

The Arab-Israeli Wars

Tank battles in the Mideast

Player and developer manual · Version 1.0.0 · Tronsoft Games

One counter is a company of tanks, a platoon of guns, or a company of infantry. One hex is about a quarter of a kilometre. A game turn is a few minutes of a battle that lasted a day. 12 scenarios are played on 8 geomorphic board faces of 11 by 13 hexes, flipped and combined two or three across, with 32 counter types across the two orders of battle.

This manual is in two halves. Sections 1 to 8 are the rules as the game enforces them. Sections 9 and 10 are for the developer: how the package is put together, how it is validated, and what the simulated play of every scenario measures.

Every table in this manual is generated from the shipped game data at build time. If a factor changes in the code, it changes here.

1. Sequence of play

A game turn is two player turns. The attacking side goes first. Each player turn has three phases:

Phase	Who acts	What may be done
Fire	the phasing side	Every counter that is fit and stationary may fire once, at full strength.
Movement	the phasing side	Counters spend their movement allowance. A counter that moves may still fire once, at half strength. Overruns, engineer work, mounting and dismounting happen here.
Defensive fire	the other side	Counters that neither fired in their own fire phase nor moved may fire at half strength, and only at counters that moved this turn.

The defensive fire rule is the heart of the system. A tank that shoots in its own phase cannot cover the gap on its flank when the enemy moves through it. Holding fire is a real decision with a real cost.

At the start of its own player turn, a dispersed counter recovers to suppressed and a suppressed counter recovers to fit — so a dispersal costs its owner most of two turns.

2. The map and terrain

Board faces are laid left to right and may be reversed. Roads leave both side edges on the centre row, so faces join whichever way they are combined. Three counters may occupy one hex.

Terrain	Movement	Defence	Height	Notes
Open desert	1	—	0	—
Soft sand	2	—	0	closed to wheeled counters
Rocky ground	2	×1.4	0	—
Wadi	2	×1.8	0	defilade: unseen beyond 2 hexes from level ground
Palm grove	2	×1.4	0	blocks line of sight
Village	2	×2.2	0	blocks line of sight
Hill	2	×1.4	1	—
Ridge	3	×1.8	2	—

Terrain	Movement	Defence	Height	Notes
Canal	—	—	0	impassable except at a bridge
Bridge	1	—	0	—

Moving from one road hex to another costs half a movement point. A roadblock adds two. Higher ground blocks the view of lower ground behind it, and a counter on a hill or ridge sees over what is in front of it.

Face	Board
1a	Sinai — open desert
1b	Mitla — the defile
2a	Suez — canal and ramparts
2b	Rafah — dunes and groves
3a	Golan — basalt plateau
3b	Valley of Tears
4a	Samarian hills
4b	Jordan valley

3. Reading a counter

Each counter shows its class at the top, then its attack strengths (armour-piercing and high-explosive), its range in hexes, its defence strength and its movement allowance. A ring in the corner means the gun is bore-sighted; a bar across the counter means it is suppressed or dispersed.

Israeli order of battle

Counter	Class	AP	HE	Range	Defence	Move	Spot	VP	Notes
Sho't Centurion	tank	14	8	9	12	8	4	9	armour, tracked
Magach M48A3	tank	13	8	8	11	9	4	9	armour, tracked
M51 Isherman	tank	11	9	7	8	9	4	8	armour, tracked
AMX-13	tank	9	5	6	5	11	4	5	armour, tracked
M3 half-track	apc	2	4	4	3	10	4	3	armour, carrier
M113 Zelda	apc	2	4	4	4	11	4	4	armour, tracked, carrier
Golani infantry	inf	6	7	2	5	4	4	5	foot, at-team
Paratroopers	inf	6	8	2	6	4	5	6	foot, at-team
106mm jeep	at	12	3	6	2	12	4	5	wheeled, gun
M109 155mm	art	5	16	22	4	8	3	7	armour, tracked, indirect
M107 175mm	art	6	20	30	3	7	3	7	tracked, indirect
Combat engineers	eng	4	6	1	4	5	3	4	foot, engineer
Recon jeeps	recon	3	4	4	2	14	8	3	wheeled, recon

Arab order of battle

Counter	Class	AP	HE	Range	Defence	Move	Spot	VP	Notes
T-62	tank	13	8	8	11	9	3	9	armour, tracked
T-55	tank	11	7	7	10	9	3	8	armour, tracked
T-34/85	tank	8	7	6	7	8	3	6	armour, tracked
IS-3M	tank	15	10	7	14	6	3	11	armour, tracked
SU-100	td	13	6	8	8	8	3	7	armour, tracked
PT-76	tank	6	5	5	4	10	4	5	armour, tracked
M48 Patton	tank	12	8	8	11	9	4	9	armour, tracked
BTR-152	apc	1	4	4	2	10	3	3	wheeled, carrier
BMP-1	apc	9	5	6	5	11	3	5	armour, tracked, carrier
Rifle company	inf	4	6	2	5	4	3	5	foot
RPG-7 company	inf	9	6	1	5	4	3	6	foot, at-team
Commandos	inf	8	6	2	6	4	4	6	foot, at-team
Sagger team	atgm	16	1	14	3	3	4	5	foot, atgm
100mm AT gun	at	12	6	9	4	2	3	6	gun
122mm D-30	art	4	14	24	3	3	3	6	gun, indirect
BM-21 Grad	art	6	18	26	2	10	3	6	wheeled, indirect
ZSU-23-4	aa	3	10	5	4	10	4	5	armour, tracked, aa
Assault engineers	eng	4	6	1	4	4	3	4	foot, engineer
BRDM recon	recon	4	3	5	3	13	7	3	wheeled, recon

VP is what the counter is worth to the enemy when it is destroyed. Spot is how far the counter can pick out an enemy that is not firing or moving.

4. Fire

A shot needs range, a line of sight, and a spotted target. Attack strength is the armour-piercing figure against armoured targets and the high-explosive figure against everything else; a counter with no strength of the right kind cannot usefully engage.

Attack modifiers

Situation	Effect
Beyond half the weapon's range	attack halved
Firing after moving this turn	attack halved
Defensive fire	attack halved
Firing into a bore-sighted hex	attack doubled
Close assault at one hex	attack doubled
Infantry with shaped charges closing on armour	attack tripled

Defence modifiers

Situation	Effect
Terrain	defence multiplied — see the terrain table
Infantry that has not moved since deployment	defence $\times 1.3$ (dug in)
Armour caught in the open at one hex	defence halved

Attack divided by defence gives the odds column. One die is rolled. Below 1:2 the shot has no effect at all.

Odds	1	2	3	4	5	6
1:2	-	-	-	S	S	D
1:1	-	-	S	S	D	D
2:1	-	S	S	D	D	X
3:1	S	S	D	D	X	X
4:1	S	D	D	X	X	X
6:1	D	D	X	X	X	X
8:1	D	X	X	X	X	X

S suppresses: the counter cannot fire and moves at half allowance. **D** disperses: it cannot fire or move. **X** destroys it. A suppressed counter hit again is dispersed; a dispersed counter hit again is destroyed.

5. The modern battlefield

Anti-tank guided missiles

Missile teams have the longest reach and the heaviest armour-piercing strength on the board, and three limitations that decide how they are used: they cannot engage inside two hexes, they cannot fire in a turn in which they displaced, and any fire into their hex pins the gunner for the turn. Suppress a missile hex with high explosive before armour crosses its front.

Bore-sighting

A stationary gun that has not fired may lay on a hex it can see. Fire into that hex counts double from then on. Moving loses the lay. Bore-sighting uses the counter's fire for the turn, so it is a bet on where the enemy will come.

Minefields, roadblocks and engineers

A counter entering a minefield stops there and is attacked at strength 8. Engineers clear a minefield or roadblock in their own hex or one beside it by spending the whole movement phase on it; a die roll of 3 or better opens the lane.

Overrun

Armour with four movement points left may attack an adjacent hex holding only soft targets, at double strength against a defence reduced by nearly half, and enters the hex if it clears it. Armour cannot be overrun.

Indirect fire and electronic warfare

Artillery fires at any hex within range without needing to see it, provided some friendly counter has eyes on the target. In the 1973 scenarios both sides jam: roughly one fire mission in six never arrives.

Spotting and carriers

A counter that has not fired or moved and is in cover can only be engaged by an enemy close enough to pick it out. Firing, moving, or standing in the open gives it away. Carriers lift one infantry counter each; a carrier destroyed with troops aboard takes them with it.

6. Victory

The attacking side has a point target. Points are objective hexes held at the end, plus the victory value of every enemy counter destroyed, plus anything run off the far edge where the scenario allows it. Reaching the target is a marginal victory for the attack; one and a half times the target is decisive. Below the target the defence has held, and below 60 per cent of it the defence has held decisively.

Scenario	Date	Turns	Attacker	Target	Boards	ISR	ARAB	Obj	EW
The Mitla Defile	31 October 1956	12	Israeli	33	1b, 1a	11	8	4	—
Rafah Junction	1 November 1956	14	Israeli	21	2b, 1a reversed	14	10	3	—
Umm Katef	6 June 1967	16	Israeli	93	1a, 2b reversed, 1b	18	17	4	—
The Jenin Road	6 June 1967	14	Israeli	87	4a, 4a reversed	12	12	5	—
The Escarpment	9 June 1967	15	Israeli	17	3b, 3a	14	13	3	—
The Ramparts	6 October 1973	14	Arab	23	2a, 1a	9	16	4	yes
The Purple Line	6 October 1973	16	Arab	107	3a, 3b reversed	14	18	4	yes
Valley of Tears	7 October 1973	18	Arab	68	3b, 3a reversed	11	21	3	yes
Sagger Country	8 October 1973	12	Israeli	32	1a, 2a reversed	12	16	4	yes
The Chinese Farm	16 October 1973	18	Israeli	49	2b, 2a	16	19	4	yes
What if: the Damascus Road	hypothetical, October 1973	18	Israeli	40	3a, 4b, 3b reversed	18	26	3	yes
What if: meeting engagement	hypothetical	16	Israeli	24	1b reversed, 1a	13	15	3	yes

ISR and ARAB are the number of counters each side deploys. Obj is the number of objective hexes. EW marks the scenarios in which fire missions can be jammed.

7. Controls

Action	Control
Select a counter, or cycle a stack	click the hex
Read the odds on a target	point at the enemy hex
Fire	click the enemy hex
Move	click a shaded hex during the movement phase
End the phase	space
Re-centre the map	F
Clear the selection	escape
Pan and zoom	drag, wheel, or pinch

The game saves itself after every action and offers to resume on the opening screen. One game is kept at a time; finishing a scenario clears it.

8. How the scenarios play

Point targets were not guessed. Each scenario was played out repeatedly by the computer opponent on both sides, and the target was set to the median attacking score, so a scenario played competently is a near-run thing. The figures below are from 24 games per scenario.

Scenario	Target	Attacker wins	Mean turns	Counters lost
The Mitla Defile	33	38%	12.0	8.3
Rafah Junction	21	67%	10.6	13.8
Umm Katef	93	50%	16.0	15.1
The Jenin Road	87	38%	13.9	14.8
The Escarpment	17	58%	15.0	8.0
The Ramparts	23	58%	12.8	17.3
The Purple Line	107	71%	16.0	17.3
Valley of Tears	68	38%	15.4	18.0
Sagger Country	32	46%	11.8	16.3
The Chinese Farm	49	67%	16.7	24.6
What if: the Damascus Road	40	54%	18.0	20.7
What if: meeting engagement	24	50%	16.0	13.7

Attacker wins is the share of simulated games in which the attacking side reached its target. A human who suppresses missile teams before advancing armour, and who holds counters silent to cover the gaps, should do better than these figures.

9. Package structure

The package follows the Tronsoft Games Package Specification v1.4. The ZIP root holds manifest.json and index.html directly.

Path	Contents
index.html	entry file: markup only, all styles and scripts linked and deferred
css/game.css	the whole stylesheet, extracted from the single-file build
js/data.js	terrain, board faces, counter roster, combat results table, scenarios
js/game.js	rules engine: map building, sight lines, spotting, movement, fire, sequence
js/ai.js	the computer opponent (required by §5 because computer_ai is true)
js/save.js	local save and restore
js/interface.js	canvas renderer, orders panel, input, turn flow
assets/	cover 600×900, icon 512×512, banner 1920×620, loading 1920×1080
screenshots/	four 1920×1080 captures of live play in this build
docs/	description, tutorial, credits, this manual
patches/	patch notes for this version and the preserved changelog
validate.js	the in-package validator described below

The package makes no network requests, bundles no fonts or libraries, and contains no audio. Local storage is used for one key, **tronsoft_arab_israeli_wars_save**, per §23.

Save format

A save records the scenario, the seed, the number of random draws made so far, and the state of every counter and hex. Restoring re-creates the game from the seed and winds the random stream forward by the recorded number of draws, so play continues with the same dice it would have had. Saves are tied to schema v1 and are not compatible across a future breaking change; any such change will be documented in the patch notes under §26.

10. Validation

Two validators cover the package. **validate.js** ships inside it and is run with Node from the extracted directory: it checks the specification requirements it can see from inside (§2, §4 to §10, §12 to §16, §20 to §23, §26, §29, §33), reads PNG and JPEG headers directly to confirm image dimensions, and then loads the shipped rules and exercises them — hex arithmetic, sight lines, the combat table, movement costs, the status ladder, missile and engineer rules, the turn sequence, scoring, and save-and-restore continuity — before playing whole scenarios out with the shipped opponent and checking board integrity after every phase.

A separate archive checker, kept outside the package because the specification prohibits script files inside it, confirms the ZIP name matches the manifest version, that the root is flat, and that there are no symlinks, traversal paths, operating-system noise, or size and compression violations.

The build that produced this release passed 1,857,258 assertions with the scenarios simulated 24 times each, and was launch-tested in Chromium at 1920×1080 and at 420×820 with no console errors.

Development tooling — Node.js, Playwright, Pillow, ReportLab — is not part of the package and is not required to run the game.