

FREE KRIEGSSPIEL

The free war game of 1876, on the Tronsoft Wargame Engine

Version 2.0.0 · engine 1.0.0 · package specification 1.4

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Every table in this manual is generated from the game's own data files at build time. If a number here disagrees with the game, the manual is wrong and the build is broken — which is precisely why it is generated rather than typed.

1 What this game is

In 1824 Georg von Reisswitz gave the Prussian army a war game with dice and printed tables, and it was used seriously for fifty years. In 1876 Colonel Julius von Verdy du Vernois pointed out that the tables were the weakest part of it: an officer who knew his business could judge the result of an attack better than a chart could, and could give his reasons. He proposed doing away with the apparatus and putting a trained umpire in its place. That is the free Kriegsspiel, and it is the direct ancestor of every professional military simulation since.

This package is that game. There is no combat results table anywhere in it, because there is no combat results table. There is an umpire, whose reasoning is declared in the ruleset as a list of named factors with weights and plain-English prose, and who writes out what he weighed and what he decided for every judgement he makes.

The other thing the free game insisted on is that the player is a commander and not a puppeteer. You do not move a battalion. You write an order, an orderly carries it, and your subordinate interprets it. Everything difficult about command follows from that one rule.

1.1 The three scenarios

Scenario	Ground	Clock	You are	Weather
A Lesson in Written Orders	The northern crossing of the Aulne	09.00 to 12.00	attacking	clear
The Affair at Vieux-Moulin	The Aulne valley, west of Metz	10.00 to 14.00	attacking	clear
The Counter-stroke at Le Moulinet	The northern crossing of the Aulne	16.00 to 19.00	defending	fog

The campaign “The Aulne, 16–17 August 1870” links them: A Lesson in Written Orders → The Affair at Vieux-Moulin → The Counter-stroke at Le Moulinet.

2 The clock

The scenarios declare the **wego** turn model: both sides’ standing orders are carried out at the same time. A turn is 10 minutes and is resolved in 5 impulses of 2 minutes each. You are never asked to end a turn; you set the clock running and halt it when you want to write something.

The clock halts by itself only on an *urgent* report — contact, ground taken, or a fresh command coming on to the field. Routine position reports do not stop it.

3 The order

An order names an officer, a task, a piece of ground and the manner in which the thing is to be done. The tasks are these:

Task	What it means to your subordinate
Advance upon	Move on the named ground and take possession of it.
Attack	Close with the enemy at the named ground and drive him from it.
Hold	Occupy the named ground, entrench upon it, and remain there.
Support	Follow the named command and come up on its flank when it is engaged.

Task	What it means to your subordinate
Reconnoitre	Ride to the named ground, observe, and report. Avoid becoming engaged.
Bring the guns into action against	Unlimber within effective range of the named ground and keep up a fire upon it.
Withdraw upon	Break off and retire on the named ground.
Halt where you stand	Stop, take up a position on the ground you are on, and await further orders.

3.1 The manner is the important part

The manner is not flavour text. It decides whether an attack closes at all, and how readily an officer will break off on his own responsibility when the umpire asks him whether he ought to.

Wording	Meaning	Presses	Breaks off	Resolve
with vigour	press on, accept loss	130%	0.62×	1.20×
as circumstances allow	use your judgement	100%	1.00×	1.00×
with caution	do not become seriously engaged	72%	1.50×	0.95×
at all costs	the order stands whatever the loss	155%	0.30×	1.25×

3.2 The orderly

A courier rides at 290 metres a minute, and 2 minutes are spent writing the order before he leaves. Rough going adds up to 45 per cent to the ride. There is a 5 per cent chance that an order goes astray, rising by 0.25 per cent for every minute of the ride to a ceiling of 16 per cent; 35 per cent of those that go astray are never seen again, and you are not told which. The shortest possible order takes 2 minutes.

Your commands report every 20 minutes, and at once when something urgent happens. Every report carries the hour it was written and the minutes it spent on the road.

3.3 Temper

Each of your subordinates has a temper, printed beside his name in the command list. It multiplies the manner of your order, and it governs what he does when he has been left without orders long enough to feel he must do something.

Temper	Presses	Breaks off	Acts on own initiative	Obedience
dashing	1.30×	0.55×	55%	72%
methodical	0.95×	1.00×	18%	94%
cautious	0.75×	1.45×	22%	86%
stubborn	1.00×	1.30×	30%	80%

4 The ground

The map is a point-top hex grid stored in axial coordinates. A hex is 151 metres across the flats (circumradius 87 metres). The valley of the Aulne is 44 hexes by 28 — 6.6 by 3.7 kilometres — and the northern crossing is 22 by 16.

The river runs along the hexsides, not through the hexes. It cannot be crossed anywhere except where a bridge or a ford is marked — which is why the crossings are worth points.

Ground	Movement	Fire taken	Defensible	Blocks sight	Cover for digging	Supply
open ground	1.0	100%	×1.0	0 m	+20%	×1.0
the chaussée	0.6	100%	×1.0	0 m	+0%	×1.4
woodland	2.1	48%	×1.7	12 m	+60%	×0.7
a village	1.7	32%	×2.4	12 m	+100%	×1.2
a walled farm	1.6	30%	×2.6	10 m	+100%	×1.1
an orchard	1.4	66%	×1.4	7 m	+40%	×0.9
wet meadow	2.6	90%	×0.9	0 m	+0%	×0.5
the Aulne	6.0	100%	×0.6	0 m	+0%	×0.0

“Fire taken” is the proportion of incoming fire that tells: a village at 32 per cent means troops there suffer under a third of what they would suffer in the open. “Defensible” is what the umpire multiplies the defenders by when an assault is judged.

4.1 Getting about

A road step costs 0.5 movement points against 1.0 for open ground. Climbing costs 0.045 points per metre of rise, to a maximum of 1.0. No more than 2 units may stand in one hex. A body that moves next to a formed enemy is halted there by his zone of control and may not slide past.

Troops	Arm	Establishment	Movement	Sight	May dig
infantry battalion	infantry	780	3.9	2200 m	yes
light infantry battalion	infantry	620	4.3	2400 m	yes
cavalry squadron	cavalry	140	9.7	2800 m	no
field battery	artillery	130	4.1	2600 m	yes
mitrailleuse battery	artillery	110	3.9	2400 m	yes

5 Fire

Fire is the one part of the game that is not judged, because it is physical. Effect is the proportion of a body standing in line in the open that is put out of action by one 2-minute impulse of fire at that range, before formation, ground and condition are taken into account. The whole calculation is itemised on the unit card.

Weapon	Class	Best at	Effect there	Half effect by	Spent beyond
Zündnadelgewehr M/41	small arms	0 m	3.10%	530 m	1100 m
fusil Chassepot mle 1866	small arms	0 m	3.30%	795 m	1500 m

Weapon	Class	Best at	Effect there	Half effect by	Spent beyond
cavalry carbine	small arms	0 m	1.20%	380 m	700 m
Krupp C/64 (steel, breech-loading)	artillery	1200 m	1.05%	3112 m	4200 m
canon de 4 rayé (bronze, muzzle-loading)	artillery	0 m	0.85%	1891 m	2900 m
mitrailleuse de Reffye	machine gun	1000 m	1.60%	1355 m	1800 m

The Chassepot outranges the Dreyse by a wide margin and is better past four hundred metres, which is why a Prussian attack that stands off and shoots is a Prussian attack that loses. The Krupp steel breech-loader outranges the French bronze gun, which is the compensation. The mitrailleuse is at its best near a thousand metres and nearly useless close in — as it was, and as it was not used.

5.1 Formation

Formation	Fire taken	May fire	Pace	Arms
march column	175%	no	100%	infantry, engineer, train
column of companies	155%	yes	85%	infantry, engineer
line	100%	yes	55%	infantry
skirmish order	42%	yes	72%	infantry
square	145%	yes	0%	infantry
mounted	130%	yes	100%	cavalry
limbered	150%	no	100%	artillery, train
in battery	80%	yes	0%	artillery

6 The umpire

Everything above the level of physics is judged. The ruleset declares each judgement as a base chance and a list of factors; each factor names a predicate the engine understands, a weight, and the line of prose the umpire will use if it applies. The umpire adds up the factors that apply, throws once, and writes the whole thing into his book.

This is why the judgements can be printed here in full, and why you can argue with them.

His command has lost {losses_pct} of its strength. Does he go on? (press_on)

Base chance 50 per cent, bounded between 3 and 97 per cent.

Factor	When it applies	Weight
the order was given at all costs, and he takes it literally	manner — is atallcosts	+55%
the order was to press on with vigour	manner — is vigour	+20%
the order allowed him to break off	manner — is caution	-30%
his temper is not one for turning back	personality — in dashing/stubborn	+15%
he is a cautious officer	personality — is cautious	-20%
close on half his men are down	losses — above 0.45	-25%
his ammunition is running out	supplied — is False	-15%

If it passes: He goes on. Whatever it costs, the attack is not called off.

If it fails: He halts and takes up a position. He will not throw the rest away.

Does the charge go home? (charge)

Base chance 50 per cent, bounded between 3 and 93 per cent.

Factor	When it applies	Weight
the enemy is already broken	state — target: is broken	+45%
the enemy is shaken	state — target: is shaken	+20%
they have formed square	posture — target: is square	-45%
caught in march order	posture — target: in march/limbered	+35%
gunners cannot defend themselves at close quarters	arm — target: is artillery	+10%
formed infantry with breech-loading rifles	arm — target: is infantry	-40%
broken ground — no place for horse	terrain — target: flag broken_ground	-30%
they have thrown up cover	entrenched — target: above 0.3	-20%
the horses are blown	fatigue — attacker: above 0.5	-12%

If it passes: It goes home. The squadrons ride over them and they stream to the rear.

If it fails: The charge is beaten off. They come back with empty saddles.

Do they carry it at the point of the bayonet? (assault)

Base chance 16 per cent, bounded between 3 and 92 per cent.

Factor	When it applies	Weight
{att} men at hand against {def} holding	ratio — above 0	scales with ratio
every house and garden wall tells against the attack	terrain — target: flag built_up	-14%
the ground gives them cover	terrain — target: flag cover	-6%
the defenders are shaken already	state — target: is shaken	+20%
they have had time to entrench	entrenched — target: above 0.4	-18%
the order was at all costs	manner — is atallcosts	+10%

If it passes: Carried. The defenders are turned out at the point of the bayonet.

If it fails: Repulsed. The attack comes back on its supports.

Will they stand? (stand)

Base chance 0 per cent, bounded between 2 and 90 per cent.

Factor	When it applies	Weight
losses of {losses_pct} and the fire still coming in	ratio — above 0	scales with ratio
{support} formed bodies within support	support — above 0	scales with support
the ground gives them something to hold	terrain — subject: flag cover	-8%
they are dug in	entrenched — subject: above 0.3	-10%
cartridges are running short	supplied — is False	+10%

If it passes: They stand.

If it fails: The battalion is shaken. It will hold its ground but it will not go forward.

Do they break? (break)

Base chance 35 per cent, bounded between 5 and 85 per cent.

Factor	When it applies	Weight
they have lost more than two men in five	losses — above 0.4	+15%
no fresh support at hand	support — at_most 0	+12%
they are among houses and will not be moved easily	terrain — subject: flag built_up	-15%
they are behind their own earth	entrenched — subject: above 0.4	-12%
the pressure on them is now overwhelming	ratio — above 2	+12%

If it passes: They hold on.

If it fails: Broken. They are going to the rear and cannot be stopped by paper.

7 What you know

Each side keeps its own picture of the field, and the picture is only ever brought up to date by a dispatch arriving. Your own troops are shown where they were last reported. An enemy sighting is placed between 0.6 and 2.1 hexes away from where he actually is, his strength is estimated between 65 and 140 per cent of the truth, and he is never identified by name.

Weather multiplies what can be seen: clear $\times 1.00$, rain $\times 0.80$, fog $\times 0.45$. Troops in skirmish order are seen at $\times 0.72$ of the usual distance, and an observer inside a wood can see only 420 metres out of it.

The machine commander reads exactly the same picture. It has no privileged access of any kind, and its orders go by the same couriers and are delayed and lost at the same rates. Difficulty changes only two things:

Grade	Thinks again	Remembers a sighting for	Estimate error	Held in reserve
cadet	18% of reviews	25 minutes	$\pm 50\%$	0%
veteran	35% of reviews	45 minutes	$\pm 25\%$	15%
ace	50% of reviews	70 minutes	$\pm 10\%$	25%

8 Scoring

8.1 A Lesson in Written Orders

Ground	Worth to you
Le Moulinet	40
La Passerelle	25

Contested ground scores two parts in five. The balance of losses is worth up to 25 points either way. The umpire's finding:

From	Finding
50	The lesson is learned
25	A fair beginning
5	Slow, but not hopeless
below	The umpire suggests you read the conventions again

8.2 The Affair at Vieux-Moulin

Ground	Worth to you
Vieux-Moulin	40
Ferme de la Croix	25
Pont de l'Aulne	20
Côte 217	15

Contested ground scores two parts in five. The balance of losses is worth up to 45 points either way. The umpire's finding:

From	Finding
84	Decisive Prussian success
68	Prussian success
50	Prussian advantage — the affair is drawn out
22	Indecisive
8	French advantage
below	The attack has failed

8.3 The Counter-stroke at Le Moulinet

Ground	Worth to you
La Passerelle	40
La Chapelle	30
La Butte	20

Contested ground scores two parts in five. The balance of losses is worth up to 40 points either way. The umpire's finding:

From	Finding
80	The crossing is held and the counter-stroke shattered
62	The position holds
46	The line is bent but not broken
22	Indecisive
below	The crossing is lost

8.4 How those bands were set

They were not guessed. Two machine commanders were set to fight the Affair at Vieux-Moulin one hundred and twenty times with no human involvement. The results ran from below zero to above ninety, with a median of thirty-two, and the middle of *Indecisive* was placed on that median. A commander who finishes above it has done something two machines could not.

9 Orders of battle

The Affair at Vieux-Moulin

Command	Officer	Temper	Troops	Men
Vorhut	Oberst von Kleist	dashing	Füs./I.R. 52 II./I.R. 52 4. leichte Batterie	1530
Hauptkolonne	Oberst von Below	methodical	I./I.R. 52 I./I.R. 12 II./I.R. 12	2340
Artillerie-Abteilung	Major Kessel	methodical	1. schwere Batterie 2. schwere Batterie 3. leichte Batterie	390
Kavallerie	Rittmeister von Barby	dashing	1./Husaren-Rgt. 9 2./Husaren-Rgt. 9 3./Husaren-Rgt. 9	420
Reserve (up at 10.45)	Oberstleutnant von Sell	cautious	Füs./I.R. 12 I./I.R. 48 II./I.R. 48	2340
Groupe du Moulin	Commandant Lacoste	stubborn	1er/32e de ligne 2e/32e de ligne 9e bat. de chasseurs	2180
Groupe de la Croix	Commandant Ferrand	cautious	1er/76e de ligne 2e/76e de ligne	1560
Artillerie	Capitaine Rollet	methodical	1re batterie de 4 2e batterie de 4 batterie de mitrailleuses	370
Cavalerie	Capitaine Vaux	cautious	3e chasseurs à cheval	140
Renfort (up at 12.20)	Commandant Girard	methodical	3e/76e de ligne 1er/45e de ligne	1560

The Counter-stroke at Le Moulinet

Command	Officer	Temper	Troops	Men
Brückenkommmando	Major von Kleist	stubborn	Füs./I.R. 52 II./I.R. 52	1400
Kommando La Chapelle	Oberstleutnant von Below	cautious	I./I.R. 12 II./I.R. 12	1560
Artillerie	Major Kessel	methodical	1. schwere Batterie 2. schwere Batterie	260
Reserve (up at 17.30)	Oberstleutnant von Sell	methodical	I./I.R. 48	780
Colonne de gauche	Commandant Lacoste	dashing	1er/32e de ligne 2e/32e de ligne 9e bat. de chasseurs	2180
Colonne de droite	Commandant Ferrand	methodical	1er/76e de ligne 2e/76e de ligne	1560

Command	Officer	Temper	Troops	Men
Artillerie	Capitaine Rollet	methodical	1re batterie de 4 batterie de mitrailleuses	240
Cavalerie	Capitaine Vaux	dashing	3e chasseurs à cheval	140

A Lesson in Written Orders

Command	Officer	Temper	Troops	Men
Advanced guard	Hauptmann von Kleist	dashing	Füs./I.R. 52	620
Main body	Major von Below	methodical	II./I.R. 52 I./I.R. 12	1560
Squadron	Rittmeister von Barby	dashing	1./Husaren-Rgt. 9	140
Battery	Leutnant Kessel	methodical	4. leichte Batterie	130
Garnison du Moulinet	Capitaine Lacoste	stubborn	détachement du 32e de ligne	480

10 Reference

10.1 Controls

Action	Mouse and touch	Keyboard
Move the map	drag	Shift + arrows
Change the view	wheel, pinch, buttons	+ - 0
Select a command	click a block or its card	N / P
Name ground in the order	click the ground	—
Read a hex aloud	hover for the unit card	arrow keys
Send the order	Seal and send	Enter
Clear the named ground	—	Escape
Run or halt the clock	Let the clock run	Space
Advance ten minutes	+10 min	T
The true position	Umpire's map	U
The conventions	Conventions	C

10.2 Saving

The game saves itself after every impulse into one browser storage key, `tronsoft_free_kriegsspiel_save`. The save carries the engine version, the package version, the random seed and the exact position in the random stream, so a resumed affair continues precisely as it would have done. An altered or truncated save is refused with a reason. Saves written by version 1.0.0 cannot be read.

10.3 What is in the package

The engine is separate from the game. Everything below is data, and all of it is validated against a schema before the game will start.

File	What it carries
rules/free-kriegsspiel.json	the whole ruleset, including the umpire's judgements
terrain/terrain.json	the ground types and what they do
units/units.json	troop classes and formations
units/weapons.json	the range and effect curves
maps/*.json	two hex maps: terrain, height, roads, river and bridges
scenarios/*/scenario.json	three scenarios with their orders of battle and victory bands
campaigns/aulne/campaign.json	the branching campaign
ai/profiles.json	tempers, difficulty grades and the utility weights
localization/en.json	every string the game shows you

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