Tracked Light Combat Vehicles

TAMSE TAM

Notes: This is a light tank designed in the mid-1970s for the Argentine Army as a companion to the VCTP armored personnel carrier. Prototypes appeared in 1977, with full production beginning in 1979. The TAM was developed primarily German engineers, but there was considerable design input by Argentine engineers, who advised on what they needed in a medium tank, the threats from other countries, and moist of all, what could be accomplished with the available budget. Most TAMs were, in fact built in Argentina, with knock-down kits being supplied to the TAMSE plant in Argentina to allow them to study design before undertaking production. Economic difficulties ended production prematurely in 1983, but manufacturing began in 1994, after which the Army's request for 200 TAMs was finally fulfilled. Budgetary difficulties cut short the sales to Argentine Army, but then some of the surplus was sold to Malaysia Ecuador, and Thailand after upgrading, and production was ramped up again. (These vehicles are known as TH-301s.) The TAM is in fact part of family of vehicles based on the same chassis.

TAM

Based on a lengthened Marder chassis, the TAM (Tanque Argentino Mediano, the Argentine name for the vehicle) is topped with a turret mounting a 105mm Rheinmetall Rh-105-30 smoothbore gun. gun. The gun is stabilized in only one plane. The coaxial machinegun is an Argentine-built version of the FN MAG. There is a driver's hatch on the front left of the deck; the turret is mounted in the rear of the vehicle with a commander and loader's hatches on the turret deck. In the rear of the hull is a door that is normally used for resupply, but can be used as a quick exit for the crew if the vehicle is taken out of action.

Optics have been criticized by defense experts as being inadequate, especially in the light of what optics were available at the time. Fire control consists of a ballistic computer and a laser rangefinder with a range of 9900 meters, far outranging the main gun, but useful for determining distances to terrain features.

The engine is a MTU MB-883 Ka500 diesel engine. It has a basic turbocharger, and uses an automatic transmission. The engine, combined with the light weight, gives the TAM lots of agility. The TAM carries a pair of two 200-liter armored drums of extra fuel, to extend range. Though these are in fact vulnerable enemy fire, the tanks do have an AV of 6 from all angles and are self-sealing. The tanks are carried above the level of the deck, allowing fuel to easily flow out of them. (Argentine Army policy is to use the extra fuel first.) The TAM is NBC-Sealed and NBC-filtered fans to help increase comfort; it is not, however, an air conditioner.

The TAM's armor is primarily of all-welded steel. Most defense experts consider the TAM's armor to be inadequate for its role, but the Argentines were willing to sacrifice protection for lighter weight, and therefore, speed and agility. Perhaps the most obvious feature of the TAM is its low-profile turret, with most working space being inside the turret basket. The gun has 20 rounds in a compartment in the turret bustle, but 30 rounds are stored in non-protected storage in the turret, protected only the hull floor armor, which is, to it's credit, somewhat thicker than one might expect from its class of vehicle. The TAM is capable of fording up to four meters of water. Suspension is by torsion bars

TH-301

The Argentines were, to a large extent, hamstrung by their own economy when they built the TAM. The Germans were not nearly so restricted, and they saw a market for an improved version of the TAM. The TH-301 version of the TAM was the version that the Thais bought; beyond that, no sales were made, and the Germans eventually took the TH-301 off the market. Most countries were, unfortunately, interested in Main Battle Tanks and not medium tanks.

The TH-301 has an all-round refit for its vision system, from adjustable telescopic optical sights to thermal imaging to four-way day/night CCD cameras. It also has improved fire control and stabilization. The engine is a new design, a 750-horsepower turbocharged diesel with a mighty output of 750 horsepower, coupled to a fully-automatic transmission, power steering, and power brakes. .Externally, the TH-301 looks almost like a TAM, with the lengthened Marder chassis and the low-profile turret and the 105mm ordnance. However, the TH-301 has slightly improved armor with higher-quality steel, and has side skirts. The suspension is mostly by torsion bar, but the Germans learned from the TAM and put a shock absorber on the front and rear roadwheels. The TH-301 is NBC-Sealed and has NBC filters for its air conditioner. Major attention has been given to the maintenance and servicing of the vehicle; for example, the TH-301 has a unitary power pack and it may be removed in one piece.

TAM 2C

The TAM 2C is a heavily-upgraded version of the TAM. In the early 2000s, the Argentines felt they needed a tank that was more survivable on the battlefield. They looked at the Leopard 2A4, the Leclerc, the Merkava, the T-80, It was decided, however, that these vehicles were too expensive to buy, use, and maintain, and that a cheaper upgrade to the TAM would be more in line with the Argentine budget. The Argentines contacts a variety of firms to design and do the upgrades, including Elbit in Israel and several Argentine firms. Yet some defense analysts criticize the TAM 2C as not enough of an upgrade, considering its likely opponents in South America, and that the Argentines passed on deals for far better main battle tanks. As medium tanks go, the TAM 2C is a reasonably up-to-date vehicle, however.

A large bustle rack has been added to the rear of the turret. Side skirts have also been added. Below the bustle rack, mounted on the back of the hull, is a 10kW APU for silent running. (The APU is at the back of the vehicle and seems to lack any armor.) Turret operation was changed from a hydraulic system to an all-electric system. Despite the increase in armor, new armor composition technology means that the TAM 2C is actually lighter than the TAM. Some TAM 2Cs sport a large rack that stretch across the entire rear deck and is about a meter wide and high.

The TAM 2C has a thermal imager as well as a backup camera for the driver. The gunner and commander were given a thermal imager as well as a day/night CCD camera. The commander also has as part of his cupola a laser rangefinder and laser designator. The commander's sight head gives the TAM 2C a hunter/killer capability. An onboard computer was added, both as a vehicle state computer and as a mapping computer; the TAM 2C has inertial navigation. The computer system also provides a ballistic computer program to the gun and coaxial, as well as providing LCD interfaces for the gunner, commander, and driver.

The gun is more properly stabilized, due to strategically-placed counterweights as well as the addition of a thermal sleeve. The current gun is a 105mm Rheinmetall Rh-105-30 smoothbore gun, but a possible future upgrade is the 120mm smoothbore gun used by most NATO and Western tanks. The gun is also more effective due to the capability of firing more, different types of ammunition, including the Israeli LAHAT and a new long-rod tungsten APFSDS-T round. The gun has 20 rounds in a compartment in the turret bustle which is similar in concept to that of the M1 series, but 30 rounds are stored in non-protected storage in the turret floor.

The chassis is essentially an up-armored version of the German Marder, with the same MTU MB-883 Ka500 diesel engine. An improved turbocharger has been added, however, and this increases output to 740 horsepower., This is linked to a fully automatic transmission, along with power brakes and power steering. Armor has been improved in general, particularly on the glacis, turret front, and turret sides., this armor is generally all-welded steel. But also incorporates some advanced armor in strategic places. The armor is said to be a version of the Israeli Iron Wall armor. The suspension base is the same as the standard TAM, but there are also shock absorbers on the front two and the rear roadwheels. The TAM 2C has an ability to detect a laser designation beam and automatically launch smoke.

The commander has an electrically-powered cupola with an Argentine-built version of the MAG on a pintle. The TAM 2C retains the bank of four smoke grenade launchers on either side of the rear of the turret. The crew benefits from air conditioning and NBC Overpressure protection.

Some TAM 2Cs have been seen with the TAM's extra fuel tanks at the rear. This appears to have been discontinued after the addition of the APU. The TAM 2C, however, retains the ability to mount those extra fuel tanks as the rear.

Twilight 2000 Notes: When the Twilight War intervened, production and the undelivered vehicles were shifted to domestic use.

Vehicle	Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
TAM	$678,494	D, A	508 kg	31.6 tons	4	29	Passive IR, Image Intensification	Shielded
TH-301	$909,066	D, A	521 kg	31.6 tons	4	21	Passive IR, Image Intensification, Day/Night CCD Camera (G, C), Day/Night CCD Camera (Backup)	Shielded
TAM 2C	$1,251,883	D, A	507 kg	30.5 tons	4	24	Thermal Imaging (D, G, C), Day/Night CCD Camera (G, C), Day/Night CCD Camera (Backup) (D)	Shielded

Vehicle	Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
TAM	158/111	44/31	650+400	268	Trtd	T4	TF26 TS8 TR8 HF32 HS6 HR6*
TH-301	164/114	45/32	650+400	279	Trtd	T5	TF28Sp TS10Sp TR8 HF34Sp HS8Sp HR6*
TAM 2C	167/117	46/32	650+400	275	Trtd	T5	TF31Cp TS10Sp TR8 HF38Cp HS7Sp HS6**

Vehicle	Fire Control	Stabilization	Armament	Ammunition
TAM	+2	Fair	105mm Rheinmetall Gun, MG3, MG-3 (C)	50x105mm, 3000x7.62mm
TH-301	+3	Fair	105mm Rheinmetall Gun, MG3, MG3 (C)	50x105mm, 3000x7.62mm
TAM 2C	+4	Good	105mm Rheinmetall Gun, MAG, MAG (C)	50x105mm, 3000x7.62mm

*Turret Roof Armor is AV6. Hull Roof Armor is AV5, Hull Floor armor is AV6, except for the front third of the floor, which is AV7.

** Roof AV is 7, Floor Armor is 8Sp.

4K 7FA FSCV 90

Notes: This is a fire support variant of the Steyr 4K 7FA-KSPz armored personnel carrier. The basic chassis is topped with a turret mounting a 90mm French or NATO gun, and ammunition is carried instead of most passengers. Two passengers are retained as scouts so the vehicle can be used for reconnaissance. The top hatch is replaced by the turret, but all other hatches are retained, and two hatches are in the turret for the commander and gunner. This vehicle is used in small numbers by Switzerland and Greece.

Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
$222,375	D, A	500 kg	16.95 tons	3+2	7	Passive IR, Image Intensification	Enclosed

Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
129/91	30/21	360	118	Trtd	T3	TF5 TS5 TR5 HF6 HS4 HR4

Fire Control	Stabilization	Armament	Ammunition
+2	Fair	90mm NATO or French gun, MAG, M-2HB (C)	64x90mm, 2000x7.62mm, 500x.50

4K 7FA Rasit

Notes: This is a 4K 7FA KSPz armored personnel carrier modified to carry the Rasit ground surveillance radar and a computerized management system as well as extra radios and a datalink system to higher headquarters. The M-2HB turret is removed in this vehicle. The radar has a range of 30 km and may be operated by a cable at a range of 30 meters.

Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
$254,012	D, A	500 kg	15.26 tons	4	11	Radar	Enclosed

Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
82/58	19/14	360	117	CiH	T3	TF1 TS1 TR1 HF6 HS4 HR4

Fire Control	Stabilization	Armament	Ammunition
None	None	MAG (C)	1600x7.62mm

SK-105 Kürassier

Notes: While the chassis of this light tank is of Austrian design, the turret is a modified form of that found on the AMX-13. The Kürassier, however, is afforded with a better night vision suite and better fire control than the AMX-13, and uses a 105mm gun as standard. The turret uses the same two-magazine system with 6 rounds each, and as with the AMX-13, the spent shell casings are ejected out of the rear of the turret. There are three light tank variations of the SK-105 in service; export customers such as Argentina, Bolivia, Morocco, and Tunisia mostly use the SK-105/A1; the SK-105/A2 is the version most commonly encountered in Austrian service; and the SK-105/A3 was the newest version, in limited production before and during the war. In addition, appliqué armor of the same capabilities as that available for the AMX-13 is available for the SK-105 (however, an AMX-13 kit will not fit the SK-105 and vice versa).

Vehicle	Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
SK-105/A1	$213,832	D, A	400 kg	17.7 tons	3	8	Active/Passive IR	Enclosed
SK-105/A2	$253,832	D, A	400 kg	17.8 tons	3	8	Passive IR	Enclosed

SK-105/A3	$255,202	D, A	400 kg	19.1 tons	3	8	Passive IR, Image Intensification	Enclosed

Vehicle	Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
SK-105/A1	116/81	27/19	420	111	Trtd	T3	TF6 TS5 TR3 HF8 HS4 HR2
SK-105/A2	110/77	26/18	420	101	Trtd	T3	TF6 TS5 TR3 HF8 HS4 HR2
SK-105/A3	118/83	28/19	420	115	Trtd	T3	TF13 TS10 TR6 HF16 HS8 HR4

Vehicle	Fire Control	Stabilization	Armament	Ammunition
SK-105/A1	+2	Fair	105mm French Gun, MG-3, MG-3 (C)	41x105mm, 2000x7.62mm
SK-105/A2	+3	Fair	105mm French Gun, MG-3, MG-3 (C)	41x105mm, 2000x7.62mm
SK-105/A3	+4	Good	105mm M-68 Gun, MAG, MG-3 (C)	41x105mm, 2000x7.62mm

Bernardini X1/A1/A2

Notes: These light tanks are a radical rebuild of the World War 2-era M3A1 Stuart, with a new suspension, new diesel engine, new turret, heavier armament, and a new fire-control system. (One has to look hard to see their M3A1 roots.) These were adopted by the Brazilian Army in the early 1970s since their Stuart progenitors were getting a bit long in the tooth, and 77 were delivered total, of X1s, X1A1s, and X1A2s. They have never been offered to the international market. The X1-series were used until the early 1990s, though in the mid-1980s, they were at first supplemented, then replaced by better vehicles in the mid-1980s.

X1

The X1 were based on heavily-modified M3 and M3A1 Stuart chassis. The Brazilian Army went through a process to weed out the still-usable chassis from those that were too far gone to continue as military vehicles. The Stuart chassis was modified with a new vertical volute suspension derived from that of the M4 artillery tractor which was more shock-absorbing. This suspension worked because it was related to the suspension already used on the M3 and M3A1. The frontal armor, in addition to applique, was given increased slope. The sides of the tank were given a moderate slope. The original engine was replaced with a Scania-Vabis DS-11 A05 CC1 diesel, with 256 horsepower. The hulls were extended slightly in the engine compartment to seat the new engines. The turret of the Stuart was completely shafted in favor of a new turret called the BT90; the turret ring had to be widened by 200 millimeters to accommodate the turret. This turret was armed with a licensed copy of the same French low-recoil 90mm gun that armed the EE9 Cascavel armored vehicle. (The designers decided to not go with the H90 turret of the EE9 because they wanted the turret to have more armor, though lessons learned from the H90 turret went into the design of the BT90.) Communications were brought up to date, and the fourth crewmember could now operate as a loader. The driver has a hatch on the front left side, and the commander and loader have hatches on the turret deck. The gunner uses loader's hatch.

Some 52 X1s were produced. Some of these were further modified into other members of the X1 family, including one into the X1A1. It is still somewhat of a mystery as to the fate of the X1 prototype; however, it is probable that the X1 prototype was modified into the prototype of the XLF40 MRL system, which was not proceeded with. X1s based on the M3 differ slightly from those based on the M3A1; those based on the M3 have flat rear plates, while those based on the M3A1 have curved rear plates.

X1A1

The X1A1 began as an update program to the X1, but as what became the X1A2 ran concurrently with the X1A1 program, the X1A1 reached only the prototype phase and was not proceeded with. The X1A1 is a stretched X1, primarily to allow for more ammunition stowage. A third bogie was added, replacing the massive idler wheel of the M4 artillery tractor's suspension, and the vehicle increased in length by 0.8 meters. The new suspension was a sort of hybrid between the suspensions of the M4 artillery tractor and the M4 Sherman MBT. The longer hull allowed for a larger fuel tank. The turret was fitted with a longer bustle to carry more ammunition. While many deficiencies were fixed in the X1A1, lengthening the hull causes a new problem – the width of the tracks remained the same, and the ground pressure of the treads therefore increased, making the X1A1 difficult to steer as the tracks dug more into the ground. This problem was later fixed in the X1A2 design. The X1A1 was not proceeded with.

X1A2

The X1A2 incorporated the features of the previous two vehicles, including the stretched length of the X1A1. However, unlike the X1 and X1A1, the X1A2 is a new-build vehicle, with the experience gained in producing the X1 and X1A1 allowing Bernardini to design a new hull. Improvements have been made in the turret and hull armor, night vision has been added, a laser rangefinder has been installed, and air conditioning is provided. The engine is also more powerful, replaced with a Scania-Vabis DS-11 A05 CC1 turbocharged diesel uprated to 280 horsepower to cope with the added weight, and the fuel tanks are larger. The transmission was replaced with an Allison CD-500.

The main gun is replaced with a more powerful 90mm gun that has more flexibility in ammunition and is low-pressure, and, along with a beefier muzzle brake, has much reduced recoil. This gun is a Brazilian copy of a French gun which was itself a copy of a British Cockerill Mk 3 gun. It should be noted that while the EC-90 was capable of firing APFSDS rounds, internal stowage in the X1A2 was such that there was no room for the carriage of APFSDS rounds. Rough rangefinding was done with a graticule, but then the gunner switched to a coincidence/laser rangefinder. The loader position has been removed, with the commander working as a loader. The chassis lengthening and improvements were carried over to the X1A2, and rearranged ammunition stowage allowed more rounds to be carried. The X1A2 was also given a new name, the Carcara, after a Brazilian jungle bird. Some 24 X1A2s were built between 1979 and 1983, but only 10 entered active service, with the remainder going directly into storage or to museums and monuments.

X1/60 HVMS

In the early 1980s, Ecuador wanted to upgrade their M3A1 Stuarts with a new gun and engine. They looked to X1 that Brazil had made out of their M3s and M3A1s, but wanted something better still. Negotiations centered around the fitting of an Israeli 60mm L/70 HVMS autocannon and a Detroit Diesel 6V53T diesel engine (a variant of which powers the famous M113 series). The 60mm HVMS was considered by Ecuador since it had better antiarmor performance than any of the guns at that time manufactured in South America, and the 6V53T engine because it was a mechanically simpler design with slightly better performance (260 horsepower) than the X1's Scania-Vabis engine, and it could be hooked up to an automatic transmission. Such a conversion would have given the Ecuadoreans a vehicle with better antiarmor performance than any vehicle in South America at the time and with more ample ammunition carriage than a vehicle with a larger-caliber gun.

It is believed that possibly as many as 30 of Ecuador's M3A1s were in good enough shape for the conversions. Unfortunately, the Ecuadorean government had other ideas; they had over the years been steadily cutting the defense budget and by the time negotiations took place in 1984, the MoD had already bought 32 EE9 Cascavels and there was no funding for the conversion project. The argument was also made that the Cascavels were new vehicles while the conversion project used 40-year-old hulls. The Ecuadorean M3A1s were eventually scrapped. The idea of mating a 60mm HVMS gun to a South American tank, however, later appeared in Chilean M4s.

It should be noted that in addition to the X1 series, the Brazilians retained some 100 stock M3 and M5 Stuarts, and these were not replaced until the mid-1980s. X1 and X1A1 variants were phased out in the 1990s and scrapped. X1A2s are maintained in working order by civilian employees of Bernardini and kept in a reserve role, but they were quickly supplanted by the superior M41C tank in Brazilian service.

Vehicle	Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
X1 Pioneiro	$203,658	D, A	341 kg	15 tons	4	12	Headlights	Enclosed
X1A1 Carcara	$241,529	D, A	385 kg	17 tons	4	13	Headlights	Enclosed
X1A2 Carcara	$298,607	D, A	345 kg	19 tons	3	15	Active/Passive IR (D, G)	Enclosed
X1/60 HVMS	$152,040	D, A	337 kg	17 tons	4	14	Active/Passive IR (D, G)	Enclosed

Vehicle	Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
X1 Pioneiro	120/84	33/23	245	71	Trtd	T2	TF9 TS7 TR7 HF13 HS7 HR5
X1A1 Carcara	114/80	32/22	320	71	Trtd	T3	TF9 TS7 TR7 HF13 HS7 HR5
X1A2 Carcara	113/79	31/22	600	98	Trtd	T3	TF12 TS8 TR7 HF16 HS10 HR5*
X1/60 HVMS	116/81	32/23	245	77	Trtd	T2	TF9 TS7 TR7 HF13 HS7 HR5

Vehicle	Fire Control	Stabilization	Armament	Ammunition
X1 Pioneiro	+1	Fair	90mm French DEFA D921A Gun, M1919A4, M1919A4 (Bow), M2HB (C)	44x90mm, 2240x.30-06, 670x.50
X1A1 Carcara	+2	Fair	90mm French DEFA D921A Gun, M1919A4, M1919A4 (Bow), M2HB (C)	58x90mm, 2240x.30-06, 670x.50
X1A2 Carcara	+3	Fair	90mm EC-90, M1919A4, M2HB (C)	68x90mm, 2500x.30-06, 750x.50
X1/60 HVMS	+2	Fair	60mm HVMS Autocannon, M1919A4, M1919A4 (Bow), M2HB (C)	66x60mm, 2240x.30-06, 670x.50

*Floor armor AV is 3Sp.

GDLS UK Ajax

Notes: The Ajax is both the designation for the class of vehicles to which the Ajax belongs and the designation of a specific vehicle, a reconnaissance/scout vehicle. The Ajax entered service with the British Army in 2017 and is still undergoing familiarization with the troops and units who are integrating it into their units. Units equipped with the Ajax are expected to be ready for deployment by 2020. The Ajax was formerly known, during development, as the Scout Specialist Vehicle. The roots of what would become the Ajax began in the early 1990s and the FRES (Future Rapid Effects Vehicle), which was also to have been a family of related vehicles, but did not bear fruit except in a general way. The Ajax is based on General Dynamics Land Systems' ASCOD 2 Common Base Platform, which is also a family of vehicles, and it beat out another family of vehicles developed from BAE/Hagglunds' CV-9040. The Ajax family will replace the CVR(T) range of vehicles currently in service with the British Army.

The Ajax has a wide turret ring and large turret basket, making it much more flexible and roomy than most AFVs.

The Ajax is equipped with a state-of-the-art ISTAR package linked to its radios, computers, location and mapping system (based on GPS) and the British T-BMS system. The ISTAR system uses several high-density solid-state hard drives which can store an estimated 12 TB of data and burst-transmit it to other friendly vehicles and higher HQ. The Ajax is generally connected to higher headquarters and other Internet capable vehicles via 20 Gbit intelligent open architecture system, which gives high speed internet connectivity as well as allowing for easy upgrading. This Internet system is the primary method by which the Ajax transmits information to higher headquarters. It uses the BOWMAN C4I system, which is a system which integrates HF, VHF, and UHF radios used by the Ajax, communicates with dismounted soldiers and other vehicles, and used encrypted frequency-hopping radios. (This will be replaced with the MORPHEUS C4I system in the future.) The Ajax has a feature which is still relatively rare on AFVs: an acoustic shot detection system (actually, three total). All crewmembers have an LCD screen, and have 100% access to all information the sensors find around them, BMS data, and vehicle state data. The Ajax has a limited weather reconnaissance function, able to measure wind, barometric pressure, and general weather conditions.

Armor is of course classified, but rumors say that the Ajax is able to stop hits from 35mm autocannons from the front, 20mm autocannons from the sides, and 14.5mm rounds from the rear. The turret is said to have similar levels of protection, or perhaps slightly less. Rumors also state that the armor is a combination of RHA, spaced armor, and composite armor in some strategic shots. I'll admit I'm not fond of rumor mills, but I'll stat this in below. There are armored track skirts and an obvious piece of added armor on the upper sides of the vehicle. Photos indicate that the Ajax is usually clad in radar and IR-reflective /absorbent camouflage-net-like form-fitting sheets, and the engine has IR suppression. These two give the Ajax Stealth 1 and IR Stealth 2. The floor armor is said to be very thick and includes spaced armor, able to take the blast of a 10-kilogram antiarmor mine. The tracks have unspecified resistance to mines, and are stronger than standard tracks. The Ajax can mount ERA or NERA on the glacis, hull sides, turret front, and turret sides. The armor is also modular; when more advanced armor is available or the armor is damaged, the old armor can be easily removed and replaced. The Ajax can also be equipped with cage armor; the Ajax is set up for this, but it is anticipated that it is only a contingency, since equipping the Ajax with cage armor would negate the Ajax's Stealth rating.

The Ajax has a crew of three: the driver, gunner/intelligence specialist, and the commander/intelligence specialist. The driver is in the front left of the hull behind the glacis, while the gunner is normally stationed down in the turret, and the commander down inside or standing in his hatch on the turret right. The gunner also has a hatch on the top turret right, but once the mission starts, he rarely uses it, staying inside with his sensor suite. The gunner is the primary intelligence specialist, while the commander is generally on the lookout for hazards and enemy units, but also evaluates and gathers some intelligence data. The commander is also responsible for monitoring the BMS and vehicle state computer. The driver primarily uses his LCD for navigation and to monitor fuel state, speed, terrain, etc. However, each crewmember may access 100% of the systems data. The crew has an air conditioner with NBC filters, NBC overpressure, and a passive APS. The passive RWS's decoy smoke is in addition to two clusters of four smoke grenade launchers on each side of the turret, which are electrically-fired by any crewmember as necessary. As with almost all British vehicles, the Ajax has a ration/water heater; it also has a 30-liter chilled drinking water tank.

Armament is surprisingly heavy for a reconnaissance vehicle, and advanced: the Ajax is armed with a CTAI 40mm CT40 autocannon, using case-telescoped ammunition which is lighter and more compact than standard 40mm ammunition, allowing for more ammunition onboard. (A 45mm standard-ammo autocannon was tested, but dropped in favor of the high-powered CTAI gun.) The gun's sensors can automatically find the most threatening targets, and at a command from the gunner, automatically lay the gun on the selected target. The 40mm CTAS is also able to engage helicopters, low-flying aircraft, and UAVs. The coaxial machinegun is an L94A1 7.62mm weapon. Ammunition is stored outside of the crew compartment in the turret bustle, except for ready-use ammunition (usually about 100 rounds of 40mm ammunition and 300 rounds of 7.62mm ammunition). The primary fire control system is Thales' ORION system, which combines all sights, vision equipment, and fire control equipment into an integrated whole. If desired, a Kongsberg RWS may be mounted on the turret ahead of the gunner's hatch; this RWS is projected to be armed with an M2HB heavy machinegun. The RWS can be controlled by the commander or gunner. The commander's station is equipped with a CITS, a reticle to aid in controlling artillery and air strikes, a reticle for the RWS (which may not be used if the Ajax is not equipped with an RWS), and a long-range laser designator with a range of 10,000 meters.

The Ajax is powered by a German MTU V8 199 TE21 turbocharged diesel with a heat-dampened exhaust, developing 805 horsepower. This is coupled to an automatic transmission, and the Ajax has power steering and power brakes. It is also capable of pivot steering. The Ajax has a 12kW APU for powering systems while on silent watch. The APU is diesel powered, using fuel from the vehicle's fuel tanks, and also having a heat-dampened exhaust and otherwise under the vehicle's armor, giving it protection and making it very quiet. An interesting fact (common to the entire Ajax family) is that it is capable of towing 62 tons, though if towing this much weight, fuel consumption is quadrupled.

Vehicle	Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
Ajax	$1,796,004	D, A	989 kg	42 tons	3	27	2nd Gen Image Intensification (D, G, C), FLIR (G, C), 3xLong-Range Day/Night CCD Cameras (D, G, C), Backup Camera (D)	Shielded
Ajax w/RWS	$1,814,422	D, A	989 kg	42.5 tons	3	29	2nd Gen Image Intensification (D, G, C), FLIR (G, C), 2nd Gen Thermal Imaging (RWS, Image Intensification (RWS) 3xLong-Range Day/Night CCD Cameras (D, G, C), Backup Camera (D)	Shielded

Vehicle	Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor**
Ajax	137/96	38/27	900	298	Trtd	T5	TF 31Cp TS22Cp TR13 HF40Cp HS27Sp HR 17
Ajax w/RWS	136/96	38/26	900	298	Trtd	T5	TF 31Cp TS22Cp TR13 HF40Cp HS27Sp HR 17

Vehicle	Fire Control	Stabilization	Armament	Ammunition
Ajax	+5	Good	40mm CTAI CT40 Autocannon, L94A1	500x40mm, 2000x7.62mm
Ajax w/RWS	+5*	Good	40mm CTAI CT40 Autocannon, L94A1, M2HB (RWS)	500x40mm, 3000x7.62mm, 1000x.50

*The RWS has a +4 Fire Control rating.
**Floor AV is 10Sp.

FV-101 Scorpion

Notes: Officially named the CVR-T (Combat Vehicle Reconnaissance – Tracked) by the British military, the Scorpion (also known as the Scorpion-76 to distinguish it from later 90mm-armed versions) is a light tank and scout vehicle developed to replace the Saladin armored car. The first versions appeared in British ranks in 1972, and by 1987 over 3500 were built for the British Army and for export. Most British Scorpions were replaced by the later Scimitar and Sabre, and the Scorpions sold to other countries (especially the turrets, which could be mounted on many different vehicles), but remaining stocks in England were recalled quickly when the war started. Most British and Australian Scorpions have diesel instead of gasoline engines, but most export versions still have the original engine. There is a hatch on the front left deck for the driver and two hatches on the turret deck for the commander and gunner. Commander's weapons are not fitted by default, but many such field modifications were carried out during the war. The Scorpion requires a flotation screen to be raised to be amphibious; this takes about 5 minutes.

The Scorpion-90 is the standard FV-101 Scorpion light tank, but with a 90mm Cockerill gun instead of the standard 76mm Cockerill. These vehicles were normally built with a diesel engine instead of the normal gasoline engine. They were built primarily for export, and Malaysia, Nigeria, Venezuela, and a few other countries ordered this variant.

Twilight 2000 Notes: They were in official service with 15 countries by the time of the Twilight War; one unusual user was the US Army and Marines, who ordered about 40 of them before the war for evaluation purposes, then put them to use during the war with about 12 going to the Marines and the other 28 going to the US Army's 9th Infantry Division.

An unusual customer for the Scorpion-90 was the US Marines, who had a number of them on loan from Britain before the Twilight War for evaluation as a fire support vehicle; when the Marines were deployed to Norway, they bought the test vehicles and ordered a few more for use in that campaign.

Vehicle	Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
Scorpion-76 (Gas)	$144,902	G, A	300 kg	8.07 tons	3	5	Passive IR	Enclosed
Scorpion-76 (Diesel)	$144,937	D, A	300 kg	8.1 tons	3	5	Passive IR	Enclosed
Scorpion-90 (Gas)	$155,189	G, A	300 kg	8.72 tons	3	5	Passive IR	Enclosed
Scorpion-90 (Diesel)	$155,224	D, A	300 kg	8.76 tons	3	5	Passive IR	Enclosed

Vehicle	Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
Scorpion-76 (Gas)	143/100	33/23/4	423	130	Trtd	T3	TF5 TS4 TR4 HF6 HS3 HR3
Scorpion-76 (Diesel)	149/104	35/24/4	423	68	Trtd	T3	TF5 TS4 TR4 HF6 HS3 HR3
Scorpion-90 (Gas)	134/94	31/22/3	391	130	Trtd	T3	TF5 TS4 TR4 HF6 HS3 HR3
Scorpion-90 (Diesel)	148/104	34/24/4	391	73	Trtd	T3	TF5 TS4 TR4 HF6 HS3 HR3

Vehicle	Fire Control	Stabilization	Armament	Ammunition
Scorpion-76 (Both)	+2	Fair	76mm Cockerill Gun, EX-34	40x76mm, 3000x7.62mm
Scorpion-90 (Both)	+2	Fair	90mm Cockerill Gun, EX-34	33x90mm, 3000x7.62mm

FV-107 Scimitar

Notes: This is basically a Scorpion with a slightly different turret mounting a 30mm Rarden autocannon instead of the 76mm gun. Other than being slightly lighter than the Scorpion and having a smoother-riding suspension and better night vision suite, the Scimitar is identical to the Scorpion. Most British versions are diesel powered, but most export versions are gasoline powered.

The Sabre is a Scorpion light tank fitted with the turret of the Fox armored car, along with some upgrades in engine, transmission, smoke grenade launchers, and stowage. This was done to save money on the introduction of a new reconnaissance vehicle.

Twilight 2000 Notes: 104 Sabre conversions were carried out before the Twilight War, but few were carried out after the war began as it was felt, as many vehicles would be needed as possible.

Vehicle	Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
Scimitar (Gas)	$213.913	G, A	300 kg	7.8 tons	3	4	Passive IR, Image Intensification	Enclosed
Scimitar (Diesel)	$213,948	D, A	300 kg	7.84 tons	3	4	Passive IR, Image Intensification	Enclosed
Sabre	$294,033	D, A	300 kg	8.03 tons	3	5	Passive IR, Image Intensification, Thermal Imaging	Shielded

Vehicle	Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
Scimitar (Gas)	87/61	20/14/2	423	65	Trtd	T3	TF5 TS4 TR4 HF6 HS3 HR3
Scimitar (Diesel)	94/66	22/15/2	423	36	Trtd	T3	TF5 TS4 TR4 HF6 HS3 HR3
Sabre	107/75	25/18/3	423	42	Trtd	T3	TF5 TS4 TR4 HF6 HS3 HR3

Vehicle	Fire Control	Stabilization	Armament	Ammunition
Scimitar (Both)	+2	Fair	30mm Rarden, EX-34	165x30mm, 3000x7.62mm
Sabre	+3	Good	30mm Rarden, EX-34	200x30mm, 3000x7.62mm

FV-432 Radar Vehicle

Notes: This is an FV-432 armored personnel carrier fitted with a counterbattery/ground surveillance radar set. The radar has a ground surveillance range of 10 km and a counterbattery range of 20 km. The radar and the associated takes up almost the entire passenger area of the vehicle, and there is no room for passengers.

Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
$295,186	G, D, A	300 kg	19.3 tons	4	13	Radar	Enclosed

Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
92/64	21/15	454	70	Trtd	T2	TF2 TS2 TR2 HF6 HS4 HR3

Fire Control	Stabilization	Armament	Ammunition
None	None	L-7A2 (C)	1600x7.62mm

KshTMS

Notes: This is a Bulgarian modification of the ACRV (MT-LBus) chassis, used as a command post vehicle at battalion level or above. In this role, the vehicle has at least 3 radios, a computer with wireless modem and LAN capability, a teletype or teleprinter, and a tent that may be erected up to 100 meters away from the vehicle and connected by a fiberoptic cable. The tent is big enough for the crew and staff of the vehicle, plus 4 other people, or more standing.

Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
$124,822	D, A	1 ton	12.75 tons	4+3	9	Headlights	Shielded

Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
103/72	24/17/2	550	53	Stnd	T3	HF4 HS2 HR2

Fire Control	Stabilization	Armament	Ammunition
None	None	PK (C)	2000x7.62mm

Type 62 Light Tank

Notes: This is a scaled-down version of the T-55 main battle tank built by China and used by China, Albania, North Korea, and several African nations. The Type 62 has an exhaust smoke-laying ability, and is amphibious. The Type 62 has a laser rangefinder and is designed for rugged terrain, with a self-recovery capability. The layout is identical to the T-55.

Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
$172,764	D, A	400 kg	21 tons	4	8	Headlights	Enclosed

Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
133/93	31/22	730	159	Trtd	T3	TF10 TS7 TR6 HF12 HS6 HR4

Fire Control	Stabilization	Armament	Ammunition
+2	Basic	85mm gun, PKT, PKT (Bow), DShK (C)	47x85mm, 1750x7.62mm, 1200x12.7mm

Type 63 Light Tank

Notes: A Chinese version of the PT-76, used by China, North Korea, Pakistan, Sudan, and Vietnam, with a beefed-up suspension, transmission, and engine, and more powerful gun.

Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
$166,706	D, A	800 kg	18.4 tons	4	9	Headlights	Enclosed

Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
139/98	33/23/3	403	147	Trtd	T3	TF6 TS6 TR6 HF8 HS4 HR4

Fire Control	Stabilization	Armament	Ammunition
+1	Basic	85mm gun, PKT, DShK (C)	47x85mm, 2000x7.62mm, 500x12.7mm

Type 90 Command Post Carrier

Notes: This is a command post version of the Type 90 armored personnel carrier. This version has a raised rear section with two man-sized and one large hatch, and a rear door. The vehicle has at least 3 radios, a 10-meter antenna mast, and a gasoline-powered 5kW generator to power the equipment. Some of these vehicles also have computers for various tasks.

Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
$91,467	D, A	2 tons	19 tons	6	10	Passive IR, Image Intensification	Shielded

Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
112/78	26/18/3	520	107	Stnd	T3	HF4 HS2 HR2

Fire Control	Stabilization	Armament	Ammunition

None	None	W-85 (C)	1050x12.7mm

DK-1

Notes: This is another development of the M-41 used by Denmark. Modifications consist of a smaller and more powerful engine, four grenade launchers on either side of the turret, an NBC overpressure system and radiation shielding, internal ammunition stowage has been rearranged for more room, and better night vision has been installed. Appliqué armor has been added.

Twilight 2000 Notes: 53 of these conversions were carried out by the Twilight War, and an unknown, though small, number after the start of the war.

Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
$209,252	D, A	700 kg	25 tons	4	10	Passive IR, Image Intensification, WL Searchlight	Shielded

Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
125/88	29/21	930	137	Trtd	T4	TF10 TS7 TR7 HF12 HS6 HR6

Fire Control	Stabilization	Armament	Ammunition
+2	Fair	76mm Cockerill, MG-3, MG-3 (C)	68x76mm, 6000x7.62N

AIFV PMORS

Notes: This is a Dutch variant of the AIFV, used for battlefield surveillance and artillery spotting. In this role, the AIFV's turret is removed, and the roof of the rear compartment has an extendable 4-meter mast containing sensors. The sensors include a thermal vision camera, an image intensifier, a video camera, a shotgun microphone, a radio direction finder, a radar detector, and antennas for intercepting enemy radio signals. Inside the rear compartment are at least three radios, a small computer, and positions for operators and intelligence analysts. On the rear deck is a 10kW generator.

Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
$163,873	D, A	800 kg	13.2 tons	5	9	Thermal Imaging, Image Intensification	Shielded

Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
124/87	29/20/3	416	84	Stnd	T2	HF6Sp HS4Sp HR4

Fire Control	Stabilization	Armament	Ammunition
None	None	M-2HB (C)	1000x.50BMG

Lynx -- Netherlands Version

Notes: This is a standard Lynx with the addition of a turret with a 25mm Oerlikon autocannon. The gunner has a hatch in the rear face of the turret and the commander has a hatch on the turret roof. The turret traverse is slow, as it is manual.

Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
$169,180	D, A	500 kg	9.88 tons	3	4	Passive IR	Enclosed

Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
92/65	22/15/2	303	47	CiH	T3	TF5 TS5 TR5 HF6 HS4 HR4

Fire Control	Stabilization	Armament	Ammunition
+2	Fair	25mm KBA autocannon, MAG (C)	400x25mm, 2000x7.62mm

AMX-10 PAC-90

Notes: This is a fire support variant of the AMX-10P, used by Indonesia. There is a hatch on the left front deck for the driver, hatches on the turret for the commander and gunner, and a large drop ramp in the rear.

Notes: Small amounts of this vehicle were diverted from shipments to Indonesia when the Twilight War began, and used by France and Belgium.

Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
$178,906	D, A	1.25 tons	15.59 tons	3+4	10	Passive IR	Shielded

Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
124/87	29/20/5	518	103	Trtd	T2	TF3 TS3 TR3 HF4 HS2 HR2

Fire Control	Stabilization	Armament	Ammunition
+3	Basic	90mmf gun, AAT-F1	40x90mm, 3200x7.62mm

AMX-13

Notes: Production of the first examples of this vehicle began in 1952; since then, the AMX-13 has been steadily upgraded and improved to try to keep it useful, relevant, and attractive on the world market. Production stopped in 1985, but upgrades packages continued to be developed after that time, and over 7700 were manufactured. The base chassis is conventional, but the turret is unusual, being an oscillating turret, where the top and bottom half are hinged, and the top half rocks back and forth to provide elevation for the main gun and coaxial armament. In addition, the main gun is fed by an autoloader, and ammunition supplied by two revolving magazines at the rear of the turret, each holding 6 rounds. Empty shell cases are ejected automatically outside the turret after firing. This feature, while giving a good fire rate, also means that when the ammunition in those magazines is exhausted, they must be manually refilled, with the crew getting outside of the armor to do so. It also limits the amount of available ammunition. One way used to increase the firepower (and antiarmor range of earlier versions) was to mount ATGM launchers on either side of the turret; early versions with these launchers used SS-11 missiles, and later versions used HOT missiles. The driver's hatch is in the front center of the vehicle, with a commander's hatch on the turret deck.

Vehicle	Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
AMX-13 M-51	$128,205	G, A	300 kg	15 tons	3	6	Headlights	Enclosed
AMX-13 M-51/SS-11	$169,933	G, A	300 kg	15.05 tons	3	6	Headlights	Enclosed
AMX-13 M-51/HOT	$253,389	G, A	300 kg	15.14 tons	3	6	Headlights	Enclosed
AMX-13/90 (Gas)	$148,320	G, A	300 kg	15 tons	3	6	Active IR	Enclosed
AMX-13/90 (Diesel)	$148,720	D, A	300 kg	15 tons	3	6	Active IR	Enclosed
AMX-13/105 (Gas)	$169,945	G, A	300 kg	15.5 tons	3	6	Passive IR	Enclosed
AMX-13/105 (Diesel)	$170,145	D, A	300 kg	15.5 tons	3	6	Passive IR	Enclosed
AMX-13/FL-15	$180,560	D, A	300 kg	15.5 tons	3	6	Passive IR	Enclosed
Argentine AMX-13	$148,320	D, A	300 kg	15 tons	3	6	Passive IR	Enclosed
AMX-13 M-1987	$181,680	D, A	300 kg	15.9 tons	3	6	Passive IR	Enclosed

Ecuadorian AMX-13	$169.745	G, A	300 kg	15.3 tons	3	6	Headlights	Enclosed

Vehicle	Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
AMX-13 M-51	111/78	26/18	480	147	Trtd	T3	TF5 TS4 TR3 HF6 HS3 HR2
AMX-13 M-51/SS-11	111/77	26/18	480	147	Trtd	T3	TF5 TS4 TR3 HF6 HS3 HR2
AMX-13 M-51/HOT	110/77	26/18	480	147	Trtd	T3	TF5 TS4 TR3 HF6 HS3 HR2
AMX-13/90 (Gas)	111/78	26/18	480	147	Trtd	T3	TF5 TS4 TR3 HF6 HS3 HR2
AMX-13/90 (Diesel)	122/86	29/20	480	104	Trtd	T3	TF5 TS4 TR3 HF6 HS3 HR2
AMX-13/105 (Gas)	104/73	24/17	480	135	Trtd	T3	TF5 TS4 TR3 HF6 HS3 HR2
AMX-13/105 (Diesel)	115/81	27/19	480	96	Trtd	T3	TF5 TS4 TR3 HF6 HS3 HR2
AMX-13/FL-15	118/83	28/19	480	96	Trtd	T3	TF5 TS4 TR3 HF6 HS3 HR2
Argentine AMX-13	121/85	28/20	480	77	Trtd	T3	TF5 TS4 TR3 HF6 HS3 HR2
AMX-13 M-1987	115/81	27/19	480	96	Trtd	T3	TF8 TS4 TR3 HF10 HS3 HR2
Ecuadorian AMX-13	105/73	24/17	480	169	Trtd	T3	TF5 TS4 TR3 HF6 HS3 HR2

Vehicle	Fire Control	Stabilization	Armament	Ammunition
AMX-13 M-51	+1	Basic	75mm Gun, AAT-52 or AAT-F1	37x75mm, 3600x7.5mm or 7.62mm
AMX-13 M-51/SS-11	+1	Basic	75mm Gun, 2xSS-11 Launchers, AAT-52 or AAT-F1	37x75mm, 2xSS-11 ATGM, 3600x7.5mm or 7.62mm
AMX-13 M-51/HOT	+1	Basic	75mm Gun, 6xHOT Launchers, AAT-52 or AAT-F1	37x75mm, 6xHOT ATGM, 3600x7.5mm or 7.62mm
AMX-13/90 (Both)	+2	Fair	90mm French Gun, AAT-F1	32x90mm, 3600x7.62mm
AMX-13/105 (Both)	+2	Fair	105mm French Gun, AAT-F1	32x105mm, 4000x7.62mm
AMX-13/FL-15, AMX-13 M-1987, Ecuadorian AMX-13	+3	Fair	105mm French Gun, AAT-F1, AAT-F1 (C)	32x105mm, 4000x7.62mm
Argentine AMX-13	+2	Fair	90mm French Gun, AAT-F1	32x90mm, 3600x7.62mm

AMX RATAC

Notes: This is a version of the AMX VCI armored personnel carrier, with a ground surveillance radar set mounted on the roof of the passenger compartment. Inside the compartment is a management computer, controls for the radar, radios, and a datalink set. The radar has a range of 20 km against vehicles and structures and 15 km against personnel and explosions. The French army transferred their RATAC radars to VAB vehicles in the mid 1970s, but the AMX RATAC was still being used by Ecuador and Morocco by 2004.

Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological

$227,556	D, A	750 kg	16 tons	4	10	Radar, Passive IR	Enclosed

Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
116/81	27/19	410	103	CiH	T3	TF1 TS1 TR1 HF8 HS4 HR4

Fire Control	Stabilization	Armament	Ammunition
None	None	AAT-F1 or AAT-52 (C)	2000x7.62mm or 7.5mm

Hotchkiss Light Tracked Vehicles

Notes: These small tracked scout vehicles were in service with the West German Army until the mid-1980s. They were designed for the French Army to operate with AMX-13s, but the French Army passed on them and the West Germans picked them up. Some of them passed into reserve units, but most of them were scrapped or used as range targets.

The base vehicle is the SPz 11-2. This is a small boxy hull with a well-sloped front end that bears a slight resemblance to the US M-114 Lynx. The driver is on the front left, with an overhead hatch. It has a small turret with a 20mm Rh-202 autocannon. The turret is behind the driver, offset to the left, and has a hatch. There are three hatches on the roof, one to the right of the turret and two on the rear deck. There are two doors in the rear of the hull.

The SPz 22-2 is a command vehicle, and does not have a turret. It is fitted with three radios, and the right front hatch on the roof has a pintle mount for a machinegun. The commander has a periscope with magnification of x4 (wide field) or x15 (narrow field); this periscope may be removed and placed on a tripod sight that is provided with the vehicle.

The SPz 51-2 is a light mortar carrier. In this role, the roof is raised slightly, and an 81mm mortar is mounted in the rear with large overhead hatches in the roof for firing. The rear of the hull has one large door instead of two smaller ones.

The SPz 2-2 is an armored ambulance. The vehicle has basic medical supplies and two stretchers. Two more stretcher patients may be carried in racks on the roof.

Some of the mortar carrier versions were converted into ground surveillance radar carriers and designated Radarpanzer kurz 1s. This radar has a range of 20 km.

Vehicle	Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
SPz 11-2	$19,377	G, A	300 kg	8.2 tons	2+3	4	Headlights	Enclosed
SPz 22-2	$14,925	G, A	300 kg	7.5 tons	5	6	Headlights	Enclosed
SPz 51-2	$63,488	G, A	300 kg	8.2 tons	5	4	Headlights	Enclosed
SPz 2-2	$5,568	G, A	300 kg	8 tons	2+3 sitting, or 1 stretcher + 1 sitting	5	Headlights	Enclosed
Radarpanzer kurz 1	$25,712	G, A	300 kg	8.1 tons	3	6	Headlights	Enclosed

Vehicle	Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor

SPz 11-2	153/107	36/25	330	96	CiH	T2	TF2 TS2 TR2 HF4 HS2 HR2
SPz 11-2	162/113	38/26	345	95	Stnd	T2	HF4 HS2 HR2
SPz 51-2	153/107	36/25	375	96	Stnd	T2	HF4 HS2 HR2
SPz 2-2	156/109	39/27	295	96	Stnd	T2	HF4 HS2 HR2
Radarpanzer kurz 1	146/103	34/24	375	96	CiH	T2	TF1 TS1 TR1 HF4 HS2 HR2

Vehicle	Fire Control	Stabilization	Armament	Ammunition
SPz 11-2	None	None	20mm Rh-202	500x20mm
SPz 22-2	None	None	MG-3 (C)	500x7.62mm
SPz 51-2	None	None	81mm Mortar	50x81mm

ABRA

Notes: This German vehicle is an M-113A1G (the German-made version of the M-113 APC) mounting a counterbattery radar. The radar may be raised up to 10 meters above the ground and has a range of 25 km. The vehicle is amphibious only when the radar is folded against the hull. The ABRA has a 5 kW generator on the roof for running the radar with the engine off, to conserve fuel.

Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
$242,380	D, A	400 kg	13.3 tons	4	8	Radar, Passive IR	Shielded

Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Type	Config	Susp	Armor
113/79	26/19/3	360	97	Radar Vehicle	Trtd	T2	TF2 TS2 TR2 HF6 HS4 HR4

Fire Control	Stabilization	Armament	Ammunition
None	None	M-2HB (C)	1000x.50

Wiesel 1

Notes: The Wiesel 1 is a light and inexpensive scout vehicle used by the German Army by the hundreds. They are easy to build, fast and maneuverable, and can be serviced using common automotive parts. The standard version uses a 20mm autocannon, but the design is very versatile and had spawned numerous variants, some of which are listed below. The autocannon carriers typically have a crew of two, with the driver in the front right of the hull and the commander in the turret. They may be easily carried in aircraft and heavy helicopters, dropped by parachute or LAPES, or sling loaded by helicopters as small as the Black Hawk.

Twilight 2000 Notes: Dozens of these vehicles were used by the US 82nd Airborne Division and 75th Ranger Regiment during the Twilight War.

Vehicle	Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
Wiesel 1/20mm	$134,962	G, A	300 kg	2.8 tons	2	2	Passive IR	Enclosed
Wiesel 1 BTM-208	$36,586	G, A	300 kg	2.86 tons	2	2	Passive IR	Enclosed
Wiesel 1/30mm	$198,914	G, A	300 kg	2.91 tons	2	2	Passive IR	Shielded

Vehicle	Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
Wiesel 1/20mm	111/78	26/18	80	31	CiH	T2	TF3 TS3 TR3 HF4 HS2 HR2
Wiesel 1 BTM-208	120/84	28/19	80	40	CiH	T2	TF3 TS3 TR3 HF4 HS2 HR2
Wiesel 1/30mm	86/60	20/14	80	48	CiH	T2	TF3 TS3 TR3 HF4 HS2 HR2

Vehicle	Fire Control	Stabilization	Armament	Ammunition
Wiesel 1/20mm	+2	Fair	20mm Rh-202 Autocannon	400x20mm
Wiesel 1 BTM-208	+1	Basic	M-2HB, MG-3	500x.50, 500x7.62mm
Wiesel 1/30mm	+2	Fair	30mm RMK-30 Autocannon, MG-3	300x30mm, 200x7.62mm

ASCOD 105

Notes: The ASCOD 105 is a joint venture between Santa Barbara of Spain and Steyr-Daimler-Puch of Austria. Great Britain, Greece, and South Africa have also expressed interest in this light tank. It has also received attention in Asia. The vehicle uses a modified Ascod IFV chassis and a turret from a Rooikat South African light combat vehicle, armed with a 105mm NATO cannon. The vehicle's joints are all welded, so that there are no rivets to pop loose and ricochet around if the vehicle is hit. The commander has a hatch on the turret roof, next to the loader. The gunner uses one of these hatches. The driver has a hatch on the front deck, and there is a rear hatch for quick escapes under fire. Night vision is provided for all crewmembers, as well as a sight for the commander and gunner equal to an image intensifier. Appliqué armor is available, adding 5 points of armor to the HF and TF and 3 points all other faces except the HR.

The ASCOD 105 GDLS is an ASCOD armored personnel carrier reworked into a light tank, like the ASCOD 105, but this time using a casemated 105mm gun, similar to that on the Marder 105. This offers more protection for the crew as well as increased gun laying and response time, as the casemated turret has a faster traverse time as well as a better fire control system. All crewmembers are carried in the front of the hull, with the driver and commander side by side and the gunner behind them on a slightly elevated seat. The hull may use the same appliqué armor as other ASCOD designs, but the turret appliqué armor may not be used.

Vehicle	Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
ASCOD 105	$313,014	D, A	800 kg	28.5 tons	4	11	Image Intensifier, Thermal Imaging	Shielded
ASCOD 105 GDLS	$356,327	D, A	800 kg	26 tons	3	10	Thermal Imaging, Passive IR, Image Intensification	Shielded

Vehicle	Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
ASCOD 105	140/98	33/23	650	213	Trtd	T3	TF14 TS6 TR6 HF18 HS5 HR4
ASCOD 105 GDLS	145/102	34/24	650	203	CiH	T3	TF7 TS3 TR3 HF18 HS5 HR4

Vehicle	Fire Control	Stabilization	Armament	Ammunition
ASCOD 105	+3	Good	105mm Gun, MG-3, MG-3 (C)	40x105mm, 4600x7.62mm
ASCOD 105 GDLS	+4	Good	105mm Gun, MG-3	40x105mm, 4600x7.62mm

M-41B/C

Notes: This is a version of the M-41 used by Brazil, Denmark, Greece, Turkey, and Spain. This version has a less thirsty diesel engine, upgraded armor, and a 90mm gun with stabilization.

Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
$193,790	D, A	700 kg	23.8 tons	4	10	Active/Passive IR	Enclosed

Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
118/83	28/19	530	118	Trtd	T4	TF11 TS10 TR10 HF14 HS8 HR8

Fire Control	Stabilization	Armament	Ammunition

+1	Basic	90mm gun, M-60E2, M-2HB (C)	45x90mm, 5000x7.62mm, 500x.50

Sherman Armored Ambulance (Ambutank)

Notes: This is an M-4 Sherman tank with the turret removed and replaced with a raised superstructure. It is used for the evacuation and treatment of casualties under enemy fire. The Sherman in this role has extensive medical supplies, including the equivalent of 5 doctor's medical bags, a refrigerator with 5 units of plasma and whole blood, refills for individual medical kits for a platoon, an oxygen unit, and other such supplies. The engine is moved to the center of the vehicle, and the floor of the passenger compartment has a hatch so that the vehicle may drive over a victim lying on the ground and pick him up. There is a hatch on the front deck for the driver, hatches on the roof of the passenger compartment, and a large door on the rear of the hull.

Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
$67,386	D, A	3 tons	34 tons	3+5 (or 2 stretchers)	13	Headlights	Enclosed

Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
97/68	23/16	700	170	Stnd	T5	HF12 HS6 HR4

Fire Control	Stabilization	Armament	Ammunition
None	None	M-2HB (C)	600x.50

HWK-13

Notes: This vehicle, unique to the Mexican Army, was first deployed in the early 1990s. It is an HWK-11 armored personnel carrier chassis topped with a light turret mounting a 90mm French gun. The area where passengers were carried is largely filled with this turret and ammunition for the main gun and the machineguns. This vehicle is normally used for long-range reconnaissance in the Mexican Army, or sometimes for infantry support.

Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
$160,433	G, A	400 kg	13 tons	4+2	6	Passive IR	Enclosed

Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
112/79	26/18	300	126	Trtd	T4	TF3 TS3 TR3 HF4 HS2 HR2

Fire Control	Stabilization	Armament	Ammunition
+2	Fair	90mm French Gun, MAG, M-2HB (C)	30x90mm, 3000x7.62mm, 500x.50

M-1985

Notes: This a North Korean light tank, based on the chassis of the YW-531 armored personnel carrier. The North Koreans felt they needed a light tank even smaller than the Type 63, for use in the rough and mountainous terrain so prevalent in North Korea, and with greater amphibious capability. To this end, they fitted a modified YW-531 chassis with a turret similar to the PT-76, a more powerful engine, and propellers to drive the vehicle in the water. The result is a light vehicle with greater speed than the PT-76 or YW-531, able to pursue vehicles and maneuver on rough terrain. This vehicle is used only by North Korea. The goal of a vehicle lighter than the PT-76 was not achieved, however, as the M-1985 is quite a bit heavier than the PT-76, being based on a stretched YW-531 chassis with extra armor.

Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
$194,742	D, A	500 kg	20 tons	4	9	Active/Passive IR	Enclosed

Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
150/105	25/25/7	450	162	Trtd	T4	TF10 TS7 TR6 HF12 HS6 HR4

Fire Control	Stabilization	Armament	Ammunition
+2	Fair	85mm gun, PKT, DShK (C), AT-3 Launcher	47x85mm, 2200x7.62mm, 550x12.7mm, 4xAT-3 ATGM

NM-116

Notes: The NM-116 is a modification of the WW2-vintage M-24 Chaffee light tank. The bow machinegun has been removed to allow for additional ammunition storage, a larger gun and a coaxial machinegun have been installed, a laser rangefinder has been added, and a diesel engine has replaced the gasoline engine. The layout is conventional. The NM-116 is built by Norway and used by that country and Taiwan.

Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
$185,516	D, A	670 kg	18.4 tons	4	8	Headlights	Enclosed

Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
96/67	23/16	416	92	Trtd	T3	TF10 TS4 TR4 HF10 HS4 HR4

Fire Control	Stabilization	Armament	Ammunition
+2	Basic	90mm French Gun, M-2HB, M-2HB (C)	41x90mm, 500x.50BMG

BRM-23

Notes: This Bulgarian scout vehicle is a modification of the standard BMP-23 IFV. The main differences are that the BRM-23 carries more ammunition, more surveillance equipment, and no passengers other than its 5-man crew. The night vision suite is improved, and the BRM-23 has a retractable ground-surveillance radar system and a laser designator, as well as a Geiger counter and chemical sniffer. Generally, no less than two long-range and two medium range radios are carried. This vehicle fulfills the same role that the M-3 Bradley fills in the US Army.

Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
$319,028	D, A	1 ton	16 tons	5	12	Passive IR, Image Intensification, Thermal Imaging	Enclosed

Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
94/66	22/15/2	560	74	Trtd	T3	TF5 TS3 TR3 HF4 HS2 HR2

Fire Control	Stabilization	Armament	Ammunition
+2	Fair	23mm autocannon, PKT, AT-5 launcher	1000x23mm, 3000x7.62mm, 7xAT-5

2S25

Notes: The 2S25 is a light tank designed for use by the VDV (Airborne Forces) and Naval Infantry, although the Russians call it a self-propelled antitank gun. The driver has a hatch on the front deck, the commander and gunner have hatches on the turret deck. The 125mm gun is a low-pressure version of the standard Russian 125mm gun (which uses standard 125mm rounds) and has an autoloader. A pintle mount is supplied by the commander's hatch. The 2S25 is fully amphibious at one-quarter its cross-country speed. The 2S25 may be airdropped from the Il-76.

Twilight 2000 Notes: The 2S25 was present in small numbers for fighting in China, Norway, and Poland.

Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
$296,227	D, A	500 kg	18 tons	3	9	Thermal Imaging	Shielded

Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
184/128	43/30/6	250	149	Trtd	T4	TF6 TS5 TR5 HF8 HS4 HR3

Fire Control	Stabilization	Armament	Ammunition
+3	Good	125mm low-pressure gun, PKT, NSVT (C)	40x125mm, 2000x7.62L, 500x12.7B

Uralvagonzavod BMPT "Terminator"

Notes: This is another one of those vehicles that is not easily placed into one category or another; based on a T-72 tank hull, it is not really a light combat vehicle; carrying no dismount troops, it is not a heavy APC; and not having a heavily-armed, heavily-armored turret, it is not a tank. The Russians call the BMPT a "Tank Support Vehicle;" its job is to tackle the infantry, They have lately also been marking the BMPT as the "Terminator." APCs and IFVs, and other light vehicles to free tanks to take on other tanks and fortifications. The BMPT was first demonstrated to the public in 2000. It is normally based on a T-72 chassis, but the modifications can also be made to a T-90 chassis to provide a vehicle with better armor protection and mobility. The hull is basically a modified tank hull which has the same level of armor protection as the base tank hull and a new engine; the turret, though fairly heavily-armored, is not anywhere as nearly protected as the hull. The modified turret has 2A42 or 2A72 30mm autocannon for use against lightly-armored or unarmored vehicles, two medium and one heavy machinegun for general antipersonnel or antiaircraft use, and an armored box launcher on the left side of the turret containing four launchers for AT-14 Kornet ATGM. On each side of the hull above the front track skirts is an AGS-30 grenade launcher for use against troops in the open. Each side of the turret has six 902-series "Tucha" smoke grenade launchers to provide obscuring smoke. The hull has lugs for ERA on the glacis and hull front and the side skirts, and the BMPT is equipped with an NPC overpressure system and radiation shielding. A 5 kW APU is located in an armored box on the right side of the vehicle. Each crewmember has their own hatch; the driver is in the center front, the commander/right AGS-30 behind the driver on the right, the left AGS-30 gunner behind the driver on the right, and the turret gunners with hatches on either side of the autocannon on the flat portion of the forward deck of the turret. Any crewmember except the driver may take control of all the weapons if necessary, or replace an injured or dead crewman without leaving his station. The BMPT can also function as a hunter/killer team, as the commander and gunner have independent sights and the commander's sight may move and rotate independently of the turret. Fence-type armor protects the vehicle from the rear, in addition to the normal armor; this functions as spaced armor, except that it stops only 1d6 damage instead of 2d6.

Future versions of the BMPT are planned, with different armament packages and possibly on different tank chassis.

Twilight 2000 Notes: This vehicle's existence was rumored as early as 1995, but examples were not seen until 1998, in Iran, China, and Poland. These versions were the T-72-based BMPTs; the T-90-based model was not built during the Twilight War.

Vehicle	Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
BMPT (T-72-Based)	$406,866	D, G, AvG, A	1.7 tons	47 tons	5	15	Passive IR (D, G, C), Image Intensification (G, C), Thermal Imaging (G, C)	Shielded
BMPT (T-90-Based)		D, G, AvG, A	1.3 tons	55 tons	5	17	Passive IR (D, G, C), Image Intensification (G, C), Thermal Imaging (G, C)	Shielded

Vehicle	Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
BMPT (T-72-Based)	150/107	30/20	1000	624	Trtd	T6	TF40Sp TS12Sp TR12Sp HF130Cp HS20Sp HR10Sp
BMPT (T-90-Based)	138/98	28/18	1000	624	Trtd	T6	TF40Sp TS12Sp TR12Sp HF180Cp HS30Sp HR18Sp

Vehicle	Fire Control	Stabilization	Armament	Ammunition
(Both)	+4	Good	30mm Autocannon, 2xPKT, NSVT,	550x30mm, 1000x30mm Grenades,

	4xAT-14 Launchers; 2xAGS-17 (Hull)	7000x7.62mm, 2000x12.7mm, 8xAT-14; 600x30mm Grenades

MT-LB R-81

Notes: This is a command and staff version of the MT-LB armored personnel carrier. In this version, the MT-LB carries at least 3 radios, and has a 4-meter flexible antenna mounted on the roof, along with a 5 kW generator. Often mounted are land-navigation computers, battle control computers, and map boards. Two cable reels that hold a total of 1000 meters of communications wire are carried in the rear for field telephones. The machinegun cupola is retained.

Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
$141,672	D, A	1 ton	12 tons	6	7	Active IR	Shielded

Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
102/71	24/17/2	450	49	Stnd	T3	HF4 HS2 HR2

Fire Control	Stabilization	Armament	Ammunition
None	None	PKT	2000x7.62mm

MT-LB SNAR-10

Notes: This is an MT-LB armored personnel carrier with a dish and equipment for the SNAR-10 (Big Fred) ground surveillance/counterbattery radar system. The radar is on a turret at the rear of the vehicle and can be rotated 360 degrees. Maximum range for vehicle and structure detection is 16 km while for counterbattery work the range is 10 km. The vehicle has a radio dedicated to datalink duties with higher headquarters and usually has at least two other radios. Unlike the APC version of the MT-LB, the SNAR-10 is not amphibious, as the radar assembly unbalances the vehicle.

Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
$62,422	D, A	750 kg	12.6 tons	5	8	Radar	Shielded

Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
111/78	26/18	450	58	Trtd	T2	TF2 TS2 TR2 HF4 HS2 HR2

Fire Control	Stabilization	Armament	Ammunition
None	None	PKT	2000x7.62mm

MT-LBus R-55

Notes: This is an ACRV (MT-LBus) fitted out for the advanced communications role. The MT-LBus in this role is fitted with at least 5 radios of varying ranges, radio telephone sets, teletype, teleprinter, and computer with wireless modem and LAN, along with various scrambling and encrypting modules. This vehicle is used to facilitate higher headquarters' communication with other headquarters and lower echelons, and one or more normally accompany a division command element. They are not normally armed, but some have a mount for a PK machinegun by the commander's hatch.

Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
$52,057	D, A	500 kg	12 tons	4	5	Headlights	Shielded

Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
119/83	28/19/2	550	60	Stnd	T3	HF4 HS2 HR2

PT-76

Notes: This light scout tank was developed shortly after World War 2, going into service in 1950. In most of the Warsaw Pact, various reconnaissance models of the BMP-1, BMP-2, and BMP-3 have long replaced it, but it is still quite common in other parts of the world, being used in countries ranging from Vietnam to Cuba. The PT-76 chassis also formed the basis of the BTR-50 series armored personnel carriers. The chassis is a boat-hulled design for full amphibious mobility, and topped by a turret mounting the same 76.2mm D-56T gun used in the T-34 tank of World War 2, though ammunition has been upgraded over the years. In addition, any one PT-76 is about 50% likely to have a mount on the turret roof for a DShK machinegun. Though the PT-76 has been steadily upgraded over the years, by 2000 it is a dated design.

Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
$144,796	D, A	300 kg	14.6 tons	3	8	Active/Passive IR	Enclosed

Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
109/76	27/18/3	250+180	70	Trtd	T3	TF12 TS4 TR4 HF12 HS4 HR4

Fire Control	Stabilization	Armament	Ammunition
+2	Fair	76.2mm D-56T Gun, PKT, DShK (C)	40x76.2mm, 1000x7.62mm, 600x12.7mm

RKhM

Notes: This is the NBC reconnaissance the Russians and their Warsaw Pact allies use when the terrain is too rough for the BRDM-2 RKhb, or they require more interoperability with motorized or tank formations. It is based on the ACRV chassis, the same chassis as the SO-122 and SO-152. In this role, the turret is replaced with a raised superstructure topped with a light machinegun cupola (the same type as on the MT-LB). For this role, the RKhM is equipped with optical chemical sniffers, Geiger counters, a box over the rear deck that can be lowered over the back of the vehicle, containing marking pennants, at least one long-range and 3 medium range radios, an arm in the rear of the vehicle for taking soil samples, and a secured area for testing these samples, separated from the crew compartment by thick bulkheads and radiation shielding.

Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
$113,822	D, A	400 kg	18 tons	4	7	Passive IR	Shielded

Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
81/57	19/13/2	550	55	Stnd	T4	HF4 HS2 HR2

Fire Control	Stabilization	Armament	Ammunition
None	None	PKT	2000x7.62mm

K-200A1 Ambulance

Notes: This is a standard K-200A1 (KIFV) with modifications to allow it to perform as an armored ambulance. Modifications include a refrigerator, respirator, defibrillator, a doctor's medical bag, and ample storage for medical supplies, including two complete splint sets. From the exterior, the K-200A1 Ambulance looks identical to the standard KIFV.

Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
$72,421	D, A	700 kg	12.1 tons	3+7 sitting or 3 stretchers	6	Passive IR	Shielded

Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
171/120	40/28/4	400	103	Trtd	T3	TF2 TS2 TR2 HF8Sp HS5Sp HR4

Fire Control	Stabilization	Armament	Ammunition
+1	Fair	M-2HB, M-60 (C)	1000x.50BMG, 1600x7.62N

K-216A1

Notes: This is a KIFV with an NBC detection and analysis suite. The K-216A1 has an optical chemical sniffer, Geiger counter, chemical analysis gear, management computers, and an NBC overpressure system. Chemical protection suits, protective masks, and chemical countermeasures for the crew are carried as standard. The vehicle has a 5kW generator to operate the equipment with the engine turned off. As the hull design is changed, firing ports are eliminated.

Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
$113,715	D, A	1 ton	11.8 tons	4	10	Passive IR	Shielded

Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
139/97	32/23/3	400	85	Stnd	T3	HF8Sp HS5Sp HR4

Fire Control	Stabilization	Armament	Ammunition
None	None	M-2HB (C)	1000x.50BMG

KAFV (Korean Armored Fighting Vehicle)

Notes: This is a scout/fire support variant of the Korean Infantry Fighting Vehicle. The turret of the KIFV is replaced with one mounting a 90mm Cockerill cannon, and more internal space is given over to ammunition storage and communications equipment. Less space is given for passengers.

Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
$262,644	D, A	550kg	15 tons	4+3	6	Passive IR, Thermal Imaging	Shielded

Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
144/101	34/24/4	400	102	Trtd	T3	TF6Sp TS6Sp TR6 HF8Sp HS5Sp HR4

Fire Control	Stabilization	Armament	Ammunition
+2	Good	90mm Cockerill, MAG, M2HB (C)	44x90mm, 950x7.62mm, 600x.50

CV-90 FCV (Forward Command Vehicle)

Notes: This is a command post and battle control version of the CV-9040 IFV. It is known to the Swedish as the Stripbv. It has 4 radios (and sometimes more), a GPS system, a computer system, map boards, and plotting equipment. The turret is smaller and is armed only with a machinegun.

Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
$246,005	D, A	1.25 tons	22.55 tons	3+6	11	Passive IR, Thermal Imaging, Image Intensification	Shielded

Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
146/102	34/24	525	177	Trtd	T4	TF14 TS8 TR6 HF18 HS7 HR4

Fire Control	Stabilization	Armament	Ammunition
+3	Good	MAG	3800x7.62mm

M-3 Stuart

Notes: The M-3 was a design evolved from the earlier M-2 light tank in the 1930s. They were used by the Allies; after World War 2, many of them were bought by Latin American and other countries, which still use them to this day. About 500 of these vehicles were built with diesel instead of gasoline engines. The M-3 is generally inadequate for modern antitank use, and most of them are used as infantry support vehicles.

The M-3A1 is an improved M-3. About 200 of them were built with a diesel engine. Differences include a new turret and removal of the driver's machineguns for more ammunition space for the main gun. Extra fuel tanks may be added to improve the range.

The M-3A3 is a further improved M-3. It has a new turret, and the hull is stretched to allow for more ammunition carriage, more internal fuel, and better suspension. These vehicles were not built with diesel engines.

The M-5 has twin gasoline automotive engines instead of the modified aircraft radial of the M-3. It also has improved frontal turret armor. The M-5A1 has an improved ammunition storage layout.

Vehicle	Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
M-3 (Early)	$145,320	G, A	200 kg	12.8 tons	4	6	Headlights	Enclosed
M-3 (Mid)	$145,320	G, A	200 kg	12.7 tons	4	6	Headlights	Enclosed
M-3 (Mid, Diesel)	$145,280	D, A	200 kg	12.7 tons	4	6	Headlights	Enclosed
M-3A1 (Gas)	$136,244	G, A	200 kg	12.9 tons	4	6	Headlights	Enclosed
M-3A1 (Diesel)	$136,204	D, A	200 kg	12.9 tons	4	6	Headlights	Enclosed
M-3A3	$181,943	G, A	200 kg	14.7 tons	4	6	Headlights	Enclosed
M-5	$145,704	G, A	200 kg	15 tons	4	6	Headlights	Enclosed
M-5A1	$162,578	G, A	200 kg	15.2 tons	4	6	Headlights	Enclosed

Vehicle	Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
M-3 (Early)	129/90	30/21	204	154	Trtd	T2	TF6 TS5 TR5 HF8 HS4 HR4
M-3 (Mid)	130/91	30/21	204	154	Trtd	T2	TF6 TS5 TR5 HF8 HS4 HR4
M-3 (Mid, Diesel)	123/86	29/20	204	72	Trtd	T2	TF6 TS5 TR5 HF8 HS4 HR4
M-3A1 (Gas)	128/90	30/21	224+170	154	Trtd	T2	TF6 TS5 TR5 HF10 HS4 HR4
M-3A1 (Diesel)	121/85	28/20	224+170	72	Trtd	T2	TF6 TS5 TR5 HF10 HS4 HR4
M-3A3	114/80	27/29	416	154	Trtd	T2	TF6 TS5 TR5 HF10 HS4 HR4
M-5	125/88	29/21	340	175	Trtd	T2	TF8 TS5 TR5 HF10 HS4 HR4
M-5A1	124/87	29/20	340	175	Trtd	T2	TF8 TS5 TR5 HF10 HS4 HR4

Vehicle	Fire Control	Stabilization	Armament	Ammunition
M-3 (Early)	None	Basic	37mm M-5 gun, M-1919A4, 2xM-1919A4 (hull), M-1919A4 (D), M-1919A4 (C)	103x37mm, 8270x.30-06
M-3 (Mid, Both)	None	Basic	37mm M-6 gun, M-1919A4, 2xM-1919A4 (hull), M-1919A4 (D), M-1919A4 (C)	103x37mm, 8270x.30-06
M-3A1 (Both)	None	Basic	37mm M-6 Gun, M1919A4, M-1919A4(D), M-1919A4 (C)	106x37mm, 7220x.30-06
M-3A3	None	Basic	37mm M-6 Gun, M1919A4, M-1919A4(D), M-1919A4 (C)	174x37mm, 7500x.30-06
M-5	+1	Basic	37mm M-6 Gun, M1919A4, M-1919A4(D), M-1919A4 (C)	123x37mm, 6250x.30-06
M-5A1	+1	Basic	37mm M-6 Gun, M1919A4, M-1919A4(D), M-1919A4 (C)	147x37mm, 6750x.30-06

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M-3 Bradley CFV

Notes: This is the same vehicle as the M-2 Bradley IFV, but used by scouts (CFV stands for Cavalry Fighting Vehicle). The main difference is that in the CFV, racks for extra ammunition and supplies take some of the space used by troop seats in the IFV version up. In addition, the firing ports are closed off, and the M-231 firing port weapons are not carried.

The M-3A2 is the same thing to the M-2A2 Bradley II IFV that the M-3 is to the M-2; i.e., a Cavalry Fighting Vehicle variant of the Bradley II IFV.

The M-3A2 with the Stingray System is a standard Bradley CFV fitted with an advanced optics jamming system. When in use, the operators of all vehicles and electro-optical systems (including thermal imaging and other night vision devices), image intensifiers, laser designators, laser rangefinders, and coincidence rangefinders must make a Formidable: Electronics roll in order to use their systems of that type. The Stingray system does not have any effect on purely optical sights such as binoculars and telescopic sights. This device is turret mounted and aimed in the same manner of a weapon, but operates on all electro-optical systems within a 90-degree arc of the facing of the turret. Jamming range is 5 km. These vehicles were first deployed, but not used, during the 1991 Persian Gulf War.

Twilight 2000 Notes: The M-3A3 Bradley III is a Cavalry Fighting Vehicle variant of the M-2A3 is a design along the same vein as the M-3 and M-3A2. It is an incredibly rare vehicle, with perhaps 25 of them ever built or converted.

Vehicle	Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
M-3	$324,853	D, A	1.5 tons	26.16 tons	3+3	10	Passive IR, Thermal Imaging	Shielded
M-3A2	$333,926	D, A	1.34 tons	32.81 tons	3+3	12	Passive IR, Thermal Imaging	Shielded
M-3A2/Stingray	$369,535	D, A	1.3 tons	33.3 tons	3+3	14	Passive IR, Thermal Imaging	Shielded
M-3A3 (25mm)	$380,926	D, A	1.34 tons	36.09 tons	3+3	12	Passive IR, Thermal Imaging	Shielded
M-3A3 (30mm)	$409,825	D, A	1.34 tons	35.61 tons	3+3	12	Passive IR, Thermal Imaging	Shielded
M-3A3 (35mm)	$438,724	D, A	1.34 tons	35.67 tons	3+3	12	Passive IR, Thermal Imaging	Shielded

Vehicle	Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
M-3	130/91	30/21/3	662	152	Trtd	T4	TF6 TS6Sp TR4 HF8 HS4Sp HR4
M-3A2	128/89	30/21/3	662	185	Trtd	T4	TF11Sp TS11Sp TR6 HF13 HS8Sp HR6
M-3A2/Stingray	124/87	29/20/3	662	190	Trtd	T4	TF11Sp TS11Sp TR6 HF13 HS8Sp HR6
M-3A3 (All)	116/81	27/19/3	662	175	Trtd	T4	TF11Sp TS11Sp TR6 HF13 HS8Sp HR6

Vehicle	Fire Control	Stabilization	Armament	Ammunition
M-3	+2	Good	25mm ChainGun, MAG, 2xTOW II Launchers,	1200x25mm, 1800x7.62mm, 10xTOW II ATGM
M-3A2 (Both)	+3	Good	25mm ChainGun, MAG, 2xTOW II Launchers	1200x25mm, 2900x7.62mm, 10xTOW II ATGM
M-3A3 (25mm)	+4	Good	25mm ChainGun, MAG, 2xHellfire Launchers	1200x25mm, 2900x7.62mm, 7xHellfire ATGM
M-3A3 (30mm)	+4	Good	30mm Bushmaster II, MAG, 2xHellfire Launchers	900x30mm, 2900x7.62mm, 7xHellfire ATGM
M-3A3 (35mm)	+4	Good	35mm Bushmaster III, MAG, 2xHellfire Launchers	750x35mm, 2900x7.62mm, 7xHellfire ATGM

M-10A2 Abrams Battle Command Vehicle (BCV)

Notes: This is an M-1A2SEP Abrams tank extensively modified for use by battlefield commanders. In this role, the main gun, coaxial machinegun, and ammunition are removed to make room for extensive battle management electronics. A dummy cannon barrel and machinegun barrel are fitted in their place, and the only difference externally between the BCV and a genuine tank are the large amount of antennas the BCV sports. Inside, the turret and hull carry extensive vision gear, including 2nd thermal Imaging and image intensification. The vehicle has a complete suite of three networked Pentium III-class computers built to tougher military specifications to take the vibrations of travel; these computers have a wireless LAN and battle management and land navigation software, including complete maps of the world (by 2000, these are based on 1997 satellite photos. The system has a large LCD touch-screen for input, with a trackball and keyboard as backups. The BCV has a set of at least five radios, from tactical radios to long-range, and for communicating with aircraft and directly with computers on aircraft such as JSTARS. A laser designator is provided, along with software to produce firing solutions for any sort of fire support from mortars to heavy bombers. A secondary function of these vehicles is signal intelligence, with a crew position and computer for an intelligence officer who has a secondary role of intercepting and analyzing enemy broadcasts.

Twilight 2000 Notes: These vehicles, due to their rarity, were initially issued only to US Division and Brigade commanders or Armored and Mechanized Infantry Divisions, and rarely found their way to lower headquarters. They were never encountered in Reserve or National Guard divisions, with the notable exception of the 49th Armored Division's commanding general's vehicle (TX ARNG).

Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
$627,976	D, G, AvG, A	900 kg	61.5 tons	5	19	2nd Generation Thermal Imaging, Image Intensification, Passive IR	Shielded

Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
148/104	34/24	1907	516	Trtd	T6	TF161Cp TS36Sp TR30 HF201Cp HS26Sp HR19

Fire Control	Stabilization	Armament	Ammunition
None	None	M-2HB (C), MAG (2nd)	2000x.50, 5000x7.62mm

M-24 Chaffee

Notes: This is an American-built, WWII-era, light AFV, now out of service in the US Army but still serving in many smaller armies. The M-24 is of conventional layout. The Chaffee was meant to replace the M-3/M-5 Stuart series of light tanks. The vehicle is not NBC-sealed. Taiwanese Chaffees have their 75mm guns replaced by French 90mm guns, their M-1919A4s replaced by MAG machineguns, and plug-ins for the crewmembers' protective masks. Some of these vehicles have had their bow machineguns replaced by flamethrowers.

Vehicle	Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
M-24	$158,732	G, A	400 kg	18.37 tons	5	8	Headlights	Enclosed
M-24 (Taiwanese)	$177,257	G, A	400 kg	18.75 tons	5	8	Headlights	Enclosed
M-24 (Flamethrower)	$186,507	G, A	400 kg	18.9 tons	5	10	Headlights	Enclosed

Vehicle	Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
M-24	82/57	19/13	416	129	Trtd	T3	TF8 TS5 TR5 HF10 HS4 HR4
M-24 (Taiwanese/Flamethrower)	86/60	20/14	416	129	Trtd	T3	TF8 TS5 TR5 HF10 HS4 HR4

Vehicle	Fire Control	Stabilization	Armament	Ammunition
M-24	+1	Basic	75mm gun, M-1919A4, M-1919A4 (bow), M-2HB (C)	48x75mm, 3750x.30-06, 440x.50
M-24 (Taiwanese)	+2	Basic	90mm French Gun, MAG, MAG (Bow), M-2HB (C)	44x90mm. 3750x7.62mm, 440x.50
M-24 (Flamethrower)	+2	Basic	90mm French Gun, MAG, Type 67M Flamethrower (Bow), M-2HB (C)	44x90mm, 2500x7.62mm, 20xFlamethrower Fuel, 440x.50

M-41 Walker Bulldog and Variants

Notes: This is a US-built light tank of 1950s vintage. By 2000, the remaining Bulldogs were in Third-World use or reserve status. Most were heavily modified with external stowage, range finders, or lugs for reactive armor. The M-41 is the basic version, being a standard sort of light tank. The M-41A1 has rearranged ammunition storage. The M-41A2 has an improved engine. The M-41A3 adds one of the first night vision systems fitted to an armored vehicle.

The M-41B is a Brazilian modification of the Bulldog; it has had its main gun replaced with a 90mm Cockerill design and a new diesel engine. The M-41C is the same vehicle, but has an improved fire control system.

Vehicle	Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
M-41	$181,824	G, A	700 kg	23.5 tons	4	10	Headlights	Enclosed
M-41A1	$192,429	G, A	700 kg	23.7 tons	4	10	Headlights	Enclosed
M-41A2	$192,429	G, A	700 kg	23.7 tons	4	10	Headlights	Enclosed
M-41A3	$224,429	G, A	700 kg	23.75 tons	4	10	Active IR, IR Searchlight	Enclosed
M-41B	$214,832	D, A	700 kg	24 tons	4	10	Passive IR	Enclosed
M-41C	$224,832	D, A	700 kg	24 tons	4	10	Passive IR	Enclosed

Vehicle	Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
M-41	137/96	32/22	530	297	Trtd	T4	TF12 TS8 TR6 HF12 HS6 HR6
M-41A1	136/95	32/22	530	297	Trtd	T4	TF12 TS8 TR6 HF12 HS6 HR6
M-41A2/A3	139/97	32/23	530	296	Trtd	T4	TF12 TS8 TR6 HF12 HS6 HR6
M-41B/C	117/82	27/19	530	118	Trtd	T4	TF12 TS8 TR6 HF12 HS6 HR6

Vehicle	Fire Control	Stabilization	Armament	Ammunition
M-41	+1	Basic	76mm gun, M-1919A4, M-2HB (C)	57x76mm, 5000x.30-06, 2175x.50
M-41A1/A2	+1	Basic	76mm gun, M-1919A4, M-2HB (C)	65x76mm, 5000x.30-06, 2175x.50
M-41A3	+2	Basic	76mm gun, M-1919A4, M-2HB (C)	65x76mm, 5000x.30-06, 2175x.50
M-41B	+2	Basic	90mm Cockerill Gun, MAG, M-2HB (C)	55x90mm, 5000x7.62mm, 2175x.50
M-41C	+2	Fair	90mm Cockerill Gun, MAG, M-2HB (C)	55x90mm, 5000x7.62mm, 2175x.50

M-551 Sheridan

Notes: This light tank was originally designed for scouting duties and to provide light firepower for airborne divisions in the US. They had a long career with the US Army, replacing the earlier M-41 Walker Bulldog, but by the late 1980s they had been replaced in US service by the LAV-75 and M-8 Buford light tanks in airborne service, and heavier tanks and Bradley CFVs in other units. The 152mm gun is a large weapon for such a light vehicle, and the recoil is very violent. In addition, some of the bugs in the fire control system were never worked out. Whenever a conventional round (but not a Shillelagh missile) is fired from the main gun, roll 1D10; on a 1-2, minor damage is inflicted on the rangefinder.

Twilight 2000 Notes: The only users of the M-551 at the time of the Twilight War were the OPFOR units stationed at Fort Irwin in southern California and Fort Polk in Louisiana. These were largely restored to functional status at the time of the Mexican invasion, often still with the modifications used to make them look like enemy vehicles, and in this way were able to make many surprise attacks and accomplish infiltrations at night for reconnaissance.

Price	Fuel Type	Load	Veh Wt	Crew	Mnt	Night Vision	Radiological
$223,463	D, A	560 kg	15.83 tons	4	7	Passive IR, WL Searchlight	Shielded

Tr Mov	Com Mov	Fuel Cap	Fuel Cons	Config	Susp	Armor
127/89	30/21/3	598	111	Trtd	T4	TF13 TS4 TR4 HF16 HS3 HR3

Fire Control	Stabilization	Armament	Ammunition
+2	Fair	152mm Gun/Missile Launcher, MAG, M-2HB (C)	20x152mm, 10xShillelagh, 3080x7.62mm, 1000x.50