



The **ADJUTANT**

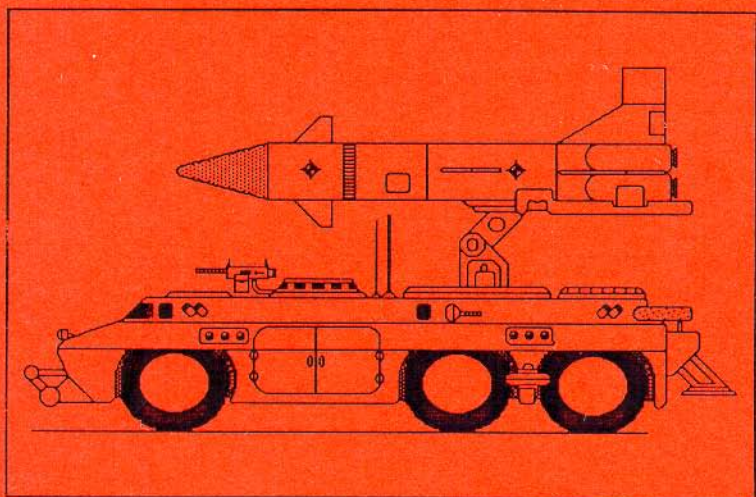
RM-90-10

# Imperial Armed Forces Vehicle Guide, Altair Sub-Sector

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Set Number Ten,  
*Wheeled, Combat*

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## Introduction

Thank you for your purchase of this vehicle guide. It contains wheeled vehicles designed for use with the Traveller® and the Striker® science fiction role playing game systems. However, the specifications are comprehensive enough that conversion to other systems should cause no problems.

With the advent of small, functional fusion drives, internal combustion engines became obsolete for military use. The low maintenance and long range provided by these power plants were perfectly suited to military applications. While the high ground pressures make the vehicles in this guide unsuited to off-road use, they are much better in urban environments than tracked, air cushioned or even grav systems. The vehicles in this guide are all designed at tech level 9 and represent one line in the state of the art design (for that tech level). The armored vehicles use a similar, modified low-box type chassis offering the best compromise between maximum protection and crew comfort. Low ground clearance is necessary to ensure a low silhouette. All vehicles in this guide have the ability to adjust their suspension to gain an additional .5 meters of ground clearance when moving cross country. This is done with the aid of a hydraulic system in each wheel well. Universal joints allow for the variation in wheel/axle alignment. All have food & supplies for their crew for at least one week and small arms & ammunition for each crewmember. Once in a combat environment, the crews often personalize their vehicles. Because of this and the fact that spare parts can be scarce, it is not uncommon to find extras of everything that can be strapped on, buckled in or shoved under any usable space in the crew compartment or on the outside of the vehicle.

Wheeled vehicles move by virtue of a sophisticated transmission that transfers torque from an electrical generator (driven by the fusion plant), to the wheels via a drive shaft, differential and axle. All vehicles in this guide are "all wheel drive" which means that all the wheels provide propulsion for movement. This is done in the event that if some of the wheels loose traction, the rest will be able to move the vehicle. All tires are equipped with a hard "donut" inside the tire. If the tire is punctured, it is prevented from going completely flat by virtue of this donut. Another feature of the six and eight wheeled platforms is the multi-wheeled steering capability. When a turn is executed, the front and rear wheels turn in opposite directions so the turn radius is significantly reduced.

The biggest disadvantage of wheeled vehicles are their slow speed and lack of traction when moving cross-country. This is due to the small surface contact between tires and ground. They may not pass over very soft ground, climb steep obstacles and are prevented from crossing rubble that could damage tires. To help overcome this problem, all these vehicles have the ability to inflate-deflate each tire individually from inside the crew compartment. For soft

ground, the tires are deflated to improve traction, and on hard ground/roadways they are inflated to their normal rating. Because they are designed for on-road activity, the max. range listed is based on road movement.

All of these vehicles are still in the current military inventory as well as exported to several client worlds for use in medium tech level conflicts. The two large missile launchers are equipped with chemical, nuclear, or specialized multiple warhead munitions installed and are used at the upper end of the Tactical scale. These platforms can also use planetary defense missiles in a Strategic role. An example of a planetary defense missile can be found in the *RM-90-01, Air Cushioned Vehicle Guide*.

The final point to address is the use of chemically propelled munitions vs. high energy weapons. The decision to use CPR guns was based on expense, maintenance, versatility, and technology levels available. Wheeled vehicles are subject to moderate jarring. High precision energy weapons in these vehicles would need to be constantly calibrated and adjusted and repair parts are expensive and time consuming to install. CPR guns, on the other hand, are a cost effective alternative and have the advantage of firing a wide variety of ammunition based on the situation with minimal energy requirements. And while lasers may be defeated in several ways, the only protection against CPR rounds is armor and lots of it. Plus, when was the last time you saw a fusion gun fire smoke, or offer indirect fire support? And yes you could use missiles or rockets but again look at the expense. For that reason, no high energy weapons are included for use in this guide.

I hope this brief explanation helps in the use of these vehicles in your campaigns. I will be happy to answer any questions or clarify an unclear point, simply enclose an S.A.S.E. with your questions and I will return an answer to you. Look for future sets outlining other vehicle families.

Also write for a sample issue of *The ADJUTANT*, a newsletter written for Traveller Army, Marine and Mercenary characters. Published six times a year, each issue is full of rules variants, suggestions, personal weapons, etc. At only \$9.00 per year, it's one of the best deals in the Imperium.

Mark  
Schmidt

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## **Acknowledgments**

Anyone who has ever tried to design new and innovative vehicles for a science fiction game realizes the complexities involved. Great amounts of time are spent in calculating and designing all the components that make up futuristic combat vehicles.. Staying up until the wee hours of the morning before the gaming session vainly trying to get the last little details worked out for detail greedy players. As GMs, we have all been placed in this unenviable position.

It is my intent to save you the time and aggravation required to put vehicles into your campaign. I hope you find this and future guides useful. My thanks and deepfelt gratitude go to the following individuals for their help in working as many of the "bugs" out of this package as is possible;

Cindy Popp, for her production assistance,  
Steve Popp for his valuable technical assistance and experience  
and reminding me not all wheeled vehicles are fighters.

Thanks to these friends and the rest of the Marina Gaming Club  
without whose help this project would never have been.

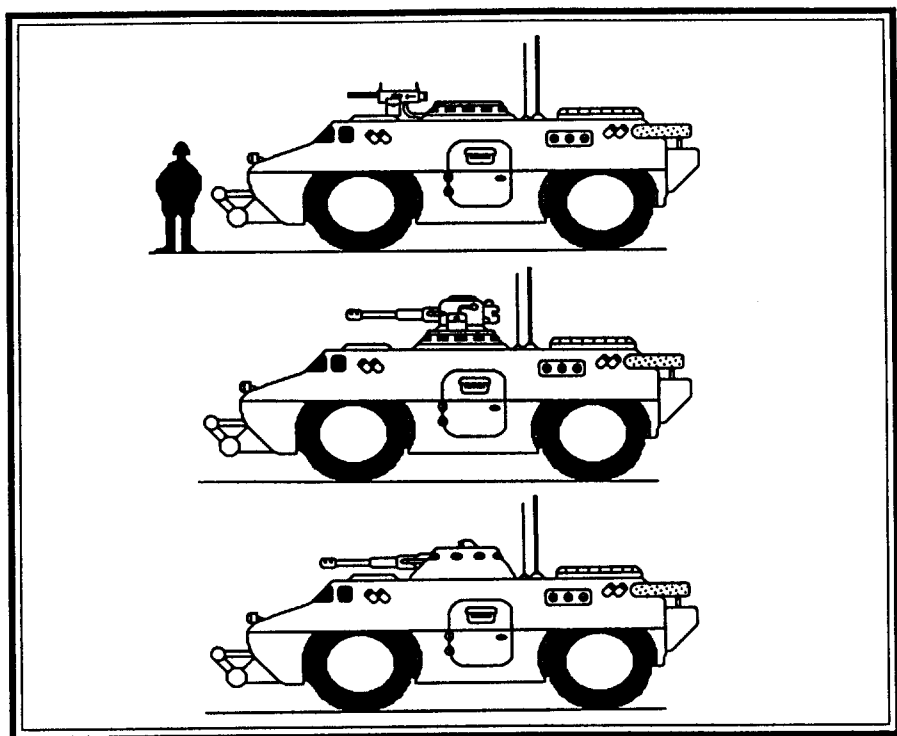
Mark Schmidt

## **M-110**

The M-110 Ferret is a Light, wheeled, ARSV used in armored and mechanized infantry formations as a Recon/Scout vehicle or in paramilitary units as an armored car. Three variations of the armament are available. Both are mounted on the commander's coupola. The first is a 12.7 mm heavy machine gun, the second is a 20 mm autocannon. The third variant has a turreted 20 mm cannon. Eight anti-laser smoke dischargers are chassis mounted and smoke can also be generated from the heat exhaust ports. Paramilitary versions may mount tear gas in place of the anti-laser canisters. Entry and exit from the vehicle is accomplished through two chassis side hatches, one hatch above the driver's station or the commander's coupola hatch on versions with a coupola mounted gun. An APERS defense system is mounted on the chassis. A water propulsion system may also be installed. It adds one ton to the vehicle weight. This vehicle can be carried in medium lift transport vehicles.

### **SPECIFICATIONS:**

Dimensions:	8 m L x 4 m W x 2.25 m H, DM low hit +1,
Combat Weight:	17 metric Tons
Power Plant:	Fusion, 2 megawatt output
Fuel Req.:	3 liters/hour, 120 liters carried
Armor:	Chassis Front      Sides      Rear      Deck      Belly
Actual/Rated mm	25/75      20/60      15/30      5/10      3/6
Ground Pressure:	.9 kg/cm <sup>2</sup>
Pwr. to Wt. Ratio:	121:1
Max.Road Speed:	161 kph
Cross Country	
Speed:	48 kph
Max. Eff. Rng:	6,440 km
Weapons:	One 12.7 mm HMG or 20 mm RFC
Range: HMG	Effective: 500 m +4, Long: 1 km +3, Extreme: 1.5 km +2
20 mm:	Eff. 2.5 km, Long 3.5 km, Extreme 5 km
Fire Rate:	10 rounds / turn ( 2 targets ea.)
Feed Device:	100 round linked belts boxed, 4,000 rounds carried or autoloader from 200 round bin
Crew:	2 - Driver, Commander
Defense:	8 smoke dischargers and smoke from exhaust ports, Two 3-Shot APERS systems, NBC, RDFSS
Electronics:	500 power Radio, Map Box, Thermal Image
Cargo:	0
Flotation:	Yes
Price:	350,000 cr (Water Propulsion attachment; 1000 cr, 16 kph)



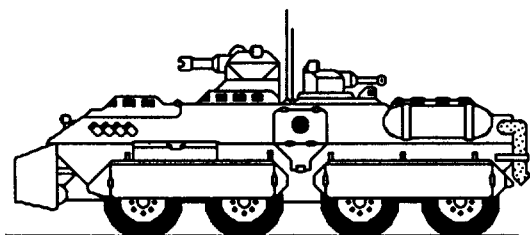
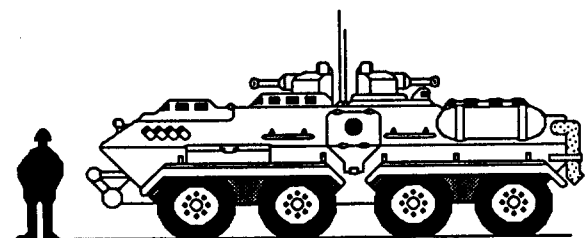
<u>Type</u>	<u>Penetration at</u>			<u>Cr</u>
<u>12.7 mm</u>	<u>Effective</u>	<u>Long</u>	<u>Extreme</u>	
KEAP	60 mm	50 mm	30 mm	1.5 ea.
 <u>20 mm</u>				
KEAP	140 mm	100 mm	60 mm	2.5 cr ea.

## **M-111**

The M-111 is a Medium, wheeled, LAAV used as an ACV in Armored and Mechanized Infantry formations or as an ARSV in Recon/Scout units. Two chassis mounted, remote LMGs serve as its main armament. These mounts each have a 240° rotation which allow for overlapping fields of fire. This vehicle can be carried in medium lift transport vehicles. Eight anti-laser smoke dischargers are chassis mounted and smoke can also be generated from the heat exhaust ports. For paramilitary units, tear gas can be substituted for anti-laser canisters. The forward LMG can also be replaced with a high pressure water cannon with a 1,000 liter on board tank. Entry and exit from the vehicle is accomplished through two chassis side-hatches or one hatch above the driver's station. An optional APERS system can be chassis mounted but none is installed as standard equipment. A water propulsion system may also be installed. It adds one ton to the vehicle's weight

### **SPECIFICATIONS:**

Dimensions:	8.25 m L x 4 m W x 2.4 m H, DM low hit +1,
Combat Weight:	46 metric Tons
Power Plant:	Fusion, 4 megawatt output
Fuel Req.:	6 liters/hour, 250 liters carried
Armor:	Chassis Front      Sides      Rear      Deck      Belly
Actual/Rated mm	50/150      37.5/112.5      25/50      7.5/15      5/10
Ground Pressure:	3 kg/cm <sup>2</sup>
Pwr. to Wt. Ratio:	86:1
Max.Road Speed:	126 kph
Cross Country	
Speed:	25 kph
Max. Eff. Rng:	5,166 km
Weapons:	Two 7.62 mm LMGs
Range:	Effective: 350 m +4, Long: 70 m +3, Extreme: 100 m +2
Fire Rate:	10 rounds / turn / per gun ( 2 targets ea.)
Feed Device:	100 round linked belts boxed, 4,000 rounds carried
Crew:	4 - Driver, 2 Gunners, Commander
Defense:	8 smoke dischargers and smoke from exhaust ports, NBC, RDFSS
Electronics:	500 power Radio, Map Box, Thermal Image
Cargo:	1 ton (versions with water cannon have no cargo space)
Flotation:	Yes
Price:	544,000 cr (Water Propulsion attachment; 1000 cr, 12 kph) (APERS System; 500 cr /3 shot dispenser)





# M-121

The M-121 is a medium, wheeled AFV. It is designed for conflicts in urban environments or areas where large well developed road networks are in place. Two chassis mounted, one coax and one coupola mounted LMG on the commander's hatch serve as secondary armament. Primary armament consists of a 90 mm High Velocity, smooth bore cannon. This vehicle can be carried in medium lift transports. Space is provided for up to 50 rounds of main gun ammo, 25 of which are mounted in an autoloader. The mix of rounds is dependent on mission type. 8 anti-laser smoke dischargers are mounted on the chassis sides as well as an APERS system.

## **SPECIFICATIONS:**

**Dimensions:** Chassis; 11 m L x 4.5 m W x 2.5 m H, DM low hit +1  
Turret: 4 m L x 3.5 m W x 1.5 m H, DM high hit +1

**Combat Weight:** 75 metric Tons

**Power Plant:** Fusion, 6 megawatt output

**Fuel Req.:** 9 liters/hour, 250 liters carried

**Armor:** Chassis Front Sides Rear Deck Belly

**Actual/Rated mm** 75/225 50/150 40/80 30/60 10/20

Turret  
75/150 50/150 50/150 30/60

**Ground Pressure:** 2.4 kg/cm<sup>2</sup>

**Pwr. to Wt. Ratio:** 80:1

**Max.Road Speed:** 150 kph

**Cross Country Speed:** 30 kph

**Max. Eff. Rng:** 3,591 km

**Weapons: (Main)** 90 mm High Velocity, Smooth Bore Cannon

**(aux)** Four 7.62 LMGs; 2 chassis, 1 coax, 1 coupola

**Range:** Effective: 1.5 km, Long: 2.5 km, Extreme: 4 km  
Effective: 350 m +4, Long: 700 m +3, Extreme: 1 km +2

**Fire Rate:** 5 rounds per turn (2 targets)  
10 rounds / turn / per gun ( 2 targets ea.)

**Feed Device:** Autoloader w/ 25 rounds, (with one reload stored)  
100 round linked belts in boxes, 4,000 rounds carried

**Crew:** 4 - Driver, Gunner, Loader, Commander

**Defense:** APERS system, 8 anti-laser smoke dischargers and smoke from exhaust ports, NBC, RDFSS

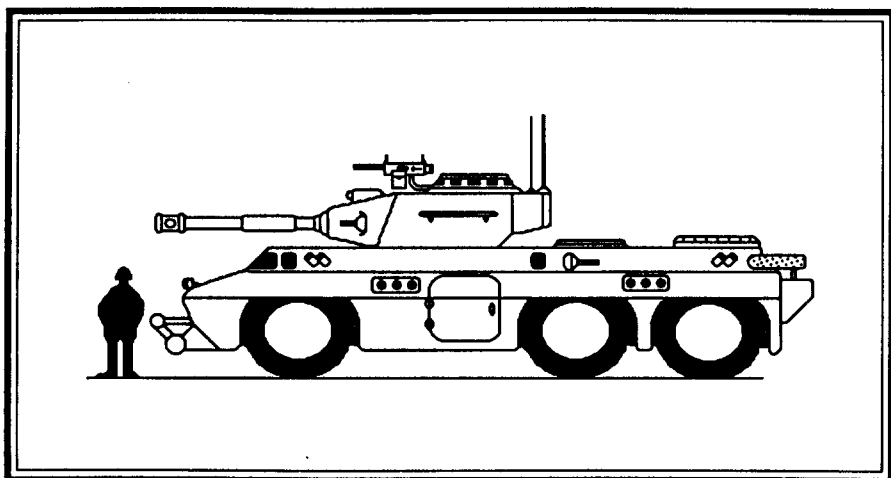
**Electronics:** 1 k power Radio, Thermal Image, Mk III FCS

**Passengers:** 0

**Cargo:** 1 ton

**Flotation:** No

**Price:** 880,000 cr (plus cost of ammo)



### 90 mm High Velocity Rounds

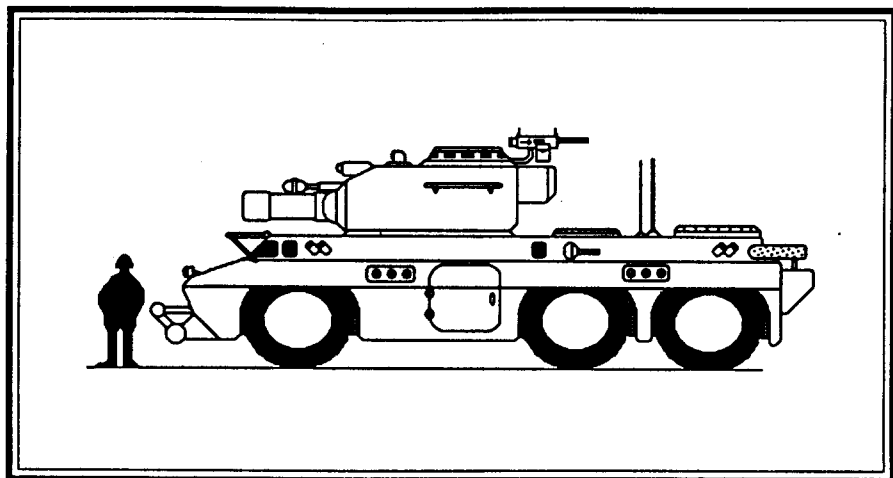
<u>Type</u>	<u>Contact Pent./mm/Burst Rad./m /Frag. Pent./mm</u>	<u>Price/round</u>
HE	180 mm / 20 m / 30 mm	176 cr
HEAP	460 mm Eff., 410 mm Long, 360 mm Ext.	264 cr
APFSDS	600 mm Eff., 550 mm Long, 500 mm Ext.	352 cr
Flechette	150 m danger space (+5 to hit)	220 cr

# M-125

The M-125 is a wheeled SPAW. It is designed specifically for conflicts in an urban environment. Two chassis mounted LMGs serve as its secondary armament with a third LMG mounted on the commander's coupola for air defense. Primary armament consists of a 150 mm Low Velocity, breach loaded, mortar. This mortar can be used in both indirect and direct mode. For direct fire missions, a rocket assisted munition may be fired as can a flechette round. This vehicle can be carried in medium lift transports. Space is provided for up to 45 rounds of main gun ammo, the mix dependent on mission type. 8 anti-laser smoke dischargers are chassis mounted. An APERS systems is also mounted to repel close assaults.

## **SPECIFICATIONS:**

Dimensions:	Chassis; 11 m L x 4.5 m W x 4 m H, DM low hit +1				
	Turret: 4 m L x 4 m W x 1.75 m H, DM high hit +1				
Combat Weight:	78 metric Tons				
Power Plant:	Fusion, 6 megawatt output				
Fuel Req.:	9 liters/hour, 250 liters carried				
Armor:	Chassis Front	Sides	Rear	Deck	Belly
Actual/Rated mm	75/225	50/150	40/80	30/60	10/20
	Turret				
	75/225	40/80	40/80	30/60	
Ground Pressure:	2.8 kg/cm <sup>2</sup>				
Pwr. to Wt. Ratio:	76:1				
Max.Road Speed:	116 kph				
Cross Country					
Speed:	23 kph				
Max. Eff. Rng:	3,591 km				
Weapons: (Main)	150 mm LVM				
(aux)	Three 7.62 LMGs; 2 chassis, 1 coupola				
Range:	Effective: 9.25 km, Long: 18 km, Extreme: 32 km				
	Effective: 350 m +4, Long: 700 m +3, Extreme: 1 km +2				
Fire Rate:	1 round per turn				
	10 rounds / turn / per gun ( 2 targets ea.)				
Feed Device:	Breach from Manual loader using Hydraulic assist				
	100 round linked belts in boxes, 3,000 rounds carried				
Crew:	4 - Driver, Gunner, Loader, Commander				
Defense:	8 smoke dischargers and smoke from exhaust ports,				
	Four 3-Shot APERS systems, NBC, RDFSS				
Electronics:	1 k power Radio, Thermal Image, Mk III FCS				
Passengers:	0				
Cargo:	1 ton				
Flotation:	No				
Price:	835,000 cr (plus cost of ammo)				



### 150 mm LVM Rounds

<u>Type</u>	<u>Contact Pent..mm/Burst Rad..m /Frag. Pent..mm</u>	<u>Price/round</u>
HE	240 mm / 30 m / 40 mm	120 cr
AP*	440 mm	180 cr
Illum	90 m area of effect w/ 45 second duration	240 cr
Smoke	20 m3 area of effect	240 cr
Flechette	50 m danger space (+6 to hit, 6 d6 damage)	600 cr

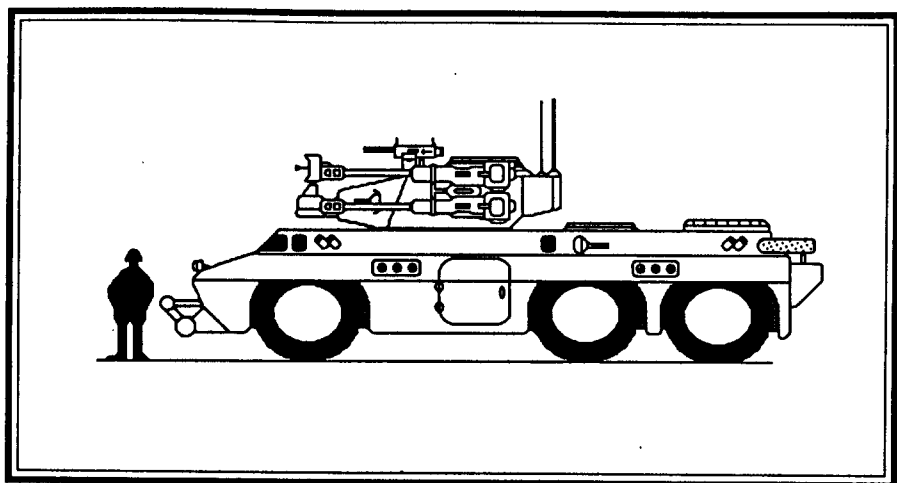
\*This anti-tank round may also be used against hardened bunkers, buildings or other reinforced structures. Penetration is rated for hardened steel or equivalent. When the round reaches apogee (highest point) it locates its target. It then fires a retro rocket to accelerate the warhead and impact the top of the target.

## M-122

The M-122 is a wheeled, Quad SPAAG Platform used for ARMAD missions. Primary armament consists of 4 slaved, 20 mm RFCs in a turreted mount. This mount can traverse a full 360°. The guns can elevate to +120° (30° over vertical) and depress -15°. For point defense mode, each gun operates semi-independently and can slew (right or left), up to 5°. Four LMGs are used for secondary armament. This vehicle can be carried in medium lift transport vehicles. Eight anti-laser smoke dischargers are chassis mounted and smoke can also be generated from the heat exhaust ports. An APERS system is mounted to the sides of the chassis. A water propulsion system may also be installed. It adds one ton to the vehicle's weight.

### **SPECIFICATIONS:**

Dimensions:	8.25 m L x 4 m W x 2.4 m H, DM low hit +1,				
Combat Weight:	69 metric Tons				
Power Plant:	Fusion, 6 megawatt output				
Fuel Req.:	9 liters/hour, 250 liters carried				
Armor:	Chassis Front	Sides	Rear	Deck	Belly
Actual/Rated mm	50/150	37.5/112.5	25/50	7.5/15	5/10
Ground Pressure:	3 kg/cm <sup>2</sup>				
Pwr. to Wt. Ratio:	86:1				
Max. Road Speed:	126 kph				
Cross Country Speed:	25 kph				
Max. Eff. Rng:	3,402 km				
Weapons: (Main)	Quad 20 mm RFCs				
(Aux)	Four 7.62 mm LMGs; 2 chassis, 1 coax, 1 coupola				
Range:	Effective: 2.5 km +4, Long: 3.5 km +3, Extreme: 5 km +2 Effective: 350 m +4, Long: 700 m +3, Extreme: 1.5 km +2				
Fire Rate:	30 rounds / turn / gun (2 targets each) 10 rounds / turn / per gun (2 targets ea.)				
Feed Device:	1000 round linked belts in bins/gun, 4,000 rounds carried 100 round linked belts in boxes, 4,000 rounds carried				
Crew:	3 - Driver, Gunner, Commander /EW Officer				
Defense:	8 smoke dischargers and smoke from exhaust ports, Four 3-Shot APERS systems, NBC, RDFSS				
Electronics:	1 k power Radio, Thermal Image, 1 k pwr Target Acq. Radar for Point Defense system				
Cargo:	0				
Flotation:	Yes				
Price:	1.3 million cr (Water Propulsion attachment; 1000 cr, 12 kph)				



**20 mm Munitions:**

KEAP: 140 mm pent. Eff. / 120 mm Long / 100 mm Extreme

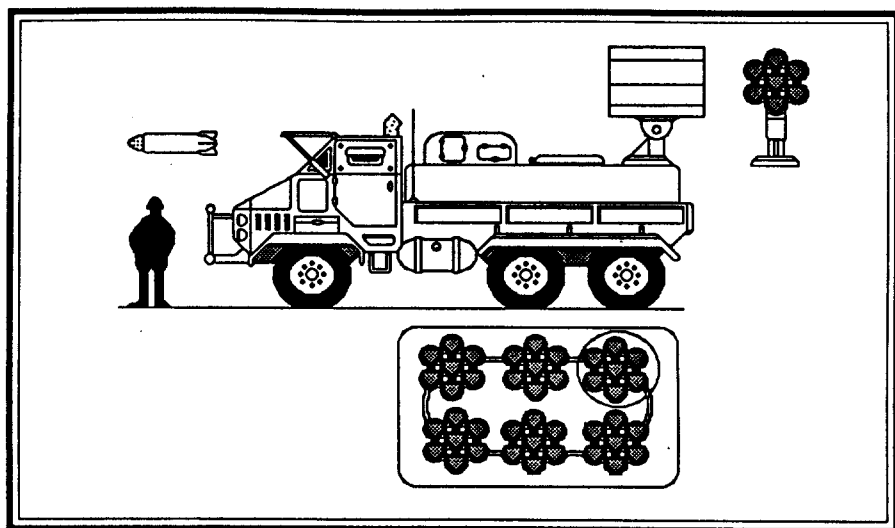
2.5 cr ea.

## **M-19**

The M-19 "Thor" is a wheeled, MRLS platform used for tactical FEBA artillery support. Based on the M-20 Mule chassis, it is fully self contained for short term fire support missions. When placed in a battery, several ammo trucks are attached to each M-19. The unique feature of this platform is its reload system. A six station rotary track is housed in an armored shell. When the rockets are discharged from the launcher, it returns to its reload position. An armored door opens and the 7 tube salvo is loaded vertically in 10 seconds. These rockets, when fired in salvo, can cover a 140 square meter area. Rockets must be specified with either impact or air burst fuzes before they are loaded onto the reload track. This vehicle can be carried in medium lift transport vehicles.

### **SPECIFICATIONS:**

Dimensions:	8 m L x 4.5 m W x 3 m H, DM low hit +1,				
Combat Weight:	26.6 metric Tons				
Power Plant:	Fusion, 2 megawatt output				
Fuel Req.:	1.5 liters/hour, two 60 liter tanks carried				
Armor:	Front	Sides	Rear	Deck	Belly
Actual/Rated mm	10/20	5/10	3/6	3/6	3/6
Ground Pressure:	1.4 kg/cm <sup>2</sup>				
Pwr. to Wt. Ratio:	75:1				
Max.Road Speed:	115 kph				
Cross Country					
Speed:	34.5 kph				
Max. Eff. Rng:	8,880 km				
Weapons:	Mk XII "Hammer" Rockets, (7 per salvo)				
Rate of Fire:	1 salvo / turn (10 second reload)				
Feed Device:	Verticle Speed-Load System from 6 station rotary conveyor				
Crew:	2 - Driver, Grenadier / Commander				
Defense:	NBC (cab only)				
Electronics:	1 k power Radio, Indirect Fire Control System				
Passengers:	0				
Cargo:	0				
Flotation:	No				
Price:	360,050 cr (+ rocket cost)				



### **Thor's Hammer Rocket**

Size: 240 x 960 mm

Weight: 57 kg

Warhead: Impact or air burst proximity

Range: 2.5 min. to 10 km max.

Damage: 330 mm contact pent. w/ 5 meter radius/ 50 mm frag. pent.

Price: 228 cr ea.

Salvo Damage: 7 rocket spread covers an area of 140 m<sup>2</sup>

### **Organizational Note**

These vehicles are normally grouped together in 2 or 3 vehicle batteries. Two of these batteries make a section with two sections constituting a Company. When used in Company strength, over 1.5 square kilometers can be covered with devastating results. Given the high rate and volume of fire, several kilometers of enemy territory can be destroyed in a matter of minutes.

Because of the rate of fire, several ammo trucks are usually assigned to each M-19. Reloading of the entire shell takes approximately one hour.

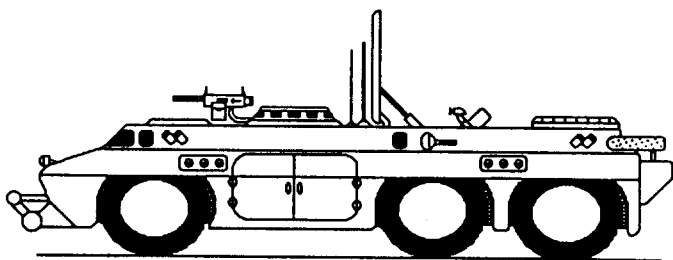
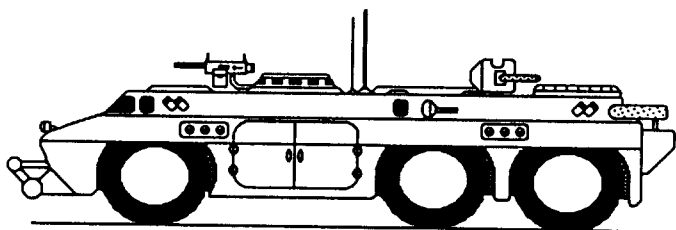
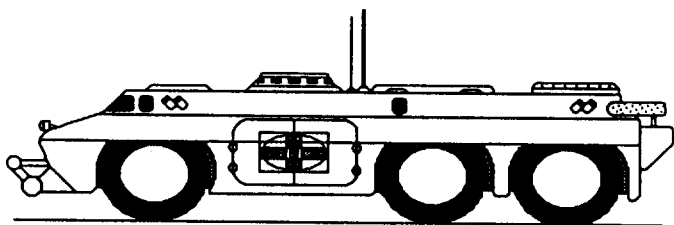
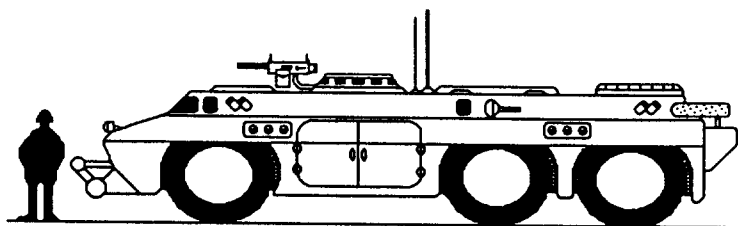


## M-117

The M-117 is a wheeled, APC. It is used as a basic troop carrier in several military and paramilitary forces as well as police units. Two chassis mounted LMGs serve as its armament with a third LMG mounted on the commander's coupola is used as anti-aircraft and overhead fire support. This platform has been modified to fit a variety of roles. This vehicle can be carried in medium lift transport vehicles. Eight anti-laser smoke dischargers are chassis mounted and smoke can also be generated from the heat exhaust ports. For police and paramilitary versions, tear gas may be substituted for smoke in the launchers. An APERS system is mounted to the side of the chassis. A water propulsion system may also be installed. It adds one ton to the vehicles weight.

### **SPECIFICATIONS:**

Dimensions:	11 m L x 4.5 m W x 2.25 m H, DM low hit +1,				
Combat Weight:	40 metric Tons				
Power Plant:	Fusion, 3 megawatt output				
Fuel Req.:	4.5 liters/hour, 250 liters carried				
Armor:	Chassis Front	Sides	Rear	Deck	Belly
Actual/Rated mm	50/150	40/120	30/60	10/20	5/10
Ground Pressure:	1.4 kg/cm <sup>2</sup>				
Pwr. to Wt. Ratio:	75:1				
Max.Road Speed:	115 kph				
Cross Country					
Speed:	35 kph				
Max. Eff. Rng:	6,380 km				
Weapons:	Three 7.62 LMGs; 2 chassis, 1 coupola				
Range:	Effective: 350 m +4, Long: 700 m +3, Extreme: 1 km +2				
Fire Rate:	10 rounds / turn / per gun ( 2 targets ea.)				
Feed Device:	100 round linked belts in boxes, 3,000 rounds carried				
Crew:	2 - Driver, Commander				
Defense:	8 smoke dischargers and smoke from exhaust ports, Four 3-Shot APERS Systems, NBC, RDFSS				
Electronics:	1 k power Radio, Thermal Image, Map Box (Opt.)				
Passengers:	10				
Cargo:	10 tons (with no passengers)				
Flotation:	Yes				
Price:	590,000 cr (Water Propulsion attachment; 1000 cr, 12 kph)				
Variants:					
-A	AASV, 10 tons				
-B	MEV, 8 Litters w/ 2 corpsmen				
-C	ACV, 2 to 4 additional deck mounted LMGs				
-D	SPAW, mortar with crew, from 90 mm to 180 mm				



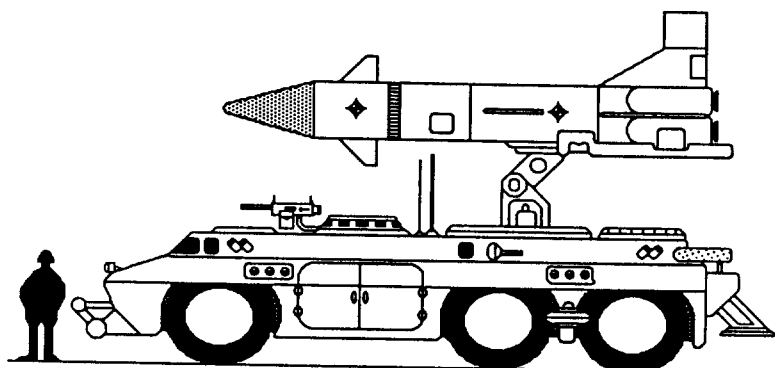
## **M-118**

The M-118 "MELT" (Mobile Erector / Launcher - Tactical) is a wheeled, SPAW vehicle used in Tactical and Strategic roles. Main armament consists of one GLCM. Two chassis mounted LMGs and a third LMG mounted on the commander's coupola serve as defense. It can be carried in medium lift transport vehicles. Eight anti-laser smoke dischargers are chassis mounted and smoke can also be generated from the heat exhaust ports. An APERS system is mounted to the side of the chassis. A water propulsion system may also be installed. It adds one ton to the vehicles weight, but may only be used when no missile is fitted. Additional missiles are carried and loaded by M118-A AASVs.

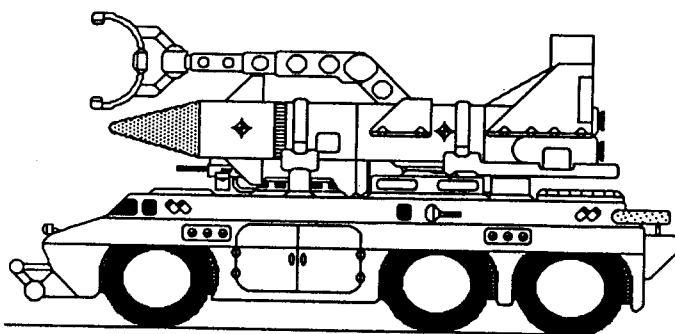
### **SPECIFICATIONS:**

Dimensions:	11 m L x 4.5 m W x 2.25 m H, DM low hit +1,				
Combat Weight:	44 metric Tons				
Power Plant:	Fusion, 3 megawatt output				
Fuel Req.:	4.5 liters/hour, 250 liters carried				
Armor:	Chassis Front	Sides	Rear	Deck	Belly
Actual/Rated mm	50/150	40/120	30/60	10/20	5/10
Ground Pressure:	1.4 kg/cm <sup>2</sup>				
Pwr. to Wt. Ratio:	75:1				
Max.Road Speed:	115 kph				
Cross Country					
Speed:	35 kph				
Max. Eff. Rng:	6,380 km				
Weapons:	Three 7.62 LMGs; 2 chassis, 1 coupola				
Range:	Effective: 350 m +4, Long: 700 m +3, Extreme: 1 km +2				
Fire Rate:	10 rounds / turn / per gun ( 2 targets ea.)				
Feed Device:	100 round linked belts in boxes, 3,000 rounds carried				
Crew:	3 - Driver, Launch Officer, Commander				
Defense:	8 smoke dischargers and smoke from exhaust ports, Four 3-Shot APERS systems, NBC, RDFSS				
Electronics:	1 k power Radio, Thermal Image, Map Box , Mk III FCS				
Passengers:	0				
Cargo:	0				
Flotation:	Yes (with no missile fitted)				
Price:	600,000 cr (Water Propulsion attachment; 1000 cr, 12 kph) M118-A 525,000 cr				

**M-118 MELT**



**M118-A AASV**



**"Fire Storm" GLCM**

<u>Warhead</u>	<u>Guidance</u>	<u>Fuse</u>	<u>Range</u>	<u>Effect</u>	<u>Cr</u>	<u>*</u>
HE	Target Mem.	Impact	250 km	5 m/60 m/60 mm	4000	1
CBM	same	Proximity	250 km	200 m2/90 mm	5000	2
AT	STAFF	same	200 km	2 km2 / 500 mm	8000	3
Nuclear	Same	same	750 km	by size		4
Chemical	same	same	550 km	by type		5

\*:

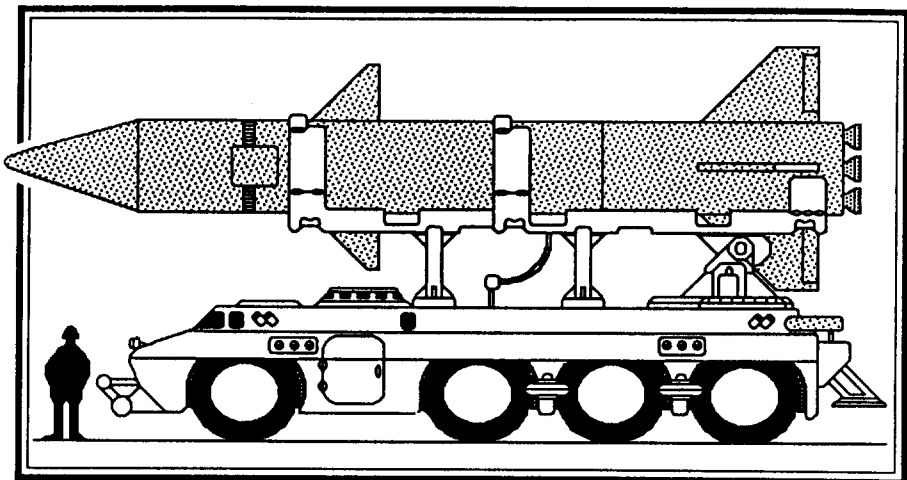
- 1) Effect = contact pent. / radius / frag. pent.
- 2) 1,000 1 kg bomblets
- 3) 100 STAFF submunitions released individually
- 4) To be determined by GM based on size of warhead
- 5) To be determined by GM based on type and size of warhead (includes biological)

## **M-119**

The M-118 "MELS" (Mobile Erector / Launcher - Strategic) is a wheeled, SPAW vehicle used in Strategic roles. Main armament consist of one GLCBM. It can be carried in medium lift transport vehicles. Eight anti-laser smoke dischargers are chassis mounted and smoke can also be generated from the heat exhaust ports. An APERS system is mounted to the side of the chassis. A water propulsion system may also be installed. It adds one ton to the vehicles weight, but may only be used when no missile is fitted. Additional missiles are loaded at special ground installations or with heavy cranes from modified "Ox" transporters. The missile may be erected and fired in 30 minutes. Reloading of the platform takes an additional 30 minutes.

### **SPECIFICATIONS:**

Dimensions:	11 m L x 4.5 m W x 2.25 m H, DM low hit +1,				
Combat Weight:	50 metric Tons				
Power Plant:	Fusion, 3 megawatt output				
Fuel Req.:	4.5 liters/hour, 250 liters carried				
Armor:	Chassis Front	Sides	Rear	Deck	Belly
Actual/Rated mm	50/150	40/120	30/60	10/20	5/10
Ground Pressure:	1.4 kg/cm <sup>2</sup>				
Pwr. to Wt. Ratio:	75:1				
Max.Road Speed:	115 kph				
Cross Country Speed:	35 kph				
Max. Eff. Rng:	6,380 km				
Weapons:	Three 7.62 LMGs; 2 chassis, 1 coupola				
Range:	Effective: 350 m +4, Long: 700 m +3, Extreme: 1 km +2				
Fire Rate:	10 rounds / turn / per gun ( 2 targets ea.)				
Feed Device:	100 round linked belts in boxes, 3,000 rounds carried				
Crew:	3 - Driver, Launch Officer, Commander				
Defense:	8 smoke dischargers and smoke from exhaust ports, Four 3-Shot APERS systems, NBC, RDFSS				
Electronics:	1 k power Radio, Thermal Image, Map Box , Mk III FCS				
Passengers:	0				
Cargo:	0				
Flotation:	Yes (with no missile fitted)				
Price:	600,000 cr (Water Propulsion attachment; 1000 cr, 12 kph)				



### "Dominator" GLCBM / PDM

<u>Warhead</u>	<u>Guidance</u>	<u>Fuse</u>	<u>Range</u>	<u>Effect</u>	<u>Cr</u>	<u>*</u>
HE	Target Mem.	Impact	1000 km	10m/90m/70mm	40k	1
CBM	same	Proximity	900 km	600 m2/90 mm	50k	2
Nuclear	STAFF	same	2000 km	by size	tbd	3
Chemical	same	same	900 km	by type	tbd	4
PDM	same	Proximity	1000 km	1 m/1 km/900mm	1.2 mcr	5

1) Effect = contact pent. / radius / frag. pent. Used as a "bunker buster"

2) 2,500 1 kg bomblets

3) To be determined by GM based on size of warhead

4) To be determined by GM based on type and size (includes biological)

5) Planetary Defense Missile for use against incoming landing craft, 1.2 million cr ea.

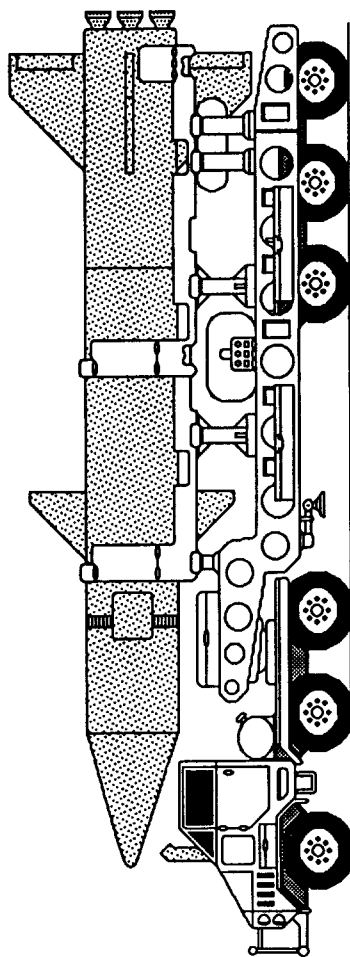
These missiles weigh an average of 7 tons.

## **M-209-J, -K**

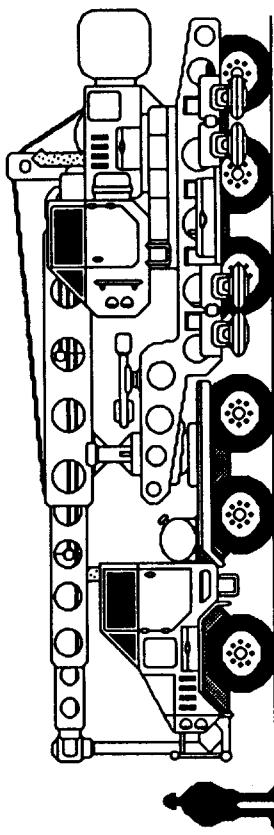
The M-209-J & -K are special modifications to the standard "Ox" platform (see *RM - 90-04 Wheeled Vehicles, Service & Support*) used to transport and reload the "Firestorm" missile system. These trucks are grouped into batteries of four to six missile carriers, one loader, two M-119 MELLS, and a BCC. The transports and crane are normally confined to road networks and the M-119 must return to these vehicles from the field to reload. Missile replenishment takes 30 minutes. The only armored portion on these vehicles is the crew compartment (cab). No weapons are normally mounted. This vehicle can be carried in Heavy lift transport vehicles, without missiles, if space allows. The crane has a 200 ton capacity and may also be found with Combat Engineering and Recovery units. The first numbers in the specs. are for the carrier, the second set are for the crane

### **SPECIFICATIONS:**

Dimensions:	17 m L x 4.5 m W x 6 m H, DM low hit +1, 13.75 m L x 4.5 m W x 5 m H, DM low hit +1
Combat Weight:	57 metric Tons , 60 metric Tons
Power Plant:	Fusion, 6 megawatt output, crane has addit'l 2 mw. pwr plant
Fuel Req.:	4.5 liters/hour, 150 liter tank carried, 75 liter tank on crane
Armor:	Cab Front                      Sides                      Rear                      Deck                      Belly
Actual/Rated mm	10/20                      5/10                      3/6                      3/6                      3/6
Ground Pressure:	1.8, 1.9 kg/cm <sup>2</sup> )
Pwr. to Wt. Ratio:	30:1, 29:1
Max.Road Speed:	110 kph
Cross Country	
Speed:	12 kph
Max. Eff. Rng:	3,660 km
Weapons:	Personal weapons
Crew:	2 - Driver, Engineer, 2 - Driver, Engineer
Defense:	NBC (cab only)
Electronics:	500 power Radio
Passengers:	0
Cargo:	0
Flotation:	No
Misc.:	200 ton capacity crane on -K
Price:	610,900 cr (~J) 700,500 cr (-K)



**M209 -J**



**M-209-K**



## **M-20-G**

The M-20 "Mule" (Military Utility Lifter, Equipment) is a wheeled, general purpose platform used for a variety of roles. The only armored portion of this vehicle is the crew compartment (cab). No weapons are normally mounted. In this application, it is used to tow gun or missile carriages for Artillery. The bed of the truck has racks installed to hold ammunition and misc. equipment to emplace and operate the weapon. This version can be carried in medium lift transports. Three versions of towed artillery are shown here although any towed field gun can be used with this vehicle. These trucks are also assigned to towed gun units as ammo carriers.

### **SPECIFICATIONS:**

Dimensions:	8 m L x 4.5 m W x 2.8 m H, DM low hit +1,					
Combat Weight:	8.18 metric Tons (basic truck)					
Power Plant:	Fusion, 2 megawatt output					
Fuel Req.:	1.5 liters/hour, two 60 liter tanks carried					
Armor:	Cab Front	Sides	Rear	Deck	Belly	
Actual/Rated mm	10/20	5/10	3/6	3/6	3/6	
Ground Pressure:	1.85 kg/cm2 (max. load)					
Pwr. to Wt. Ratio:	71:1					
Max.Road Speed:	111 kph					
Cross Country						
Speed:	22 kph					
Max. Eff. Rng:	8,880 km					
Weapons:	Towed field piece and Personal weapons					
Crew:	by weapon type (*)					
Defense:	NBC (cab only)					
Electronics:	500 power Radio					
Passengers:	Up to 14					
Cargo:	28 tons or 60 m3					
Flotation:	No					
Price:	200,500 cr (Basic truck package)					
	M21-90: 75,000 cr					
	M21-150: 20,000 cr					
	M21-C: 119.700					

\*: -90 & -C have 8 man crew, -150 has 14 man crew with extra M-20 carrier

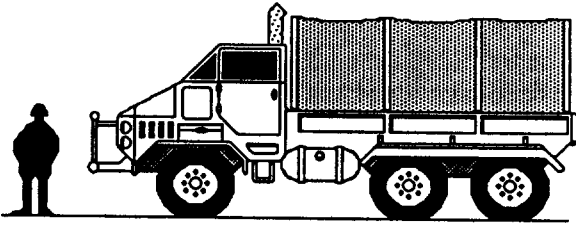
### **Weapons Specifications:**

For M-21-90, 90 mm towed gun, see M-121

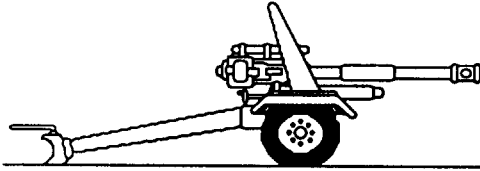
For M-21-150, 150 mm towed gun see M-125

For M-21-C, MRLS see M-19

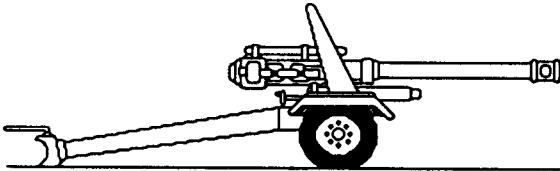
***M-20 Basic Truck***



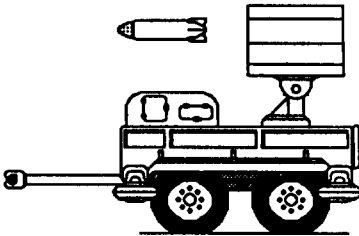
***M-21-90, 90 mm***



***M-21-150, 150 mm***



***M-21-C MRLS***

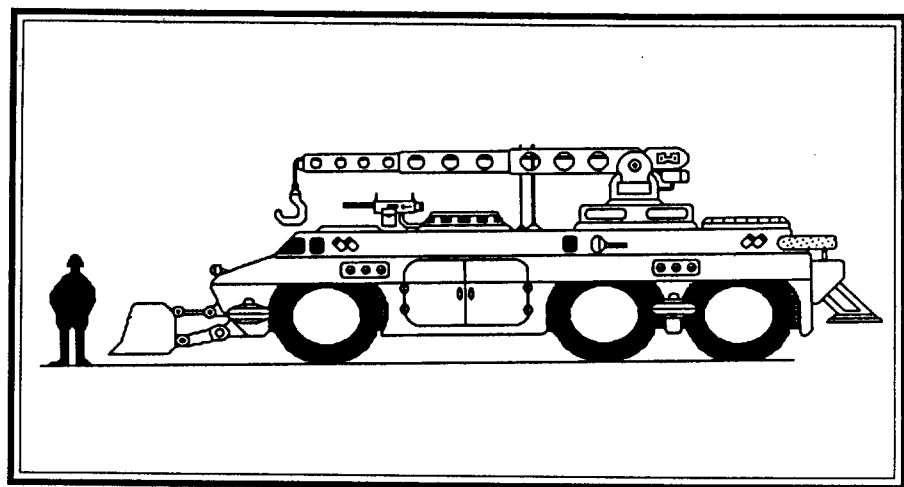


## **M-130**

The M-130 is a wheeled CEV. Its role is either as battlefield repair and recovery platform or as a construction vehicle for battlefield fortifications. Two chassis mounted LMGs serve as its armament with a third LMG mounted on the commander's coupola. A medium lift crane (5 tons) is fitted to the chassis deck and stabilizers are fitted on the chassis sides and rear. A 3.5 cubic meter, articulated scoop/dozer blade is fitted to the front. This vehicle can be carried in medium lift transports. Eight anti-laser smoke dischargers are chassis mounted and smoke can also be generated from the heat exhaust ports. An APERS system is mounted to the side of the chassis. For repair and recovery roles, it is stocked with common repair parts along with an extra 250 liter fuel tank. For construction roles it is equipped with a full compliment of construction and demolition tools.

### **SPECIFICATIONS:**

Dimensions:	11 m L x 4.5 m W x 4 m H, DM low hit +1, DM high hit +1				
Combat Weight:	64 metric Tons				
Power Plant:	Fusion, 6 megawatt output				
Fuel Req.:	9 liters/hour, 250 liters carried, (extra tank w/250 liters)				
Armor:	Chassis Front	Sides	Rear	Deck	Belly
Actual/Rated mm	75/225	50/150	40/80	30/60	10/20
Ground Pressure:	1 kg/cm <sup>2</sup>				
Pwr. to Wt. Ratio:	93:1				
Max.Road Speed:	133 kph				
Cross Country					
Speed:	40 kph				
Max. Eff. Rng:	3,591 km				
Weapons:	Three 7.62 LMGs; 2 chassis, 1 coupola				
Range:	Effective: 350 m +4, Long: 700 m +3, Extreme: 1 km +2				
Fire Rate:	10 rounds / turn / per gun ( 2 targets ea.)				
Feed Device:	100 round linked belts in boxes, 3,000 rounds carried				
Crew:	5 - Driver, Commander, 3 Engineers				
Defense:	8 smoke dischargers and smoke from exhaust ports, Two 3-Shot Apers Systems, NBC, RDFSS				
Electronics:	1 k power Radio, Thermal Image				
Passengers:	0				
Cargo:	2 tons (spare parts, tools or construction equipment)				
Misc.:	5 ton capacity crane, 3.5 m <sup>3</sup> scoop/dozer blade				
Flotation:	No				
Price:	715,000 cr				



## Explanation of Terms

AGLS, FCS, MRLS, TOGS...?! Arggg! you say. What is all this \*@#%?! I didn't buy this guide to learn government speak. Actually once you start to use these abbreviations, you'll be surprised how fast they stick. Let us explain how they work.

The Fire Control System (FCS) is the package of controls and sensors that allow the gunner to identify and engage targets. Within this system are Optical (L3TV), Infra-Red (TOGS) and Laser (LTFCS) sighting sub-systems.

Artillery vehicles have a similar package (EPAWS) but it also includes indirect fire components (AGLS, AIFS).

The weapons in this guide are also stabilized (FCE). This allows for "fire on the fly" or firing while moving with no penalty. Several references are made to "tank". This is because the guns and equipment used are the same as those used in tanks.

All Direct fire guns are equipped with a Mk. III FCS. It contains the following Sensor/Computer sub-systems:  
ATTs, CSS, LTFCS w/LTD, MTI, TADS/TES, TGTS & TOGS.

All Indirect Fire guns are equipped with a MK V EPAWS. It contains the following Sensors/Computer sub-systems:  
AGLS, AIFS, ARETS, CAWS, CSS, FCE & TOGS.

Should the main power fail, a manual system can be employed but the fire rate will be cut to 1/4 normal.

Below is a list of what these "techspeak" terms can do for you in games terms.

### OFFENSIVE

- AGLS +1 to hit coordinates fed by the BCC.
- AIFS Computer Link to BCC or can function independently for fire support only.
- ARETS Allow gun to fire based on laser designator from other vehicle and use their bonus. (*tank A spots and Tank B fires*)
- ATTS Works with TADS to identify targets as hostile or friendly and then cues the Targeting computer.
- CAWS Allows artillery to function in a direct fire mode.
- CSS Coordinates L3TV, TOGS and Laser sighting subsystems to give gunner the best target solution.
- LTFCSS Interprets and integrates sighting from other laser. Works with ARETS.
- MTI Allows fire at a moving target with no penalty
- TGTS Allow stationary target bonus (+1/turn) against a moving target.
- TOGS Sighting sub-system used when Optical system fails to obtain a target lock.

### DEFENSIVE

- APERS Flechette charge with 15 meter danger space (6D6)
- ECM -1 to opponents attempt to target vehicle by radio or radar.
- NBC no effect to crew inside vehicle from Nuclear fallout, biological or chemical contaminates, as long as vehicle remains sealed.
- Prismatic
- Aerosol anti Laser/Thermal/Optical screen, good for 2 turns  
(works both ways though, you can't see out either).
- RDFSS gives +1 to crews survival roll in case of internal fire or explosion.  
(still damaged by fragmentation)
- TLS Senses incoming targeting lasers and automatically deploys aerosol.

## Glossary of Terms

AASV	Armored Ammunition Supply Vehicle
ACV	Armored Cavalry Vehicle
ADMP	Air Defense Missile Platform
AFSV	Armored Fire Support Vehicle
AFV	Armored Fighting Vehicle
AGLS	Automatic Gun Laying System (provides targeting from location in map box)
AIFS	Advanced Indirect Fire System
AIFV	Armored Infantry Fighting Vehicle
AP	Armored Piercing
APC	Armored Personnel Carrier
APDS	Armor Piercing, Discarding Sabot
APERS	Anti-Personnel
APFSDS	Armor Piercing, Fin Stabilized, Discarding Sabot
APHE	Armor Piercing, High Explosive
ARETS	Armor Remote Target System (provides targeting from external sighting source)
ARMAD	Armored & Mechanized Unit Air Defense
ARSV	Armored Recon/Scout Vehicle
ARV	Armored Recovery Vehicle
ATTS	Automatic Tank Target System
AVGP	Armored Vehicle, General Purpose
BCC	Battery Control Center (arty. command vehicle)
CAWS	Cannon Artillery Weapons System (arty. fire control for direct fire mode)
CBM	Cluster Bomblet Munition
CBTSS	Counterbattery Targeting Solution System
CEV	Combat Engineering Vehicle
CSI	Computer Synthesized Image
CSS	Computer Sighting System
CVR (W)	Combat Recon Vehicle (Wheeled)
C3	Command, Control & Communications
DPU	Depleted Uranium (extremely dense material used for warheads to increase penetration)
ECM	Electronic Counter Measures
EPAWS	Enhanced Self Propelled Artillery Weapons System (primarily indirect fire control)
EW	Electronic Warfare
FACE	Field Artillery Computer Equipment
FCE	Fire Control Equipment (stabilization gear)
FCS	Fire Control System
FEBA	Forward Edge of Battle Area (the front lines!)
GLCBM	Ground Launched Continental Ballistic Missile
GLCM	Ground Launched Cruise Missile
HE	High Explosive
HEAT	High Explosive, Anti-Tank
HEI	High Explosive, Incendiary
HMG	Heavy Machine Gun, 12.7 mm

ICM	Improved Conventional Munitions
IFV	Infantry Fighting Vehicle
IR	Infra Red (detects variations in heat signatures)
k	1,000
km	kilometer, equal to 1,000 meters (.62 miles)
KEAP	Kinetic Energy, Armor Piercing
KEAPER	Kinetic Energy, Armored Piercing, Extended Range
LAAV	Light Armored Assault Vehicle
LADS	Light Air Defense System
L3 TV	Low Light Level Television
LMG	Light Machine Gun
LTFCS	Laser Tank Fire Control System, (allows main gun to sight from laser)
LTD	Laser Target Designator (paints laser target for main gun)
LVH	Low Velocity Howitzer
MASH	Mobile Army Surgical Hospital
MEV	Medical Evacuation Vehicle
MICV	Mechanized Infantry Combat Vehicle
MRS	Multiple Rocket System (includes missile equipped systems)
MTI	Moving Target Indicator (allows tracking of moving targets)
NBC	Nuclear, Biological, Chemical (protective system includes overpressurization & shielding)
PDM	Planetary Defense Missile
RAP	Rocket Assisted Projectile
RAFTAC	Radar For Field Tactical Artillery Fire Control
RDF	Radio Direction Finder (locates radio transmission for arty. fire)
DRFSS	Rapid Deploy Fire Suppression System
RFC	Rapid Fire Cannon
SAPI	Semi Armor Piercing, Incendiary (for light armored targets)
SP	Self Propelled
SPAAG	Self Propelled Anti-Aircraft Gun
SPAW	Self Propelled Artillery Weapon
SPH	Self Propelled Howitzer
SPL	Self Propelled Launcher
STAFF	Smart Target Activated, Fire and Forget
TCV	Tactical Control Vehicle
TES	Target Engagement System (coordinates all targeting subsystems allowing for firing of weapons)
TGTS	Tank Gunnery Tracking System (works with MTI to keep gun on moving target)
TIS	Thermal Imaging System (infra-red observation)
TOGS	Thermal Observation & Gunnery System (IR option for guns)
VDU	Video Display Unit (combined with L3TV)
WP	White Phosphorous, also called "Willy Pete"



*Other guides planned in this series will include:*

RM-90-01	Air Cushioned
RM-90-02	Rotary and Fixed Wing Aircraft
RM-90-03	Tracked Vehicles
RM-90-04	Wheeled Vehicles, Service & Support
RM-90-05	Grav Vehicles
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