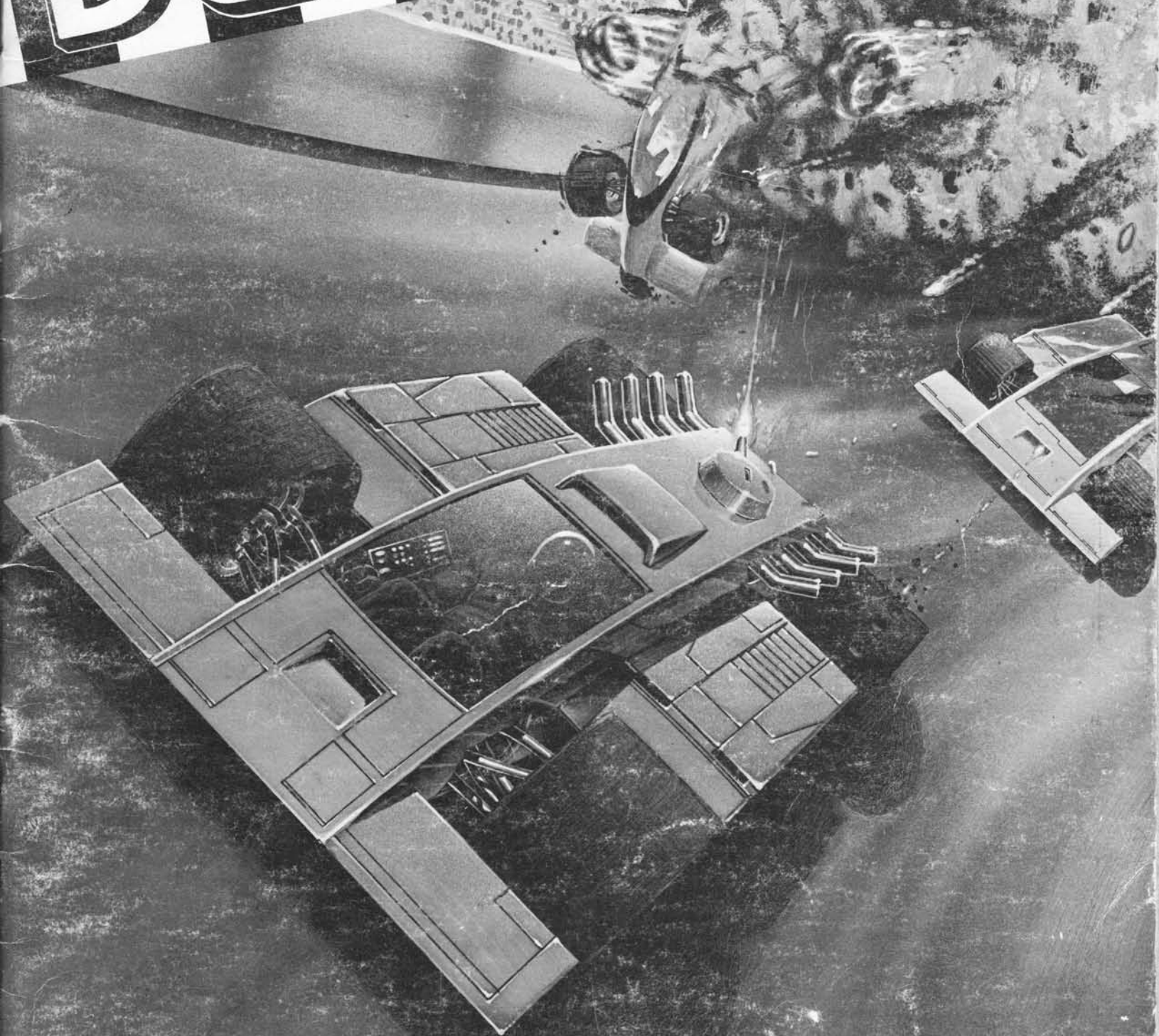


a CAR WARS[®]
DELUXE SUPPLEMENT

DUELTRACK[™]



Denis Loubet '85

STEVE JACKSON GAMES

DUELTRACK™

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Introduction

It's 2036 . . . and an unfamiliar sound echoes off the arena walls. It's the whine of a perfectly-tuned, high-performance internal combustion engine as it powers a sleek racing machine down the track.

Gasoline and its chemical relatives stopped being the energy of choice nearly 40 years ago — what little is left is hoarded by the military or enjoyed by the eccentric rich. For where there's a lot of money, there's usually a way. . . .

Dueltrack is a supplement for *Car Wars* — you will need the original game to play (either the Pocket Box version or the Deluxe version).

Those of you who've been playing *Car Wars* for a while know that gasoline is extremely scarce in 2036. Yet the demand among *Car Wars* players for gas-powered vehicles has remained high — high enough for us to do this supplement. So where did the gas come from?

Well, we never said it *all* went away. There is gas to be had, if you have enough money. But before you design a car to go across the country (or even across the county!), remember that finding enough juice to fill your tanks along the way will be nearly impossible — at any price.

(And by the way, call it gas, or petrol, or gas-ohol, or anything you want; we're not going to be specific. As far as the game is concerned, these vehicles run on a generic distilled liquid petroleum product. One type fits all.)

In racing (pages 22–24), the race organizers usually provide fuel for the competitors — and that fuel is rationed very strictly to each racing team.

Gas-powered duellists (pages 19–21) had better be so incredibly rich that they can afford such expensive pastimes — gas-powered duelling is sort of the thoroughbred horse breeding of 2036.

And in the "Chassis & Crossbow" section (pages 14–18), well, that was years ago, and gas was more plentiful. . . .

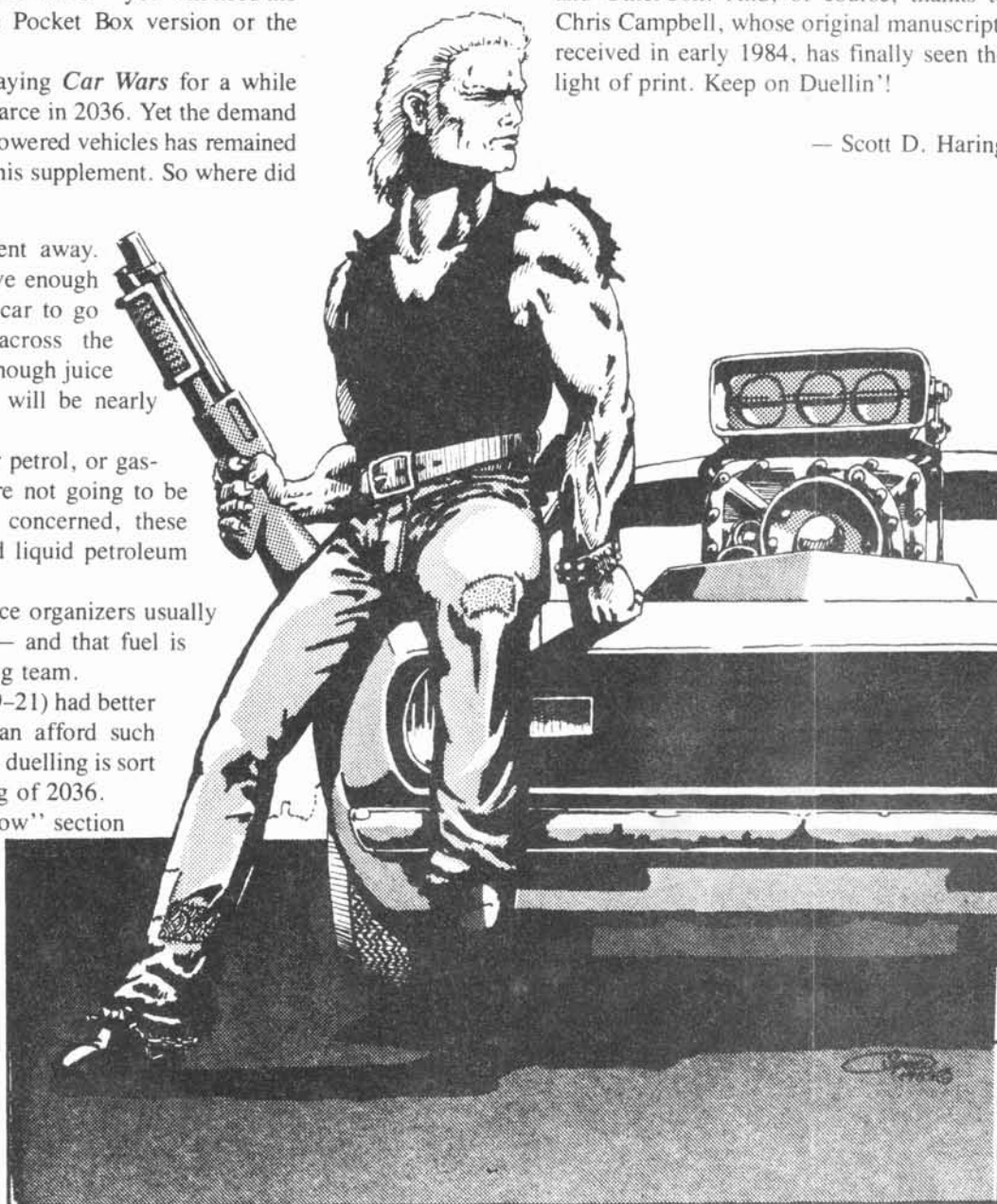
Thanks to Warren Spector, our resident car freak, for lots of information on auto racing and cars in general, and thanks to Steve Jackson for all his helpful comments. Also, a big thank-you to all the American Autoduel Association chapters that play-tested early drafts of *Dueltrack* and helped find the bugs.

Hats off to:

The Royal Autoduelling Association of Australia, the Tulsa Overt Operators for the Betterment of Autoduelling, The New Jersey Foundation for Death on Wheels, The NorCal Transit Authority, the Land of Lincoln Autoduel Association, the Carmel Autoduel Association, the Minneapolis Autoduel Association, and Tim Ray and the River City Autoduel Association.

Thanks also to the playtesters at WarCon and UtherCon. And, of course, thanks to Chris Campbell, whose original manuscript, received in early 1984, has finally seen the light of print. Keep on Duelling'!

— Scott D. Haring



Internal Combustion

An internal combustion engine, at its simplest, explodes controlled amounts of flammable liquid in a sealed chamber and transfers the force of that explosion to a spinning shaft. The shaft, in turn, is connected by gears (the transmission) to the wheels of the vehicle, which push against the ground and move the car.

To keep things simple, some details about the engines described in this supplement will be glossed over, or omitted entirely. For example, the number of cylinders an engine has will not be considered; cubic inch displacement is the only significant measure of an engine's size. Details concerning cooling systems are ignored — it is assumed that every engine has one, and that it is sufficient for that size of engine. Fuel

injection is considered standard, though carburetors (for those on a budget) and fancy gadgets (for those without a budget) are available.

One other thing: Unlike the electric power plants of *Car Wars*, any size engine may be placed in any type of vehicle, provided your vehicle has enough spaces and you can afford the cost and weight. The only exception is the big truck engines, which are explained separately in the "Trucks and Buses" section. The table below gives all pertinent data for the engines available. Most of the entries on the table should be familiar to *Car Wars* players; new terms will be explained later in this section.

Engine Table

Cu. In.	Cost	Weight	Spaces	DP	Power Factors	Base MPG
10	\$400	40	1	1	300	80
30	750	75	1	2	500	70
50	1250	100	2	3	700	60
100	2500	175	3	6	1300	50
150	4000	250	4	9	1900	45
200	5500	320	4	12	2500	35
250	6500	475	5	14	3200	28
300	7800	550	6	16	4000	22
350	9500	650	7	19	5000	18
400	10500	700	9	22	6300	15
450	11700	750	10	24	7800	13
500	13000	800	12	26	9500	12
700	19000	850	14	30	13000	10

Dueltrack

The 10-, 30-, and 50-cubic-inch engines are primarily for cycles and trikes, although technically, a heavy cycle could carry a driver, some armor and a 250-cubic-inch engine! The medium-sized engines (anything from 100 to 350 or 400) will work fine in any car. The 500- and 700-cubic-inch engines are primarily for dragsters (though, again, if you have the spaces in your road — or road-racing — vehicle, more power to you!)

A Note on Movement

Dueltrack expands the *Car Wars* universe in two significant ways — higher speeds and better handling. With these powerful internal combustion engines and some of the accessories described below, speeds well above 200 mph are possible. And the racing vehicles described later in this book have (and need) Handling Classes well in excess of the traditional limit of HC 3. These changes require new additions on two important *Car Wars* tables — the Movement Chart and the Control Table.

The Movement Chart in *Deluxe Car Wars* only goes up to 200 mph. When a vehicle is moving faster than 200, subtract 100 from the vehicle's true speed and consult that line on the chart — but go 2 inches where a "1" appears and 3 inches where a "2" appears.

Example: A race car is tearing up the track at 230 mph. Since there is no 230 mph line on the Movement Chart, we look at the "130" line. Every place a "1" appears — phases 1, 2, 4, 5, 7, 8, and 10 — we'll move 2 inches, and every place a "2" appears — phases 3, 6, and 9 — we'll move 3 inches.

If you are using the Movement Chart from the original *Car Wars* set, you'll notice it only goes up to 100 mph. For speeds between 100 and 200 mph, look at the line for the speed 100 mph less than your actual speed (if you're going 165, for example, look at the "65" line), and go 1 inch in every phase a blank appears, and 2 inches every phase in which an "X" appears. For speeds between 200 and 300, look at the line for the speed 200 mph less than you're actual speed (if you're going 240, for example, look at the "40" line), and go 2 inches in every phase

a blank appears, and 3 inches every phase in which an "X" appears.

The "Ram" column on the far right of the Movement Chart has a very simple progression beyond 200 mph — simply add another die of damage for each additional 5 mph of speed.

The Control Table needs to be expanded in two directions, to accommodate higher speeds and greater Handling Classes. A new Control Table appears on the back cover.

Acceleration

Acceleration for internal-combustion powered vehicles is calculated using the power factors of the engine and the total weight of the vehicle, just as in basic *Car Wars*. For cars, cycles, and trikes, apply the following guidelines when designing your vehicle: If the number of power factors is less than $\frac{1}{3}$ the vehicle's total weight, it is underpowered and will not move. If the power factors are at least $\frac{1}{3}$ the weight but less than $\frac{1}{2}$, the acceleration is 5 mph. If the power factors are at least $\frac{1}{2}$ the vehicle's weight but less than the weight itself, the acceleration is 10 mph. If the power factors are equal to the weight or greater, the acceleration is 15 mph.

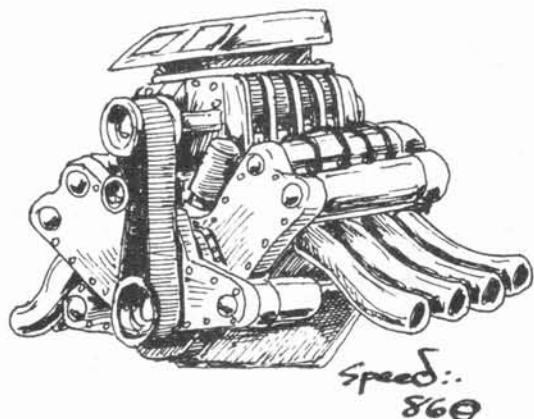
Example: A vehicle with a 250-cubic-inch engine (3200 power factors) weighs 6600 lbs. One-third of the vehicle's weight is 2200; one-half is 3300. The power factor figure of 3200 falls in between; therefore, the acceleration is 5 mph. To get to 10 mph, you'd either have to cut the weight to 6400 pounds (since 3200 is exactly one-half of 6400) or get a bigger engine.

Top Speed

Top speed of internal-combustion vehicles will vary with the engine and the weight being pulled. Top speed is calculated by comparing the power factors of the engine with the total weight of the vehicle (including the weight of a full tank of gas — see "Gas Tanks" below).

A vehicle with more power factors than weight has a top speed above 100 mph; for every 100 power factors (or fraction thereof) above the weight of the vehicle, the top speed is 5 mph above 100 mph. If, after this calculation, you find that your speed is above 170, divide the number of miles per hour above 170 by 10 (rounding to the nearest 5 mph, and rounding down when exactly in between) and then add the result to 170. This is your final top speed.

Some accessories will increase a vehicle's top speed (see "Accessories," below). When these items are in use, add the top speed bonus to the total *before* dividing speed in excess of 170 mph by 10. *Example:* After comparing power factors and weight, a car has a top speed of 190. The amount over 170 is divided by 10 (yielding 2), and the result — 172 — is rounded to 170. Adding an accessory that increases top speed by 10 mph



Internal Combustion

will *not* change the top speed to 180. Instead, add the 10 mph bonus to the original 190, and then divide the amount over 170 by 10. After rounding, the new top speed is 175 (go ahead, figure it out). The only exception is the nitrous oxide accessory — its bonus is added directly to the final, calculated top speed.

A vehicle with more weight than power factors has a top speed below 100 mph; for every 300 factors (or fraction) below the weight of the vehicle, the top speed is 5 mph below 100.

Example: A muscle car with a 400-cubic-inch engine (6300 power factors) only weighs 4190 pounds. There are still 2110 extra power factors. At 5 mph for every 100 or fraction thereof (that's 5×22), we get a bonus of 110 mph to the base speed of 100, giving us a top speed of 210 mph. But speed in excess of 170 mph is divided by 10, so that last 40 mph is really only 4 mph, which gets rounded to 5 mph. So the top speed is 175 mph.

Another Example: A light cycle with just a 30-cubic-inch engine (300 power factors) weighs, with rider, only 325 pounds. Comparing this to the power factors gives 25 power factors too few. At 5 mph for every 300 or fraction thereof (in this case, that's 5×1), we get a *penalty* (remember, there were fewer power factors than pounds this time) of 5 mph to the base speed of 100 — giving us a top speed of 95 mph.

Yet Another Example: A van built for speed crams in the biggest plant it can carry — the 700-cubic-inch giant with 13,000 power factors! After adding a driver and four standard tires, the van weighs in at 3120 pounds, which gives it 9880 extra power factors. Normally, this would be worth a 495 mph bonus

(go ahead, figure it out) for a top speed of 595 mph. But that won't do. So, we subtract 170 from 595, leaving 425; divide that by 10 and we're left with 42.5, which is rounded to 40; add this to 170 mph, and the final top speed of the van is 210 mph — still incredibly impressive. On the other hand, this van has no armor or weapons and a HC of 0, so good luck . . .

Vehicle Range

How far a vehicle can travel on a tank of gas depends on two things — the efficiency of the engine and the size of the tank. Note that this rules section comes into play only when you're traveling far enough for vehicle range to make a difference (say, an inter-city trip). For urban and arena combats, it's really not worth bothering with.

Engine Efficiency: Each engine has a "base MPG" rating; this is the number of miles per gallon the engine will deliver at a constant speed of 55 mph. For every *full* 10 mph of additional constant speed, reduce the MPG by 10 percent (always rounding to the nearest whole number, of course, and down when it's exactly in between). The worst the MPG can get in any case is 30 percent of the base value.

For every full 10 mph of constant speed *under* 55 mph, *increase* the MPG by 10 percent (again, rounding to the nearest whole number and down when it's exactly in between). The best the MPG can get in any case is 120 percent of the base value.



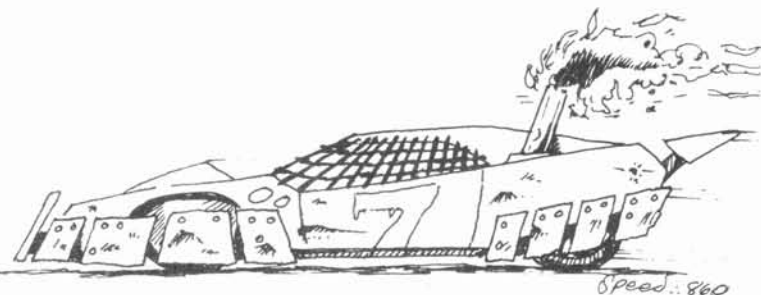
Dueltrack

Once the final MPG has been calculated for a given speed, multiply it by the gallon capacity of the gas tank. This will yield the range of the vehicle.

Example: A 200-cubic-inch engine has a base MPG of 35. At 55 mph, this engine will get 35 miles per gallon. With a 10-gallon tank, that would be a range of 350 miles. If the driver decides to take it up to 90 mph, however, his efficiency will drop. Ninety minus 55 is 35 mph too fast, which is good for a 30 percent reduction in MPG (remember, it's 10 percent for every full 10 mph). 30 percent of 35 is 10.5, which is rounded to 10. The new MPG rating is only 25, which multiplies out to a range of 250 miles with the same 10-gallon tank.

If the same driver prefers to take it easy and drop to 40 mph, that's 15 mph slower, good for a 10 percent *bonus*. 10 percent of 35 is 3.5, which is rounded to 3. Added to the base of 35, we get a new MPG rating of 38, and a new vehicle range of 380 miles.

Gas Tanks: The gas tank should be considered a separate component in a vehicle, and should be drawn in separately on the vehicle record sheet. A gas tank can be any size and can hold any whole number of gallons — even just one.



There are four different types of gas tanks, with varying degrees of safety; their stats are given below. The number of spaces a gas tank takes up, though, is the same for every type. A tank of 5 gallons or less takes up no space; 6-15 gallon tanks take up 1 space; 16-25 gallon tanks take up 2 spaces; 26-35 gallon tanks take up 3 spaces; and so on. If multiple tanks are used, calculate the space taken up using the total capacity of the combined tanks.

Here are the four types of tanks:

Economy Tank. Weighs 1 lb. and costs \$2 per gallon of capacity. (Example: a 20-gallon Economy tank costs \$40 and weighs 20 lbs.; the cost and weight of the gas itself is figured separately.) The Economy tank has 2 DP. Treat the tank like a building for breaching purposes; damage less than the DP value of the tank (in this case, 1) has no effect. Damage equal to or greater than the DP value of the tank (in this case, 2 or more) will cause a breach. When a tank is breached, roll one die and multiply the result by 20% — that is the percentage of the amount of gas in the tank that leaks out.

The gas is lost immediately, and no further rolls for gas loss are necessary. Any gas lost is taken “off the top” — that is, if the tank is already only partially full, and the percentage of fuel lost is less than the portion of the tank that is already empty, then the hole in the tank is above the fuel line, and no additional fuel is lost. Of course, if you roll a 5 or a 6, you lose all your fuel immediately!

Example: A 15-gallon Economy gas tank takes three points of damage, so it is breached. A die is rolled, and comes up 3. Three times 20% is 60%, so 9 gallons of gas (60% of 15) is immediately lost. If there were only 7 gallons in the tank to begin with, only one gallon would be lost — in either case, 6 gallons would remain. When an Economy gas tank is breached, there is also a greater chance of the vehicle catching on fire than with other tanks (see “Fire and Explosion,” page 9.)

Heavy-Duty Tank. The Heavy-Duty gas tank weighs 2 lbs. and costs \$5 per gallon of capacity. (Example: a 12-gallon Heavy-Duty gas tank would weigh 24 lbs. and cost \$60 — the cost and weight of the gas itself would be figured separately.) It's just like the Economy gas tank in all other respects, except that it has 4 DP instead of 2.

Racing Tank. The Racing tank is considered the standard for all modern race vehicles. The Racing tank uses the latest safety technology, including compartmentation and PetroSafe (TM), a sponge-like substance that holds the fuel and keeps it from sloshing and leaking. The result is that even if the tank is breached, fuel loss will be minimal. The Racing tank has 4 DP, and breaches are determined in the same way as for the Economy and Heavy-Duty tanks. Once the Racing tank is breached, however, roll one die and multiply the result by only 5% — that's the amount of gas that will be lost.

Example: A 20-gallon Racing tank takes 6 points of damage and is breached. A die is rolled, and comes up 2. Two times 5% is 10%, so only 2 gallons (10% of 20) of fuel is lost. The Racing tank also has less of a chance of catching on fire when breached than the Economy and Heavy-Duty tanks do (see “Fire and Explosion,” page 9).

The Racing tank weighs 5 lbs. and costs \$10 per gallon of capacity. (Example: An 18-gallon Racing tank would weigh 90 lbs. and cost \$180; the cost and weight of the gas itself is figured separately.)

Duelling Tank. This top-of-the-line tank is for duellists who want to take as few risks as possible. The Duelling tank has the same internal safety features of the Racing tank, plus it's more heavily armored — 8 DP! Breaches are determined in the usual way. The Duelling tank weighs 10 lbs. and costs \$25 per gallon of capacity (Example: An 8-gallon Duelling tank would cost \$200 and weigh 80 lbs.; the cost and weight of the gas is figured separately.) The chance for fire and explosion is the same as for the Racing tank.

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When figuring the weight of a vehicle for the purposes of calculating top speed and acceleration, the weight of the fuel must be considered. Fuel weighs 6 pounds per gallon. Base all weight calculations on a *full* tank of fuel. Players — if they are so inclined — can refigure their vehicle's weight with the consumption of each gallon of fuel, and recalculate top speed and acceleration based on the new weight figure, but we strongly recommend against it: Reaching for the calculator every few turns slows down the game too much. But if such number-crunching really excites you, go to it.

Fuel costs vary from campaign to campaign, and from region to region, according to the whim of the referee, but we recommend a price of around \$40 a gallon (where it's available at all). The cost of fuel counts against the total cost of any vehicle (again, assume a *full* tank when figuring cost). The costs of the sample vehicles given later in these rules use the \$40 per gallon figure.

Here's a table to recap the gas tank information:

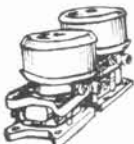
Tank type	DP	Wt./gallon	\$/gallon
Economy	2	1 lb.	\$2
Heavy-Duty	4	2 lbs.	\$5
Racing	4	5 lbs.	\$10
Duelling	8	10 lbs.	\$25

Accessories

There are a number of accessories available for internal combustion engines. They are:



1 if it started below 10). Installing a carburetor is a Medium job for a mechanic.

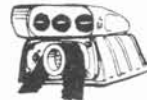


Carburetor. Saves 20 percent of the engine cost, no weight or space. By taking out the fuel injection system and replacing it with an old-fashioned carburetor system, you can save money. But top speed will drop by 10 mph, and the Base MPG rating goes down by 2 (only

Multiple-carburetor System. Save 10 % of the engine cost, no weight or space. Top speed only drops by 5 mph, and the Base MPG rating goes down by 1. Installing the multi-carb system is a Medium job, but switching from a single carb to a multi-carb system is an Easy job.



Turbocharger. Costs \$1,000, no weight or space. A turbocharger uses exhaust gases to power a turbine which forces more air and fuel into the engine, improving performance. A turbocharger will increase top speed by 10 mph, and will increase acceleration by 5 mph once the vehicle is going 40 mph or faster (no acceleration bonus at slower speeds). It does not affect MPG, but an engine equipped with a turbocharger is more likely to be severely damaged due to a loss of oil pressure. Installing a turbocharger is a Hard job for a mechanic. No vehicle except a dragster (see "Specialty Racing Vehicles," page 22) can mount a turbocharger and a supercharger.



Supercharger. Costs \$1,500, weighs 20 percent of engine weight, and takes up 1 space. A supercharger works like a turbocharger, except it runs off the engine itself instead of the exhaust gases. The supercharger will increase top speed by 10 mph and acceleration by 5 mph, but (unlike the turbocharger) the acceleration bonus is good at all speeds. Use of a supercharger will reduce the MPG of an engine by one. Installing a supercharger is a Medium job for a mechanic. A supercharger can't be installed on an engine smaller than 150 cubic inches.



Nitrous Oxide. One tank of this stuff costs \$500, weighs 20 pounds and takes up 1 space. When it is opened (by hitting a button on the dashboard, which is a firing action), acceleration goes up by 10 mph and top speed becomes 1.5 times the previous rating — for five seconds. (If the top speed of your race car is usually 180, for example, then when you hit the nitrous, the top possible speed during that five-second burst goes up to 270!) Then the nitrous oxide (and a full gallon of gas) is gone.

At the end of the five seconds, the vehicle decelerates by 10 mph per turn automatically until its speed is back below the regular top speed for the vehicle. This is "free" deceleration; you can put on the brakes to slow down even more, and the "free" deceleration does not count toward the hazard of excessive braking. Recharging the tank costs \$200, but availability of nitrous oxide is up to the referee. Installing the nitrous oxide system is an Easy job for a mechanic.

Engine Damage

Internal combustion engines are much more complex than the electric fuel cells of *Car Wars*, and are therefore easier to damage.

Each engine has a set number of DPs — when an engine takes more damage than it has DPs, it stops working immediately.



The vehicle decelerates by 5 mph each turn, and weapons that ran directly off the engine (like lasers) stop working, too. Other weapons and accessories continue to operate.

Even a partially damaged gas engine may not function as well as an undamaged one. *Every time* the engine takes damage, immediately roll 2 dice and consult the following table:

Engine Critical Damage Table

2: Black smoke pours out of the engine compartment (not enough for a smokescreen, but enough to deliver a good scare . . .).

3-5: *Clang!* Something got hit in there . . . but performance is unaffected.

6: After 5 seconds, the oil gauge will show a dramatic loss of pressure, and will stay there until repair. But it is the gauge, not the oil system, that is damaged.

7: Hideous grinding noises come from the engine. Roll again on this table. If you get "7" again, stop rolling. No other effect on performance.

8: *Cylinder!* You've blown a seal or lost a valve. Acceleration drops by 5 mph (but never goes below 5), and top speed drops by 20 mph (if you're going faster than your new top speed, you decelerate at 10 mph per turn until you get within your new limits). Repairs will cost 25 percent of the cost of a new engine, and are considered a Very Hard job for a mechanic.

9: *Radiator!* In 10 seconds, your temperature gauge will be in the red. For every second the engine continues to run after that, roll one die — on a 6, the engine seizes up and is totally ruined. For full effects, see entry under "Disaster," below. If you shut off in time, repairs will cost 10 percent of the cost of the engine, and are considered an Easy job for a mechanic.

10: *Oil System!* In 5 seconds, your oil pressure gauge goes in the red. Starting after 3 seconds, roll one die — on a 6, the engine seizes up and is totally ruined. A turbocharger is especially sensitive to oil pressure. If the engine in question is equipped with a turbocharger, the chance of an oil-related disaster doubles — it happens on a 5 or a 6.

Since you (as your driver character, that is) don't know there's a problem until the gauge tells you, there will be two seconds in which your engine may self-destruct without warning — those are the breaks! For full effects, see the entry under "Disaster," below. If you get lucky and shut down in time, repairs will cost 10 percent of the cost of the engine, and are considered a Medium job for a Mechanic.

In either case, place an oil slick immediately behind the vehicle — but only *after* the engine seizes up or the oil gauge drops — don't let the oil slick give the driver an early clue that there's a problem! Oil Jet and Flaming Oil Jet weapons are completely separate systems, and are not affected by this result.

11: *Fuel System!* The car will shut down by itself in 5 seconds, (the engine will be starved for gas), but otherwise performance is unaffected. Now for the bad news — you may be on fire! (See the section on "Fire and Explosion," below.) If there is a fire, the vehicle will leave a patch of burning gasoline behind it! Treat this as a flaming oil slick in all respects. Repairs will cost from 10 to 60 percent of the cost of the engine (roll one die and multiply by 10 — if it's a sliced fuel line, it's a cheap fix, but if it's the fuel injection computer, well. . .), and are considered a Medium job for a mechanic.

12: *Disaster!* The block is cracked, or a rod is thrown, or something else equally bad happened. You decelerate at least 15 mph per turn (more if you want to put on the brakes), until you get to 20 mph; you lurch along at that speed for five more seconds, and then the engine dies a miserable, permanent death. Turning it off early won't help. The engine is totally ruined — get a new one. Place an oil slick behind the vehicle each of the next three times the vehicle moves. Replacing an engine, by the way, is considered a Hard job for a mechanic.

Secret Engine Damage: The referee can make all the appropriate rolls on the table above and immediately tell players what happened; alternatively, he can roll and, if something goes wrong, not tell the player the result until something noticeable actually happens.

For example, the ref could roll a "Radiator" result, and just keep quiet about it. Then, ten turns later, he could announce, "Hey, Car #43, you just noticed that your temperature gauge is in the red. What are you going to do?" This will add to the realism of racing, and drive up the blood pressure of the players.

Fire and Explosion

One of the most disturbing things about internal combustion engines is their unfortunate tendency to burn and explode at inconvenient times. Whenever an engine takes substantial damage in a single turn, or the "Fuel System" result is rolled on the Engine Critical Damage Table, there is a chance of fire. There is also a chance of fire when a gas tank is breached.

The chance of fire varies depending on the circumstances. In all cases, roll two dice; if the number rolled is equal to or higher than the number needed, there is a fire!

Engine takes more than 4 points of damage in a single turn: 10.

Engine takes more than half its total DP in a single turn: 9.

"Fuel System" result is rolled on the Critical Engine Damage table: 9.

Economy or Heavy-Duty gas tank is breached: 7.

Racing or Duelling gas tank is breached: 9.

In the case of "Fuel System" damage, roll *every turn* until the engine is shut off or runs out of gas; in all other cases, roll just once. The die roll is also modified by the following:

If the damage was done by a light or regular laser: +1

If the damage was done by a heavy laser: +2

If the damage was done by a flamethrower or flaming oil: +3

If the damage was done by a heavy-duty flamethrower: +4

Every part of a vehicle that is on fire takes one point of damage at the end of every turn (as in basic *Car Wars*). If a vehicle is equipped with a fire extinguisher, it will get a chance to put out the fire before any damage is assessed. Internal combustion fires are particularly nasty, however. A standard *Car Wars* fire extinguisher system puts out a gas fire on a 1 or 2 out of 6; the improved fire extinguisher works on a 1-3; and the portable fire extinguisher works on a 1 out of 6.

After a fire extinguisher system (if any) has had a chance to put out the fire, and after the point of damage has been assessed, then comes the chance for an explosion. In *Car Wars*, there is a 1 in 6 chance of explosion if a vehicle is carrying certain volatile weapons: rockets, missiles, flamethrowers, flaming oil, mines, AT gun, tank gun, or incendiary ammo. An internal-combustion system will also explode on a roll of 1 on a 6-sided die. If a vehicle has an internal-combustion engine **and** any of the dangerous weapons listed above, the chance of explosion increases to 2 in 6 per turn.

In the event of an explosion, anyone inside or on the vehicle is killed instantly, and the vehicle is totally destroyed, leaving a flaming hulk. All pedestrians or vehicles within 2" take 1 die of damage; this damage should be treated like flamethrower fire, possibly setting additional fires.

If the variant fire system from *Deluxe Car Wars* is used,

give all hits to the engine a +2 burn modifier, and all hits to the gas tank a +3 burn modifier.

Repair and Salvage

Repair cost and difficulty for the different types of critical engine damage are given on the Engine Critical Damage Table. General engine damage costs 10 percent of the cost of the engine per point of damage to repair, and is considered a Medium task for a mechanic. Repairing a gas tank also costs 10 percent of the cost of the tank per point of damage, but is considered an Easy task.

General engine maintenance costs \$100 a month for duelling vehicles, \$500 a month for racing vehicles. This covers the cost of oil changes, tune-ups, new spark plugs, and the myriad little adjustments to wring every bit of horsepower out of an engine.

It should be possible to salvage parts from the engine of a defeated foe. Working on the side of the road, items that can be grabbed include the carburetor, radiator, alternator, various pumps, battery, and other small pieces. The chance of any part being usable on any other given engine is slim (too many different types of engines out there) — a 1 in 6 chance for any given piece.

Even if a salvaged part can't be used by the salvager, there may be others who *can* use it, and there are used parts stores willing to buy anything players can't use. As a general rule, the parts value of what can be lifted on the roadside is half the original cost of the engine. (That's what the strippers can get for it — buying the same parts from a parts dealer would cost as much as the original engine cost.)

If you take a wreck to a full garage, the engine can be lifted in its entirety; portable shops aren't up to the task. Once the salvaged engine is stripped, it can be sold for 80 percent of the original cost of the entire engine. (Again, that's what the strippers can get for it — buying the same parts individually from a dealer would cost *twice* as much as the original engine.) There's a lot of money to be made in the internal-combustion engine parts business, but it's the dealers who make it.



Metal Armor

Metal has always been the first choice for protection from personal harm — for those who could afford it. And in 2036, armor-quality metal is not cheap. It takes extremely high temperatures, and not a little skill, to fashion the scrap that's in such abundance in the junkyards and deserted cities into something that will stop bullets. Some automakers still produce a few metal-bodied models, but the difficulty of repairing heavy metal has kept it unpopular with most drivers and duellists.

In addition to being expensive and hard to work, metal armor is heavy. Metal armor weighs *five times* as much as normal *Car Wars* armor for all vehicle types. It generally costs 2.5 times as much as normal *Car Wars* armor, but the referee can adjust the cost, making metal armor more or less costly depending upon the circumstances of his campaign or scenario.

Even if a player has the weight capacity and the money, there is still the question of availability. In 2036, there are some

places where metal armor simply does not exist — at any price. It's up to the referee to decide the availability of metal armor in a given campaign or scenario.

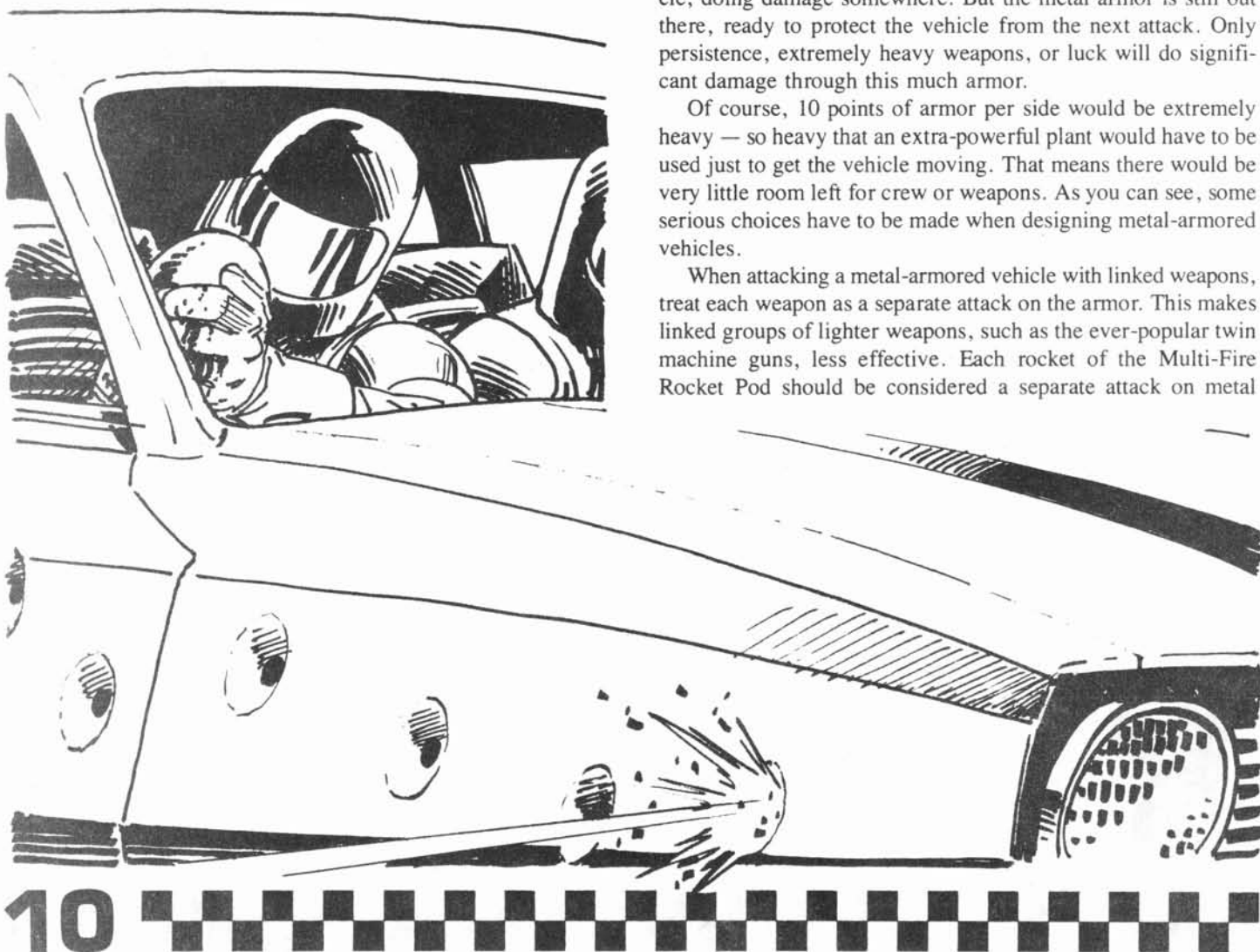
Metal Advantages

Normal *Car Wars* armor is *ablative* — that is, it loses strength as it takes damage. Metal armor is only slightly ablative — any damage in excess of the armor value passes through to the interior of a vehicle, and the armor remains (more or less) intact.

Example: A vehicle has 10 points of metal armor on its right side (as you'll see, this is pretty good!). If a standard machine gun takes a shot, the best it can do is 6 hits — not enough to penetrate. A Vulcan MG, on the other hand, could penetrate, but only if the attacking player rolled well. Let's say he rolls maximum damage — 12 points. The armor will stop 10 of the 12, and the remaining 2 points will enter the interior of the vehicle, doing damage somewhere. But the metal armor is still out there, ready to protect the vehicle from the next attack. Only persistence, extremely heavy weapons, or luck will do significant damage through this much armor.

Of course, 10 points of armor per side would be extremely heavy — so heavy that an extra-powerful plant would have to be used just to get the vehicle moving. That means there would be very little room left for crew or weapons. As you can see, some serious choices have to be made when designing metal-armored vehicles.

When attacking a metal-armored vehicle with linked weapons, treat each weapon as a separate attack on the armor. This makes linked groups of lighter weapons, such as the ever-popular twin machine guns, less effective. Each rocket of the Multi-Fire Rocket Pod should be considered a separate attack on metal



Metal Armor

armor, too. In the case of a rocket guided by a laser guidance link, again do separate damage for the laser and the rocket.

Unlike plastic armor, metal armor is susceptible to hand weapon fire — but not very. Against most hand weapons, treat metal armor as *double* its listed value. One point of armor protects like two, two points protect like four, etc. In other words, most hand weapons are only half as effective against metal armor as they are normally.

Some hand weapons do full damage to metal armor: The tripod-mounted MG and RR; the LAW, and VLAW; the portable laser; and the flamethrower are exceptions to the above rule. Though these are technically hand weapons, they do full damage to metal armor.

Metal armor cannot be set on fire. Fire-based weapons still do damage normally (and interior damage may still set fires), but the armor itself will not catch fire. Metal armor isn't naturally resistant to laser fire, but it can be polished and treated to make it laser-reflective. This adds an extra 10 percent to the cost of the armor, but adds nothing to the weight.

Accessories available in plastic armor (such as wheelguards, armored wheel hubs, component armor, camper shells, spoilers, and airdams) can also be made of metal armor. The metal versions of these accessories cost 5 times and weigh 2.5 times their plastic counterparts. A vehicle with metal armor is not required to use metal accessories — it can still use plastic ones. Just treat the plastic pieces by plastic armor rules, and the metal pieces by the metal armor rules.

Metal-armored vehicles with spoilers and airdams must follow some special rules: Normally, these two accessories are destroyed when all the armor on the side they are mounted on (front for airdams, back for spoilers) is destroyed. Since metal armor is very tough to destroy, a spoiler or airdam mounted on metal armor would last much longer than it should in combat. Use this new rule for plastic spoilers or airdams mounted on metal armor: The spoiler or airdam is destroyed when 30 points of damage hit its side, regardless of how much the metal armor absorbs and how much it lets through. A metal spoiler or airdam mounted on metal *or* plastic armor uses the standard rule.

Damage

Metal armor is not ablative, but that doesn't mean it will last forever. Under some circumstances, it can be damaged. Every time a weapon of any sort hits metal armor, roll the damage — **even if the weapon can't do enough damage to breach the armor**. For every six that comes up on the dice, reduce the armor value in that location by one. This simulates a powerful weapon literally blowing chunks of armor off the car. This loss of DP value is assessed *after* the armor absorbs the damage from the attack in question.

Example: A 6-point side of metal armor is struck with a machine gun, which rolls a 6 for damage. The armor loses a point to 5, but the full MG burst is absorbed first. If the MG hits again and rolls another 6, one point of damage will go through, and then the armor will be reduced to 4 DP.

And if the weapon is a burst-effect weapon (any kind of rocket or missile, recoilless rifle, tank gun, AT gun, etc.), the metal armor hit will be reduced on a 5 *or* a 6.

When metal armor is blown off a car, a player may — if he wants — refigure the weight of the vehicle and recalculate acceleration or top speed (if it changes). On the other hand, play will go much faster if you just make it a house rule to calculate all that information once at the beginning of an adventure or duel and let it stand.



Here's a recap of how various types of weapons affect metal armor:

All weapons: If damage rolled is greater than value of armor in location of hit, damage in excess of the armor value penetrates the armor to affect internal components. In addition, every "six" rolled on damage die reduces the DP value of the armor by one point.

Burst effect weapons: As above, but the DP value of the armor is reduced by one for every "five" *or* "six" rolled on the damage die.

Flamethrowers, lasers, flaming oil, incendiary ammo, and other weapons that have a chance to start a fire: No chance for a fire, unless damage gets past the armor and affects internal components; metal armor is inherently fireproof.

Hand weapons: Treat the armor as twice its listed value (4 DP acts like 8 DP, for example). Exceptions are the hand weapons that do full damage to basic *Car Wars* vehicles: Tripod MG, tripod RR, portable FT, LAW, VLAW, and portable laser.

Repair and Salvage

Salvaging armor from a wreck is an Easy job for a mechanic, but one point of armor is automatically destroyed in the salvaging process. Placing the salvaged armor on another vehicle of the *same make and model* is also an Easy job, and the facings should match, too — that is, armor salvaged from the front of a Hotshot can only be put easily on the front of another Hotshot.

Front, back, top, bottom, and side armor are unique and can't be moved easily from position to position, or from vehicle to vehicle. If a player thinks salvaged armor should fit in another position or on another vehicle, ask the referee — if he allows it, go ahead.

Converting salvaged metal armor to locations it wasn't originally intended to fit is a Very Hard job for a mechanic. When converting the stuff to a vehicle of a different size or to a different facing, find the total weight of the armor salvaged and divide it into the weight per point of the new vehicle type, always rounding down. Working with armor-quality metal is not easy: Ten percent of the metal is ruined, and lost, in the conversion process.

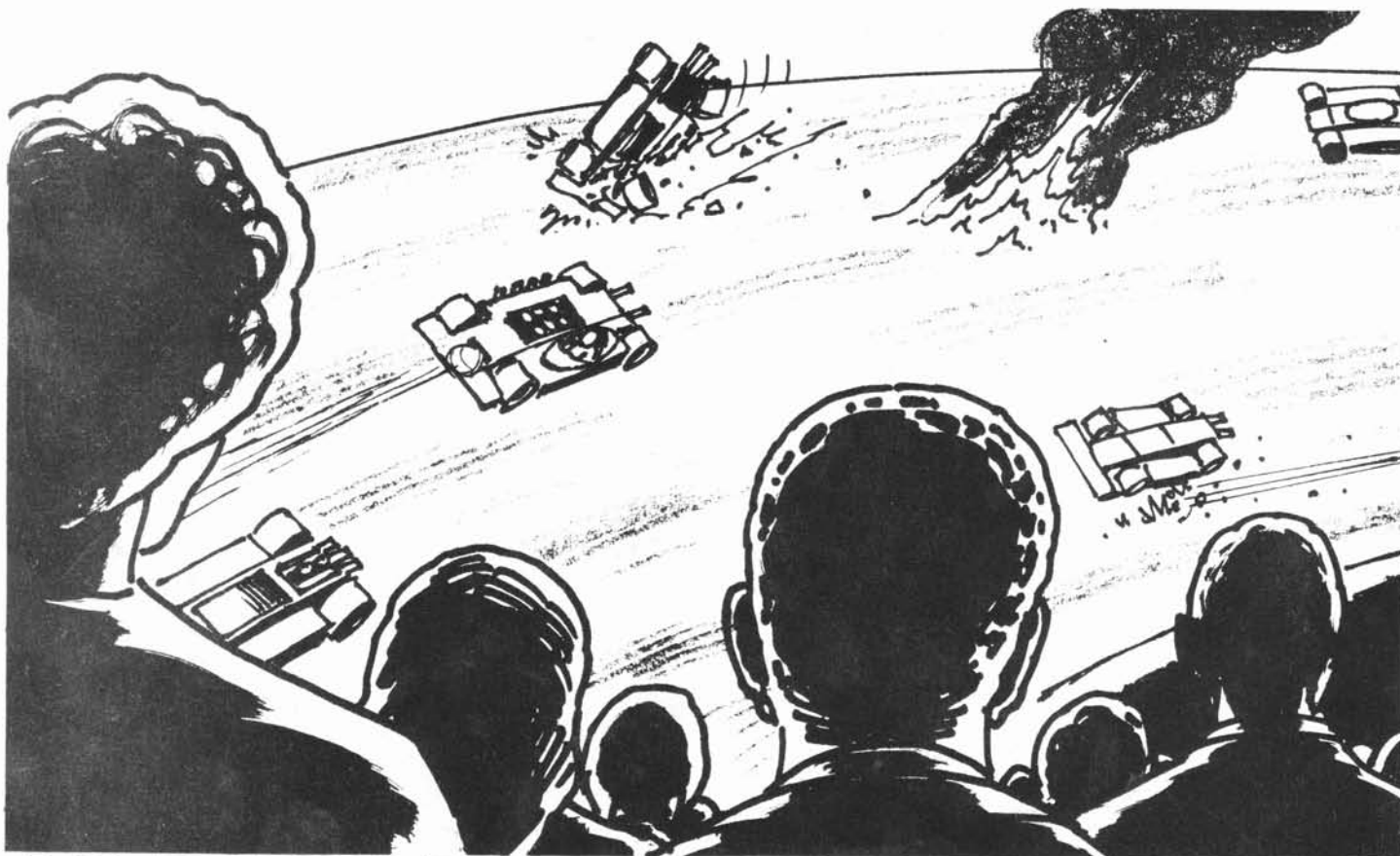
Example: A 16-point plate of metal armor is salvaged from a mid-sized car, and you want to put it on a pickup. Sixteen points

of mid-sized metal armor weighs 640 pounds (16 x 40); 64 pounds (10 percent) is wasted in the conversion process. You've got 576 pounds left, and pickup armor weighs 55 pounds per point. That's ten points of armor, with 26 pounds to spare. The extra 26 pounds can be saved (but the next time you work with it, another 10 percent will be lost), or it can be carried as dead weight — not a good alternative.

If salvage from other vehicles is not available, you can still repair metal armor. Adding each point of armor costs 1.5 times the original cost, and requires 1.5 times the original weight of scrap metal to fashion into the armor patch. The extra weight is lost in the repair process, of course. Restoring a single point of metal armor is a Hard job for a mechanic, and each successful repair by a mechanic restores just one point of armor.

Collisions

Metal armor does not behave like regular *Car Wars* armor in collisions. The basic rules of thumb are: Metal armor is three times more effective than its listed value against collision damage; and the most points the armor itself can lose is half the total on the side involved in the wreck (round down). Ramplates cost the same as before and work normally.



Example: A vehicle with 8 points of front metal armor hits a brick wall at a pretty good clip, and 7 dice of damage are rolled, yielding 29. The front armor will stop up to three times its value, which is 24 (3 x 8). The remaining 5 points of damage go to the interior of the vehicle and are distributed in the normal way for collisions. If the car survives, it will still have 4 points (half the original value) of armor on the front.

Composite Armor

As a variant rule, some referees and players may want to allow composite armor—that is, layering metal and plastic armor together in the same armor location. This would require a fair amount of bookkeeping, and careful reasoning when the composite armor is hit. The layers can be any point values and arranged in any order, though the most efficient would be metal armor outside and plastic armor on the inside in just two layers.

Example: The side of a vehicle has been equipped with three layers of armor: 3 points of metal on the outside, 10 points of plastic in the middle, and 2 more points of metal on the inside. The vehicle is hit with a recoilless rifle shot, and 8 points of damage (a 5 and a 3) is rolled. The 3-point outer layer of metal

armor soaks up 3 of the 8 points of damage, and the 10-point middle layer of plastic soaks up the remaining 5, but is reduced to 5 points in the process.

The next turn, the RR hits again, but only rolls a 3 for damage. The 3-point outer layer of metal armor stops all of the damage, and the plastic layer is untouched.

On the third turn, the RR hits yet again, and rolls an 11—a 6 and a 5! The outer layer of metal armor takes 3 points of the damage away, leaving 8 (and is reduced to one point in the process!). The remaining 5 points of plastic armor in the middle layer is destroyed completely by the 8 points of damage, leaving 3 points to continue on. The 2-point inner layer of metal armor stops 2 of the remaining 3 points (but loses no DP—the outer layer took the loss), and 1 point of damage is done to an interior component.

In future turns, there's one point of metal armor in the outer layer, and two points in the inner layer, with nothing in between; for simplicity, treat this as a single, three-point sheet of metal armor.

Remember, this is a variant. Players should decide among themselves if they want to include this rule when they play. If the referee in your campaign thinks it's too complicated or just plain doesn't like it, his word stands.



Chassis & Crossbow

It wasn't so long ago that "low-tech" duelling was common. Back around the turn of the 21st century, low-tech was the only tech! "Chassis & Crossbow" recreates those good old days.

(Note: A version of this article first appeared in *Autoduel Quarterly* Vol. 1, No. 3. Revisions have made it compatible with *Deluxe Car Wars* and this supplement, but the drama of low-tech autoduellings remains unchanged.)

The Setting

Shortly after the turn of the 21st century, the U.S. government was still recovering from an expensive war of secession with the Free Oil States. The economies of all nations involved were shaky at best. Authentic gasoline was rare (except in the Free Oil States), but many grain-derived alcohol substitutes were used with some success. (This would all change when the Grain Blight of 2016 hit). Military equipment, heavy firearms, and ammunition were in short supply. Outlaw gangs were on the rise, and the weakened governments were in no position to do anything about it. Private citizens began to arm themselves for self-defense, but like the gangs, the lack of high-powered weaponry forced them to improvise.

Vehicle Construction

Vehicles are not so much built in this period as they are *found*. There aren't a whole lot of car lots for shopping purposes, either — players should be forced to use whatever the breaks give them.

All standard body styles of cars, cycles, sidecars, trucks, and buses are available. Helicopters and trikes are not; use the standard *Car Wars* stats for the available vehicle types. The gas engines in these early duelling vehicles should be no bigger than 350 cubic inches, and referees should roll randomly (in some fashion of their own choosing) to determine the precise size of the engine. Most engines have carburetor fuel systems; multi-barrel carbs, fuel injection, turbochargers, superchargers, and nitrous oxide should all be extremely rare.

No improvement of the chassis or suspension is possible in Chassis & Crossbow, so vehicles have HC 1 (HC 0 for vans) and can carry no additional weight over the listed limit. Standard tires are the only kind around, and all vehicles use the Economy gas tank. Fuel is reasonably priced — \$3 a gallon.

Gunners only take up one space in these older vehicles, because the fancy targeting equipment that takes up all that room in modern vehicles doesn't exist in these vehicles. Drivers still take up two spaces, however.

Very few vehicular weapons are available, and those that are can't usually be aimed like basic *Car Wars* weapons. Instead, the weapons are mounted fixed to the chassis. Consider each

weapon to be facing straight out from the side, and fired as if on automatic. There are two accessories, however, that may be helpful for aiming weapons:

Articulated Mount. This is a vehicle weapon mount which allows an arc of fire that is the same as normal vehicular weapons in basic *Car Wars*. It requires that a gunner sit behind the weapon and physically move and fire it. A gunner firing a weapon mounted on this item has no accuracy penalty, even if it's a hand weapon. The driver of a vehicle may fire a weapon with this mount, but at a -2. The Articulated Mount costs \$500, weighs 50 lbs., and takes up one space. Cycles cannot use this item.

Ring Mount. A vehicle with a ring-mounted weapon may not have any top armor, and a vehicle can have only one ring-mounted weapon (cycles can't use this item at all). The gunner stands behind the weapon and swings it in the desired direction before firing. The weapon on this type of mount has a 360-degree arc of fire, but it cannot swing around as fast as a modern-day turret. Each turn, the weapon may change its facing up to 90 degrees. Example: If the weapon is in the front arc of fire, it may swing around to the right or left arc, but not to the back. This type of mount takes up 4 spaces (but the gunner doesn't take up any additional space), weighs 200 lbs., and costs \$1,000. A gunner firing a ring-mounted weapon can fire no other vehicular weapon, though he can fire personal hand weapons.

Either vehicular weapons or hand weapons can be mounted on these special mounts. Hand weapons of three grenade-equivalents or less take up no space when mounted on an Articulated Mount or a Ring Mount (though the weight of the weapon must be counted against the vehicle's chassis limit). Larger hand weapons take up one space on an Articulated Mount. On a Ring Mount, no weapon of any kind takes up any additional space (the Ring Mount acts like a turret in this regard). The weight of the weapon, of course, must still be taken into account.

Without big-time military or underworld connections, the only weapons players can find easily are of the hand weapon variety. And even some hand weapons — like the tripod-mounted MG and RR, and the LAW and VLAW — are tough to find. These harder-to-find weapons are divided into two categories: Rare and Very Rare.

The following weapons are considered Rare: The machine gun, flamethrower, smokescreen, heavy rocket, and the tripod-mounted MG. To find a vehicle equipped with any of these weapons would be a Real Stroke Of Luck; to find two on a single vehicle would be nearly impossible. Rare weapons cost twice the cost listed in basic *Car Wars* — both for the weapon and ammunition.

These weapons are considered Very Rare: The Vulcan machine gun, rocket launcher, recoilless rifle, anti-tank gun,



Chassis & Crossbow

minedropper, flaming oil jet, and the tripod-mounted RR, LAW, and VLAW. These weapons should exist only in players' legends. Actually possessing one instantly makes you One Bad Dude; and finding a cache of these weapons would be a once-in-a-lifetime experience. Very Rare weapons cost *four times* the cost listed in basic *Car Wars* — both for the weapon and ammunition.

The Oil Jet and Spikedropper are the only vehicular weapons from basic *Car Wars* that are readily available — and at the regular listed cost.

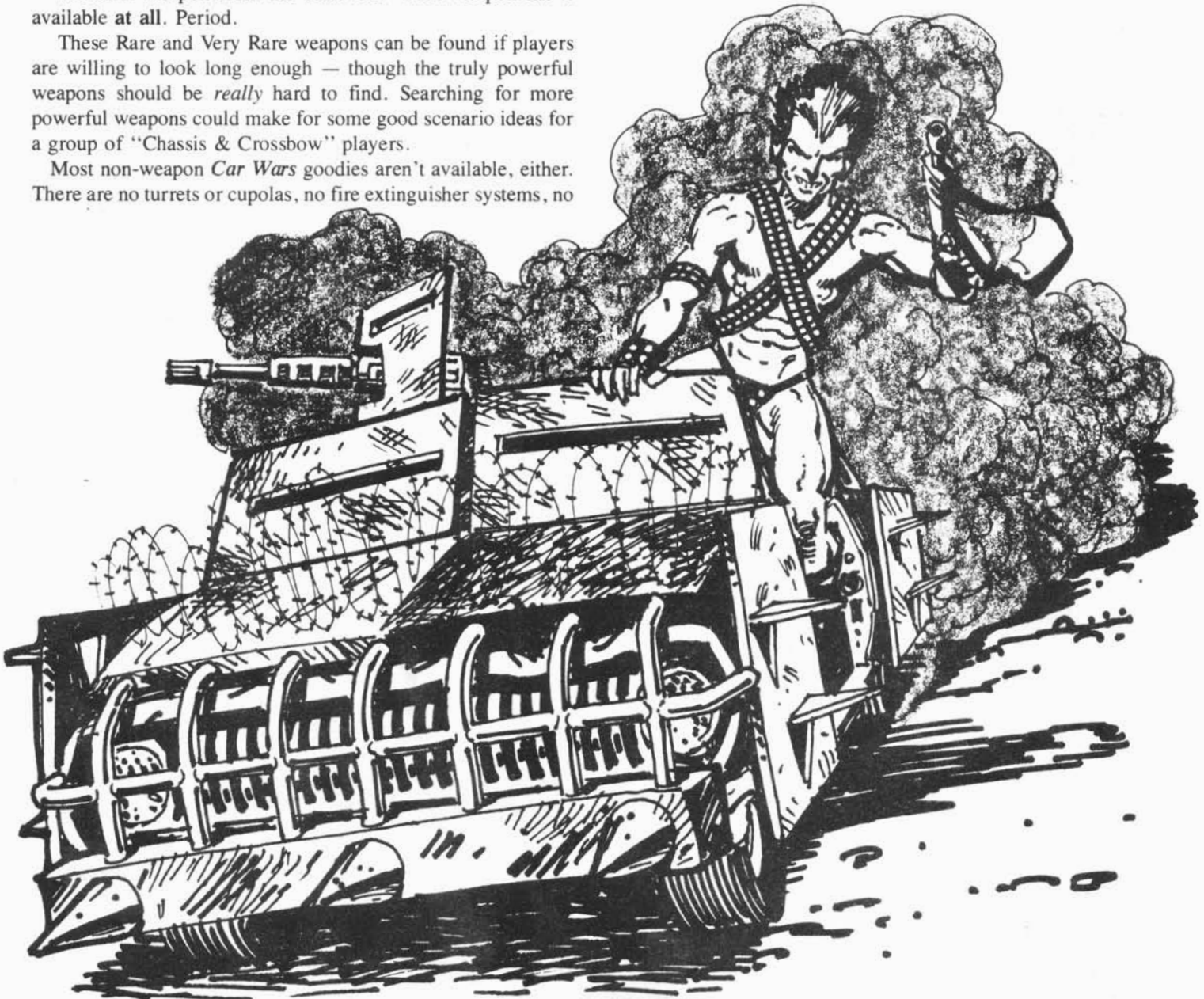
No other weapon from the basic *Car Wars* weapon list is available **at all**. Period.

These Rare and Very Rare weapons can be found if players are willing to look long enough — though the truly powerful weapons should be *really* hard to find. Searching for more powerful weapons could make for some good scenario ideas for a group of "Chassis & Crossbow" players.

Most non-weapon *Car Wars* goodies aren't available, either. There are no turrets or cupolas, no fire extinguisher systems, no

fancy electronics, no ramplates, no targeting computers, no lasers, and no armored wheel hubs. Roll cages and wheelguards exist, as do portable fire extinguishers, but that's about it. If specific questions arise about certain pieces of equipment not listed here, let your referee make the final decision.

Much of the combat in "Chassis & Crossbow" will involve hand weapons. Remember that hand weapon fire from a moving vehicle is at -3 for the driver and -1 for all others in the vehicle. Many of the weapons below are taken straight from the basic *Car Wars* hand weapons table, and others are new:



Weapons List

Weapon	Cost	Grenade Equiv.	To Hit	Damage
Crossbow	\$75	3	6	1-3
Submachine gun	250	2	6	1-6
Rifle	120	2	7	3
Shotgun	120	2	6	2*
Heavy Pistol	100	1	7	2
Light Pistol	75	1	8	1
Grenade	25	1	9	1-6*
Molotov	25	1	9	1-6*
LAW	500	2	8	2-12*
VLAW	200	1	8	1-6*
RR (tripod)	1500	5	7	2-12*
MG (tripod)	1000	5	7	1-6
Bowie Knife	50	1	8	1-2
Sword	75	2	7	1-3
Pike	80	3	8	1-3*
Bow	50	2	7	1-2
Fists	Free	0	7	1*
Bricks	5	1	8	1*
Cycle Chain	30	1	9	1*
Heavy Chain	50	1	9	1-2
Baseball Bat	20	2	9	1-2
AV Crossbow	100	6	7	2-12

*Indicates a special amount or type of damage; see Notes.

Notes

Crossbow — Bolts cost \$2 apiece, and are one grenade-equivalent for every 10 carried. After firing, it takes two turns to reload.

Shotgun — If you fire at point-blank range and hit, roll one die; on a 6, you do double damage.

Grenade — Does listed damage in a 2'' burst radius; does half-damage to vehicles and tires.

Molotov — When it hits, the exact square it lands on and every adjoining square (forming a $\frac{3}{4}$ '' square) is on fire. Pedestrians take one die of damage, vehicles take half-damage. If the engine or fuel tank is damaged, the molotov has a +4 modifier when determining if a fire has started or not.

LAW — Does full damage to vehicles; does an additional one die of damage to pedestrians in a 2'' burst radius. Very Rare.

VLAW — Does full damage to vehicles; does an additional half-die of damage to pedestrians in a 2'' burst radius. Very Rare.

RR (tripod) — Does full damage to vehicles; does an additional one die of damage to pedestrians in a 2'' burst radius. Very Rare.

MG (tripod) — Does full damage to vehicles. Rare.

Pike — Can hit targets up to 2 squares away. When set vs. a charge, the pike does two dice of damage and hits on a 7 or better

(perfect for cyclist kebab). When wielded by a charging cyclist (or car), hits on an 8 or better and does one die of damage for every 25 mph of collision speed, up to three dice maximum; if the collision speed is over 50, the pike will break.

Bow — Arrows cost \$2 apiece, and are one grenade-equivalent for every 10 carried; after firing, it takes one turn to reload.

Fists — Does 1 die — 5 damage.

Bricks — Does 1 die — 4 damage.

Cycle Chain — Does 1 die — 4 damage.

Heavy Chain — Can be strung up as a barrier.

AV Crossbow — This is an 8-foot crossbow, mounted on a tripod, which fires a metal bolt. The bolts cost \$5 each, and are one grenade-equivalent for every 5 carried. Two people can carry it assembled, one person can carry it unassembled (it's not heavy, just bulky). Two people can reload it in two turns, one person in four. The AV Crossbow treats each range as the next closest, that is, 0''-4'' is point blank, 4''-8'' is normal range, 8''-12'' is a -1 penalty, etc.

This is by no means a definitive list. If you want to include exotic weapons — such as boomerangs, blow guns, nunchuks, bolas, or whatever — in your game, work up numbers you can all agree on and go ahead and use it. In the case of dispute, the referee's word is final.

Chassis & Crossbow

Combat

Tires can be targeted at a -3. People inside a car can be targeted at a -5 (this is instead of the -3 pedestrian penalty). All other targeting modifiers are exactly the same as in regular *Car Wars*.

The standard metal skin of 20th-century cars is not a lot of help against weapons fire. Against hand weapons, treat the car's body as if it had two points of metal armor. Against vehicular weapons (and hand weapons that are listed as doing full or half damage against vehicles), treat the car's body as if it had only one point of metal armor.

Additional metal armor can be added to these vehicles, but at *ten times* the weight and *five times* the cost of regular *Car Wars* armor (that's double the numbers for metal armor given previously). In all other respects, this is the same as the metal armor described above.

The jury-rigged and shade-tree-modified vehicles of the early 21st century are nothing like *Car Wars* duelling vehicles. These are not carefully crafted vehicles, with no space wasted; instead, they're family sedans with guns and armor grafted on. So when gunfire penetrates the interior of one of these cars, there's a chance that the rounds will go right through, hitting nothing . . . if you're lucky.

When armor is breached and additional damage enters the interior of a vehicle, roll one die. On a 1 or a 2, the damage goes right through — the bullets lodge in a seat, or go out the far window, or just lodge themselves in the frame. On a 3-6, assess damage normally, as you would for any *Car Wars* vehicle.

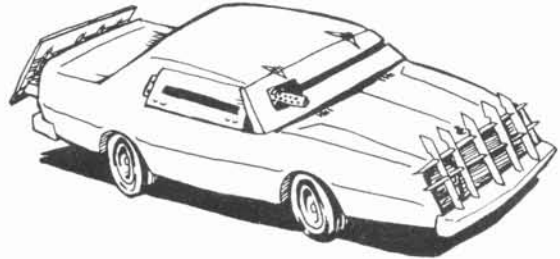
Now for the bad news. If a burst effect weapon (RR, LAW, VLAW, or grenade) enters a vehicle and any damage enters the crew compartment, the other members of the crew (other than the one hit) take full burst effect damage. This is only if the damage reaches the crew compartment — if it stops at the engine, or just destroys a weapon or two, the crew will be unaffected.

Sample Vehicles

Because of the limited options for "Chassis & Crossbow" vehicles, building them is fairly easy. The "Chassis & Crossbow" versions of some trucks are given here; trucks will be more fully explained in a later section. Gas is assumed to cost \$3 a gallon in these samples. Many of these are "typical" vehicles players may find in 2010, some of them manned by not-so-friendly characters. . . .

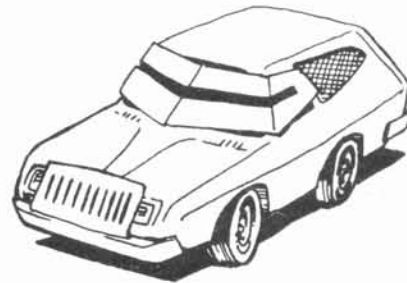
Skycharge — Mid-size, 250 cu. in. engine, carburetor, 20-gallon Economy gas tank, 4 standard tires, driver, gunner, 2 passengers, SMG on articulated mount front operated by gunner.

Metal Armor: F5, L4, R4, B4, T2, U1. Accel. 10, Top speed 65, HC 1, Base MPG 26, 4,585 lbs., \$8,450.

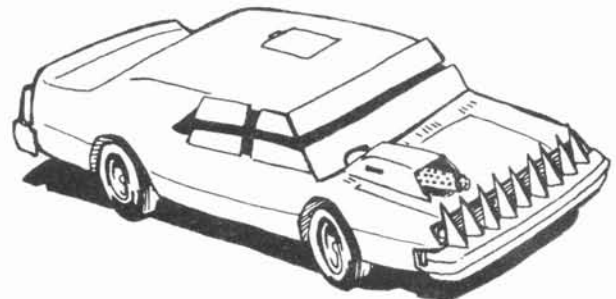


Downtown — Luxury, 400 cu. in. engine, carburetor, 20-gallon Economy gas tank, 4 standard tires, driver, 2 gunners, FT in articulated mount back operated by second gunner. Metal Armor: F4, L4, R4, B4, T1, U0. Accel. 15, Top speed 135, HC 1, Base MPG 13, 5,460 lbs., \$13,200.

Katydid — Subcompact, 100 cu. in. engine, carburetor, 15-gallon Economy gas tank, 4 standard tires, driver, gunner. Metal armor: F4, R3, L3, B2, T0, U0. Accel. 10, Top speed 70, HC 1, Base MPG 48, 2,300 lbs., \$3,235.



Roan — Compact, 250 cu. in. engine, carburetor, 15-gallon Economy gas tank, 4 standard tires, driver, gunner, MG front (fixed). Metal armor F6, R4, L4, B4, T2, U0. Accel. 10, Top speed 80, HC 1, Base MPG 26, 3,700 lbs., \$10,175.



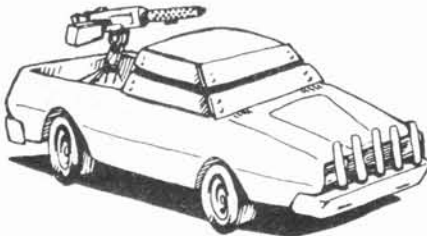
Battlewagon — Luxury, 350 cu. in. engine, multi-barrel carburetor, 25-gallon Economy gas tank, 4 standard tires, driver, gunner, RR in articulated mount front fired by operated

Dueltrack

by gunner, SD back, roll cage. Metal armor: F5, R3, L3, B3, T3, U0. Accel. 10, Top speed 85, HC 1, Base MPG 17, 5,500 lbs., \$20,575.

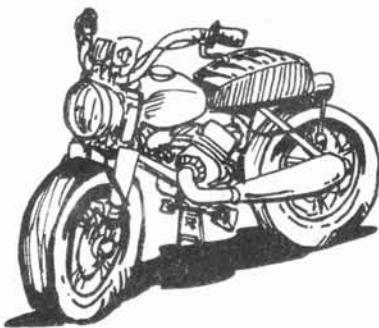


Rat Patrol Special — Pickup, 300 cu. in. engine, carburetor, 25-gallon Economy gas tank, 4 standard tires, driver, gunner, VMG on ring mount in bed of truck, operated by gunner. No armor. Accel. 15, Top speed 100, HC 1, Base MPG 13, 3,895 lbs., \$19,265.



Ferret — Hvy. cycle, 100 cu. in. engine, carburetor, 5-gallon Economy gas tank, 2 standard tires, driver, articulated mount front. Metal armor: F5, R4. Accel. 15, Top speed 95, HC 1, Base MPG 58, 1,280 lbs., \$3,065.

Darter — Med. cycle, 50 cu. in. engine, carburetor, 5-gallon Economy gas tank, 2 standard tires, driver, articulated mount front. No armor. Accel. 10, Top speed 85, HC 1, 705 lbs., \$1,925.



Hummingbird — Lt. cycle, 10 cu. in. engine, carburetor, 5-gallon Economy gas tank, 2 standard tires, driver. Metal armor:

F4, B3. Accel. 10, Top speed 80, HC 1, Base MPG 78, 785 lbs., \$995.

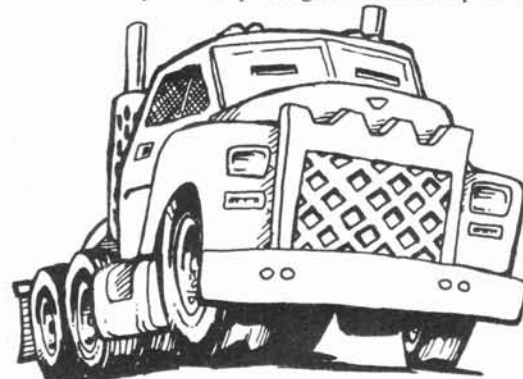
Cosmo — Mini bus, Small truck engine, carburetor, 80-gallon Economy gas tank, 10 standard tires, driver, 2 gunners, 8 passengers, articulated mount front operated by first gunner. Metal armor: F5, R4, L4, B4, T2, U0. Accel. 2.5 to 25 mph, 5 thereafter, Top speed 70, HC 1, Base MPG 10, 11,920 lbs., \$19,040.



Jeremiah — Std. cabover, Medium truck engine, carburetor, 50-gallon Economy gas tank, 10 standard tires, driver, gunner, articulated mount front. No armor. Accel. 2.5 to 25 mph, 5 thereafter, Top speed 80, HC 0, Base MPG 8, 10,000 lbs., \$28,650. Note: This tractor is capable of pulling a trailer of up to 15,000 lbs.



Atlas — Sleeper longnose, Super truck engine, carburetor, 50-gallon Economy tank, 10 standard tires, driver, gunner, 2 articulated mounts front. Accel. 2.5 to 25 mph, 5 thereafter, Top speed 110, HC 0, Base MPG 3, 13,450 lbs., \$50,750. Note: This tractor is capable of pulling a trailer of up to 76,550 lbs.



Gas-Powered Duelling

Gas-powered duelling vehicles of 2036 are really throwbacks to the "good old days" of American motoring, when great acceleration, high speeds, and the sound of shredding metal were commonplace. Only the eccentric and the very rich can afford the upkeep on these babies in 2036.

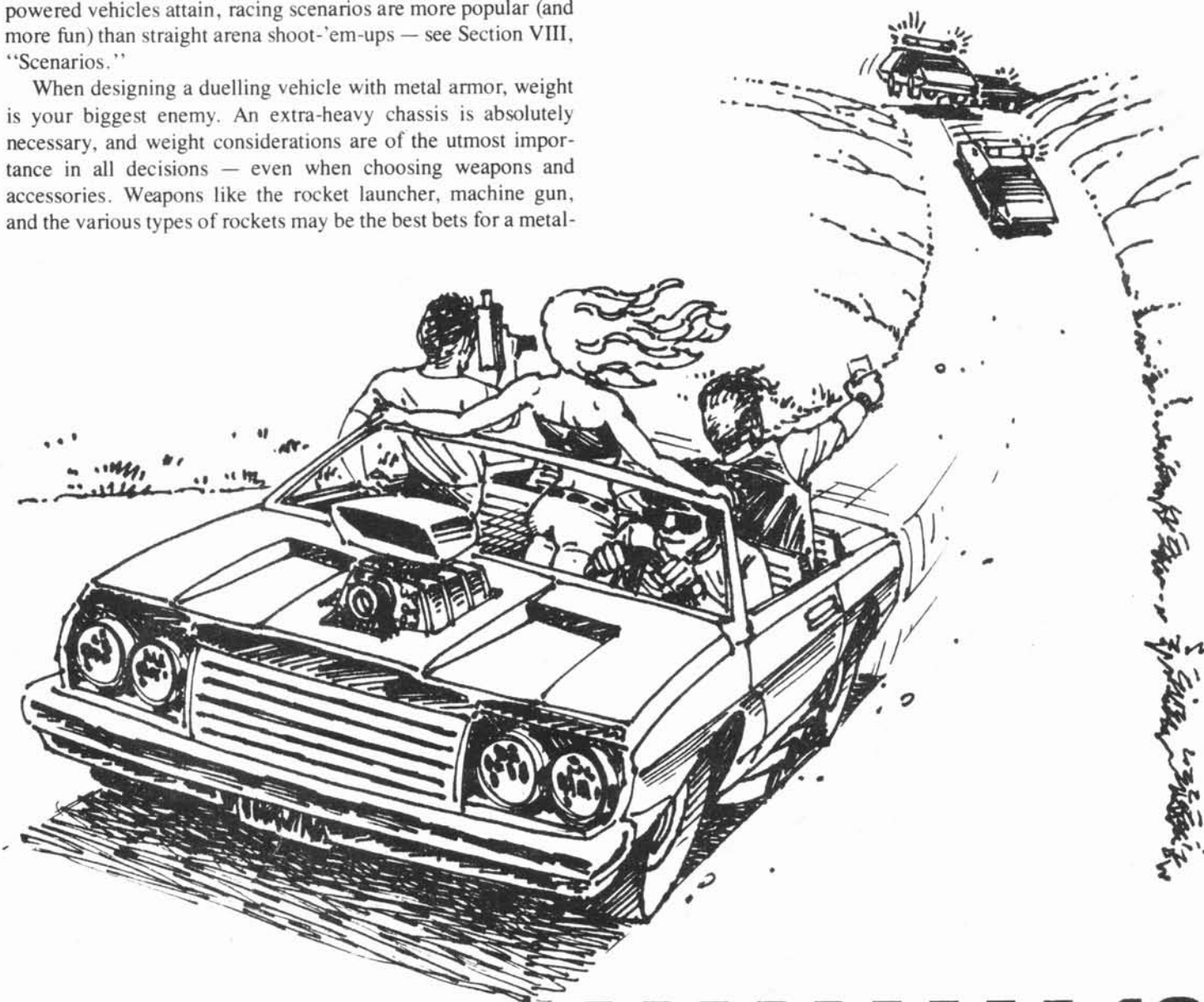
Gas-powered duelling is fairly rare for a couple of reasons; One, of course, is the tremendous expense. And aside from higher speeds and more spectacular flaming deaths, the action is much the same as electric-powered duelling.

Setting up duelling events with this type of vehicle is no different from a standard *Car Wars* event. The best method is to set a dollar limit for construction of vehicles, then turn each player loose in an arena. Because of the high speeds many gas-powered vehicles attain, racing scenarios are more popular (and more fun) than straight arena shoot-'em-ups — see Section VIII, "Scenarios."

When designing a duelling vehicle with metal armor, weight is your biggest enemy. An extra-heavy chassis is absolutely necessary, and weight considerations are of the utmost importance in all decisions — even when choosing weapons and accessories. Weapons like the rocket launcher, machine gun, and the various types of rockets may be the best bets for a metal-

armored vehicle; the recoilless rifle and the Vulcan MG are on the heavy side, but still good values; flamethrowers and lasers may be too heavy to consider (though the accuracy and punch of a laser is hard to resist!).

Since there is very little difference in the weights of the various gas-powered engines, the tradeoff there is space vs. power. To get the power you want for great acceleration and a top speed in the 120+ range, it'll take an engine that leaves little room for anything else. Many of the sample designs below have only one weapon system — that's all there was space for. You can create space for additional weapons, or extra accessories, or even cargo by getting a smaller engine — but your top speed will suffer.



Sample Vehicles

Here are some sample vehicles. When options are included, only the stats that change are listed. If a particular stat is not listed with an option (like acceleration, weight, etc.) assume that stat is not changed from the initial design.

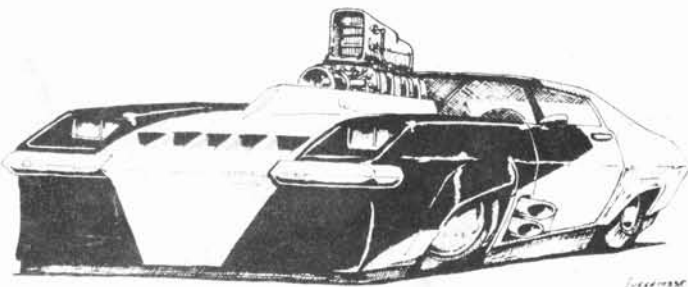
Hornet — Subcompact, X-hvy. chassis, Hvy. suspension, 4 PR tires, driver only, 100 cu. in. engine, turbocharger, 5-gallon Racing tank, two linked micro-missile launchers front, targeting computer. Metal armor: F8, L6, R6, B6, T4, U6. Accel. 5 (10 at 40 mph+), Top speed 85, HC 3, Base MPG 50, 2,730 lbs., \$9,540.

Option I — Drop 6 pts. of armor. Accel. 10 (15 at 40 mph+), Top speed 85, 2,580 lbs., \$9,375.

Option II — Replace 100 cu. in. engine with 150 cu. in. engine, remove one MM launcher, drop 2 pts. of armor. Accel. 10 (15 at 40 mph+), Top speed 95, Base MPG 45, 2,630 lbs., \$9,985.

Option III — Replace 100 cu. in. engine with 200 cu. in. engine, remove one MM launcher. Accel. 10 (15 at 40 mph+), Top speed 105, Base MPG 35, 2,750 lbs., \$11,540.

Option IV — Replace linked MM launchers and targeting computer with RR and single weapon computer, drop 4 pts. armor. \$8,330.



Bullet — Compact, X-hvy. chassis, Hvy. suspension, 4 solid tires, driver only, 250 cu. in. engine, turbocharger, 12-gallon Racing tank, Vulcan MG in turret, single weapon computer. Metal armor: F16 (with ramplate), L5, R5, B5, T5, U2. Accel. 10 (15 at 40 mph+), Top speed 90, HC 3, Base MPG 28, 4,387 lbs., \$18,215.

Dum-Dum Option — Reduce gas tank to 5 gallons, add nitrous oxide and 2 pts. armor, 4,390 lbs., \$18,430. Note that triggering the nitrous can increase acceleration and speed dramatically, making a ram particularly nasty . . .

XM-9 — Mid-sized, X-hvy. chassis, Hvy. suspension, 4 solid tires, driver only, 350 cu. in. engine, 15-gallon Racing tank, laser in turret, improved fire extinguisher. Laser-reflective metal armor: F10, L8, R8, B8, T8, U6. Accel. 10, Top speed 85, HC 3, Base MPG 18, 5,685 lbs., \$26,462.

Div. 25 Option — Move laser to front, remove turret. Top speed 90, 5,485 lbs., \$24,962.

Div. 20 Option — Replace laser and turret with Vulcan MG front, add 8 points of armor. Top speed 85, 5,755 lbs., \$19,982.

Napoleon — Luxury, X-hvy. chassis, Hvy. suspension, 4 PR Radials, driver only, 450 cu. in. engine, supercharger, 25-gallon Racing tank, two linked rocket launchers front, targeting laser front, laser guidance link between RLs and targeting laser, 5 smoke dischargers (2L, 2R, 1B), spoiler and airdam. 4 10-point wheelguards, metal armor: F9, R7, L7, B8, T8, U7. Accel. 20, Top speed 170, HC 3, Base MPG 12, 6,575 lbs., \$31,450.

Option I — Remove RLs, laser, and link, add 2 linked Vulcan MGs with HD ammo, remove wheelguards, spoiler, airdam, 4 points of armor. 6,565 lbs., \$28,400.

Div. 30 Option — Remove RLs, laser, and link, add RR front, MD back, hi-res computer, remove 2 smoke dischargers. \$29,950.

Option III — Replace 450 cu. in. engine with 350 cu. in. engine, add RR back and improved fire ext., remove spoiler, airdam, 6 points of armor. Accel. 15, Top speed 80, Base MPG 17, 6,525 lbs., \$30,300.

Retton XL — Luxury, X-hvy. chassis, Hvy. suspension, 4 solid tires, driver, gunner, 350 cu. in. engine, turbocharger, 15-gallon Racing tank, two linked MGs with HD ammo front, RR with extra magazine in turret, Flaming oil jet back, improved fire ext., roll cage, 2 targeting computers. Metal armor: F6, R6, L6, B5, T5, U4. Accel. 10 (15 at 40 mph+), Top speed 80, HC 3, Base MPG 18, 6,510 lbs., \$30,125.

Div. 30 Option — Reduce tank to 12 gallons. Top speed 85, 6,477 lbs., \$29,975.

Condor — Van, X-hvy. chassis, Hvy. suspension, 6 PR tires, driver, gunner, 450 cu. in. engine, supercharger, 30-gallon Racing tank, RR front, 3 HRs (one each R, L, B), improved fire ext., 4-space mini safe, 2 targeting computers. Metal armor: F7, L6, R6, B6, T3, U4. Cargo capacity: 2 spaces outside mini-safe, 2 spaces inside mini-safe, 130 pounds. Accel. 20, Top speed 150, HC 2, Base MPG 12, 7,070 lbs., \$27,550.

Option I — Remove mini-safe, add 4 points of armor. No cargo capacity. Top speed 140, 7,200 lbs., \$27,150.

Lancelot — Van, X-hvy. chassis, Hvy. suspension, 6 PR tires, driver only, 500 cu. in. engine, 25-gallon Racing tank, 2

Gas-Powered Duelling

linked HRs front, 2 linked HRs back, 3 linked MNRs left, 3 linked MNRs right, hi-res computer, improved fire ext. Metal armor: F8, L8, R8, B8, T4, U6. Cargo capacity: 7 spaces, 15 lbs. Accel. 15, Top speed 175, HC 2, Base MPG 12, 7,185 lbs., \$28,100.

Option I — Replace all MNRs with 2 MGs (one R, one L), drop 4 points of armor. \$30,350.

Option II — Replace all MNRs with 2 MGs (one R, one L), replace front 2 HRs with RR, replace back 2 HRs with RL, drop 7 points of armor. Cargo capacity: 7 spaces, 25 lbs. 7,175 lbs., \$32,975.

Option III — Replace 500 cu. in. engine with 450 cu. in. engine, add supercharger and nitrous oxide, drop 2 points of armor. Accel. 20, Top speed 145, Base MPG 13, 7,165 lbs., \$28,650.

Panther — Pickup, X-hvy. chassis, Hvy. suspension, 6 PR radials, driver only, 450 cu. in. engine, turbocharger, 5-gallon Racing tank, light laser in turret, hi-res computer. Metal armor: F15, R12, L12, B12, T12, U9. Accel. 15 (20 at 40 mph+), Top speed 115, HC 3, Base MPG 13, 7,725 lbs., \$31,060.

Option I — Drop 2 points of armor. Top speed 120, 7,615 lbs., \$30,950.

Option II — Replace 450 cu. in. engine with 400 cu. in. engine, increase tank to 15 gallons. Accel. 10 (15 at 40 mph+), Top speed 85, Base MPG 15, 7,785 lbs., \$30,360.

Div. 30 Option — Replace light laser with MG. \$29,560.

Kabuki — Hvy. cycle, Hvy. suspension, 2 PR radials, driver only, 100 cu. in. engine, turbocharger, 5-gallon Racing tank, RL front, single weapon computer. Metal armor: F4, B4. Accel. 15 (20 at 40 mph+), Top speed 115, HC 3, Base MPG 50, 1,280 lbs., \$8,040.

Option I — Replace 100 cu. in. engine with 150 cu. in. engine, replace RL with MG, reduce gas tank to 4 gallons. Top speed 145, Base MPG 45, 1,294 lbs., \$9,640.

Option II — Replace 100 cu. in. engine with 200 cu. in. engine, replace RL with MG, drop 4 points of armor. Top speed 170, Base MPG 35, 1,255 lbs., \$11,070.

Option III — Replace 100 cu. in. engine, with 50 cu. in. engine, add SS back. Accel. 10 (15 at 40 mph+), Top speed 100, Base MPG 60, \$7,140.

Slingshot — Hvy. cycle, Hvy. suspension, 2 PR tires, driver only, 200 cu. in. engine, 4-gallon Racing tank, MG front. Metal armor: F3, B3. Accel. 15, Top speed 165, HC 2, Base MPG 35, 1,294 lbs., \$8,980.

Pellet — Hvy. sidecar, Impr. suspension, 1 PR tire, 2 HRs (not linked) front, SS back. Metal armor: F1, B1.

Cycle/Sidecar Combination — Accel. 15, Top speed 125, HC 3, 2,004 lbs., \$10,855.

Miser — Med. cycle, Hvy. suspension, 2 HD tires, driver only, 50 cu. in. engine, carburetor, 3-gallon Racing tank, MG front. Metal armor: F6, B4. Accel. 10, Top speed 80, HC 2, Base MPG 58, 1,073 lbs., \$4,025.

Option I — Remove carburetor. Top speed 90, Base MPG 60, \$4,275.

Option II — Replace 50 cu. in. engine with 30 cu. in. engine, add 2nd MG linked front, drop 6 points of armor. Accel. 5, Top speed 80, Base MPG 70, 1,098 lbs., \$4,910.



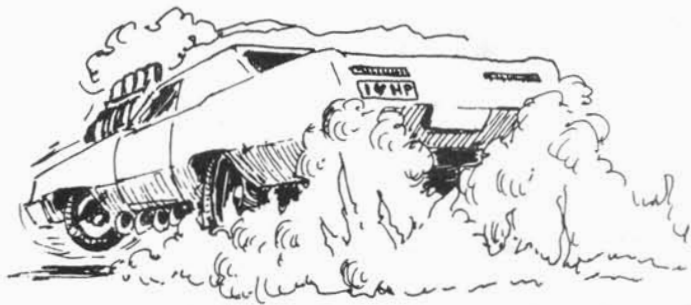
Wanderer — Med. trike, OR suspension, 3 OR solid tires, driver only, 250 cu. in. engine, turbocharger, 12-gallon Racing tank, Vulcan MG front. Metal armor: F3, R2, L2, B1, T0, U0. Accel. 15 (20 at 40 mph+), Top speed 170, HC 2, Base MPG 28, 2,067 lbs., \$14,040.

Option I — Replace 250 cu. in. engine with 150 cu. in. engine, replace VMG with RL, add hi-res computer, improved fire ext., 8 points of armor. Accel. 10 (15 at 40 mph+), Top speed 105, Base MPG 45, 2,082 lbs., \$14,930.

Bunyan Special — X-hvy. trike, Hvy. suspension, 3 PR radials, driver, gunner, 250 cu. in. engine, turbocharger, 15-gallon Racing tank, RR in turret, MM launcher front, improved fire ext. Metal armor: F4, L3, R3, B3, T3, U0. Accel. 10 (15 at 40 mph+), Top speed 105, HC 3, Base MPG 28, 3,495 lbs., \$16,840.

Option I — Replace 250 cu. in. engine with 200 cu. in. engine, add 2nd linked MM launcher front. Top speed 90, Base MPG 35, 3,465 lbs., \$16,790.

Option II — Replace 250 cu. in. engine with 300 cu. in. engine, drop fire ext. add 2 points of armor. Accel. 15 (20 at 40 mph+), Top speed 140, Base MPG 22, 3,450 lbs., \$17,720.



Gas-Powered Racing

There are many kinds of racing, some of which will require special vehicles. The most common type, however, is stock car racing, which uses the standard *Car Wars* vehicle sizes. Luxuries and mid-sizes dominate this category, but any regular *Car Wars* vehicle can be outfitted with an internal combustion engine and

raced — including vans, pickups, station wagons, trikes, and cycles!

Racing vehicles tend to be very lightly armed and armored — speed, not firepower, is of the essence. Many racing events are throwbacks to the days before autoduelling, when no combat was allowed at all! Of course, an occasional “accidental” bump could still result in an unfortunate spin or wreck, clearing the path to victory....

Specialty Racing Vehicles

There are four types of vehicles that will be seen only on the racetrack, and not in the arena or on the streets. Modeled after four popular types of 20th century race cars, they are —



Gas-Powered Racing

Type	Price	Weight	Max. load	Spaces	Armor
Formula One/Indy	\$6500	600	6000	15	\$22/10
Can-Am	6500	800	6500	18	\$24/12
Sprint	5600	300	3200	10	\$15/7
Dragster	6200	600	4000	16	\$20/8

These cars are built just like any other *Car Wars* vehicles, with your choice of engines, armor, weapons, chassis, tires, and accessories. There are some exceptions and special cases, however:

First, all four types of specialty racing vehicles are designed for a driver only — no gunners or passengers.

Also, these vehicles have racing suspensions that cannot be altered in any way. All four have a base HC of 5, and there is no upper limit to handling class. With the addition of special tires, and figuring in other equipment advantages, the base handling class of one of these racing devils could get up to 7 or more — and with the added bonuses for a skilled driver, it could go even higher! At the speeds these vehicles will be going, they'll need the help. . . .

Dragsters are a particularly special case. First, they're ½" longer than all other cars. This should pose few problems, however — they still move straight forward in the usual way. When using the turning key for maneuvers, line the key up with the *front* inch of the counter. Everything should be easy from there.

Acceleration for dragsters is calculated the usual way, with one addition: If the number of power factors the engine has is more than twice the weight of the dragster in pounds, then the base acceleration of the dragster is 20 mph/turn. Dragsters are also the only vehicles that can use a turbocharger *and* a super-charger together.

Dragsters use motorcycle tires in front, and can use any tire (including racing slicks — see below) in the back. Because the racing slicks are not on all four corners, however, their bonus to HC is only 1. Also, because of their odd shape, dragsters cannot perform any maneuver greater than D1 difficulty if they're going 20 mph or faster. At less than 20 mph, all maneuvers except the bootlegger are possible.

Dragsters also have some weapon restrictions. No more than two spaces' worth of weaponry may be mounted in the front arc of fire, due to the extremely narrow front. And the only place to put in a turret is in the body *in front* of the driver. This means that any such turret cannot fire in the rear arc of fire. Some may ask, "Can't I fire it to barely miss the driver and still hit a target

behind me?" If you were *really* the driver, in the dragster yourself, would *you* do it? Probably not. As a safety measure, the turrets are pre-set so they cannot fire into the rear arc. Like the other racing cars, no turret larger than 2 spaces may be installed.

Even as targets, dragsters have special rules. Because of their long, thin shape, dragsters are +1 to be hit from the side and -1 to be hit from the front or back. This is in addition to any other targeting penalties that may apply.

Racing Tires

There is one type of tire made specifically for race cars — the racing slick. Its surface is wide and completely bare, providing exceptional traction and handling — and while it's tough enough to handle gunfire, watch out for water, ice, oil, and just about anything else on the road!

Racing slicks cost \$750 apiece, and weigh 100 lbs. each. They have 10 DP. Racing slicks on all four corners will improve HC by 2. (The HC of standard *Car Wars* vehicles may be raised above 3 by this item!) Dragsters, which can only put slicks on the back, have their HC raised by 1. The hazard for maneuvers on oil, ice, and water is +D4. In addition, just hitting oil, ice, or water is a D3 hazard. Racing slicks also take *double* damage from spikes, debris, and obstacles.

Any car can mount slicks, but these tires are most beneficial on a professionally-maintained, glass-smooth racetrack surface. On a regular city street or highway, racing slicks take 1 point of damage for every 10 minutes they drive on the open road, just from accumulated road trash.

The Formula One/Indy, Dragsters, and Sprint cars may not mount wheelguards, because the wheels and tires stick out beyond the body of the car. Armored Wheel Hubs (from *ADQ 3/4*) may still be used, but are only half as effective as usual (stopping damage on a 1 or 2 on one die, instead of 1-4). The Can-Am car has no such restrictions, and can use wheelguards. Racing slicks are bigger than other types of tires, so targeting them in combat is only a -2.

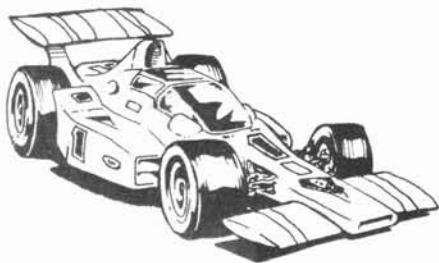
Dueltrack

Sample Racing Vehicles

This is by no means a complete list of racing cars; how you design a vehicle depends a great deal on the track, conditions, and ground rules of the event you've entered. But here are a few to get you started (fuel is assumed to be \$40 per gallon in these examples). Unless armor or armor accessories are specifically described as metal, assume them to be plastic.

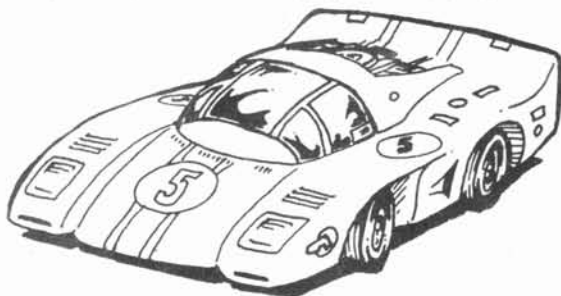
Thompson J-1 — Indy car, Std. chassis, 400 cu. in. engine, turbocharger, 25-gallon Racing tank, driver, racing slicks, spoiler, airdam. Armor: F8, R7, L7, B8, T0, U5. Accel. 15 (20 at 40 mph +), Top speed 180, HC 7, Base MPG 15, 2,675 lbs., \$24,020.

Light Combat Option — Reduce gas tank to 15 gallons, drop 9 points of armor, add MG front. Only price changes: \$24,822.



Rolling Thunder — Can-Am car, Std. chassis, 500 cu. in. engine, turbocharger, 25-gallon Racing tank, driver, solid tires, VMG in turret. Armor: F15, R15, B20, L15, T5, U10. Accel. 15 (20 at 40 mph +), Top speed 190, HC 5, Base MPG 12, 3,935 lbs., \$29,870.

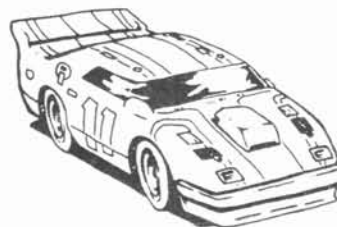
Smoker — Can-Am car, std. chassis, 700 cu. in. engine, turbocharger, 25-gallon Racing tank, driver, racing slicks, spoiler, airdam. No armor. Accel. 15 (20 at 40 mph +), Top speed 215, HC 7, Base MPG 10, 2,675 lbs., \$31,750.



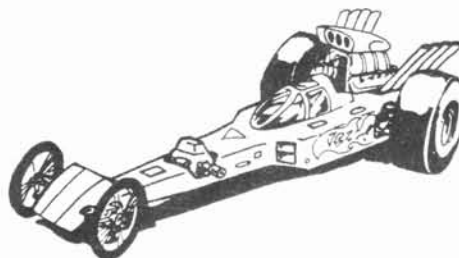
Cartland — Sprint car, Std. chassis, 350 cu. in. engine, turbocharger, 15-gallon Racing tank, driver, PR radials, spoiler, airdam. Armor: F25, R25, L25, B30, T10, U15. Accel. 15 (20 at 40 mph +), Top speed 175, HC 6, Base MPG 18, 2,615 lbs., \$21,800.

Stock Ace — Luxury, Std. chassis, Hvy. suspension, 500 cu. in. engine, supercharger, 25-gallon Racing tank, driver, solid tires, two linked MGs front, spoiler, airdam. Metal armor: F7, L5, R5, B7, T0, U4. Accel. 20, Top speed 185, HC 3, Base MPG 11, 5,485 lbs., \$30,200.

Handling Option — Replace solid tires with racing slicks, drop 2 points of metal armor. HC rises to 5, new cost \$31,100.



Rattler — Dragster, Std. chassis, 450 cu. in. engine, turbocharger, 2-gallon Racing tank, driver, 2 racing slicks back, 2 cycle solids front, RR front, VMG with HD ammo side, 4 10-point armored wheel hubs, hi-res computer. Armor: F30, Sides 40 and 10, B30, T20, U0. Accel. 20 (25 at 40 mph +), Top speed 195, HC 6, Base MPG 13, 3,897 lbs., \$33,950. Note: The VMG and 40-point armor side are always facing the opponent in the race. If the Rattler is in the right-hand lane, the weapon and heavy armor faces left, to face the opponent.



Rascal — Dragster, Std. chassis, 400 cu. in. engine, turbocharger, supercharger, nitrous oxide, 2-gallon racing tank, driver, 2 racing slicks back, 2 cycle solids front, VMG with HD ammo side, improved fire ext., 2 10-point armored wheel hubs. Armor: F10, Sides 30 and 0, B10, T0, U0. Accel. 25 (30 @ 40 mph +), Top speed 200, HC 6, Base MPG 14, 3,137 lbs., \$27,500. Note: The VMG, wheel hubs, and 30-point armor side all face the opposing dragster.

Scorcher — Dragster, Std. chassis, 450 cu. in. engine, turbocharger, supercharger, nitrous oxide, 2-gallon Duelling tank, driver, 2 racing slicks back, 2 cycle solids front, improved fire ext. No armor. Accel. 25 (30 @ 40 mph +), Top speed 210, HC 6, Base MPG 12, 2,167 lbs., \$24,030.

Note that none of these vehicles are prepared for serious combat. That's OK — they're built for speed and handling, not mayhem.



Trucks and Buses

Internal combustion engines powerful enough to pull oversized vehicles — both the big rigs and ten-wheeled trucks and buses — are rare in 2036, but not unheard of. Some gas-powered rigs are maintained as antiques, a few actually work the Free Oil State highways hauling cargo and passengers, and a very few are maintained as specialty duelling vehicles.

The only difference between a gas-powered truck and an electric-powered truck is the power plant. All other aspects — vehicle size and stats, carrier and trailer size, tires, maneuvers, combat, etc. — are the same as in basic *Car Wars*.

There are four types of gas-powered engines suitable for pulling oversized vehicles. Like their electric counterparts, they are not given a power factor rating, but are rated for the maximum weight they can pull.

Accessories

Only two accessories are available for internal-combustion truck engines. They are:

Carburetor. Has the same effect as the carburetors on smaller engines: Cuts engine cost by 20%, reduces top speed by 10 mph, and drops Base MPG by 2.

Truck Turbo. Improves acceleration. Oversized vehicles equipped with this item accelerate at 2.5 mph/turn until they reach 10 mph; acceleration then increases to 5 mph/turn until they reach 40 mph; and acceleration increases to 10 mph/turn beyond that. The Truck Turbo costs \$2,000, weighs 50 lbs., and takes up 1 space.

Acceleration

Acceleration for internal-combustion big rigs is constant, just like in basic *Car Wars*. Any oversized vehicle equipped with any of these plants (but not with the Truck Turbo, explained above) will accelerate at 2.5 mph/turn until they get to 25 mph, and 5 mph/turn at higher speeds.

Top Speed

The top speed for each truck engine is listed on the table below. The listed top speed, however, assumes that the engine is

pulling its maximum load. If the total weight of the truck and cargo is significantly less, the top speed of the vehicle will increase.

For every full 10% of the engine's maximum weight under that maximum, the top speed of the vehicle will increase by 5 mph.

Example: A tractor-trailer combination sports a large IC truck plant — maximum weight 60,000, top speed 120. For every full 10% of that 60,000 the rig weighs *under* the maximum, the top speed goes up another 5 mph. Ten percent of 60,000 is 6,000; for the rig above, if the weight drops to 54,000 (60,000 minus 6,000), the top speed will rise to 125.

If the rig weighs only 48,000, the top speed will rise to 130. Without any cargo at all, the rig weighs 19,000 pounds. That's 41,000 pounds under the maximum, or 6 full 10% increments under the maximum. (Note that if the rig weighed just 1,000 pounds less, the 42,000 pounds under would be *seven* full 10% increments under the maximum.) Those six 10% increments are good for a 30 mph bonus to top speed, so our sample rig can make 150 mph empty!

Vehicle Range

As with the other internal combustion engines, vehicle range depends on the efficiency of the engine and the size of the gas tank. A Base MPG rating is given for each of the four engines; the rating assumes a constant speed of 55 mph. Modifications to this MPG rating work just like they do for the smaller gas-powered engines: For every full 10 mph of additional constant speed over 55 mph, the MPG will go down 10 percent (always rounding to the nearest whole number, and rounding down when it's exactly in between). The lowest the MPG can get in any case is 30 percent of the base value.

And for every full 10 mph of constant speed under 55 mph, the MPG will *increase* by 10 percent. The best the MPG can get in any case is 120 percent of the base value.

Gas tanks for oversized vehicles work just like regular tanks. The gas tank should be in the same vehicle as the engine — you can't put the gas tank for an 18-wheeler in the trailer while the engine is up in the cab.

Oversized Gas Engine Table

Type	Cost	Weight	Spaces	DP	Max. Wt.	Top Spd.	MPG
Small	\$12,000	3,000	6	18	18,000	80	12
Medium	\$18,000	5,200	8	24	25,000	90	10
Large	\$27,500	6,500	12	32	60,000	100	8
Super	\$35,000	8,000	14	38	90,000	120	5

Dueltrack

Engine Damage

Use the same tables used for car-sized internal combustion engine damage (see page 8) when assessing special damage to these big engines. These larger engines also have the same chances of catching on fire and exploding as their smaller counterparts (see page 9). Also, use the rules on page 9 when determining repair costs and salvage value of damaged engines.

Metal Armor

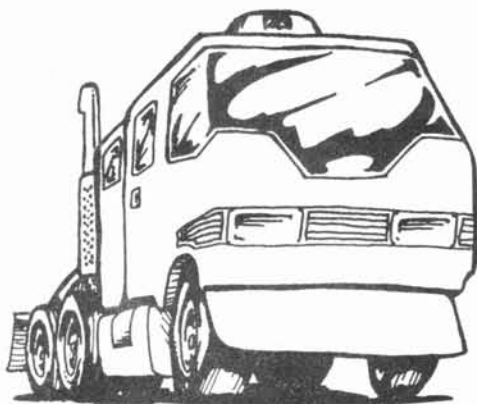
Oversized vehicles can also use metal armor. It weighs 5 times as much as plastic armor, and costs 2.5 times as much — the same as for the smaller vehicles. All the other metal armor rules discussed in a previous section also apply to oversized vehicles.

Sample Vehicles

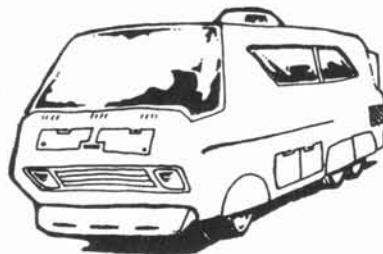
Here are some typical gas-powered oversized vehicles. All armor is plastic unless it is specifically labeled as "Metal armor." The top speeds of some of the tractors may seem a little high, but remember — that's for the tractor *alone*. Once a heavy trailer is attached to the back, the top speed of the whole rig will go down dramatically.

Spectre — Sleeper longnose, X-hvy. chassis, Large truck gas engine, Truck Turbo, 50-gallon Heavy Duty gas tank, 10 solid tires, driver, gunner, VMG with HD ammo in turret, RR front, improved fire ext., 2 hi-res computers. Armor: F30, R25, L25, B15, T20, U10. Accel. 2.5 to 10 mph, 5 to 40 mph, 10 thereafter; Top speed 140, HC 0, Base MPG 6, 16,150 lbs., \$106,250.

When paired with a stock Basher trailer (from *The AADA Vehicle Guide*), cargo capacity is 69 spaces, 28,665 lbs.; Top speed 130, HC 1, 31,335 lbs., \$180,100. When trailer is full of cargo, top speed is 105.



Wyoming Limited — Sleeper cabover, X-hvy. chassis, Super truck gas engine, 35-gallon Heavy-Duty gas tank, 10 PR tires, driver, gunner, RR in turret with extra magazine, 2 hi-res computers. Armor: F5, R5, L5, B0, T4, U0. Accel. 2.5 to 25 mph, 5 thereafter; Top speed 160, HC 0, Base MPG 5, 14,400 lbs., \$88,933. When pulling a full load, top speed is 120.



Budget-Haul — Std. cabover, X-hvy. chassis, Large truck gas engine, 35-gallon Economy gas tank, Truck Turbo, 10 standard tires, driver, improved fire ext., computer. Armor: F12, R10, L10, B8, T7, U3. Accel. 2.5 to 10 mph, 5 to 40 mph, 10 thereafter; Top speed 145, HC 0, Base MPG 6, 11,945 lbs., \$59,470. When pulling a full load, top speed drops to 105.

Workhound — 40-foot bus, X-hvy. chassis, Medium truck gas engine, Truck Turbo, 50-gallon Racing gas tank, 10 solid tires, driver, 2 gunners, 2 linked RRs in turret, 2 linked RLs front, targeting laser front, RLs and laser linked with Laser Guidance Link, 3 linked SDs back, 6 10-point armored wheel hubs, 6 10-point wheelguards, improved fire ext., 3 computers, room for 15 passengers. Armor: F40, FR35, BR35, FL35, BL35, B40, FT30, BT30, FU30, BU30. Accel. 2.5 to 10 mph, 5 to 40 mph, 10 thereafter; Top speed 95, HC 1, Base MPG 8, 24,935 lbs., \$86,550.

Stubby — 10-wheeled longnose cab, X-hvy. chassis, 15-foot van carrier, Small truck gas engine, Truck Turbo, 40-gallon Racing tank, 10 solid tires, driver, gunner, autocannon front with extra magazine, 2 linked VMGs with HD ammo in turret on carrier, MD and OJ back, improved fire ext. Cab armor: F30, R30, L30, B0, T20, U10. Carrier armor: F15, R30, L30, B30, T25, U20. Accel. 2.5 to 10 mph, 5 to 40 mph, 10 thereafter; Top speed 85, HC 1, Base MPG 10, 16,230 lbs., \$80,790. Cargo capacity: 24 spaces, 1,770 lbs.

Battlebus — Mini-bus, X-hvy. chassis, Small truck gas engine, 50-gallon Duelling gas tank, 10 solid tires, driver, 2 gunners, RL right, RL left, MFR back, MD back, Hvy. laser in 3-space universal turret, 2 linked RRs front, 3 hi-res computers, improved fire ext., 6 10-point armored wheel hubs, 6 10-point wheelguards. Armor: F35, R30, L30, B25, T20, U10. Accel. 2.5 to 25 mph, 5 thereafter; Top speed 90, HC 1, 14,380 lbs., \$80,450.



Scenarios

Gas-Powered Duelling

Today, many AADA-sanctioned facilities put on events featuring gas-powered vehicles. These events do not carry "AADA Official" status, but at least the tracks and arenas that sponsor them do not risk loss of official sanction — an enlightened change in AADA policy that came about just last year.

Before that decision, gas-powered duelling and racing was on view at only a handful of specialty, "gas only" facilities in North America. The most famous of these is the Muskogee Fairgrounds and Family Emporium, located in east central Oklahoma. "Pistol" Pete Hendricks has run the Fairgrounds for 32 years, and for the last 26 of them, the Muskogee Fairgrounds has been the most successful track of its type in the world.

The Muskogee Fairgrounds doesn't usually get much publicity, mainly because the fiercely independent Hendricks, a decorated hero in the Secession Wars, has refused every offer to affiliate the Muskogee Fairgrounds with any sanctioning organization of any type, in racing or duelling. Instead, he has depended on the loyalty of his regular Midwest customers, and, later, visionary use of communications satellites to set up his own independent video channel. Long before other duelling arenas and networks were set up, Hendricks had viewers worldwide on Muskogee Vision.

But no discussion of Hendricks' success can be complete without mentioning the one thing that has kept him on top — Oil. The Muskogee Fairgrounds and Family Emporium sits right on top of one of the biggest remaining oil fields in all of Oklahoma. It's not much by the Big Oil standards of the 20th Century, but it's very impressive for 2036.

Hendricks uses the Muskogee oil to draw the finest gas duellists to his events. Each racing or duelling team is given a set amount of fuel at the beginning of each event. In most racing events, each team is limited to the fuel provided by the track. In duelling events, the vehicles have no such restrictions — the precious gas is used more as a bonus for participation.

The map of the Muskogee Fairgrounds and Family Emporium can be found on pages 38–39. It's drawn in one-quarter scale; that is, $\frac{1}{4}$ " on the map will be a full inch when you draw it out.

Many of the key features of the Muskogee Fairgrounds are explained on the map key, but some further explanation may be necessary. The dotted lines on the track indicate where the

management puts up temporary concrete barriers (15 DP) to divert traffic flow into any one of three patterns: Figure Eight, Oval with Pit Stops, and Oval without Pit Stops.

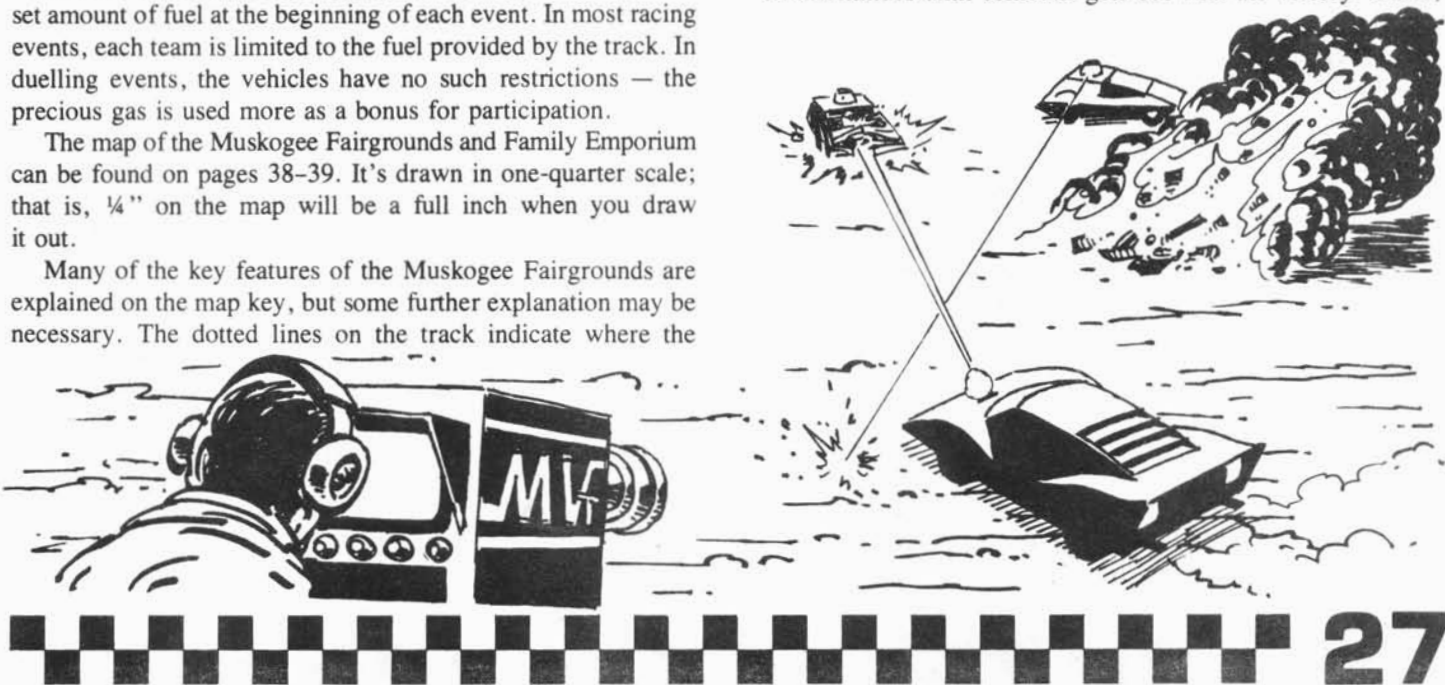
Each pit stop has its own fuel connection, built into the ground. The pit team simply hooks its own hose into the connection, and pumps the gas. Gauges built underground are preset by race officials to limit the amount of fuel each team gets.

The "infield" areas are asphalt, and driving on them is not a hazard of any type. Moving from the track (the shaded area) to the infield or vice versa, however, is a D2 hazard. No big deal, unless you're going 180 mph. . . .

In the western infield is the headquarters of the Fairgrounds — the administrative offices, hospital, crew quarters, garage and repair facility, two helipads, and the oil well. Protected by two 20 DP walls, armed guards, and a number of automatic defensive emplacements, the on-site well is actually very simple — just a wellhead and a few gauges, so operators can monitor the flow of oil. The oil goes right back into the ground, via a buried pipeline, and is carried to a small, well-protected refinery facility Hendricks maintains to the west.

The eastern infield contains "The Octagon," a traditional autoduellung arena. There are three entry gates on each of four faces, and entry to the inner areas of the arena are restricted by staggered openings. At the very center is an area that differs with the event — sometimes a pillar, sometimes a pit, sometimes a pressure plate.

A popular scenario is a free-for-all version of Capture the Flag. The first vehicle to touch the center plate is "it." If that vehicle can escape through any gate (or, alternately, the one through which he entered), he wins. Any other vehicle that disables the target vehicle, however, becomes the new "it." This continues until someone gets out with the victory. Other,



Dueltrack

more traditional duelling formats are also seen at the Octagon, and across the world on MuskogeeVision.

This set-up can be drawn on to four 21" x 32" sheets of ¼" graph paper. The parking and grandstand areas are off the map. The Fairgrounds can be used three ways: As a figure-eight or full-oval racetrack with an open infield; a full-oval racetrack with pit facilities; or an open arena.

The racetrack with open infield is used for short race events in which pit stops won't be necessary. For longer events, temporary buildings and barriers are brought into the infield and makeshift pit areas are erected. In the arena configuration, the area is cleared, and after certain interesting obstacles, debris, ramps, and whatever are added, duelling begins.

Similar formats are used at the other independent gas arenas across the continent. Now that "AADA official" facilities are also experimenting with gas-powered events, the variety of events has increased dramatically. Most arenas and tracks run their usual schedules, except for the difference in vehicle type. But there are so many different kinds of arenas out there featuring so many different types of events, gas-powered duelling is proving to be every bit as versatile as the traditional, electric-powered kind.

As for "crossover" events — electric- and gas-powered cars facing each other across the arena floor — the AADA has taken a very cautious approach to such events. Many of the independent arenas (including the Muskogee Fairgrounds) have put on crossover events as exhibitions, but only one facility today (the Sparks Duelplex and Casino in Nevada) holds regularly scheduled crossover events. The AADA's current official policy is that crossover duelling will remain unapproved until "further study" into the safety and fairness of such events can be finished.

Racing Scenarios

The Ground Rules. These are the extra rules that add spice to an event. Anything you can think of can be a ground rule — hand weapons only; no armor; no weapons fire until you've passed two vehicles; no weapons fire until one lap is completed; no computers; machine guns only; etc.

In addition, there are two important ground rules you should consider:

No Dropped Weapons. These are forbidden in 99% of high-speed (i.e., gas-powered) events on a closed-circuit track. It is bad enough to have track employees risk their lives to remove debris and whatnot from the track during a race, without adding deliberate hazards as well.

Limiting Vehicle Types. Fairness should be a guide in determining what sorts of vehicles players can have. A money limit on the value of each player's race car is a good way to keep everything balanced, but there are other limits the referee might

want to put on an event, such as limiting engine size or restricting the race to one kind of car.

Running Races

Once you've established the ground rules, the type of start and finish you'll use, and whether pit stops will be required (see below), you'll find that you have a complete racing event, ready to go! And any of these features can be changed to produce different and challenging events every time you play.

Included in this book are a number of racetrack layouts you can use for your own racing events. Some can be built using the Deluxe Road Sections, while others should be sketched out on graph paper or the *Car Wars Map Sheets*.

But let's face it — if you played out a 500-mile race one inch at a time, you wouldn't finish until you were a little old autoduellist. Here are a few ideas that can speed things up:

Play one full second at a time. Eliminate phased movement. Move in speed order, fastest first, and move your full second's movement at once. If passing or a combat situation comes up, you can hold up play and break down the crucial phases into tenths of seconds, then pick up the pace again afterwards.

Play ten seconds at a time. As above, but even more abstract. For long races, though, perhaps the only way to go.

Play one lap at a time. Pick a speed for a lap, and then play it out once to see how many seconds (in game time) it takes and what sort of control rolls (if any) are required. Then, on subsequent laps, simply make the control rolls as needed, and keep track of the differences between racers in terms of time. "Okay, after 3 laps, I have a six second lead." "That's all right, you'll have to make one more pit stop than me, and I'll make the time back up then." When it comes time to pass or to have a little combat, go back to standard movement and play it out.

Run short races. Sure, 500 miles is pretty intimidating — but if you're organized, you could run a 10-mile race in one afternoon (especially at these speeds . . .). And even a two-lap event can be fun.

Let the natural tendency for violence run its course. In some ways, it may not matter how long the race is supposed to be — everybody will be shot to pieces in the first lap-and-a-half anyway.

Starting The Race

The Rolling Start. At the old-time Indianapolis 500, the cars were lined up by threes, and went around the track at a slow speed (like about 80), led by the pace car (a car the referee should control). As the pack approached the start/finish line, the pace car pulled off into the pits, and the pack accelerated up to speed. It worked in 1986, so there's no reason it shouldn't in *Car Wars*.



The Standing Start. A standing start can also be used, but if everybody starts in a pack at speed 0, they might be tempted just to sit there and shoot it out. Some sort of restriction on weapons fire should be in place, e.g., no firing until one lap is completed. A better set-up for a standing start is to stagger the cars around the track, evenly spaced. Combat could start immediately under these circumstances.

During The Race: The Pits

Most race car engines have mediocre Base MPG ratings to begin with. Considering that they'll all be driven at such high speeds, actual MPG will end up in the 3 to 5 range (go ahead, figure it out). For a race of any length at all, that means only one thing — pit stops.

Two pit areas are provided on the counter sheet in this set. Cut them out, and you can use them with any sort of racetrack — one made out of road sections, or one drawn out on a map sheet.

Most dueltracks are laid out to make it difficult or impossible for stray shots to enter the pits. And most tracks prohibit any attacks on or by a vehicle entering the pits (large stores of gas are *very* dangerous). A small minority of events (usually "outlaw" races) permit combat in the pits — in fact, pit crews are considered combatants. This can give rise to some incredibly nasty and destructive scenarios.

A pit stop for fuel takes one second for every three gallons of fuel (round up), with a minimum of 6 seconds. For example, filling an 8-gallon tank would take 6 seconds; filling a 15-gallon tank would take 6 seconds; filling a 20-gallon tank would take 7 seconds; and filling a 45-gallon tank would take 15 seconds. It only takes one pit crew member to fill a fuel tank.

The other major function of a pit crew is to change tires. Replacing one or two tires takes 8 seconds and requires three crewmen (one on each tire, and one on the jack).

four tires takes 12 seconds and requires 5 crewmen (one on each tire and one on the jack).

Under most circumstances, racing teams are assumed to have an unlimited supply of tires. (If the referee wants to limit the supply of tires, that's okay, but that makes tire shots that much more attractive — and pit stops that much more common.)

Tire changing can go on simultaneously with refueling. Any repairs or other activities in the pits will add to the length of a pit stop — anywhere from 30 seconds to 30 minutes. The referee determines how much damage can be repaired how quickly.

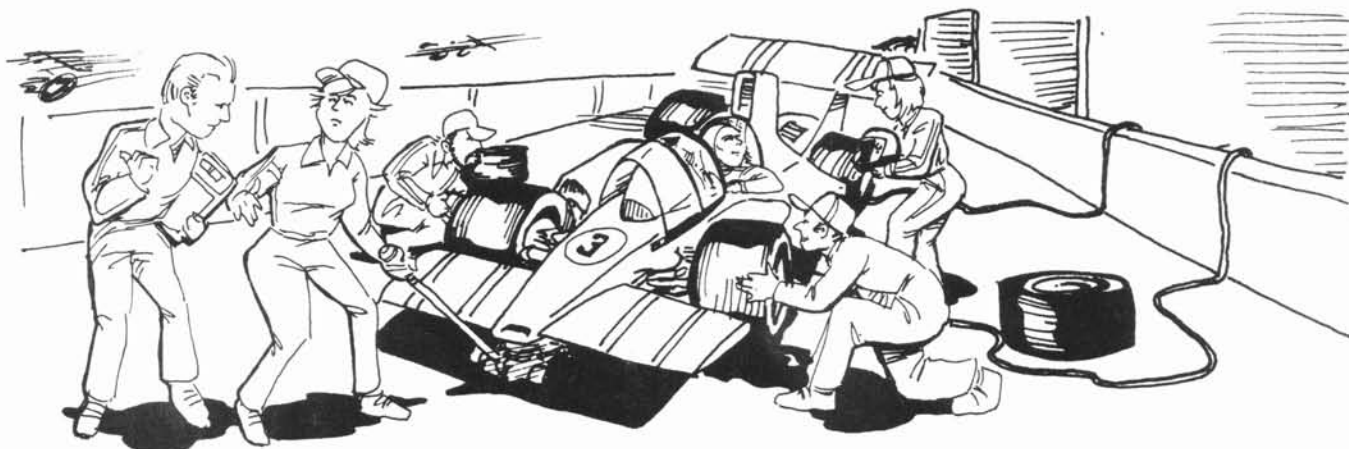
Pit stops take as long as the longest single task — of course, if you are short on crew members and people have to do more than one task, they must be done one after the other, and not simultaneously.

A good pit crew can cut the time spent in the pits. For each task undertaken in the pits, roll one die. On a 5, cut the time needed by one second. On a 6 or better, cut the time needed by two seconds. Refueling is considered a separate task, as is each individual tire change.

If any members of the pit crew have the Mechanic skill above the base level, they get to add their bonus to the die roll for any task in which they are directly involved. If more than one crewman involved in a particular task has a Mechanic skill bonus, use the largest bonus.

Example: A Thompson J-1 pulls into the pits. The crew swarms over the wall, and starts working the moment the car comes to a stop. The Thompson needs a refuel and two tires. That's considered three separate tasks. There are enough crewmen available to do all three jobs at the same time.

The person on the gas can has no Mechanic bonus, but rolls one die anyway. He gets a 5, which knocks one second off the normal refueling time of nine seconds. The crewman changing one of the tires is a Mechanic +1, and also rolls a 5. The +1 bonus makes it a 6, which is good for two seconds off the normal changing time of eight seconds. The crewman changing the



other tire is a Mechanic +2, but rolls a 1 — so low that his Mechanic bonus won't help.

The eight seconds it takes to change the second tire (and to fill the tank) is the longest single part of the pit stop, so the entire stop takes eight seconds.

It's generally best to assume there is an unlimited supply of car-crazy folks who would make competent pit crew workers. (Referees can, however, limit the number available in a campaign or for a particular event.) For a single event, crew members can be hired for \$500 each.

If you wish to maintain a steady crew in the context of a campaign, work out salaries and other expenses with your referee. Skilled crew are much more expensive than your average, run-of-the-mill joe: A Mechanic +1 costs five times as much as a regular crew member; a Mech +2 costs ten times as much; and a Mech +3 costs 25 times as much. Remember also that Mech +3s don't grow on trees; almost all of them will be salaried employees of a racing team, and not available for one-time employment.



Ending The Race

In a duelling event, determining a winner is easy — the last survivor wins. In a race, however, speed and finesse are supposed to be worth more than brute power. . . .

The simplest kind of race is one involving a distance (10 miles, 500 miles, whatever). The winner is the first to complete that distance. Alternatively, you can set a time limit (either game time or real time) and declare the vehicle that has traveled the farthest to be the winner.

You could also determine the winner of a race by number of cars passed. This tends to encourage a little more violence, since the easiest way to pass another vehicle is to leave it a burning hulk by the side of the track.

The Winner's Circle. Most racing events are held for cash prizes — 1st place is usually close to 10% of the total value of the competing vehicles. Second place will get half that, and third place half of second. If combat is also part of the event, all survivors get salvage rights to their kills.

Some tracks have substitutes for cash prizes — free repairs, ammunition, new equipment, etc. And a few, like the Muskogee Fairgrounds and Family Emporium, offer prizes in the form of gasoline — 100 gallons for first, 50 for second, 25 for third.

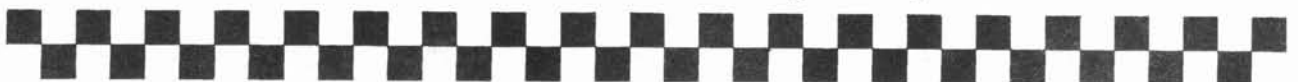
Racing drivers get prestige awards just like duellists. Prestige earned in racing events *can* be mixed with prestige earned in duelling events — notoriety is notoriety, no matter what for. The benefits of prestige are the same as in basic *Car Wars*. Prestige awards are also the same as in basic *Car Wars*, with the following additions:

- Winning a race: +3
- Finishing second: +2
- Still running when race is over, but not first or second: +1
- Entering a gas-powered event: +1
- Escape burning vehicle alive: +1

For the purposes of improving various skills, treat each combat in the course of a race as a separate combat. In addition, winning a race is worth 3 points toward the Driver skill and 3 general skill points. Being "in the running" when the race is over is worth 1 point toward the Driver skill and 2 general skill points.

A racing campaign is fairly easy to set up. In addition to the regular winnings at the end of a race, allocate points to the top finishers. For example, the first six places could get 9-6-4-3-2-1 points. Then, after a series of races covering an entire season (15 or 20 races, or maybe even more), total up the points and crown the winner "Season Champion."

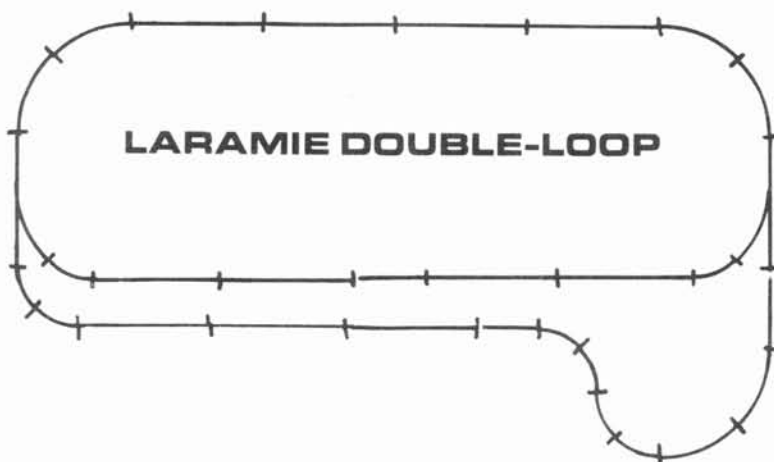
The Season Champ should get incredible wealth, prestige, and fame, of course, and those who also finished high in the points standings should receive smaller prizes as well as the adoration of racing fans everywhere.





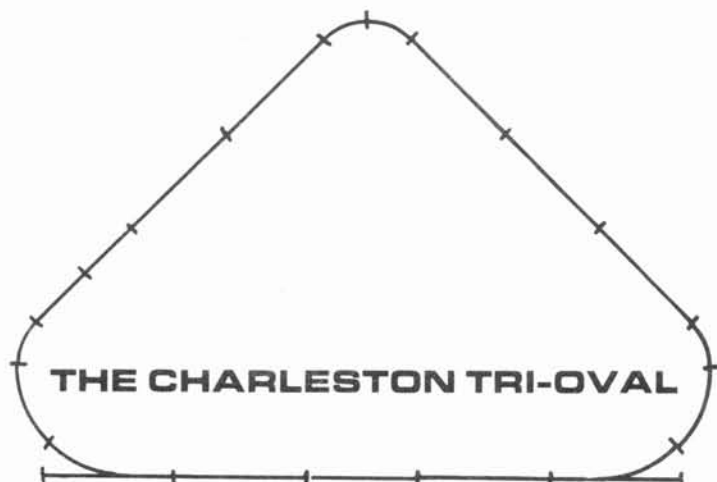
THE BRISTOL OVAL — This common narrow-oval design is typical of small Northeastern tracks where space is at a premium. The tight curves at either end tend to hold speeds down, but there are usually enough foolhardy drivers (especially on Amateur Night) to keep the crowds entertained. This track can be built with the road sections provided in this box, combined with the road sections in either *Car Wars* game.

LARAMIE DOUBLE-LOOP — Really two tracks in one, the Double-Loop is a fairly typical dueltrack. Its major distinction is an event known as Mixed Doubles, where two races are run simultaneously on the two tracks. Cars driving on a portion of the course not belonging to their race are disqualified, and combat on the common portions of the track can often get very confusing. Building this track requires the road sections from this set and *Deluxe Car Wars*, and one *Deluxe Road Section Set 1: Starter Set*.



CRUM MEMORIAL — Named after one of Louisville, Kentucky's most celebrated citizens, the Denny Crum Memorial is almost a standard oval racetrack. Almost, that is, except for the wicked hairpin curves at either end. Louisville's reputation as one of the most autoduellling-crazy towns in North America makes the Crum Memorial a regular stop for most top duellists, who are treated like royalty during their stay. This track can be built with the road sections provided in this set, combined with the road sections in either *Car Wars* game.

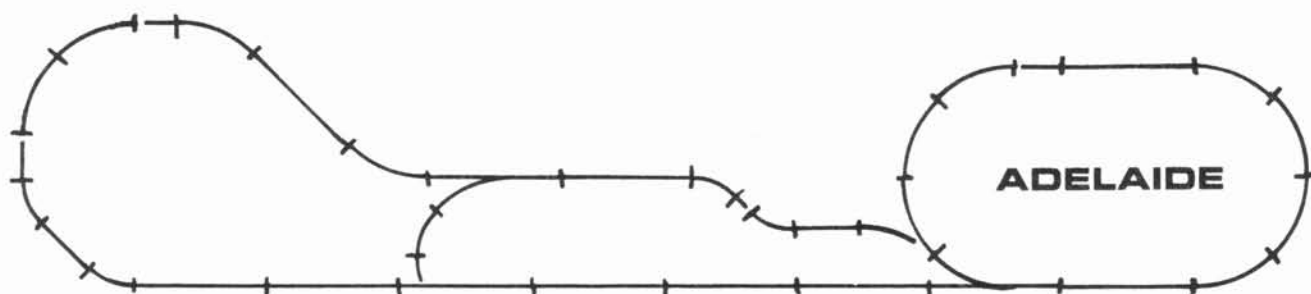
THE CHARLESTON TRI-OVAL — A scaled-down replica of a famous 20th-century stock car track, the Charleston features banked curves that permit some of the highest speeds in the country for a track of this size. (The rules for banked tracks are simple: All maneuvers made in the direction of the bank — that is, toward the downhill side — are D2 less than normal. Maneuvers made against the bank are at +D2.) This layout can be built with the road sections provided in this box, plus straight sections from *Car Wars*.



THE DEARBORN AUTODUEL ARENA



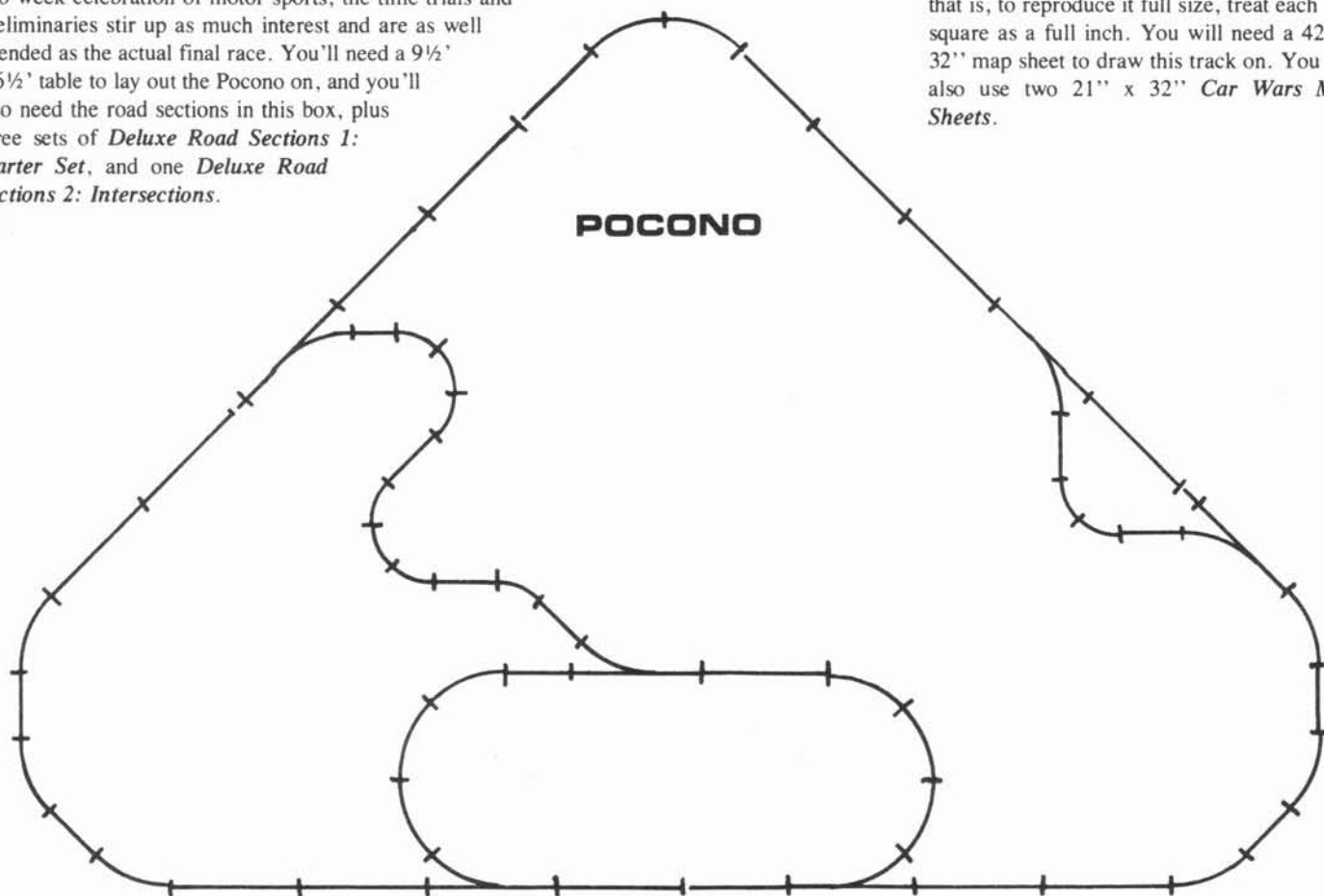
THE DEARBORN AUTODUEL ARENA — Entrepreneurs bought up the testing grounds of a now-defunct Detroit automaker, and converted part of the test track into this racetrack arena. It can be run as a circuit, with the "Y" sections at either end treated as hairpin curves, or it can be run as a split dragstrip. This layout can be built with just the road sections provided in this supplement, combined with the road sections in either *Car Wars* game.



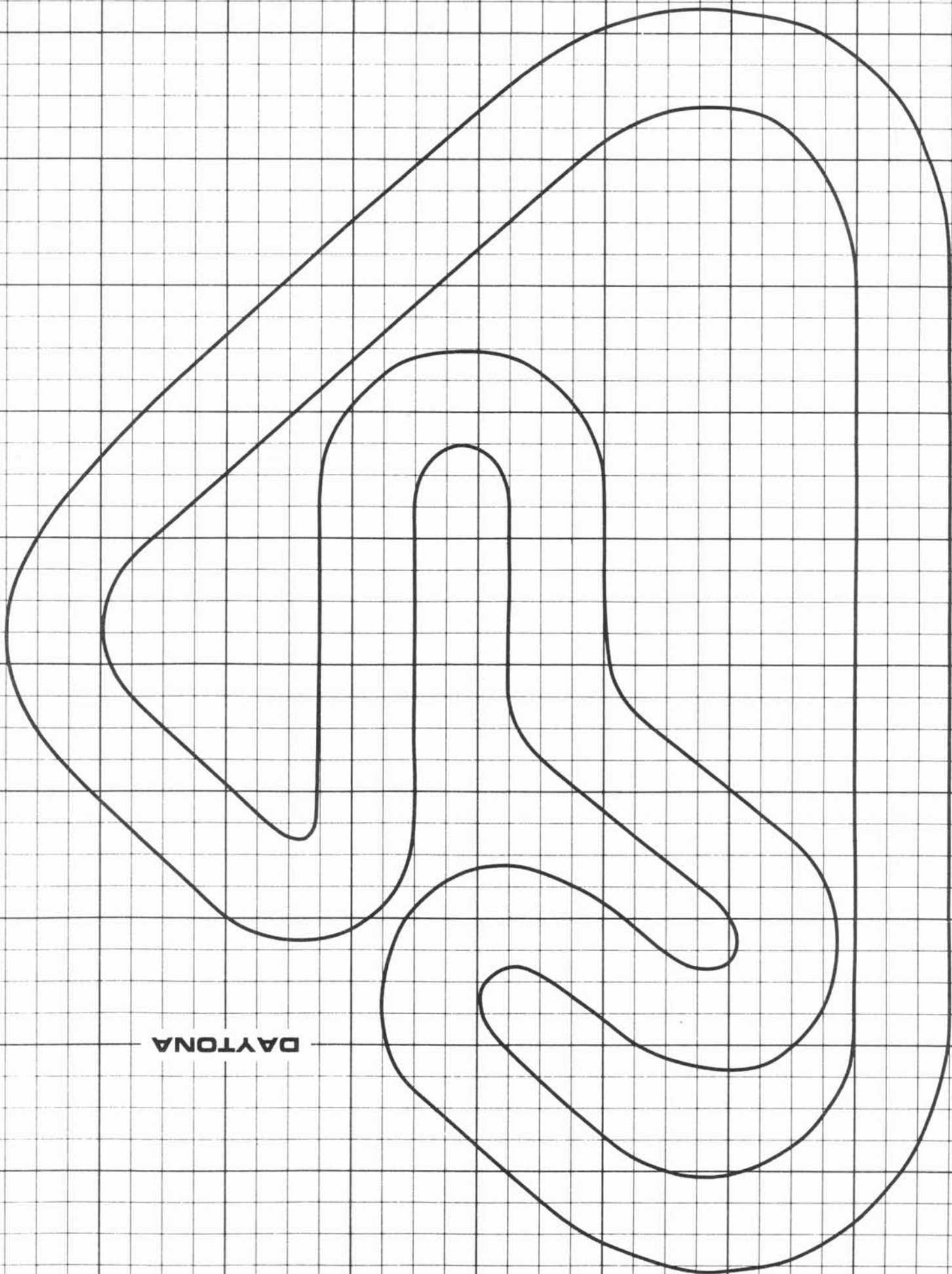
ADELAIDE — Australia's premier racetrack duelling facility, the Adelaide is located in Glen Osmond and features events six nights a week, year-round. Note that different tracks can be traced on the same layout by blocking off certain intersections. This layout can be built using the road sections in this set, the road sections in *Deluxe Car Wars*, and two sets of *Deluxe Road Sections Set 1: Starter Set*.

POCONO — A magic name in racing for nearly a century, the Pocono Raceway is the home of one of the prestigious racetrack duelling events in America today, the Pocono Unlimited. A two-week celebration of motor sports, the time trials and preliminaries stir up as much interest and are as well attended as the actual final race. You'll need a 9½' x 6½' table to lay out the Pocono on, and you'll also need the road sections in this box, plus three sets of *Deluxe Road Sections 1: Starter Set*, and one *Deluxe Road Sections 2: Intersections*.

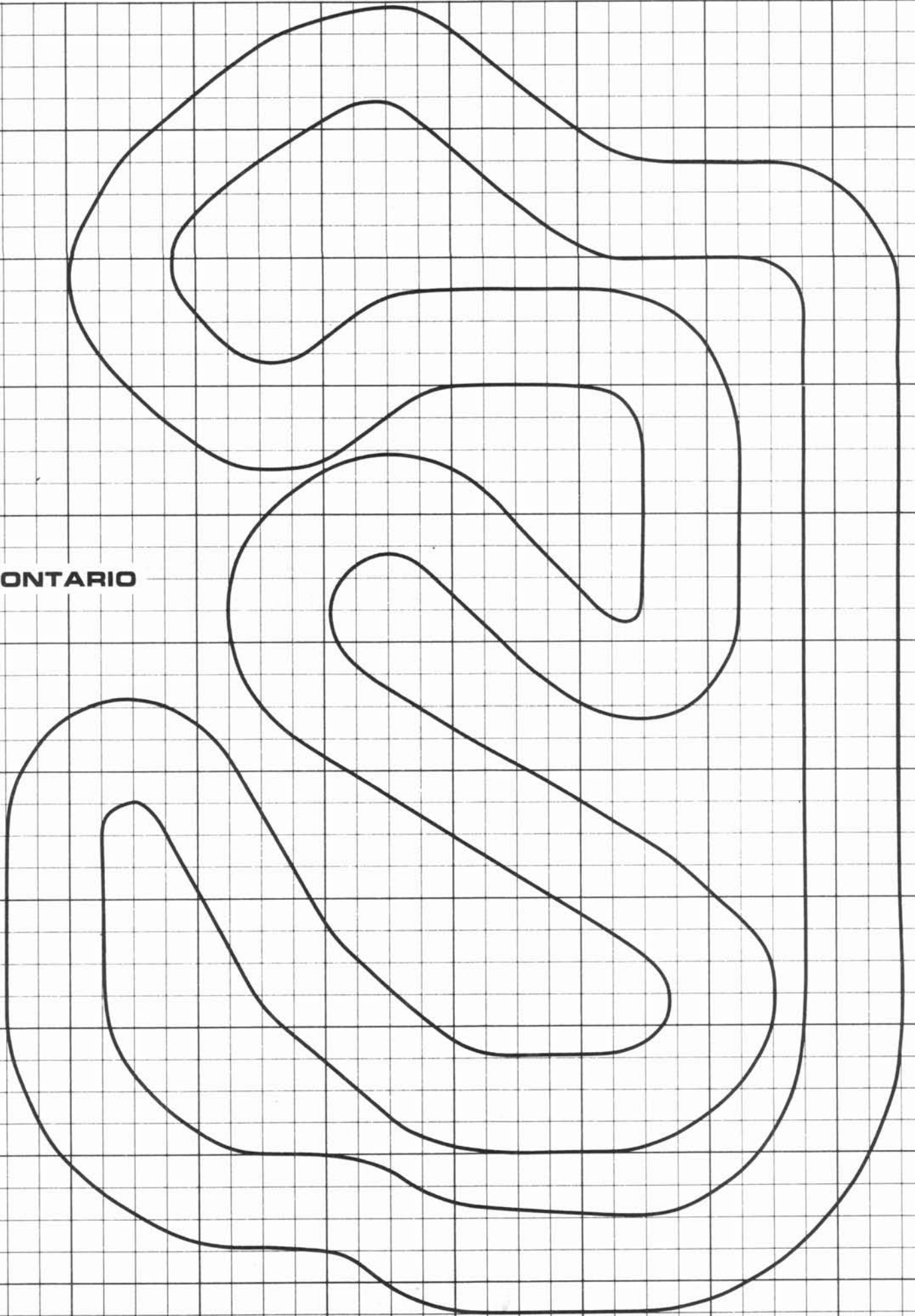
DAYTONA — For most of the past 35 years, the Daytona racetrack has been an amusement park run by the Disney corporation. Disney sold the facility four years ago, however, and it reopened in 2035 as a dueltrack arena featuring the finest technology available in spectator safety. As a result, Daytona has the largest annual live attendance of any duelling facility in the world — over 8 million paying customers a year, with only 7 duel-related fatalities since the reopening of the track. The map is presented in ¼-scale; that is, to reproduce it full size, treat each ¼" square as a full inch. You will need a 42" x 32" map sheet to draw this track on. You can also use two 21" x 32" *Car Wars Map Sheets*.

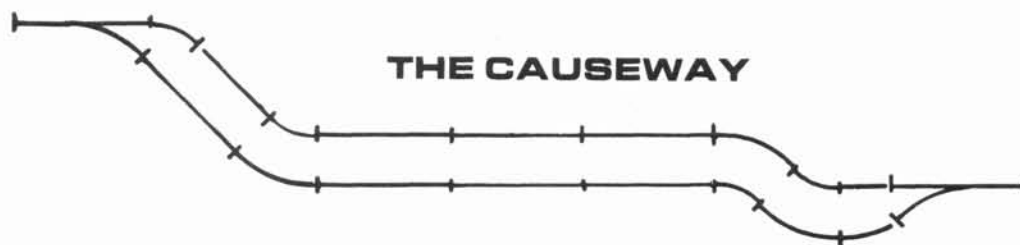


DAYTONA



ONTARIO

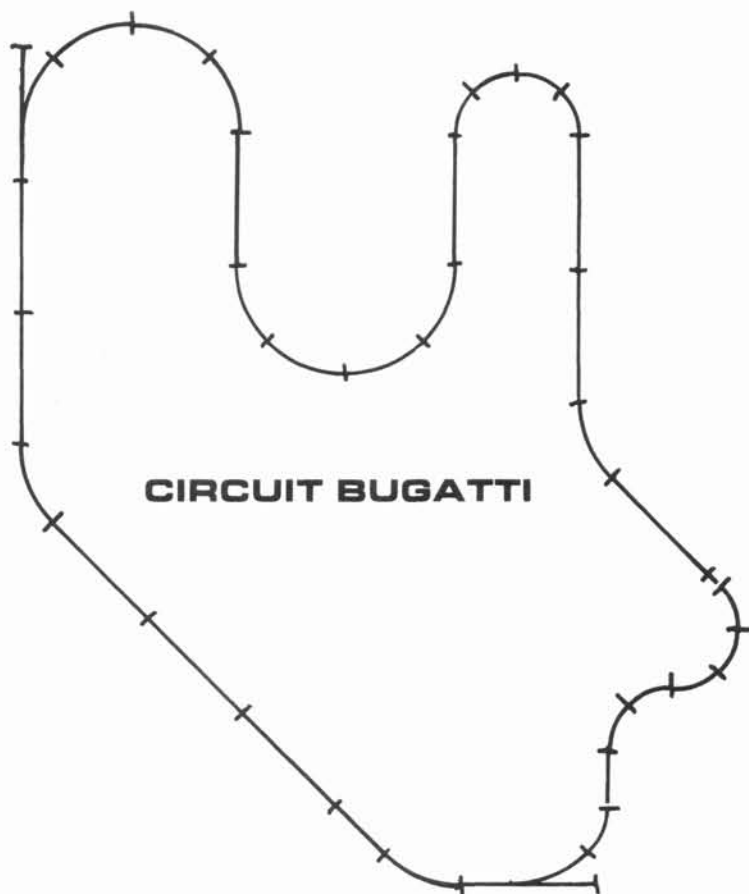




THE CAUSEWAY

THE CAUSEWAY — This side-by-side dragstrip is also called "The Wiggler" by fans. Located in Mobile, Alabama, the Causeway also has frequent circuit events, using the "Y" junctions at either end as tight hairpin curves. This layout can be built with the road sections provided in this box, combined with the road sections in either *Car Wars* game.

ONTARIO — After decades of abandonment and neglect, this California dueltrack recently completed a \$14 million facelift and refurbishment to make it one of the finest tracks in the West. The hairpin curves put handling at a premium, while the long straightaway insures that the slower vehicles will be left in the dust. The map is presented in 1/4-scale; that is, to reproduce it full size, treat each 1/4" square as a full inch. You will need a 42" x 32" map sheet to draw this track on. You can also use two 21" x 32" *Car Wars* Map Sheets.

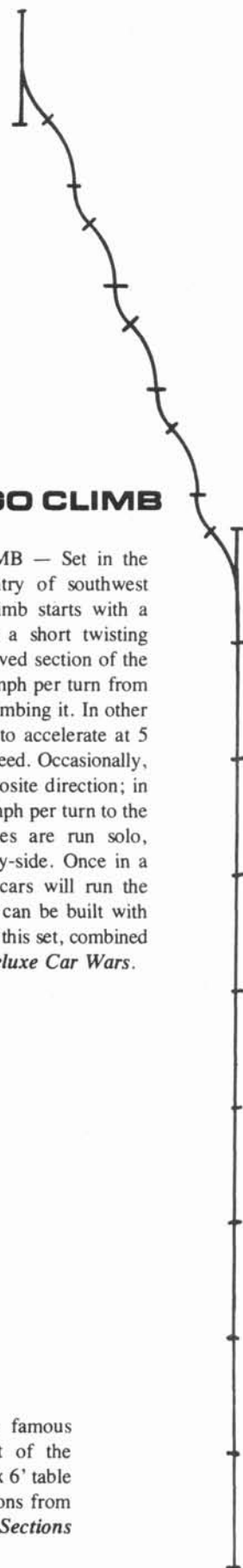


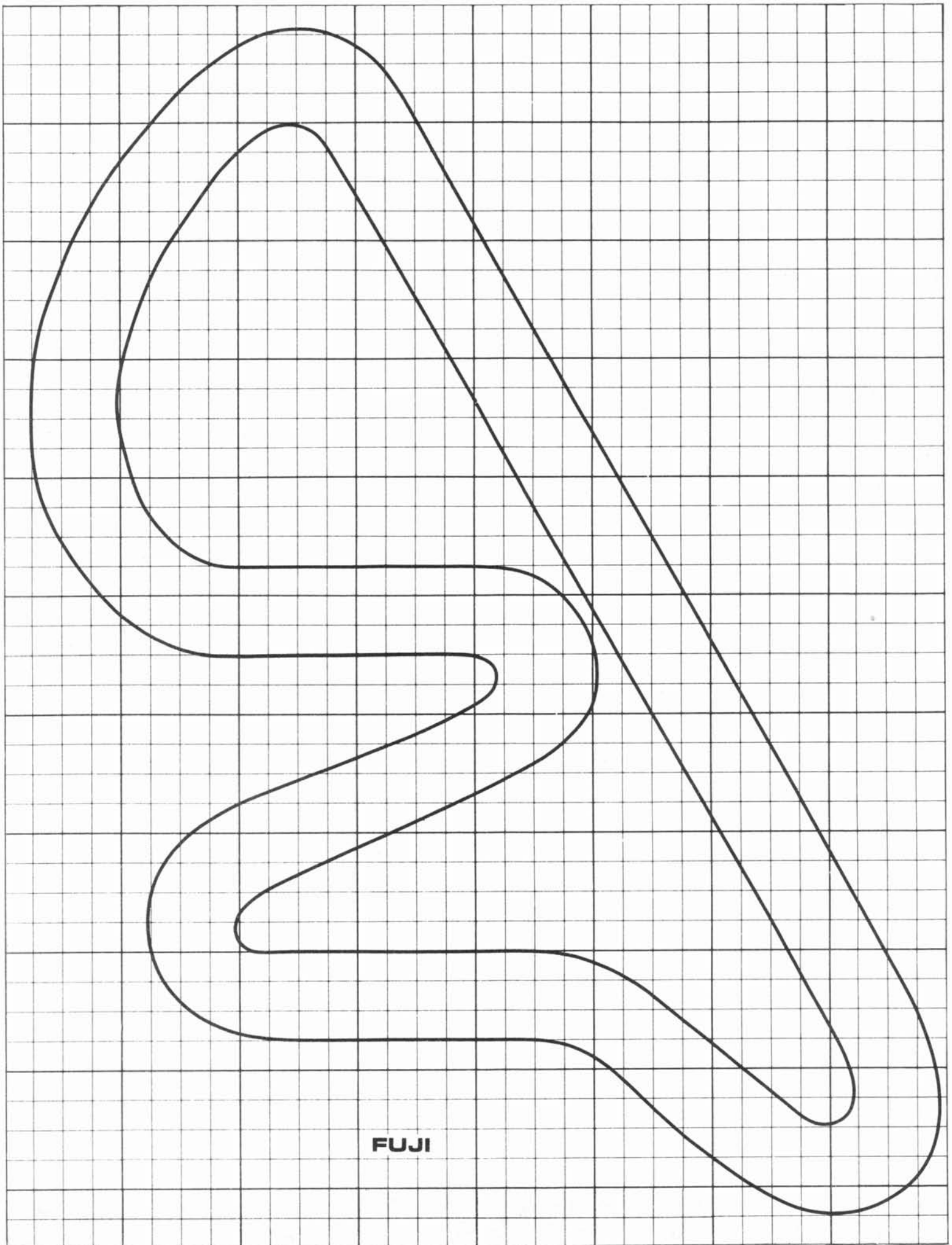
CIRCUIT BUGATTI

CIRCUIT BUGATTI — This famous French circuit is but a small part of the LeMans race course. It requires a 5' x 6' table to lay out; you'll need the road sections from this set, as well as two *Deluxe Road Sections Set 1: Starter Set* to build it.

THE DURANGO CLIMB

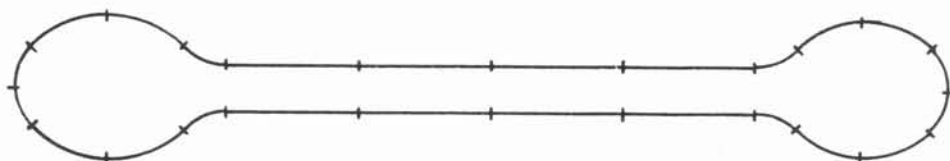
THE DURANGO CLIMB — Set in the picturesque mountain country of southwest Colorado, the Durango Climb starts with a 1/4-mile straightaway, then a short twisting climb to the finish. The curved section of the road is steep — subtract 5 mph per turn from the speed of each vehicle climbing it. In other words, a vehicle will have to accelerate at 5 mph just to keep the same speed. Occasionally, races will be run in the opposite direction; in that case, the slope *adds* 5 mph per turn to the speed of the vehicle. Races are run solo, against the clock, or side-by-side. Once in a while, three or even four cars will run the course together. This track can be built with the road sections provided in this set, combined with the road sections in *Deluxe Car Wars*.





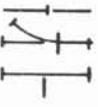
FUJI

BALTIMORE JOUSTDUEL ARENA

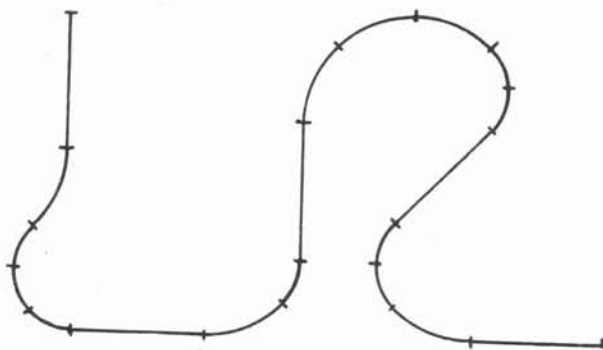


BALTIMORE JOUSTDUEL ARENA — This arena was the site of the 2034-35 AADA World Championships. Two vehicles line up at opposite ends of opposing lanes, and charge at each other, negotiate the tight loop at the end, and return for another pass. Crossing the center is discouraged by a double layer of mines. This layout can be built with the road sections provided in this box, plus the road sections in *Deluxe Car Wars* and *Deluxe Road Sections Set 1: Starter Set*.

KEY

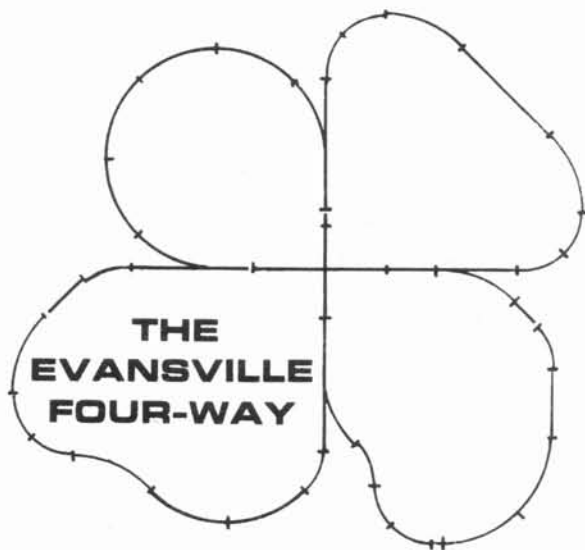
-  Short Straight
-  Straight
-  Tight Curve
-  Regular Curve
-  Turnout
-  Crossroads
-  Various overlapping road sections

THE MACON DRAGWAY



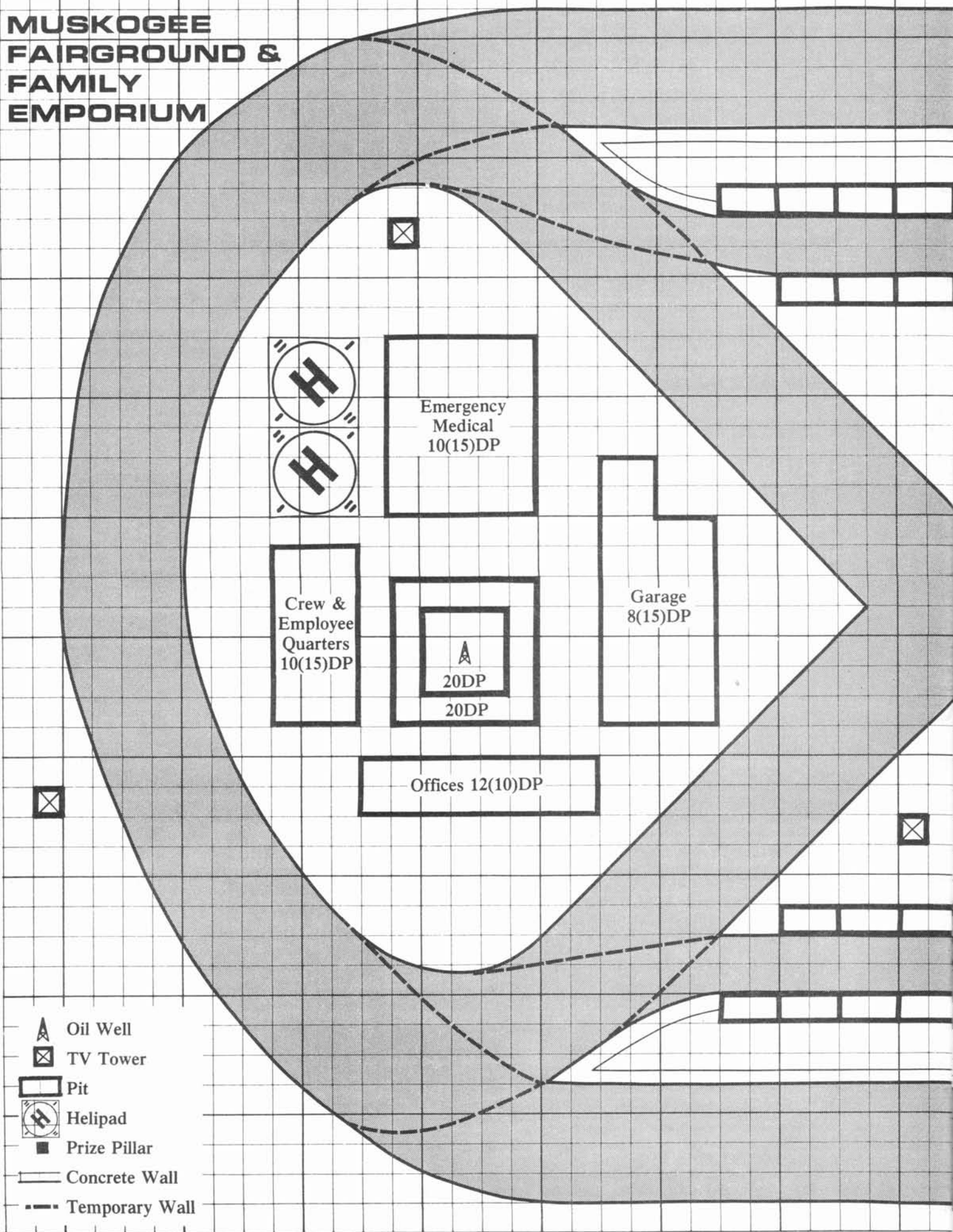
THE MACON DRAGWAY — Called "The Kink" by practically everyone, the Macon Dragway is a dragstrip in only the loosest sense of the word. Many interesting events are held here, but the best is the "Macon Special" — a once-a-month free-for-all in which two teams line up at opposite ends of the strip and advance. The first team to get a vehicle or member on foot across the other team's starting line wins. This track can be built with the road sections provided in this set, combined with the road sections in *Deluxe Road Sections Set 1: Starter Set*.

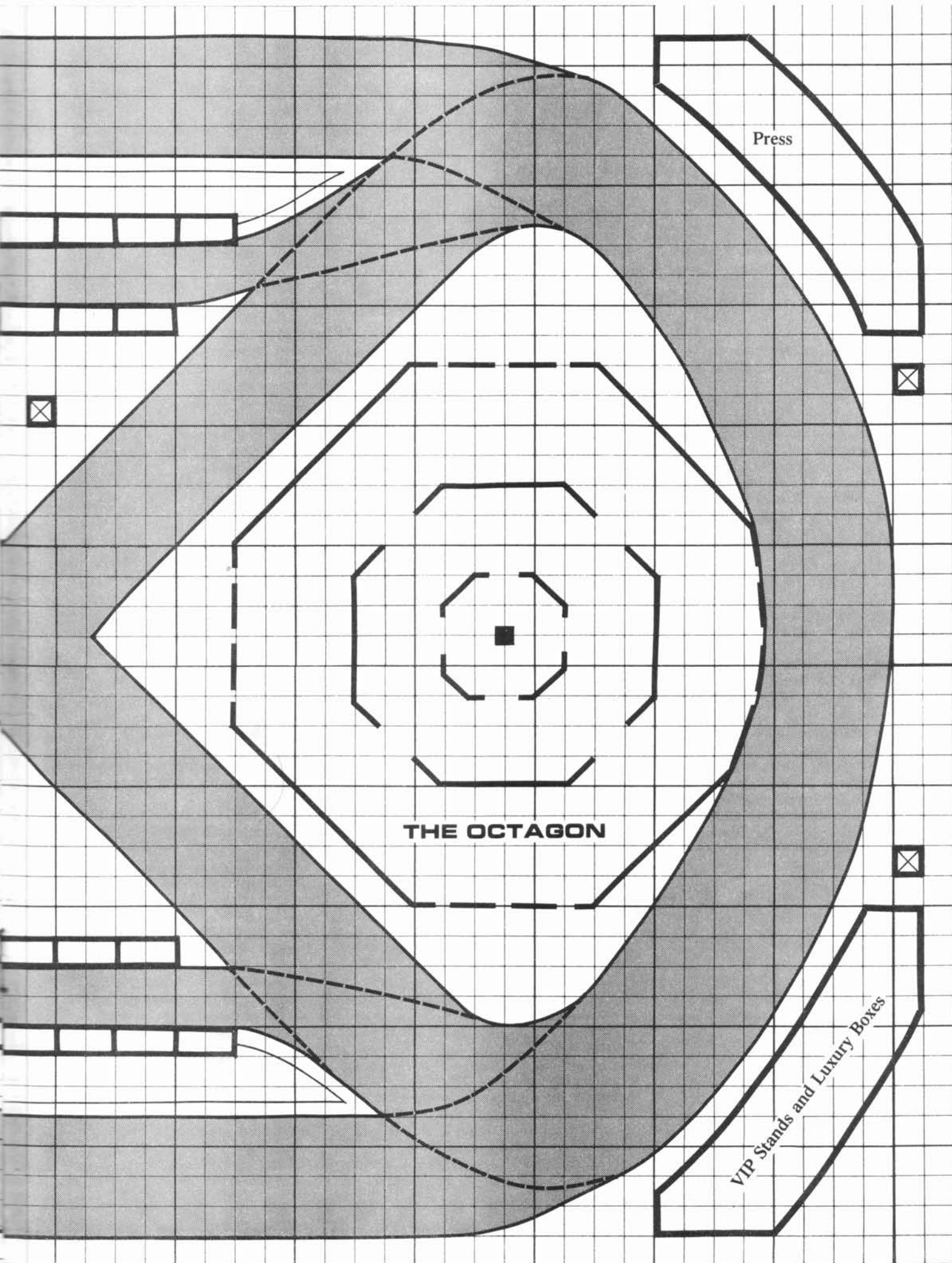
FUJI — A classic Japanese racetrack, the Fuji barred all duelling activities in the mid-20s, labeling autoduelling as "dishonorable" and "corrupt." Public pressure and flagging revenues caused the management to change its tune in early 2036, however, and now a full autoduelling schedule is run for enthusiastic Japanese fans who are getting their first taste of live duelling. The map is presented in $\frac{1}{4}$ -inch scale; that is, to reproduce it full size, treat each $\frac{1}{4}$ " square as a full inch. You will need a 42" x 32" map sheet to draw this track on. You can also use two 21" x 32" *Car Wars Map Sheets*.



THE EVANSVILLE FOUR-WAY — Indiana's second-most popular duelling arena (the Hoosier Duellodrome in Brickyard is No. 1), the Four-Way is noted for the odd traffic patterns and strange collisions that only a demented clover-leaf layout can provide. This track requires the road sections in this set, *Deluxe Car Wars*, two *Deluxe Road Sections Set 1: Starter Set*, and one *Deluxe Road Sections Set 2: Intersections* to build.

MUSKOGEE FAIRGROUND & FAMILY EMPORIUM





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Control Table

Handling Track Status

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