiers:**

| Condition | Modification |
|---|---|
| Below 0 deg. C (32 deg. F) | multiply rate of spread and flame height by 0.5 (Grass and Tall grass fuel types multiply by 0.25) |
| Below 0 deg. C and humidity greater than 50% | multiply rate of spread and flame height by 0.25 (Grass and Tall grass fuel types will not burn) |
| Humidity +20% | Go down one column for each 20% increase (Hot 60% humidity {normally 20%}, use Cold column) |
| Humidity -20% | Go up one column for each 20% decrease (Cold 10% humidity (normally 50%), use Hot column). |
| Moderate slope (10-30 degee angle) | multiply rate of spread by 2 (if fire is burning down hill, divide by 2) |
| Steep slope (30+ degee angle) | multiply rate of spread by 3 (if fire is burning down hill, divide by 3) |

**Application:**
The rate of spread is in the direction of wind travel, if modified by slope the increase applies only to the uphill side, decrease the downslope side accordingly, high winds will greatly increase the rate of spread. For fires with low wind speeds the rate of spread is full in the direction the wind is blowing, use 1/2 for lateral spread and 1/2 as it backs into the wind, flame height is not changed. For high wind speeds use 1/2 the low wind speed rate of spread and flame height for the fires spread into the wind, the fire should spread laterally 1/4 of the forward spread rate and 1/2 the flame height.
**Example 1:** a fire in grass on a warm day with light winds will spread 2m/cr with the wind, 1m/cr left and right of the head and 1m/cr into the wind, flame height will be 1.2m on all facings.
**Example 2:** a fire burning in grass under high winds on a hot day will spread 14m/cr forward with a 3.3 meter flame front, 3.5m/cr to each side with 1.7 meter flames and 1.25m/cr to the rear with 0.8 meter flames.
**Example 2:** The same fire with the wind blowing down a moderate slope. The forward rate of spread (downslope) would be 7m/cr (14 / 2), 3.5m/cr side to side and 2.5m/cr (1.25 x 2) upslope (into the wind), the flame heights would remain the same.

**Legalese message.**

The rules stated here are for game purposes only, while these are based on formula used in wildfire calculation they are extremely simplified and generalized, no attempt should be made to use these to predict actual wildfire conditions. Firefighting can be dangerous and should be left to trained personnel only. End of message.

# Wildland Firefighting Equipment

## Handtools

**Axe:** This is a standard wood axe, single and double bit versions are both common. It is used for chopping tasks, cutting trees, downed logs and brush being very common duties. It is not well suited for cutting brush as it tends to bounce back or slip off the brush creating a safety hazard, the Brush hook is much better suited for this task since the blade design tends to "catch" the brush better. With the introduction of light weight chainsaws the axe saw a great decline in use, but it has remained common in the U.S. for use in designated wilderness areas (which don't allow power equipment).
**Price:** $50 **Wt:** 2kg **Range:** L **Hit Mod:**-2 **Damage Value:** 1d6+STR

**Brush hook:** The brush hook looks like something that belongs in a slasher movie. It has a long cleaver like blade which curves forward at the top, the blade is mounted at the end of an axe handle. It has been banned in much of the U.S. for safety reasons but is still commonly found in fire caches and fire departments (firefighters hate to throw anything away). It is a very effective chopping tool for smaller tree limbs and brush (as the name would suggest) and is much more suited for this task than an axe. While it could eventually cut down a tree it really wasn't designed for that purpose and it would be a miserable chore (and would very possibly result in a broken tool).
**Price:** $50 **Wt:** 2kg **Range:** L **Hit Mod:**-2 **Damage Value:** 1d6+STR

**Combination tool:** The Combi-tool as it is more commonly known is the Jack of all trades of fire tools. It is basically an enlarged version of the military entrenching tool. It has a long handle (approximately 1.5 meters or 5 feet) and a small shovel head which can be folded out straight with the handle to be used as a shovel or it may be folded at 90 degrees to the handle for use as a hoe or scraping tool. The back side has a pick like point, this also may be folded inline with the handle or at a 90 degree angle. It is often referred to as the crew boss or officers tool as its length is just about perfect for leaning on while watching others work.
**Price:** $50 **Wt:** 1.5kg

**Council rake:** The council rake is common in the Southern and Eastern United States, it resembles a garden rake that has had its tines replaced with metal shark teeth. It is a scraping tool used to cut through thick layers of leaf or needle litter while making fire line. The sharp teeth also make it useful for cutting vines.
**Price:** $50 **Wt:** 1.5kg

**Cross cut saw:** The cross cut saw is commonly referred to as the misery whip, it is a muscle powered logging saw. Smaller saws have a single handle and are designed for one operator, these have a blade about 1.5m (5 feet) long, the larger designs have a handle on each end and are intended for use with two sawyers, these generally have a blade 1.8-3m (6-10 feet) long. The crosscut saw can be bowed in half for carrying. These saws remain in use primarily with Smoke Jumpers and for use in wilderness areas. It is

much more difficult to operate the two person saw than most people would assume, it takes close coordination between the two sawyers to effectively operate these saws.
**Price:** $150-200 **Wt:** 2-3kg

**Drip Torch:** This is a tool used to ignite fires, often for firing operations during fire suppression or controlled burning for resource management. The drip torch is a cylindrical cannister which holds 6 liters (1.5 gallons) of a flammable mixture (usually gasoline and diesel fuel). The fuel mixture is dispensed through a spout approximately 0.3 meters (1 foot) long, an enclosed wick ignites the mixture as it leaves the spout.
**Price:** $100 **Wt:** 5kg

**Forestry shovel:** This is a short handled shovel about 1.2 m (4 feet) long. The shovel is the workhorse of the wildfire inventory, it is used to scrape light fuels from the dirt when building fire line, may be used to throw dirt cooling or smothering flames and the edges are sharpend allowing it to chop down saplings and cut branches from brush or trees.
**Price:** $50 **Wt:** 1.5kg **Range:** L **Hit Mod:**-2 **Damage Value:** 1d6+STR/2

**Fusie:** Very similar to the common road flare, fusies have a burn duration of 10 minutes and are about 0.3 meters (1 foot) long, they can be linked together increasing the burn duration and reach. The longest practical fusie "staff" would be 5 or 6 fusies long. Fusies are used for the same ignition tasks as drip torches but are more portable, most firefighters carry 2-4 fusies with their gear.
**Price:** $1 **Wt:** 0.2kg

**McLeod:** This is combination of a rake with long tines on one side and a cutting / scraping edge on the other. It is most successful in grasses and timber litter. Generally the rake side is used to pull loose material aside, the cutting edge is then used to scrape the ground to mineral soil while building fireline.
**Price:** $75 **Wt:** 2kg **Range:** L **Hit Mod:**-2 **Damage Value:** 1d6+STR/2

**Pulaski:** Named for its inventor Edward Pulaski, one of the early pioneers of organized wildfire suppression in the U.S. The Pulaski is a combination axe and hoe. The axe is used to perform standard cutting chores and the grubbing or hoe side is used to dig up roots, scrape light fuels down to mineral soil and loosen dirt for other tools.
**Price:** $50 **Wt:** 2.5kg **Range:** L **Hit Mod:**-2 **Damage Value:** 1d6+STR

**Swatter:** This resembles a thick rubber mud flap on the end of a 1.8m (6 foot) handle. It is used to beat out flames in light fuels like grasses where it is suprisingly effective when properly used. It is commonly found in the South West and Alaska. Variations of the swatter are common world wide and range from a flap of wet canvas or a truck inner tube on the end of a pole to the most simple method of using a freshly cut tree limb (which often works just as well).
**Price:** $50 **Wt:** 3kg

## Power tools

**Chainsaw:** The gas powered chainsaw has become one of the most useful cutting tools, largely replacing the axe, brush hook and hand saw. When equipped with the more common straight bar it can make quick work of falling trees and cutting up logs, it can be used on brush as well but for that task the bow bar is preferred. The bow bar is a large oval shaped hoop which the chain runs around, it has a hook on the top and bottom which is used to catch brush allowing the chain to cut it. Chainsaws come in a variety of sizes, most of those used are medium sized industrial models with bars from 0.45-0.6m (18-24"), areas with large trees tend to use larger saws with bars from 0.75-1.2m (30-48").
**Price:** $400-800 **Wt:** 6.8-11.4 kg **Range:** L **Hit Mod:**-2 **Damage Value:** 3d6
**Fuel Cap:** 1-1.5 liters **Fuel Cons:** 2-3 liters per period

**Floato-pump:** This is a portable pump which is placed in a water source where it floats on the surface and pumps water to hoses, it only needs water about 0.18m (8") deep to operate. It is often used when there is no road access for a fire engine.
**Price:** $1000 **Wt:** 11kg **Pump flow:** 114 liters / min (30 gallons per minute) **Fuel Cap:** 4 liters **Fuel Cons:** 3 liters per period

**Fusie dispenser:** This is an ignition device mounted in a helicopter, it uses short fusies (about 3 minute duration) which are ignited as they are dropped from the dispenser at a set rate.
**Price:** $2500 **Wt:** 10kg **Magazine:** 40 fusies

**Fusie launcher:** This device is made to launch fusies during firing operations. It is generally powered by compressed air and has a range of approximately 100 meters. Often these are "home built" using a section of pipe, an air line and an air compressor.
**Price:** $100 **Wt:** 2kg **Range:** 15

**Heli-Torch:** This is another aerial ignition device. It consists of a 55 gallon drum of a flammable mixture (usually gasoline and diesel fuel) slung beneath a helicopter. It has a spout with an ignition source at the end remotely operated by the pilot. The helicopter flies over the desired ignition site and burning fuel is dumped over the area, the fuel can be split into several drops by opening and closing the spout.
**Price:** $2500 **Wt:** 120kg

**Leaf Blower:** This is a standard gas powered commercial leaf blower, it is occasionally used in the Eastern United States in hardwood forests for constructing fire line (it is used to blow the leaves away from an area creating a fire break).
**Price:** $150 **Wt:** 6.8kg **Fuel Cap:** 2 liters **Fuel Cons:** 2 liters per period

**Ping pong ball aerial ignition device:** This is an ignition device mounted in a helicopter, ping pong balls are filled with a chemical, just as the ball is dispensed from the machine a needle injects a second

chemical resulting in a reaction, a few seconds after being dropped the ball "melts" igniting any nearby combustables. Despite Hollywood depictions of exploding ping pong balls, these ping pong balls simply ignite into a small pool of burning goo.
**Price:** $3500 **Wt:** 18.2kg **Magazine:** 250 ping pong balls

**Portable pump:** This is a gasoline powered water pump, these are generally more powerful than floto-pumps. Most portable pumps use a special 19 liter (5 gallon) fuel can similar to the type used with an outboard motor. The pump uses a 3m (10 feet) semi flexible hard suction hose to draft from a water source and most only need about 0.15m (6") of water to operate. Portable pumps are often used to supply water to hoses when there is no road access for a fire engine.
**Wt:** 20.5kg (fuel can adds 14kg) **Pump flow:** 190 liters / min (50 gallons per minute)
**Price:** $1500 **Fuel Cap:** 19 liters **Fuel Cons:** 4 liters per period

**Terra Torch:** Otherwise known as a flame thrower. This is a trailer mounted flame thrower generally used for controlled burning. Terra Torches are uncommon.
**Price:** $2500 **Wt:** 365kg **Fuel Cap:** 190 liters

| ROF | Damage | Pen | Magazine | Recoil | Range |
|---|---|---|---|---|---|
| SA | fire | Nil | 50 | 4 | 5 |

**Very pistol:** This is a flare pistol which fires 12 gauge incediary flares, it is used to ignite fires at a distance during firing operations.
**Price:** $100 **Wt:** 1kg **Range:** 10

## Personal gear and safety equipment

**Boots:** Heavy leather boots with 8-12" ankle protection. Boots are the closest thing to a status item with wildland firefighters, most equipment is issued but boots are generally purchased by the user. Once an individual has spent 21 days in a pair of boots they understand the value of a good pair. Generally new firefighters buy the most economical pair of boots available (usually $80-120), more seasoned veterans will spend the money for the best they can get often paying $250-400, custom fit boots are not uncommon. This money goes for quality construction not glitter, it is spent for comfort not vanity. So when meeting an unknown firefighter the first impression is often determined by a glance footward, a cheap pair of boots says I am inexperienced or I spend most of my time in the office.
**Price:** $80-400 **Wt:** 4kg

**Chain saw chaps:** These are similar to the chaps used by horse riders but are made of kevlar cloth. They are designed to protect a chainsaw operators legs from the saw. If the saw cuts into the chaps the kevlar

abrades away quickly jamming the saw and usually protecting the sawyer, the chaps are generally destroyed in this process.
**Price:** $150 **Wt:** 1kg

**Fire Shelter:** This is a tent made of heavy duty aluminum foil backed with fiberglass cloth, it is used as a last resort when trapped by fire. It may sound like a worthless piece of equipment unlikely to work but it reflects 95+% of the radiant heat generated by a fire and has been credited with saving the lives of more than 300 firefighters in the U.S. since its introduction in the 1970's. Its use is largely restricted to the United States although Austrailia was involved in its development. It is a required piece of equipment in the U.S. but most other countries do not issue them due to the cost. It is prepackaged folded into a rectangle about 0.15m x 0.24m (6x10") and issued with a canvas cover which is hung on a belt.
**Price:** $100 **Wt:** 1.5kg

**Hardhat:** This is a standard plastic construction helmet, full brim and cap styles are both common and vary by region, often a fire resistant cloth shroud is attached to the helmet to protect the face from burns. A few agencies issue helmets with the look of a traditional firefighters helmet.
**Price:** $25 **Wt:** 0.4kg

**Headlamp:** This is a battery powered headlamp designed to fit on a helmet. It is bright enough to allow a person to walk confidently in broken terrain on a dark night and will last approximately 6-8 hours on four AA batteries. The most common designs use a large rubber band which goes around the outside of the helmet.
**Price:** $15 **Wt:** 0.2kg

**Nomex or Fire resistant cotton clothing:** Nomex is a fire resistant cloth, fire resistant does not mean fire proof, it will burn but when removed from a source of heat the fire goes out. The most common designs are jump suits or a long sleeved shirt and pants, designs that include lots of pockets are popular. Fire resistant cotton is often used as a substitute material, it is regular cotton treated with a fire resistant chemical and is about one half the cost of Nomex. Both materials are about the weight and thickness of heavy cotton or denim.
**Price:** $200 **Wt:** 1kg

**Web gear:** Similar in fuction to military web gear, in fact some agencies use surplus web gear. The most common designs blend military and recreational technology, these generally include a detachable pack (about the size of a day pack), pouches for canteens (2-6 1 liter canteens), holders for 2-6 fusies and a pouch for a fire shelter at the small of the back. Additional small pouches on the shoulder straps can be added to most for notebooks, weather kits, compasses, flashlights etc. Web gear is available in a multitude of colors ranging from camoflage to bright pink.
**Price:** $100 **Wt:** 1.5kg

## Misc. Equipment

**Belt Weather kit:** This is a small kit designed to fit on a belt, it includes a compass along with several specialized pieces of equipment used to determine the current wind speed / direction, air temperature and humidity. A notebook and pencil are included for documenting the results. None of the equipment is electronic.
**Price:** $100 **Wt:** 1kg

**Fire Line Handbook:** This is a book about the size of a standard paperback book which is often carried by crew leaders. It includes charts used to calculate fire behavior including rate of spread, probability of ignition, flame length etc, most of these charts require a weather kit to obtain current data needed for these calculations. In addition to this there are charts with estimations of work potential for various resources, safety reminders and other useful information including first aid, compass use, hand signals etc.
**Price:** $10 **Wt:** 0.5kg

**Hose:** Fire hose, this comes in 3 sizes.
**3/4" (19mm)** This comes in a 15.2m (50 feet) length and is about the diameter of a garden hose but is made of a thin material, it can be rolled up to the size of a flat soft ball. It can flow up to about 38 liters (10 gallons) per minute. **Price:** $20 **Wt:** 0.5kg
**1" (25mm)** This comes in a 15.2m (50 feet) or 30.3m (100 feet) lengths. It can flow up to 114 liters (30 gallons) per minute. **Price:** $50-100 **Wt:** 2-4kg
**1.5" (37mm)** This comes in a 15.2m (50 feet) or 30.3m (100 feet) lengths. It can flow up to 380 liters (100 gallons) per minute. **Price:** $50-100 **Wt:** 4-8kg

**Hose Accessories:**
**Adaptors:** These come in a wide variety of designs based on use and are similar in function to plumbing adaptors, common functions are increasers / reducers to allow a larger or smaller hose to be connected, double male / female to reverse the threads and thread adaptors to allow a different type of thread design to be used. **Price:** $25-50 **Wt:** 0.1kg
**1.5" Gated Wye:** Goes on the end of a hose to split it into 2 "legs", a shut off is included on each exit to stop water from entering that leg if desired. These are often used to run a "trunk line" running a long distance with a wye placed in it at places people would want to have a hose and nozzle. Adaptors are used to use a smaller hose, often a large hose is used for a trunk and a smaller hose is used to provide water at desired locations. **Price:** $50 **Wt:** 1kg
**Nozzles:** Goes on the end of a hose to control the flow of water.
**3/4" (19mm)** This is a standard metal garden nozzle with a range of approximately 10 meters, flow rate is about 13 liters (3 gallons) per minute. **Price:** $5 **Wt:** 0.1kg
**1" (25mm)** This nozzle may be set for 38 or 76 liters (10 or 20 gallons) per minute. It has a maximum range of approximately 20m. **Price:** $25 **Wt:** 0.3kg
**1.5" (37mm)** This is nozzle may be set for 76 or 285 liters (20 or 75 gallons) per minute. It has a maximum range of approximately 30m. **Price:** $50 **Wt:** 0.5kg

# FIRE

**I've worked for the U.S. Forest Service since 1996, during this time I have worked on the Eldorado and Lassen National Forests in Northern California, the Coronado National Forest in South Eastern Arizona and now back to Central California on the Sequoia National Forest. Working for the Forest Service has allowed me to travel to fires in California, Arizona, New Mexico, Nevada, Texas and Mexico. Before working for the Forest Service I was a volunteer firefighter with the Alameda County fire department for about five years, a paid federal firefighter in Monterey, California for one year and I worked for a private ambulance company in Sonoma County for two years.**

Sequoia National Forest Engine 65 on the Manter fire, Sequoia NF, CA (7/2000)

Coronado National Forest Engine 32 on a fire
while detailed to Elko, NV (8/99)

Tanker 55 (retired P2V Neptune) dropping retardant
on a fire near the Arizona / Mexico border (5/99)

Lassen National Forest Engine 1-3 and crew after a long night on a fire (7/97)

Eldorado National Forest Engine 5-4 in front of station (6/96)

Naval Support Activity Monterey Bay Fire Dept. Station 1 (Naval Postgraduate School)

Naval Support Activity Monterey Bay Fire Dept. Station 2 (Ft. Ord)

Alameda County Fire Department Engine 5241 and crew after a structure fire (7/95)

Propane fire training Alameda County Fire Department (9/94)

Redwood Empire Life Support Medic 52

**and now other peoples stuff.**

U.S. Forest Service Fire and Aviation