

Hellwig's Wargame

A war game in the manner of the Brunswick master of pages, 1780

WHAT THIS IS

Johann Christian Ludwig Hellwig, master of pages at the court of Brunswick, published a war game in 1780 that broke chess out of its sixty-four squares. He gave it ground: a board of coloured fields, and a box of terrain pieces the players laid out before play, so that no two actions were fought over the same country. Every arm of service moved after its own fashion, the terrain told for and against, and the result of an attack was *computed* rather than left to fortune — he was writing half a century before anyone thought to put dice on a war game.

This is a game in that manner, on hexes rather than squares. It is not a reconstruction of Hellwig's rules, which are not reproduced here; it is an original system built on the three ideas that made his game matter: **terrain you lay out**, **arms that differ**, and **combat you can work out on paper**.

THE SHAPE OF AN ACTION

Two armies of 14 pieces meet on a field of 24 by 18 hexes, 150 metres to the hex, laid out from 9 terrain squares drawn at random from a set of 16. Each army has 8 orders a turn and they are spent alternately. The action lasts at most 24 turns and always reaches a decision.

Everything in this manual — every number in every table — is generated at build time from the same JavaScript modules the game runs on. If a rule changes, this page changes with it.

THE BOARD, AND HELLWIG'S BOX OF SQUARES

Before each action the game draws 9 terrain squares of 8 by 6 hexes and lays them in a 3 by 3 frame, each one flipped at random in either axis. The seams are drawn faintly on the plate and the name of each square is set in the margin, so you can see the country you are fighting over come out of the box. The two outer columns are drawn from a restricted set, so a deployment area can never be walled off.

The terrain squares

Ploughland	Heath	Forest
Copses	Ridge	Downs
Hamlet	Walled town	Mill and orchard
Fen	Fish ponds	Enclosures
Defile	Water meadow	Brakes
Chapel and yard		

A river is traced through the middle of the field with two bridges and a ford; each army has a fortress on its own edge; villages lie between, and roads are laid between the fortresses and the villages. Wherever the ground would cut a village or a fortress off entirely, a crossing is opened so that every objective can be reached both on foot and on horseback.

THE GROUND

Ground	Cost	Cover	Notes
Open ground	1	+0	—
Wood	2	+1	blocks the view
Rising ground	1	+1	guns reach one hex further
Marsh	3	+0	closed to horse
Village	1	+2	blocks the view

Water	—	—	bridge or ford only
Redoubt	1	+3	thrown up by miners
Fortress	1	+3	taking it ends the action

Measured over forty generated boards, the ground comes out as: open ground 57%, wood 19%, rising ground 12%, marsh 3%, village 4%, water 4%.

Playing

SEQUENCE OF AN ACTION

Each army has **8 orders a turn**. The armies spend them **alternately** — you give one order, then your opponent gives one, and so on until both allowances are exhausted. No piece may take more than one order in a turn, so an army of 14 pieces can move only 8 of them in any turn and the choice of which is the whole game. The initiative — who gives the first order of the turn — changes hands every turn.

This is a deliberate departure from the sequence most board wargames use, in which one side moves its whole army and then the other does. Alternating single orders means neither army ever watches a full turn unfold before it may answer, and closing with the enemy is no longer punished simply for being first.

AN ORDER

An order is one of: move a piece; move it and attack; attack without moving; bombard with artillery; set miners to throw up a redoubt or break a bridge; set pontoniers to begin a bridge. Standing fast forfeits what is left of your allowance for the turn.

MOVEMENT

A piece spends its march allowance on the ground it enters, at the costs in the table above; moving along a road between two road hexes costs half. **A piece that enters ground beside an enemy must halt there**, which is what makes a screen worth posting. Water is impassable except at a bridge or a ford. Marsh is closed to horse. A piece in disorder may move but may not attack, and recovers at the start of a turn if no enemy stands beside it.

THE ARMS OF SERVICE

Arm	No.	March	Attack	Defence	Mark
Musketeers	3	2	3	3	×
Grenadiers	2	2	4	3	⊗
Jäger	2	3	2	2	/
Dragoons	2	4	4	2	○
Hussars	1	5	2	1	⊘
Artillery	2	1	1	1	●
Pontoniers	1	2	0	1	⊖
Miners	1	2	1	2	∧

- **Musketeers**. Line infantry. The substance of the order of battle.
- **Grenadiers**. Assault troops. +1 storming a village or redoubt.
- **Jäger**. Light foot. Moves through wood at open cost, +1 defending it.
- **Dragoons**. Heavy horse. +1 attacking in the open, −2 into wood, village or redoubt.
- **Hussars**. Light horse. Fast, brittle, +2 against guns and train caught in the open.
- **Artillery**. Bombards to 3 hexes (4 from rising ground) with a clear view. Cannot move and fire.

- **Pontoniers.** Throws a bridge over an adjacent water hex. One turn to work.
- **Miners.** Throws up a redoubt on its own hex, or breaks a bridge it stands on.

Attacking

There are no dice in this game

An attack is reckoned, not rolled. Work out the attacker's total and the defender's total, and the difference between them settles the matter outright. The same numbers always give the same result, which means an attack can be planned — and that the game rewards arranging one before making it.

THE ATTACKER'S TOTAL

- The attacking arm's own attack number.
- What its arm gains or loses on the defender's ground: grenadiers add one storming a village or redoubt; horse add one attacking in the open and lose two attacking into wood, village or redoubt; hussars add two against guns or train caught unescorted in the open.
- One for horse that charged home across two hexes or more of open ground.
- **One for each friendly piece already standing beside the defender, to a maximum of three.**

THE DEFENDER'S TOTAL

- The defending arm's own defence number.
- The cover of the ground it stands on, from the table on the previous page. Jäger add a further two defending a wood.
- Less two if the defender is in disorder.

THE LADDER

Difference	Result
+2 or more	the position is carried
+1	the defender is driven back
0	both fall into disorder
-1	the attack is repulsed
-2 or less	the attacking piece is broken up

A piece driven back that has nowhere to retire to is taken instead, which is what makes cutting off a retreat worth the trouble. A piece whose attack carries advances into the ground it took.

THE LEDGER

Every attack is entered in the ledger beside the board, with each contribution named and the columns added up, ruled off, and the verdict set beneath. Before you commit, hovering an enemy with one of your own pieces in hand prints the same sum in advance. Nothing about this game's arithmetic is hidden from you.

ARTILLERY

Artillery bombards to 3 hexes, 1 further from rising ground, provided nothing blocks the view; woods, rising ground and villages do. It may not move and fire in the same order. A bombardment throws a steady piece into disorder. A piece already in disorder and caught in the open, and any battery or train, is destroyed outright. The proper use of guns is therefore to break up a formation so that the foot can carry it on the next order.

Deciding the day

THE THREE WAYS TO WIN

- **The fortress.** Occupy the enemy fortress and the action ends at once in your favour.
- **Breaking the army.** An army that loses 5 of its 14 pieces breaks and quits the field.
- **Nightfall.** After 24 turns the field is judged: 3 points for every enemy piece taken and 4 for every village held. An equal count leaves the field disputed.

HOW OFTEN EACH HAPPENS

Measured over machine-against-machine actions at the highest calibre, both sides played by the same routine:

Decided by	Share
The fortress stormed	3%
An army broken	27%
Judged at nightfall	70%

Mean length 21.4 turns; mean losses 4.4 pieces across both armies; measured over 120 actions.

THE OPPONENT

Three calibres are offered. What separates them is not boldness — in a game without dice, attacking without an advantage is simply punished, so recklessness is not skill — but how well each reads the board: how much of the available ground it weighs, how steadily it appraises it, whether it sees the counterstroke a move invites, whether it concentrates before it strikes, whether it softens a position with guns before storming it, and whether it looks over its shoulder at its own fortress.

Match	Result	Drawn	Actions
Ace against Cadet	58% – 40%	3%	120
Ace against Veteran	53% – 42%	5%	120
Veteran against Cadet	61% – 34%	5%	120
Ace against Ace	48% – 48%	5%	120

Each figure is pooled over both orientations — every action is played twice, with the calibres swapped between the two armies — so that an advantage of side cannot be mistaken for an advantage of skill. The Ace-against-Ace row is the check on that: at 48% against 48% neither side of the board is favoured.

Notes for the developer

WHAT IS IN THE PACKAGE

- **index.html** — markup only. No inline style, no inline script.
- **css/game.css** — the whole stylesheet.
- **js/data.js** — terrain, arms, tile library, constants. Every table in this manual is generated from this file at build time.
- **js/game.js** — the engine: hex arithmetic, board generation, movement, combat, victory, save and restore. It knows nothing about the interface.
- **js/ai.js** — the machine opponent.
- **js/interface.js** — the canvas plate, the camera, the panels, and the only file in the package that touches storage.

SCRIPTS AND SCOPE

The four modules are loaded from index.html by relative path with `defer`, which preserves their order and runs them once the document is parsed. Each module is wrapped in its own closure at source, because separate script tags share a single global scope and bare top-level declarations in one file will collide with another.

STORAGE

The action is written to local storage after every order, the machine's as well as the player's, under the single key `tronsoft_hellwigs_wargame_save`, derived from the package slug. The interface probes storage once at boot and degrades quietly if it is refused, so the game plays normally from a `file://` origin or in private browsing — it simply does not remember. No other file in the package refers to storage at all.

NETWORK

The package makes no network request of any kind. There are no external stylesheets, no web fonts, no analytics, no remote images and no `fetch` or `XMLHttpRequest` anywhere in it. It will run correctly with the machine offline.

AUDIO

There is none, and the manifest declares none, so the package ships no sounds directory and no sound module.

SAVED GAMES AND FUTURE VERSIONS

The saved position carries a version stamp. Should a future release change the shape of the position, saves from this version may not be readable, and the release notes will say so.