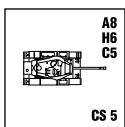


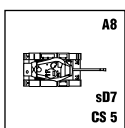
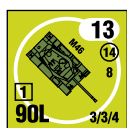


U.S. VEHICLE NOTES



1. M41 Walker Bulldog: While the Chaffee was a successful design, its main gun was not effective enough against well armored opponents. Although the primary mission of light tank was scouting, Armored Force wanted one with more powerful armament. The development of the new tank, T37, began in 1947. The vehicle was designed to be air-transportable, and the desired anti-tank capabilities were provided by installing a long 76 mm gun with an advanced rangefinder. In 1949, with the adoption of a less ambitious rangefinder, project changed its designation to M41. Production started in 1951 at Cadillac's Cleveland Tank Plant, and by 1953 the new tank completely replaced the M24 in the US Army. Initially it was nicknamed "Little Bulldog", then renamed to "Walker Bulldog" after General Walton Walker, who was killed in a jeep accident in Korea in 1950.

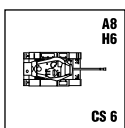
Walker Bulldog never saw combat with the US Army. But in 1965 a number of vehicles were supplied to South Vietnam. The M41 went on to form the bulk of the ARVN Armored Force, and played a significant role in the Vietnam War. Being too lightly armored for most battlefield tasks, the tank was used mostly for internal security missions. On several occasions when the tank encountered North Vietnamese armor its gun was reportedly effective against enemy tanks including T-54.



2. M46 Patton: A In May 1946, due to the changing conception of the US Army's tank needs, the M26 Pershing tank was reclassified as a medium tank and the need for a new heavy tank arose. The design was initially called M26E2, but modifications continued to accumulate, and eventually the Ordnance decided that the tank "deserved" an index of its own. When the rebuild began in November, 1949 the upgraded M26 received not only a new powerpack and a main gun, but a new designation along with them - M46 General Patton or simply Patton.

In total 1160 M26s were rebuilt: 800 to the M46, 360 to the M46A1 standard. The M46 was exported to some European countries, including Belgium, France and Italy.

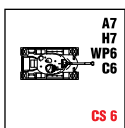
† See U.S. Vehicle Note A.



3. M47 Patton: Although the new powerpack corrected the mobility and reliability problems of the M26, the US Army considered the M46 a stopgap solution that would be replaced later by the T42 medium tank. However, after fighting erupted in Korea, the Army decided it needed the new tank earlier than planned. It was deemed that there was likely no time to finish the development of the T42 and then also to fix various problems that were likely to emerge in a new design. The final decision was to produce another interim solution, with the turret of T42 mounted on the familiar hull of the M46. The old-new tank, developed by the Detroit Arsenal, was named M47 Patton and entered production in 1951.

The M47 was widely used by NATO allies and other countries, including Austria, Belgium, France, Germany, Greece, Iran, Italy, Japan, Jordan, Pakistan, Portugal, Saudi Arabia, Somalia, South Korea, Spain, Taiwan, Turkey and Yugoslavia. In the US, however, it was quickly replaced by the M48.

† See U.S. Vehicle Note A.

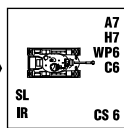


4. M48 Patton: A year after the M47 entered service, the US Army decided to replace it by yet another product of the evolution of the Pershing/Patton line, the M48, still dubbed Patton. A deeper modernization than the M46 and the M47, the M48 featured a new turret, redesigned hull and an

improved suspension. The hull machine gunner position was removed, reducing the crew to 4.

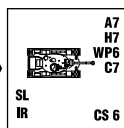
Nearly 12,000 M48s were built from 1952 to 1959. The early designs were powered by gasoline engines which gave the tank a short operating range and were prone to catching fire when hit. This version was considered unreliable but numerous examples saw combat use in various Arab-Israeli conflicts.

By the mid-1990s, the M48s were phased out of U.S. service. However, many foreign countries continue to use the M48 models.



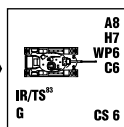
5. M48A1 Patton: The M48A1 received the M1 commanders' cupola providing armoured cover and enclosing the .50 cal plus numerous other improvements to the tank. The M48A1 was quickly followed by the M48A2 entering service in 1955 with a new power plant and fire control systems. The M48A2 is also represented by the M48A1 counter.

† See U.S. Vehicle Notes A and B.



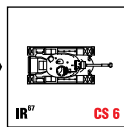
6. M48A3 Patton: In 1959, American M48s were upgraded to the M48A3 model which featured a diesel power plant. The M48A3 is the most common used variant of the M48. It was used extensively in Vietnam.

† See U.S. Vehicle Notes A and B.



7. M48A5 Patton: In the mid-1970s, the M48A5 upgrade was developed to allow the vehicle to carry the heavier 105 mm gun. This was designed to bring the M48s up to speed with the M60 tanks then in regular use.

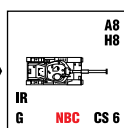
Most of the M48s were placed into reserve service by this time.



8. M67 Zippo: A M48 variant armed with a flamethrower inside a dummy model of the main gun with fake muzzle brake. The M67 flamethrower tank, nicknamed the Zippo, was used extensively during the Vietnam War after its introduction in 1960. It was phased out of service 1975.

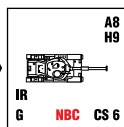
† The counter also represents the M67A1, introduced in 1967 which adds an IR night vision sight as indicated by IR⁶⁷ on the counter backside.

† See U.S. Vehicle Note B.



9. M60: In 1957, it was determined that the Soviets were in the process of developing a new medium tank, the T-62, with a 115 mm gun, superior to that of the American M48 tank. In response, an M48 tank was fitted with a new engine and later with a variant of the British 105 mm L7 series gun. This new vehicle (originally designated M68) was put into production in 1959, reclassified as the M60 and entered service in 1960. Over 15,000 M60s (all variants) were constructed.

M60 variants are in service with Austria, Bahrain, Bosnia, Brazil, Egypt, Greece, Israel, Portugal, Spain, Turkey, Taiwan, Thailand and some other nations to varying degrees.



10. M60A1 Patton: In 1963, the M60 was upgraded to the M60A1. This new variant, which stayed in production until 1980, featured a larger, better-shaped turret and improvements to the armor protection and

shock absorbers.

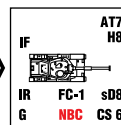
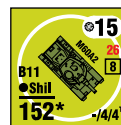
† See U.S. Vehicle Note A.



Vehicle	WGt	BPV	Dates	Size	AF	TA	OT	CS	MP	GP	GT	MA	ROF	B#	IF	BMG	CMG	AAMG	SA	Am	s#	PP/T#	G	Night	FC	Notes
M41 Walker Bulldog	23.5		10/51-12/72		4/2	+S		5	21	T	T	T76L	1				3	4		A8, H6, C5					1	
M46 Patton	44		6/48-12/60		14/8	-F		5	13	T	T	T90L	1				3	4		A8					2	
M47 Patton	46		1/52-12/64		18/6	-F/+S		6	14	T	T	T90L	1				3	4		A8, H6					3	
M48 Patton	52		7/53-12/72	-1	18/8	-F		6	15	T	T	T90L	1				3	4		A7, H7, C6					4	
M48A1 Patton	52		1/55-12/70	-1	18/8	-F		6	15	T	T	T90L	1				3	4		A7, H7, C6				IR		5, SL
M48A3 Patton	52		1/68-12/84	-1	18/8	-F		6	15	T	T	T90L	1				3	4		A7, H7, C6				IR		6, SL
M48A5 Patton	50		1/75-12/94	-1	18/8	-F		6	15	T	T	T105LL	1				3	4		A8, H7, C6				• IR/TS ⁸³		7
M67 Zippo	52		1/60-12/74	-1	18/8	-F		6	15	T	T	T153Z	2				3	4						IR ⁸²		8
M60 Patton	46		1/60-12/80	-1	26/8	+S		6	15	T	T	T105LL	2				4	4						• IR		9, NBC
M60A1 Patton	52		1/62-12/90	-1	26/8	+S		6	15	T	T	T105LL	2				4	4						• IR		10, NBC
M60A2 Patton	52		1/74-12/81	-1	26/8	+S		6	15	T	T	T152*	2				4	4		•Shil				• IR		-1
M60A3 Patton	52		8/81+	-1	26/8	+S		7	15	T	T	T105LL	2				5	4						A IR/TS ⁸¹		-1/-2 ⁸¹
M651 Sheridan	17		1/67-12/89		4/2	+3F/+S		5	20	L	T	T152*	2				4	4		•Shil				• IR		12, NBC
M551A1 Sheridan	18		1/75-12/89		4/2	+3F/+S		5	20	L	T	T152*	2				4	4		•Shil				• IR		13, NBC
M1 Abrams	60		1/81-12/84		42/8*	+4S		8	22	H	T	T105LL	2				5	7						A TS		-2
IPM1 Abrams	60		1/85-12/89		42/11*	+3S		8	22	H	T	T105LL	2				5	7		•Shil				A TS		-2
M1A1 Abrams	63		1/87+		42/11*	+3S		8	19	H	T	T120LL	2				5	7		•Shil				A TS		-2
M1A1 (HA) Abrams	67		1/91+		64/11*	+2F/+3S		8	19	H	T	T120LL	2				5	7		•Shil				A TS		-3
M1A2 Abrams	68		1/95+		64/11*	+2F/+3S		8	19	H	T	T120LL	2				5	7		•Shil				A TS		-3
M1A2SEP Abrams	69		1/99+		64/11*	+2F/+3S		8	19	H	T	T120LL	2				5	7		•Shil				A TS		-4
M728 CEV	52		6/65-2/97	-1	26/8*	-F		6	14	T	T	T165*	2				3	4		•Shil				A TS		-20, NBC
M48 Dozer	53		1/68-12/84	-1	18/8*	-F		6	15	T	T	T90L	1				3	4		A7, H7, C6				IR		21, NBC, Dozer, HF AF+2
M60 Dozer	53		1/62+	-1	26/8	-F		6	15	T	T	T105LL	2				4	4		A8, H9				• IR		22, Dozer, HF AF+2
M1 MCHS	68		9/90+		42/11*	+3S		8	19	H	T	T120LL	2				5	7		•Shil				A TS		-24, NBC, HF AF+2
M60 AVLB	57		2/87+	-1	26/8	+2S		7	15	NT	NT		2				5	7		•Shil				A TS		-25, NBC, Bridge: 60 tons
XM104 Wolverine	69		9/00+		64/11*	+2F/+3		8	18	H	NT						3							TS		26, NBC, Bridge: 70 tons
M42 Duster	22		1/53-12/78		3/2	-F		5	21	T	T	T40LL	3(12)				3			Ag, H7, C6						27, MA/AA, 2xTK DR
M56 Scorpion	7.1		6/53-6/72	+1	1/1			•	8	13	T	T90L	2				3			H8, C7						28
M50 Ontos	8.6		1/56-12/75	+2	3/2	-F		5	14	L	NT	B106*	2*				3							TS		29, MA-RCL
M901 ITV	13		1/80-12/88		2/1	+F/+S		5	20/12	L	ST	ATGM*	2*				3			*I-TOW				TS		30
M901A1 ITV	14		1/89-12/93		2/1	+F/+S		5	20/12	L	ST	ATGM*	2*				3			*I-TOW-2				TS		31
M981 FISTV	13		1/75-12/87		2/1	+F/+S		5	20/12	L	ST	GLLD					3							TS		32
M14	6.8		1/62-12/83	+1	3/1			4	16*	H	NT	B20LL	3(4)				7							9PP		33
M11A42	7.5		1/67-12/83	+1	3/1			4	16*	H	NT	B20LL	3(4)				7							9PP		34
M113	11		1/60-12/69		2/1			5	20*	L	NT	AAMG	2				4							13PP		35
M113A1	11		1/64-12/99		2/1			5	20*	L	NT	AAMG	2				4							13PP		36
M113 ACV	11		1/67-12/84		2/1			5	20*	L	NT	AAMG	2				10*							13PP		37, AAMG-4&3&3
XM734	11		1/65-7		2/1			5	20*	L	NT	AAMG	2				4							13PP		38
M103 RCL	11		1/60-12/75		2/1			5	20*	L	CM	CT06*	1				4			*TOW/I-TOW ⁸¹				TS ⁸¹		39, MA-RCL
M150	11		1/70-12/89		2/1			5	20*	L	CM	ATGM*	2				4							6PP		40
M113A3	12		1/87+		2/1			5	15*	L	ST	T1E24	2				4							13PP		41
M132 Zippo	12		3/63-12/72		2/1			5	20*	L	T	T20LL	3(4)				4									42
M163 VADS	12		1/67-12/84		2/1	+S		5	20*	L	T	T20LL	3(4)				4							IR		43, RS, MA-AA
M163A2 PIVADS	12		1/85+		2/1	+S		5	20*	L	T	T107*	3				4									44, RS, MA-AA
M106 107mm	11		1/62-12/97		2/1			5	18*	L	ST	T18*	3				4									45, MA-MTR
M125A1 81mm	11		1/61-12/89		2/1			5	20*	L	ST	T18*	3				4									46, MA-MTR
M1064 120mm	13		1/95+		2/1			6	20*	L	ST	T120*	2				4									47
M2 Bradley IFV	23		5/81-12/89	-1	6/3*			5	19*	L	T	T25LL	3(6)				5			I-TOW				A TS		-1
M2A1 Bradley IFV	25		1/90-12/95	-1	11/6*			5	18*	L	T	T25LL	3(6)				5			TOW-2				A TS		-1
M2A2 Bradley IFV	33		1/96+	-1	14/6*	+S		5	18*	L	T	T25LL	3(6)				5			TOW-2B				A TS		-1
M2A3 Bradley IFV	35		1/00+	-1	14/8*	+F		6	18*	L	T	T25LL	3(6)				5			TOW-2B				A TS		-1
M3 Bradley CFV	23		5/81-12/89	-1	6/3*			5	19*	L	T	T25LL	3(6)				5			I-TOW				A TS		-1
M3A1 Bradley CFV	25		1/90-12/95	-1	11/6*			5	18*	L	T	T25LL	3(6)				5			TOW-2				A TS		-1
M3A2 Bradley CFV	33		1/96+	-1	14/6*	+S		5	18*	L	T	T25LL	3(6)				5			TOW-2B				A TS		-1
M3A3 Bradley CFV	35		1/00+	-1	14/8*	+F		6	18*	L	T	T25LL	3(6)				5			TOW-2B				A TS		-1
M7 Bradley FISTV	33		1/96+	-1	14/6*	+S		5	18*	L	T	T25LL	3(6)				5			GLLD				A TS		-55, NBC, *Inh, HS
LVTP7A5	40		1/56-12/72	-1	1/0			7	14*	L	NT	AAMG	2				3							39PP		57
LAV-25	26		1/82+		4/3*	+F/+S		5	3F*	ST	T140*	3(6)	11				4			•A				IR		58, MA-AGL
LAV-AD	13		9/97+		3/3	+F/+S		5	3F*	ST	T20LL	3(4)	11				4			•A				TS		59
LAV-M	13		1/83+		3/3	+F/+S		5	30*	ST	T18*	3					3			IR				TS		60, RS, MA-AA
LAV-AI	14		1/83+		3/3	+F/+S		5	3F*	ST	ATGM*						3			*I-TOW				TS		61, MA-MTR
M107 175mm	28		1/63-12/79	-1	4/3	*		9	15	NT	B175LL						3									62
M109 155mm	24		1/64-12/78	-1	4/3	-F/-S		7	16	ST	TT55						4									63, MA-RFNM
M109A2 155mm	25		1/79-12/99	-1	4/3	-F/-S		7	16	ST	TT55L						4									64
M109A6 155mm	29		4/92+	-1	4/3	-F/-S		7	18	ST	TT55L						4									65, NBC ⁸³
M110 8"	27		1/63-12/76	-1	4/3	-F/-S		9	15	NT	B203L						4									66, NBC
M110A2 8"	28		1/78+	-1	4/3	-F/-S		9	15	NT	B203L						4									67, MA-RFNM
M1026 HMMWV	2.3		1/85+	+1	*			4	46	NT	*AAMG						opt3or4									68, MA-RFNM
M1026 HMMWV (40)	2.3		1/85+	+1	*			4	46	CM	C40*						4									69, B
M966 HMMWV (TOW)	2.5		1/90+	+1	*			4	46	CM	ATGM*						4			*TOW-2B				TS		70, MA-AGL
M1097 HMMWV	2.3		1/85+	+1	0/0			4	46	NT	*AAMG						4									71
M1097 HMMWV (40)	2.3		1/85+	+1	0/0			4	46	CM	C40*						4									72, B
M1045 HMMWV (TOW)	2.5		1/00+	+1	0/0			4	46	CM	ATGM*						4			*TOW-2B				TS		

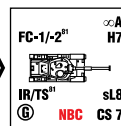
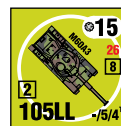


Vehicle	WGt	BPV	Dates	Size	AF	TA	OT	CS	MP	GP	GT	MA	ROF	B#	IF	BMG	CMG	AAMG	SA	Am	s#	PP/T#	G	Night	FC	Notes
M51A1C	2		1/64-12/72	+2	*			2	40°	CM	CTOG*	1	9		•					H7,C6		T10				77, MA-RCL
M51A1 (TOW)	2		1/70-12/89	+2	*			2	40°	CM	ATGM				•				TOW/L-TOW ¹³			T10		TS ¹⁴		78, B
Light Truck	5.5	20	1/46+	0	*		6	6	28°			AAMG	1					opt3or4				21PP/T7				79, B
Medium Truck	7.5	20	1/46+	-1	*		7	28°				AAMG	1					opt3or4				29PP/T5				80, B
Heavy Truck	22	20	1/46+	-1	*		7	22°	H			AAMG	1					opt3or4				29PP/T4				81, B
M35 Guntruck (16)	9		1/65-12/75	0	0/0	+F	7	28°		T		T12.7	3(16)									T5				82
M35 Guntruck (AA)	8		1/65-12/75	0	0/0	+F	7	28°				AAMG	2					8				21PP/T5				83



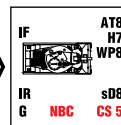
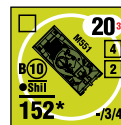
11. M60A2 Patton: The M60A2, sometimes referred to as the “Starship” due to its space-aged technology, featured an entirely new low-profile turret with a commander’s machine-gun cupola on top, giving the commander a good view and field of fire while under armour but spoiling the low profile. It also featured a 152 mm calibre main gun similar to that of the M551 Sheridan light tank, which fired regular rounds as well as the Shillelagh ATGM. There were a number of problems with the new gun (such as unburnt propellant from the missile fouling the tube and pre-detonating subsequent rounds), most of which were solved to some extent, but after all the problems the A2 model was abandoned and the turret for the A3 would be based on that of the A1. Most of the M60A2 tanks were rebuilt to M60A3 standard or the hulls converted to Armored Vehicle Launched Bridge vehicles.

† See U.S. Vehicle Notes A and C.



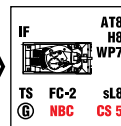
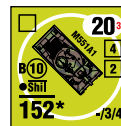
12. M60A3 Patton: In 1978, work began on the M60A3 variant. It featured a number of technological enhancements, including smoke dischargers, a new rangefinder and ballistic computer and a turret stabilization system. All American M60s eventually underwent the conversion to the A3 model.

† See U.S. Vehicle Note A.



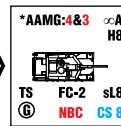
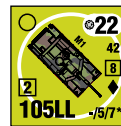
13. M557 Sheridan: Production started in 1966, and reached service in 1968 as the Sheridan. 1,562 M551s were built between 1966 and 1970. The M81 gun had problems with cracks developing near the breach after repeated firing, a problem that was later tracked to the “key” on the missiles that ran in a slot cut into the barrel.

† See U.S. Vehicle Note C.



14. M557A1 Sheridan: The Army started to phase out the Sheridan in 1978, although at the time there was no real replacement. Nevertheless the 82nd Airborne were able to keep them on until 1996. The Sheridan was the only air-deployable tank in the inventory, and as an elite force they had considerably more “pull” than general infantry and armor units who were forced to get rid of them. Their units were later upgraded to the M551A1 model, including a thermal sighting system and laser rangefinder for the commander and gunner.

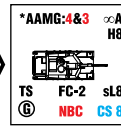
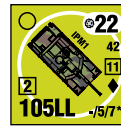
† See U.S. Vehicle Note C.



16. M1 Abrams: The M1 Abrams was designed by Chrysler Defense and is currently produced by General Dynamic Corporation in Lima, Ohio, and first entered US Army service in 1980. Over 8,800 M1 and M1A1 tanks have been produced at a cost of \$2,350,000-4,300,000 per unit, depending on the variant.

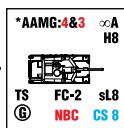
Export variants, with the export armor package and different options (such as multi-fuel diesel engines) of the M1 Abrams are also used by the defense forces of Egypt, Saudi Arabia and Kuwait.

† See U.S. Vehicle Note J.



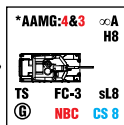
16. IPM1 Abrams: Produced briefly in 1984 before the M1A1, contained upgrades and reconfigurations.

† See U.S. Vehicle Note J.



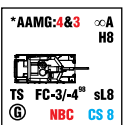
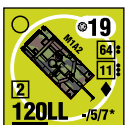
17. M1A1 Abrams: An improved version of the M1, the M1A1, was introduced in 1985. The M1A1 has the M256 120 mm smooth-bore cannon developed by Rheinmetall AG of Germany for the Leopard 2, improved armor, and an NBC protection system.

† See U.S. Vehicle Note J.



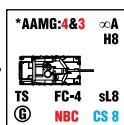
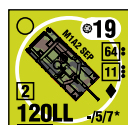
18. M1A1 (HA) Abrams: The M1A1(HA) (Heavy Armor) is an interim version of the M1, adding new depleted uranium armor mesh, and a pressurized NBC system.

† See U.S. Vehicle Note J.



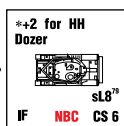
19. M1A2 Abrams: The M1A2 is a further improvement of the M1A1 with a commander's thermal viewer and weapon station, position navigation equipment, digital data bus and a radio interface unit.

† See U.S. Vehicle Note J.



20. M1A2SEP Abrams: The M1A2SEP (System Enhancement Package) adds an electronic upgrade for the M1A2. It is also upgraded with 3rd generation depleted uranium encased armor with graphite coding leading to an improved armor protection.

† See U.S. Vehicle Note J.



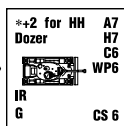
21. M728 CEV: The vehicle is based on an M60A1 Patton chassis with a hydraulically operated dozer blade mounted on the front, an A-frame crane hinged on each side of the turret and a winch. The armament was changed from using the 105 mm gun, to use an M135 165 mm short-barrelled demolition gun with 30 rounds of HEP (High Explosive, Plastic) ammunition.

291 units were produced, the M728 was first deployed in 1965 during the Vietnam War. It was also used in Operation Desert Shield and Operation Desert Storm in 1990-1991.

The vehicle was found to be too slow to keep pace with newer armored vehicles such as the M1 Abrams tank and from 2000 is not used by active duty units.

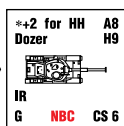
† ROADBLOCK: The M728 may attempt a Roadblock Clearance with its MA using Area Target Type. After a successful hit, the Roadblock is removed with subsequent K/KIA result on the (I)FT [EXC: a Critical Hit always destroys a Roadblock].

† See U.S. Vehicle Note D.



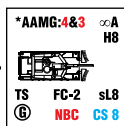
22. M48 Dozer: A

† See U.S. Vehicle Note D.



23. M60 Dozer: A

† See U.S. Vehicle Note D.

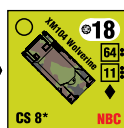
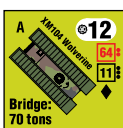
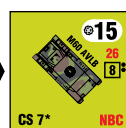
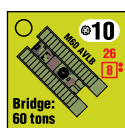


24. M1 MCBS: The M1 Mine Clearing Blade System is an auxiliary piece of equipment necessary for the tank unit to breach minefields during the normal conduct of op-

erations. In Operation Desert Storm track width mine ploughs proved very successful against pressure fused anti-tank mines and allowed the M1A1 main battle tank to breach mine fields with little loss of momentum.

† CLEARANCE: A M1 MCBS clears mines like affail tank (B28.7-.72), with the following exceptions. Each time a M1 MCBS enters a new hex, the player owning mines in that hex must announce their presence (not type or strength). The M1 MCBS's owner then makes his Mine Clearance DR, but there is a +2 DRM to that DR unless when entering that hex the M1 MCBS paid twice the normal MP cost and did not use the CE road movement cost. A Final Mine Clearance DR of 11 or ≥ 12 is treated as per B28.72 or B28.71 respectively. A M1 MCBS need to be, or remain in Motion in order to attempt Mine Clearance. If the M1 MCBS reveals the presence of mines while CE it must immediately become BU.

† A M1 MCBS can attempt to clear wire in a non-woods/non-building (only) Location by making a Mine Clearance DR. If that DR results in successful mine clearance (regardless of the presence of mines), that wire counter is removed (along with any mines). All other possible results of that DR are still applicable. A M1 MCBS that successfully clears wire by this method is not subject to a Bog DR due to that wire (B26.43); however, if the tank is unsuccessful and must undergo the Bog DR, B26.53 applies unchanged.



25. M60 AVLB & XM104 Wolverine: The Armored Vehicle

Launched Bridge (AVLB) was designed to launch and retrieve a class 60 bridge. The main body is either based on the M60 or the M48 tank assembly. Used during combat, an AVLB is a folding portable bridge that is transported on the top of a tank chassis.

The Wolverine consists of an M1 Abrams tank chassis modified to transport, launch and retrieve a Military Load Class (MLC) 70 bridge across gaps up to 24 meters wide. Wolverine will be air-transportable in the C-5A aircraft and will be comparable in mobility and survivability to the Abrams tank. The first unit equipped with the Wolverine is the 4th Infantry Division.

† Prototypes of the XM104 are available from 8/99.

† A bridgeless M60 AVLB weighs 0.0 tons, has 15 MP, and a Target Size of -1.

† A bridgeless XM104 Wolverine weighs 0.0 tons, has 18 MP, and a Target Size of 0.

† MOVEMENT: The following apply to a M60/XM104 while it is carrying its bridge: it may not use VBM – as signified by “VBM NA” on the counter; if in a Sunken Road hex (B4.), it is treated as being on a one-lane bridge for VCA-change purpose (B6.431).

† PRC: Although a Bridgelayers has no armament, it does have an Inherent Crew; however, see U.S. Vehicle Note M. A Bridgelayers may carry neither Passengers nor Riders.

† WRECK: To indicate a M60 AVLB/XM104 Wolverine wreck, use a M60 or M1 Wreck counter respectively, and mark it with a Scrounged counter.

† BRIDGE: When placed, the bridge is represented by a 5/8” Bridge counter. It is One-Lane (B6.43-.431) and has a normal entry cost of one MF or four MP for all units. It is neither an obstacle nor a Hindrance to LOS, and a unit on it is considered to be in Open Ground as if on a road (with no B6.31 TEM).

● PLACEMENT: The bridge can be placed “across” only a trench, A-T Ditch, canal, the Shellholes in a hex, or a gully/stream – and only by a Stopped Bridgelayers (whose crew is neither stunned nor shocked) during its MPH at a cost of all its “delay” MP (expanded in one MPH) while it is ADJACENT to the Location “across” which it wishes to place the bridge. This Location must also be within the Bridgelayers's VCA. Only one bridge may be placed per hex, and may be placed across neither an unbreached wall/hedge hexside nor a Depression Hexside. A bridge “across” a gully/stream is at its Crest level. A Bridgelayers that becomes immobilized while Non-Stopped (including via an Unbogging DR), or that is Bogged/Mired, cannot place its bridge. The Bridgelayers's owner first announces the placement attempt, then makes an X# DR to check for possible disablement of the Bridgelaying mechanism. If this Final DR (see DESTRUCTION) is > 12 the bridge cannot be placed and the Bridgelayers is immediately Recalled; on a Final DR < 11 placement commences, and only then does the AFV begin expending “delay” MP. After thusly expending all its MP the bridge is placed at the end of the current MPH; position it such that its “length” is perpendicular to the hexside



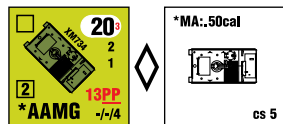
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positions were extremely exposed and the vehicles armament was in many ways lacking. The kit included shields and circular turret for .50 caliber and 2 additional M60 machine guns, again with shields, and could be fitted to any existing M113 APC.

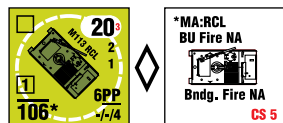
† The M113 ACAV's AAMG consists of 3 different machineguns. See the diagram of ASL U.S. Vehicle Note 30 (*M3(MMG)* & *M3(HMG)*).

† See U.S. Vehicle Note F.



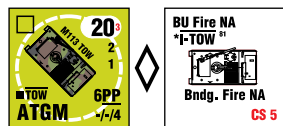
37. XM734: Mechanized Infantry Combat Vehicle (MICV) prototype. Variant of the standard M113A1 APC with 4 firing ports and vision blocks on each side of the hull.

† See U.S. Vehicle Note F.



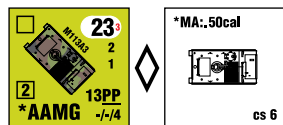
38. M113 RCL: The basic M113 armored personnel carrier can itself be fitted with a number of weapon systems. Armored Cavalry units in Vietnam removed jeep mounted M40 106mm recoilless rifles fitting them to their M113s instead.

† See U.S. Vehicle Note F.



39. M113 TOW: In the 1970s the TOW ATGM system was installed at the M113's troop compartment hatch.

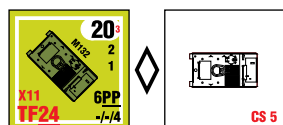
† See U.S. Vehicle Note F.



40. M113A3: M113A3 introduced sliding Kevlar spall liners to the troop compartment to help protect the infantry in the event of an armor penetration. The new, more powerful engine and new transmission were referred to as the RISE (Reliability Improvements

for Selected Equipment) package. M113A3 was fitted with the external fuel tanks that first made their appearance on M113A2.

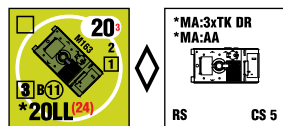
† See U.S. Vehicle Note F.



41. M132 Zippo: The M132 was an M113 APC modified into a mobile flame thrower. The cupola was replaced with the flame gun mounting, and the passenger compartment was taken up by the M10 fuel and pressure

unit, which consisted of four 50 gallon spherical flame fuel tanks, each of which was topped by a spherical air compressor. The M8 cupola group housed the flame gun.

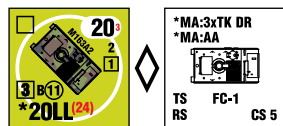
† See U.S. Vehicle Note F.



42. M163 VADS: The Vulcan Air Defense System (VADS) is a self-propelled anti-aircraft gun (SPAAG) used by the US Army. It is also known as the M163. The M168 gun is a variant of the General Dynamics 20 mm

M61 Vulcan rotary cannon—the standard cannon in most US combat aircraft since the 1960s.

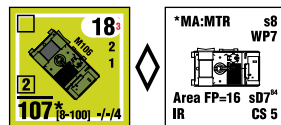
† See U.S. Vehicle Note F.



43. M163A2 PIVADS: The Product Improved Vulcan Air Defense System (PI-VADS), first accepted in 1984, was a kit developed by Lockheed Electronics Company which reduced the gunner's workload and

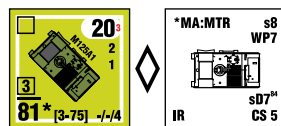
improved the accuracy of the system. Hardware improvements included a digital microprocessor, director sight, low backlash azimuth drive system, and the ability to fire armor-piercing discarding sabot (APDS) ammunition.

† See U.S. Vehicle Note F.



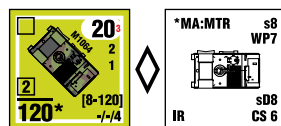
44. M106 107mm Mortar Carrier: The M106 carrier is the M113 armored personnel carrier modified to carry the M30 4.2-inch (107mm) mortar on a specially designed turntable mount. It is an armored, full-tracked, self-propelled vehicle that can swim streams and small bodies of water. A .50 caliber machine gun is mounted on the cupola for the vehicle commander's use. The mortar and its components can be removed from the carrier for ground-mounted firing.

† See U.S. Vehicle Note F and L.



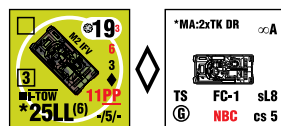
45. M125A1 81mm Mortar Carrier: The M125A1 was based on the the M113A1 APC, and shared the same modifications as the M106 107mm self-propelled mortar since the 81mm and 107mm mortars were interchangeable. The mortar and its components can be removed from the carrier for ground-mounted firing.

† See U.S. Vehicle Note F and L.



46. M1064A1 120mm Mortar Carrier: M1064 was basically an M106A2 107mm self-propelled mortar carrier armed instead with a 120mm mortar. External fuel tanks were fitted to the M1064, and kits were available to convert earlier M113-based mortar carriers to M1064 or M1064A3 standard.

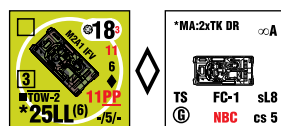
† See U.S. Vehicle Note F and L.



47. M2 Bradley IFV: The Bradley, named after WWII General Omar Bradley, is a replacement for the M113 family of APCs and consists of two types of vehicles, the M2 Infantry Fighting Vehicle (IFV) and the M3 Cavalry Fighting Vehicle (CFV). The M2 carries a crew of three and a six-man infantry squad. Since entering service with the U.S. Army in 1981, 4,641 Bradleys have been produced.

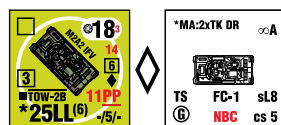
The M2 (also sometimes written M2A0 to help prevent confusion) was the basic production model, first produced in 1982.

† See U.S. Vehicle Note G.



48. M2A1 Bradley IFV: Introduced in 1986, the A1 variant included an improved TOW II missile system, a Gas Particulate Filter Units (GPFU) NBC system, and a fire-suppression system. By 1992, the M2A1s had begun being remanufactured to upgraded standards.

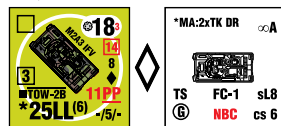
† See U.S. Vehicle Note G.



49. M2A2 Bradley IFV: Introduced in 1988, the A2 received an improved 600-horsepower engine with an automatic transmission and improved armor (both passive and the ability to mount explosive reactive armor). Ammo

stowage was reorganized and spall liners were added. The M2A2 was qualified to be transported by the C-17. M2A2s will all eventually be modified to M2A2 ODS or M2A3 standard.

† See U.S. Vehicle Note G.



50. M2A3 Bradley IFV: Introduced in 2000, the A3 upgrades make the Bradley IFV/CFV totally digital and upgrade or improve exist-

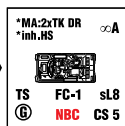
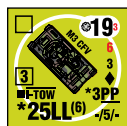


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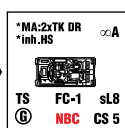
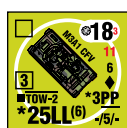
ing electronics systems throughout improving target acquisition and fire control, navigation, and situational awareness. Also, the survivability of the vehicle is upgraded with a series of armor improvements, again both passive and reactive, as well as improved fire-suppression systems and NBC equipment.

† See U.S. Vehicle Note G.



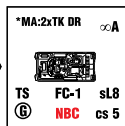
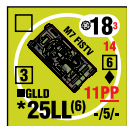
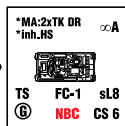
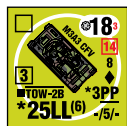
51. M3 Bradley CFV: The M3 CFV was originally going to be named after General Jacob L. Devers, but it was decided the Bradley name would apply to both, since both vehicles are based on the same chassis (they differ in only some details). The M3 carries the crew of three and a two-man scout team and additional radios, TOW and Dragon or Javelin missiles. Since entering service with the U.S. Army in 1981, 2,083 M3 Bradleys have been produced.

† See U.S. Vehicle Note G.



52. M3A1, A2, A3: The M3 Bradley CFV feature the same upgrades and improvements as the M2 IFV variant.

† See U.S. Vehicle Note G.

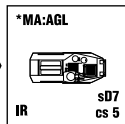


53. M7 Bradley FISTV: The Bradley FISTV is designed to replace existing forward observation vehicles in the U.S. Army inventory, and adds an inertial navigation system and a new targeting station control panel. A mission-processor unit automates



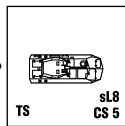
54. LVTP-5: The LVTP5 is a large vehicle with an inverted V-shaped bow that was built for a more efficient water operation and its date of acceptance was 1956. Since then many advances have been made in equipment technology and vehicle capabilities.

By 1957, 1,124 of these amphibians were built to replace World War II versions used by the Marine Corps. The Landing Vehicle, Tracked, Personnel, Model 5 (LVTP5) was designated LVTP5A1 when fitted with minor modifications including a box-type snorkel over the engine compartment. It was never considered a satisfactory design because of its short operating range and excessive maintenance. When a new vehicle by FMC called the LVTP7 entered service in 1971, the LVTP5 was phased out by 1974. Some were transferred to the Philippines and Taiwan, and recently bought by Chile.



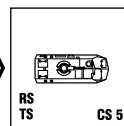
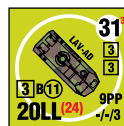
55. LVTP7A1: The LVTP7 was first introduced in 1972 as a replacement for the LVTP-5. In 1982, FMC was contracted to conduct the LVTP7 Service Life Extension Program, which converted the LVTP7 vehicles to the improved AAVP7A1 vehicle by adding an improved engine, transmission, and weapons system and improving the overall maintainability of the vehicle.

† The counter also represents the LVTP7 variant, which has no 40mm AGL. The LVTP7 is available from 1/72.

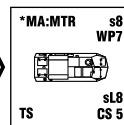


56. LAV-25: LAV-25 is an eight-wheeled armoured personnel carrier (APC) based on the Mowag Piranha family of armoured fighting

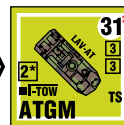
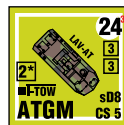
vehicles used by the United States Marine Corps. The LAV-25 is armed with the M242 25mm chain gun, and two M240 machine guns.



57. LAV-AD: LAV fitted with an electric turret mounting a 25 mm GAU-12 Equalizer gattling cannon, and two, four missile pods, which contain FIM-92 Stinger SAM (Surface-To-Air Missiles).

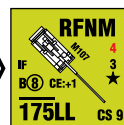
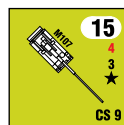


58. LAV-M: LAV fitted with opening doors on the top, inside it is fitted with an 81 mm M252 mortar, with 360° traverse.



59. LAV-AT: LAV fitted with an Emerson 901A1 TOW 2 ATGM (Anti-Tank Guided Missile) launcher (Same turret that was fitted on the M901 ITV).

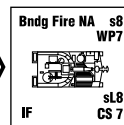
† See U.S. Vehicle Note E.



60. M107 175mm SPA: The M107 175mm self-propelled gun was part of a family of self-propelled artillery that also included the M110, both essentially the same vehicle with different barrels. The gun is mounted atop an open tracked body which makes it highly maneuverable due to its lighter weight but extremely vulnerable to attack due to the lack of armor.

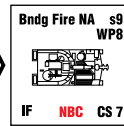
The M107's combat experience with the US military was almost entirely limited to the Vietnam War. There it proved its effectiveness by having one of the longest ranges of any fielded mobile artillery piece in the war, able to launch a 67 kg projectile nearly 30 km. This range advantage along with the ability to rapidly retreat from its last position made it an effective weapon for harassing the enemy and providing effective counter-battery fire. The M107 was also frequently used by Israel in the various Arab-Israeli conflicts. The M107 was retired from the US Army in the late 1970's but it continues to see use in many foreign armies around the world.

† See U.S. Vehicle Notes H and I.



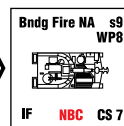
61. M109 155mm SPA: The M109 is an American-made self-propelled 155 mm howitzer, first introduced in the early 1960s. The M109 was the medium variant of a US Program to adopt a common chassis for its self-propelled artillery units. The light version, the M108 howitzer, was phased out during the Vietnam war, many of which were rebuilt as M109s.

† See U.S. Vehicle Note I.



62. M109A2 155mm SPA: The M109A2 incorporates many improvements. Most notably, the long barreled 155 mm M185 cannon in the M178 gun mount, ballistic protection for the panoramic telescope, counterbalanced travel lock, and the ability to mount the M140 alignment device.

† See U.S. Vehicle Note I.



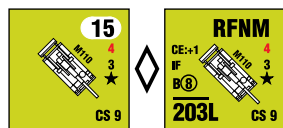
63. M109A6 Paladin: The M109A6 Paladin is the latest advancement in 155mm self-propelled artillery. The system enhances previous versions of the M109 by implementing onboard navigational and automatic fire control systems. Paladin has both a Kevlar-lined chassis and a pressurized crew compartment to guard against ballistic, nuclear, biological, and chemical threats.

† See U.S. Vehicle Note I.



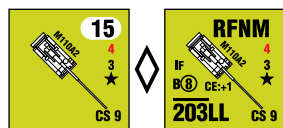
H^x: Modern ASL Vehicle & Ordnance Notes

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64. M110 8" SPA: The 8 inch (203 mm) Self-Propelled Howitzer M110 was the largest available self-propelled howitzer in the United States Army's inventory.

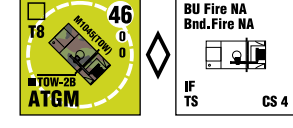
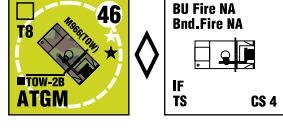
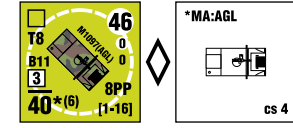
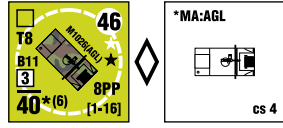
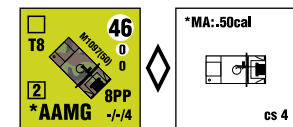
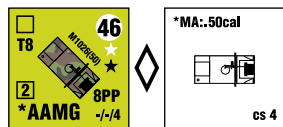
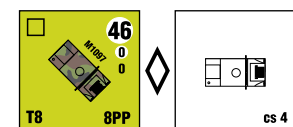
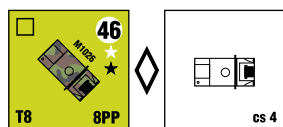
† See U.S. Vehicle Notes H and I.



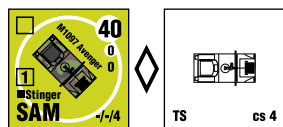
65. M110A2 8" SPA: The M110A2 is the latest version with double muzzle brake, the earlier A1 version had a plain muzzle. It first entered service with the US Army in 1963. It has been used in the Vietnam War by the

United States Army, and in Operation Desert Shield and Operation Desert Storm by the United States Army, and the British Army.

† See U.S. Vehicle Notes H and I.

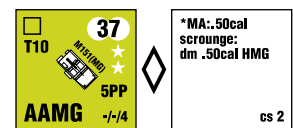
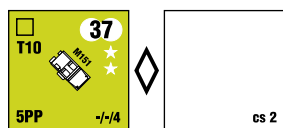


66. HMMWV: In the 1970s, the United States Army concluded that the militarized civilian trucks in use no longer satisfied their requirements. In June 1981, the Army awarded AM General a contract for development of several more prototype vehicles to be delivered to the U.S. government for another series of tests, and the company was later awarded the initial production contract for 55,000 HMMWVs to be delivered in 1985. HMMWVs first saw combat in Operation Just Cause, the US invasion of Panama in 1989. The HMMWV can be fitted with a variety of weapons: .50cal machinegun, M240 7.62mm machinegun, and the Mk19 AGL.



67. M1097 Avenger: The Avenger Air Defense System is a US military weapon system utilized by both the Army and the Marine Corps that provides mobile, short-range air defense protection for ground units against

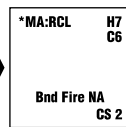
cruise missiles, unmanned aerial vehicles, low-flying fixed-wing aircraft, and helicopters. The Avenger system has been in use since 1989.



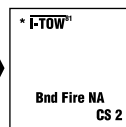
68. M151: The M151 Military Utility Truck

(MUTT) is a 1/4 ton utility truck developed by Ford Motor Company, a successor to the World War Two jeep and post-war M38/M38A1. It was first put into service in Vietnam and played an active part in American military operations until early 1990s. It is small enough to fit inside a C-130 cargo plane, and is narrow enough to traverse areas too tight for the HMMWV. The M151 was purchased by many other countries, including Canada, Denmark, Israel, and the United Kingdom.

† See U.S. Vehicle Note K.

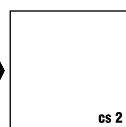
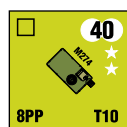


69. M151A1C: The M151A1C equipped with a 106mm recoilless rifle on an M79 rifle mount. Capable of carrying six rounds of ammunition and weapon tools. Including the driver, it provides space for two men



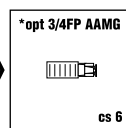
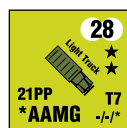
70. M151A1 (TOW): Some M151 are refitted to mount the TOW ATGM. The TOW guided missile system can be either tripod mounted or mounted on a pedestal in an M151A1 truck.

† The TOW may be removed by its crew.



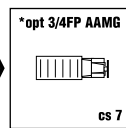
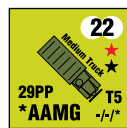
71. M274 Mechanical Mule: The M274, known as the Me-

chanical Mule, was developed in the 1950s as a light weight cargo carrier to replace both the 1/4-ton jeep and 3/4-ton trucks in infantry and airborne infantry battalions. The M274 family could be fitted for many infantry tasks including transport of personnel or cargo (slowly--keeping up with foot soldiers), for stringing wire with a cable reel, for carrying patients on stretchers, and as a weapons platform for a recoilless rifle or TOW anti-tank missile. Each wheel had shackles for lifting by helicopter or parachute airdrop. The seat and the foot basket can be detached and stored underneath the platform which can then be rigged as a steerable trailer. The steering column could be set in multiple positions so the driver could operate the vehicle from almost any position, including crouching down.



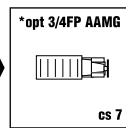
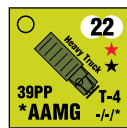
72. Light Truck: A

† See U.S. Vehicle Note K.



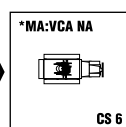
73. Medium Truck: A

† See U.S. Vehicle Note K.



74. Heavy Truck: A

† See U.S. Vehicle Note K.



75. M35 Guntrucks: A gun truck is an improvised military armoured vehicle, based on a conventional cargo truck that is able to carry a large weight of weapons and armour. They have poor off-road performance so

have mainly been used by regular armies to escort military road convoys in regions subject to ambush by Guerrilla forces. Some were equipped with the quad .50cal from the M16 halftrack, others carried twin AAMGs.

U.S. MULTI-APPLICABLE VEHICLE NOTES

A. The AFV may have an optional Spotlight. The Spotlight is only available by SSR.

B. The AFV has an AAMG installed in a small turret. The AAMG may be used by a BU crew, but with a +1 DRM on the (I)FT. This is indicated by a superscript T after the AAMG FP factor on the counter.



C. On a TH DR ≥ 10 when firing non-ATGM MA, place a “FC Damaged” marker on the vehicle. Any further TH DR suffer a +1 TH DRM. No ATGMs may be launched from this AFV with damaged FC.

D. The vehicle is equipped with a dozer blade. Due to the extra protection afforded by the dozer blade, a special +2 To Hit DRM applies to the calculation of a front-hull hit vs a tankdozer unless the firer is at least one full level higher than the target. This is signified by “+2 for HH” on the counter.

E. The ATGM launcher (or GLLD) has to be erected before missiles could be launched (or GLLD be used). Therefore, it has two different versions – one on each side of the counter. The “Moving” side has the higher MP allotment, but cannot fire at any target [EXC: AAMG]. The “Firing” side permits the MA to fire (or GLLD to be used) normally. Flipping the counter from one side to the other can be accomplished only during a fire phase in which the vehicle does not enter a new hex, and as if the vehicle were a Gun being unlimbered (C10.21-.22) [EXC: the crew remains inherent to do so]. While in “Firing” mode, the AAMG may not be used.

F. Due to a very thin underbelly armor made of aluminum instead of armor grade steel, all mine attacks vs. the M113/M114 family and M551 Sheridan receive a -2 DRM on their resolution DR.

G. The Bradley family of IFV/CFV is equipped with a dedicated 2-tube TOW launcher. They use the normal rules for Launcher launched ATGM (X?.) with the following exception. After the first ATGM is fired, mark the vehicle counter with a “1 ATGM Left” counter. The M2/M3 can fire another ATGM without reloading. After the second ATGM is fired, turn the counter over to its “Launcher Empty” side. In this state it can only be fired after being reloaded. All Reloading rules (X?.) apply normally.

H. Due to the M107/M110’s configuration most of the crew actually stood outside of and behind it while serving the gun. Therefore, one side of the counter shows the AFV “limbered” while the other side shows it “unlimbered”. To change modes the counter is flipped over during any friendly PFPh/DFPh, provided its inherent crew is not stunned, shocked, pinned, or broken, and neither the crew nor the MA has fired; both the crew and AFV then become TI. The MA may not fire while “limbered”. While the M107/M110 is “unlimbered” it may not expend MP, it is treated as an RFNM Gun (C10.25) for To Hit purposes, and its crew is always CE as per D6.84 (but with only a +1 CE DRM [0 DRM if attacked through its unarmored Target Facing; D5.311]) – as signified by “CE:+1” on the counter.

I. The vehicle may be setup Emplaced as a Gun [EXC: it never sets up HIP] whenever it is allowed to setup on the mapboard by the Scenario. As long as the vehicle doesn’t leave its hex, the B# is increased to B12. This represents an artillery position with additional ammunition to the internally carried rounds.

J. The blue-print CS# indicates improved ammunition storage and fire extinguishing systems. A vehicle with a blue-print CS# becomes a Burning Wreck only, if the TK DR $\leq 1/4$ (FRU) the printed CS#.

K. The AAMG is a .50-cal HMG if 4 FP, or a MMG if 3 FP - and may be Removed (D6.631) as such. If the MG is optional the RF is 1.3 if 4 FP or 1.1 if 3 FP.

L. The Mortars of the M113 series mortar carriers can be removed (D6.632). The mortar carriers have a 2-2-8 infantry crew.



U.S. ORDNANCE NOTES

1. Mk19 40mm AGL: The Mk 19 fires 40mm grenades at a rate of 300 to 400 rounds per minute, giving a practical rate of fire of 60 rpm (rapid) and 40 rpm (sustained). The Mk 19 is a man-portable crew-served weapon that can fire from a tripod mounted position or from a vehicle mount.

2. M19 60mm Mortar: The M19 was developed in 1942 as a replacement for the M2 Mortar. It was a very simple and light weapon but was too inaccurate without a mounting.

3. M224 60mm Mortar: The M224 replaces the older 60mm M2 and M19 Mortars. These weapons only had an effective range of 2000 m. While the M224 was designed to fire all types of the older ammunition, its primary rounds are of the newer, longer-range type.

4. M29 81mm Mortar: The M29 81mm mortar replaced the M1 in U.S. service in the late 1950s. The straight tube M-29 has a greater range and lighter weight, at 121.5 lb (55.1 kg), with its basic issue items. The M29 was used in Vietnam and, like the M1, can be broken down into smaller loads for carrying. The M29 was replaced in the Army and Marine Corps by the M29A1 81mm Mortar in 1970. The M29A1 is equivalent to the M29 in ASL terms.

5. M252 81mm Mortar: The M252 entered service with the US Army in 1987 and replaced the previous Marine Corps 81 mm mortar in 1986. The M252 is an adaptation of the standard British 81 mm mortar, the L16 81mm Mortar developed in the 1970s. It was adopted due to the extended range (from 4,500 meters to 5,650 meters) and lethality it provides in comparison to the previous 81 mm mortar (the M29A1).

6. M30 107mm Mortar: The M30 entered service with the US Army replacing the previous M2 107mm Mortar. It was adopted due to the extended range and lethality in comparison to the previous M2 107 mm mortar.

7. M120 120mm Mortar: The M120 120 mm mortar replaced the M30 107 mm (4.2 inch) mortar in United States Army motorized infantry units. Although heavy mortars require trucks or tracked mortar carriers to move them, they are still much lighter than field artillery pieces. They out-range light and medium mortars, and their explosive power is much greater. The M120 entered service with the United States Army in 1991.

8. M18A1 57mm Recoilless Rifle: see ASL Chapter H.
† See U.S. Ordnance Note A.

9. M20A1 75mm Recoilless Rifle: see ASL Chapter H.
† See U.S. Ordnance Notes A and B.

10. M67 90mm Recoilless Rifle: The M67 recoilless rifle was a lightweight, portable, crew-served 90mm weapon intended primarily as an anti-tank

weapon made in the United States by the department of the U.S. army. The M67 primarily saw action during the Vietnam War and was later replaced by the M47 Dragon anti-tank missile system.

† See U.S. Ordnance Notes A and B.

11. M40 106mm Recoilless Rifle: The M40 recoilless rifle was a lightweight, portable, crew-served 105 mm (N.B. The weapon is commonly described as being 106 mm, but it is in fact 105 mm; the 106 mm designation was designed to prevent confusion with the incompatible 105 mm ammunition from the failed M27) weapon intended primarily as an anti-tank weapon made in the United States. The M40 primarily saw action during the Vietnam War and was later replaced by the BGM-71 TOW anti-tank missile system. The M40 continues to be used by Egypt, Greece, Honduras, Israel, Mexico, Morocco, Taiwan and Turkey.

† See U.S. Ordnance Note B.

12. M20 Super Bazooka: After it proved inadequate against the Soviet T-34 tank during the latter war, it was replaced with the M20 Super Bazooka (3.5") model. The M20 was in turn supplanted by the M72 LAW in the opening stages of the Vietnam War. The M20 saw widespread use in the Korean War and in the Vietnam War.

13. M72 LAW: The M72 LAW (Light Anti-Tank Weapon, also referred to as the Light Anti-Armor Weapon or LAW) is a portable one-shot 66 mm anti-tank weapon, designed in United States. The LAW replaced the bazooka as the US Army's primary anti-tank weapon after the Korean War.

† See U.S. Ordnance Note C

14. M136: The M136 (or AT-4) is a portable one-shot anti-tank weapon built in Sweden.

† See U.S. Ordnance Note C

15. M47 Dragon: The M47 Dragon is an American shoulder-fired man-portable anti-tank missile system. It used a wire-guidance system in concert with a HEAT warhead and was capable of defeating armored vehicles, fortified bunkers, and other hard targets. While it was primarily created to defeat the Soviet Union's T-55, T-62 and T-72 tanks, it has since seen action up into the current era including the Gulf War. The US Armed Forces officially retired the weapon in the late 1992; however stocks of the weapon remain in arsenals. In use by the US Army, the USMC, as well as many foreign militaries the design was first fielded in 1975.

16. M47 Dragon 2: The Dragon was upgraded to the designation Dragon 2 in 1985 when its penetration effectiveness was increased.

17. M47 Super-Dragon: Reaching its current designation of Super-Dragon in 1990, it was capable of penetrating 18 inches (450 mm) of armor at a maximum effective range of 1,500 meters.

18. FIM-43 Redeye: The FIM-43 Redeye was a man-portable surface-to-air missile system. It used infrared homing to track its target. Production was terminated in September 1969 after about 85,000 rounds had been built - in anticipation of

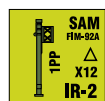


U.S. ORDNANCE LISTING

Name	Type	CSize	ROF (IFE)	B#	Range	M#	TSize	Dates	Special	Night	FC	BPV	Notes
Mk19 40mm	AGL	40*	3(6)	11	1-16	-	-	1/82+	5PP	-	-	20	1
M19 60mm	MTR	60*	3		2-50	-	-	1/46-12/86	5PP, WP7, IR	-	-	18	2
M224 60mm	MTR	60*	3		2-87	-	-	1/87+	5PP, WP8, IR	-	-	21	3
M29 81mm	MTR	81*	3		2-115	11	+1	1/66-12/94	s8, WP7, IR	-	-	29	4
M252 81mm	MTR	81*	3		2-145	11	+1	1/95+	s8, WP7, IR	-	-	29	5
M30 107mm	MTR	107*	2		8-100	10	+1	1/66-12/84	s8, IR	-	-	26	6, 16 Area FP
M120 120mm	MTR	120*	2		8-180	9	+1	1/94+	s8, IR	-	-	7	
M18A1 57mm	RCL	57*	1	11	1-11	-	-	1/46-12/60	3PP, H7, WP6, crewed	-	-	29	8, A
M20A1 75mm	RCL	75*	1		1-20	-	-	1/46-12/60	5PP, H7, C6 ^a , crewed	-	-	36	9, A, B
M2 Carl Gustav	RCL	84*	1		1-28 [HEAT: 1-13]	-	-	1/90-12/99	2PP, H8, s8	-	-	40	10
M3 Carl Gustav	RCL	84*	1		1-28 [HEAT: 1-13]	-	-	1/96+	2PP, H8, s8	-	-	42	11
M67 90mm	RCL	90*	1		1-10	-	-	1/61-12/99	5PP, H8, C6 ^a , crewed	-	-	-	12, A, B
M27 105mm	RCL	105*	2		25	9	0	12/50-12/54	T, H9	-	-	?	13
M40 106mm	RCL	106*	2		34	8	0	1/53-12/72	T, H9, s7, WP6, C7 ^b	-	-	?	14; M40A1: 1/63-12/72, B
M20 Super Bazooka	BAZ50	12-8		X11	8	-	-	1/51-12/67	1PP	-	-	-	15
M72 LAW	LATW	8-8		X11	8	-	-	1/65-12/89	1PP*	-	-	-	16, *any number for 1PP
M136A	LATW	12-8		X11	8	-	-	1/90+	1PP	-	-	-	17
M47 Dragon	ATGM	M47		X12	2-25	-	-	1/70-12/85	2PP	IR	-	-	18
M47 Dragon II	ATGM	M47-II		X12	2-25	-	-	1/86-12/90	2PP	TS	-	-	19
M47 Super Dragon	ATGM	M47-S		X12	2-35	-	-	1/91-12/99	2PP	TS	-	-	20
M220 TOW	ATGM	TOW			3-75	9	+1	1/70-12/81	T	TS	-	?	21
M220 I-TOW	ATGM	I-TOW			3-94	9	+1	1/82-12/89	T	TS	-	?	21
M220 TOW-2	ATGM	TOW-2			3-94	9	+1	1/90+	T	TS	-	?	21, Tandem
M220 TOW-2B	ATGM	TOW-2B			3-94	9	+1	1/96+	T	TS	-	?	21, Tandem, Top-Attack
FIM-43 Redeye	SAM	IR-1		X11	13-138	-	-	1/67+	1PP, crewed	-	-	25	22, A
FIM-92 Stinger	SAM	IR-2		X11	5-120	-	-	1/82+	1PP, crewed	-	-	32	23, A
M101A1	ART	105*	1		275	7	0	1/46-12/72	NT, s7, WP8, C6 ^b	-	-	35	24, B
M102	ART	105*	1		288	8	0	1/64+	ST, s7, WP8, C6 ^b	-	-	39	25, B
M119	ART	105*	1		350	8	0	1/75+	NT, s7, WP8	-	-	37	26
M114	ART	155*			365	6	0	1/46-12/84	NT, s8, WP7	-	-	41	27
M198	ART	155			560	6	0	4/94+	NT, s8, WP7	-	-	42	28
M167 VADS	AA	20LL	3(24)	11	50	8	0	1/69+	T	IR ⁸⁰	-	55	29, RS
M167A2 PIVADS	AA	20LL	3(24)	11	75	8	0	1/00+	T	TS	-1	58	30, RS

the Redeye II, that would later become the FIM92 Stinger. The Redeye was withdrawn gradually between 1982 and 1995 as the Stinger was deployed. The Redeye found its way into Afghan hands during the Soviet invasion of Afghanistan in 1984, where it shot down a number of aircraft including several SU-25 jets as well as Mi-24 and Mi8 helicopters. By November 1985 it had largely been replaced by the dramatically more successful FIM-92 Stinger missiles.

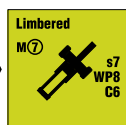
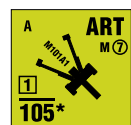
† See U.S. Ordnance Note A.



19. FIM-92 Stinger: The FIM-92 Stinger is a man portable infra-red homing surface-to-air missile developed in the United States and used by all the US armed services, with whom it entered service in 1981. The basic Stinger missile has to

date been responsible for 270 confirmed kills of aircraft. It is used by the military of the United States and by 29 other countries. Around 70,000 missiles have been produced.

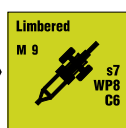
† See U.S. Ordnance Note A.



20. M101A1 105mm Howitzer: The 105 mm Howitzer M2A1 (M101) was the standard medium field howitzer for the U.S. in World War II, seeing action in both European and Pacific theatres. After minor changes in

the post war era, the howitzer became known as the M101A1. It continued to see service in the Korean War and the Vietnam War. Today the M101A1 has been retired by the U.S. military, though it continues to see service with many other countries.

† See U.S. Ordnance Note B.

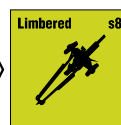


21. M102 105mm Howitzer: First introduced during the Vietnam War, the M102 was the light-towed 105 mm howitzer used by the United States Army in Operations Desert Shield and Desert Storm. It fires a variety of conventional munitions and traverses rapidly through 360 degrees.

M102s can be dropped by parachute or transported by utility helicopters for normal movement or air assault operations. The M102 is no longer in use by

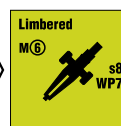
the United States Army, having been replaced by the M119. It is, however, still in use by the National Guard.

† See U.S. Ordnance Note B.



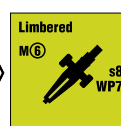
22. M119 105mm Howitzer: The howitzer was designed and produced by British Royal Ordnance as the L118/L119 Light Gun. In the L118 configuration, the 105 mm projectile and the propelling charge are loaded

separately. The L118 entered service with the British army in 1975 and is used by the Parachute and Commando Field Artillery Regiments. In 1987 an agreement was reached to produce the L119 under license as the M119, to replace the M102 howitzer. It entered service with 7th Infantry Division in December 1989. Some improvements were made to produce the M119A1, including increasing its extreme low temperature envelope from -30 C to -45C, adding a US digital fire control system, and improving maintainability. It will reach the end of its service life around 2008. It is currently fielded with all Regular Army light divisions, including the 10th Mountain, 25th Infantry, 82nd Airborne, and 101st Airborne Divisions, as well as certain National Guard field artillery battalions. It is routinely airdropped in airborne operations and slungload under Chinook or Blackhawk helicopters in air assault operations.



23. M114 155mm Howitzer: The M114 155 mm howitzer was a towed howitzer used by the United States Army. It was first produced in 1942 as a medium artillery piece. It saw service with the US Army during World War

II, the Korean War, and the Vietnam War, before being replaced by the M198 Howitzer. The gun was used by the armed forces of many nations, including Argentina, Austria, Brazil, Canada, Chile, Denmark, Greece, Iran, Iraq, Israel, Jordan, South Korea, Lebanon, Libya, Norway, Saudi Arabia, Taiwan, Venezuela, Vietnam and Yugoslavia. 116 surplus howitzers were sent to Bosnia in 1997. In some of those countries the M114 still remains in service.



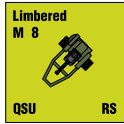
24. M198 155mm Howitzer: The M198 howitzer is a medium-sized, towed artillery piece. It can be dropped by parachute or



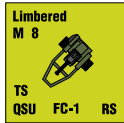
H^X: Modern ASL Vehicle & Ordnance Notes

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transported by a CH-47 Chinook. The M198 is deployed in separate corps- and Army-level field artillery units, as well as in artillery battalions of light and airborne divisions. It also provides field artillery fire support for all USMC Air-Ground Task Force organizations.



25. M167 VADS: The M167 VADS Vulcan Air Defense System, which has been withdrawn from service, was a towed short-range air defense gun intended to protect forward area combat elements and rear area critical assets. It also protected against lightly armored ground targets.



26. M167A2 PIVADS: The M167A2 PIVADS was a modified M167A1 VADS with an improved fire control subsystem.



27. M220 TOW: The TOW was first produced in 1970 and is the most widely used anti-tank missile in the world. Current production TOWs can penetrate all currently known tank armor. The M220 launcher is used by infantry, but can also be mounted on a number of vehicles, including the M151 jeep, the M113 APC, and the M966 HMMWV. This launcher is technically man-portable, but is quite bulky. This launcher has been upgraded to include a thermal optic to allow night time usage, and has been simplified to reduce weight.



U.S. MULTI-APPLICABLE ORDNANCE NOTES

A. This weapon requires a crew (C12.2) or two SMC (C12.21) in order to be used without penalty – as signified by “crew” on the counter. See A15.23 for hero usage. The BPV of this weapon includes a crew as per H1.3.

B. The Canister Depletion number of this weapon is only valid during the Vietnam War (1962-1975). After 12/75, Canister is only available by SSR.

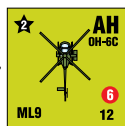
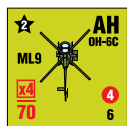
C. Due to their light weight, any number of M72/M136 may be carried for 1PP.



U.S. AIRCRAFT LISTING

Name	Type	Bomb	Rocket	ATGM	Def	MG	MG ROF	MG TK#	PP/EPP	CS	Dates	BPV	Notes
OH-6C Cayuse	AH												1
AH-6J Little Bird	AH												2
UH-1B	AH												3
AH-1G Cobra	AH												4
AH-1W Supercobra	AH												5
AH-64A Apache	AH												6
UH-1B	UH												7
UH-1D	UH												8
UH-1H	UH												9
CH-21B Shawnee	UH												10
CH-46 Seaknight	UH												11
CH-47A Chinook	UH												12
CH-47D Chinook	UH												13
CH-53A Stallion	UH												14
UH-60 Blackhawk	UH												15
A-1E Skyraider	FB												16
A-10 Warthog	FB ¹												17
A-7 Corsair II	FB ¹												18
A-4 Skyhawk II	FB ¹												19
A-6A Intruder	FB ¹												20
F-117A	FB ¹												21
F-100 Super Sabre	FB ¹												22
F-105 Thunderchief	FB ¹												23
F-4 Phantom II	FB ¹												24
F-15E Strike Eagle	FB ¹												25
F-16 Fighting Falcon	FB ¹												26

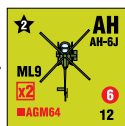
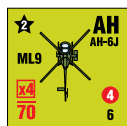
U.S. AIRCRAFT NOTES



1. OH-6C Cayuse: The Boeing OH-6C, was designed for use as a military scout during the Vietnam war to meet the U.S. Army's need for an extremely maneuverable light observation helicopter. The OH-6C could

be armed with the M27 armament subsystem, the M134 six-barrel 7.62mm "minigun" or the M129 40mm grenade launcher on the XM8 armament subsystem.

† See U.S. Aircraft Notes A and B.



2. AH-6J Little Bird: The latest versions of these aircraft, the AH-6J attack helicopter, feature a more powerful engine and improved avionics, including an embedded GPS/inertial navigation system and forward-

looking infrared. The AH-6J can be armed with two seven-tube 2.75 inch rocket launchers and two 7.62mm M134 "miniguns". The "Little Bird" can also be armed with .50 Cal. machine guns, MK19 40mm grenade machine gun, Hellfire missiles, and Air-to-Air Stinger (ATAS) missiles.

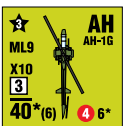
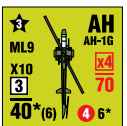
† See U.S. Aircraft Notes A and B.



3. UH-1B: During service in Vietnam, the UH-1 was used for various purposes and various terms for each task abounded. UH-1s tasked with a ground attack or armed escort role were outfitted with rocket launchers,

grenade launchers, and/or machine guns.

† See U.S. Aircraft Notes A and B.



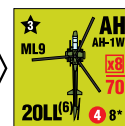
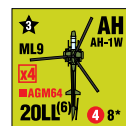
4. AH-1G Cobra: The Cobra was first employed to Vietnam with the 1st Cavalry Division (Airmobile) in August 1967. The Cobra's primary mission was to give fire support to troop carrying Hueys. Its trial-by-

fire introduction to service as the AH-1G in Vietnam immediately provided ground commanders with air superiority without the wait of calling in the Air Force.

The AH-1G Cobra, was armed with 2.75 inch (70mm) Folding Fin Aerial Rockets (FFARs) in M158 seven-tube or M200 19-tube rocket launchers, used so effectively at An Loc in 1972. The Cobra had a chin-turret on the

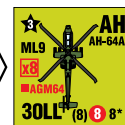
M28/M28A1 armament subsystem. The chin-turret mounted the M134 7.62mm minigun and the M129 40mm grenade launcher. The AH-1G could also be armed with the M134 minigun in fixed side-mounting M18/M18A1 gun pod, and the port (left) side mounting M195 20mm automatic gun on the M35 armament subsystem. The AH-1G could also mount the XM118 smoke grenade dispenser.

† See U.S. Aircraft Notes A.

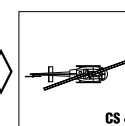


5. AH-1W Supercobra: The Super Cobra is armed with a 20mm turret gun, TOW, Hellfire, Sidewinder, Sidearm missiles, and 5 inch or 2.75 inch rockets. The Hellfire Missile System increased ordnance delivery and firepower capabilities. The AH-1W Super Cobra provides full night-fighting capability with the Night Targeting System.

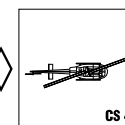
† See U.S. Aircraft Notes A.



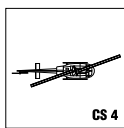
6. AH-64A Apache: The United States Army issued a request for proposals in 1972 for an Advanced Attack Helicopter. In 1983 the first production helicopter was rolled out at Hughes Helicopter's facility at Mesa, Arizona. The Apache was first used in combat during the 1989 invasion of Panama, Operation Just Cause. It is armed with a 30mm cannon and could carry a variety of missile armaments, Hellfire, Stinger, or 2.75" Rocket Pods.



7. UH-1B: The most widely used military helicopter, the Bell UH-1 series Iroquois, better known as the "Huey", began arriving in Vietnam in 1963. Before the end of the conflict, more than 5,000 of these versatile aircraft were introduced into Southeast Asia. "Hueys" were used for MedEvac, command and control, and air assault; to transport personnel and materiel; and as gun ships. Considered to be the most widely used helicopter in the world, with more than 9,000 produced from the 1950s to the present, the Huey is flown today by about 40 countries.



8. UH-1D: The UH-1D had a longer fuselage than previous models, increased rotor diameter, increased range, and a more powerful engine. The UH-1D, redesigned to carry up to 12 troops, with a crew of two, reached Vietnam in 1963.

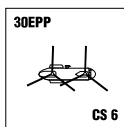


9. UH-1H: The UH-1H (1967-1986) was identical to the UH-1D but was equipped with an upgraded engine that allowed transport of up to 13 troops.



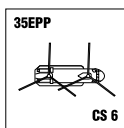
10. CH-21B Shawnee: The CH-21B assault helicopter could carry 22 fully-equipped troops, or 12 stretchers, plus space for two medical attendants, in the MedEvac role. The CH-21B was first deployed to Vietnam in

December 1961 with the Army's 8th and 57th Transportation Companies, in support of ARVN troops. The CH-21B Shawnee could be armed with 7.62 mm or 12.7 mm door guns.



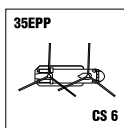
11. CH-46 Seaknight: The CH-46 Sea Knight was first procured in 1964 to meet the medium-lift requirements of the Marine Corps in Viet Nam with a program buy of 600 aircraft. Production continued in subsequent

years, along with modifications to improve some of the H-46's characteristics. With service in Southeast Asia came installation of guns and armor.



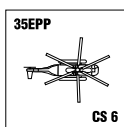
12. CH-47A Chinook: The CH-47 is a twin-engine, tandem rotor helicopter designed for transportation of cargo, troops, and weapons during day, night, visual, and instrument conditions. The CH-47A, first delivered for

use in Vietnam in 1962, is a tandem-rotor medium transport helicopter. The Chinook's primary mission is moving artillery, ammunition, personnel, and supplies on the battlefield.



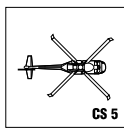
13. CH-47D Chinook: The CH-47D was the result of June 1976 contract for a modernized Chinook. The CH-47D carries twice the load of a CH-47A and has improved performance. During Desert Storm "the CH-47D was often

the only mode of transportation to shift large numbers of personnel, equipment, and supplies rapidly over the vast area in which US forces operated.



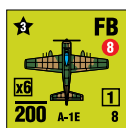
14. CH-53A Stallion: The CH-53 Sea Stallion is the most common name for the Sikorsky S-65 family of heavy transport helicopters. Originally developed for use by the United States Marine Corps, it is also in service

with Israel and Germany, and as the MH-53 Pave Low with the United States Air Force. The CH-53 has significant combat experience during its lengthy service, with both the U.S. military during the Vietnam War and as a Special Operations helicopter, and the Israeli Air Force.



15. UH-60 Black Hawk: The Black Hawk was developed to meet a US Army requirement for a UH-1 Iroquois replacement in 1972. The Black Hawk was selected for production and the UH-60A entered service with

the US Army in 1979.



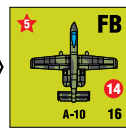
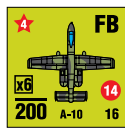
16. A-1 Skyraider: The Skyraider was originally designed in the 1940s by Ed Heinemann of the Douglas Aircraft Company, as a simpler alternative to the XBTD-1. At the time of the first prototype's flight on 18

March 1945, it was the largest production single-seater aircraft. Its distinctive feature was the presence of seven hardpoints on each wing, enabling it to carry a tremendous amount of ordnance for its size. Although the Sky-

raider entered production too late for active service in World War II, it turned out to be of great value in both the Korean and Vietnam Wars, as its weapon load and 10-hour flying time far surpassed the jets that were available at the time.

Production ended in 1957 with a total of 3,180 built. However, in 1962 the existing Skyraiders were redesignated A-1D through A-1J and later used by both the USAF and the Navy in the Vietnam War.

† See U.S. Aircraft Notes C.



17. A-10 Warthog: The Fairchild-Republic A-10 Thunderbolt II is a single-seat, twin-engine jet aircraft designed to provide close air support of ground forces by attacking tanks, armored vehicles, and other ground targets.

Although the A-10 can carry a considerable weight of disposable stores, its primary built-in weapon is the 30 mm Gatling gun. One of the most powerful aircraft cannon ever flown, it fires large depleted uranium armor-piercing shells at a rate of about 3,900 rounds per minute (50 rounds per second during the first second followed by 70 rounds per second).

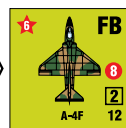
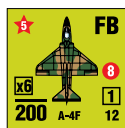
† See U.S. Aircraft Notes D.



18. A-7 Corsair II: In 1962, United States Navy began preliminary work on a replacement for the A-4 Skyhawk with greater range and payload. In 1965 the aircraft received the popular name Corsair II, after Vought's highly

successful F4U Corsair of World War Two. The first Navy A-7 squadrons reached operation status on 1 February 1967, and began combat operations over Vietnam in December of that year.

† See U.S. Aircraft Notes C.



19. A-4 Skyhawk II: The A-4 Skyhawk is an attack aircraft originally designed to operate from United States Navy aircraft carriers. Fifty years after the type's first flight, some

of the nearly 3,000 Skyhawks produced remain in service with smaller air arms around the world, including active duty on a carrier. Skyhawks were the Navy's primary light bomber over both North Vietnam during the early years of the Vietnam War while the USAF was flying the supersonic F-105 Thunderchief. They would be supplanted by the A-7 Corsair II in the Navy light bomber role.

† See U.S. Aircraft Notes C.



20. A-6A Intruder: The A-6 Intruder is a twin-engine, mid-wing attack aircraft built by Grumman Aerospace. In service between 1963 and 1997, the Intruder was designed as a replacement for the piston-engined A-1

Skyraider.

† See U.S. Aircraft Notes C.



21. F-117A Nighthawk: The Lockheed F-117A Nighthawk, nicknamed "The Black Jet", is the world's first operational aircraft completely designed around stealth technology. Flown only by the United States Air

Force, it is a direct descendant of the Have Blue stealth prototype program. The F-117A's split internal bay can carry 5,000 lb (2,300 kg) of ordnance.

† See U.S. Aircraft Notes C.



22. F-100 Super Sabre: The F-100A officially entered USAF service on 1954-09-27 with 479th Fighter Wing at George AFB. The F-100Ds arrived in Southeast Asia in



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1962 but did not begin flying combat missions over Vietnam until 1965. The aircraft was used for ground attack within South Vietnam. The F-100 was progressively replaced in Vietnam by the F-4 Phantom II and the F-105 Thunderchief.

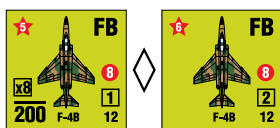
† See U.S. Aircraft Notes C.



23. F-105 Thunderchief: The Republic F-105 Thunderchief, commonly known as the “Thud” by its crews, was a single-seat supersonic fighter-bomber used by the United States Air Force. The largest single-engined

fighter ever employed by the service, it saw extensive use during the Vietnam War. Although it weighed 50,000 pounds (22,680 kg), the F-105 could exceed the speed of sound at sea level and Mach 2 at high altitude, and could carry up to 14,000 pounds (6,700 kg) of bombs and missiles in addition to an internal 20 mm M61 Vulcan cannon. The Thunderchief was retired in 1984, with a total of 833 aircraft built.

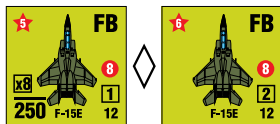
† See U.S. Aircraft Notes C.



24. F-4 Phantom II: Entering service in 1960, the F-4 was designed as the first modern fleet defense fighter for the U.S. Navy. By 1963, it had been adopted by the U.S. Air Force for the fighter-bomber role. When

production ended in 1981, 5,195 Phantom IIs had been built, making it the most numerous American supersonic military aircraft. Until the advent of the F-15 Eagle, the F-4 also held a record for the longest continuous production with a run of 24 years. The F-4 could carry up to 18,650 pounds (8,480 kg) of weapons on nine external hardpoints, including air-to-air and air-to-ground missiles, and unguided, guided, and nuclear bombs. Created when air-to-air missiles were expected to eliminate the need for close air combat, the Phantom received an internal cannon only in the definitive F-4E variant. The Marines received their first F-4Bs in June 1962.

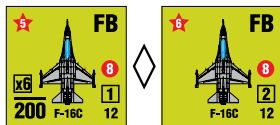
† See U.S. Aircraft Notes C.



25. F-15E Strike Eagle: The F-15E Strike Eagle is a modern United States all-weather strike fighter, designed for long-range interdiction of enemy ground targets deep behind enemy lines. A derivative of the F-15 Eagle

air superiority fighter, the Strike Eagle proved its worth in Desert Storm, carrying out deep strikes against high-value targets and providing close air support for Coalition troops.

† See U.S. Aircraft Notes C.



26. F-16 Fighting Falcon: The F-16 Fighting Falcon is a multi-role jet fighter aircraft developed by General Dynamics in the United States. Designed as a lightweight fighter, it evolved into a successful multi-role air-

craft. The F-16 is the largest and probably most significant current Western fighter program, with over 4,000 aircraft built since production started in 1976. Though no longer produced for the United States Air Force, it is still produced for export.

† See U.S. Aircraft Notes C.

U.S. MULTI-APPLICABLE AIRCRAFT NOTES

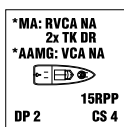
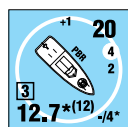
A. The Aircraft has a MG TK# of 4.

B. The Aircraft has a MG TK# of 6.

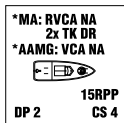
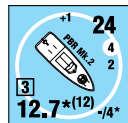
C. The Aircraft has a MG TK# of 8.



U.S. LANDING CRAFT/RIVERINE NOTES



ed .50-caliber machine guns forward, M-60 machine guns (or a grenade launcher) port and starboard amidships, and a .50-caliber aft. The initial version of the boat, the Mark I, performed well in river patrol operations but was plagued with continual fouling of its water-jet engines by weeds and other detritus. In addition, when Vietnamese sampans came alongside for inspection they often damaged the fragile fiberglass hull of the PBRs.



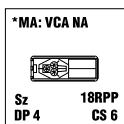
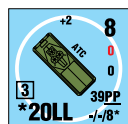
wales.



movement of 9th Army troops

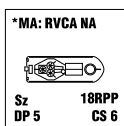


the rear position in the column (generally considered the worst place to be). They were converted LCMs with 1/4" armor plate added.

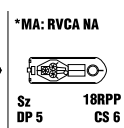


part of the war this was principally troops of the 9th Infantry Division. Later Vietnamese Army and Marine troops took the fight to the enemy aboard the Tango boats. Those Tangos with added helicopter decks, ATC(H), also provided a means of landing helicopters for swift evacuation of the wounded. All Tango boats have the distinctive bow ramp.

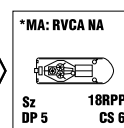
† See U.S. LC/RC Note A



6. Monitor (40): The Monitor was the battleship of the Riverine fleet. It was equipped with 50cal MG, 40mm and 20mm gun mounts, two 40mm grenade launchers, and an 81mm mortar.



7. Monitor(105): Around 1969, the monitors started sporting a 105 howitzer mount used in tanks. This gun made a huge explosion and got Charlie's attention in a big way.



8. Monitor "Zippo": The flame throwing converted monitor with bow mounted flame-throwers and napalm tanks provided a means of clearing the dense growth near river banks where Charlie was prone to ambush the boats

or support ships.



ployed to the Danang area as Coastal Division 17. Although able to move with great speed over shallow, marshy areas, such as in the Plain of Reeds, the PACVs proved to be too noisy and too mechanically sophisticated for Riverine war in South Vietnam. After the Tet emergency, the craft were shipped back to the United States for reevaluation.



cargo and personnel of the assault elements of the Marine Air-Ground Task Force from ship to shore and across the beach. LCAC first deployed in 1987 aboard USS Germantown (LSD 42). LCAC are transported in and operate from all amphibious well deck ships including LHA, LHD, LSD and LPD. The craft operates with a crew of five.

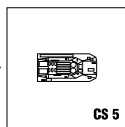
U.S. MULTI-APPLICABLE LC/RC NOTES

U.S. RIVERINE LISTING

Name	BPV	Dates	Size	AF	TA	OT	DP	CS	MP	Bog	GT	MA	ROF (IFE)	B#	CMG	AAMG	SA	PP/RPP	Notes
PBR Mk.I		3/66-12/72	+1	4/2		•	2	4	20	+1		T12.7	3(12)			4		15RPP	1
PBR Mk.II		12/66-12/72	+1	4/2		•	2	4	24	+1		T12.7	3(12)			4		15RPP	2
PCF "Swift"																			3
ASPB "Alpha"	29		-2			•	5	6	4	+3		AAMG	2			12		69PP	4
ATC "Tango"			-1	0/0			4	6	8	+2		T20LL	3		8			39PP, 18RPP	5
Monitor (40)		1/60-12/72	-1	3/2			5	6	8	+3		T40LL	2		8		T20LL	18RPP	6
Monitor (105)		1/69-12/72	-1	3/2			5	6	8	+3		T105*	1		8		T107*, T20LL	18RPP	7
Monitor "Zippo"		1/69-12/72	-1	3/2			5	6	8	+3		BF36	2*		8		T107*, T20LL	18RPP	8
PACV		3/66-12/72								0									9
LCAC		1/87+	-2			•													10

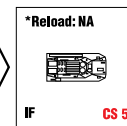
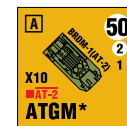
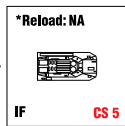


RUSSIAN VEHICLE NOTES



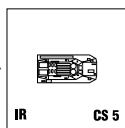
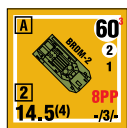
1. BRDM-1: The BRDM-1 was an armored scout car used by Russia and the former Soviet Union. The BRDM (also known as the BTR-40P) first appeared in 1959, and was in production until 1966. Total production was

around 10,000 vehicles, less than 600 remain in the reserves of a number of countries.



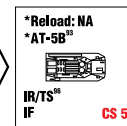
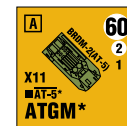
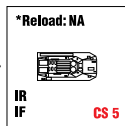
2. BRDM-1 (AT1) & BRDM-1 (AT2): To be done...

† See Russian Vehicle Note A.



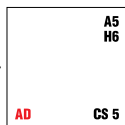
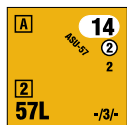
3. BRDM-2: In an attempt to improve the amphibious characteristics and increase the combat power of their wheeled reconnaissance vehicles, the Soviets produced the

BRDM-2. This vehicle differs from the original BRDM in that the powerplant has improved and moved to the rear of the vehicle, and that a small 14.5mm machinegun-armed turret has been fitted. This turret is identical to that found on the BTR-60PB armored personnel carrier. The original BRDM (BTR-40P) first appeared in 1959. It was first seen in 1966 and by the mid-1980s was rapidly replacing the BRDM in the Soviet and Warsaw Pact armies.

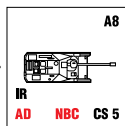


4. BRDM-2 (AT3/AT5): The BRDM-2(AT) is used for the AT-3 and AT-5/SPANDREL. The ATGM launcher replaces the turret. This model is found in regimental and divisional antitank units of motorized rifle divisions and in the antitank regiment or brigade in the artillery division of a front.

† See Russian Vehicle Note A.



6. ASU-57: To be done...



7. ASU-85: To be done...



14. GAZ-B11: To be done...



15. UAZ-69 (AT): The UAZ-69 launch vehicle has a very distinctive appearance since the quadruple launcher with the missiles is rotated to the vertical position

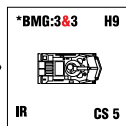
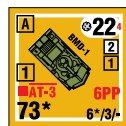
during travel. Both the missiles and launcher are covered with a canvas top which give the vehicle the appearance of a baby carriage. For firing the canvas ton is towered to the rear and the launcher is rotated downward to the rear of the vehicle. Since the UAZ-69 is a small vehicle no reserve rounds are carried. The two-man crew of the launcher is located in the forward compartment of the vehicle where the on-board fire control equipment is located. Off-vehicle remote control is also provided for.



15. BTR-50 (106): To be done...

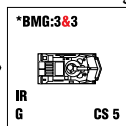


16. BTR-50 (73): To be done...

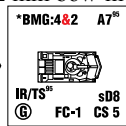
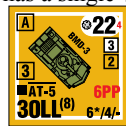


17. BMD-1: The BMD airborne amphibious infantry combat vehicle (AAICV) superficially resembles the BMP, although it is considerably smaller. The BMD-1 can be air dropped by parachute, and features a suspension that "squats" to fit into aircraft. The BMD was first seen in the Dvina exercise in the USSR in 1970 and was not seen again until the November 1973 Moscow Red Square parade. Since then, the BMD has replaced the airborne assault gun ASU-57 in the Soviet airborne forces, substantially increasing the firepower and maneuverability of the airborne division. The basic BMD was initially introduced around 1970. Between then and about 1973, it underwent a variety of minor product-improvement modifications. The final design, designated BMD-1, is most readily identified by a dome-shaped NBC filter intake on the right-center hull roof.

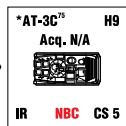
† See Russian Vehicle Note B.



18. BMD-2: The BMD-2 is a variant of the BMD-1 with a new one-man turret with the gunner seated on the left and a single piece circular front-opening hatch cover. Armament consists of a 30 mm 2A42 stabilized cannon, used for ground engagements and in the anti-aircraft/anti-helicopter role, and a 7.62 mm PKT machine gun mounted coaxial to the right. A launcher for an AT-4 Spigot or the longer-range AT-5 Spandrel ATGM mounted on the right side of the turret roof. The BMD-2 has a single 7.62 mm bow-mounted machine gun on the right side, with the machine gun port in the left side of the BMD-1 being eliminated.



19. BMD-3: The BMD-3, which rectifies many of the faults of the BMD-1 and BMD-2 AIFVs, is more rugged (and heavier) than previous BMDs and can be airdropped with its crew in the vehicle. The IL-76M can carry 3 BMD-3s ready for airdrop. All BMDs have an adjustable suspension to raise or lower the vehicle's height and cushion it better for airdrop. The BMD-3 features an entirely new chassis fitted with the two-man turret of the BMP-2 infantry fighting vehicle. While retaining the boat-shaped hull of the earlier vehicles, the BMD-3 has improved amphibious capability and a significant increase in firepower. And unlike its predecessors, the BMD-3 can be airdropped with its complement of seven men inside the vehicle, enhancing the element of surprise associated with airborne operations. Previously the crew of other vehicles would be dropped separately, requiring additional time to marry up with their fighting vehicle. The all-welded construction of the BMD-3 provides the crew with protection from small arms fire and shell splinters.



21. BMP-1: The Bronevaya Maschina Piekhota (BMP-1) was first built in the early



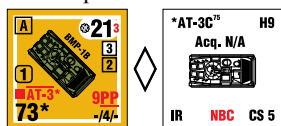
H^x: Modern ASL Vehicle & Ordnance Notes

Version 1.0 (February 2007)

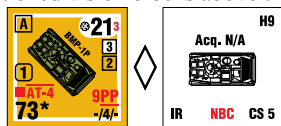
[illegible]



1960s and seen in public in November 1967 at a Red Square parade. It was called the M-1967 and BMP by NATO before its correct designation was known. The BMP represented an important shift from the concept of an armored personnel carrier to an armored infantry combat vehicle, combining high mobility, effective anti-tank weapons, and armored protection for carrying troops. The BMP is significantly smaller than Western APCs and has considerably greater firepower. The BMP-1 was innovative in that it allowed the infantry being carried to fire their personal weapons from within the vehicle whilst remaining protected by armour. To do this firing ports and vision devices were provided for each infantry soldier. Thus the BMP became the first Infantry Combat Vehicle. The BMP replaced the BTR-50P and complements the BTR-60PB in first-line motorized rifle units.



bow and the extension of the deflector shroud to the rear, were designed to improved the vehicle's swimming capability which was inhibited by the forward placement of the engine. Other changes include an enlarged and squared firing port for the PKM machine gun below the turret and repositioned vision blocks above the crew compartment.

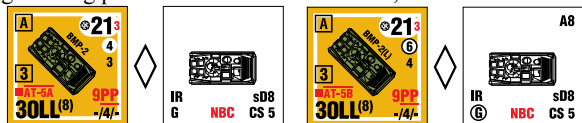


22. BMP-1B: The most common variant of the infantry combat vehicle is the BMP-1 which appeared in 1970. Its most noticeable modifications, the lengthening of the

† See Russian Vehicle Note B.

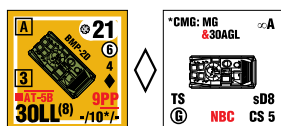
23. BMP-1P: BMP-1 with the replacement of the AT-3 SAGGER launch rail by a pintel-mounted AT-4 SPIGOT ATGM launcher.

This variant has a two-man turret mounting a 30-mm automatic cannon. An AT-4/SPIGOT or AT-5/SPANDREL tube-launched ATGM is mounted atop the turret (rather than above the gun tube as with the AT-3/SAGGER launch rail on the BMP-1). Compared to the BMP-1, there is one less firing port on each side of the rear fighting compartment, as well as an additional machine gun firing port on the left side of the hull, forward of the turret.



† See Russian Vehicle Note B.

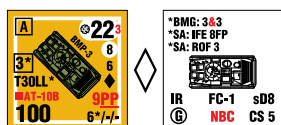
24. BMP-2 & BMP-2(L): The BMP-2 [BMP = Boyevaya Mashina Pyekhota - Infantry Fighting Vehicle] infantry combat vehicle, fielded in the early 1980's [initially designated BMP 1981], is an improved version of the BMP-1 incorporating major armament changes. The new two-man turret



mounts a 30-mm automatic gun with a long thin tube and double-baffle muzzle brake that can be used against aircraft and helicopters. The ATGM launcher on top of the turret can employ either AT-4 SPIGOT or AT-5 SPANDREL missiles, though the AT-5 Spandrel canister is normally mounted.

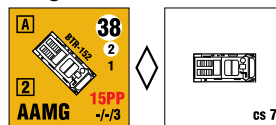


25. BMP-2D: Variant with add-on plate armor, but which cannot swim.

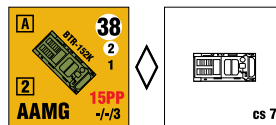


26. BMP-2K: Command variant with additional radio

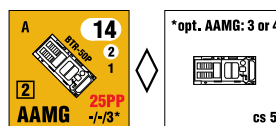
27. BMP-3: The BMP-3 [BMP = Boyevaya Mashina Pyekhota - Infantry Fighting Vehicle], which represents a totally different design concept from BMP-1/2, is a light tank that can hold a squad of infantry. It has a 100mm main gun that fires HE to demolish buildings, can fire long-range ATGMs through its barrel, and a 30mm autocannon and a medium machine gun as a single unit in the turret. The innovative BMP-3 armament suite has been subjected to criticism in the Russian military, which has focused on deficiencies in the barrel-fired ATGM. The BMP-3, first seen in public during a parade in Moscow in 1990, was built by Kurganmashzavod, developer and manufacturer of the BMP-2 infantry combat vehicle.



28. BTR-152: The first version of the BTR-152 wheeled armored personnel carrier was produced in 1950. Production ended in early 1960s, and in Russia the vehicle was replaced by the BTR-60P series. While long withdrawn from Russian service, this vehicle remains operational in a number of other countries.



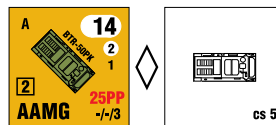
29. BTR-152K: with full overhead armour for troop protection.



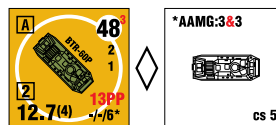
30. BTR-40: The BTR-40 is a 4-wheel drive command and reconnaissance vehicle built on the GAZ-63 chassis. Featuring a sloping front, flat rear, and open roof, some variants

have an armored roof.

32. BTR-50P: The BTR-50P is based on the chassis of the PT-76 light amphibious tank with an open-topped troop compartment in the center. The 20 infantrymen sit on bench seats which run across the full width of the vehicle and enter and leave by climbing over the side of the hull. The BTR-50P was introduced in 1954. It is no longer in production and is being replaced by newer BTRs and BMPs in the Russian Army. Armored personnel carriers of the BTR-50P series were issued to the motorized rifle regiment of tank divisions in the Soviet and East German Armies, and in a modified form as command vehicles in virtually all Warsaw Pact armies. They have also been exported to the Middle East. The BTR-50P, which was first shown in public on November 1957, has undergone a number of modifications.



33. BTR-50PK: added overhead armor and limited radiological protection. The BTR-50PK also has been modified for use as a mine clearing vehicle with the UR-67 explosive line charge and as an amphibious armored maintenance support vehicle.

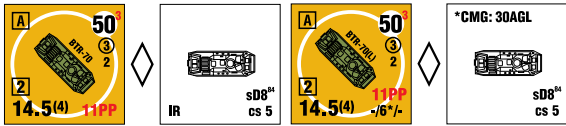


34. BTR-60P: The BTR-60 armored personnel carrier, the first in the line of Russian 8-wheeled APC's, was developed in the late 1950s to replace the BTR-152 (6x6) APC and was first seen in public in 1961. It was continuously improved throughout the 1960s culminating in the production of the BTR-60PB, and was subsequently replaced in production by the similar BTR-70 (8x8). Numerically, the BTR-60 was the most important vehicle

in the Soviet Army. It was issued in quantity to the East German, Bulgarian and Romanian Armies. It has also been exported to Yugoslavia. Signifi-



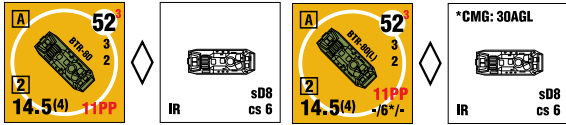
Vehicle	WGT	BPV	Dates	Size	AF	TA	OT	CS	MP	GP	GT	MA	ROF	B#	IF	BMG	CMG	AAMG	SA	Am	s#	PP/T#	G	Night	FC	Notes
Medium Truck																										
Heavy Truck																										



cantly, it was the standard armored personnel carrier of the Soviet

Naval Infantry.

35. BTR-60PB: The most widely fielded variant has a one-man turret, a 14.5-

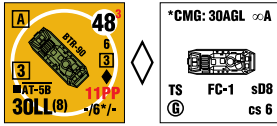


mm KPV-T MG, a coaxial 7.62-mm MG and day/night sights.

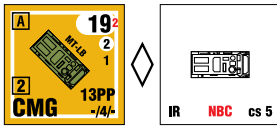
36. BTR-70: The BTR-70 was first seen in 1978 and so was given the preliminary designation BTR M1978, and was first shown in public during a Moscow parade in 1980.

37. BTR-80: The BTR-80 is a modern, lightly armored vehicle with a diesel power plant. Although the manufacturer is normally given as the Gorky Automobile Plant, production of the BTR-70 and the later BTR-80 was undertaken in the neighbouring Arzamaz Machine-Building Plant facility. It entered service with the Russian army in the late 1980's and has since been used in a number of military conflicts, including UN peacekeeping operations. The vehicle is in production and

in service with the Russian army and with a number of other countries.



38. BTR-80A: The BTR-80 has evolved into the BTR-80A. In 1993, the Tula design bureau finished development of a new turret similar to that on the German Marder APC, mounting a 30-mm (BMP-2) automatic gun, coax 7.62-mm MG, and TNP-3 day/night sights.



39. BTR-90: In 1994 the Russian Army publicly displayed the BTR-90. This vehicle has a slightly larger and higher hull than the previous BTR-80, with a pointed nose resembling LAV-25.

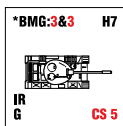
40. MT-LB: The MT-LB amphibious armoured tracked vehicle is fully amphibious, propelled in the water by its tracks. The MT-LB was first designated M 1970 since it was initially identified by the West in 1970. The MT-LB is a multipurpose vehicle. When used as an ARC or command vehicle, it can carry ten personnel besides its two-man crew (driver and commander-gunner). It also is used as a prime mover for various types of artillery. In this case it can also carry the artillery crew (six to ten personnel). It is frequently used as prime mover for the 100-mm antitank gun T-12. As a cargo and general transport vehicle, it has a cargo capacity of 2.0 metric tons.



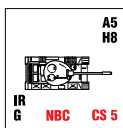
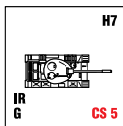
20. PT-76: The PT-76 is one of several light amphibious tanks developed and used by the Soviet Army. The vehicle entered service in 1954 and is amphibious without additional preparation. Although the PT-76 is lightly armored and undergunned for a modern tank, its inherent amphibious capability outweighs these limitations. It has had widespread use in the Warsaw Pact and many other countries.



† The Polish variant adds a 4FP AAMG.

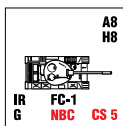


42. T-54: The T-54 series tanks first appeared in 1949 as replacements for the T-34 tank of World War II. The first T-54 prototype was completed in 1946 with first production beginning in 1947. The T-54 was continuously improved and modified, and, when sufficient changes had been made, the tank was redesignated T-55.

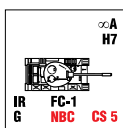


43. T-54A: This model has a fume extractor for the 100mm gun, stabilization system and deep fording equipment.

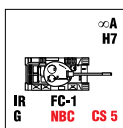
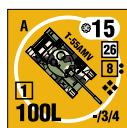
44. T-55: The T-55 was introduced in 1958 and incorporates all the refinements and improvements of the fully developed T-54 series without being radically different in design or appearance.



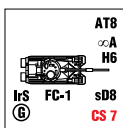
45. T-55A: The T-55A appeared in the early 1960s. Production continued in the Soviet Union through 1981 and was also undertaken in China (as the Type 59), Czechoslovakia and Poland. This model added an NBC protection system.



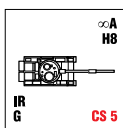
46. T-55AM1: added bra armor, an armor band around the turret for 180° coverage.



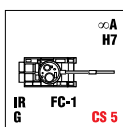
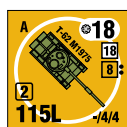
47. T-55AM2: Variant does not have ATGM capability



48. T-55AMV: The -AMV upgrade means substitution of ERA for the bra armor. The Ukraine and Syria will upgrade to the T-55AMV standard.

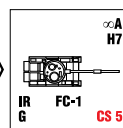
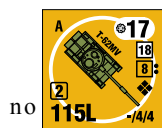


48. T-62: The T-62 is a further step in the line of development begun with the T-54/55 series, entering production in 1961 and remaining in production until 1975. It became the standard main battle tank in Soviet tank and motorized rifle units, gradually replacing the T-54 and T-55. The T-62A variant first appeared in 1970. By the 1980s it was replaced by the new generation T-64/T-72/T-80 tanks as the first-line Soviet main battle tank.

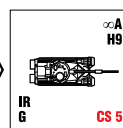


49. T-62A: Besides the standard 7.62-mm PKT coaxial machine gun with a range of 1,000 meters, the T-62A version features a 12.7-mm DShK anti-aircraft machine gun with a range of 1,500 meters against ground targets and a slant range of 1,000 meters against aircraft. The T-62A also has a stabilized main gun, which enables the gunner to track and fire on the move with significantly improved accuracy.

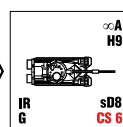
49. T-62 M1975: adds protection, FCS and ATGM capability.



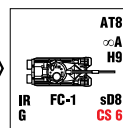
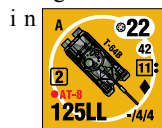
50. T-62M1: Variant with Volna FCS but missile launch capability.



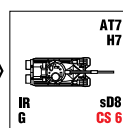
51. T-62MV: Version with ERA in place of the bra armor. The ERA includes Kontakt ERA and Kontakt-5 2nd-Generation ERA.



52. T-64: The T-64, introduced in the late 1960s, was the first of a sophisticated new family of Soviet main battle tanks developed as successors to the T-54/55/62 family. Retaining the low silhouette of the T-54/55/62 series of tanks, the T-64 featured an innovative design incorporating both an autoloader and advanced armor. The T-64 entered production in 1966, was fielded in 1967, and was first seen in public in 1970.

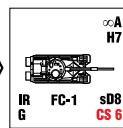
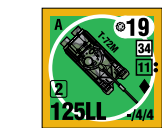
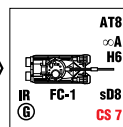


53. T-64A: improvements include a modified sight for the gunner and smoke grenade launchers. This was a further development of the T-64 tank by means of fitting it with a 125mm smoothbore gun, improvement of the engine systems and running gear.

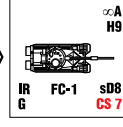


54. T-64B: major redesign incorporating new hull and turret armor that was less bulky than the first generation Combination K armor on the T-64A while offering better protection. The T-64B also has a laser rangefinder. This was a further development of the T-64A tank by means of installing a more advanced fire control system and armament stabiliser, guided missile system, improving the protection level etc.

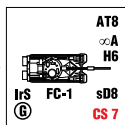
55. T-72: The T-72, which entered production in 1971, was first seen in public in 1977. The T-72, introduced in the early 1970s, is not a further development of the T-64, but rather a parallel design chosen as a high-production tank complementing the T-64. The T-72 retains the low silhouette of the T-54/55/62 series, featuring a conventional layout with integrated fuel cells and stowage containers which give a streamlined appearance to the fenders. While the T-64 was deployed only in forward-deployed Soviet units, the T-72 was deployed within the USSR and exported to non-Soviet Warsaw Pact armies and several other countries. The T-72, which came into service in the late 1970s, was successfully met by the Israelis in Lebanon in 1982. Armed with a long-barreled, smooth-bored 125mm gun and with a three-man crew, the T-72 at 45 tons is considerably lighter than the American M60A1.



56. T-72B: has the thickened frontal turret armor and is commonly known in the United States as the Dolly Parton.

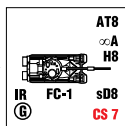


57. T-72M: Original Polish and former-Czechoslovakian T-72-series tank from which Polish/Czechoslovakian T-72M1 was derived.



58. T-72M1: Russian export version and Polish/Czechoslovakian counterparts. Some T-72M1s do not have smoke grenade launchers or track skirts. Some T-72s/T-72Ms have

smoke grenade launchers.

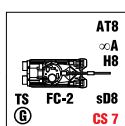


59. T-72BV: with explosive reaction armor packages fitted to the hull and turret. The glacis plate is covered with a layer of single

ERA blocks while the turret is covered by one, two or three layers with one being the more usual.

59. T-80: The T-80, manufactured by Transmash of Omsk, appeared as production model in 1984, retaining the basic features of the T-64 series (including the 125mm smoothbore gun with autoloader). Major innovations included the first Soviet use of a gas turbine engine, providing increased

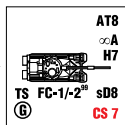
speed and power, and the first use of a laser rangefinder providing major improvements in fire control. The T-80 is very similar in appearance to the T-72. It incorporates features common to both the T-64 and T-72, especially in weaponry. Easily distinguishable features of this tank as compared with the standard T-72 are the attachment of side skirts and twelve turret-mounted grenade launchers with seven on the left side and five on the right side.



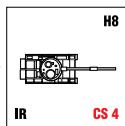
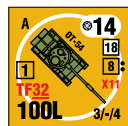
60. T-80U: First observed in 1989 and referred to by NATO as the SMT (Soviet Medium Tank) M1989. The new turret has an improved frontal armor package with second generation explosive reactive armor. The 9K120 Svir (AT-11 Sniper) laser-guided anti-tank missile in place of the older Kobra. Other improvements include a more powerful and fuel efficient gas turbine engine.

This version is equipped with the 9K120 Svir (AT-11 Sniper) laser-guided anti-tank missile in place of the older Kobra. Other improvements include a more powerful and fuel efficient gas turbine engine.

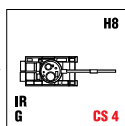
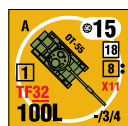
61. T-80UM: Upgraded with a gunner's thermal sight with additional tank commander viewing screen. Similar to standard T-80U, but without IR searchlight and with enlarged night sight housing. Outfitted with 2nd Generation ERA.



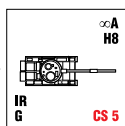
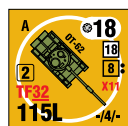
62. T-90: The T-90 went into low-level production in 1993, based on a prototype designated as the T-88. The T-90 was developed by the Kartsev-Venediktov Design Bureau at the Vagonka Works in Nizhniy Tagil. Initially thought by Western observers to be an entirely new design, the production model is in fact based on the T-72BM, with some added features from the T-80 series. The T-90 features a new generation of armor on its hull and turret. Plans called for all earlier models to be replaced with T-90s by the end of 1997, subject to funding availability. By mid-1996 some 107 T-90s had gone into service in the Far Eastern Military District.



63. OT-54: To be done...



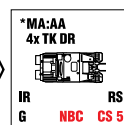
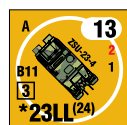
64. OT-55: To be done...



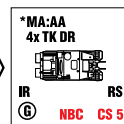
65. OT-62: To be done...



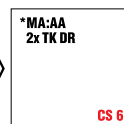
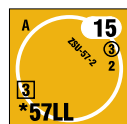
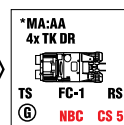
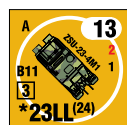
66. BTR-152A: To be done...



67. BTR-40A: To be done...

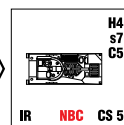


68. ZSU-23-4 Shilka: The Shilka ZSU-23-4 is a Self-Propelled Anti-Aircraft Gun (SPAAG) featuring a prominent radar dish that can be folded down mounted on a modified PT-76 chassis. A platoon of four ZSU-23-4s is assigned, along with four SA-9/GASKIN SAM systems, to the anti-aircraft battery of motorized rifle and tank regiments to cover the deadspace of the SA-6/GAINFUL in the division air defense umbrella.



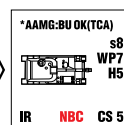
69. ZSU-23-4M: To be done...

70. ZSU-23-4M1: To be done...



71. ZSU-57-2: The ZSU-57 is distinguished by its pair 57mm cannons mounted to the front of the box type turret. China did not import the system from the USSR in 1950s, but rather acquired it from Iraq in the early 1980s.

72. 2S1 Gvozdika: The 2S1 is found in the howitzer battalion of BMP-equipped motorized rifle regiments and some tank regiments. Since it is tracked and amphibious, it has the cross-country capability necessary to keep pace with supported BMPs and tanks. Since the 2S1 was seen in public for the first time in 1974, it also has been known under the provisional designation M1974. It also has been

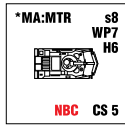


referred to as SP-74 and SAU-122. The self-propelled howitzer 2S1 provided the Soviet Army with highly mobile firepower that fit neatly into its doctrine of the offensive. It also was found in some non-Soviet Warsaw Pact armies.

73. 2S3 Akatsiya: The 2S3 was first introduced into the Soviet inventory in 1973 and also has been known under the provisional designation M1973. It is also known simply as the SP-73 or SAU-152 (and erroneously as the M1975 or M-75). It somewhat resembles the US 155-mm self-propelled



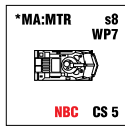
the towed 152-mm howitzer D-1 (M1943) in the artillery regiment of motorized rifle divisions and one battalion of the towed 122-mm howitzer D-30 in the artillery regiment of tank divisions. Also, the 2S3 replaced some towed 152-mm artillery in the front-level artillery division and in the army-level artillery regiment/brigade.



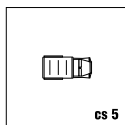
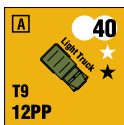
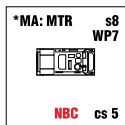
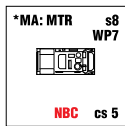
74. 2S7 Pion: The large 2S7 chassis is the largest armored vehicle in the current Russian inventory, with seven dual rubber-tired road wheels, drive sprocket at the front and the idler at the rear. Standard equipment includes an overpressure NBC protection system and night vision equipment.

75. 2S9 Nona: The most recent change to the Airborne artillery is the introduction of the 2S9, a 120-mm self-propelled howitzer mounted on a BMD chassis and replacing the M-1943 120-mm mortar in the Airborne battalions. The 120-mm 2S9 Anona (Anemone) self-propelled howitzer/mortar was first seen in public in May 1985 and was developed to replace existing mortars and howitzers and as a direct fire anti-tank weapon system firing HEAT projectiles.

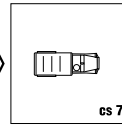
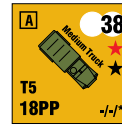
In the Afghanistan was, the 2S1 122mm self-propelled howitzer and 2S9 120-mm self-propelled howitzer/mortar were best suited to support raiding motorized rifle or air assault forces. They usually deployed by battery or battalion. Prior to the raid, the Soviet planners determined initial targets from aerial, visual and artillery reconnaissance. They usually fired a three-five minute artillery preparation on those targets. Should the Mujahideen open fire on the Soviet forces in the course of the raid, the Soviet gunners would attempt to quickly engage the target before it could escape by registering with one or two ranging rounds and then firing massed artillery fires on the target using normative firing tables for suppression or assured destruction. While pitched battles occurred, the most common activity for raiding Soviet forces was pursuit of a withdrawing enemy. Mujahideen would usually leave a rear guard to slow down the attacker while the main body escaped. The rear guard would try to stay within 200-300 meters of the Soviet force to escape Soviet air and artillery. In that case, the Soviet forward observer would spot his first round some 200 meters beyond the enemy and then walk the rounds back onto the enemy.



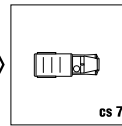
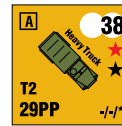
would usually leave a rear guard to slow down the attacker while the main



78. MT-LB/82: To be done...



79. GAZ: To be done...



80. Light Truck: To be done...

81. Medium Truck: To be done...

82. Heavy Truck: To be done...

RUSSIAN MULTI-APPLICABLE VEHICLE NOTES

76. 2S4 Tulpan: The 240-mm self-propelled mortar known to the West as the M-1975 is known as the SM-240 (2S4) by the former Soviet Army, although its more common name is the Tyulpan, or Tulip Tree.

77. MT-LB/120: To be done...



RUSSIAN ORDNANCE NOTES

1. SPG-9:
2. B10:
3. B11:
4. 2B9 Vasilek:
5. M37:
6. M1937:
7. M43:
8. 2B:
9. 2A60 Nona:
10. M-160:
11. D48:
12. BS-3:

13. T12: The T-12 is a 100-mm smoothbore antitank gun mounted on a two-wheeled, split-trail carriage, with a single caster wheel near the trail ends. The MT-12 variant has a winged shield angled to the rear on both sides and an additional recoil cylinder above the breech on the right. Both versions frequently mount infrared night sighting equipment. The T-12 and MT-12 fire fin-stabilized, non-rotating rounds similar to those of the 115-mm gun of the T-62 tank. The theoretical rate of fire is reportedly 14 rounds per minute; however, rate for aimed fire is only 6 rounds per minute, and the maximum practical rate is 10 rounds per minute.

14. 2A45: The 2A45 is a towed, split-rail 125mm anti-tank gun. They are usually deployed on the flanks of a defensive position. They are very hard to spot until they shoot, and are effective at ranges of up to 2000m. The 2A45M shares similar ordnance to that of the T-72/T-80 MBTs. The 2A45M is capable of firing the AT-11 SNIPER (Svir) laser beam riding, antitank guided missile which has a maximum range of 4000 meters.

15. KS-12: The KS-12 85mm single shot AA gun is mounted on a 4 wheeled towed carriage. The Chinese variant is the Type-72. Although long withdrawn from Russian service, it remains operational in several countries, including North Korea.

16. KS-19: The Soviet 100mm antiaircraft gun KS-19 was introduced in the late 1940s as the replacement for the wartime 85mm guns. It found use in all of the Warsaw Pact armies, and though it has been largely replaced by surface-to-air guided missiles, the KS-19 is still held in some Warsaw Pact units, and is employed in other countries as well. Provision is also made for direct fire against ground targets such as tanks. The ammunition is of the fixed type and is interchangeable to a large extent with that of other 100mm rifled tank and field guns. The KS-19M2 Anti-Aircraft Artillery may also be employed in a ground support role. The Chinese Communists call the gun the Type 55.

17. KS-30: The Soviet 130mm antiaircraft gun KS-30 appeared in the early 1950s. Closely resembling the United States wartime 120mm antiaircraft gun, the KS-30 was used for the home defense forces of the USSR and some other Warsaw Pact countries. It is held in war reserve since it has been replaced by surface-to-air guided missiles.

18. M1939: The Soviet recoil-operated 37mm antiaircraft guns are based on a Bofors design and closely resemble the 40mm guns used by both the Brit-

ish and United States forces during World War II. Although the single mount is the most common version, a twin mount was produced and has been exported to Algeria. The Soviet Navy also employed a twin water-cooled version closely resembling the multi-mount United States 40mm guns used in World War II. The 37mm gun M1939 is used in Communist China where it is known as the Type 55.

19. SA-60: The S-60 is a towed, road-transportable, short- to medium-range, single-barrel 57-mm antiaircraft gun system. The S-60 recoil-operated weapon replaced the earlier 37mm models in most Warsaw Pact units. It is a powerful weapon, well suited to attack armored vehicles as well as low-flying aircraft. The S-60 was found in the antiaircraft regiment of some motorized rifle and tank divisions to protect critical assets. However, by the 1980s it had been replaced in most Soviet divisions by the SA-6/GAINFUL or SA-8/GECKO SAM systems. It also may be found in territorial defense units, especially around airfields. The S-60 was built by the Chinese [designated Type 59] and has seen combat in the Middle East. In Vietnam it was the keystone of North Vietnamese low-altitude air defense and was most effective between 460 meters (1,500 feet) and 1,500 meters (5,000 feet).

20. ZPU-1: The ZPU-1 was introduced into the Soviet Army into the immediate post Second World War period. The ZPU-1 is a single towed weapon which was obsolete in the Soviet Army by the mid-1970s. Although not used in the Warsaw Pact countries today, the ZPU-1 has been identified in Southeast Asia and in the Middle East.

21. ZPU-2: The ZPU-2 was introduced in 1949 and is a twin version of the ZPU-1 basic Soviet 14.5MM machine gun. The ZPU-2 was used in Korea and considered a dangerous opposition in Vietnam. The Type 58 is the Chinese version, while the individual KPV machineguns as the Type 56. The ZPU-2 was used in the 1970s by some Warsaw Pact armies and by security elements such as the East German Workers' militia.

22. ZPU-4: The ZPU-4 is a quadruple anti-aircraft version of the basic Soviet 14.5mm machine gun. Introduced in 1949, it was used in Korea and was later considered the most dangerous opposition to U.S. helicopters in Vietnam. It was used by Iraqi forces during Operation Desert Storm. The Type 56 is the Chinese version.

23. ZU-23: Introduced in 1964, the ZU-23 was the Soviets' newest light-weight, automatic, towed antiaircraft gun. It was used extensively by airborne units and possibly by some motorized rifle regiments that have not yet converted to the ZSU-23-4/SA-9 air defense battery. ZU-23s also are used to provide close-in air defense for a SA-4 brigade. A battalion of 18 ZU-23s was organic to the Soviet airborne division and is the division's principal AAA weapon. It has an effective AA range of 2,500 meters. It also can be used effectively against lightly armored ground vehicles.

24. 2A6T: The 2A6T 152 mm Field Gun, displayed at the VTTV-Omsk-97 international exhibition of military land equipment, armaments and conversion products, is built by the Gosudarstvennoe unitarnoe predpriyatie Zavod 9 [Vysokodispersnye Metallicheskiye Poroshki AO]. Very few details of this new light-weight field gun have been revealed, and there is some ambiguity both as to its caliber [it is reported as 152mm though it was displayed with a 155mm shell] and its relationship to the new 155mm M-389 gun by the same manufacturer with an apparently similar configuration.

25. D-30: The D-30 122mm howitzer is a standard armament of artillery mechanised formations. The D-30, also known as the M1963, replaced the older 122-mm howitzer M-30 (M1938). The original D-30 was fielded in 1963 and the midlife product improvements occurred in the mid to late 1970's. The original D-30 is in use with at least 50 different countries.

26. 2A36: The 2A36 (M1976) 152-mm Towed Gun has a distinctive four-wheeled carriage and armored shield sloping to the rear and extending over the wheels. The quick firing load assist system includes a hydraulic rammer,



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[illegible]

by which a projectile placed on the loading tray is rammed into the ordnance. The cartridge cased charge is loaded in a similar manner, and once the breech is closed and the rammer returns to the side the weapon is ready to fire.

27. 2A65: The towed, nuclear-capable 152-mm field gun M1976, along with its self-propelled counterpart 2S5, replaced the 130-mm field gun M-46 in gun battalions organic to artillery regiments and brigades at front and army level. This gun has a distinctive four-wheeled carriage, and has an armored shield that slopes to the rear and extends over the wheels. It has been fielded since 1978 and deployed in Soviet forces in Eastern Europe. This deployment indicated the importance Soviet doctrine placed on the capability to deliver low-yield nuclear strikes relatively close to Soviet forces.

28. B4: The M1931 (B-4) is a rather old weapon developed in 1931 and adopted for service in 1934. The modified version (B-4M) with four-wheeled carriage appeared only after World War II. It may be found in the heavy artillery brigade at front level.

29. D-20: The D-20, also known as the M1955 or M-55, was the newest 152-mm towed howitzer in the Soviet and Warsaw Pact inventory when first introduced in 1955, replacing the heavier, less powerful, 152-mm gun-howitzer ML-20 (M1937). It is organic to army/front-level artillery and to the artillery regiment/brigade of a tank or combined arms army, while the self-propelled version 2S3 is found in the artillery regiment organic to motorized rifle and tank divisions. The D-20 was exported to all Warsaw Pact armies (except Bulgaria). The Type-66 is a Chinese version, which has been exported to Iraq.

30. M-30: The 122mm howitzer M1938 (M-30) was introduced into the Soviet Army shortly before World War II to replace the obsolescent World War I models. After the war the M1 938 became the standard divisional howitzer of the other Warsaw Pact armies and was introduced into the Yugoslav Army. It also was sold to armies in other parts of the world.

31. M-46: The M-46 was first seen in public in May 1954 and originally was known in the West as the M1954. Since 1978, two new nuclear-capable guns, the 152mm field gun M1976 and the 152mm self-propelled gun 2S5, began to replace the M-46 in Soviet forces. Today it is still found in the ar-

mies of many countries. The first 130 mm field gun produced by China was the Type 59, a virtually direct copy of the Russian M-46.

33. Zis-3 obr42:

34. RPG-2:

35. RPG-7:

36. RPG-7V:

37. AT-1 Snapper: The first antitank guided missile to be used in the Warsaw Pact forces was the AT-1 “SNAPPER” which was launched from a UAZ-69 jeep. Although by the mid-1970s this launcher was rarely encountered with Soviet troops, it was still used in other countries of the Pact and has been exported to Yugoslavia and the Middle East.

38. AT-2 Swatter: The SWATTER was introduced into service in 1960 specifically for use with the BRDM reconnaissance vehicles. The Mi-8/HIP E can mount four SWATTERs above its outboard weapons racks, and the Mi-24/HIND A and D mount four SWATTERs on wingtip launch rails. BRDM/BRDM-2 SWATTERs are sometimes found in the antitank battery of motorized rifle regiments although this role is more likely filled by the AT-3 or AT-5. The BRDM-mounted SWATTERs with MCLOS guidance were replaced by the new AT-5/SPANDREL.

The initial version of the missile was the SWATTER-A, but two upgrades were introduced in the 1970s, designated SWATTER-B and SWATTER-C.

41. AT-3 Sagger: The wire-guided 9M14M Malutka [Tiny or Little Baby] SAGGER, also known by the US designation AT-3, was first seen in 1961.

42. AT-3C Sagger: The improved SAGGER-C was fitted with semi-automatic command line of sight (SACLOS) guidance to serve as an interim until the AT-5 SPANDREL and AT-6 SPIRAL entered service. The guidance panel can be located up to 15 meters from the launcher, and can control up to four launchers.

43. AT-4 Spigot: The first concrete evidence of the existence of second-generation Soviet ATGMs was a 1975 report in a Yugoslav military periodical that an ATGM called FAGOT had recently appeared in the Warsaw Pact



forces. Subsequently, it was reported that the FAGOT first entered service in 1972. The man-portable FAGOT system has now been given the NATO nickname SPIGOT and the US designation AT-4.

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44. AT-4B Spigot: The AT-4B/Factoria is an upgrade ATGM with greater range and armor penetration.

45. AT-5 Spandrel: Introduced in 1977, the SPANDREL is equivalent to the American TOW missile. The first of the second-generation Soviet ATGMs to be seen in public was the BRDM-mounted model displayed in the Red Square parade of November 1977.

46. AT-5B Spandrel:

47. AT-6 Spiral: Introduced in 1978 as a long-range stand-off weapon for the Hind attack helicopter, the SPIRAL is often incorrectly said to be a laser-guided weapon similar to the American Hellfire.

48. AT-7 Saxhorn:

49. AT-8 Songster: The AT-8 (Songster) is a Russian ATGM. It was designed to be fired from the 125 mm smooth-bore gun. It uses radio for guidance from the gunner.

50. AT-9 Vikhr: The latest aircraft antiarmor missile is the 9A4172 of the Vikhr (AT-9) family for Ka-50 helicopters and Su-25T aircraft.

51. AT-10 Stabber: The 9K116 Bastion (AT-10 STABBER) is a laser-beam riding, antitank missile launched from the main gun of a T-55AM2B main battle tank, BMP-3 Infantry Fighting Vehicle, and the MT-12 antitank gun.

52. AT-10C Stabber:

53. AT-11 Sniper: The AT-11 SNIPER laser-guided ATGM, gives the T-90 the ability to engage other MBTs, vehicle ATGMs, and even most helicopters before they can engage the T-90.

54. AT-11B Sniper:

55. AT-12 Swinger: The 9K118 Sheksna (AT-12 SWINGER) is a laser-beam riding, antitank missile launched from the main gun of a an improved T-62 main battle tank.

56. AT-13 Metis:

57. AT-14 Kornet: In October 1994, the KPB Instrument Design Bureau introduced the Kornet (AT-14) ATGM system. The Kornet was developed introducing a laser beam-riding missile with automatic command-to-line of sight (SACLOS) guidance. The operator simply has to keep the sight on the target to ensure a hit. The laser beam-riding system is also less vulnerable to countermeasures. The Kornet was specifically designed to replace the Konkurs, which has been in service with the former Soviet and Russian armies for over twenty years.

58. AT-15 Khrizantema:

59. AT-16 Ataka-V: A modification of the Shturm-V family is the Ataka-V family of missiles used on Mi-28 helicopters and on the latest Ka-50 helicopter. The Vikhr antitank missile is also the main weapon of the Su-39. The aircraft is armed with 16 such missiles. 60. SA-7A Grail:

61. SA-7B Grail:

62. SA-14 Gremlin:

63. SA-16 Gimlet:

64. SA-18 Grouse:



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Name	Type	Bomb	Rocket	ATGM	Def	MG	MG ROF	MG TK#	PP/EPP	CS	Dates	BPV	Notes
OH-6C Cayuse	AH												1
AH-6J Little Bird	AH												2
UH-1B	AH												3
AH-1G Cobra	AH												4
AH-1W Supercobra	AH												5
AH-64A Apache	AH												6
UH-1B	UH												7
UH-1D	UH												8
UH-1H	UH												9
CH-21B Shawnee	UH												10
CH-46 Seaknight	UH												11
CH-47A Chinook	UH												12
CH-47D Chinook	UH												13
CH-53A Stallion	UH												14
UH-60 Blackhawk	UH												15
A-1E Skyraider	FB												16
A-10 Warthog	FB ^j												17
A-7 Corsair II	FB ^j												18
A-4 Skyhawk II	FB ^j												19
A-6A Intruder	FB ^j												20
F-117A	FB ^j												21
F-100 Suber Subre	FB ^j												22
F-105 Thunderchief	FB ^j												23
F-4 Phantom II	FB ^j												24
F-15E Strike Eagle	FB ^j												25
F-16 Fighting Falcon	FB ^j												26



BRITISH VEHICLE NOTES

BRITISH MULTI-APPLICABLE VEHICLE NOTES



BRITISH ORDNANCE NOTES

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BRITISH AIRCRAFT NOTES

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ARGENTINEAN VEHICLE NOTES

ARGENTINEAN MULTI-APPLICABLE VEHICLE NOTES



ARGENTINEAN ORDNANCE NOTES

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ARGENTINEAN AIRCRAFT NOTES

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GERMAN VEHICLE NOTES

GERMAN MULTI-APPLICABLE VEHICLE NOTES



GERMAN ORDNANCE NOTES

GERMAN MULTI-APPLICABLE ORDNANCE NOTES



GERMAN AIRCRAFT NOTES

GERMAN MULTI-APPLICABLE AIRCRAFT NOTES



PAVN VEHICLE NOTES

PAVN MULTI-APPLICABLE VEHICLE NOTES



PAVN ORDNANCE NOTES

PAVN MULTI-APPLICABLE ORDNANCE NOTES



ARVN VEHICLE NOTES

ARVN MULTI-APPLICABLE VEHICLE NOTES



ARVN ORDNANCE NOTES

ARVN MULTI-APPLICABLE ORDNANCE NOTES



ANZAC VEHICLE NOTES

ANZAC MULTI-APPLICABLE VEHICLE NOTES



ANZAC ORDNANCE NOTES

ANZAC MULTI-APPLICABLE ORDNANCE NOTES



ANZAC AIRCRAFT NOTES

ANZAC MULTI-APPLICABLE AIRCRAFT NOTES



ISRAELI VEHICLE NOTES

ISRAELI MULTI-APPLICABLE VEHICLE NOTES



ISRAELI ORDNANCE NOTES

ISRAELI MULTI-APPLICABLE ORDNANCE NOTES



ISRAELI AIRCRAFT NOTES

ISRAELI MULTI-APPLICABLE AIRCRAFT NOTES



ARAB VEHICLE NOTES

ARAB MULTI-APPLICABLE VEHICLE NOTES



ARAB ORDNANCE NOTES

ARAB MULTI-APPLICABLE ORDNANCE NOTES



ARAB AIRCRAFT NOTES

ARAB MULTI-APPLICABLE AIRCRAFT NOTES

