

A FISTFUL OF TOWS: 2000

A Study of Modern Armored Combat 1960-2010

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§ 1 Introduction

A. Scale

A Fistful of TOWs: 2000 is a fast and playable simulation of modern mechanized warfare. One inch equals 100 meters, one vehicle represents five vehicles and a stand of infantry represents a platoon. One turn represents about 3-5 minutes.

When the rules require that numbers be halved, always round the numbers up to the next whole number. This game uses only six sided dice.

B. Measuring

Players may not measure distances before they declare fire. They may never check front/flank angles until an attack is declared against them.¹

If a player declares an attack, measures the range and determines that the target is out of range, the attack is wasted.

§ 2 Sequence of Play

A. General

Each game turn is composed of two player turns. A game lasts a number of game turns as determined by the referee. A good limit is ten turns for a two hour game.

B. Sequence of Play

1. Attacking Player Turn

(a) Command Phase

- The attacker places artillery barrages.
- The attacker places reinforcements on the board
- No overwatch activity is allowed during the command phase.

(b) Movement Phase

- Attacker Moves
 - The attacker moves his stands, one at a time.
 - At any time during the phase, Defending stands may conduct overwatch fire or shoot and scoot fire if eligible.
 - Defender Pivots
 - Quality Checks
- At the end of the phase, quality checks are made. No overwatch activity is allowed during this sub-phase.

(c) Close Combat Phase

- Defender Phase
 - Defender fires.
 - Attacker resolves quality checks due to enemy close combat attacks.
 - Defender pivots.
- Attacker Phase
 - Attacker fires.
 - Defender makes quality checks due to enemy close combat attacks.
 - Attacker pivots.
- Final Phase
 - Reduce remaining movement by one.
- Repeat the close combat phase until there are no opponents within close combat range.

(d) Complete movement. Resolve additional close combats as necessary.

(e) Firing Phase

- All fire within this phase is simultaneous. Combat results take effect at the end of the phase.
- Attacker resolves fire combat and anti-infantry combat.
- Defending units with **hold fire** markers fire.

¹ Oh sure, we have ballistic computers and such stuff, but allowing players to pre-measure slows the game to a crawl. If it makes you feel better, ascribe it to fog of war, etc....

- Remove destroyed stands.
- Resolve quality checks.
- Attacker may place overwatch markers on stands that did not fire or move during the turn.
- (f) Artillery Phase
 - Defender's artillery barrages land.
 - Resolve quality checks.
 - No overwatch activities during this phase.
- (g) Final Phase
 - Resolve any housekeeping chores.
 - Make quality checks for unit losses.
 - Remove pin markers on friendly troops.

2. Defending Player Turn

Use the same sequence for the Attacking Player Turn, but reverse the roles.

**Note that "overwatch activities" include shoot and scoot maneuvers.

§ 3 The Forces

A. Markers

You will need the following markers in order to play *FFT*:

Barrage templates indicate the area affected by an artillery strike. They are 1", 2", 3", 4" and 5" square.

Barrage markers are used to indicate the location of artillery barrages.

Quality check markers indicate which units must take a quality check at the end of the phase.

Missile ammo markers indicate the status of units that have limited missile ammunition. Pennies make good ammo markers; heads indicates that one shot is left, tails indicates that no shots are left.

B. "Units" and "Stands"

In these rules, the word "stand" refers to individual vehicles and infantry stands. "Unit" refers to the entire command unit (companies or battalions, depending on the army lists), which comprises several vehicles and/or infantry stands.²

C. Vehicles

Vehicles stands have their characteristics listed on the **Vehicle Data Chart**. A sample listing looks like this:

Vehicle	Period	PV	Move	Armor	—Gun—				—Msl—				Equip	Carry	Msl	Notes
					Pen	ROF	Rng	Inf	Pen	ROF	Rng					
M2A2 Bradley	90-95	24	12ta	2r/1r	1	4	16	4+	16h	1	1-38†	s,t,n	1	*	-	

1. The Data chart abbreviations are:

- a) **Vehicle:** The vehicle's name
- b) **Period:** The time period that these ratings are valid for.
- c) **PV:** Point value of the vehicle.
- d) **Move:** Movement allowance. "a" means that the vehicle is amphibious. "w" is a wheeled class vehicle; "t" is a tracked class vehicle; "h" is a helicopter.
- e) **Armor:** Armor value. The number before the slash is the front armor, the number after the slash is flank armor. An "r" indicates reactive/laminate armor and a "c" indicates Chobham armor.
- f) **Pen:** Penetration. An "h" indicates that this is an h-class weapon.
- g) **ROF:** Rate of fire. An ROF in braces (e.g., {3}) indicates a unit with a CITV.
- h) **Rng:** Effective range of the weapon. A "†" indicates a top-attack weapon.
- i) **Inf:** Anti-infantry rating of the weapon.
- j) **Equip:** Special equipment carried by the vehicle:
 - (1) s-stabilized gun
 - (2) ss-advanced stabilization
 - (3) t-thermal sights
 - (4) v-commander's independent thermal viewer (CITV)

² Western armies generally use companies as the basic command unit, while Russian, Chinese, Arab and Third World armies use battalions as the basic command unit.

- (5) n-nbc protection
- k) **Carry:** The number of infantry stands that the vehicle can carry.
- l) **Msl:** If an asterisk (*) appears here, the vehicle has a restricted missile ammo supply. If a bullet (•) appears here, the vehicle has unlimited missile ammo.
- m) **Notes:** Any other data relevant to the vehicle.

D. Infantry

Infantry stands have their characteristics listed on the **Infantry Table**. A sample listing would look like this:

Type	Period	PV	Move	—Small Arms—			—LAW—		—MAW—		—SAM—	Notes
				To Hit	ROF	Range	Pen	Rng	Pen	Rng	Rng	
US Army Inf*	70-84	3	3	3+	2	6	10h**	10	-	-	-	
Milan Inf*	81-89	7	3	4+	2	6	14h	20	-	-	-	

1. The chart abbreviations are:

- a) **Type:** The type of infantry stand. An asterisk (*) indicates that the stand's MAW is a missile.
- b) **Period:** The time period that these ratings are valid for.
- c) **PV:** Point value of the stand.
- d) **Move:** Movement allowance.
- e) **(Small Arms) To Hit:** The to hit roll when using small arms fire..
- f) **(Small Arms) ROF:** The stand's rate of fire when using small arms fire.
- g) **(Small Arms) Range:** The stand's range when using small arms fire.
- h) **Pen:** Penetration of the weapon. An "h" indicates that this is an h-class weapon. A "†" indicates a top-attack weapon. Double asterisks denote that the stand has a limited ammo supply with its MAW.
- i) **ROF:** Rate of fire.
- j) **Rng:** Effective range of the weapon.
- k) **LAW:** Ratings for the stand's Light Antitank Weapons.
- l) **MAW:** Ratings for the stand's Medium Antitank Weapons.
- m) **SAM:** Ratings for the stand's Surface to Air Missiles.
- n) **Notes:** Any other relevant data.

E. Artillery

Artillery stands are listed on the **Artillery Data Chart**. A sample listing looks like:

Type	PV	Cal	Move	Armor	Range	—Converged—		—Dispersed—		Ammo	—Direct Fire AV—		
						AF	Temp	AF	# Temp		Pen	ROF	Rng
SP 105/122mm	30	105/122	6	0	15(21)km	2L	1"	1L	2" x 1"	s,c	10h	1	8"
SP 81mm Mort.	15	81	6a	0	30"	2L	1"	1L	2" x 1"	s,c	-	-	-

1. The chart abbreviations mean:

- a) **Type:** Type of artillery.
- b) **PV:** Point value of the vehicle.
- c) **Cal:** Caliber of the weapon.
- d) **Move:** Movement allowance.
- e) **Armor:** Armor value.
- f) **Range:** Range of the weapon. The number in parenthesis is the range for rocket assisted projectiles.
- g) **Converged:** Data for converged sheafs.
- h) **Dispersed:** Data for dispersed sheafs.
- i) **AF:** Artillery factors for the sheaf. An "L" indicates an L-class artillery piece.
- j) **Temp:** The dimensions of the template for the sheaf.
- k) **Ammo:** Ammunition types that the weapon can fire:
- (1) s-smoke
 - (2) c-chemical
 - (3) i-improved conventional munitions
 - (4) l-laser guided projectile
- l) **Direct Fire AV:** The weapon's characteristics when firing direct fire anti-vehicle fire.
- m) **Pen:** Penetration. An "h" indicates that this is an h-class weapon.
- n) **ROF:** Rate of fire.
- o) **Rng:** Effective range of the weapon.

p) **Notes:** Any other data relevant to the vehicle.

F. Troop Quality³

Stands in *A Fistful of TOWs: 2000* fall into one of four classes:

Green troops are poorly trained, disaffected, and/or inexperienced. They have a quality of 6 and have a to hit adjustment of -1 when using anti-vehicle fire and small arms fire. Examples include typical Third World soldiers, poorly trained reservists, Russian Category II and III troops, Russian troops in the 1990s, US Army from 1971-1982, US National Guardsmen in their first battle, Arabs (except 1973+ Egyptians and 1945+ Jordanians), Balkan troops (except Turks), Danish regulars and NATO reservists.

Average troops are trained, reasonably well-led, and effective. The majority of armies from industrialized nations are average. They have a quality of 5, and no to hit adjustment. Examples include US Army in most periods, US National Guardsmen after their first battle, Cubans, most NATO regulars, 1973+ Egyptians, Russian Category I troops (through 1990), US and West German reservists, Poles, Turks, and Chinese.

Veteran troops are well-trained, long term professionals who often have considerable combat experience. They have a quality of 4 and have a to hit adjustment of +1 when using anti-vehicle fire and small arms fire. Examples include US Marines, US Army 1991-1995, British Army, French FAR, Jordanians, Israelis, Canadians and South Africans.

Elite troops are superbly trained and superbly led professionals, often special forces. They have a quality of 3 and have a +2 to hit adjustment when using anti-vehicle fire and small arms fire. Examples include the Royal Marines, US Navy SEALs, Delta Force, Soviet Special Forces, Israeli Paratroops, and Canadian ski troops.

If you're playing a campaign game, it is recommended that units be rated one quality level lower than normal in their first battle. In subsequent battles, they attain their normal quality.

G. Quality Checks

1. General

Whenever a stand takes a quality check, it must roll its quality number or higher on one die. A natural "1" always fails. Unless stated otherwise, a failed quality check removes the stand from the game.⁴ The stand counts half for enemy victory conditions.

Stands take quality checks at the end of the phase in which the event requiring the quality check occurred.

A stand can take a maximum of three non-close combat quality checks in a player turn, excluding close combat. It can take one check from each of the following sources each turn:

- (1) fire combat (during the fire phase or due to overwatch fire);
- (2) artillery; and
- (3) losses (its unit has taken 2/3 losses or the stand is the last stand in its unit).

Quality checks in close combat do not count against these limits. In addition, a stand can take any number of quality checks in close combat (see Close Combat).

If a stand has already taken and passed a particular type of quality check in a turn, later quality checks of that same type during the same turn are ignored.

2. Quality Checks Due to Fire Combat

Quality checks that occur as a result of fire combat are taken at the end of the fire phase. Only one fire combat quality check per game turn is permitted per unit. This includes overwatch fire.

3. Quality Checks Due to Overwatch Fire

A quality check caused by overwatch fire occurs at the end of whatever phase the overwatch fire occurred in. Additional quality checks due to overwatch fire and fire combat are ignored for the remainder of the **turn**.

For example, an M1A1 is advancing in its movement phase towards a T-80U that is in overwatch. The T-80U fires and hits the M1, causing a quality check. The quality check is taken at the end of the movement phase and the M-1 passes. Later, during the fire phase, another T-80 on overwatch fires at the M-1 and causes a quality check. The M-1 automatically passes the check.

³ One fundamental assumption of *A Fistful of TOWs: 2000* is that troop quality is the most important variable on the battlefield. Accordingly, troop quality affects every major game system.

⁴ The stand is not necessarily dead, but it is out of the current fight.

4. Quality Checks Due to Artillery Attacks

Quality checks occurring as a result of artillery fire are taken at the end of the artillery phase, and again, only one test per artillery phase is taken per unit.

A non-soft AFV that takes a quality check from "L" class artillery has +2 added to its die roll.⁵ A natural "1" still fails the check.

5. Quality Checks Due to Losses

When a unit loses 2/3 (or more) of its stands, the entire unit must make a single quality check (one roll for the whole unit). This check occurs in the **final phase** of the turn in which the unit's losses reach 2/3.

A unit that has already lost 2/3 or more of its stands must make a quality check in the final phase of any turn in which it takes additional losses.

A stand that is the last stand in a unit must make a quality check during the final phase of the first turn in which the stand becomes the last stand in the unit.

6. Quality Checks Due to Close Combat

A stand can take a maximum of one quality check per close combat round. In close combat, the **only** quality checks allowed are due to weapons fire. All close combat quality checks take place at the end of each close combat round.

§ 4 Movement and Cohesion

A. General

Players may move as many of their stands as they want during their movement phase. Stands may use as much of their movement allowance as the owning player wants.

There are two classes of movement, **normal** and **strategic**.

Stands may turn during movement at no additional movement cost. Turning is not movement for firing and overwatch purposes. A vehicle (except helicopters) may move backwards at 1/4 movement rate.

B. Movement Classes

A stand's movement class determines the effect that terrain has on that stand's movement. Movement class is noted after the movement allowance on the data charts.

All infantry stands have a **leg** movement class.

Stands with a "t" are tracked vehicles and have a **tracked** movement class. Stands with a "w" are wheeled vehicles with a **wheeled** movement class. Stands with an "h" are helicopters with a **helicopter** movement class. Stands with an "x" are towed weapons and have a **towed** movement class.

Stands with an "a" are **amphibious vehicles** and may cross impassable rivers (see below). Amphibious vehicles may cross rivers and streams at one quarter movement allowance. They may not fire while in the water. The referee may rule that some rivers or streams are impassable to amphibious vehicles because the banks are too steep.

C. Terrain Effects on Movement

1. Clear Terrain

Clear terrain does not affect on movement.

2. Light Woods

Light woods do not affect movement. Helicopter stands may not move through light woods in NOE mode. Light woods are cover for spotting and los purposes.

3. Heavy Woods

Heavy woods do not affect leg class stands. Helicopter class stands may not move through heavy woods in NOE mode. All other movement classes have their movement halved. Heavy woods are cover for spotting and los purposes.

4. Forest

Forest is impassable to all movement classes except leg class stands. Forest is cover for spotting and los purposes.

⁵ "L" class artillery is light artillery that is relatively ineffective against AFVs. A non-soft AFV is an AFV with an armor rating of 0 or more.

5. Swamp

Swamp does not affect leg class stands. Stands of all other movement classes have their movement rate quartered when moving through swamp. These stands must roll 1 die at the end of any movement phase in which they entered swamp. On a 1 or 2, the stand is stuck and cannot get out. Place the stand at the point it would have been at half of its movement allowance. If this takes the stand out of the swamp, place the stand on the edge of the swamp nearest to the halfway point.

An armored recovery vehicle may attempt to extract a stuck stand. It must move into contact with the stuck stand and stop. At the end of the movement phase the recovery vehicle must roll to get stuck itself. If it does not get stuck, it can extract the stuck stand on a 1-4 on 1 die. The stuck stand is no longer stuck. Both vehicles will have to roll for getting stuck again as they move out of the swamp.⁶

Swamp is cover for spotting and los purposes.

6. Streams

Streams have no effect on a leg class stand or a helicopter class stand. All other stands must spend half of their movement allowance to cross the stream. Stands that are behind a stream are in cover for spotting and los purposes, if the spotting stand must trace his los through the stream.

7. Rivers

Fordible Rivers have no effect on helicopter stands. All other stands may cross the river but their movement rate is halved.

Impassable Rivers have no effect on helicopter stands. All other non-amphibious stands may not cross the river. Amphibious stands may cross impassable rivers at 1/4 movement rate. These stands may not fire (except in close combat) while in the water. At the referee's discretion, infantry stands may have integral rubber rafts. They can cross impassable rivers at 1/2" per turn and may not fire while in the water.

8. Roads, Bridges and Paths

Roads or Bridges have no effect on helicopter stands. Wheeled class stands have their movement rate quadrupled when moving along a road. All other stands have their movement rate doubled when moving along a road.

Roads are blocked if a vehicle is destroyed on them.

An MBT may only be pushed out of the way by another MBT. A light vehicle may be pushed out of the way by an MBT or light vehicle. A vehicle spends half its movement allowance pushing a vehicle off of a road. Alternately, a vehicle can move past a blocking vehicle at a cost of 2" of movement (the moving vehicle is going around the blocking vehicle). This option is not available if a bridge is being blocked.

Paths cannot be used by helicopters. All other stands are treated as if they were moving through clear terrain as long as they move along a path.

9. Cliffs and Ridges

Cliffs have no effect on helicopter stands. Cliffs are impassable to all other stands, except light infantry. Light infantry may cross cliffs after they have spent a full turn adjacent to the cliff.

Ridges have no effect on movement.

10. Towns

Towns are impassable to helicopters in noe mode. Towns have no effect on leg class stands. All other class stands have their movement rate halved when moving through towns. Towns are cover for spotting and los purposes.

D. Carrying Infantry/Moving Towed Weapons

A vehicle may carry a number of infantry stands equal to the vehicle's capacity. The vehicle expends half of its movement allowance when it picks up or drops off infantry stands. The vehicle may pick up or drop off infantry at any time during its movement phase. The vehicle is not considered to have moved (for overwatch purposes) if it only drops off infantry.

Infantry that is dropped off will lose a fraction of their movement allowance equal to the fraction spent by the carrier when it drops off the infantry. Round all fraction down to the nearest half inch. *For example, a Warrior IFV with a movement of 10 moves 2" and drops off an infantry stand. The Warrior has expended 7 inches of movement-2" for movement and 5" to drop the infantry off. This is 70% of its movement, so the infantry will lose 70% of its movement that turn. The infantry stand can move 3"; 70% of 3" is 2.1"; this leaves .9 inches for the infantry to move, which is rounded down to .5 inches. The infantry*

⁶ The swamp rules are a lot of trouble. If you want, you can simply make swamp impassable to vehicles.

has 1/2 inch of movement left.

In close combat, mounted infantry can dismount after the first round of close combat. The carrier loses half or all of its movement allowance at the end of the close combat. The infantry may not move after close combat.

These same rules apply to towed weapons and their movers, except that towed weapons may be moved 1" per turn by their crews, if the towed weapon did not plot fire in the command phase.

E. Cohesion

To be in cohesion, all stands in a unit must remain within cohesion distance of another stand in the unit. Recon stands ignore all cohesion rules.

A stand that is out of cohesion must move towards the other stands in its unit, if the stand moves at all. A stand out of cohesion has its quality number increased by one until it restores cohesion.⁷

Players may intentionally move a stand out of cohesion, but the stand must move to re-join its unit if the stand moves in a later turn. Cohesion distance depends on troop quality:

Green troops have a cohesion distance of 2".

Regular troops have a cohesion distance of 2".

Veteran troops have a cohesion distance of 3".

Elite troops have a cohesion distance of 4".

F. Strategic Movement

Strategic movement is a special type of movement. Only ground stands can make strategic moves. A vehicle stand that makes a strategic move has its base movement rate doubled or increased to 12, whichever is greater. An infantry stand has its movement rate doubled. A stand must make a strategic move for the entire movement phase; it can't "mix and match" movement modes. But for the entire player turn and the following enemy player turn, the stand must obey the following restrictions:

1. It can't fire during its fire phase.
2. It can't move within 10" of any enemy stand, *regardless of whether it can see the enemy stand or not*. Of course, this means that it can't initiate a close assault.
3. It can't have an overwatch marker or a hold fire marker placed on it.
4. All quality checks that the stand takes as a result of enemy anti-vehicle or small fire are at -1.
5. Enemy attacks against the stand are at +1 to hit, except for artillery attacks.
6. If close assaulted, the stand fights normally.
7. It must be more than 10" away from any enemy stands before it can make a strategic move.

§ 5 Seeing Your Opponent

A. General

Before a stand may fire, its target must be spotted. Before a stand can spot a target, the spotting stand must be able to trace an unblocked line of sight to the target stand.

B. Line of Sight (los)

Stands trace line of sight from any part of a stand to any part of a stand.

Los may be blocked by certain types of terrain as well as geographic features such as hills or towns.

Players may agree to use the **Carl Rule**, which provides that a stand on the edge of cover may only fire or be fired at through its front arc.⁸ Infantry is exempt from the Carl Rule.

C. Spotting

A stand is spotted **the instant** it is within spotting range of an enemy stand. The spotting chart lists spotting ranges.

Once a stand is spotted by any stand, it is spotted by all stands.

A stand becomes unspotted during the beginning of any phase in which it is out of any enemy unit's line of sight.

⁷ This rule simulates the additional command and control burden of having a detachment running around the battlefield, as well as the brittle nature of detachments.

⁸ The Carl Rule is realistic, but painfully non-intuitive. Therefore, we made it optional. If you use the Carl Rule, you should allow players to check the angle of their stands before they finish moving, so that they can be certain that they can fire at a target.

D. Terrain Effects on Los and Spotting

1. Hills and Ridges

Hills are not shaped like wedding cakes. They regularly slope from the ridge of the hill to its base. Hills can be one or more levels high. Ideally, hills should be at least two levels high, but you can make them as high as you want.

Ridges are linear obstacles. They block los, unless either the spotting stand or the target stand touches the ridgeline.

2. Cover

Woods, forests, towns and swamps are cover. Most cover is one level high, but towns and cities can be higher if you desire. A stand touching a ridge is in cover for spotting purposes only if the los must be traced through the ridgeline. Cover blocks line of sight. Stands in cover may see up to 2" in the cover. This stops at the edge of the cover. So a stand 1" inside a forest cannot see out of the forest. Its los stops at the forest edge.

E. Smoke

Smoke blocks line of sight just like cover. But stands equipped with thermal sights ignore smoke. Smoke goes away during the command phase of each turn on a roll of 1 on one die. Roll during each player's first phase. A smoke barrage has the same width as the weapon's HE burst size, and three times the HE burst size in length.

An incendiary smoke barrage has the same size as regular smoke. All soft or infantry stands in an incendiary smoke barrage are attacked with 1 anti-infantry die on the turn that the barrage lands (only).

F. Multi-spectrum Smoke (optional)

In scenarios taking place after 1998, smoke may be multi-spectral. Treat multi-spectral smoke just like normal smoke, except that stands with thermal sights do not ignore this smoke.⁹

G. Thermal Sights

A stand with thermal sights ignores normal smoke. Incendiary smoke degrades a thermal sight. Every inch after the incendiary smoke is counted as two inches against the thermal sight's 20" range.

§ 6 Combat Overview

A. General

There are 3 types of combat:

Anti-vehicle combat: direct fire against vehicles usually using armor piercing ammunition.

Small arms combat: fire against infantry and soft stands usually using automatic weapons and high explosive warheads.

Artillery combat: fire delivered by indirect fire from artillery systems.

B. Cover

A stand must touch the edge of cover for the stand to fire out of the cover or be fired at by stands outside the cover. A stand in cover may trace a line of sight two inches in the same cover. It may fire at a target 2 inches or less away in the same cover.¹⁰

C. Infantry in Personnel Carriers

Infantry may fire from a vehicle, but the effective range is halved and a -2 adjustment is applied to the hit number. Infantry in a vehicle that is destroyed (not one that fails a quality check) must make a quality check. If they fail this quality check they're destroyed and removed with the vehicle. Infantry in a vehicle that fails a quality check are eliminated with the vehicle.¹¹

§ 7 Fire Combat Eligibility

A. General

Stands execute fire combat during the firing phase, or, in the case of overwatch fire, during the

⁹ Larry Bond postulates this in his novel *Cauldron*. I can't confirm its existence, but it is fun to play with, and it takes the edge off of thermal sights.

¹⁰ All cover has this "hard edge" for playability purposes. If you like, you can delete this rule and allow all stands to see 1" into cover and see 1" out of cover.

¹¹ The infantry are staying in the vehicle as it seeks "better firing positions" to the rear.

movement or firing phase.

Vehicles with multiple weapons systems (i.e., both guns and missiles) must choose one weapon system to fire. Vehicles may conduct anti-infantry fire or anti-vehicle fire, but not both.

Infantry may attack regardless of how far they moved. Infantry stands may use all of their weapons in the same turn, against different targets, if the owning player decides. Infantry missiles are an exception to this rule. They may only fire if the infantry stand did not move during its last movement phase. This applies to overrun combat as well.

Towed weapons may only fire if they did not move during the movement phase.

All attacks against a given target must be declared before they are resolved.

Vehicles that moved more than half their movement (not including turning or picking up/dropping off infantry) are not eligible to fire in the fire phase, unless the vehicle has stabilized guns.

B. Procedure

A player may conduct fire with his stands in any order. The player indicates one or more firing stands, identifies the target, and states the type of weapon(s) being fired. The player then resolves the attack(s). The player then declares and resolves the next attack. Note that this allows a player to see the effect of the first attack before he declares the second attack. However, all fire against a given target must be declared before resolving any attack against that target.

C. Targeting Restrictions

A stand must fire at the nearest enemy stand, **at the moment it fires**, subject to the following exceptions:

- a) Firing stands may ignore any enemy stands being fired at by other friendly stands during the current phase. All overwatch fire in a given phase counts for this rule. So, a stand firing in overwatch at a tank 10" away may ignore the tank 5" away, if a friendly stand has already made an overwatch attack against the stand, during the current phase.
- b) Firing stands may ignore infantry in favor of vehicles or vice versa. A firing stand may ignore enemy stands in cover in favor of enemy stands in the open.
- c) Firing stands may ignore a target in cover or behind an obstacle in favor of a target in the open.
- d) Firing stands may ignore light vehicles to fire at main battle tanks (but **not** vice-versa).

Artillery units (on-board and off-board) are not subject to this rule when making indirect fire attacks.

D. Movement and Firing; Stabilized Guns

Vehicles that moved more than half their movement (not including turning or picking up/dropping off infantry) are not eligible to fire in the fire phase, unless the vehicle has stabilized guns.

Vehicles that have stabilized guns have an "s" in the "Equip" section of the vehicle data chart.

Missiles are **never** stabilized, even on vehicles that have stabilized guns.

A vehicle may always make anti-infantry attacks, no matter how far it moved.

E. Overwatch and "Shoot and Scoot"

1. Overwatch

A stand that does not move during its movement phase or fire during its firing phase may fire during the enemy's turn or even during the player's next movement phase. If a stand has advanced stabilization ("ss"), it can move up to half its movement and place an overwatch marker (assuming that it didn't fire in its fire phase).

If a stand conducts overwatch fire in the owning player's next movement phase, the stand may not fire in the following fire phase. The stand may have an overwatch marker placed on it at the end of the owning player's turn in this case.

For example, an M1 has an overwatch marker placed on it at the end of the Attacker's Turn 1. It does not fire during Defender's turn 1. During the movement phase of Attacker's Turn 2, a T-80 conducts overwatch fire and becomes spotted by the M1. The M1 fires. It cannot fire again in the Fire Phase of Attacker's Turn 2. But since it did not move in the Movement Phase or fire in the fire phase (it conducted overwatch in the Movement Phase, not the Fire Phase), the M1 can have an overwatch marker placed on it.

Overwatch markers are placed at the end of the owning player's fire phase.

Overwatch fire may be made at any point – before, during or after movement or firing – unless

specifically excluded in the sequence of play. All normal targeting restrictions must be obeyed during overwatch fire. A stand loses its overwatch eligibility after it fires all of the shots that it is eligible to fire.

2. Shoot and Scoot

A stand on overwatch that fires during the opponent's turn may fire normally or may make a special "shoot and scoot" attack.

To execute a shoot and scoot attack, the stand makes an anti-vehicle attack at half its ROF, round down. If the stand has an ROF of 1, it gets 1 shot, at -1 to hit.

After taking this shot, the stand may immediately move half of its movement. It may back up 1/4" and may not be fired at by enemy units on overwatch for this 1/4" movement. During the rest of the stand's movement, it may be fired at by eligible enemy stands, if they can trace a valid los and are in range.

F. Hold Fire

A stand that is eligible to fire during its fire phase may choose instead to "hold fire". The stand cannot fire in its own fire phase, but can fire during the enemy's next fire phase. All fire in a fire phase is simultaneous. Stands that have a hold fire marker may also pivot.

G. Pivot

A stand may pivot at the beginning of the enemy fire phase. The stand may only pivot when an enemy stand that began its movement phase in the friendly stand's front arc moves into the friendly stand's flank arc. The pivoting unit must pivot to keep the enemy unit in the pivoting unit's front arc.¹²

§ 8 Anti-Vehicle Fire

A. General

Anti-vehicle fire requires the following:

- a) An unblocked line of sight from the firing stand to the target stand; and
- b) The target stand must be within range of the firing stand.

B. Angle of Attack

If there is an unblocked line of sight, determine the angle of the attack. An attacker wholly or partially in the target's front arc (120°) uses the target's front armor value. An attacker not in the front arc uses the target's flank armor value. If the target does not have a flank armor value listed, use an armor value of 1 if the target is an MBT or 0 for any other vehicle.

C. Rolling to Hit

1. Procedure

- a) To resolve an anti-vehicle attack, roll dice equal to the ROF of the weapon.
- b) At close range (one half of effective range), the target is hit on a 3+. At effective range, the target is hit on a 4+. At long range (1.5 times effective range), the target is hit on a 5+.
- c) Guns making h-class attacks are inherently inaccurate at long range. Therefore, they hit on a "6" at long range. This does not apply to missiles.

2. Quality Modifiers

Green troops get a -1 to their roll, Veterans get a +1 to their roll. Elites get a +2 to their roll.

3. ROF Reduction for Multiple Targets

A stand with an ROF greater than 1 may fire at different targets and may allocate the number of shots among the different targets as the owning player wishes, but it loses one ROF for each target it engages after the first. Therefore, a stand with an ROF of 3 can fire 3 shots at one target, or 1 shot each at 2 targets.

4. CITVs

Vehicles equipped with a Commander's Independent Thermal Viewer (CITV) allow the vehicle commander to target a second vehicle while the gunner is firing at the first vehicle. Thus, CITVs allow a vehicle to ignore the ROF Reduction for Multiple Targets.

For example, an M1A2 with a ROF of 3 can fire one shot at three different targets.

¹² This prevents players from exploiting the sequence of play and "panzerbushing."

5. Point Defense Systems

Some Russian tanks now have an active countermeasures system installed to defeat antitank missiles. These systems fire flechette grenades in the direction of incoming missiles and also incorporate jammers to interfere with the missile controller.

Vehicles equipped with point defense systems add one to their terrain saving throw. If the vehicle is in terrain with no saving throw, the vehicle gets a saving throw of 6.

6. Missiles

Missiles may have a minimum range and always have maximum range. Their hit number at all ranges is 3+. Missiles get no penetration modifier for close or long range.

Green troops get a -1 to their to hit roll, Veterans get a +1 to their to hit roll. Elites get a +2 to their to hit roll. A natural "1" always misses.

Most missiles have a minimum and maximum range. For example, "1-40". The missile may not be fired at less than one inch or more than 40 inches.

Stands that are listed as having missiles (Msl on the data charts) may have a limited supply of missile ammunition. Stands with a limited missile supply have two shots. To represent this, place a penny under the stand (heads up) when it fires. Whenever the stand fires another missile, turn the penny tails up. The stand may no longer make missile attacks.

Stands with unlimited missile ammunition may fire as many shots as they wish.

Some missiles are classified as top-attack missiles. These missiles attack a target's flank armor, no matter what angle they attack from.

D. Terrain Saving Throw

A stand that is hit by anti-vehicle fire gets a saving throw if it is in certain types of terrain. The saving throw is made on 1 die, and a separate saving throw is made for each round that scored a hit. If the stand makes the saving throw, the round misses.

Stands in **Lt. Woods, Heavy Woods or Swamp** have a saving throw of 5 or 6.

Stands in **Forests, Towns or Smoke**, or behind **Ridges** have a saving throw of 4,5, or 6.

Stands that are behind (and touching) **streams or trenches** have a saving throw of 4,5, or 6.

Saving throws into woods, forests, swamps, or towns are increased by 1 if the attacker is firing a missile.

E. Penetration Roll

1. Procedure

For every round that hits the target, roll dice equal to the weapon's penetration minus the target's armor. Apply modifiers from the Anti-Vehicle Fire Table for non-"h" class weapons. A player may roll a maximum of 10 dice per shot that hits.

If a 6 is rolled on any die, the target is destroyed. If a 4 or 5 is rolled on any die, the target must make a quality check. Only one quality checks needs to be made, no matter how many 4s or 5s are rolled.

For example, an M1A1 (pen 17) fires and hits a T-72B (armor 10c) in the front. The M1A1 gets (17-10) seven dice and rolls them. He rolls a 1,2,2,1,4,5,1. The T-72 must make a quality check. The T-72 is average quality so its roll must equal or exceed 5 or it will be destroyed.

A weapon always rolls one penetration die per shot that hits the target. However, if the weapon's penetration is less than the target's armor, the penetration roll is adjusted by the negative number.

So, if an M2 Bradley fires its gun (pen 1) at an AMX-30B2 (armor 4), the M2 would roll 1 die per shot that hits, and since the penetration minus the target's armor is a negative number (-3), the Bradley would subtract 3 from its penetration roll. Therefore, the Bradley cannot harm the AM-30B from the front.

2. Soft Vehicles

Soft vehicles have an armor value of 0 when fired at by anti-vehicle fire. Note that soft vehicles can also be fired at with anti-infantry fire.

3. Chobham Armor

Missiles (and some guns) have an "h" listed after their penetration. All "h" weapons halve their penetration against vehicles whose armor has a "c".

4. Reactive/Laminate Armor

H class weapons subtract 3 penetration dice against vehicles whose armor has an "r". Roll for each separate shot that hits the target.

5. Infantry Anti-Tank Weapons

Infantry stands have an anti-infantry rating, a LAW (light antitank weapon) and possibly a MAW (medium antitank weapon).

Most MAWs and all LAWs have a long and close range just like most other weapons.

However, some MAWs are actually missiles and use the missile rules below.

Infantry stands that have integral mortars are equipped with light 60mm mortars. The stand may make an additional indirect fire mortar attack with a range of 16", a burst of 1" and 1L artillery factors.

§ 9 Small Arms Fire

A. Procedure

Small arms fire may be conducted against any infantry stand or soft vehicle stand. The firing stand nominates any infantry stand or soft vehicle it can see within effective range (or long range for vehicles) and rolls dice equal to its rof.

The target takes a hit for each of the firing stand's dice that exceeds the firing stand's to hit number. The target stand then must make a quality check. For every additional hit after the first one, subtract one from the quality check. Infantry units only have to make one quality check per phase, no matter how many attacks are made against them. If the infantry stand makes the quality check, the stand is marked with a pinned marker. A stand with a pin marker may not move (or continue moving) until the marker is removed in the final phase.

If the firing stand fires at more than 1 target, the **ROF Reduction for Multiple Targets** rules (§ 8 C.) apply.

For instance, a Bradley fires its cannon at two enemy infantry stands. The cannon has a ROF of 5, reduced to 4 because there are two targets. The Bradley allocates two attacks against each target. The Bradley's small arms to hit number is 4+. The dice on the attack against the first stand are 2 and 6. The first stand takes a hit and must make a quality check. The dice on the attack against the second stand are 5 and 4. The second stand must make a quality check at a -1.

Artillery pieces use the artillery rules for resolving hits, if they are conducting self-spotted artillery fire. They use the small arms fire rules if conducting direct fire.

Small arms fire at long range is permitted, but subtract 2 from the to hit roll.

B. Terrain Effects on Small Arms Fire

Apply a -1 to the to hit number of a stand firing at a target that is in soft cover (woods, forest, swamp) **and that did not move** in the last movement phase (or the current phase if attacked by a stand on overwatch).

Apply a -2 to the to hit number of a stand firing at a target that is in hard cover (towns, bunkers, ridgeline, trench/stream, etc) **and that did not move** in the last movement phase (or the current phase if attacked by a stand on overwatch).

Apply a +2 to the to hit number of a stand firing at a target that **moved in its last movement phase** (or that is moving in the current movement phase if attacked by a stand on overwatch).

§ 10 Artillery Fire

A. Procedure

Players place artillery barrage markers during their Command Phase. The artillery fire will usually hit during the enemy's Artillery Phase. One barrage marker corresponds to an artillery mission. An artillery mission is one or more batteries (or battalions for Soviet/CIS, East Bloc and Third World armies).

When you place a barrage marker, write down the turn, the barrage marker number, the batteries/battalions that are firing, the sheaf, and the ammunition. If the barrage marker is a decoy, note that on the sheet.

Any number of batteries may participate in a single mission, but all artillery stands must be of the same type and must fire the same ammunition and sheaf.

Each FO can observe for one barrage marker. The marker is placed anywhere that the FO can trace an unblocked line of sight to. In addition, a player can place up to 3 decoy barrage markers.

Artillery barrages land during the Artillery Phase of the opponent's turn. A barrage is represented by a **barrage template**. But just before the barrage lands, it can be "corrected." The actual barrage template can be placed within 6" of the marker, as long as the observer can trace an unbroken line of

sight to the new location.

If the FO that placed the barrage marker cannot trace a line of sight to the marker when the artillery lands, the barrage template is placed exactly where the barrage marker is. No correction is allowed. Also, if the observing stand or unit is destroyed, the artillery strike lands exactly where the barrage lands.

An FO can always cancel an artillery barrage at any time before the barrage lands.

Any stand wholly or partially within an artillery barrage template is affected by the barrage.

Total the number of artillery points from all firing guns. Cross reference this on the **Artillery Chart** to determine the roll needed to score a hit on the target. A stand that is hit must make a quality check.

B. Forward Observers

Each unit has one integral FO. The integral FO is with any stand the owning player desires at any time. The FO is not destroyed until the entire unit is destroyed.

There are also FOs that are deployed on the battlefield. They act like any other stand with these exceptions:

- a) They may not fire at an enemy unit.
- b) As long as they are within 4" of a friendly unit, they may not be targeted by enemy troops, nor may they be affected by enemy artillery.
- c) During the command phase, FOs may spot for friendly off-board artillery.
- d) During the fire phase, FOs that did not spot for off-board artillery may spot for on-board artillery.

C. Batteries

All guns in a battery fire at the same target. Additional guns do not increase the barrage template size, but simply add artillery points to the attack.

For example, an American SP 155mm battery has two guns. Each gun has 2 artillery points. If both guns fire, they will use the same barrage template and 4 artillery factors apply to the attack.

D. Sheafs

Most artillery can fire two kinds of sheafs: dispersed and converged. The data charts give the template sizes and number of artillery points for each sheaf.

E. Off-Board Artillery

Off board artillery can fire at any target on the board as long as a FO or unit spots for them. As a practical matter, most artillery will be off-board.

F. Self-Spotting

On board artillery stands (mortars usually) don't need an FO to place a barrage marker if they can spot their target.

G. Battalion/Regiment Mortars

Mortars that are integral to a Battalion or Regiment (see the Army Lists) can react faster than other artillery.

These stands fire during the fire phase (or opportunity fire phase if the stand does not move or fire). They resolve their hits like normal artillery attacks. Their attacks do not have to be marked with barrage markers.

These stands can fire at targets that they cannot see, but a FO or unit of their battalion/regiment must spot for them. The FO or unit must not have placed other artillery barrages during the owning player's previous command phase.

H. Artillery Fire Against Unspotted Stands

An unspotted stand that is touched by an artillery template is only affected if the firing player rolls a 1-3 on one die. This roll is not made if there is a spotted enemy stand completely covered by the template.¹³

I. Direct Fire From Artillery Units

On-board non-mortar artillery stands can engage in direct fire. The stand is treated basically as an AFV and has listings for penetration, range, and ROF.

J. Ammunition Limits (optional)

Many artillery units have limited ammunition. A 119mm or smaller howitzer has 15 shots. A 120-

¹³ Do not use this rule if you are playing a scenario with completely hidden units and a referee.

129mm howitzer has 10 shots. A 130-150mm howitzer has 7 shots. A 151mm or larger howitzer has 5 shots.

K. Counterbattery Fire

To simulate counterbattery fire, self propelled artillery stands may only fire every other turn (they are moving to new firing positions). Batteries that have two guns can thus fire one gun each turn, or two guns every other turn.

Towed artillery stands may only fire every other turn and will be destroyed on a roll of 1 or 2 in any phase that they deliver artillery missions.¹⁴

If you want, you can play without the counterbattery rules. But you should increase the cost of the towed artillery systems to equal the self propelled artillery systems. Then, double the cost of all artillery systems.

L. Multiple Rocket Launchers

Multiple rocket launchers (MRL) are less accurate than tube artillery. Therefore, an MRL barrage may scatter and miss the target.

MRL barrages are placed and corrected like any other artillery mission. But an MRL barrage will only hit its target if the player makes a quality check for the firing stand. If the check misses, the barrage will scatter 1d6" in a random direction. Use scatter dice to determine the direction.

§ 11 Close Combat

A. Procedure

A stand that moves within 1" of an enemy stand must halt. The player places a die or a numbered marker beside the moving stand with its remaining movement allowance showing. During the close combat phase, units take turns firing at each other (nonmoving player first). After each round of close combat, decrease the remaining movement allowance by one. A unit completes close combat when it no longer has a target within one inch.

After the close combat is over, stands that have any movement left may continue moving.

B. Firing In Close Combat

In close combat, stands take turns firing (the non-moving stand fires first) until one side or the other has been destroyed.

Infantry firing at vehicles in close combat get to attack the vehicle's flank armor (regardless of facing).

C. Missiles In Close Combat

Due to minimum range restrictions, units may only fire missiles in the first round of close combat, and only if the missile has a minimum range of 1 or less.

D. Infantry In Close Combat

Non-moving infantry being close assaulted by MBT's must make a quality check at +2 to the roll. If the infantry makes the roll, it may fight as normal. If the infantry misses the roll, it may not fire in the first round of close combat.

Infantry firing at vehicles in close combat get to attack the vehicle's flank armor (regardless of facing).

E. Pivoting in Close Combat

Stands may pivot before firing in the second and subsequent firing rounds. This pivot will **not** cause the stand to engage in other close combats.

F. Miscellaneous Close Combat Rules

When close combat is over, any of the moving player's stands that survive may continue to move if it has any movement remaining (check the movement die beside the stand). They may engage in additional close combats at this time. Stop and resolve each new close combat after all eligible units have moved.

Stands that participate in close combat may also fire in their normal fire phase. Stands on overwatch remain on overwatch after close combat is over.

Stands expend missile ammunition in close combat if they fire missiles.

¹⁴ Yes, we realize that this is an abstract rule. But please remember that the primary focus of the game is on mechanized forces and on speed of play. This simple mechanic makes it possible to delete half a page of cumbersome rules that only slow down play.

§ 12 Helicopters

A. General

A helicopter is treated for the most part as a very fast vehicle with special movement rules.

B. Movement

1. General

Helicopters function in one of two modes: high mode or nap of the earth (noe). A helicopter enters one mode or the other at the start of its movement phase. It must spend the entire turn in that mode.

2. Nap of the Earth Mode

A helicopter in nap of the earth mode is flying very close to the ground. It is treated as an armored vehicle for all purposes. The Helicopter Data Chart lists the speed of the helicopter in noe mode. A helicopter in noe mode may not enter cover, but the helicopter may fly over it. All terrain moved over costs the same as clear terrain for movement purposes. Treat the helicopter as being 1 level higher than the cover for spotting and line of fire purposes.

3. High Mode

A helicopter in noe mode ignores terrain costs for linear obstacles and broken terrain. A helicopter in high mode has an unlimited movement allowance. All enemy units spot the helicopter and may trace a clear line of sight to the helicopter regardless of intervening terrain. At the end of the movement phase in which a helicopter flies in high mode, the owning player rolls one die. If the roll is 1-5, there is no effect. On a "6", the helicopter will be the target of 1d6-3 anti-aircraft missiles. Even if the result is zero or a negative number, at least one missile will attack the helicopter. These are assumed to come from off board sources. Each missile will destroy the helicopter on a "6".

4. Coherency

Helicopters have a coherency range of 6".

C. Combat

1. General

During the firing phase (or during the opposing player's turn if the helicopter is on overwatch), the helicopter may attack with one of its weapons systems just like any other vehicle.

2. Pop-Up Attacks

The helicopter may also make a special pop-up attack. The helicopter executing the pop-up attack may fire through any intervening terrain and attack a target. Any enemy units on overwatch may fire at the helicopter as it rises before the helicopter makes its attack. These units trace a los to the helicopter. The helicopter is treated as though it were at the minimum height level it would need to be to execute its attack.

3. Close Combat

Helicopters are subject to the normal close combat rules, but close combat occurs at 4" range from enemy infantry. Only helicopters in NOE can engage in close combat.

D. Firing At Helicopters

Guns with a ROF of 4 or more may fire at helicopters that are within effective range.

Missiles may fire at helicopters if the helicopters are within 1/2 their maximum range.

All stands have integral **machineguns** which can attack helicopters. For anti-helicopter fire, each of these machineguns have a pen of 0, ROF of 1 and an effective range of 10".

Fire against helicopters is treated the same as fire against any other vehicle, except that guns, missiles and machineguns score a hit on a helicopter on a 6, regardless of range or troop quality.

Artillery treats helicopters as though they were armored vehicles. Helicopters in high mode are immune to artillery strikes.

E. SAMs, AAMs, and AA Guns

SAMs, AAMs, and AA guns are specially designed to engage aircraft and are much more effective against helicopters. SAMs, AAMs, and AA guns fire at helicopters like any other stands, except that they hit on a 5+. AA guns may fire at long range at a -1 to hit.

Some SAMs and AAMs are listed as being rear aspect missiles. These missiles may only fire at a helicopter from the rear. The rear is determined by using the 20° template.

Add troop quality modifiers when rolling to hit with SAMs, AAMs, and AA Guns.

F. Other Special Rules

Unless otherwise stated, treat helicopters as armored vehicles. Friendly forces may not fire (or correct) any artillery barrages within 20" of friendly helicopters. If a friendly helicopter is within 20" of a map fire mission, the mission is canceled for that turn. The mission will continue the next turn and will land in the location it normally would for that turn.

G. Rockets

Helicopter rockets are fired like any other direct fire weapon, except that no "to hit" roll is made. Instead, a 1" barrage template is placed and all stands touched by the template take a 5L artillery strike.

H. Laser Designation

Helicopters equipped with laser designated missiles may fire them just like any other missiles. They may also fire missiles at targets that are designated by other stands.

A stand may designate for any other stand in the same company if the stand can trace an unobstructed los to the target. The stand must not have moved that turn (or during the previous turn if the attack is occurring as an overwatch attack)

Referees may also give this designating capability to other units when designing scenarios.

A helicopter that is firing missiles designated by another stand may execute a much quicker pop-up attack than normal. The effect of this is that all weapons except SAMs, AAMs and AA guns have their effective range halved when firing at a helicopter executing this quick pop-up attack. SAMs and AAMs are -1 to hit.

§ 13 High Technology

A. General

Advanced technology is rapidly altering the modern battlefield. Of course, this is nothing new. Just ask the knights at Agincourt, the Israelis at the start of the Yom Kippur War or the Iraqis in Desert Storm. But what is new is how quickly the advanced technology is appearing. And armies that utilize this new technology have a decisive edge over more primitive armies.

B. IVIS (Inter-Vehicular Information System)

The IVIS is a computerized communications system that links every vehicle in a unit with its headquarters, giving the commander unprecedented control over units.

Each stand that has IVIS may place a different barrage marker. So, a company of 3 M1A2's can place 3 different artillery barrage markers.

Stands with IVIS also have their cohesion distance doubled.

C. CITV (Commander's Independent Thermal Viewer)

Vehicles equipped with a CITV allow the vehicle commander to target a second vehicle while the gunner is firing at the first vehicle. This has the game effect of allowing a vehicle to ignore the ROF Reduction for Multiple Targets.

For example, an M1A2 with a ROF of 3 can fire one shot at three different targets.

D. SADARM (Sense And Destroy ARMor)

SADARM is a new type of anti-armor artillery munition. After 1998, players can purchase SADARM ammunition for 152mm+ artillery and MRLs. SADARM barrages have the same template size as ICM. Any vehicles in the template are automatically attacked by a Pen 8h projectile. The attack hits the flank armor.

E. Artillery Laser Guided Projectiles

155mm, 152mm and 203mm guns can deliver laser guided projectiles instead of their normal attacks.¹⁵

Each unit or FO can place a laser guided mission in lieu of a barrage marker.

The laser guided projectile arrives just like other artillery missions. It will hit an enemy stand within 6" of the marker if:

1. The enemy stand was spotted by the designating stand when the mission was called; and
2. The enemy stand remained spotted in all subsequent phases; and
3. The firing stand makes its to hit roll of 4+.

A laser guided projectile has a Pen of 16h for 152/155mm guns, and a Pen of 24h for 203mm guns.

¹⁵ The US example of this system is the Copperhead. The Russians currently have a complete family of laser guided artillery rounds.

It hits on a roll of 4+. It strikes the flank armor of the target on a second roll of 4+. Otherwise, it hits the front.

152/155mm laser guided projectiles cost 25 points for each shot. 203mm laser guided projectiles cost 40 points each.

F. AFATDS (Advanced Field Artillery Tactical Data System)

This system is a replacement for the TACFIRE system that will enable even quicker response times for artillery missions. AFATDS will be available in U.S. units after 1998 and in European forces by 2005.

AFATDS stands fire during the fire phase (or opportunity fire phase if the stand does not move or fire). They resolve their attacks like any other artillery attacks. Their attacks do not have to be marked with barrage markers.

These stands can fire at targets that they cannot see, but a FO or unit of their battalion/regiment must spot for them. The FO or unit must not have placed other artillery barrages during the owning player's previous command phase.

Artillery stands that have AFATDS cost triple their normal cost.

G. NLOS Missiles

The US Army is working on a missile system that can be fired at targets that the gunner cannot see. The gunner flies the missile to the target using a fibre-optic link.

NLOS missiles have an "n" after their range on the vehicle data charts.

NLOS missiles may be fired at any enemy stand as long as a friendly stand can see the enemy stand. A friendly stand can guide any number of NLOS missiles.¹⁶

The stand firing an NLOS missile does not have to be able to trace a los to its target.

¹⁶ The friendly stand does not "designate" for the NLOS attack. Instead, the friendly stand tells the firing stand that enemy vehicles are nearby. The firing stand fires its missiles in the general area of the target, acquires the enemy vehicles, and flies the missile to them..

§ 14 Designers Notes

A. Two Hours; Two Pages of Rules

You hold in your hand a game that was designed in about two hours over a few beers while Dave and I listened to blues music, and which only had 2 pages of rules. Actually, we decided what our goals would be in that time. The game that you hold was designed in about 200 hours. The playtesting for the game has lasted over three years, and the current version of the rules (version 5) takes up a *lot* more than 2 pages. I guess it's appropriate that a game simulating modern warfare would be subject to the same "creeping featuritis" that has afflicted virtually every modern weapons system.

But the result is a tactical miniatures game that can stand toe to toe with any other set of miniatures rules on the market. I have worked very hard getting the systems right and have engaged in countless hours of research, trying to get hard data on modern weapon systems. There are still some rough areas, and I will continue to polish the rules as much as time allows. However, you hold a game that will allow you to simulate any battle of from 1960 to 2010.

B. Designing *A Fistful of TOWs: 2000*

1. Goal-Based Game Design

I have always respected game designers who have a clear idea of what they want to simulate before they design a game. Designers that clearly establish what they want to simulate, and how they want to simulate it usually produce coherent, elegant games. A good example is the Third World War series by Frank Chadwick. Chadwick decided he that he wanted a fast playing, and sophisticated simulation that could simulate a Third World War at division level, anywhere from Norway to the Persian Gulf. Chadwick also wanted players to use appropriate tactics because they made sense, not because the rules said so. So he designed an unprecedented asymmetrical sequence of play that required the Soviet player to echelon his forces to get optimum use out of them. NATO's sequence of play rewarded the use of AirLand Battle tactics. The Soviets would lose if all they did was barrel forward. Similarly, NATO would lose if all it did was dig in.

This single example affected me greatly when I started designing games. Every game that I have designed began with a list of goals. *A Fistful of TOWs: 2000* was no different.

2. The Paradigm

Alvin and Heidi Toffler in *War and Anti-War* theorize that there are three levels of military organizations, which correspond to the three types of civilization that they described in *The Third Wave*. The First Wave military is the military force of an agrarian economy. This is the military force that existed in various forms until the Industrial Revolution. The First Wave military was made obsolete by massive Second Wave militaries in which industrial prowess more important than military excellence. The American and Soviet armies of the Second World War and the Cold War exemplified such militaries. But at the end of the twentieth century, we're seeing the emergence of a Third Wave military – a military that is typified by "smart" weaponry, computerization at all levels, and that has achieved a quantum leap in command and control. The US Army in Desert Storm gave us a hint of what is to come in the next two decades. And it showed what can happen to a Second Wave military that tangles with a Third Wave military. The Iraqis were as helpless against the US Forces as Alexander the Great's Macedonians would have been against Patton's Third Army.

This thesis has fascinated us and one of the design goals of *A Fistful of TOWs: 2000* is to illustrate the difference between the World War II Army and the 21st Century Army.

3. Elegance

I love elegant games because they are far harder to design than "complicated" games. Anyone can write a rule to cover every possible contingency, and weigh a game down to the point that it is unplayable. But elegance requires simplicity and sophistication rather than complexity. While these qualities are difficult to attain in a game design, the result is worth it. Players enjoy elegant games because they are easy to learn but hard to master. Of course, they must be fun. So I wanted *A Fistful of TOWs: 2000* to be elegant.

But how do you achieve elegance? I believe that you achieve elegance in a wargame by developing systems that quickly and simply achieve results that, in other games, take much more complex rules. Good examples are the command/cohesion system, the artillery system and the vehicle data system.

4. The Command System

Command systems exist to prevent players from maneuvering every individual stand independently. They also simulate the differences between armies at controlling and directing forces. The 1941 Germans and the 1941 Russians illustrate the extremes of the “command continuum. Few armies will be as well-commanded as the 1941 German army, and few will be as poorly commanded as the 1941 Russian army. An army’s ability to command and direct its forces on the battlefield is a primary indicator of its ability to win battles. The Russian army was terrible until its commanders learned to control their forces. And when Russian commanders got better (or just good enough), the Red Army defeated the Wehrmacht.

Due to the importance that we placed on command, FFT had to have a command system. After considering a variety of systems based on command points, we decided to use coherency rules modeled after the rules in Warhammer 40K. These rules allowed us to dispense with command vehicles and a probably a page of rules, while retaining the essence of a good command system. Stands maneuver in company or battalion sized units just like their real life counterparts.

5. The Artillery System

The FFT artillery system, is my personal favorite for elegance, however. Quite simply, it works. Simply. Quickly. And realistically. Players in FFT use artillery much more effectively than in other games I have played. The essence of the system is that it dispenses with the notion of pre-plotting artillery fire. Strange as it may seem, game designers have yet to realize that few miniature games are so well planned that the players have a perfect map of the battlefield. The FFT artillery system simulates the “lag time” of an artillery barrage, without cumbersome rules for plotting strikes. It’s a system that novices can understand and use in their first game, as playtesting has shown. And simplicity begets speed.

6. Troop Quality

The better troops consistently win battles. Most military historians agree with this truism, but most wargames don’t reflect it. I’ve always suspected that this is because it is much harder to quantify what the effect of troop quality really is. Therefore, games have tended to emphasize hardware over quality, because you can objectively determine the range of a TOW, for instance. But we decided to take a stand and reflect our opinions in FFT.

My undergraduate degree is in History and I have accumulated 18 hours towards an M.A. in History. Dave and I have studied warfare extensively as a hobby. Dave was also a member of the US Team in the Southeast Asian Games. We believe that materiel is important, but throughout history, better trained, motivated and led soldiers have defeated more lavishly equipped opponents. Think of the Germans in 1940 or 1941. The Israelis. The Army of Northern Virginia. There are countless additional examples.

To reflect our bias, we agreed that troop quality would affect every aspect of our game. We decided to hang as many game mechanics on troop quality as we could. The result is a game in which the better troops usually do win. You can replicate the Bekaa Valley or the Gulf War in FFT. Most games will not let you do that. Of course, we have a points system to build balanced scenarios. But if you fight a historical scenario, like the Battle of the Golan Heights in 1973, or 73 Easting in 1991, the results will be the same.¹⁷

7. Vehicle Data

We also required that all vehicle data fit on one line of a sheet of notebook paper. We barely made it. The reason for this requirement is that we wanted games to play fast (see below). We wanted players to be commanding their units, not leafing through data charts for the .50 cal machinegun anti-armor effects data chart.

The vehicle data was derived from a variety of sources, primarily the various Janes’ publications. Vehicle movement rates were determined primarily from the vehicle’s power to weight ratio and whether the vehicle was tracked or wheeled.

Data is readily available for most missile systems. Again, I relied heavily on the Janes’ publications. I generally used the most conservative data available. Penetration was determined by dividing the missile’s penetration in millimeters by 50. Some of the higher numbers were adjusted downward so that they would still be unable to penetrate the front armor of Chobham armored main battle tanks.

Gun data was harder to find, but basically a gun’s penetration number is its penetration (of rolled

¹⁷ We considered, but rejected, a rule that would allow veterans and elites to increase their ROF by one on all weapons. Feel free to use it, if you want. We rejected it because it would have unpredictable effects on the point values of vehicles.

homogeneous armor at 2000 meters) in millimeters, divided by 50 plus 2.

8. Speed, Speed and More Speed

The primary motivation for designing FFT arose out of dissatisfaction with the time required to play *Command Decision II*. We wanted to play a modern miniatures game, but we couldn't stand the thought of spending an hour (or more) to play a single game turn. To be fair, my experience with *CDII* is limited. However, Dave has played it extensively and has won more games than anyone else in our club. He flatly states that he can't ever remember a game of *CDII* that he played that averaged less than an hour a turn.

We wanted something fast. *Real fast*. We wanted a game that could be played in 10 minutes per game turn. We have attained that level of speed in numerous games and even our slowest games did not average more than about 20 minutes per turn. Dave and I agree that the essence of modern mechanized warfare is speed. The great commanders like Rommel, Guderian or Patton, have the ability to react quickly and get things done quickly. The incompetents can't. I don't think that a game that requires an hour to play a single turn is "realistic" in any sense of the word. Nor is it much fun.

Our obsession with speed provided us with a useful litmus test for rules. We examined every rule by asking the questions "how much time will this add to the game?" and "is it worth it." We ruthlessly excluded rules that cut into our precious speed.

9. Low Complexity

Dave and I are old hands at wargaming. He has played wargames for over 30 years and I have played wargames for about 18 years. We have played our share of complex games. Dave, for example, loves (cringe) Air War, possibly the most complex wargame ever designed. I have played numerous games of The Next War and (shudder) Nato Division Commander. We have played Scorched Earth twice. These credentials demonstrate that we do not fear complexity. But we despise needless complexity.

I define needless complexity as complexity that extracts a cost exceeding the benefits it provides. An example of needless complexity is the spotting system in Assault or Command Decision. While it is doubtlessly "realistic," whatever that means, it slows a game to an absolute crawl. I have disparagingly referred to Command Decision as "Spotting in the East." Its spotting system is so cumbersome that experienced players have heavily modified it. If they don't, the game slows to a crawl and any sense of speed is lost. Anyway, the point of this diatribe is to warn players that complexity does not equate to realism. What you gain in realism may be more than offset by the cost that the "realistic" rule exacts.

10. Conclusion

I believe that FFT is a good tactical wargame. It is not perfect. I have a lot of rules yet to write. However, all of the rules that you will need to fight 95% of your battles are here. I will get the remainder written as soon as I can. And you can learn the rules and fight a major engagement in a couple of hours.

If you disagree with any part of this game, tell me. Give me a chance to fix the problem before you decide that the game is not worth playing. A lot of assumptions went into this game. Many of them are probably suspect, or at least debatable. Dave and I are not in love with any particular rule or system. If you can think of a better way to do something, let me know.

Enjoy!

§ 15 Charts

Spotting Stand: Quality Type		TARGET TYPE							
		VEHICLE				PERSONNEL			
		Moving In	Moving Open or	Station. In	Station. In	Moving In	Moving Open or	Station. In	Station. In
GREEN	Personnel Vehicle Recon Vehicle Recon Personnel	Firing auto	Cover 20"	Cover 10"	Open 40"	Firing auto	Cover 10"	Cover 1"	Open 20"
AVERAGE	Personnel Vehicle Recon Vehicle Recon Personnel	auto	30"	15"	45"	auto	15"	1"	30"
VETERAN OR ELITE	Personnel Vehicle Recon Vehicle Recon Personnel	auto	40"	20"	50"	auto	20"	1"	40"
		auto	30"	15"	50"	auto	15"	1"	30"
		auto	40"	20"	50"	auto	20"	1"	40"
		auto	50"	25"	50"	auto	25"	1"	50"

Troop Type	Quality Roll	To Hit
Green	6+	-1
Average	5+	0
Veteran	4+	+1
Elite	3+	+2

- ### C. Small Arms Fire
1. Roll dice equal to the firing stand's ROF.
 2. Apply these modifiers to the rolls:
 - If target didn't move in last movement phase (or current phase if attacked by a stand on overwatch)*
 - 1** if the target is in **soft cover** (woods, forest, swamp)
 - 2** if the target is in **hard cover** (towns, bunkers, ridgeline, trench/stream, etc)
 - If target moved in last movement phase (or current phase if attacked by a stand on overwatch)*
 - +2** if target is in the open
 - +1** if target is in cover
 3. Every die that equals or exceeds the firing stand's "to hit" number is a hit. A "6" always hits.
 4. The target must make a quality check if it suffers a hit. The check is at -1 for each additional hit after the first one.
 5. If the target makes the quality check, it is **pinned**.

D. Anti-Vehicle Fire	
Range	To Hit
Close	3+
Effective.....	4+
Long	5+
If firer is green, -1. If firer is veteran/elite, +1. A natural "6" always hits. Penetration Dice: A 4-5 is a quality check, 6 is a kill.	

E. Artillery Fire Chart

Artillery Factors	AFV	"L" Class vs. AFV	Soft/Infantry in the open	Soft/Infantry in cover
1-2	6+	6+	5+	6+
3-4	5+	6+	4+	5+
5-6	4+	5+	3+	4+
7-8	3+	5+	2+	3+
9+	2+	4+	2+	2+

If a target is hit, it must make a quality check.

F. Terrain Effects Chart

Terrain	Anti-Vehicle Save	Small Arms Modifier	<i>Movement Class</i>					
			Tracked	Wheeled	Leg	Towed	Amphibious	Helicopter
Clear	-	-	1	1	1	1	-	1
Light Woods	5+ 4+ Msl	-1	1	1	1	1	-	P
Heavy Woods	5+ 4+ Msl	-1	2	2	1	2	-	P
Forest	4+ 3+ Msl	-1	P	P	1	P	-	P
Swamp	5+ 4+ Msl	-1	See pp8-9	See pp8-9	See pp8-9	See pp8-9	See pp8-9	P
Towns	4+ 3+ Msl	-2	2	2	1	2	-	P
Streams	4+ ¹	-2 ¹	1/2 stand's MA	1/2 stand's MA	1	1/2 stand's MA	-	-
Rivers-Fordible	-	-	2	2	2	2	2	-
Rivers-Impassable	-	-	P	P	P ²	P	4	-
Cliffs	-	-	P	P	P ³	P	-	-
Ridges	4+ ¹	-2 ¹	-	-	-	-	-	-
Roads	-	-	MA doubled	MA quadrupled	MA doubled	MA doubled	-	-
Paths	-	-	1	1	1	1	-	-

P = Prohibited - = No Effect

A number indicates that this is how many inches of movement it costs to move one inch through that type of terrain.

¹ If target stand is behind and touching the terrain feature, it gets this modifier or saving throw. Otherwise, there is no effect.

² At the referee's discretion, infantry may cross with rubber rafts at 1/4" per turn. The infantry may not fire while in the water.

³ Light infantry stands may cross a cliff by spending an entire movement phase beside the cliff.

§ 16 Vehicle Data

Vehicle	Period	PV	Move	Armor	Gun				Missile			Equip	Cap	Missile	Notes
					Pen	ROF	Rng	SA	Pen	ROF	Rng				
United States MBT's															
M60A1	70-80	13	5	5	8/8h	3	16	5+	-	-	-	s	-		
	81-84	16	5	5	9/8h	3	16	5+	-	-	-	s	-		
	85-89	18	5	5	10	3	16	5+	-	-	-	s	-		
	90-95	19	5	5r	10	3	16	5+	-	-	-	s	-		
	96-00	21	5	5r	11	3	16	5+	-	-	-	s	-		
M60A2	70-80	19	5	5	15h	1	12	3+	12h	1	10-30	s	-		
M60A3	81-84	22	5	5	9/8h	3	20	5+	-	-	-	s	-		
	85-89	24	5	5	10	3	20	5+	-	-	-	s	-		
	90-95	26	5	5r	10	3	20	5+	-	-	-	s	-		
	96-00	28	5	5r	11	3	20	5+	-	-	-	s	-		
M1	81-84	30	12	7c/2	9/8h	3	20	5+	-	-	-	ss,t,n	-		
	85-89	33	12	9c/2	10	3	20	5+	-	-	-	ss,t,n	-		
	90-95	36	12	9c/2	10	3	20	5+	-	-	-	ss,t,n	-		
	96-00	39	12	9c/2	11	3	20	5+	-	-	-	ss,t,n	-		
M1A1	85-89	44	12	9c/2	12	3	24	5+	-	-	-	ss,t,n	-		
	90-95	54	12	12c/2c	15	3	24	5+	-	-	-	ss,t,n	-		
	96-00	60	12	12c/2c	17	3	24	5+	-	-	-	ss,t,n	-		
M1A2	96-00	65	12	12c/2c	17	{3}	24	5+	-	-	-	ss,t,n,c	-		
XM8 Buford?	96-00	36	12	5c/1r	11	3	20	5+	-	-	-	ss,t,n	-		
Stingray	90-95	21	12	1r	10	2	20	5+	-	-	-	s	-		
	96-00	22	12	1r	11	2	20	5+	-	-	-	s	-		
United States Light Vehicles															
M113	70-00	1	7a	0	-	1	6	6+	-	-	-		1		
ACAV	70-00	1	7a	0	-	2	6	5+	-	-	-				
M2 Bradley	85-89	10	12a	1	1	4	10	4+	14h	1	1-38	s,t,n	1	*	
	90-95	14	12a	1	1	4	16	4+	16h	1	1-38	s,t,n	1	*	
	96-00	22	12a	1	1	4	16	4+	8h	1	1-38†	s,t,n	1	*	Top attack missile
M2A2 Bradley	90-95	15	12a	2r/1r	1	4	16	4+	16h	1	1-38	s,t,n	1	*	
	96-00	23	12a	2r/1r	1	4	16	4+	8h	1	1-38†	s,t,n	1	*	Top attack missile
M3 Bradley CFV	85-89	20	12a	1	1	4	10	4+	14h	1	1-38	s,t,n	-	•	
	90-95	23	12a	1	1	4	16	4+	16h	1	1-36	s,t,n	-	•	
	96-00	39	12a	1	1	4	16	4+	8h	1	1-38†	s,t,n	-	•	Top attack missile
M2A2 CFV	90-95	24	12a	2r/1r	1	4	16	4+	16h	1	1-38	s,t,n	-	•	
	96-00	40	12a	2r/1r	1	4	16	4+	8h	1	1-38†	t,n	-	•	Top attack missile
LAV-25	90-00	3	6wa	0	1	4	10	4+	-	-	-	t,n	1		
LAV-AT	90-95	16	6wa	0	-	1	6	6+	16h	1	1-38	t,n	-	•	+1 to terrain saving throw
	96-00	28	6wa	0	-	1	6	6+	8h	1	1-38†	t,n	-	•	Top attack missile
Jeep-TOW	70-80	7	6w	s	-	1	6	6+	10h	1	1-30		-	•	
	81-84	12	6w	s	-	1	6	6+	14h	1	1-38		-	•	
	85-89	15	6w	0	-	1	6	6+	14h	1	1-38	t,n	-	•	
HMMWV-TOW	90-95	17	6wa	0	-	1	6	6+	16h	1	1-38	t,n	-	•	
	96-00	30	6wa	0	-	1	6	6+	8h	1	1-38†	t,n	-	•	Top attack missile
M901 ITV	85-89	15	7a	0	-	1	6	6+	14h	1	1-38	t,n	-	•	+1 to terrain saving throw
	90-95	17	7a	0	-	1	6	6+	16h	1	1-38	t,n	-	•	
	96-00	30	7a	0	-	1	6	6+	8h	1	1-38†	t,n	-	•	Top attack missile
M150 TOW Veh	70-80	9	7a	0	-	1	6	6+	10h	1	1-30		-	•	
	81-84	13	7a	0	-	1	6	6+	14h	1	1-38		-	•	
M551 Sheridan	70-00	17	9a	1	15h	1	12	3+	12h	1	10-30	s	-	*	
German MBT's															
Leopard 1	70-80	14	10	3	7/8h	3	16	5+	-	-	-	s,n	-		
	81-84	16	10	3	8/8h	3	16	5+	-	-	-	s,n	-		
	85-89	17	10	3	9	3	16	5+	-	-	-	s,n	-		
	90-95	17	10	3	9	3	16	5+	-	-	-	s,n	-		
	96-00	19	7	3r	10	3	16	5+	-	-	-	s,n	-		
Leopard 2	81-84	33	12	10r	9/8h	3	20	5+	-	-	-	ss,t,n	-		
	85-89	36	12	10r	10	3	20	5+	-	-	-	ss,t,n	-		
	90-95	41	12	10r	12	3	20	5+	-	-	-	ss,t,n	-		
	96-00	47	12	10r	14	3	20	5+	-	-	-	ss,t,n	-		
Leopard 2L	96-00	52	10	11c	14	{3}	20	5+	-	-	-	ss,t,n,c	-		
M48A2G2	70-80	12	5	5	7/8h	3	16	5+	-	-	-	s,n	-		
	81-84	13	5	5	8/8h	3	16	5+	-	-	-	s,n	-		

Vehicle	Period	PV	Move	Armor	Gun				Missile			Equip	Cap	Missile	Notes	
					Pen	ROF	Rng	SA	Pen	ROF	Rng					
JgPz Kanone	85-89	14	5	5	9	3	16	5+	-	-	-	s,n	-			
	90-95	14	5	5	9	3	16	5+	-	-	-	s,n	-			
	96-00	16	5	5r	10	3	16	5+	-	-	-	s,n	-			
	70-00	10	8	1	7h	3	12	5+	-	-	-	n	-			
France MBT's																
LeClerc	96-00	51	12	11c/2c	15	{2}	26	5+	-	-	-	ss,t,n,c	-			
AMX-30 B2	81-84	16	8	4	8/8h	3	20	5+	-	-	-	s,n	-			
	85-89	18	8	4	9	3	20	5+	-	-	-	s,n	-			
	90-95	18	8	4	9	3	20	5+	-	-	-	s,n	-			
	96-00	20	8	4r	10	3	20	5+	-	-	-	s,n	-			
AMX-30	70-80	12	8	3	6/8h	3	16	5+	-	-	-	n	-			
	81-84	14	8	3	8/8h	3	16	5+	-	-	-	n	-			
	85-89	16	8	3	9	3	16	5+	-	-	-	n	-			
	90-95	16	8	3	9	3	16	5+	-	-	-	n	-			
AMX-40	96-00	17	8	3r	10	3	16	5+	-	-	-	n	-			
	85-89	23	12	5r	10	3	20	5+	-	-	-	s,n	-			
	90-95	26	12	5r	12	3	20	5+	-	-	-	s,n	-			
96-00	30	12	5r	14	3	20	5+	-	-	-	s,n	-				
UK MBT's																
Challenger 1	85-89	27	5	10c	10	3	20	5+	-	-	-	ss,t,n	-			
	90-95	31	5	11c	12	3	20	5+	-	-	-	ss,t,n	-			
	96-00	31	5	11c	12	3	20	5+	-	-	-	ss,t,n	-			
Challenger 2	96-00	46	9	12c	15	3	20	5+	-	-	-	ss,t,n	-			
	Chieftan	70-80	13	4	9	8/10h	3	20	5+	-	-	-	s,n	-		
		81-84	15	4	9	9/10h	3	20	5+	-	-	-	s,n	-		
		85-89	17	4	9	10/10h	3	20	5+	-	-	-	s,n	-		
Centurion	90-95	19	4	9	12	3	20	5+	-	-	-	s,n	-			
	96-00	20	4	9r	12	3	20	5+	-	-	-	s,n	-			
	70-80	9	4	3	7/8h	3	16	5+	-	-	-	-	-			
	81-84	11	4	3	8/8h	3	16	5+	-	-	-	-	-			
85-95	13	4	3	9	3	16	5+	-	-	-	-	-	-			
	96-00	14	4	3	10	3	16	5+	-	-	-	-	-			
	Israeli MBT's															
Merkava	81-84	23	6	8r/2	8/8h	3	20	5+	-	-	-	s,t	-			
	85-89	25	6	8r/2	9	3	20	5+	-	-	-	s,t	-			
	90-95	28	6	8r/2r	10	3	20	5+	-	-	-	s,t	-			
	96-00	30	6	8r/2r	11	3	20	5+	-	-	-	s,t	-			
Merkava 2	90-95	31	8	8r/2r	10	3	20	5+	-	-	-	s,t	-			
	96-00	33	8	8r/2r	11	3	20	5+	-	-	-	s,t	-			
Merkava 3	96-00	45	10	8c/2c	15	3	20	5+	-	-	-	ss,t	-			
Miscellaneous MBT's																
S-Tank	70-80	16	4	5	7/7h	3	20	5+	-	-	-	-	-		+1 to terrain save	
	81-84	18	4	5	8/7h	3	20	5+	-	-	-	-	-		+1 to terrain save	
	85-00	21	4	5	9/7h	3	20	5+	-	-	-	-	-		+1 to terrain save	
Western European Light Vehicles																
MCV-80 Warrior	86-00	4	10	1r	1	4	10	4+	-	-	-	n	1			
MCV-80/Milan	86-95	8	10	1r	1	4	10	4+	14h	1	1-20	n	1	*		
	96-00	9	10	1r	1	4	10	4+	18h	1	1-20	n	1	*		
Scimitar	70-00	3	10	0	1	4	10	4+	-	-	-	n	-			
Scorpion	70-00	5	10	0	5/6h	3	8	5+	-	-	-	n	-			
FV-432	70-00	12	5a	0	-	1	6	6+	14h	1	1-40	n	-			
Spartan	70-00	2	12a	0	-	1	6	6+	-	-	-	n	1			
Striker	70-00	21	12a	0	-	1	6	6+	14h	2	1-40	n	-			
Fox	70-00	3	8wa	0	1	4	10	4+	-	-	-	-	-			
	70-85	3	8	1	1	5	8	4+	-	-	-	n	1			
Marder	86-95	11	8	1	1	5	8	4+	14h	1	1-20	n	1			
	96-00	14	8	1	1	5	8	4+	18h	1	1-20	n	1			
Marder 25	81-95	12	8	1	1	4	10	4+	14h	1	1-20	n	1			
	96-00	14	8	1	1	4	10	4+	18h	1	1-20	n	1			
Jaguar 1	70-85	14	8w	1	-	1	6	6+	14h	1	1-42	n	-	•		
	86-00	17	8w	1	-	1	6	6+	18h	1	1-42	n	-	•		
Jaguar 2	70-80	9	8w	1	-	1	6	6+	10h	1	1-30	n	-	•		
	81-89	13	8w	1	-	1	6	6+	14h	1	1-38	n	-	•		
	90-00	15	8w	1	-	1	6	6+	16h	1	1-38	n	-	•		

Also has 20 mm cannon
Pen ROF Rng SA
1 5 12 4+

Vehicle	Period	PV	Move	Armor	Gun				Missile			Equip	Cap	Missile	Notes
					Pen	ROF	Rng	SA	Pen	ROF	Rng				
Wiesel 25	70-00	3	12w	0	1	4	10	4+	-	-	-	n	-		
Wiesel TOW	70-80	10	12w	0	-	1	6	6+	10h	1	1-30	n	-	•	
	81-89	15	12w	0	-	1	6	6+	14h	1	1-38	n	-	•	
	90-00	17	12w	0	-	1	6	6+	16h	1	1-38	n	-	•	
AMX-13	70-00	8	6	1	4/8h	3	10	5+					-		
AMX-13 SS	70-00	10	6	1	-	1	6	6+	12h	1	5-30		-		
AMX-10RC	70-00	6	6w	1	6/8h	3	18	6+	-	-	-	n	-		
EBR	70-00	6	7	1	4/8h	3	10	5+					-		
ERC	70-00	6	8	0	4/8h	3	10	5+					-		
AML-90	70-00	5	6w	0	4/8h	3	10	5+					-		
AMX-10P	70-00	3	6a	1	1	5	12	4+	-	-	-		1		
AMX-10 TM	70-00	9	7a	1	1	5	12	4+	10h	1	1-20		1		
VAB HOT	70-85	12	6wa	0	-	1	6	6+	14h	1	1-42		-	•	
	86-00	16	6wa	0	-	1	6	6+	18h	1	1-42		-		
AIFV	90-00	3	8a	0	1	5	10	4+	-	-	-	n	1		
AIFV TOW	85-89	15	7a	0	-	1	6	6+	14h	1	1-38	t,n	-	•	+1 to terrain saving throw
	90-95	17	7a	0	-	1	6	6+	16h	1	1-38	t,n	-	•	
	96-00	30	7a	0	-	1	6	6+	8h	1	1-38†	t,n	-	•	Top attack missile
East Bloc/CIS MBT's															
T-55	70-00	6	5	4	3/7h	2	10	5+	-	-	-	n	-		
T-55AM2b	85-00	11	5	6	4/7h	2	12	5+	10h	1	1-40	n	-	*	
T-62	62-00	8	5	5	5/7h	2	12	5+	-	-	-	n	-		
T-62M	85-00	16	5	6	5/7h	2	12	5+	10h	1	1-50	n	-		
T-64A	70-80	13	8	8	7/8h	2	14	5+	-	-	-	s,n	-		
	81-84	14	8	8	8/8h	2	14	5+	-	-	-	s,n	-		
	85-89	17	8	8r	11	2	14	5+	-	-	-	s,n	-		
	90-95	18	8	8r	12	2	14	5+	-	-	-	s,n	-		
	96-00	18	8	8r	12	2	14	5+	-	-	-	s,n	-		
T-64B	81-84	18	8	8	8/8h	2	14	5+	10h	1	5-40	s,n	-	*	
	85-89	21	8	8r	11	2	14	5+	10h	1	5-40	s,n	-	*	
	90-95	22	8	8r	12	2	14	5+	10h	1	5-40	s,n	-	*	
	96-00	22	8	8r	12	2	14	5+	10h	1	5-40	s,n	-	*	
T-72	70-80	11	7	5	7/8h	2	14	5+	-	-	-	s,n	-		
	81-84	12	7	5	8/8h	2	14	5+	-	-	-	s,n	-		
	85-89	15	7	5	11	2	14	5+	-	-	-	s,n	-		
	90-95	16	7	5r	12	2	14	5+	-	-	-	s,n	-		
	96-00	16	7	5r	12	2	14	5+	-	-	-	s,n	-		
T-72 Mod M2	96-00	28	7	6r	12	2	20	5+	-	-	-	s,t,n	-		Polish/Western upgrade of the T-72.
T-72A	81-84	13	7	6	8/8h	2	16	5+	-	-	-	s	-		
	85-89	16	7	6r	11	2	16	5+	-	-	-	s	-		
	90-95	18	7	6r	12	2	16	5+	-	-	-	s	-		
	96-00	18	7	6r	12	2	16	5+	-	-	-	s	-		
T-72B	85-89	17	7	7r	11	2	16	5+	-	-	-	s	-		
	90-95	19	7	7r	12	2	16	5+	-	-	-	s	-		
	96-00	19	7	7r	12	2	16	5+	-	-	-	s	-		
T-72B1	85-89	20	7	7r	11	2	16	5+	12h	1	1-40	s	-		
	90-95	22	7	7r	12	2	16	5+	12h	1	1-40	s	-		
	96-00	22	7	7r	12	2	16	5+	12h	1	1-40	s	-		
T-80	70-80	16	10	8	7/8h	2	16	5+	-	-	-	s,n	-		
	81-84	20	10	8	8/8h	2	16	5+	-	-	-	s,n	-		
	85-89	20	10	8r	11	2	16	5+	-	-	-	s,n	-		
	90-95	21	10	8r	12	2	16	5+	-	-	-	s,n	-		
	96-00	21	10	8r	12	2	16	5+	-	-	-	s,n	-		
T-80B,BV (without missile)	81-84	20	10	10r	8/8h	2	16	5+	-	-	-	s,n	-		
	85-89	20	10	10r	11	2	16	5+	-	-	-	s,n	-		
	90-95	22	10	10r	12	2	16	5+	-	-	-	s,n	-		
	96-00	22	10	10r	12	2	16	5+	-	-	-	s,n	-		
T-80B,BV (with missile)	81-84	26	10	10r	8/8h	2	16	5+	12h	1	1-50	s,n	-	*	
	85-89	26	10	10r	11	2	16	5+	12h	1	1-50	s,n	-	*	
	90-95	28	10	10r	12	2	16	5+	12h	1	1-50	s,n	-	*	
	96-00	28	10	10r	12	2	16	5+	12h	1	1-50	s,n	-	*	
T-80U	90-95	40	10	10c	12	2	16	5+	12h	1	1-50	s,t,n	-	*	
	96-00	41	10	10c	12	2	16	5+	12h	1	1-50	s,t,n	-	*	ATGM defenses: +1 to save
T-80U (without missile)	90-95	33	10	10c	12	2	16	5+	12h	1	1-50	s,t,n	-	*	
	96-00	34	10	10c	12	2	16	5+	12h	1	1-50	s,t,n	-	*	ATGM defenses: +1 to save

Vehicle	Period	PV	Move	Armor	Gun				Missile			Equip	Cap	Missile	Notes
					Pen	ROF	Rng	SA	Pen	ROF	Rng				
T-90	96-00	37	7	12cr	12	2	20	5+	12h	1	1-50	s,t,n	-	*	ATGM defenses: +1 to save
T-90 (no missile)	96-00	30	7	12cr	12	2	20	5+	-	-	-	s,t,n	-		ATGM defenses: +1 to save
East Bloc/CIS Light Vehicles															
BMP-1	70-89	7	9a	0	7h	2	8	5+	6h	1	3-30	n	1	*	
BMP-1	90-00	10	9a	0	7	2	8	5+	14h	1	1-30	n	1	*	
BMP-2 (Warpac)	81-00	5	9a	0	1	5	10	4+	6h	1	1-25	n	1	*	
BMP-2	81-00	8	9a	0	1	5	10	4+	12h	1	1-40	n	1	*	
BMP-3	91-00	17	12a	1	6/8h	1	12	5+	10h	1	1-40	s,n	1	*	
					1	5	10	4+							
BMD-1/2	70-00	8	12a	0	7h	2	8	5+	6h	1	3-30	n	1	*	
	90-00	11	12a	0	7h	2	8	5+	14h	1	1-30	n	1	*	
BMD-3	90-00	8	12a	0	1	5	10	4+	10h	1	1-40	n	1	*	
BRDM-2AT	81-00	9	6wa	0	-	1	6	6+	12h	1	1-40	n	2	•	
BRDM	70-00	1	6wa	0	1	1	6	6+	-	-	-	-	-		
PT-76	70-00	3	6a	0	7	2	8	5+	-	-	-	n	-		
Generic APC (Tr)	70-00	1	5a	0	0	1	6	6+	-	-	-	-	1		M113, MTLB, FV-438, etc
Generic APC (Wh)	70-00	1	5wa	0	-	1	6	6+	-	-	-	-	1		VAB, Luchs, Hummer, BTR, etc
Generic Truck	70-00	1/3	5w	0	-	-	-	-	-	-	-	-	1		Soft target
Helicopters															
AH-1S/E/F	70-79	21	24n	0	1	5	10	3+	10h	1	1-38	s	-	*	1 rocket
	80-89	26	24n	0	1	5	10	3+	14h	1	1-38	s	-	*	1 rocket
	90-95	33	24n	0	1	5	10	3+	18h	1	1-38	s,t	-	*	1 rocket
	96-00	44	24n	0	1	5	10	3+	8h†	1	1-38	s,t	-	*	1 rocket
AH-1G	70-79	20	22n	0	1	5	10	3+	10h	1	1-38	s	-	*	1 rocket
	80-89	25	22n	0	1	5	10	3+	14h	1	1-38	s	-	*	1 rocket
	90-95	27	22n	0	1	5	10	3+	18h	1	1-38	s	-	*	1 rocket
	96-00	39	22n	0	1	5	10	3+	8h†	1	1-38	s	-	*	1 rocket
AH-1T/W	80-89	26	24n	0	1	5	10	3+	14h	1	1-38	s	-	*	1 rocket
	90-95	28	24n	0	1	5	10	3+	18h	1	1-38	s	-	*	1 rocket
	96-00	64	24n	0	1	5	10	3+	26h	1	1-80	s,t	-	*	1 rocket
AH-64	80-00	122	24n	2	2	5	10	3+	26h	1	1-80	s,t	-	*	1 rocket
Comanche	2000+	70	26n	2	1	5	10	3+	26h	1	1-80	s,t	-	*	1 rocket
UH-1/60	70-00	7	16n	0	-	1	6	4+	-	-	-	s	1		
UH-60 Gunship #1	80-00	73	16n	0	1	5	10	3+	26h	1	1-80	s	-		
UH-60 Gunship #2	80-00	50	16n	0	1	5	10	3+	26h	1	1-80	s	-	*	1 rocket
OH-58 Scout	70-00	9	18n	0	-	1	6	4+	-	-	-	s	-		
OH-58 AT	80-00	38	18n	0	-	1	6	4+	26h	1	1-80	s	-	*	
OH-58 Gunship	80-00	10	18n	0	1	5	10	3+	-	-	-	s	-		1 rocket
CH-47 Chinook	70-00	6	16n	0	-	1	6	4+	-	-	-	s	3		
Mi-24 Hind A-D	70-00	22	20n	0	1	5	10	3+	12h	1	5-40	s	1		1 rocket
Mi-24 Hind E-G	80-00	39	20n	0	1	5	10	3+	10h	1	1-70	s	1		1 rocket
Mi-28	2000+	44	24n	2	1	5	10	3+	10h	1	1-70	s	-		1 rocket
Mi-8 Hip Gunship AT	70-00	20	18n	0	1	2	6	4+	12h	1	1-70	s	3	*	
Mi-8 Hip Gunship	70-00	13	18n	0	1	5	10	3+	-	-	-	s	3		1 rocket
Mi-8 Hip Transport	70-00	9	18	0	-	1	6	4+	-	-	-	s	3		
Air Defense Vehicles*															
ZSU-23/4	70-00	20	6	0	1	8	25	3+	-	-	-	-	-		
ZSU-57/2	70-00	12	6	0	2	2	40	3+	-	-	-	-	-		
SA-8	70-00	16	6	0	-	1	6	6+	2a	1	120	-	-	*	
SA-9	70-00	12	6	0	-	1	6	6+	2a	1	50	-	-	*	
SA-13	80-00	14	6	0	-	1	6	6+	2a	1	80	-	-	*	
M163/PIVADS	70-00	12	7	0	1	2	16	2+	-	-	-	-	-		
Avenger	90-00	18	6	0	1	2	16	2+	2a	1	50	-	-	*	
Gepard	70-00	34	8	1	2	4	35	3+	-	-	-	-	-		
Tarasque	70-00	8	t	s	1	2	20	3+	-	-	-	-	-		
Breda	70-00	14	t	s	2	2	40	3+	-	-	-	-	-		
Roland	70-00	14	6	0	-	1	6	6+	2a	1	60	-	-	*	
Rapier	70-00	8	t	s	-	-	-	-	2a	1	65	-	-	*	
Tracked Rapier	70-00	13	6	0	-	1	6	6+	2a	1	65	-	-	*	

* Against ground targets, all air defense guns have an effective range of 1/2 , or 10 whichever is greater and their rof is doubled.

§ 17 Artillery Data

Type	PV	Cal	Move	Armor	Range	—Converged—		—Dispersed—		Ammo	—Direct Fire AV—		
						AF	Temp	AF	# Temp		Pen	ROF	Rng
Guns/Howitzers													
105/122mm SP	30	105/122	6	0	15(21)km	2L	1"	1L	2 x 1"	s,c	10h	1	8"
105mm Towed	20	105/122	t	s	15(21)km	2L	1"	1L	2 x 1"	s,c	10h	1	8"
152/155mm SP	40	155	5	1	18(30)km	2	1"	1	2 x 1"	s,i,c,m	2	1	8"
152/155mm Towed	30	155	t	s	18(30)km	2	1"	1	2 x 1"	s,i,c,m	2	1	8"
203mm SP	50	203	5	0	27(37)km	3	1"	1	2 x 1"	i,c,m	7	1	8"
203mm Towed	40	203	t	s	27(37)km	3	1"	1	2 x 1"	c	7	1	8"
ICM (3 shots)	*	all	-	-	-	+1	2"	+1	2 x 2"	-	-	-	-

* 3 shots of ICM ammo will double the cost of the gun. 6 shots will triple the cost of the gun, 9 shots will quadruple the cost of the gun.

SP Mortars

SP 81mm Mortar	15	81	6a	0	30"	2L	1"	1L	2 x 1"	s,c	-	-	-
Towed 81 Mortar	12	81m	t	s	30"	2L	1"	1L	2 x 1"	s,c	-	-	-
SP 4.2" Mortar	15	4.2"	6a	0	45"	1	1"	1	1 x 1"	s,c	-	-	-
SP 120mm Mortar	15	120	6a	0	45"	1	1"	1	1 x 1"	s,c	-	-	-
Towed 120 Mortar	12	120m	t	s	45"	1	1"	1	1 x 1"	s,c	-	-	-
Towed 160 Mortar	18	160m	t	s	75"	2	1"	1	2 x 1"	c	-	-	-
SP 240 Mortar	36	240m	6	0	90"	3	1"	1	2 x 1"	c	-	-	-
Towed 240 Mortar	28	240m	t	s	90"	3	1"	1	2 x 1"	c	-	-	-
Vasilek Automortar	26	82m	t	s	30"	5L	1"	1L	5 x 1"	s	-	-	-

Multiple Rocket Launchers

MLRS*	50	227	6	0	30km	15L	3"	3L	5 x 3"	m	-	-	-
Light MLR*	18	122	5	0	20km	5L	3"	1L	5 x 3"	c	-	-	-

*This is a multiple rocket launcher with 1 shot per game.

§ 18 Infantry Data

Type	Period	PV	Mov	—Small Arms—			—LAW—			—MAW—			—SAM—		
				To Hit	ROF	Rng	Pen	ROF	Rng	Pen	ROF	Rng	Pen	ROF	Rng
US Army Infantry**	70-84	3	3	3+	2	4	6h	1	2	10h	1	10	-	-	-
	85-89	4	3	3+	2	4	7h	1	3	10h	1	10	-	-	-
	90-00	6	3	3+	2	4	7h	1	3	14h	1	10	-	-	-
US Army Lt Inf	70-89	2	3	4+	2	4	6h	1	2	-	-	-	-	-	-
US Marine Infantry	70-84	2	3	3+	2	4	6h	1	2	-	-	-	-	-	-
	85-00	2	3	3+	2	4	7h	1	3	6h	1	3	-	-	-
US Mar. Dragon Team*	70-89	4	3	3+	1	4	7h	1	3	10h	1	10	-	-	-
US Mar. Javelin Team*	90-00	5	3	3+	1	4	7h	1	3	6h†	1	10	-	-	-
Russian Inf	70-84	2	3	3+	2	4	7h	1	2	7h	1	3	-	-	-
	85-00	2	3	3+	2	4	7h	1	2	7h	1	4	-	-	-
British Inf	81-84	2	3	3+	2	4	6h	1	2	7h	1	4	-	-	-
	85-00	3	3	3+	2	4	10h	1	3	7h	1	4	-	-	-
Dutch Inf**	70-00	3	3	3+	2	4	6h	1	2	10h	1	10	-	-	-
Dutch Reserve Inf	70-00	2	3	4+	2	4	6h	1	2	7h	1	4	-	-	-
Belgian Inf**	70-00	6	3	3+	2	4	-	-	-	14h	1	20	-	-	-
Belgian Lt Inf	70-00	2	3	4+	2	4	6h	1	2	-	-	-	-	-	-
French Inf	70-00	2	3	3+	2	4	6h	1	2	7h	1	4	-	-	-
Canadian Inf	70-00	2	3	3+	2	4	6h	1	2	7h	1	4	-	-	-
German Inf	81-84	2	3	3+	2	4	6h	1	2	7h	1	4	-	-	-
	85-00	3	3	3+	2	4	6h	1	3	7h	1	4	-	-	-
TOW Team*	70-00	16	3	4+	1	4	6h	1	2	14h	1	1-38			
Milan Infantry**	81-89	7	3	3+	2	4	6h	1	2	14h	1	1-20	-	-	-
Milan Team*	81-89	11	3	4+	1	4	6h	1	2	14h	1	1-20			
Sagger Team*	70-00	6	3	4+	1	4	-	-	-	6h	1	3-30			
Generic Militia	81-89	3	3	4+	2	4	6h	1	2	-	-	-	-	-	-
Generic Crew	70-00	1	3	5+	1	3	6h	1	2	-	-	-	-	-	-
Generic FO	70-00	1	3	6+	1	3	-	-	-	-	-	-	-	-	-
TOW Inf*	70-00	12	3	3+	2	4	6h	1	2	10h	1	30			
Milan Inf**	81-89	7	3	3+	2	4	6h	1	2	14h	1	20	-	-	-
	90-00	9	3	3+	2	4	6h	1	2	18h	1	20	-	-	-
Sagger Team*	70-00	6	3	4+	1	4	-	-	-	6h	1	3-30			
Redeye Team*	70-00	8	3	4+	1	4	6h	1	2	-	-	-	2	1	30°r
Stinger Team*	70-00	12	3	4+	1	4	6h	1	2	-	-	-	2	1	50°c
Blowpipe/Javelin Team*	70-00	12	3	4+	1	4	6h	1	2	-	-	-	2	1	50°a
SA-7 Team*	70-00	8	3	4+	1	4	6h	1	2	-	-	-	2	1	30°r
SA-14 Team*	70-00	10	3	4+	1	4	6h	1	2	-	-	-	2	1	40°c

NOTES: A recon stand costs 1 extra point.

ROF for all infantry small arms fire is 2.

* This stand's MAW is a missile and only has an effective range. ** This stand's MAW is a missile and only has an effective range. The stand only has two MAW shots. † This is a popup missile.

r: rear aspect missile c: chase aspect missile a: all aspect missile

§ 19 Army Lists

These army lists are designed to allow players to choose an army for competitive play. Referees and scenario designers should use these lists as a guide, but may completely ignore them if they wish. More complete and detailed army lists will appear in *For A Few TOWs More*.

A. U.S. ARMY GENERAL

Since World War II, the US Army has been the world's most technologically advanced and lavishly equipped army. In the period represented by this game, the US Army has reached the heights of military excellence and plumbed the depths of military incompetence. Perhaps more than any other army in the world, the US Army has reflected the society that created it. It entered the 1960s honed to a sharp edge and fully prepared to defend the West against Soviet hordes storming into Central Europe. Like the United States at that time, it was confident – even cocky – that it could win that fight. Unfortunately, its test came not in Europe, but in the steaming jungles of Southeast Asia. And as long as the American people felt that we could win the war, the US Army fought well, virtually annihilating the Viet Cong. But when the American people lost faith in the nation's ability to win the war, the US Army's performance sagged.

A decade of attrition warfare and political unwillingness to mobilize the reserves forced the Army to cannibalize units outside of Vietnam. This ground down the Army and ruined it for a decade. By the early 1970s, the US Army was a shattered, hollow skeleton of the fighting force that confidently entered Vietnam. And in the 1970s, the Army battled the same problems – racism, drug abuse, and apathy – that plagued American society as a whole. The Arab oil embargo, a pacifistic and isolationist political leadership and general economic stagnation prevented the Army from upgrading its equipment to fight its renewed mission – the Soviet Threat.

Fortunately, the Army still had a cadre of dedicated officers determined to rebuild and restructure it. Soviet arrogance, aided by the Iranian hostage crises, helped oust Jimmy Carter and refocus the American people on foreign affairs. Ronald Reagan took office in 1981, with a mandate to rebuild the US military, a task he relished. Within a decade, the US Army was lavishly re-equipped with a new generation of military hardware. It was also larger than it had been since World War II and it was one of the best trained armies in the world. This was the force that fought the Gulf War and annihilated the Iraqi Army in just 72 hours.

Its performance in the Gulf War was a first in American military history: this was the first time in American history that the US Army won its first battle. In that battle, the US Army annihilated the Iraqi Army and suffered fewer than 100 casualties.

The 1990s weren't as kind to the US Army though. The disintegration of its chief rival has left it lacking a well-defined moment. This lack of an opponent has also meant that the days of lavish defense spending are over. The Army has deactivated many formations and has scaled back many new weapons programs. It has also had to undertake humanitarian operations in Somalia, Haiti and Bosnia. And now charges of sexual harrasment are eroding confidence in the officer and NCO corps. Nonetheless, the US Army remains the world's most potent fighting force.

QUALITY AND COHESION

The US Army's quality depends on the year the scenario is being fought:

From 1960-1970, US Army stands are **regular**.

From 1970-1985, US Army stands are **green**.

From 1983-1988, US Army stands are **regular**.

From 1989-1995, US Army stands are **veteran**.

From 1996-2010, US Army stands are **regular**.

COMBAT FORMATIONS (1980+)

- **Tank Battalion:** (1 recon CFV; 1 M106); 4 Tank Companies

- **Mechanized Infantry Battalion:** (1 recon CFV; 1 M106); 1 AT Company* ¹; 4 Mech Infantry Companies
- **Armored Cavalry Squadron:** (1 M106); 3 Armored Cav Troops; 1 Tank Company
- **Divisional Cavalry Squadron** ²: (1 recon CFV; 2 recon M113;) 1 Attack Helicopter Co; 2 Ground Troops
- **Light Infantry Battalion/Airborne Infantry Battalion:** (1 81mm mortar w/HMMWV; 1 recon infantry w/HMMWV; 1 HMMWV w/TOW); 3 Light Infantry Companies

CROSS-ATTACHMENTS

Each combat formation may exchange any of its companies or troops (except AT Companies) for any of the following companies/troops:

- Tank Company
- Mechanized Infantry Company
- Armored Cavalry Troop
- Light Inf Company

SUPPORT UNITS

Each combat formation may have up to two of the following support units attached:

- Field Artillery Battalion: 3 Field Artillery Batteries (see below)
- Field Artillery Battery: 2 M109; 1 FIST-V
- Heavy Artillery Battalion: 3 Heavy Artillery Batteries (see below)
- Heavy Artillery Battery: 2 M110; 1 FIST-V
- Light Howitzer Battalion ³: 3 Light Howitzer Batteries (see below), FO with HMMWV
- Light Howitzer Battery ³: 1 105mm Towed Hwz
- General Support Battery ³: 2 155mm Towed Hwz
- MLRS Battery: 1 MLRS
- Attack Helicopter Company: 2 AH; 1 OH-58
- ADA Battery: (3 M163; 4 Stinger stands w/HMMWV)
- Air Cav Troop: 2 OH; 1 AH
- Transport Helicopter Co: 3 UH-60

COMBAT UNIT TO&Es

- Tank Co: 3 MBT
- Mechanized Infantry Co: 3 IFV; 3 Infantry
- Armored Cav Troop: 2 MBT; 3 recon CFV
- Light Inf Co: 2 Light Infantry; 1 Infantry; 3 HUMMWV
- Ground Troop: 4 recon CFV; 1 M125
- AT Company: 3 M901 or 3 M150

VEHICLE NOTES

MBT: M48, M60, M1, M551 (all models)

IFV: M113, M2 (all models)

CFV: M3, M114 (all models)

Generic Wheeled APC: HUMMWV, Jeep

Generic Tracked APC: M113, M114

¹ The AT Co in the mechanized infantry battalion can be divided among the other companies as the owning player sees fit, or the AT Co may be

used as a normal unit in the battalion.

² Only one divisional cavalry squadron is allowed.

³ This unit may only be attached to light infantry battalions.

B. U.S. MARINE CORPS (1995-2000)

Each Combat Formation may have up to 2 Support Units attached, may cross-attach up to 3 units, and may add up to 3 additional combat units (up to a maximum of 6 non-support units per base formation).

Marines are Veterans.

COMBAT FORMATIONS

- **Tank Battalion:** 4 Tank Companies; 1 AT Platoon
- **Light Armored Infantry Battalion:** 3 Light Armored Infantry Companies; 1 Lt Arm Inf Hvy Weapons Company
- **Marine Infantry Battalion:** 1 Infantry Weapons Company; 3 Rifle Companies
- **Light Armored Recon Bn¹:** 1 AT Platoon; 3 Light Armored Recon Companies

CROSS-ATTACHMENTS

Each combat formation may exchange any of its companies (except AT Companies) for any of the following units:

- Tank Company
- Infantry Company
- Light Armored Infantry Company
- Light Armored Recon Company

SUPPORT UNITS

Each combat formation may have up to two of the following support units attached:

- Artillery Battalion: 3 Artillery Batteries (see below)
- Artillery Battery: 1 M198 155mm howitzer [or 1 105mm towed howitzer]; 1 FO w/HMMWV
- AA Company: 2 LAV-ADs
- Attack Helicopter Squadron: 1-4 AH
- Heavy Helicopter Squadron: 1-4 CH-53E
- Medium Helicopter Squadron: 1-3 3 CH-46H

COMBAT UNIT TO&Es

- Tank Company: 3 MBT
- Rifle Company: 3 Marine infantry; 1 Marine weapons infantry [with optional 4 AAVP7A1 or 4 HMMWV]
- Infantry Weapons Company: (2 81mm mortars); 3 Marine Dragon infantry; 2 HMMWV w/TOW [optional 5 HMMWV or AAVP7A1]
- Light Armored Infantry Company: 2 LAV-25; 2 Marine infantry
- Light Armored Recon Company: 3 recon LAV-25; 1 LAV-AT
- Light Armored Infantry Hvy Weapons Company: 4 LAV-AT; (1 LAV-M)
- AT Platoon: 6 HMMWV w/TOWs

VEHICLE NOTES

MBT: M48A5, M60A1, M1A1

Generic Wheeled APC: HUMMWW, Jeep

Generic Tracked APC: AAVP7A1

¹ Only one of these units is available.

C. SOVIET/CIS ARMY (1986-2000)

QUALITY

From 1960-1990, the quality of the Soviet/CIS Army is as follows:

- Category I Divisions, Airborne Divisions, Marine Divisions, Airmobile Units are all regular.
- All other Soviet/CIS forces are green.
- Polish and East German Category I Divisions, Airborne Divisions, and Marine units are regular.
- All other Warsaw Pact forces are green.

From 1990-2000, the quality of the Soviet/CIS Army is as follows:

- Airborne Divisions, Marine Divisions, Airmobile Units are all **regular**.
- All other forces are **green**.

COMBAT FORMATIONS

- **Tank Regiment:** (1 SA-9; 1 ZSU-23-4; 1 recon BRDM-2; 1 recon BMP); 3 Tank Battalions; 1 BMP Company
- **BMP Motorized Rifle Regiment:** (1 Vasilek w/BTR; 1 SA-9; 1 ZSU-23-4; 1 recon BRDM-2; 1 recon BMP); AT Missile Battery*, 2 BMP Motorized Rifle Battalions; 1 Tank Battalion (MR), 1 122mm SP Artillery Bn
- **BTR Motorized Rifle Regiment:** (1 Vasilek w/BTR; 1 SA-9; 1 ZSU-23-4; 1 recon BRDM-2; 1 recon BMP); AT Missile Battery*, 3 BTR Motorized Rifle Battalions; 1 Tank Battalion (MR), 1 122mm Artillery Bn

CROSS-ATTACHMENTS

Each combat formation may exchange any of its companies or troops (except AT Companies) for any of the following units:

- | | |
|------------------|------------------------------|
| • Tank Battalion | • Independent Tank Battalion |
| • BMP Battalion | • Recon Battalion |
| • BTR Battalion | • Antitank Battalion |

SUPPORT UNITS

Each combat formation may have up to two of the following support units attached:

- Artillery Regiment: 2 152mm SP Artillery battalion; 1 Rocket Launcher battalion
- 122mm Artillery Battalion: 1 FO (Use generic tracked APC); 3 Batteries [2 122mm towed hwz each]
- 122mm SP Artillery Battalion: 1 FO (Use generic tracked APC); 3 Batteries [2 2S1 each]
- 152mm SP Artillery Battalion: 1 FO (Use generic tracked APC); 3 Batteries [2 2S3 each]
- Rocket Launcher Battery: 1 BM-21
- SAM Regiment: 5 SA-6/8/11; 5 SA-7/14 infantry w/truck
- SAM Battery: 1 SA-6/8/11; 1 SA-7/14 infantry w/truck
- SAM Battalion: 3 SA-4 or SA-12
- Army SAM Battery: 1 SA-4 or SA-12

COMBAT UNIT TO&E

- Tank Battalion¹: 6 MBT
- Tank Battalion (MR)²: 9 MBT
- Independent Tank Battalion: 9 MBT
- BMP Battalion³: 9 BMP; 9 Infantry; (1 120mm mortar w/truck)

- BMP Company: 3 BMP; 3 Infantry
- BTR Battalion: ³ 9 BTR; 9 Infantry; 1 120mm mortar w/truck; 1 AT-4 stand w/BTR
- AT Missile Battery: 2 BRDM/AT-5
- Antitank Battalion: 2 AT Gun w/MTLB; 2 BRDM-AT5

¹ This battalion has a special 2 MBT company that maneuvers as a separate unit. Stands in the separate company may trace cohesion to each other or they may be part of the battalion, as the owning player sees fit.

² This battalion has a special 3 MBT company that maneuvers as a separate unit. Stands in the separate company may trace cohesion to each other or they may be part of the battalion, as the owning player sees fit.

³ This battalion has a special 3 BTR/BMP company that maneuvers as a separate unit. Stands in the separate company may trace cohesion to each other or they may be part of the battalion, as the owning player sees fit.

VEHICLE NOTES

MBT: T-55, T-62, T-64, T-72, T-80, T-90 (all models)

BMP: BMP 1,2 or 3

Generic Wheeled APC: BTR

Generic Tracked APC: MTLB

D. FRENCH ARMY (1990-2000)**COMBAT FORMATIONS**

- **Mechanized Infantry Regiment:** (1 recon jeep; 1 VAB-Mortar); 3 Mech Infantry Companies; 1 Armored Company
- **Armored Regiment:** (1 recon jeep); 4 Armored Squadrons
- **Infantry Regiment:** (1 jeep/milan; 2 recon jeeps; 1 4.2" mortar w/truck; 2 81mm mortars w/truck); 4 Infantry Companies
- **Light Armored Regiment:** 3 Light Armored Squadrons; 1 AT Company [with 3 VAB-HOT]

CROSS-ATTACHMENTS

Each combat formation may exchange any of its companies or squadrons (except AT Companies) for any of the following units:

Armored Squadron	Infantry Company
Light Armored Squadron	Recon Company
Mechanized Infantry Company	

SUPPORT UNITS

Each combat formation may have up to two of the following support units attached:

- Field Artillery Battalion: 4 Field Artillery Batteries (see below)
- Field Artillery Battery: 1 155mm SP Hwz; 1 FO w/jeep
- Towed Artillery Battalion: 4 Towed Artillery Batteries (see below)
- Towed Artillery Battery: 1 155mm Towed Hwz; 1 FO w/jeep
- MLRS Battery: 1 or 2 MLRS
- Attack Helicopter Company: 2 SA-342 Gazelle (HOT) AH or 2 SA-341/gun Gazelle
- ADA Battery: 3 AMX-13 DCA
- SAM Battery: 2 Roland launchers

COMBAT UNIT TO&Es

- Armored Squadron: 3 MBTs
- Light Armored Squadron: 3 AMX-10RC or AMX-13; 1 jeep/Milan
- Mechanized Infantry Company: 3 AMX-10P; 2 Infantry; 1 Milan Infantry¹
- Infantry Company: 3 VAB; 2 Infantry; 1 Milan Infantry
- Recon Company: 1 jeep/Milan; 6 recon jeeps

VEHICLE NOTES

MBT: AMX-30; AMX-30B2; LeClerc

Generic Wheeled APC: VAB

¹ This missile may be fired from the AMX-10P or from the infantry stand.

E. NETHERLANDS ARMY (1990-2000)**COMBAT FORMATIONS**

- **Mechanized Infantry Battalion:** (2 AIFV/TOW; 2 AIFV 4.2" SP Mortar); 3 Mech Infantry Companies
- **Armored Battalion:** (1 recon Lynx-20); 3 Armored Companies
- **Recon Battalion:** 3 Recon Companies

CROSS-ATTACHMENTS

Each combat formation may exchange any of its companies or troops (except AT Companies) for any of the following companies/troops:

- Mechanized Infantry Company
- Armored Company
- Recon Company

SUPPORT UNITS

Each combat formation may have up to two of the following support units attached:

- Field Artillery Battalion: 3 Field Artillery Batteries (see below); 1 FO w/jeep
- Field Artillery Battery: 1 M109
- Heavy Artillery Battalion: 3 Heavy Artillery Batteries (see below)
- Heavy Artillery Battery: 1 M110; 1 FO w/jeep
- Towed Howitzer Battalion : 3 Towed Howitzer Batteries (see below), FO w/jeep
- Towed Howitzer Battery: 1 155mm Towed Hwz
- MLRS Battery: 1 MLRS

COMBAT UNIT TO&Es

- Mechanized Infantry Company: 3 AIFV; 3 Infantry
- Armored Company: 3 MBT
- Recon Company: 1 recon Leopard 1; 3 recon Lynx-20

VEHICLE NOTES

MBT: Leopard 1; Leopard-2

§ 20 Game Reference Sheet

VEHICLES

Vehicle	PV	Move	Armor	—Gun—			—Missile—			Equip	Cap	Missile	Notes
				Pen	ROF	Rng	SA	Pen	ROF				
.....	
.....	
.....	
.....	
.....	
.....	
.....	

INFANTRY

Type	PV	Mov	—Small Arms—			—LAW—			—MAW—			—SAM—		
			To Hit	ROF	Rng	Pen	ROF	Rng	Pen	ROF	Rng	Pen	ROF	Rng
.....
.....
.....
.....

ARTILLERY

Type	PV	Cal	Move	Armor	Range	—Converged—		—Dispersed—		Ammo	—Direct Fire AV—		
						AF	Temp	AF	# Temp		Pen	ROF	Rng
.....
.....
.....
.....

TURN SEQUENCE

Attacking Player Turn

- (a) Command Phase
 - The attacker places artillery barrages.
 - The attacker places reinforcements on the board
 - No overwatch activity is allowed during the command phase.
- (b) Movement Phase
 - Attacker Moves
 - The attacker moves his stands, one at a time.
 - At any time during the phase, Defending stands may conduct overwatch fire or shoot and scoot fire if eligible.
 - Defender Pivots
 - Quality Checks
 - At the end of the phase, quality checks are made. No overwatch activity is allowed during this sub-phase.
- (c) Close Combat Phase
 - Defender Phase
 - Defender fires.
 - Attacker resolves quality checks due to enemy close combat attacks.
 - Defender pivots.
 - Attacker Phase
 - Attacker fires.
 - Defender makes quality checks due to enemy close combat attacks.
 - Attacker pivots.

- Reduction Phase
 - Reduce remaining movement by one.
- Repeat the close combat phase until there are no opponents within close combat range.
- (d) Complete movement. Resolve additional close combats as necessary.
- (e) Firing Phase
 - All fire within this phase is simultaneous. Combat results take effect at the end of the phase.
 - Attacker resolves fire combat and anti-infantry combat.
 - Defending units with **hold fire** markers fire.
 - Remove destroyed stands.
 - Resolve quality checks.
 - Attacker may place overwatch markers on stands that did not fire or move during the turn.
- (f) Artillery Phase
 - Defender's artillery barrages land.
 - Resolve quality checks.
 - No overwatch activities during this phase.
- (g) Final Phase
 - Resolve any housekeeping chores.
 - Make quality checks for unit losses.
 - Remove pin markers on friendly troops.

Defending Player Turn

Use the same sequence for the Attacking Player Turn, but reverse the roles.
 **Note that "overwatch activities" include shoot and scoot maneuvers.

