yags

Yet Another Game System

High Tech

World Wars and Cold Wars

Free as in Freedom

GPL

The Technological Revolution

I never thought that I would ever be wealthy enough to own a car - nor so poor that I wouldn't have servants.
-- Agatha Christie

Through a process that began in the 17th century, and began to accelerate in the 19th, the 20th century saw a huge increase in the rate of technological advancement that made massive changes to the way people lived within a single generation. The early 20th century saw the first air planes, the mechanisation of warfare, the mass production of cars and instantaneous long distance communication coming into the hands of the masses.

YAGS High Tech covers the equipment available during the period from the early 20th century (Technology Level 6) through to the early 21st century (TL 8). Though it is barely more than 100 years, there is a huge change in the type of items available. However, they are all close enough to the present to be considered *Modern*, and for most people to have a vague understanding of what these periods in history were like.

High Tech concerns itself mostly with those things that require in-game statistics, such as weapons and vehicles. Since vehicles become so predominant during these periods, a detailed set of rules on the use of vehicles within ***YAGS*** are also included.

The Modern World (1900 - 2020)

The technology levels in ***YAGS*** are meant as a rough guide as to when an item, skill or knowledge becomes available for use within the game. The date ranges given are based on 'Western Civilisation', and there is always a certain fuzziness around the transition from one period to the next.

Though Europe and North America are currently TL 8, there are still TL 0 (stone age) civilisations in the world, and many smaller countries might still be classed as TL 7, or even TL 6. In many games, it may well be that the adventures are happening in these less technologically advanced countries, so though PCs have access to high tech weapons and satellite phones, the culture around them has a combination of spears and AK-47s.

The technology level defines the base level of technology that a culture can support itself, and may be radically different from the technology actually available. There are many African nations where mobile phones are a common means of communicating and where farmers regularly look up grain prices on the internet, but the TL of the culture itself may be 2 or 3. Just because they don't have the knowledge to build a steam engine, doesn't mean they can't make use of (or even know how to repair) high tech equipment purchased from others.

Where prices are given, they are given for the TL when the item was introduced. Most items will reduce in price at later TLs, though if they become generally unavailable then prices may well increase.

Prices are given in USD ($), again at time of introduction.

TL 6 - The Mechanical Age

You can't say that civilization don't advance, however, for in every war they kill you in a new way.
-- Will Rogers

Covering the period from 1900 to 1945, TL 6 sees the introduction of cars and planes on a scale which affects the lives of everyone.

From the point of view of being the setting for a campaign, TL 6 has a number of unique advantages. Firstly, it has just the right amount of technology to allow things to be possible, without it being quite prevalent enough to close down other options.

Communication around the world is possible, but possible to prevent on a regular basis without stretching disbelief. Fast air travel exists, but is limited. In America, you have the extremes of high society and abject poverty rubbing shoulders with each other. Two world wars provide plenty of plot hooks, and the '30s provide obvious villains in the form of the Nazis.

Supporting a TL 6 Culture

In a science fiction setting, it is relatively easy for a culture to achieve TL 6 if they are pre-equipped with the right scientific knowledge. As long as skilled craftsman are available, the machines that were common in this period didn't require high levels of automation for production, and could be produced manually.

There were no sensitive electronic components needing to be manufactured in expensive clean rooms, no high precision tools for crafting micro technology, and no required knowledge of advanced physics or medicine.

As such, many off world colonies may well be able to support a TL 6 culture with a relatively low population. They would rely on trade with more populous worlds to obtain more advanced tools, medicine and machines.

TL 7 - The Nuclear Age

> *Now, I am become Death, the destroyer of worlds.*
> *-- J. Robert Oppenheimer*

The first atomic bomb was detonated in 1945, and signifies the start of TL 7. Atomic energy was not the only defining characteristic of TL 7 however. Space travel, computers and the wide adoption of television also changed culture considerably.

TL 7 provides a number of good possibilities for a campaign, the most obvious of which is the Cold War. There is plenty of opportunity for adventures set around espionage, covert operations and outright shooting wars. The end of the Cold War period actually made it a lot harder to come up with believable plots for action films.

The huge expenditure of the Cold War, on both sides of the Iron Curtain, saw rapid advancement in the state of military equipment. Most of the major conflicts of the period though were between imbalanced armies and demonstrated that having the best hardware wasn't the only requirement to win a war quickly.

TL 8 - The Information Age

> *I'm a great believer that any tool that enhances communication has profound effects in terms of how people can learn from each other, and how they can achieve the kind of freedoms that they're interested in.*
> *-- Bill Gates*

The Science Fiction of TL 7 saw computers as becoming bigger and more powerful, but mostly failed to predict them becoming smaller and cheaper. The early dreams of a telephone in every American town, or a computer in every home, ended up missing the mark by being too conservative.

With the end of the Cold War in the late 80s, it seemed that the West had run out of enemies to fight. It wasn't long before new enemies were found, and by the early 21st century there is again room for plenty of covert operations, though the nature of such things has changed drastically since TL 7.

The big issue with TL 8 adventures is that communication and information is ubiquitous. Unless characters are adventuring in remote parts of Africa or South America, it's difficult to be out of range of a mobile signal, Google, Wikipedia and the answer to whatever problem is currently confusing you.

Supporting a TL 8 Culture

The level of technology prevalent in TL 8 requires a supporting infrastructure not easily obtained without a large population, in the order of 100 million people. It requires raw materials, advanced factories, precision machines and the ability to produce sensitive electronic components on a huge scale.

Also required is a good understanding of science, at a level beyond what most people are willing to be capable of. This requires a good education system, and the ability to support academia.

Some technology however is easy to share with low tech neighbours. Mobile phones are ubiquitous almost throughout the entire world, even in cultures which are barely above TL 0. AK-47s are cheap and easy to use, and have become the staple of tribal warfare. As technology advances though, it becomes harder to support it without the full set of tools. A TL 7 car can be fixed and maintained by someone with a hammer and a bit of knowledge. Fixing the computer controlled electronics of a modern TL 8 car however is going to be much harder.

Ageing and Health

> *I don't want to achieve immortality through my work; I want to achieve immortality though not dying. I don't want to live on in the hearts of my countrymen; I want to live on in my apartment.*
>
> *-- Woody Allen*

Sooner or later, everybody dies. As an 'adventuring hero' you will probably die on your feet attempting to do something heroic. Most people die in their beds of old age. On the off chance that you survive to old age, ***YAGS*** has some rules on what happens to you at this point.

Once you reach 30, you need to make an ageing roll each year. This roll can be done on your birthday, or at the end of the winter season. For long running campaigns which are built around yearly events, it is generally easiest to assume that everyone rolls at the same time of year. The results of the ageing will happen sometime over the following year.

Ageing Rolls

An ageing roll is equal to 1d20 + the number of full decades you have lived. On your 30th through 39th year, you will roll 1d20 + 3. There are modifies to this based on your current state of health and living conditions.

TL 0-3	+1
TL 7.	-1
TL 8.	-2
TL 9+.	-3

Hazards

> *The various reasons which we have enumerated lead us to believe that the new radioactive substance contains a new element which we propose to give the name of radium.*
>
> *-- Marie Curie*

The world is a dangerous place, which is often trying to find new ways of killing us, or at least making life more exciting. It is during the *High Tech* era that we began to discover and understand some of these new ways, from radiation sickness to nerve poisons and biological warfare.

Radiation

Radiation begins to be understood at the start of TL 6, though it is not until the end of TL 6, with the dropping of the first atomic bombs, that the full horrors of radiation become understood by the population at large. During the early years of the 20th century it was actually believed that radiation was good for you, and radioactive drinks were marketed as a health benefit.

There are many ways to measure radiation, the most common being the *Gray* and the *Sievert*. These are not simply different units, but different ways of measuring radiation so there isn't a direct conversion factor between them. For simplicity, ***YAGS*** uses a **Radiation** score for someone who has been exposed to radiation. This starts at zero, and 100 or more is considered immediately fatal, which is about equivalent to 30 *Grays*.

Radiation sickness comes in two forms - *acute* and *chronic*. Acute radiation sickness consist of health effects which manifest within 24 hours of being irradiated. Chronic sickness will show up months or years later.

Getting Irradiated

If you are irradiated, then you will gain a *Radiation* score which will build up each time you suffer further radiation exposure. Minor exposure may have little or no short term effect, but over time can lead to death from organ failure, cancers or other long term health symptoms.

If you are exposed to a radiation source, then make a roll on the following chart to see how much *Radiation* you gain. The strength of the source will range from *mild* to *critical*.

d20	Mild	Light	Moderate	Heavy	Serious	Critical
1-4	-	1	2	3	5	10
5-8	1	2	4	6	10	20
9-12	2	3	6	10	15	35
13-16	2	4	8	15	25	50
17-20	3	5	10	20	40	80

The amount of *Radiation* gained has no short term effect, though will affect your long term health. For short term effects of exposure, see the following descriptions.

Mild Dose

A *mild* dose of radiation will be received by eating lightly contaminated food or being exposed to a small amount of radioactive material.

Light Dose

A *light* dose might be received from a minor leak at a nuclear power plant, or a small accident in a nuclear laboratory. It may also be received if mishandling a nuclear warhead.

Moderate Dose

A *moderate* dose of radiation is received from a leak at a nuclear power plant, or from a major accident in a nuclear laboratory.

Heavy Dose

A *heavy* dose of radiation may kill you in the short term, though it is more likely to cause long term health effects. Being in the blast of an atomic bomb, or down wind of a burning nuclear reactor will provide a heavy dose.

If exposed to a *heavy* dose, roll on the radiation dose chart once every 10 minutes. After a number of minutes equal to your *Health*, you will begin to suffer from nausea and vomiting which will give you a -10 penalty to all actions. This will last a number of hours equal to the amount of *Radiation* received.

Severe Dose

A *severe* dose requires a roll every minute on the *Radiation* table above. You receive a *stun* from skin burn and gain a level of *exhaustion*. Within a number of minutes equal to your *Health*, you will start to feel nausea, and suffer from vomiting and diarrhoea. This will last for a number of hours equal to the amount of *Radiation* that you received, and you will be at -10 to all actions whilst suffering.

The radiation will continue to destroy your body even after exposure is finished. Each day, and for a number of days equal to the amount of *Radiation* received, you will lose one point of either *Strength*, *Health*, *Agility* or *Dexterity*. This loss is permanent due to destroyed muscle tissue, nerves and vital organs. You may resist the loss with a *Health* check of difficulty 10. This goes up by +5 each time you succeed at a check.

Severe levels of radiation are often fatal. They can be encountered near to an exposed reactor core, swimming in highly radioactive water or inhaling smoke and dust from a burning reactor core.

Critical Dose

A *critical* dose requires a roll every round on the *Radiation* table above. Each round, you also gain a *wound* from burns

to the skin and also gain one level of *exhaustion*. You are immediately overcome with nausea, vomiting and diarrhoea which gives you a -10 penalty. Without some form of medical intervention, this lasts until you die.

You lose one point of *Strength*, *Health*, *Agility* and *Dexterity* each hour, for an hour per 10 points of *Radiation* that you received. If you manage to survive this, then the loss is permanent.

Exposure to *critical* levels of radiation is nearly always fatal within hours. Examples of such levels would be standing next to an exposed reactor core.

Chronic Radiation Doses

A chronic dose is received over a long period of time, normally days, weeks, months or years. Unlike an *acute* dose, you don't suffer effects when you receive it, but instead over a long time period, the length of which depends on your current *Radiation* score. Note that since your score can increase from acute doses, you will also need to roll after receiving an acute dose.

Radiation	Period of effect
1-5	15 Years.
6-10	10 Years.
11-20	5 Years.
21-30	3 Years.
31-50	1 Year.
51-75	3 Months.
76-100	1 Month.
100+	1 Week.

Your *Radiation* score will drop by one point every year, so a small dose for a short period may deteriorate before you need to make a check. However, it won't drop below the 'background' level. If you are gaining 3 points a year from light radiation, it won't drop below 3.

Mild

Gain one point a year.

Light

Gain three points a year (one every four months).

Moderate

Gain one point a month.

Heavy

Gain one point a week.

Severe

Gain one point a day.

Critical

Gain four points a day (one every six hours). Anything more radioactive than this will count as *acute*.

Armoury

Those who live by the sword get shot by those that don't.
-- Anon.

The variety of ways in which people can kill each other is quite staggering, and the arms industry seems to do well regardless of the state of the economy. Whilst ***YAGS*** tries to capture some of the flavour of the various types of death dealing items of equipment, it shouldn't be seen as a full list of everything that has been available throughout the modern period.

What ***YAGS High Tech*** does try to do is capture a sample of the different *kinds* of weapons, and try to model them in a semi-realistic fashion. A top down approach to realism is what is aimed for - as long as the rules give the same sort of result as what may be expected in real life, ***YAGS*** doesn't worry too much about the exact way in which this is modelled.

Weapons

The number of statistics for each weapon can be quite daunting, but they are all there for a reason. The least obvious are the codes listed in the weapon notes. They all have specific meanings which are consistent across genres and settings. The main purpose is to give a different feel for different weapons, and to make them useful in different circumstances.

Codes

Au: Fully automatic weapon, capable of firing multiple shots or burst fire. Unless specified, an automatic burst consist of 10 rounds. If a number is specified, then the burst has this many rounds.

Ex-X: Explosive damage. Does full damage to the target and those within X metres. Does mixed damage at -5 out to double X, and stun damage at -10 out to triple X.

Fi: Firearm. Missile weapon firing a high velocity round. Halves all armour which isn't rated as bullet proof. Quarters most defence rolls (except full defence).

Hv: Heavy weapon. Halves non-heavy bulletproof armour, ignores all weaker types of armour.

Li: Light weapon. Double the value of heavy or bulletproof armour (overrides the effects of being a firearm).

Lo-X: Weapon must be reloaded. X is number of rounds to reload. If X is 0, then a slow attack may also be made that round.

Ls: Laser weapon, unaffected by wind, though may suffer in fog and thick atmospheres. Does not lose accuracy or suffer fumble increase at medium and long range. Counts as a firearm for defence rolls.

SA: Semi-automatic weapon, can fire multiple shots in a single round but is not capable of burst fire.

Sg: The weapon fires small pellets or flechette rounds, much like a shotgun. This is poor against armour, but good against soft targets at close range.

So: Sonic weapon, ignores all armour but very short ranged. It's base damage is halved at medium range and quartered at long range (instead of the normal damage modifiers).

TA: Automatic weapon that can fire automatic bursts of 3 rounds as a single attack. Counts as a single attack, but any wounds caused are doubled.

Vc: Vehicle weapon. Against non-vehicle targets, completely ignores all soak unless full heavy armour is worn, in which case the soak roll is merely halved.

Armour

As weapon technology has progressed, so has that for armour. For much of the high tech period however, armour has lagged behind since it has been difficult to make armour effective enough to stop high velocity bullets which is light enough to be wearable on a modern battlefield.

The first attempts at bulletproof armour where made in the Great War, but weren't particularly successful. Things improved in World War II, but attempts were bulky and often impractical.

With the advent of new materials, body armour has improved greatly since the 2nd half of the 20th century though, and a number of different options become available in TL7 and TL8.

Codes

The following codes are used in describing the different types of armour.

BP: Bulletproof armour is designed to resist firearm attacks, and isn't halved against weapons rated as 'Fi'. BP armour also has a secondary effect, which is described below.

NBC: Armour rated 'NBC' gives protection against nuclear, biological and chemical attacks. This generally means that it is a sealed suit, with either a filtration system or its own air supply.

Va: Armour rated 'Va' is sealed against a vacuum, and the wearer can operate in space. It has all the benefits of an NBC suit, and always has its own oxygen supply.

Vc: Vehicle scale armour treats the wearer as being a vehicle for purposes of damage effects.

All armour is considered to be either *Heavy* or *Light*. If vehicle armour is *Heavy*, then this is generally because it is designed

to counter anti-tank (anti-armour) weapons. This can be very TL dependant, so any *Heavy* vehicle weapon treats all armour from a lower TL as being *light*.

Bulletproof Armour

As well as reducing the damage done, bulletproof armour can have a secondary effect against firearms, reducing the effectiveness of the attack.

Light BP armour will reduce the damage type by one level (e.g. *Wounds* to *Mixed*) for light and normal attacks, as long as the damage roll was less than twice the soak roll.

Heavy BP armour will reduce light and normal attacks by two levels, and heavy attacks by one level, as long as the damage roll was less than twice the soak roll.

Vehicle scale attacks completely ignore this secondary effect, even against vehicle scale armour. Any attack which is more than 5 Size points larger than the target also ignores this.

Vehicles

Tonight: an awful new car from Rover; a brilliant new car from Aston Martin; and the Apache helicopter gunship: can it get missile lock on a Lotus Exige?
-- Jeremy Clarkson, Top Gear

Yags is all about characters and the things that they can do. But sometimes a character wants to do something bigger, faster and more awesome than they can manage with their frail fleshy bodies. For this reason ***Yags*** also includes these rules for vehicles.

The term *vehicle* can also be extended to cover all forms of constructs, from scary killer robots to fortresses and giant space ships. More mundanely, it also covers trains, planes and cars. There are sections to cover combat between vehicles, since the sort of very big guns that military vehicles have a tendency to carry step outside the bounds of character scale combat.

In brief, vehicles mostly the same rules as characters. There are some changes to account for the differences in size, but a most things are additional, the character rules merely being one end of a sliding scale.

Vehicle Size

Whether something counts as a vehicle is based on its construction rather than its size. Generally, something that has been built out of non-living material is classed as a vehicle. It is not based on size - a motorbike is vehicle scale whilst an elephant is still character scale.

Vehicles also include buildings, so a house uses vehicle rules as far as absorbing damage is concerned.

All vehicles have a *Size* statistic, just like characters do. This is on the same scale, so a *Size* 5 motorbike is about the same size as an adult human. A vehicle's *Size* is roughly proportional to its volume. A *Size* 5 vehicle is about 1 cubic metre. Every ten fold increase in volume adds +5 to the *Size*. Some examples of vehicle sizes are below.

Type of vehicle	Size
Motorbike	4-5
Family car	8-10
Tank	10-15
Frigate	20
Battleship	30
Aircraft carrier	45

Because of the logarithmic scale, even very large Science Fiction starships can be represented in double digit sizes. Since attacks can't damage targets more than 15 size points larger, damage and armour values can also remain relatively low.

Vehicle Damage

Damage, and the absorption thereof, is considered to be on a different scale to characters. Unless noted, weapons and armour are *character scale*. Anything to do with a vehicle tends to be *vehicle scale*, and will be specified with a 'Vc' in its properties. A vehicle scale weapon that does +20 damage is far more effective than a character scale weapon which does the same.

Vehicles don't have wounds and stuns, but they do have *damage*. This is based on the vehicle's *Size*, though isn't directly proportional to it. Instead, it is equal to the square of the vehicle's *Size*, divided by 20:

Damage levels = *Size*^2 / 20 (round to nearest) + 2.

There are 3 damage levels - superficial, moderate and critical. A vehicle that has taken superficial damage is at no penalty to manoeuvring, a moderately damaged vehicle is at -10 and a critically damaged vehicle is at -25 and halves its top speed and acceleration. In addition, a vehicle always has one damage level in *disabled*, which gives a -40 penalty. A vehicle stops working once it becomes disabled, though it's possible to get it working again with a difficulty 20 *Mechanics* check (takes 1 round per point of *Size* of the vehicle).

Example

Damage Levels

As an example, take a modern BMW M3, with a Size of 9. It will have 4 body levels (9 * 9 = 81, divided by 20 = 4), plus the two free levels for a total of 6.

The first five get split between superficial (2), moderate (2) and critical (1), and the sixth goes into disabled (1).

The first two points of damage the car takes will leave it as *superficially damaged*. On taking its third level it becomes *moderately damaged*. This is similar to how character scale damage works.

There are two types of vehicle damage - *Major* and *Minor*. The former is the default type and is similar to *wounds* at character scale. *Minor* damage is like *stuns* and is non cumulative, but is applied to the same damage track as *Major* damage. Generally, damage from character scale weapons is *Minor* damage.

When a vehicle receives *Major* damage, the damage is added directly to the damage track. If a vehicle has 4 damage, and takes 3 points of *Major* damage, it now has 7 damage.

Minor damage represents dents and scratches which are unlikely to take a vehicle out of commission. Every two points of *Minor* damage adds one to the damage track if the vehicle is no more than superficially damaged.

Three points of *Minor* damage are required to damage a vehicle that already has moderate damage, and five points if it is already critically damaged.

Example

Minor Damage

A size 28 battleship has 41 (39 + 2) damage levels, with 14 in superficial, 13 in moderate, 13 in critical and a final one in disabled.

It is being fired on by a small artillery gun (effective size 15) that is doing minor damage. The first two shots do 13 levels each, causing 6 damage twice, taking it to 12 levels (still superficial). The third shot also does 13 levels. The first four points do two points of damage on the superficial track, and the remaining nine points do three damage (1 per 3) on the moderate damage track.

Shooting at Vehicles

If a vehicle is attacked with a character scale weapon, then the damage roll is halved and the damage caused is *Minor*. Any vehicle which is more than 10 *Size* points larger than the weapon (normally vehicles of *Size* 16+) take no damage from character scale attacks. Also, only *wounds* are converted to vehicle damage - stuns are ignored.

Man portable firearms are generally considered to be *Size* 5, though specialist anti-vehicle weapons may be larger. The most effective of these are generally classed as vehicle scale anyway.

If a character weapon happens to be 5+ size points larger than the vehicle under attack, then the damage caused is *major* damage. If the weapon is 10+ size points larger, then the damage roll is not halved. Outside of fantasy, such events will tend to be limited to elephants trampling a motorcycle.

Shooting at Characters

If a vehicle scale weapon is used against characters then the character receives no soak roll unless they are fully protected with heavy armour. In the latter case then their soak roll is 'merely' halved.

Note that a character scale weapon mounted on a vehicle (e.g. a turret mounted light machine gun) is still considered character scale. It is the size and characteristics of the weapon, not the vehicle, which are important.

If the weapon is 10+ *Size* points larger than the target, then even heavy armour is completely ignored. Characters also suffer the multiplication of damage from oversized vehicle attacks (see below), but normally it's irrelevant by this point.

Shooting into Vehicles

When combat happens between vehicles, a lot of the time passengers will end up being the target. This can be either due to deliberate aiming, or through simple bad luck. For the purposes of these rules, a 'hit' may be an actual direct hit, or may be due to shrapnel or ricochet. In either case, the actual cause of the 'hit' is abstracted for simplicity.

If there is a hit on a vehicle that causes at least one point of minor or major damage, there is a chance that characters in that location are hit. For something like a car, 'that location' is considered to be any hit on the vehicle. For larger vehicles, such as a ship, determination of location is left to the GM. Note that even one point of minor damage against a vehicle has a chance of harming a passenger, even though that won't actually add damage to the vehicle. What counts is the number of points of damage, not the levels added to the vehicle's damage track.

Roll a d20, and on a 20+, a random character was hit. If using automatic fire, add +1 to the roll per 2 bullets. If the rounds are explosive, add +3 per 1m blast radius of the round. If somebody was hit, roll again at a cumulative -5 to see if a subsequent person was hit. Each person can only be hit once.

On a hit, the damage done is always character scale. If the original attack was character scale, then drop the damage type by one level. The damage is 10 x damage levels + 1d20.

Example

Hitting Passengers

A gangster fires into a car, with a 10 round burst of gunfire from his Thompson SMG, causing 1 minor wound. Since minor wounds are halved, this only causes superficial damage. However, any passengers have a chance of being hit on a d20 roll of 15+ (normally 20+, but +5 for the 10 round burst).

If a passenger is hit, then will take 10 (1 x 10) + 1d20 damage. This is unlikely to cause serious harm, but if any damage is done to a character it will be *wounds*.

Size Matters

Look at the size of that thing!

-- Red 2, Star Wars

Differences in size between vehicles can be far greater than that between animals (at least, in the real world). In the modern world, the largest vehicles are aircraft carriers of size 40+. SF starships (not covered under *High Tech*) can be even larger (the *Death Star* would be about Size 80).

Each vehicle mounted weapon has its own *Size* which is independent of the vehicle it is mounted on. Most anti-vehicle weapons (such as the main gun on a tank) are *Size* 10.

Secondary weapons (such as a heavy machine gun) will be *Size* 5. Heavier artillery or naval guns may be *Size* 15, 20 or larger.

For vehicle on vehicle action, if the target vehicle is 11+ *Size* larger than the attacking weapon then any damage caused is *Minor*. If the target is 16+ *Size* larger, then no damage is caused.

If the attack is 10+ larger, then any damage levels caused are doubled and any soak is halved. Each further +10 *Size* increase adds a further multiple to the damage caused and completely ignores soak.

General Statistics

Size isn't the only statistic vehicles have in ***Yags***. As for characters, *Strength*, *Health*, *Agility* and *Perception* also exist for vehicles.

Strength is pretty straightforward, and is a measure of the vehicle's pulling power. It can be compared directly against the strength of a person. Generally, it is equal to the square root of the BHP of the vehicle plus half it's Size. So, a small car such as the *Peugeot 205*, which is Size 8 and has 60 BHP would have a Strength of 12 (4 + 7.7). The He 111 medium bomber, Size 15 with two 1,300 HP engines would have a Strength of 58 (7 + 51).

Health is a measure of the general reliability and toughness of the vehicle. A *Health* of 3 is pretty standard. A fragile F1 car or broken old banger may have a *Health* of 2, more rugged off-road cars or military vehicles will have higher *Health*.

Agility represents how agile the vehicle is. Generally though. it isn't used directly since vehicles rarely drive themselves. Instead, it caps the *Dexterity* of the driver (rider/pilot). It doesn't affect the speed of the vehicle, but may affect how well it handles at high speeds.

Perception is only used if the vehicle has its own sensor systems. For most vehicles in the High Tech era sensors are limited to the Mk I eyeball, so this is zero.

Soak

A construct will normally have a base soak equal to its size. If it is stronger or weaker than usual then this can vary. The following guide can be used to determine the base soak of a vehicle or building. These are guidelines only, and any values in between (or outside) those given can be used.

Soak	Type of construct
x0.5	**Weak.** A very weak object, normally poorly constructed or deliberately designed to be light.
x1	**Average.** Any typical building or vehicle will have a base soak equal to its size.
x1.5	**Reinforced.** If the object has been reinforced, such as a rally car, SUV or heavily constructed building. About the strongest most flying vehicles will be.
x2	**Strong.** Object has been designed from the start to be tough and durable. A tank, battleship or bunker will tend to be this strong.
x3	**Very strong.** A heavily built vehicle, such as the strongest tanks, or a heavily toughened bunker. The entire design of the construct is geared towards making it strong, rather than pretty or fast.
x4	**Super strong.** A heavily built vehicle made from ultra-tech materials (TL10+), or one which is designed to do little more than resist damage at the expense of being very space inefficient.
x5	**Ultra strong.** Ultra-tech object which does little more than resist damage which is also very space inefficient, but also highly resistant to damage.

This is the base soak of the construct, and is not affected by heavy weapons or other effects.

As for characters, vehicles and buildings may be armoured. Many heavily armoured vehicles will have two armour ratings - one for the heavy front armour, and the second for the lighter sides and rear. Most armour on vehicles is considered to be *Light vehicle*. *Heavy vehicle weapons* (normally armour piercing weapons, such as HEAT) halve such armour.

Armour	Examples of armour
5-30	**Armoured vehicle.** Armoured vehicles (such as APCs, armoured limo) will tend to have armour in the 5-30 range.
20-30	**Light tank.** Heavily armoured vehicles, such as tanks, will tend to have up to 30 points of front armour.
30-50	**Heavy tank.** The toughest of tanks will have armours in this sort of range.
40-60	**Battleships.** Heavy battleships.
-10	**Tech -6.** At tech levels prior to 7, materials are limited so reduce armour values by 10.
-5	**Tech 7.** For tech level 7 era vehicles, reduce armour levels by 5.
+5	**Tech 9-10.** At tech levels 9-10, increase armour by +5.
+10	**Tech 11-13** At tech levels 11-13, increase armour by +10.
+15	**Tech 14+** At tech levels above 13, increase armour by +15.

Speed and other things

Vehicles will generally have a *speed*, which is the top speed in km/h. They also have an *acceleration*, which is in km/h/s. What this means is that a motorbike with an acceleration of 20 km/h/s will, from a standing start, be doing 20 km/h after 1 second. After 5 seconds (a round) it will be doing 100km/h. In reality acceleration slows as a vehicle approaches its top speed, but this is ignored for simplicity.

If you really want to, halve acceleration if the vehicle is travelling at greater than half its top speed.

Each vehicle also has a *range*, which is how many kilometres it can travel on a single load of fuel. Again, this is just an average for simplicity. If you want, increase fuel consumption

by 50% above 100km/h, double it above 150km/h, and add further multiples for each extra 50km/h.

For purposes of combat, a vehicle has a *Move* rating. As for characters, this is how far the vehicle can move in a round, in metres. This is equal to half the vehicle's top speed, ignoring unit conversions. For example, a vehicle with a top speed of 180km/h will have a *Move* of 90. This gives a speed the vehicle can move at in combat without penalty.

Vehicle Weapons

> *Shoot gun.*
> *Shoot big gun.*
> *Shoot OH MY GOD, DON'T POINT THAT GUN AT MY PLANET!*
> -- *Tales of the Floating Vagabond*

Vehicle mounted weapons can range from heavy machine guns to 18" naval guns and beyond. Modern autocannons can make a mockery of the automatic fire rules, and the ranges and damage levels mean human targets don't stand much of a chance.

There is a *Heavy weapons* skill for using man portable heavy weapons, such as rocket launchers, mortars and light machine guns.

For bigger weapons, characters use the *Gunnery* skill, which covers everything from tank guns to heavy artillery.

Extreme Automatic Fire

The standard rules for automatic fire assume a burst size of 10 bullets, with the option of larger burst sizes for really high rates of fire. Many modern autocannons routinely spew out thousands of rounds a minute, making the more extreme ends of the rules somewhat common.

Firstly, the effects of a burst according to the number of bullets in it is unaffected, maxing out at 37+. An autocannon burst size of 100 bullets is no different in this sense than one with 50 bullets, except it is retains effectiveness at longer ranges.

An automatic weapon halves the burst size at 10% of short range, and each subsequent multiple of this. A more general rule is that the base range is increased to be 1% of short range per bullet in the burst. An autocannon with a basic burst size of 50, is fully effective out to 50% of short range. After this, and for each multiple of 50% of short range, the effective burst size is halved.

If an automatic weapon has a burst size greater than 100, then close range is capped at 100%.

Example
Automatic Fire

The GAU-8 has a short range of 1km, and is rated as Au-50, with a RoF of 350. Every round it can fire 7 bursts of 50 bullets each.

Out to 50% of short range, or 500m, each burst is counted as having 50 bullets. Out to 1km, burst size is reduced to 25 bullets. Up to 1.5km, it is 12 bullets, 6 bullets out to 2km, 3 out to 2.5km and 1 out to 3km.

This gives a maximum effective range for the weapon of 3.5km, shorter than the 8km long range. However, the *following fire* technique can increase this effective range. Otherwise, the chance of actually hitting anything 8km away is pretty much zero.

Vehicle scale weapons also gain a +1 bonus to their effective size for every full 10 bullets in the burst. If they do explosive damage (e.g., HE rounds), then also add +2 size for the first 1m of explosive radius, and a further +2 for each doubling of radius.

Vehicle Actions

Work In Progress

This section is still very much a work in progress.

For the most part, vehicles are secondary to the plot - they allow characters to get from A to B with a minimum of time and fuss. Occasionally however, the journey is the interesting bit, but modelling a high speed car chase can be tricky to handle.

Designer's Notes

Too Many Rules

There are a lot of rules here, and if you really want to keep it simple, then only ever require a drive check when something really exciting happens. You can use a simple target number, or have an opposed check between two people. That's where most games leave it, and in many cases that is good enough.

If you have a game where action sequences involving vehicles are common, or you have sunk all your points into being a really good driver, then you may want to be able to show off your skills, and this is where these rules are designed to be useful.

From A to B

> *A good driver can get out of situations an excellent driver would never get into.*
>
> *-- Anon*

Firstly, when driving a normal route, without any attempt at high speed or evasion, there is a simple *Perception* based *Drive* check made every hour at a target of 10. This is not capped by the vehicle's statistics, and mostly comes down to the driver being aware of what is going on around them. After a number of checks equal to their *Will*, they gain a level of exhaustion, and a further level every 2 checks after that.

If a check is failed, then the driver must make an immediate *Dexterity* based driving check at the same difficulty. If this succeeds, then an accident is narrowly avoided. Otherwise, there is a collision. If they have a skill of at least 4, then they may opt to gain a level of exhaustion to halve the difficulty of the second check.

If the driver wishes to travel faster than normal, then they can reduce journey time by 20%, but the target difficulties are increased by +5. Each further 5% reduction increases the difficulty by an extra +5 (e.g., difficulty 45 to halve the journey time). If the speed is pushing the limits of the car, add a further +5.

There is also the option to drive carefully. Increase journey time by 50% to reduce difficulty by 5. Double journey time to reduce difficulty by 10.

This assumes medium amounts of traffic.

Level of traffic	Modifier
Light traffic. Equivalent to late at night, where there's always room to overtake and plenty of distance between vehicles.	-10
Medium traffic. Late evening or during quiet periods during the day. There is space between traffic, but a lot of breaking and lane changing will be necessary.	+0
Heavy traffic. Everyone is moving, but you need to be aggressive to overtake, since there is rarely a clear line between vehicles. Rush hour on motorways during a good day. Travel time is +25% normal.	+10
It's a car park. Traffic is pretty much stationary, and there's no where to go. Travel time is +100% normal.	+25

It also assumes good weather.

Driving conditions	Modifier
Good conditions. Dry roads during the day.	+0
Wet roads, light rain. The roads are wet and/or there is light rain or fog reducing visibility.	+5
Heavy rain. Very heavy rain can reduce visibility and cover the road with a lot of water, reducing breaking ability.	+10
Ice and snow. Very icy conditions can make driving hazardous. If there is just a little ice, treat as light or heavy rain as applicable.	+15
Dark. If it is dark, and the roads aren't well lit, then there is less chance of seeing an obstruction.	+5
Thick Fog. If it's dark, then you can at least see the lights of other cars. In thick fog, even this isn't possible and driving can be really dangerous.	+10

In most situations, a collision will be unlikely to occur unless the driver is suffering penalties from exhaustion.

In terms of skill, a new driver will have a *Drive* of about 2. After a few months of regular driving, this will increase to about 3, and will reach 4 after a year or two of experience.

Action Scenes

The previous rules won't be needed very often - unless it's important to the plot in some way that there's a chance of failure, assume that anyone with skill can safely drive from A to B. However, in some circumstances driving can be more exciting, and skill checks become more useful.

If playing out a car chase or similar action sequence, then a skill check is required whenever there is an 'action point'. Whenever the road changes, or there is an obstacle to avoid, a skill check is required. For a simple drive along a straight road, in stressful circumstances (trying to drive as quickly as possible), use the following table.

Result	Target
Failure. Complete failure. Make a second check, on another failure you crash, on success the car simply loses half its speed.	0

Result	Target
Minimal success. You don't manage to get into the right gear, and only achieve 50% of possible acceleration.	10
Good driving. Achieve 75% of car's maximum acceleration.	20
Excellent driver. Perfect gear changes and keeping to a straight line, achieve 100% of car's acceleration.	30

Add modifiers to the difficulty from the previous section for poor road conditions. The skill check is made using *Dexterity* and *Drive*, with *Dexterity* capped by the vehicle's *Agility*.

When the vehicles reach a point of interest (such as a sharp corner, narrow gap or obstacle), another check is required. Firstly though, the GM needs to determine the safe speed for this action, then all drivers get to choose the speed they're attempting around it.

Result	Target
Tortoise (-25%). You are driving well below the safe speed for this event. You're going to lose the race, but at least you won't crash.	0
Safety first (+0%). You're driving at a suitable speed for the required action (within safe speed limits), with sane breaking before hand.	10
Taking risks (+25%). Hard breaking at the last moment, and a bit on the fast side.	20
Dangerous driving (+50%). Late breaking, power sliding and making it look good. If you don't crash.	40
Deadly driving (+75%). Even later breaking, taking the 'racing line' perfectly and taking your car to the limit.	80
Elite (+100%). The sort of manoeuvre that wins races, or ends your driving career permanently.	120

On success, you come out of the event at the modified safe speed.

Example

Hard Driving

Alice and Bob are both taking part in a street race, and are neck and neck when they start heading down a stretch of open round with a T-junction at the end.

The GM decides that a safe speed for this corner is 20kph. Alice tries to take the junction at 30kph, and Bob goes for 25kph.

For Bob, it's a simple difficulty 20 check, which he makes without too much difficulty and comes out of the junction at 25kph.

For Alice, it's difficulty 40, and she rolls only 33. She needs to immediately make a second check to avoid a crash, and she decides to take a point of Fatigue to halve the difficulty. She makes the second check, but is shaken from the experience, and comes out of the junction at 20kph (half her attempted speed because of the first failure).

Sensors

Sensors, in particular radar, came into use during TL 6, and became common place in TL 7.

Sensor Size

A sensor system has a *Perception* statistic which represents its basic ability to detect things, much like characters do. For a mechanical sensor, this rating is based on the size of the system.

A system which is 10 cubic metres in size has a base *Perception* of 3. Every ten fold increase in volume gives a +3 bonus to *Perception*. Such sensors are considered to be vehicle scale.

A vehicle scale sensor has a basic range of one kilometre.

Sensitivity

The ability of a sensor to actually detect things (which includes sensitivity, and the ability to tell noise from a real signal) is given as the *skill rating* of the sensor system. This is generally based on technology level, but also modified by quality.

A basic TL 6 sensor system has a skill of 1. This is increased to 3 at TL 7 and 4 at TL 8. Every two TL beyond that increases it by a further +1.

Detection

When trying to detect a target, a sensor check is made every minute.

The difficulty is equal to 5 for every multiple of range, modified by -3 for each point of *Size* of the target.

If there are multiple targets, then add +2 to the size for each doubling of the number of targets.

A medium bomber (size 15) at a range of 10km has a target difficulty of +50 (for range) -45 (for size) = 5. This is easy for a late TL 6 (3 x 2 + 1d20) to spot. At 15km, the difficult raises to 30, which is outside of sensor range. However, a fleet of 100 bombers has a difficult of -6 to be spotted at this range (+12 to size, which is -36 to the difficulty). The normal detection distance will be around 20km (difficulty 19).

Larger radars, or networks of them, can detect bomber fleets out to much greater ranges. For a network of radar detectors, add a multiple to the base range for each extra radar.

The Great Wars (TL6)

This is a war to end all wars.

-- H.G. Wells

Only the dead have seen the end of war.

-- George Santayana, philosopher

The first half of the 20th century saw some of the most destructive and far reaching wars humanity has yet been subjected to. They propelled the USA to the centre stage of world affairs, and began a cold war which was to dominate the second half of the century.

Technology level 6 is considered to start in 1900, though an equally valid argument could be made for any date in the few decades immediately prior to that. If TL 5 saw the rise of industrial machines, so TL 6 comes to be dominated by consumer machines. Horses give way to cars. Steamboats to planes. Telegrams to telephones. Newspapers to television. Antibiotics, vaccines, radar and computers are invented in TL 6. It is the beginning of the modern world.

Pulp Adventures

In many respects, TL 6 provides the best of both worlds for GMs looking to set adventures here. Travel to almost anywhere in the world is relatively easy, and telegrams or even telephones can be used to ask for aid, or update colleagues back home on what has been going on.

However, society isn't all pervasive. Even if you are out in the country in England, you'll need to find a house that has a telephone. Out in the woods, you're on your own. There are still plenty of places in the world which are relatively unexplored, and which require a lot of effort to get to.

This is the time of *Indiana Jones* and similar combat archaeologists.

Tomb Raiders

This period is great for adventures in exotic locations, finding ancient treasures and bringing them back to museums. As previously mentioned, getting to places is much easier than in previous eras, but it is still hard enough to make it dangerous (and therefore interesting from the point of view of a game).

International law is still weak enough that adventurers from the First World can get away with a lot of things they wouldn't be able to in a more modern period, but again there are far fewer laws to protect you.

The two Wars also provide an easy enemy for PCs to fight against - especially in the 30s and 40s where the Nazis provide an easily identifiable bad guy (at least from a modern perspective) for a black and white morality conflict. The Great War is more complex, and most players probably don't know as much about this period as they do World War II, which can either be a benefit or a problem for games set in the earlier period.

Horror

This period is ideal for horror games, again because there is just enough technology to make it interesting. It is also the time of HP Lovecraft, and his brand of horror fits the period well.

Horror is easy to fit into either of the Wars, and adding a supernatural theme to the atrocities of either can work well.

A Post-Apocalypse Setting

The science of this time is advanced, but not that advanced. It is possible for a small number of people to have a good understanding of all things that are required for such a culture. This means that knocking a culture back beyond TL 6 is going to be difficult, unless the surviving population base is really limited.

The technology of the period is also mechanical, and therefore can be fiddled with and fixed by a mechanic with a spanner. Many post-apocalyptic settings are probably going to fall back to TL 6 after the infrastructure of their technological society is destroyed.

Higher tech equipment will be available, but will gradually decay over time. Batteries will run out on the ground, and GPS and communication satellites will eventually stop working.

Knowledge of how to build higher tech items may persist, but there may be lack of precision tools which prevent them from being made.

Space Colony Alpha

A small colony on another world may be limited to a few hundred (or maybe a few thousand) people. Unlike a post-apocalyptic setting where who survived is going to be pretty random, colonists will have been chosen for having the right set of useful skills. So though the population base is smaller, the knowledge to keep things working is more likely to be there.

Though higher tech goods may be in abundance, the ability to actually produce new things may be limited to TL 6.

TL 6 Equipment

Here we provide a list of gear, weapons and vehicles available between 1900 and 1945. WWI saw the development of machine guns and trench warfare which invented far more effective ways of killing people, and WWII developed things about as far as you could go without the use of advanced computers and electronics.

Gear

Electronics was just becoming available in this period, and was considerably limited compared to what came later.

Body Shield
Bullet proof armour from the Great War
Legality: 4; **TL:** 6; **Mass:** 18kg ; **Cost:** $1,200
Load: 18; **Soak:** +12; torso
Hv BP

A heavy metal vest designed to protect from bullets. It is quite effective, though incredibly heavy so not always practical to wear. It is also limited to protecting just the torso of the wearer.

Gas Mask
Basic gas mask to protect from chemical warfare.
Legality: 4; **TL:** 6; **Mass:** 500g ; **Cost:** $100

These gas masks were introduced early during the Great War to protect against poison gas attacks. Originally, they were cloth masks dipped in chemicals to help neutralise the gas.

Lantern, Electric
Electric powered lantern
Legality: 4; **TL:** 6; **Mass:** 2kg ; **Cost:** $2

More modern than the paraffin lamps, electric lamps in TL 6 don't have a comparable duration but have the advantage of being safer and are easier to switch on and off. The battery will generally last a few hours.

Lantern, Paraffin
Paraffin fuelled lantern
Legality: 4; **TL:** 5; **Mass:** 1kg ; **Cost:** $5

Many lanterns of this period burn paraffin. First produced in the late 19th century, they were in common use throughout this period. A typical lamp will consume a litre of fuel a day and illuminate out to a distance of a few metres.

Silk bulletproof vest
Bullet proof armour from the Great War
Legality: 4; **TL:** 6; **Mass:** 1kg ; **Cost:** $800
Load: 1; **Soak:** +6; torso arms
Li BP

Consisting of up to 30 layers of silk, these vests are capable of protecting you from a bullet. Thought they won't negate all damage, they can reduce it significantly.

Torch
Electric powered torch
Legality: 4; **TL:** 6; **Mass:** 200g ; **Cost:** $2

Invented in 1899, the first torch was a battery and bulb wrapped in a paper tube. Illuminates about 10m and the batteries last about 5 hours. Until the 1920s, they could only produce light for a short time before needed to be 'rested' to allow the batteries to recover.

Melee Weapons

Though guns were the most common form of weapon in this period, people still used more primitive weapons. Whether it is a gangster bringing a knife to a gun fight, or a desperate fall back option once you've run out of bullets, knives and sharp sticks will still be encountered.

A number of the weapons assume that they are made from modern steels using modern techniques, so may have a higher tech level listed than more primitive equivalents.

Club
A wooden club, a very simple weapon.
TL: 0; **Mass:** 500g ; **Cost:** $1
Load: 1; **Str:** 2; **Reach:** 1; **Atk:** +2; **Dfn:** +3; **Dmg:** +5
Li
Skill to make: Crafting
Difficulty to make: 10 / 1; **Time:** Hours

Often, a club is not much more than a shaft of wood, maybe with some metal on one end to weight it. It is considered to be a simple weapon.

Dagger
A short bladed steel weapon.
TL: 4; **Mass:** 250g ; **Cost:** $2
Load: 0.5; **Str:** 1; **Reach:** 0; **Atk:** +2; **Dfn:** +3; **Dmg:** +5
Li Im
Skill to make: Smithing (Weaponsmith)
Difficulty to make: 20 / 1; **Time:** Days

Daggers are halfway between a knife and a sword - unlike a knife they are properly designed as a weapon rather than a tool or eating implement.

Hand axe
A small steel weapon designed to be used in one hand.
TL: 4; **Mass:** 250g ; **Cost:** $1
Load: 0.5; **Str:** 1; **Reach:** 1; **Atk:** +2; **Dfn:** +1; **Dmg:** +6
Hv Th
Skill to make: Smithing (Weaponsmith)
Difficulty to make: 15 / 1; **Time:** Days

A small steel axe, not designed specifically for combat but can be used in close quarters fighting. It has a small head, with a haft about 30cm long.

Katana
A single edged two handed sword.
Mass: 1.1kg ; **Cost:** $1,000
Load: 2; **Str:** 3; **Reach:** 2; **Atk:** +6; **Dfn:** +5; **Dmg:** +14
2H Hv Li

A katana is a particular type of sword of Japanese origin. It has a long, singled edged blade, with a two handed grip. Like the European bastard sword, it can be used one or two handed. The katana is designed for cutting, never for stabbing - the rarity of metal in Japan meant there was never a need to penetrate mail or metal plate armour.

Due to their rarity, most katanas are of high quality.

Knife

A short bladed weapon.
TL: 4; **Mass:** 100g ; **Cost:** $1
Load: 0.25; **Str:** 1; **Reach:** 0; **Atk:** +1; **Dfn:** +2; **Dmg:** +2
Li Wk Th
Skill to make: Smithing (Weaponsmith)
Difficulty to make: 15 / 1; **Time:** Days

Steel knives are found everywhere, whether they are flick knives, hunting knives or table knives. They aren't really effective weapons, but will do in a pinch.

No-dachi

A single edged great sword.
Mass: 500g ; **Cost:** $1,500
Load: 2; **Str:** 5; **Reach:** 3; **Atk:** +9; **Dfn:** +7; **Dmg:** +17
2H Hv Li

A large Japanese great sword. It's blade has a single edge and like the katana it is designed for cutting rather than thrusting.

Throwing axe

A small axe designed for throwing.
TL: 4; **Mass:** 250g ; **Cost:** $3
Load: 0.5; **Str:** 2; **Reach:** 0; **Atk:** +2; **Dmg:** +5
Increment: 10m; **Range bands:** 3m / 6m / 9m
Hv

Throwing knife

A knife designed for throwing.
TL: 4; **Mass:** 250g ; **Cost:** $2
Load: 0.25; **Str:** 1; **Reach:** 0; **Atk:** +3; **Dmg:** +2
Increment: 10m; **Range bands:** 2m / 5m / 10m
Li Wk
Skill to make: Smithing (Weaponsmith)
Difficulty to make: 20 / 1; **Time:** Hours

Wakizashi

A single edged short sword.
Mass: 500g ; **Cost:** $200
Load: 2; **Str:** 2; **Reach:** 1; **Atk:** +3; **Dfn:** +3; **Dmg:** +10
Li

A short Japanese single edged sword. Unlike the katana, it could be used for thrusting with the point, but was still designed to be used against lightly armoured opponents.

Personal Firearms

Man portable or man-packed weapons, including machine guns, mortars and early anti-tank weapons covering the period from WWI to WWII.

Browning automatic rifle

Light machine gun.
Legality: 2; **TL:** 6; **Mass:** 8kg ; **Cost:** $120
Load: 5; **Str:** 5; **Reach:** 3; **Atk:** +6; **Dmg:** 22
Increment: 15m; **Range bands:** 750m / 1.5km / 4.5km
Capacity: 20; **RoF:** 20; **Recoil:** -5
Hv Fi Au Lo-2

This was a common light machine gun used by the allies from about 1917 until the 60s. Severely limited by its small magazine capacity. It was mostly designed for trench clearing.

It is fitted with a bi-pod, but can also be easily mounted to a vehicle or tripod.

Garand M1

Semi automatic infantry rifle.
Legality: 3; **TL:** 6; **Mass:** 4.5kg ; **Cost:** $350
Load: 4; **Str:** 3; **Reach:** 2; **Atk:** +7; **Dmg:** 17
Increment: 20m; **Range bands:** 450m / 700m / 2.1km
Capacity: 8; **RoF:** 5; **Recoil:** -5
Fi SA Lo-2

The first semi-automatic rifle to see large scale distribution, it was the standard rifle of the US army from 1936 to 1957.

Karabiner 98k

Bolt-action rifle.
Legality: 3; **TL:** 6; **Mass:** 4.1kg ; **Cost:** $350
Load: 4; **Str:** 3; **Reach:** 2; **Atk:** +7; **Dmg:** 17
Increment: 25m; **Range bands:** 800m / 1.6km / 3.5km
Capacity: 5; **RoF:** 2; **Recoil:** -10
Fi Lo-2

The German made Karabiner 98k was a bolt action rifle which went into general use in the German army in 1935. It used a 7.92 x 57mm round, with a muzzle velocity of 760m/s.

Lewis machine gun

Light machine gun.
Legality: 2; **TL:** 6; **Mass:** 13kg ; **Cost:** $100
Load: 13; **Str:** 5; **Reach:** 4; **Atk:** +9; **Dmg:** 19
Increment: 20m; **Range bands:** 700m / 1.4km / 3.5km
Capacity: 50; **RoF:** 50; **Recoil:** -5
Hv Fi Au Lo-2

Lewis light machine gun. Uses a bi-pod. Can use a 50 round or 100 round drum.

M1903 Springfield
Bolt action rifle.
Legality: 3; **TL:** 6; **Mass:** 4.5kg ; **Cost:** $350
Load: 4; **Str:** 3; **Reach:** 2; **Atk:** +8; **Dmg:** 17
Increment: 25m; **Range bands:** 550m / 900m / 2.7km
Capacity: 5; **RoF:** 2; **Recoil:** -10
Fi Lo-2

First adopted by the American army in 1903, this is a magazine fed bolt-action rifle which was widely used during WW1 and WW2. Even after it fell out of use amongst regular infantry, it continued to be used as a sniper weapon until the 1960s due to its effectiveness up to almost 1km.

It uses the .30-06 Springfield cartridge, or 7.62 x 63mm metric.

M2-2 Flamethrower
World War 2 flamethrower.
Legality: 1; **TL:** 6; **Mass:** 30kg ; **Cost:** $1,000
Load: 30; **Str:** 4; **Reach:** 3; **Atk:** +12; **Dmg:** 5
Increment: 20m; **Range bands:** 20m / 35m / 50m
Capacity: 7; **RoF:** 5; **Recoil:** 0
Au-1 Lo-24

This is an American flamethrower that was used during WW2. It has a man-portable backpack consisting of two gasoline fuel tanks plus a nitrogen tank for propellent. It has enough fuel for seven seconds of burn.

S&W .357 Magnum
Revolver.
Legality: 3; **TL:** 6; **Mass:** 1.5kg ; **Cost:** $20
Load: 1; **Str:** 3; **Reach:** 0; **Atk:** +4; **Dmg:** 12
Increment: 15m; **Range bands:** 80m / 160m / 800m
Capacity: 6; **RoF:** 3; **Recoil:** -4
Fi SA Lo-3

The .357 Magnum was a more powerful revolver than the model 10.

S&W Model 10
Revolver firing a .38sp round.
Legality: 3; **TL:** 6; **Mass:** 900g ; **Cost:** $20
Load: 1; **Str:** 2; **Reach:** 0; **Atk:** +4; **Dmg:** 8
Increment: 15m; **Range bands:** 60m / 120m / 600m
Capacity: 6; **RoF:** 3; **Recoil:** -3
Fi SA Lo-3

The Smith & Wesson 'Military & Police' revolver, is a typical six-shooter using the .38 Special round. It first went into production in 1899, and has consisted of several different models. It has been described as the most successful handgun of all time, and the most popular centre fire revolver of the 20th century.

Thompson SMG
.45 ACP sub-machine gun.
Legality: 2; **TL:** 6; **Mass:** 4.9kg ; **Cost:** $120
Load: 5; **Str:** 3; **Reach:** 1; **Atk:** +5; **Dmg:** 10
Increment: 15m; **Range bands:** 200m / 500m / 2km
Capacity: 20; **RoF:** 20; **Recoil:** -5
Fi Au Lo-2

The American light automatic weapon that entered service in 1921 and found fame when it was commonly used by American gangsters during the 20s. It was also used by allied troops during World War II. It remained in service until the early 70s.

It can take a 20 or 30 round detachable box magazine, or a 50 or 100 round drum magazine. A drum adds +1 or +2 *Load* to the weapon, and is unreliable, jamming on a roll of 1-2.

Vickers machine gun
Medium machine gun.
Legality: 2; **TL:** 6; **Mass:** 50kg ; **Cost:** $120
Load: 5; **Str:** 8; **Reach:** 4; **Atk:** +9; **Dmg:** 22
Increment: 25m; **Range bands:** 750m / 1.5km / 4.1km
Capacity: 250; **RoF:** 50; **Recoil:** -15
Hv Fi Au Lo-3

The Vickers machine gun was in service between 1912 and 1968, and was famed for its reliability. It is designed to be fired from a tripod and is belt fed and water cooled.

Walter PP
Semi-automatic pistol.
Legality: 3; **TL:** 6; **Mass:** 680g ; **Cost:** $20
Load: 1; **Str:** 2; **Reach:** 0; **Atk:** +4; **Dmg:** 8
Increment: 10m; **Range bands:** 50m / 100m / 400m
Capacity: 8; **RoF:** 5; **Recoil:** -3
Fi SA Lo-1

Introduced in 1929, it was closely followed by the PPK variant in 1931. The PPK is slightly lighter and more concealable, but has its magazine capacity reduced by 1.

Winchester Model 1897
Late 19th century 12G shotgun.
Legality: 2; **TL:** 6; **Mass:** 3.6kg ; **Cost:** $550
Load: 4; **Str:** 3; **Reach:** 3; **Atk:** +15; **Dmg:** 23
Increment: 10m; **Range bands:** 10m / 25m / 50m
Capacity: 5; **RoF:** 5; **Recoil:** -5
Li Fi SA Sg Lo-4

One of the most famous shotguns, the Winchester 1897 was used in both world wars as a trench weapon. It was available as both a civilian hunting weapon and for military use, but the basic statistics remain the same regardless of looks.

If using a solid slug rather than shot, it loses its *Cone* effect, does +5 damage and triples all ranges. The increment is

doubled, but halve the attack bonus. Also lose the *light* effect and becomes *heavy*.

Vehicles of the Great War

Despite the mechanisation of killing, the horse and cart was still a major contributor to transportation during World War I. Iron Clad battleships, early aircraft and the first tanks were most spectacular vehicles of the war.

Civilian transportation also began to take off during this period, and the Ford Model T had been introduced only a few years prior to the start of the war.

Ford Model T

First affordable car.
Legality: 5; **TL:** 6; **Mass:** 540kg ; **Cost:** $850
Manufacturer: UK; **In-Service:** 1908
Speed: 70 km/h; **Accl:** 5 km/h/s; **Range:** 240 km

Siz	Str	Hea	Agi	Per	Soak	Move	Accl
9	9	2	2		9	35	25

Damage track
+0 : O O
-10: O O
-25: O
-40: O (Disabled)

The Ford Model T was the first affordable motor car, and also the first car to be produced using a production line. First sold in 1908, variations were produced until 1927.

HMS Dreadnought

British Battleship
Legality: 0; **TL:** 6; **Cost:**
Water Speed: 39km/h; **W Accl:** 1km/h/s; **W Range:** 12000 km

Siz	Str	Hea	Agi	Per	Soak	Move	Accl
28	200	5	1		56	20	15

Damage track
+0 : O O O O O O O O O O O O O O
-10: O O O O O O O O O O O O O
-25: O O O O O O O O O O O O O
-40: O (Disabled)
Armour (Front): 86 *(Half: 71)*
Armour (Top): 71 *(Half: 63)*
12in Naval Gun (x10)
Atk: 40; **Dmg:** 80; **Size:** 5 (Fi Ex-5 Vc)
Inc: 100m; **Ranges:** 3km / 10km / 40km
Capacity: 77; **RoF:** 1; **Recoil:** 0

HMS Dreadnought was a new design of Battleship that came into service in 1906. Previously, battleships had a mix of primary and secondary guns, but the secondary weapons were generally useless. HMS Dreadnought was equipped only with primary weapons, making her faster and lighter than any other ship in her class. Her performance was also helped by the use of steam turbines.

Mark I Tank

First combat tank of the Great War.
Legality: 1; **TL:** 6; **Mass:** 28t ; **Cost:** $2,600
Manufacturer: UK; **In-Service:** 1915
Speed: 6 km/h; **Accl:** 1 km/h/s; **Range:** 50 km

Siz	Str	Hea	Agi	Per	Soak	Move	Accl
14	17	2	1		21	3	10

Damage track
+0 : O O O O
-10: O O O
-25: O O O
-40: O (Disabled)
Armour: 31 *(Half: 26)*
QF 6 Pounder
Atk: 5; **Dmg:** 25; **Size:** 5 (Fi Ex-2 Vc)
Inc: 20m; **Ranges:** 500m / 1,000m / 7.5km
Capacity: 20; **RoF:** 1; **Recoil:** -20
Light Machine Gun
Atk: 3; **Dmg:** 22; **Size:** 5 (Hv Fi Au)
Inc: 25m; **Ranges:** 750m / 2,000m / 4km
Capacity: 7000; **RoF:** 20; **Recoil:** -5

The Mark I was the first tank that was built for combat. 150 were built. They were noisy, unpleasant and unreliable, but proved that the concept both worked, and was useful. The armour was thick enough to stop most small arms fire, though armour piercing rounds could still get through.

Vehicles of World War 2

This is the end of TL 6, and saw the development of many technologies that would become the basis for TL 7. The late war years are pretty much on the cusp of TL 6/TL 7, but are considered to be late TL 6 rather than early TL 7.

Bismarck

German Battleship
Legality: 0; **TL:** 6; **Cost:**
Water Speed: 30km/h; **W Accl:** 1km/h/s; **W Range:** 17200 km

Siz	Str	Hea	Agi	Per	Soak	Move	Accl
28	400	5	1		70	80	15

Damage track
+0 : O O O O O O O O O O O O O O
-10: O O O O O O O O O O O O O
-25: O O O O O O O O O O O O O
-40: O (Disabled)
Armour (Front): 120 *(Half: 95)*
Armour (Top): 100 *(Half: 85)*
15in Naval Gun (x8)
Atk: 50; **Dmg:** 100; **Size:** 20 (Fi Ex-5 Vc)
Inc: 100m; **Ranges:** 3km / 10km / 40km
Capacity: 77; **RoF:** 1; **Recoil:** 0

The *Bismarck* was one of the most famous battleships of World War II.

Cromwell tank

WWII British tank.
Legality: 1; **TL:** 6; **Mass:** 27.6t ; **Cost:**
Manufacturer: United Kingdom; **In-Service:** 1944
Speed: 64 km/h; **Accl:** 6 km/h/s; **Range:** 270 km

Siz	Str	Hea	Agi	Per	Soak	Move	Accl
12	30	4	3		24	80	15

Damage track
+0 : O O O
-10: O O O
-25: O O
-40: O (Disabled)
Armour (Front): 49 *(Half: 36)*
Armour (Side): 42 *(Half: 33)*

Ordnance QF 75mm
Atk: 20; **Dmg:** 35; **Size:** 10 (Fi Ex-2 Vc)
Inc: 30m; **Ranges:** 1,000m / 4km / 10km
Capacity: 77; **RoF:** 1; **Recoil:** 0

7.92mm Besa Machine Gun (x2)
Atk: 6; **Dmg:** 20; **Size:** 5 (Hv Fi Au-20)
Inc: 25m; **Ranges:** 750m / 2,000m / 4km
Capacity: 2000; **RoF:** 60; **Recoil:** -5

The Tank Cruiser Mk VIII Cromwell was once of the most successful British tanks of World War II. It combined an effective gun and armour together with high speed and reliability.

Heinkel Bomber

German He 111H Medium Bomber.
Legality: 1; **TL:** 6; **Mass:** 8.2200000000000001t ; **Cost:** $65,000
Manufacturer: Germany; **In-Service:** 1935
Speed: 440 km/h; **Accl:** 50 km/h/s; **Range:** 2300 km

Siz	Str	Hea	Agi	Per	Soak	Move	Accl
15	58	4	2		15	80	15

Damage track
+0 : O O O O
-10: O O O O
-25: O O O O
-40: O (Disabled)
Armour (All): 20 *(Half: 17)*

20mm MG FF Cannon
Atk: 25; **Dmg:** 26; **Size:** 10 (Fi Au-25 Ex-1 Vc)
Inc: 30m; **Ranges:** 1,000m / 4km / 10km
Capacity: 500; **RoF:** 50; **Recoil:** 0

13mm MG 131 Cannon
Atk: 25; **Dmg:** 13; **Size:** 10 (Fi Au-50 Ex-1 Vc)
Inc: 30m; **Ranges:** 1,000m / 4km / 10km
Capacity: 1000; **RoF:** 200; **Recoil:** 0

MG15 Machine Gun 7.92mm (x7)
Atk: 5; **Dmg:** 20; **Size:** 5 (Hv Fi Au)
Inc: 25m; **Ranges:** 750m / 2,000m / 4km
Capacity: 2000; **RoF:** 30; **Recoil:** -5

The Heinkel He 111 was one of the most recognised German bombers of World War II. It was originally classed as a transport aircraft, but was mostly used as a medium bomber during the war.

Panzer IV

German medium tank.
Legality: 1; **TL:** 6; **Mass:** 27.5t ; **Cost:** $26,000
Manufacturer: Germany; **In-Service:** 1939
Speed: 46 km/h; **Accl:** 3 km/h/s; **Range:** 280 km

Siz	Str	Hea	Agi	Per	Soak	Move	Accl
8	21	3	2		16	23	10

Damage track
+0 : O O
-10: O
-25: O
-40: O (Disabled)
Armour (Front): 41 *(Half: 28)*
Armour (Side): 31 *(Half: 23)*

75mm long tank gun
Atk: 28; **Dmg:** 40; **Size:** 10 (Fi Ex-2 Vc)
Inc: 40m; **Ranges:** 1,500m / 6km / 15km
Capacity: 87; **RoF:** 1; **Recoil:** 0

Light Machine Gun (x2)
Atk: 5; **Dmg:** 22; **Size:** 5 (Hv Fi Au)
Inc: 25m; **Ranges:** 750m / 2,000m / 4km
Capacity: 1500; **RoF:** 30; **Recoil:** -5

German tank common at the start of the war, over ten thousand were constructed, with varying models being based on the standard design.

Panzer VI - Tiger

WWII German heavy tank.
Legality: 1; **TL:** 6; **Mass:** 62.6t ; **Cost:** $56,000
Manufacturer: Germany; **In-Service:** 1942
Speed: 46 km/h; **Accl:** 3 km/h/s; **Range:** 140 km

Siz	Str	Hea	Agi	Per	Soak	Move	Accl
10	31	3	2		20	23	10

Damage track
+0 : O O
-10: O O
-25: O
-40: O (Disabled)
Armour (Front): 55 *(Half: 37)*
Armour (Side): 40 *(Half: 30)*

88mm medium tank gun
Atk: 25; **Dmg:** 40; **Size:** 10 (Fi Ex-2 Vc)
Inc: 30m; **Ranges:** 1,500m / 6km / 15km
Capacity: 92; **RoF:** 1; **Recoil:** 0

Light Machine Gun (x2)
Atk: 5; **Dmg:** 22; **Size:** 5 (Hv Fi Au)
Inc: 25m; **Ranges:** 750m / 2,000m / 4km
Capacity: 2000; **RoF:** 30; **Recoil:** -5

The best of the German tanks.

Sherman M4

Medium tank.
Legality: 1; **TL:** 6; **Mass:** 33.2t ; **Cost:** $31,000
Manufacturer: US; **In-Service:** 1941
Speed: 45 km/h; **Accl:** 3 km/h/s; **Range:** 330 km

Siz	Str	Hea	Agi	Per	Soak	Move	Accl
13	26	4	2		26	22	10

Damage track
+0 : O O O
-10: O O O
-25: O O O
-40: O (Disabled)
Armour (Front): 46 *(Half: 36)*
Armour (Side): 41 *(Half: 33)*
75mm medium tank gun
Atk: 25; **Dmg:** 35; **Size:** 10 (Fi Ex-2 Vc)
Inc: 30m; **Ranges:** 1,000m / 4km / 10km
Capacity: 90; **RoF:** 1; **Recoil:** 0
Light Machine Gun (x2)
Atk: 5; **Dmg:** 23; **Size:** 5 (Hv Fi Au)
Inc: 25m; **Ranges:** 750m / 2,000m / 4km
Capacity: 2000; **RoF:** 30; **Recoil:** -5

The standard US tank, which was used throughout the war by the US and her allies. It has a 75mm main gun as well as a secondary machine gun. It was produced in great numbers during WWII, which was fortunate given that it was seriously outclassed by the later German Panther and Tiger tanks.

T-34

WWII Russian heavy tank.
Legality: 1; **TL:** 6; **Mass:** 28.6t ; **Cost:** $65,000
Manufacturer: Russia; **In-Service:** 1940
Speed: 58 km/h; **Accl:** 3 km/h/s; **Range:** 180 km

Siz	Str	Hea	Agi	Per	Soak	Move	Accl
11	27	4	2		22	80	15

Damage track
+0 : O O O
-10: O O
-25: O O
-40: O (Disabled)
Armour (Front): 57 *(Half: 39)*
Armour (Side): 42 *(Half: 32)*
75mm medium tank gun
Atk: 25; **Dmg:** 35; **Size:** 10 (Fi Ex-2 Vc)
Inc: 30m; **Ranges:** 1,000m / 4km / 10km
Capacity: 77; **RoF:** 1; **Recoil:** 0
Light Machine Gun (x2)
Atk: 5; **Dmg:** 22; **Size:** 5 (Hv Fi Au)
Inc: 25m; **Ranges:** 750m / 2,000m / 4km
Capacity: 2000; **RoF:** 30; **Recoil:** -5

The T-34 was a Soviet medium tank which was a mainstay of the Russian army throughout most of World War II. Though there were other tanks which were better, the T-34 could be produced in very large numbers cheaply and efficiently. It underwent a number of revisions throughout the war - this one is the original T-34 first deployed in 1940.

One problem was that it wasn't a particularly reliable tank, and as many were lost due to mechanical fault as to enemy action.

The Cold War (TL7)

World War II had spurred the development of new technologies that became the defining achievements of TL7. Computers, electronics, nuclear power and space flight all become achievable and even in common everyday use, bringing about some of the greatest changes in technology never before witnessed.

With the advent of the Cold War, both Russia and America had the opportunity to engage in an arms race and indirect conflict which caused no end of suffering, but which provides plenty of opportunity for gaming.

Guns

The design of new ways of killing people accelerated, with many specialisations focussing on particular areas, from police forces and civilian defence to high tech battle field operations.

AGM-65 Maverick

Air-to-ground tactical missile.
Legality: 1; **TL:** 7; **Mass:** 250kg ; **Cost:** $160 K
Load: 20; **Str:** 10; **Reach:** 4; **Atk:** +5; **Dmg:** 45
Increment: 200m; **Range bands:** 350m / 25km / 30km
Capacity: 1; **RoF:** 1; **Recoil:** -20
Hv Lo-4 Ex-2 Vc Gu(H/4)

A fire and forget missile designed for close air support against ground (or sea) targets. The physical characteristics given here exclude the launcher and fire control systems.

It uses IR homing to track a target that has been identified by an operator. After launch, it uses its own sensors and navigation systems to stay on course and track the target.

It has a top speed of 1,200km/h and a range of 28km, using a solid fuel rocket for propulsion. It is roughly 2.5m in length.

AK-47

Soviet assualt rifle.
Legality: 3; **TL:** 7; **Mass:** 4.3kg ; **Cost:** $350
Load: 4; **Str:** 3; **Reach:** 2; **Atk:** +7; **Dmg:** 18
Increment: 25m; **Range bands:** 300m / 800m / 2.4km
Capacity: 30; **RoF:** 50; **Recoil:** -5
Fi Au SA Lo-2

The AK-47 is one of the most widely used assualt rifles. It is gas-operated, uses a 7.62 x 39mm round and has a reputation of being incredibly robust. It isn't very accurate at long ranges, but is designed to be good at the short ranges that most fire fights occur at.

It is possible to attach a 75 round drum magazine instead of the 30 round box magazine. Increase load by 1.

Beretta Model 92

Semi automatic pistol.
Legality: 2; **TL:** 7; **Mass:** 0.95kg ; **Cost:** $1,300
Load: 1; **Str:** 2; **Reach:** 0; **Atk:** +5; **Dmg:** 10
Increment: 10m; **Range bands:** 50m / 100m / 400m
Capacity: 15; **RoF:** 10; **Recoil:** -2
Fi SA Lo-1

Available from 1975, the Beretta was a reliable semi-automatic pistol in common use across the world.

Colt Python

Colt .357 Magnum revolver.
Legality: 2; **TL:** 7; **Mass:** 5kg ; **Cost:** $1,300
Load: 1; **Str:** 4; **Reach:** 0; **Atk:** +5; **Dmg:** 12
Increment: 15m; **Range bands:** 75m / 150m / 750m
Capacity: 6; **RoF:** 3; **Recoil:** -4
Fi SA Lo-3

A heavy revolver.

Dragunov SVD

Semi automatic sniper rifle.
Legality: 2; **TL:** 7; **Mass:** 4.3kg ; **Cost:** $3,500
Load: 4; **Str:** 4; **Reach:** 4; **Atk:** +9; **Dmg:** 29
Increment: 40m; **Range bands:** 700m / 1.4km / 2.8km
Capacity: 10; **RoF:** 5; **Recoil:** -10
Hv Fi Lo-2

This is a Russian gas operated rifle with a 10 round magazine. The SVD was very common in Russian forces, it being used by a designated marksman per platoon, rather than being reserved for specialist sniper units. It is lighter than many other sniper rifles, making it easier to use.

It uses a 7.62x54mm round.

FN FAL 7.62

Light automatic rifle.
Legality: 2; **TL:** 7; **Mass:** 5kg ; **Cost:** $1,300
Load: 5; **Str:** 5; **Reach:** 3; **Atk:** +10; **Dmg:** 22
Increment: 40m; **Range bands:** 750m / 1.5km / 3.5km
Capacity: 20; **RoF:** 50; **Recoil:** -5
Fi Au SA Lo-2

A Belgium made light automatic rifle was first made in 1953, and has been a popular weapon since then. It is classed as a *battle rifle*, making it more suited to longer range situations than *assault rifles* such as the M16 or AK47. A larger capacity magazine of 30 rounds do exist.

GAU-8 Avenger

30mm Gatling cannon.
Legality: 3; **TL:** 7; **Mass:** 280kg ; **Cost:** $35,000
Load: 112; **Str:** 8; **Reach:** 5; **Atk:** +11; **Dmg:** 22
Increment: 50m; **Range bands:** 1000m / 3km / 8km
Capacity: 1150; **RoF:** 350; **Recoil:** -25
Hv Fi Au-50 Lo-3 Ex-2 Vc

A 7 barrelled rotary cannon capable of firing 30mm rounds at 4,200 rpm with a velocity of 1km/s. It is the principle weapon of the A-10 Warthog, a close combat aircraft designed for tank hunting, amongst other things.

Typically, the magazine is loaded with a mixture of armour piercing and high explosive rounds for maximum effectiveness against armoured targets.

KBP AGS-17

Automatic grenade launcher.
Legality: 3; **TL:** 7; **Mass:** 31kg ; **Cost:** $35,000
Load: 35; **Str:** 6; **Reach:** 4; **Atk:** +5; **Dmg:** 30
Increment: 25m; **Range bands:** 50m / 500m / 2km
Capacity: 30; **RoF:** 30; **Recoil:** -10
Fi Au Lo-3 Ex-20

Russian infantry support weapon designed for use from a mount. It fires 30mm grenades on fully automatic, by default high explosive fragmentation grenades for use against soft targets. It was commonly used in Afganistan by Russian forces, often mounted on vehicles, including helicopters. Mass production began in 1971.

M151 TOW Launcher

Wire guided anti-tank missile.
Legality: 2; **TL:** 7; **Mass:** 80kg ; **Cost:** $35,000
Load: 20; **Str:** 10; **Reach:** 4; **Atk:** +5; **Dmg:** 45
Increment: 200m; **Range bands:** 300m / 3km / 4.5km
Capacity: 1; **RoF:** 1; **Recoil:** -20
Hv Lo-4 Ex-2 Vc Gu

Designed to fire the BGM-71 TOW wire guided missile, the M151 is a vehicle mounted launcher which is also (barely) man portable. The TOW (Tube-launched, Optically Tracked, Wire command) is a guided missile that must be manually guided by an operator at the launch platform. It was first produced in 1970 by the US Army. The BGM-71 is the missile itself, and it may be fired from a variety of launch platforms.

It has a top speed of 278m/s, and a maximum range of 3750m.

M16 A1

Fully automatic assualt rifle.
Legality: 3; **TL:** 7; **Mass:** 4kg ; **Cost:** $350
Load: 4; **Str:** 5; **Reach:** 2; **Atk:** +9; **Dmg:** 16
Increment: 30m; **Range bands:** 550m / 800m / 2.4km
Capacity: 30; **RoF:** 30; **Recoil:** -5
Fi Au SA TA Lo-2

The Colt M16 has been the standard weapon of the US military since the 1960s. Using a 5.56 x 45mm NATO round. It is more accurate than some of its contempories, however tends to be more fragile. The light round makes carrying large amounts of ammo easy, though doesn't have the stopping power of 7.62 caliber.

M61 Vulcan

20mm Gatling cannon.
Legality: 3; **TL:** 7; **Mass:** 112kg ; **Cost:** $35,000
Load: 112; **Str:** 8; **Reach:** 5; **Atk:** +13; **Dmg:** 12
Increment: 50m; **Range bands:** 1000m / 3km / 8km
Capacity: var.; **RoF:** 500; **Recoil:** -25
Fi Au-100 Lo-3 Vc

First produced in 1959 by General Electric, the M61 Vulcan is a six barrelled, air-cooled, electrically fired Gatling style cannon, capable of firing 20mm rounds at 6000rpm, with a muzzle velocity of just over 1km/s. The original specification was for an aircraft mounted cannon capable of hitting other high speed targets.

It uses a link less feed system, and has the option of either ejecting or retaining spent cases. The latter is useful on aircraft where ejected cases have potential to damage the engine.

There is a self-powered version, the GAU-4 (or M130) which is gas operated. This is 4.5kg heavier, but otherwise similar in capability.

RPK

Soviet SAW.
Legality: 2; **TL:** 7; **Mass:** 5kg ; **Cost:** $350
Load: 5; **Str:** 6; **Reach:** 4; **Atk:** +8; **Dmg:** 19
Increment: 30m; **Range bands:** 400m / 1000m / 3km
Capacity: 100; **RoF:** 50; **Recoil:** -5
Fi Au Lo-2

Designed for the Soviet infantry as a Squad Automatic Weapon, the RPK is a light machine gun that uses the same ammunition as the AK-47, and can use the same magazines as that weapon as well. It is normally fitted with a bipod.

SPAS 12

Automatic shotgun.
Legality: 1; **TL:** 7; **Mass:** 5kg ; **Cost:** $1,300
Load: 5; **Str:** 4; **Reach:** 3; **Atk:** +12; **Dmg:** 17
Increment: 10m; **Range bands:** 10m / 40m / 80m
Capacity: 7; **RoF:** 5; **Recoil:** -5
Li Fi SA Sg Lo-6

A common semi-automatic combat shotgun used by the military and SWAT teams. It was manufactured by the Italian firearms company Franchi S.p.A.. Import of the weapon into the United States is banned.

It has the option of firing as a pump-action shotgun, which allows it to use low velocity rounds (such as tear gas cannisters and bean bag rounds). Rate of fire drops to 2 when used this way.

Gear

K-15 Kevlar Vest

Bullet proof vest.
Legality: 3; **TL:** 7; **Mass:** 3kg ; **Cost:** $350
Load: 3; **Soak:** +7; torso
Li BP

Kevlar body armour first introduced in the late 1970s. Lighter and more effective than earlier types. Designed primarily to protect against firearms rather than melee attacks.

M-1951 Field Jacket

Bullet proof vest.
Legality: 3; **TL:** 7; **Mass:** 4kg ; **Cost:** $350
Load: 4; **Soak:** +4; torso
Li BP

Introduced in the 1950s, this example of bullet proof armour consisted of a nylon vest with fibre-reinforced plastic segments woven into it. In practice, they offered minimal protective value.

Vehicles

AH-64 Apache

Attack helicopter.
Legality: 1; **TL:** 7; **Mass:** 5t ; **Cost:** $15.4 M
Air Speed: 277km/h; **A Accl:** 30km/h/s; **A Range:** 476km; **Alt:** 6400 m

Siz	Str	Hea	Agi	Per	Soak	Move	Accl
48	14	4	4		21	140	25

Damage track
+0 : O O O O O O O O O O O O O O O O O O O O O O O O O O O O
O O O O O O O O O O O
-10: O O O O O O O O O O O O O O O O O O O O O O O O O O O O O
O O O O O O O O O O
-25: O O O O O O O O O O O O O O O O O O O O O O O O O O O O
O O O O O O O O O O
-40: O (Disabled)
Armour (All): 29 *(Half: 25)*

M230 Chain Gun
Atk: 10; **Dmg:** 15; **Size:** 10 (Fi Au-25 Ex-5 Vc)
Inc: 50m; **Ranges:** 800m / 1,500m / 4.5km
Capacity: 1200; **RoF:** 50; **Recoil:** 0

AGM-114 Hellfire
Atk: 0; **Dmg:** 80; **Size:** 10 (Hv Fi Ex-2 Vc Gu(H/4))
Inc: 0m; **Ranges:** 500m / 6km / 8km
Capacity: 4; **RoF:** 1; **Recoil:** 0

Hydra 70
Atk: 10; **Dmg:** 70; **Size:** 10 (Fi Ex-10 Vc)
Inc: 0m; **Ranges:** 1,000m / 3km / 4km
Capacity: 76; **RoF:** 1; **Recoil:** 0

The Boeing AH-64 Apache attack helicopter was made for the US Army in the 1970s, and first introduced in 1984. It carries an M230 Chain gun and a mixture of Hellfire and Hydra missile pods mounted on hardpoints.

It can carry up to 16 Hellfire missiles or 76 Hydra rockets, or some combination thereof (e.g., 8 Hellfire + 38 Hydras).

A New Millennium (TL8)

From 1980 to 2020, TL 8 covers the present day. Huge advancements in computer technology become apparent to the general population over this period, as communications and information technology begin to reform society.

Computer assistance makes its way into vehicles and weapons, and remotely operated drones make the battle field safer (for those who have the drones). As the threat of full scale nuclear war diminishes, so small scale tactical weapons are favoured over massive destructive ability.

Guns

The reliability and killing power of small arms doesn't change much in this period, and there is greater focus on making things lighter and improving personal protection.

AI AW

Sniper rifle.
Legality: 1; **TL:** 8; **Mass:** 6.5kg ; **Cost:** $4,700
Load: 7; **Str:** 4; **Reach:** 4; **Atk:** +12; **Dmg:** 35
Increment: 50m; **Range bands:** 800m / 1.6km / 3.2km
Capacity: 10; **RoF:** 1; **Recoil:** -15
Hv Fi Lo-2

Produced by the British company Accuracy International, the AI Arctic Warfare rifle is a bolt-action snipers rifle which has seen popular use amongst civilians, military and police.

Barrett M82-A1

Semi-automatic material rifle.
Legality: 1; **TL:** 8; **Mass:** 14kg ; **Cost:** $8,900
Load: 14; **Str:** 5; **Reach:** 4; **Atk:** +7; **Dmg:** 15
Increment: 50m; **Range bands:** 1.8km / 3.6km / 5.4km
Capacity: 10; **RoF:** 5; **Recoil:** -15
Fi SA Lo-2 Vc

The Barrett M82-A1 is a heavy snipers rifle that fires a .50 calibre round. It is not designed to be used against human targets, but instead is an anti-material rifle for taking out vehicles and small installations.

Beretta 93R

Selective fire machine pistol.
Legality: 2; **TL:** 8; **Mass:** 1.2kg ; **Cost:** $1,300
Load: 1; **Str:** 2; **Reach:** 0; **Atk:** +4; **Dmg:** 10
Increment: 10m; **Range bands:** 50m / 100m / 400m
Capacity: 20; **RoF:** 9; **Recoil:** -4
Fi TA Lo-1

This is a selective fire machine pistol designed for police and military use. It is limited to firing 3 round bursts for good recoil control. The R stands for *Raffica*, which is Italian for "burst fire". It was in production from 1979 to 1993. It has a second folding grip, just in front of the trigger guard, for better handling.

Each burst counts as a triple burst shot (one damage roll, any wounds are doubled), but up to 3 such bursts can be fired in a single round as if it was semi automatic. Alternatively, it can fire single shots.

Glock 17

Semi automatic pistol.
Legality: 2; **TL:** 8; **Mass:** 700g ; **Cost:** $600
Load: 1; **Str:** 2; **Reach:** 0; **Atk:** +5; **Dmg:** 13
Increment: 10m; **Range bands:** 50m / 100m / 400m
Capacity: 17; **RoF:** 10; **Recoil:** -2
Fi SA Lo-1

The Glock 17 became the standard handgun of the Austrian military and police forces in 1982, beating many other contenders for the privilege. It was the first hand gun to be partially made of synthetic materials. Despite popular stories to the contrary, it does have metal parts and can be detected by X-ray scanners.

H&K G11

Prototype assault rifle.
Legality: 1; **TL:** 8; **Mass:** 3.6kg ; **Cost:** $10,000
Load: 4; **Str:** 3; **Reach:** 2; **Atk:** +10; **Dmg:** 17
Increment: 30m; **Range bands:** 400m / 900m / 1.8km
Capacity: 50; **RoF:** 50; **Recoil:** -4
Fi Au SA Lo-2

The Heckler & Kock G11 is a prototype assault rifle designed to use caseless ammunition. It is of West German design.

HK416

Assault rifle.
Legality: 2; **TL:** 8; **Mass:** 3kg ; **Cost:** $10,000
Load: 3; **Str:** 3; **Reach:** 2; **Atk:** +9; **Dmg:** 18
Increment: 30m; **Range bands:** 400m / 800m / 1.6km
Capacity: 30; **RoF:** 50; **Recoil:** -4
Fi Au SA Lo-2

German made assault rifle designed for use by American special forces. It is based on the M4 carbine, but it is more reliable. It has been in service since 2005. It uses 5.56x45mm NATO rounds.

SA80 A2

Bullpup assualt rifle.
Legality: 1; **TL:** 8; **Mass:** 4kg ; **Cost:** $1,300
Load: 4; **Str:** 3; **Reach:** 2; **Atk:** +9; **Dmg:** 20
Increment: 30m; **Range bands:** 500m / 1000m / 2km
Capacity: 30; **RoF:** 30; **Recoil:** -5
Fi Au SA Lo-2

This is a 5.56mm gas operated assault rifle using a bull pup configuration. This makes it shorter than a typical assault rifle,

though it has a similar barrel length. However, the compact form makes it difficult to use left handed.

SPAS 15

Automatic shotgun.
Legality: 1; **TL:** 8; **Mass:** 4kg ; **Cost:** $1,300
Load: 4; **Str:** 4; **Reach:** 3; **Atk:** +12; **Dmg:** 19
Increment: 10m; **Range bands:** 10m / 40m / 80m
Capacity: 8; **RoF:** 5; **Recoil:** -5
Li Fi SA Sg Lo-3

This is based on the SPAS 12, and is also made by the Italian company Franchi S.p.A.. Like it's predecessor, import of this weapon into the US is banned. Unlike the SPAS 12, it uses a magazine for faster loading.

It has the option of firing as a pump-action shotgun, which allows it to use low velocity rounds (such as tear gas cannisters and bean bag rounds). Rate of fire drops to 2 when used this way.

Gear

Interceptor Body Armour

Modern ballistic vest.
Legality: 3; **TL:** 8; **Mass:** 7kg ; **Cost:** $350
Load: 7; **Soak:** +8; torso
Li BP

A type of ballistic armour used by the US military.

Mobile Phone

A simple mobile phone.
Legality: 5; **TL:** 8; **Mass:** 200g ; **Cost:** $50

A simple mobile phone capable of making voice calls. It may have the ability to take notes and record audio. Battery life will be in the order of a week or two, depending on how much it is used.

Smart Phone

Smart phone.
Legality: 5; **TL:** 8; **Mass:** 400g ; **Cost:** $500

A typical smart phone of the type available around 2010. It has voice and data capability, plus about 16GB+ of data storage. It almost certainly has a touch screen and may have a small keyboard. Battery life will be in the order of a day to a few days, depending on capabilities.

It will be able to play and record audio, pictures and video, as well as providing the ability to connect into computer systems for remote administration and having a basic SatNav with maps and route finding.

Civilian Vehicles

Armoured SUV

Armoured version of a SUV
Legality: 3; **TL:** 8; **Mass:** 1.55t ; **Cost:** $350 K
Speed: 190 km/h; **Accl:** 15 km/h/s; **Range:** 350 km

Siz	Str	Hea	Agi	Per	Soak	Move	Accl
11	20	5	3		11	95	20

Damage track
+0 : O O O
-10: O O
-25: O O
-40: O (Disabled)
Armour (All): 17 *(Half: 14)*

An armoured version of an SUV, designed to be used by politicians, crime boss or paranoid civilian. It provides protection against most forms of small arms fire, though is vulnerable to even light anti-vehicle weapons.

Executive sports car

BMW E46 M3
Legality: 5; **TL:** 8; **Mass:** 1.5t ; **Cost:** $50,000
Speed: 303 km/h; **Accl:** 20 km/h/s; **Range:** 800 km

Siz	Str	Hea	Agi	Per	Soak	Move	Accl
9	18	3	5		9	150	20

Damage track
+0 : O O
-10: O O
-25: O
-40: O (Disabled)

A typical early 21st century luxury car, of which the BMW M3 is just one example.

Family Car

5 door hatch back.
Legality: 5; **TL:** 8; **Mass:** 750kg ; **Cost:** $15,000
Speed: 180 km/h; **Accl:** 10 km/h/s; **Range:** 600 km

Siz	Str	Hea	Agi	Per	Soak	Move	Accl
9	15	3	3		9	90	20

Damage track
+0 : O O
-10: O O
-25: O
-40: O (Disabled)

Motorbike

Typical average motorbike.
Legality: 5; **TL:** 8; **Mass:** 250kg ; **Cost:** $5,000
Speed: 160 km/h; **Accl:** 20 km/h/s; **Range:** 360 km

Siz	Str	Hea	Agi	Per	Soak	Move	Accl
4	10	3	5		8	80	30

Damage track
+0 : O
-10:
-25:
-40: O (Disabled)

An typical good performance motorcycle from the late 20th century.

SUV

Sports Utility Vehicle
Legality: 5; **TL:** 8; **Mass:** 1.25t ; **Cost:** $35,000
Speed: 220 km/h; **Accl:** 15 km/h/s; **Range:** 500 km

Siz	Str	Hea	Agi	Per	Soak	Move	Accl
11	18	4	3		11	110	25

Damage track
+0 : O O O
-10: O O
-25: O O
-40: O (Disabled)

This is a typical SUV, designed for some limited off road ability. At the very least it will have four wheel drive, and be suitable for getting around on the farm as well as driving on road.

Sports car

Lotus Exige
Legality: 5; **TL:** 8; **Mass:** 0.914t ; **Cost:** $60,000
Speed: 249 km/h; **Accl:** 25 km/h/s; **Range:** 400 km

Siz	Str	Hea	Agi	Per	Soak	Move	Accl
8	17	3	6		8	125	25

Damage track
+0 : O O
-10: O
-25: O
-40: O (Disabled)

A two-door, two-seat coupe sports car such as the Lotus Exige. Designed for speed and agility, it is also relatively affordable when compared to high end sports cars. The statistics given here are for an early 21st century model of car.

Military Vehicles

Cougar

Armoured fighting vehicle.
Legality: 2; **TL:** 8; **Mass:** 14.5t ; **Cost:** $475 K
Speed: 105 km/h; **Accl:** 15 km/h/s; **Range:** 966 km

Siz	Str	Hea	Agi	Per	Soak	Move	Accl
13	24	4	3		26	52	25

Damage track
+0 : O O O
-10: O O O
-25: O O O
-40: O (Disabled)
Armour (All): 38 *(Half: 32)*
Armour (Bottom): 46 *(Half: 36)*

A US armoured fighting vehicle designed for deployment in high risk areas, and to be resistant to anti-vehicle mines and IEDs. Comes with air conditioning as standard.

Snatch Land Rover

Protected patrol vehicle.
Legality: 4; **TL:** 8; **Mass:** 4t ; **Cost:** $75,000
Speed: 97 km/h; **Accl:** 15 km/h/s; **Range:** 510 km

Siz	Str	Hea	Agi	Per	Soak	Move	Accl
11	15	4	4		16	50	25

Damage track
+0 : O O O
-10: O O
-25: O O
-40: O (Disabled)
Armour (Front): 24 *(Half: 20)*
Armour (Top/Rear): 20 *(Half: 18)*

Designed as a general patrol vehicle in low threat areas, the Snatch Land Rover is used by the British military. It is lightly armoured and not really designed to protect against a serious attack. However, it is cheaper and more agile than heavier vehicles which serve similar roles.

28 YAGS High Tech

The following are combined tables containing statistics for all the weapons previously listed in this article.

TL6 - The Great Wars

Small arms

These are small weapons designed to be easily man portable. They range from pistols up to rifles.

Pistols	Atk	Dfn	Dmg	Load	Str	Rch	RoF	Cap	Rcl	Inc	Sh	Md	Lg	Class	TL	LC	Notes
S&W .357 Magnum	+4		12	1	3	0	3	6	-4	15	80	160	800	pistol	6	3	Fi SA Lo-3
S&W Model 10	+4		8	1	2	0	3	6	-3	15	60	120	600	pistol	6	3	Fi SA Lo-3
Walter PP	+4		8	1	2	0	5	8	-3	10	50	100	400	pistol	6	3	Fi SA Lo-1

Rifles	Atk	Dfn	Dmg	Load	Str	Rch	RoF	Cap	Rcl	Inc	Sh	Md	Lg	Class	TL	LC	Notes
Garand M1	+7		17	4	3	2	5	8	-5	20	450	700	2100	rifle	6	3	Fi SA Lo-2
Karabiner 98k	+7		17	4	3	2	2	5	-10	25	800	1600	3500	rifle	6	3	Fi Lo-2
M1903 Springfield	+8		17	4	3	2	2	5	-10	25	550	900	2700	rifle	6	3	Fi Lo-2
Thompson SMG	+5		10	5	3	1	20	20	-5	15	200	500	2km	rifle	6	2	Fi Au Lo-2

Shotguns	Atk	Dfn	Dmg	Load	Str	Rch	RoF	Cap	Rcl	Inc	Sh	Md	Lg	Class	TL	LC	Notes
Winchester Model 1897	+15		23	4	3	3	5	5	-5	10	10	25	50	rifle	6	2	Li Fi SA Sg Lo-4

Heavy Weapons

These weapons are either normally vehicle mounted, or considered to be squad support weapons. They are generally not issued to all soldiers, but to dedicated teams who have been trained in their use.

Heavy	Atk	Dfn	Dmg	Load	Str	Rch	RoF	Cap	Rcl	Inc	Sh	Md	Lg	Class	TL	LC	Notes
Browning automatic rifle	+6		22	5	5	3	20	20	-5	15	750	1500	4500	heavy, rifle	6	2	Hv Fi Au Lo-2
Lewis machine gun	+9		19	13	5	4	50	50	-5	20	700	1400	3500	heavy	6	2	Hv Fi Au Lo-2
Vickers machine gun	+9		22	5	8	4	50	250	-15	25	750	1500	4100	heavy	6	2	Hv Fi Au Lo-3

TL7 - The Atomic Age

Small arms

These are small weapons designed to be easily man portable. They range from pistols up to rifles.

Pistols	Atk	Dfn	Dmg	Load	Str	Rch	RoF	Cap	Rcl	Inc	Sh	Md	Lg	Class	TL	LC	Notes
Beretta Model 92	+5		10	1	2	0	10	15	-2	10	50	100	400	pistol	7	2	Fi SA Lo-1
Colt Python	+5		12	1	4	0	3	6	-4	15	75	150	750	pistol	7	2	Fi SA Lo-3

Rifles	Atk	Dfn	Dmg	Load	Str	Rch	RoF	Cap	Rcl	Inc	Sh	Md	Lg	Class	TL	LC	Notes
AK-47	+7		18	4	3	2	50	30	-5	25	300	800	2400	rifle	7	3	Fi Au SA Lo-2
Dragunov SVD	+9		29	4	4	4	5	10	-10	40	700	1400	2800	rifle	7	2	Hv Fi Lo-2
FN FAL 7.62	+10		22	5	5	3	50	20	-5	40	750	1500	3500	rifle	7	2	Fi Au SA Lo-2
M16 A1	+9		16	4	5	2	30	30	-5	30	550	800	2400	rifle	7	3	Fi Au SA TA Lo-2

Shotguns	Atk	Dfn	Dmg	Load	Str	Rch	RoF	Cap	Rcl	Inc	Sh	Md	Lg	Class	TL	LC	Notes
SPAS 12	+12		17	5	4	3	5	7	-5	10	10	40	80	rifle	7	1	Li Fi SA Sg Lo-6

Heavy Weapons

These weapons are either normally vehicle mounted, or considered to be squad support weapons. They are generally not issued to all soldiers, but to dedicated teams who have been trained in their use.

Heavy	Atk	Dfn	Dmg	Load	Str	Rch	RoF	Cap	Rcl	Inc	Sh	Md	Lg	Class	TL	LC	Notes
AGM-65 Maverick	+5		45	20	10	4	1	1	-20	200	350	25km	30km	heavy	7	1	Hv Lo-4 Ex-2 Vc Gu(H/4)
GAU-8 Avenger	+11		22	112	8	5	350	1150	-25	50	1km	3km	8km	heavy	7	3	Hv Fi Au-50 Lo-3 Ex-2 Vc
KBP AGS-17	+5		30	35	6	4	30	30	-10	25	50	500	2km	heavy	7	3	Fi Au Lo-3 Ex-20
M151 TOW Launcher	+5		45	20	10	4	1	1	-20	200	300	3km	4500	heavy	7	2	Hv Lo-4 Ex-2 Vc Gu
M61 Vulcan	+13		12	112	8	5	500	var.	-25	50	1km	3km	8km	heavy	7	3	Fi Au-100 Lo-3 Vc
RPK	+8		19	5	6	4	50	100	-5	30	400	1km	3km	heavy	7	2	Fi Au Lo-2

TL8 - The New Millennium

Small arms

These are small weapons designed to be easily man portable. They range from pistols up to rifles.

Pistols	Atk	Dfn	Dmg	Load	Str	Rch	RoF	Cap	Rcl	Inc	Sh	Md	Lg	Class	TL	LC	Notes
Beretta 93R	+4		10	1	2	0	9	20	-4	10	50	100	400	pistol	8	2	Fi TA Lo-1
Glock 17	+5		13	1	2	0	10	17	-2	10	50	100	400	pistol	8	2	Fi SA Lo-1

Rifles	Atk	Dfn	Dmg	Load	Str	Rch	RoF	Cap	Rcl	Inc	Sh	Md	Lg	Class	TL	LC	Notes
AI AW	+12		35	7	4	4	1	10	-15	50	800	1600	3200	rifle	8	1	Hv Fi Lo-2
H&K G11	+10		17	4	3	2	50	50	-4	30	400	900	1800	rifle	8	1	Fi Au SA Lo-2
HK416	+9		18	3	3	2	50	30	-4	30	400	800	1600	rifle	8	2	Fi Au SA Lo-2
SA80 A2	+9		20	4	3	2	30	30	-5	30	500	1km	2km	rifle	8	1	Fi Au SA Lo-2

Heavy Weapons

These weapons are either normally vehicle mounted, or considered to be squad support weapons. They are generally not issued to all soldiers, but to dedicated teams who have been trained in their use.

Heavy	Atk	Dfn	Dmg	Load	Str	Rch	RoF	Cap	Rcl	Inc	Sh	Md	Lg	Class	TL	LC	Notes
Barrett M82-A1	+7		15	14	5	4	5	10	-15	50	1800	3600	5400	rifle	8	1	Fi SA Lo-2 Vc