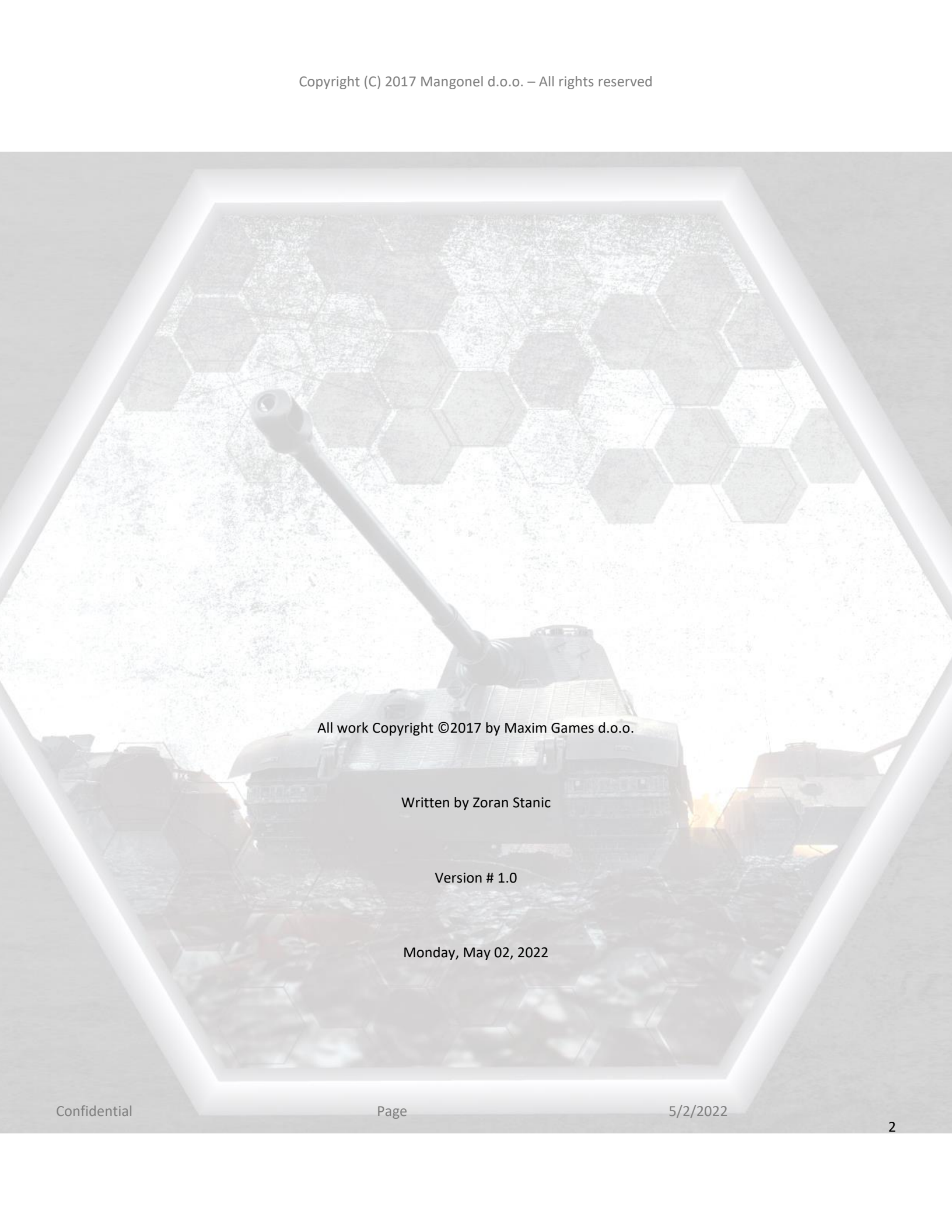


KLOTZEN!

PANZER BATTLES



GAME MANUAL



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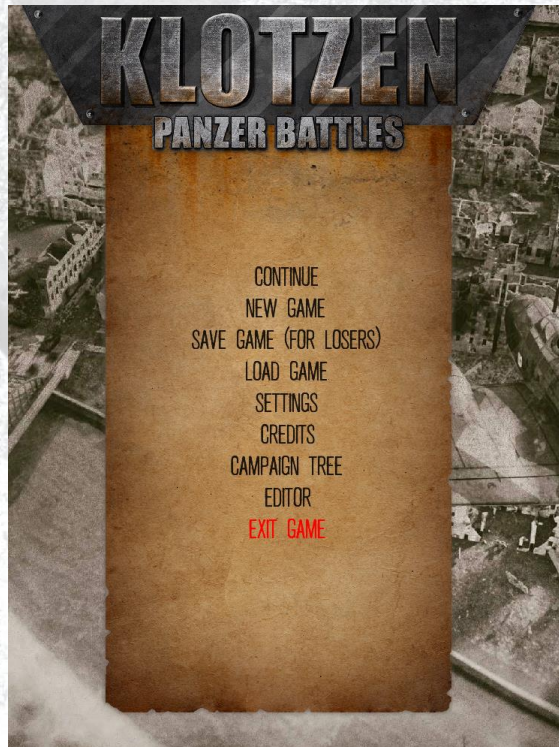
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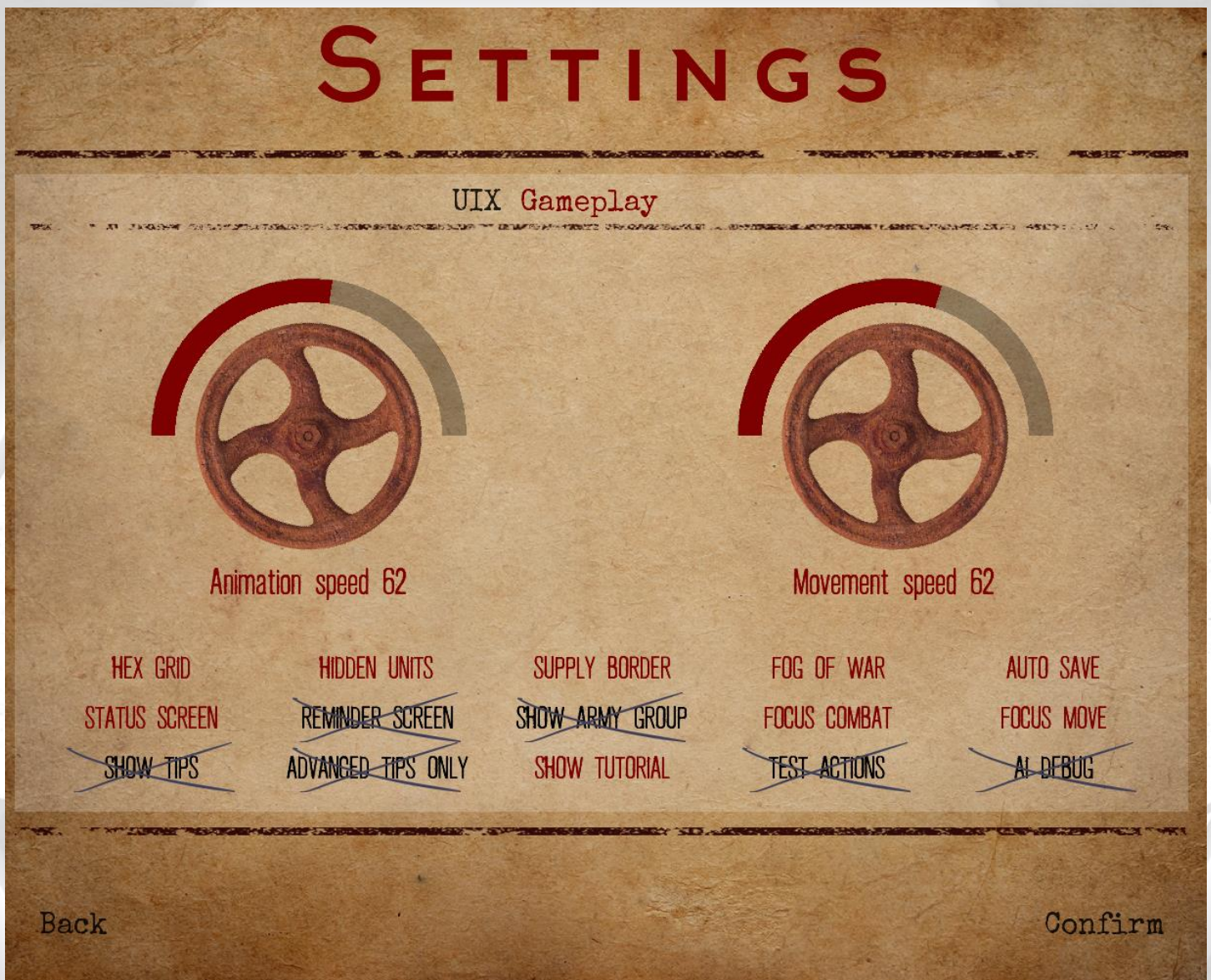
PLAYING THE GAME



On the Main screen, please take some time to review the “Settings” menu and modify the game to your preferences.

To start, select “New Game”, then consult the “CAMPAIGN/SCENARIO” Section to choose the type of game you want to play.

SETTINGS



Experiment with the settings to modify how game information is presented.

CAMPAIGN/SCENARIO SELECTION



The game can be played in both the standalone and campaign mode. In Campaign mode, you progress from scenario to scenario.

You can select which campaign/scenario to play in the New Game menu.

STATUS BUTTONSTRIP

There are six buttonstrip menus on the screen: STATUS, CONTROLS, INFO, HQ, MINIMAP and REPORTS.

This is the STATUS buttonstrip.



The most important things to note is the End turn leveler to the left of the menu.

Also note the Main menu and Settings buttons.

To access the main menu, hover over the orange arrow sign to the left of the STATUS buttonstrip.

Here are the most important parts:

1. Scenario name
2. Settings menu (the gear symbol to the right of the Scenario Name)
3. Current date
4. Player's influence – this basically money; The more influence, the better you are in convincing the HQ that YOUR army group should get those precious reinforcements.
5. Current weather conditions - Weather is important as planes are grounded during storms and units receive penalties when fighting in bad weather.
6. Map ground conditions - Units (especially Trucks) move very slowly if ground is muddy or frozen.
7. Under influence is the number of units that have not attacked/moved.
8. Below that is the number of units that are not receiving supply, which will reduce their combat effectiveness.
9. Current side/player

CONTROLS BUTTONSTRIP



Controls box allows manipulation of the currently selected unit.

Undo move – allows to cancel previous unit move. Only works if the unit has not detected any enemy units. Also, this is only possible while unit remains selected.

Replacements – replaces lost unit strength with inexperienced troops. Total unit experience will drop proportionally to the number of replaced strength points.

Elite replacements – this will replace troops with veterans but will cost significantly more influence.

Upgrade – this will open a unit upgrade window where unit can be assigned a transport, better equipment or assigned a new commander.

Load – This button will load the unit into land transport of the unit (if available).

Transport – There are 5 types of transports available: Sea (warships or transport ships), Air (transport planes or gliders) and Train. Depending on the context, not all the transports will be available. Air transport is only available when the unit is on an airfield. Similarly, train is only available on railroads, towns and ports while sea transport is only available in ports. Warship must be present next to harbor for the unit to embark. Rest of the transport units are available through HQ menu and are created and assigned automatically. Clicking on this button will open a dropdown with all of the available options. Note that “Undeploy” sub button is present if unit is next to the supplied railroad.

Special – this is used for special abilities, if any. For example, torpedo attack of some warships, or engineering actions (lay minefield, dig fortifications).

Sleep – unit will not be counted as active when checking for the end of turn or when cycling through the active units.

Info button will open a unit info window with detailed unit statistics.

INFO BUTTONSTRIP



This shows the currently active unit and date on the hex the mouse is hovering over.

Note the hex index at the bottom, this can be used to quickly locate hexes on map.

HQ BUTTONSTRIP



The HQ Menu allows quick access to the four very important menus. We suggest opening each of them to quickly familiarize yourself with their functionalities. We will explain them in more detail later.

Note that in the MANAGE UNITS menu you can view both units to purchase, and the current army. You can switch the PURCHASE and the REVIEW ARMY by clicking the button in the bottom left corner of the menu.

Note that the DEPLOY MENU has the same filtering options as the MANAGE UNITS, to speed up finding the right units.

The PERSONNEL menu lets you assign different commanders to your units, as well as choose the General for your armies, but we will cover this later.

The HQ HELP allows you to get your army from the tight spots and keep your army prepared for the challenges ahead, but we will postpone this for a later time.

Ground/Air view switch – shows air units or land/sea units first.

Next active unit button – cycles through all the player's units that are still moving and/or attacking.

REPORTS BOX



Reports how detailed overview of the combat, as well as important events on unit destruction and supply situation.

MINIMAP BOX



Minimap shows Current units (air or ground, depending on the currently selected VIEW in the HQ Buttonstrip), Towns, objectives (downward pointing arrow) and airfields. You can quickly zoom screen to a location by clicking on its position on the minimap.

CAMPAIGN EVENTS

At the end of some scenarios there is a chance of triggering campaign event.

In some cases there are different ways history could have played.

Events can have the following effects:

For any one scenario, change one or more of the scenarios to be played next (for Major Victory, Minor Victory or Loss).

Change unit cost – for one state, either all classes or one class.

Trigger another event

Trigger random check for what will be the next scenario (in this case, 3 options are allways presented to a player: Scenario A, Scenario B, or select A or B on random (with displayed chances))

Some events can have another event as a prerequisite, and some have no effect apart from influencing another event as a prerequisite.

Example: France attacking Ruhr during invasion of Poland.

So player is given options:

Select A (France sits behind Maginot line) (HISTORICAL)

Select B(France invades) (COUNTERFACTUAL)

Random with historical chances (A 80%, B 20%)

Some options might have an influence cost.

Name	Description	Effect 1	Effect 2
Spain exhausted		Allows CANARIS_EXPOSED Event	
Kurt's NO to Hitler	(ALT, 50% chance)	If triggered, Austria	Else, no effect (Peaceful anschluss (OTL))
Austrian National Bank evacuated		All German units cost +20% until after last France map. Cumulative with Austrians enraged	
Austrians enraged		German Infantry cost +20% for the rest of the war	
Send military advisors to Japan	Player can choose: Roll the dice for the outcome of Khalkhin Gol, or press HQ to send military advisors.	YES: Germans start Fall weiss with 50% influence. Khalkhin Gol is won by Japan. Stalin Line event triggered	NO: Historical. Go to Khalkhin Gol event
Khalkhin Gol won by...	Only if Send military advisors to Japan is NOT triggered	Historical: USSR: 80% chance	Japan: 20 % chance. Stalin Line event triggered
Player's influence weakened	Germany starts with 50% influence on the next map. Then remove event. Message: You've irritated the High Command, but you know it will be worth it in the long run.	Germany starts with 50% influence on the next map. Then remove event.	
Stalin line	Japan has more presence in the east. Stalin makes more concessions to Germany NOTE: Since this changes the whole war, this battle is entirely optional, player can choose to go with historical.	Barbarossa starts from Stalin line IN 1942!. Baltic states and eastern poland not occupied).	

France attacks	(30% chance) France attacks Siegfried line	YES: No romanian bridgehead, next is Siegfried line. Stalin line event removed.	NO: If Stalin Line triggered Romanian Bridgehead, else Norway
Stalin moves in	USSR occupies parts of Poland due to German failure.	Stalin line event removed.	
French shaken		Allies have -25% influence on the next 2 maps due to losses sustained	
Germany weakened	German army is weakened by its clash with the French and adopts a more conservative strategy.	If triggered replaces Ardennes with Low Countries. German units 30% more expensive.	
Altmark incident	ALT: 50% chance.	Replaces R4 with Norway	
Disaster at Namsos	Luftwaffe destroys british evacuation force.	Remove 1-2 UK ships (destroyer or cruiser) on 3 next maps involving UK. Also, remove 2 BEF infantry units in te next map.	
Norwegian treasury captured		All German units cost 10% less in the next map	
Leave it to Luftwaffe	Choice: Chose to override Hitler and lose influence to prevent Dunquerkue evacuation in order to make Sealion easier	REFUSE: Lose influence. Ripe for the taking event triggered	AGREE: Nothing happens
Ripe for the taking	BEF destroyed, England is ripe for the invasion	England has -50% influence during Sealion '41	
Quick victory	Losses in France were surprisingly low.	Germany weakened event removed	
Outrageous demands	1.12.1940. Only happens if Stalin line is NOT triggered (Stalin would not be brave enough otherwise). Meeting with Molotov in November goes wrong as Stalin presses some territorial issues. Hitler is enraged and possibly decides for Barbarossa instead of Mediterranean and Sealion	YES: 70% chance Barbarossa goes historically. Strengthen Afrika Corps event is presented to player. Event: Barbarossa rushed triggered	NO: Germany attacks in Mediterranean and Sealion. NO Strengthen Afrika Corps event (Operation Felix instead) Triggers event: Popping the Pimple

Create new Army group	THIS HAPPENS PRIOR TO BARBAROSSA/LIBYA Player will create a new Army group. One will fight in Africa and defensive battles in the west (Army Group West, AGW). One will fight in the Balkans, Sealion, and Russia (Army Group East (AGC)). Player will choose which general and units will go where. If west is won, Russia group will be in the center and the Africa group will be in the south. Default should be that 2/3 of the units go to Russia group.	YES: AGW created	NO: Player can choose to have only one group everywhere, but then experience and influence gain is halved
Barbarossa rushed	Barbarossa starts in 1941.		
Strengthen Afrika Korps	Choice: Spend some influence to send more units to DAK. This will weaken Barbarossa but will allow a chance to win in Africa	YES: DAK starts with more units than historical. Next map is Libya. Barbarossa starts with 1/2 influence.	No: Barbarossa will start with full influence. DAK will move along historical route. Next map is Balkans
Popping the Pimple	If Barbarossa is delayed, allow player to choose if they want to participate	YES: Operation Tannenbaum	NO: Operation Felix
Gold in the mountains	Swiss banks and industry captured:	All troops 20% cheaper until 1.1.1943.	
Canaris exposed	Only if Spain Exhausted NOT triggered. Canaris is discovered or betrayed by Franco.	YES: 80% chance. Franco agrees to join Axis, Felix can proceed, Infantry cost -10% for the duration of the war	NO: OTL effects (no Felix, Spain neutral)
Pullout from Afrika	Saveznici u ovom slučaju mogu birati između Sicilije, Južne Francuske. VJEROJATNO je SLEDGEHAMMER (Normandija '43) SLJEDEĆI!		
Win Africa		No Italy maps. No invasion in Southern France	
Win West	UK surrenders, USA doesn't enter the war in Europe	All maps start with 20% more influence for the player; Offer to move AGW to East (replace AGS). If not, player can choose to replace a general, and up to 30% of the AGW units (with	

		commanders) instead of AGS units.	
Really soft underbelly	Churchill convinces Roosevelt to go for Torch instead of Roundup	YES: (60% chance) Algeria instead of Roundup	NO: Roundup.
Italy turns	Italy is out of the war;	Happens on the beginning of the first turn (Italy starts as axis, so on Axis turn) Italian units no longer available. German infantry cost is increased by 20% Italian units and towns/hexes change side.	
Stalin shoots first	Only if Stalin line, 50% chance.	YES: Stalins gambit	No: Stalin line Center
USSR weakened		30% more expensive units in next 4 scenarios for USSR	
Combatants weakened		Both sides get only 50% influence during next two scenarios (Stalin line Center and Stalin line South).	
Moscow taken			
Win East	USSR surrenders		
Rzev salient	Russian attacks at Rzev - no changes in campaign tree, only influence changes for both players	Germany wins (OTL, 70% chance): Next 2 maps: Germany -20% influence, Russia - 40% influence	Russia wins (ALT): Next 2 maps: Germany -30% influence, Russia - 30% influence
Tamed bear	USSR is weakened and close to defeat		
Reconnaissance squadron destroyed	Early russian attack destroys a vital reconnaissance squadron. Germans are unaware of the extent of the soviet preparations	YES: 60% chance: Kursk	NO: Kursk Defense
Lucy spy ring broken	BOTH events are checked. Kursk defense wins over Kursk. Germans aware surprise is lost: Wait for russian attack	YES:40% chance: Kursk Defense	NO: Kursk

South stabilised	Army group south holds so Army group center can be reinforced		
Center holds	Army group Center is stabilised		
Romania Turns!	Romania changes sides	Happens on the beginning of the fourth turn (Romania starts as axis, so on Axis turn) Romanian units no longer available. German infantry cost is increased by 20% Romanian units and towns/hexes change side.	

EVENTS

Events are random influences that can happen to either side and can have either positive or negative impact.

Events can happen both at the beginning or at some point during the scenario.

Possible events:

There are 3 levels, each with more impact. First has a 20% chance, second 10% chance and 3rd 3% chance. Events chances are checked separately except for the global ones which are checked for the scenario (weather for example). Each event chance is checked before each scenario. There is an equal chance for either good or bad effect.

1. Unit has introduction date moved (positive or negative, 3 levels with 2,4 or 6 months delay or half for earlier for each unit, calculated at the start of the campaign, for all States), checked once per game. NOTIFY PLAYER, 1 year before the new introduction date.
2. Available supply increased/decreased (positive or negative, 3 levels with 1 extra/less unit per level, for each Side separately).
3. A patch of good/bad weather is almost guaranteed at certain turn in scenario (80% chance) (positive or negative, 3 levels with 2 extra/less days of good/bad weather per level).
4. Intact factory captured/escaped). Effect: Extra influence for one side, minus for the other (+200, +500, + 1000) or cheaper units in one class (-10,-20,-40% in any air or ground class except infantry, recon, AA and AT). This happens at random turn between 20-40% of the total number of turns in the scenario and lasts until after start of the next scenario.
5. One side is permanently awarded a free unit. The unit still counts towards the supply limit.
 - a. Level 1: Green personnel, 20% of the cheapest unit types of Infantry, AA, Recon or AT.

- b. Level 2: Personnel with 30% experience of the most experienced player's unit, unit type with up to 60% of the most expensive unit type in any air or ground class
- c. Level 3: Personnel with 80% experience of the most experienced player's unit, most expensive type in any air or ground class except Infantry, AA, Recon or AT
- 6. Less HQ units:
 - a. Level 1: Weakest HQ unit is unavailable.
 - b. Level 2: Strongest HQ unit is unavailable
 - c. Level 3: Weakest and strongest HQ units are unavailable
- 7. Commander earns a free promotion - one per level, after scenario, must survive
- 8. Discovered enemy battle plans. This is a level 2 chance, so 10%:
 - a. Defender: All attacker's units are visible for two consecutive turns (random start turn, but not among the first 20% turns)
 - b. Attacker: All of the defender's units are revealed after the deployment phase (before the combat starts)
- 9. General earns a free promotion. Checked at the end of scenario, only if he won, level 3 chance (3%).

GENERALS

BERTIN GLAUB
LEVEL 1
PERSONALITY: PHLEGMATIC
INFLUENCE: 0
COMPETENCE: POOR

SANGUINE CHOLERIC MELANCHOLIC PHLEGMATIC

ABYSMAL
COST: 78

SOLID
COST: 78

GOOD
COST: 156

EXCEPTIONAL
COST: 234

Any skill from other personalities can be chosen but with limitations:
Flamboyant - up to level 2. Planner and Leader - up to level 1.

NEW GENERAL RANDOM GENERAL LAST GENERAL

BURGHARDT LANGHANS
LEVEL 1
PERSONALITY: PHLEGMATIC
INFLUENCE: 578
COMPETENCE: POOR

Skills Flaws

YOU CAN CHOOSE 1 SKILL!

Friendly
HQ teambuilding
Bootcamp connections
Teachers pet
Friend in need
Master strategist
Secret stash
Organized
Intelligence

Officer training
Friendly discount
Factory connections
General Charming
Officer training
Logistics
Efficient
Careful
Leapfrog

FRIENDLY
EVERYONE LIKES THE GUY WHO IS WILLING TO COOPERATE AND IS READY FOR COMPROMISES. +2%/GENERAL LEVEL INFLUENCE BONUS.

CLOSE ADD REMOVE

In this game Generals are used to control army groups in scenarios. Each army group will have commanding General. Through generals, player will be able to control one or more army groups, each in charge of it's own part of the theatre of war. Army groups will rarely mix, meaning that army group fighting in Normandy will not take part in fighting in USSR. When a new army group gets created, players will first be taken to „Create General“ window. In „Create General“ window players will be able to rename the general, replace the assigned General with a more competent one (by sacrificing some influence).

Replacing the general costs:

$$\text{COST} = 35 * \text{GL} * \text{CL}$$

Where GL is the current general level (starting with 1 at the start of the war) and CL is the competence of the general, with Abysmal being level 1 and Exceptional being level 5.

The quality of the available Generals will increase during the war, and will be on the level with the existing Generals. Each army group has it's own influence. Influence spent when changing General is deducted from the influence for that army group.

Enemy armies are also controled by Generals of varying degrees of skill.

Generals can be of varying competence (when used by AI):

Certain nations will have different starting competences, with the starting competences outlined in the tables below.

Chance for getting general of certain degree of competence is modified by Nation/Year competence from Generals modifier table.

Competence	Flaw	Skill	Frequency (%)
Abysmal	1-3	1	10
Poor	0-2	1-3	20
Solid	0-1	2-3	54
Good	0	2-4	13
Exceptional	0	3-6	6

Nation	Year	General Average*** level
Germany	1936	2
Germany	1939	3
Germany	1940-1942	4
Germany	1943	5
Germany	1944+	4
Poland	1939	2
France	1939-1940	2

UK	1940-1941	2
UK	1942+	3
USA	1941+	3
USSR	1941	1
USSR	1942	2
USSR	1943+	3
Italy	1940	1
Other nations	1936+	1

General can have average or level up to 2 more or less than average. Chance for average: 40%. +/-1: 20% each. +/-2: 10% each. For each level reduce or increase number of skills by 1.

Generals start with personality **Flamboyant** (connected and well-liked by HQ), **Leader** (decisive and energetic), **Planner** (analytical and careful), or **Amiable** (helping and cooperative).

Major Victories give 4 victory points, Victories 2, and losses deduct 1.

General can be promoted for free after 10 victory points (if the player has 10 or more victory points, the upgrade window is opened after scenario end, and the player then selects new traits/skills same as with commander).

General can be promoted for free as long as victory points are above 9, so for e.g. three times if victory points are 33.

If Victory points are less than 10, General can be promoted for a price.

Cost depends on the:

$$\text{COST} = \text{INF} * \text{GL} * (0.1 * (10 - \text{VP}))$$

Where GL is the current level of the General, INF is the influence awarded at the beginning of the last scenario and VP is the current number of victory points.

PERSONALITIES:

FLAMBOYANT: HQ FAVOURS.

No Leader skills can be chosen

FLAWS:

- Indecisive - General requires additional time for most decisions. One random unit per turn doesn't receive any orders (loses a turn but can be attacked).

- Disorganized - Insufficient preparations lead to undersupplied units. 10% of the units don't get supplied this turn.
- Subjective – General chooses his subordinates by likability. 30% of commanders get one extra flaw.

SKILLS

Skill name	Level	Effect	Description
Officer training	1	removes flaw effect	
HQ teambuilding	3	+2/+4/+8 unit cap	After a good party, HQ finally realises your mission is in peril unless reinforced.
Friendly discount	3	-15% influence cost one class/40 one class/20 all units	Ill news is an ill guest...unless it's you who needs help.
Bootcamp connections	3	AB – after battle, IB – in battle L1: Normal replacements -80%AB, -30% IB L2: Veteran -40AB, -25 IB L3: Veteran '80AB, -50 IB	
Factory connections	3	Extra sea/air transport/supply trucks +20/50/100%	
Teacher's pet	3	+1 HQ ground unit/level (infantry, recon, artillery, tank hunter, all with truck transport) -20/50/100% cost if unit destroyed	„He's still learning but is a talented young man.“
General Charming	3	Promotion cost for the General -10/25/50%	„This is a long past due, my friend.“
Friend in need	3	Free HQ actions 1/level/scenario, same level as level of this skill: L1:Scout/ enemy information L2:L1+ supply unit L3: L2+supply by air	

PLANNER: STARTING AND SUPPLY BONUSES

No Flamboyant skills can be chosen

FLAWS:

- Brooding - General is disliked in the HQ. Less influence available (-15%)
- Overplaner - General requires additional time for most decisions. One random unit per turn doesn't receive any orders (loses a turn but can be attacked).
- Asocial - General doesn't handle people well. Lower unit morale (-1)

SKILLS

Skill name	Level	Effect	Description
Officer training	1	removes flaw effect	
Master strategist	3	+1/level turns to win	
Logistics	3	units start with efficiency bonus (+1/skill level)	
Secret stash	3	first 1/level unsupplied units are supplied (Sequence if more units: units unsupplied longest, closest to objective, highest value)	
Efficient	4	Every 2 levels adds one extra turn before unsupplied units start losing efficiency (max 2 extra turns)	
Organized	4	every level increases town supply range by 0.5 truck turns (1/2 of how much it can move in a turn)	
Careful	3	town supply and airfield damage (to planes) reduced by 15/35/60% due to preparations	
Intelligence	3	Reveals location of enemy units (10/25/50% chance for each enemy unit) Level 1: Reveals total number of enemy units. Once per scenario, it reveals an area 3 hexes in radius (player selected), as described above Level 2: Reveals composition by class of all units. Twice per scenario, it reveals an area 4 hexes in radius. Level 3: Reveals exact unit types of all enemy units. Three times per scenario, it reveals an area 10 hexes in radius.	
Leapfrog	3	No strafing bonus if units have moved less than 50/60/80% of the total movement, rounded up.	By jumping units from cover to cover, enemy gets no strafing bonus

LEADER: UNIT BONUSES

No Planner skills can be chosen

FLAWS:

- Rash - General is unable to stand up for his army group. Group has a deploy limit lowered by 10% rounded down, to a min of 1.
- Arogant - General is disliked in the HQ. Less influence available (-15%)
- Angry - General is quick to point others mistakes. Lower unit morale (-1)

SKILLS

Skill name	Level	Effect	Description
HQ friend	1	removes flaw effect	
Courageous speech	3	+1/Level Unit morale	
Ticket to the last station	3	Extra move 1/level/scenario, only one extra move per turn can be used	By spending time with the units, General can be in the right place at the right time to push units forward
Once more into the breach	3	Extra attack if first one failed, one extra attack per unit per turn, 1/level per scenario	
Mentorship	3	+10%/level experience gain for all units	
Skilled sergeants	3	-20%/level experience lost when replacing with regular replacements	
Overwatch	3	Units gain 1/level experience when performing move or attack action. NOTE: This is STILL DIVIDED by experience gain penalty	
Field training	3	Units start with $(1 + 0.25/\text{level}) + 0.1$ per level per year of war of extra experience levels.	For level 2 in september 1943 this is 2.3 levels, add that much experience to the unit

Field academy	3	Free promotion for 1/level commanders per scenario	
Fame	3	+1 commander/level to chose from when creating new commander (when creating unit or replacing commander)	Every commander dreams of serving under the General.
Field Experience	3	+1 commander skill/level, max of 3+level, each time a commander/unit is created.	General knows talent when he sees it.

Amiable: JACK-OF-ALL-TRADES

Any skill from other personalities can be chosen but with limitations: Flamboyant - up to level 2. Planner and Leader - up to level 1.

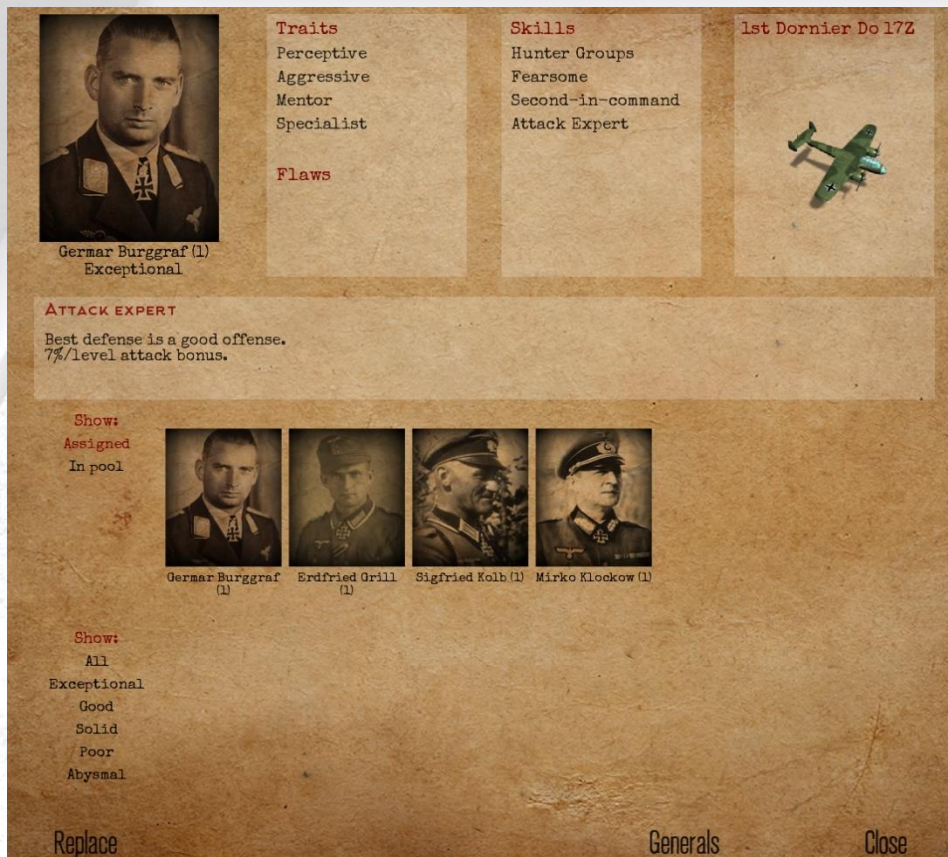
FLAWS:

- Disorganized - Insufficient preparations lead to undersupplied units. 10% of the units don't get supplied this turn.
- Spineless – general is unable to stand up for his army group. Group has a deploy limit lowered by 10% rounded down, to a min of 1.
- Subjective – General chooses his subordinates by likability. 30% of commanders get one extra flaw.

SKILLS

- Any other personalities skills can be chosen
- Friendly - +2%/general level influence bonus

COMMANDERS



Each unit has a commander, if he dies new one needs to be assigned/bought. Commanders can be reviewed by opening the Personnel menu from the HQ buttonstrip.

Each commander has a quality, the cost will be higher for higher quality when buying a new commander. Also, higher the commander level, higher the price. Commanders get distributed randomly when new units are created, but they are of more quality as war progresses.

Commanders are limited to 6 traits and 20 skills.

Before buying commander, only show Incompetent (Abysmal to Solid), Medicore (Poor to Good) and Competent (Solid to Exceptional), with differences in prices. When bought, commander is revealed.

Competence:

Abysmal ((10%) chance. 1-3 flaws, 1 trait, 1 skill)

Poor ((20%) chance. 0-2 flaws, 1-2 traits, 1-3 skills)

Solid ((if none of the other 4 Competences, this is rest of chance). 0-1 flaws, 1-3 traits, 2-3 skills)

Good ((5%) chance: 2-3 traits, 2-4 skills)

Exceptional ((2%) chance: 2-4 traits, 3-6 skills)

(Same as table for Generals)

Certain nations will have different starting competences, with the starting competences outlined in the tables below.

Chance for getting commander of certain degree of competence is modified by Nation/Year competence from Commander modifier table.

Competence	Trait	Flaw	Skill
Abysmal	1	1-3	1
Poor	1-2	0-2	1-3
Solid	1-3	0-1	2-3
Good	2-3	0	2-4
Exceptional	2-4	0	3-6

Commander modifier	Abysmal %	Poor %	Solid %	Good %	Exceptional %
Inept	1-30	31-70	71-90	91-98	99-100
Green	1-20	21-60	61-85	86-96	97-100
Trained	1-10	11-30	31-84	81-94	95-100
Seasoned	1-7	8-20	21-70	71-92	93-100
Veteran	1-5	6-15	16-60	61-90	91-100

Nation	Year	Commander modifier
Germany	1936	Green
Germany	1939	Solid
Germany	1940-1942	Seasoned
Germany	1943	Veteran
Germany	1944+	Seasoned
Poland	1939	Green
France	1939-1940	Green
UK	1940-1941	Green
UK	1942+	Trained
USA	1941+	Trained
USSR	1941	Inept
USSR	1942	Green
USSR	1943+	Trained
Italy	1940	Inept
Other nations	1936+	Inept

Commander list is created when first opened while playing scenario. Once the list is created, it gets saved when the game is saved. Only names/images and Incompetent/Competent/Medicore info is saved (to prevent reading it from the save file). Once commander is bought, his skills/traits get created.



ERDFRIED GRILL
2ND GERMAN REGULAR
LEVEL: 1
COST: 5



Skills:	Traits:	Flaws:
Coordinated attacks A drop of sweat Interlocked defense	Strategist Scout	

Skills:	Traits:
Alternating attacks Coordinated attacks 12 Interlocked defense 12 Communications adjutant Fire brigade Long range patrol A drop of sweat 12	Brown noser Audacious Aggressive Planner Zealous Mentor Specialist Pillaner

ALTERNATING ATTACKS

TRY TO COOPERATE WITH FELLOW GENERALS. BUT DONT LET THEM TAKE ALL THE GLORY. 12%/LEVEL INITIATIVE BONUS WITH OTHER TEAM PLAYERS IN SAME MEDIUM

Close
Level up
Replace commander

As the unit levels up, player is given an option:

Either improve or add a skill, add another trait or replace the commander.

Replacing the commander will either return the commander to HQ (which can yield some prestige to the player) or add him to the commander pool. A new replacement is then added (randomly generated), and player chooses which of the 3 replacements (or any commander in the pool) becomes the commander.

Replacements will have one level less than the commander. All the skills are chosen upon taking command.

Players can also choose to ask HQ for commander. There will be a HQ pool where replaced commanders are sent. This pool will constantly refresh, adding and removing part of commanders (permanently or temporary). Getting commander from HQ will cost influence, based on commander's level and competence.

After the combat ends, a trait improvement window is displayed. This is in addition to leveling/promotion when a commander's unit levels up.

Commanders can die depending on the amount of damage done to the unit and commander experience (level). This can be turned off by player on lower difficulty levels (1-4).

Commander should have some 25% chance of surviving the quickest German grand campaign (so all victories, from Poland to the end).

Chance of dying:

If unit is destroyed: $70\% - (7\% * \text{level})$. Min chance is 5%. If commander survives he is added to the list of commanders a player can chose from. This type of commanders costs no influence to assign to a new unit.

If unit is damaged, chance for commander to die is: $((\text{damage}/\text{level})/1000 * \text{difficulty level})$.

A unit without the commander is marked with an icon:



TRAITS AND FLAWS

Commander Flaw	Allowed Traits	Effect
Despised	BROWN NOSER SPECIALIST CAMOUFLAGE	-1 unit attack when attacking
Troublemaking	AUDACIOUS AGGRESSIVE ZEALOUS	+20% unit upgrade cost
Butcher	AGGRESSIVE ZEALOUS BOMBER	+10% loses for both (Rounded Up) when attacking
Cautious	PLANNER STRATEGIST MENTOR	-1 initiative when attacking
HQ enemies	MENTOR BOMBER PILLAGER	50% chance all reinforcements are 10% more expensive (checked at the start of the scenario)
Solitary	TACTICIAN	-1 unit attack when adjacent to friendly units (in the same medium)

	SPECIALIST SCOUT	
Hesitant	STRATEGIST BROWN NOSER PLANNER	-1 unit attack when no friendly units adjacent (in the same medium)
Empathy	MENTOR STRATEGIST PERCEPTIVE	-1 unit morale when attacking
Singleminded	CAMOUFLAGE PERCEPTIVE BROWN NOSER	Commander is limited to 3 traits
Daredevil	SCOUT ZEALOUS SPECIALIST	-1 defense if spent movement
Ardent	PERCEPTIVE TACTICIAN PILLAGER	-1 morale
Rash	BOMBER AUDACIOUS TACTICIAN	-1 unit defense when attacking
Torcher/Arsonist	PILLAGER AUDACIOUS AGGRESSIVE	No influence gain when taking hexes (towns, objectives...)
Meticulous	CAMOUFLAGE PLANNER SPECIALIST	Digging in starts one turn later – so no defense bonuses on the first turn
NA	CAPTAIN	No effect

Each commander will have 1-4 starting traits. No trait is a good or bad one, although some are better/worse than the others in military operations. Traits determine which skills commander can take. A commander cannot have opposing traits. SOME TRAITS ARE ONLY LAND, SEA OR AIR BASED, SOME ARE FOR ALL GROUPS.

COMMANDER SKILLS

Skills depend on traits. Upon leveling, a list of available skills is displayed and player can select one skill or a new trait.

If multiple skills influence the same characteristic, only the largest one is applied.

TRAIT	OPPOSITE TRAIT, SKILL	ALLOWED MEDIUM	ALLOWED CLASS	NAME	L	EFFECT	REQUIRED
BROWN NOSER	AGGRESSIVE	GROUND, AIR		HQ Friends	3	Unit has +7%/level to attack and defense. Friends deserve the best equipment.	
BROWN NOSER	AGGRESSIVE	GROUND, AIR		Nepotism	3	By calling on the influential friends commander can get one free upgrade per level	HQ Friends ***
BROWN NOSER	AGGRESSIVE	GROUND, AIR		Smooth talker	3	A well-placed compliment can lead a capable commander a long way. Regular replacements are cheaper by 10% per level.	

BROWN NOSER	AGGRESSIVE	GROUND, AIR		Connected	3	Elite replacements cost 10% less per level of the skill. Not applicable for overstrength. It just takes calling on a few well-placed acquaintances to send those veterans here instead of where they are needed.	
BROWN NOSER	AGGRESSIVE	GROUND, AIR		Dragon mom	1	One free elite replacement per scenario. One thing better than protective mother is protective mother hosting high class tea parties.	Connected level 3.
BROWN NOSER	AGGRESSIVE	GROUND		Press friends	3	30% more influence per level when taking objective. Who cares who took the town if you are on the first picture?	
BROWN NOSER	AGGRESSIVE	GROUND, AIR		Camera-ready	3	30% more influence per level when destroying the enemy. Nothing impresses superiors more than tall stories.	Press friends ***
AUDACIOUS	PLANNER	GROUND, AIR		Quick thinking	3	7%/level initiative bonus	
AUDACIOUS	PLANNER	GROUND, AIR		Rapid reactions	3	Automatic initiative gain once per level per scenario when attacking.	Quick thinking ***
AUDACIOUS	PLANNER	GROUND		Pursuing	1	Move to attacked hex after combat (if enemy unit retreated or destroyed)	
AUDACIOUS	PLANNER	GROUND		Drill	3	Increased movement by 20%/level, rounded down.	
AUDACIOUS	PLANNER	GROUND, AIR		Hero	1	Extra commander promotion on the next and every second level afterwards. (Core only)	
AGGRESSIVE	BROWN NOSER	GROUND		Relentless	1	New attack if unit retreated	Cruelty level 3
AGGRESSIVE	BROWN NOSER	GROUND		Cruelty	3	If enemy unit retreats, it suffers 1 damage per level.	
AGGRESSIVE	BROWN NOSER	GROUND		Bloodlust	1	Extra combat (with same unit) if unit disengaging. Not activated if commander's unit is under 4 strength. Counterfire effects persist, counterfire is not performed again, all the damage is still present.	Cruelty level 3
AGGRESSIVE	BROWN NOSER	GROUND, AIR		Brutality	3	10%/level more damage to both attacker and defender, rounded up	
AGGRESSIVE	BROWN NOSER	GROUND, AIR		Attack expert	3	7%/level attack bonus	
AGGRESSIVE	BROWN NOSER	GROUND, AIR		Fearsome	3	15%/level more scatter to enemy unit.	
PLANNER	AUDACIOUS	GROUND, AIR		Expert defense	3	7%/level defense bonus	
PLANNER	AUDACIOUS	GROUND, AIR		Diligent preparations	3	12%/level increased attack if unit has not attacked the previous turn	
PLANNER	AUDACIOUS	GROUND		Careful	1	Ambush/surprise don't trigger combat. Unit is stopped one hex before the ambushing unit.	
PLANNER	AUDACIOUS	GROUND, AIR		Survivor	1	Commander has no chance of dying but misses every 3rd promotion. (Core only)	
PLANNER	AUDACIOUS	GROUND, AIR		Personal reconnaissance	3	7%/level less losses when attacking. Pre-attack inspection of enemy positions is warmly recommended for any commander that truly cares for his troops.	
PLANNER	AUDACIOUS	GROUND, AIR		Planned fallback	3	If unit would be destroyed, add back 1 point/level. If unit is above 0, it is not destroyed but retreats instead.	Expert defense level 3

ZEALOUS		GROUND, AIR		Motivational speech	3	Morale bonus, 1/level	
ZEALOUS		GROUND, AIR		Unwavering	3	15%/level less scatter.	
ZEALOUS		GROUND, AIR		Charge	3	1 additional attack per level per scenario, only one additional attack per turn.	
ZEALOUS		AIR		Determined	3	15% per level higher damage to towns and attacker when bombing towns.	
ZEALOUS		AIR		Hedgehoppin g	3	15% per level higher damage to target and attacker when bombing units.	
ZEALOUS		AIR		Nerves of steel	3	15% per level higher damage to target and attacker when bombing ships.	
TACTICIA N	STRATEGIST	GROUND, AIR		Free maneuver	3	10%/level initiative Bonus when no friendly units adjacent in the same view (air/ground).	
TACTICIA N	STRATEGIST	GROUND, AIR		Multi- directional attack	3	10%/level Attack Bonus when no friendly units adjacent in the same view (air/ground)	
TACTICIA N	STRATEGIST	GROUND, AIR		Elastic defense	3	10%/level Defense Bonus when no friendly units adjacent in the same view (air/ground)	
TACTICIA N	STRATEGIST	GROUND		Fallback positions	3	12%/level less losses when lost combat, rounded up. Works by returning a part of losses after combat, only if unit is alive.	Elastic defense ***
TACTICIA N	STRATEGIST	GROUND	ARTILLERY	Sustained fire	3	Unit can fire twice if its hard attack is (4+2*level) or less. Second attack reduces efficiency by 1.	
TACTICIA N	STRATEGIST	GROUND	ARTILLERY	Bunker buster	3	Hard attack increased by 10%/level if unit type has hard attack greater than 10.	
STRATEGI ST	TACTICIAN	GROUND, AIR		Alternating attacks	3	12%/level initiative Bonus with other team players in same medium	
STRATEGI ST	TACTICIAN	GROUND, AIR		Coordinated attacks	3	12%/level Attack Bonus with other team players in same medium	
STRATEGI ST	TACTICIAN	GROUND, AIR		Interlocked defense	3	12%/level Defense Bonus with other team players in same medium	
STRATEGI ST	TACTICIAN	GROUND, AIR		Shared reconnaissan ce	3	7%/level initiative Bonus to all neighboring units in same medium	Alternating attacks ***
STRATEGI ST	TACTICIAN	GROUND, AIR		Communicati ons adjutant	3	7%/level Attack Bonus to all neighboring units in same medium	Coordinated attacks ***
STRATEGI ST	TACTICIAN	GROUND, AIR		Fire brigade	3	7%/level Defense Bonus to all neighboring units in same medium	Interlocked defense ***
MENTOR		GROUND, AIR		Free hand mentorship	3	Player gets 1/level free replacement with competence equal to the commander competence. This is permanent, so on 3 rd level only 3 free replacement commanders per game. The new commanders can be assigned to any unit and this persists even if commander dies. (Core only)	
MENTOR		GROUND, AIR		Mandatory debriefing	3	Unit gets 10%/level more experience	
MENTOR		GROUND, AIR		Second-in- command	3	On each levelup, has a 20%/level chance of creating a free commander of the competence level: (competence - 1 + 1/level) (so on 3 rd level current commander's competence +1) (Core only)	

MENTOR		GROUND, AIR		Skillful officers	3	Unit can be oversized 1 strength/level earlier (so max strength 13 if skill level 3 and unit is first level) (but max strength is 15)	
MENTOR		GROUND		Overseer	3	Unit can be oversized 1 strength/level higher (max strength is 18, only for units of level 5+)	
SPECIALI ST		GROUND		Terrain use	3	Units that dig-in by only half of the max dug-in bonus (Artillery, AT, AA, but only towed) will receive +1/level to defense, regardless of the terrain, when completely dug-in (on 4 th turn)	
SPECIALI ST		GROUND		Engineering detachment	3	Never leave home without a digging machinery. Units count as if started digging in +1 turn/level earlier.	
SPECIALI ST	Open terrain specialist	GROUND		Closed terrain specialist	3	5%/level to initiative, attack and defense (rounded up) in closed terrain	
SPECIALI ST	Closed terrain specialist	GROUND		Open terrain specialist	3	5%/level to initiative, attack and defense (rounded up) in open terrain	
SPECIALI ST		GROUND		Fortifications expert	3	12%/level increase in terrain bonus (multiply terrain bonus with this, rounded on 0,50 up or down)	
SPECIALI ST		GROUND		Pathfinding	3	15%/level less movement cost. Note: reduces cost towards 1, not 0.	
SCOUT		GROUND		Long range patrol	3	Extra +1 hex view radius on 1st and 3rd level.	
SCOUT		GROUND	RECON	Penetration tactics	3	Unit has (25+25*level) % chance of not losing movement points upon entering enemy ZOC.	
SCOUT		GROUND	RECON	Double shifts	3	Units can double recon radius, once per level (added to Ability button) per scenario	
SCOUT		GROUND		A drop of sweat	3	Additional move per scenario, once per level.	
PERCEPTI VE		AIR		Hawkeye	3	One extra intercept attempt per level. Note that intercept chance drops for each attempt.	
PERCEPTI VE		AIR		Interceptor	3	Increases intercept chance as described in the Manual.	
PERCEPTI VE		AIR		Hunter groups	3	Each level adds +1 intercept range. Work for both intercept (fighter intercepting bombers) and interdict (plane intercepting land unit)	
PERCEPTI VE		AIR		Marksmanship	3	+15%/level to attack during intercepts.	
PERCEPTI VE		AIR		Advanced tactics	3	+7%/level air attack	
BOMBER		AIR		Low altitude attacks	3	Reduces (1/level) penalties for bombing in cloudy weather.	
BOMBER		AIR		Acrobatics	3	20%/level chance of avoiding successful intercept.	
BOMBER		AIR		Navigation	3	7%/level bonus to attack during bombing, rounded up.	
BOMBER		AIR		Focus	3	Reduces scatter by 20%/level during bombing.	
BOMBER		AIR		Air reconnaissance	3	20%/level to attack when attacking airfields.	
BOMBER		AIR		Fuel economy	3	Increase combat radius by 7%/level	
PILLAGER		GROUND		Scavenger	3	Add one efficiency counter every (4-level) turns.	
PILLAGER		GROUND		Local supply	3	This unit can use unsupplied towns for supply in 1/level turns truck radius.	

PILLAGER		GROUND		Favours	3	Unit doesn't count towards deploy limit, on third level. (Core only, at any time there can only be limited number of units with this skill – equal to 10% of the number of core units on the map)	
PILLAGER		GROUND		Fuel discipline	3	Supply drop effects start 1/level turns later.	
CAMOUFLAGE		GROUND	ARTILLERY	Risky positioning	1	Extra 1 hex range. Unit suffers 20% more damage when not in transport/embarked.	
CAMOUFLAGE		GROUND		Crossfire positioning	3	Unit inflicts 10%/level more damage when defending.	
CAMOUFLAGE		GROUND		Camouflage training	3	Unit has air defense increased by 15%/level	
CAMOUFLAGE		GROUND		Leapfrog movement	3	20%/level chance of avoiding successful intercept.	
CAMOUFLAGE		AIR		Camouflaged hangars	3	20%/level less damage when attacked on the airfield.	
CAPTAIN	Delayed firing	SEA	DESTROYER, LIGHT_CRUISER, HEAVY_CRUISER, BATTLESHIP	Gunnery expert	3	10%/level bonus to cannon attack	
CAPTAIN	Gunnery expert	SEA	SUBMARINE, DESTROYER, LIGHT_CRUISER	Delayed firing	3	5%/level bonus to torpedo attack	
CAPTAIN		SEA		Pattern evasion	3	10%/level increase in evade chance	
CAPTAIN		SEA	SUBMARINE, DESTROYER, LIGHT_CRUISER, HEAVY_CRUISER, BATTLESHIP	Dasher	3	7%/level bonus to Initiative	
CAPTAIN		SEA	DESTROYER, LIGHT_CRUISER, HEAVY_CRUISER, BATTLESHIP, CARRIER	Coordinated fire	3	10%/level bonus to Air Attack and defense.	

*** (each level, so 3rd level of required skill required for 3rd level)

OBJECTIVES



Some towns (sometimes other hex types) on the map (mostly supply hubs, so supply passes through them) are objectives (marked with golden star on the map and downward pointing arrow on the minimap). Controlling objectives is the most common requirement for winning the map.

See Victory Conditions section for details on how objectives influence victory.

VICTORY CONDITIONS

Victory turns determine up to which turn is which type of victory possible - first number is turn in which victory is no longer Major Victory. Second number is a turn which ends scenario with a loss for attacker.

The goal on each map is to take all enemy-controlled objectives (for attacker) or to hold as many objectives (for defender).

In some maps there are special win conditions that modify the win conditions for the player.

When playing the standalone scenario against the AI, the same rules apply as when playing campaign („Major victory“ and „Minor victory“ are used only if the player plays the default player side).

When (in standalone scenario) player is playing the side that is by default played by the AI, the goal of the attacker is to take all objectives by the last turn (the result is „Victory“).

SPECIAL VICTORY CONDITIONS

Some examples of special victory conditions:

Attacker must destroy a portion of marked units (these are units of special importance, marked with a star).

At the end of the last turn, attacker can control less than all of the objectives in order to achieve minor victory.

Player can choose which objective to take for major victory (choosing between the two given objectives).

Player must prevent destruction of a portion of his marked units.

Player must evacuate a portion of his units.

Player must kill LESS than certain number of units (Bruderkampf map only).

When (in standalone scenario) player is playing the side that is by default played by the AI, no special win conditions are used.

SCENARIO TURN LENGTH

One scenario turn can last from half a day to 4 or more days. If the day has two turns, first one starting in 6:00 AM and the other in 2:00PM. There are no changes to gameplay from this.

SCENARIO SCALE

Scenario scale represents the actual size of one hex. In game this is either 5, 10, 15 or 20 km and for simplicity's sake only influences combat radius of planes.

UNIT EXPERIENCE AND LEVEL

Units get experience by inflicting and taking damage and participating in battles (even with no damage).

So average combat should give:

$$EXP = 5 * (1 + DI) * VRAT * RMD * LMD * CMD$$

EXP: Experience gain

DI: damage inflicted (in strength points)

VRAT – influence value ratio of target and attacker

LMD: level modifier – Each level is more difficult to attain as experience gain is slower. $2 / \text{Unit Level}$

RMD: result modifier – number between 1/2 and 2, depends on the actual losses versus expected losses. If Expected losses are between 2 and 10, RMD is 1 for 6, 1/2 for 2 and 2 for 10.

$$RMD = LM * (1 - PERC) + HM * PERC$$

Where:

$$PERC = (HE - AD) / (HE - LE)$$

HE - upper limit of possible damage

LE - lowest possible damage

AD - actual damage (random)

LM - low end damage modifier (0.5)

HM - high end damage modifier (2)

CMD: class modifier. Consult the Class Modifier table below.

Class	Modifier
Infantry	1.3
AT, AA	1.5
Artillery	0.6
Tank	1
Recon, Tank hunter	1.3
Fighter	2
Tactical bomber	1
Level bomber	1
All warships	3
Submarine	3
All rest	1

When unit gains a level, its commander also gains promotion. See commanders section for details.

Also, each level of experience above the regular increases the morale by 1.

Each unit level increases attack, initiative and defense by 1.

Experience levels and effects:

Level	Experience	Morale and initiative	Attack, defense
Green (1)	0-29	-1 morale and initiative	No effects
Regular (2)	30-99	No effects	+1
Experienced (3)	100-199	No effects	+1

Seasoned (4)	200-299	+1 morale, +1 attack, defense and initiative	+2
Veteran (5+)	+100	+((Level/2) -1) morale and initiative, rounded down	+((Level/2) rounded down

UNIT INFO



Unit info box is located below the unit icon. It shows the nation a unit belongs to, units' strength, current supply of the unit and if unit can attack (green crosshair icon) and move (green arrow).

If unit's supply is low, unit's combat effectiveness will be impacted. Units without the supply cannot attack and can hardly move or defend.

The golden line around the box marks core units that follow you through the campaign. Other units have the silver outline.

UNIT INTRODUCTION AND OBSOLETE DATE

Units have an introduction date which is date when first prototype unit is available for acquire. In order to clear unit lists close to the end of war, older models will also have an obsolete date after which no new units of that type can be bought.

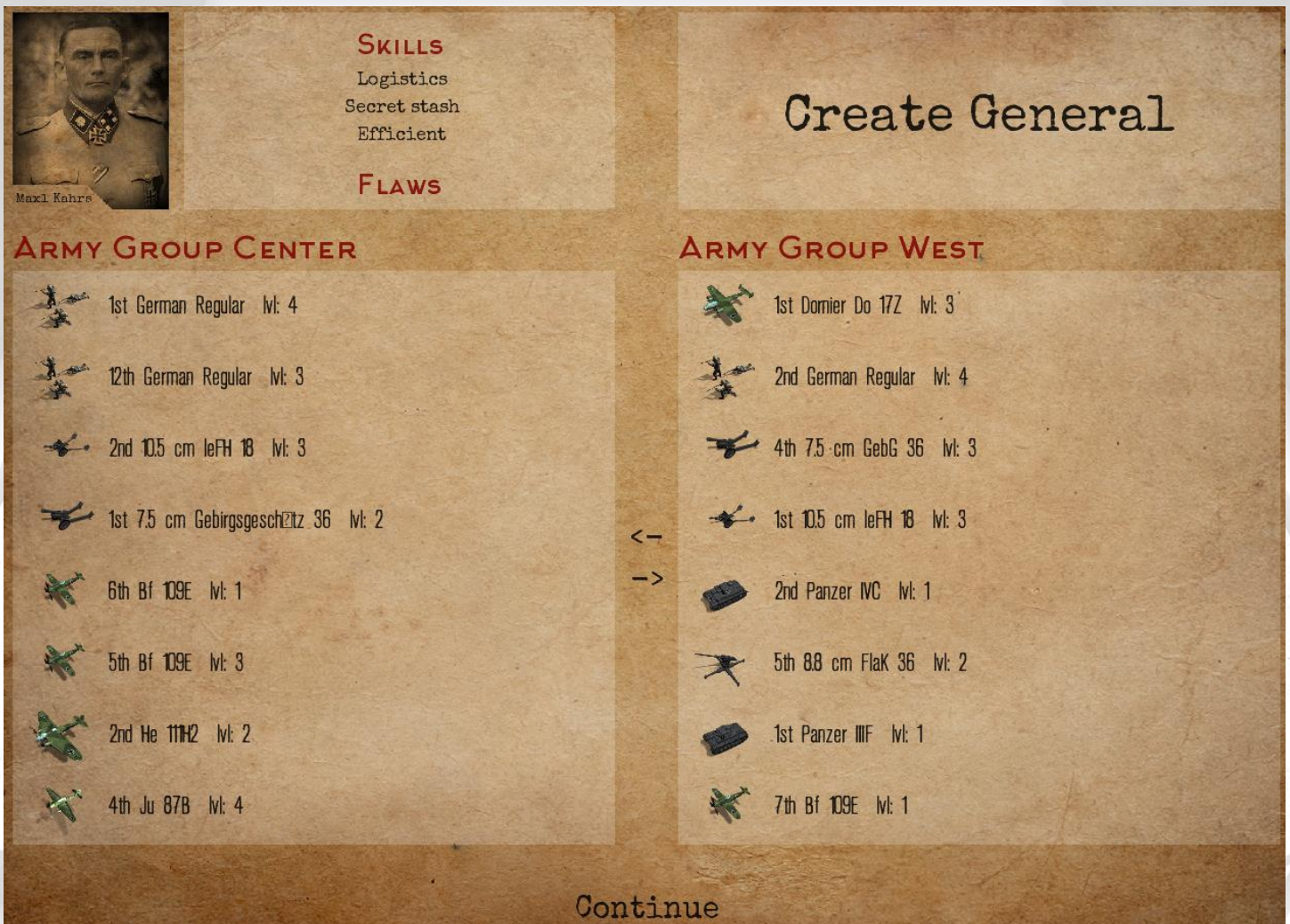
UNIT OWNERSHIP

In each scenario, there will be 2 types of units: Army group units and HQ units. Army group units belong to a certain army group, whereas HQ units are units lent by the High Command. Army group unit move from scenario to scenario, while HQ units return to HQ after the scenario.

SIDES AND STATES

Each scenario will have exactly two sides. One will be attacker and one defender. Each side consists of one or more States. note that one country could have two States, fighting for different Side (Republican and Nationalist Spain for e.g.) and States can switch sides mid-scenario (Italy in 1943. and Romania in 1944.). Note that town ownership becomes very important in that case because of potential disruption of the supply chain.

ARMY GROUP



In each scenario, there can be one army group for each side (a maximum of 2 army groups for Germany only in the whole game – one per theater). Each theater will have one army group.

One army group: Beginning of war, from Poland to Barbarossa, called Army Group Center (AGC).

Second army group gets created in Africa, and will take part in all the western scenarios (Army Group West, AGW).

This will usually be split in 70-30 ratio, with AGC getting the General and most of the units.

At the beginning of Barbarossa, If the west is won, Army Group West (AGW) units and influence are added to AGC. Player can choose which general to use.

If the war in the west is not won both groups remain as they are.

DEPLOYMENT



First scenario turn is the DEPLOY turn. This is a period before the operations start, during which you can replenish losses to units and make cheap unit upgrades.

No movement is possible during deploy turn. To proceed to the first combat turn, you will need to press the End turn leveler.

Attacker will have predetermined deployment hexes specific to that side. Defending side will also be able to deploy in all supplied hexes, provided unit can move into that hex (no deploying of tanks on top of the mountains for e.g.). Each scenario has a predefined unit cap for each side. In some special cases players will be able to deploy units above the unit cap.

For invasion/sea scenarios one or both sides will sometimes have sea deploy hexes to deploy units later in scenario.

Use the DEPLOY MENU (accessible from the HQ Buttonstrip) to deploy units with ease. Note that the air units can only be deployed on airfields. Fighters can also be deployed next to an airfield; in which case it starts the scenario defending the airfield.

INFLUENCE

Influence represents general's standing with the superiors (Headquarters, HQ). It is used as a game's currency. Asking HQ for new units, promotion or favors will reduce general's influence. Success on the battlefield will add to it.

Influence can be gained by:

Action	Influence gain
Major victory	30% of the total enemy influence (deployed units and influence gained by the enemy)
Minor victory	20% of the total enemy influence
Loss	10% of the total enemy influence
Conquering enemy town/airfield	30
Taking objective	100
Completing HQ mission	Special, per mission description
Destroying enemy units	2% of the unit influence value
Releasing ("selling") units back to HQ	Special, see the "Buying/selling" section for details
Releasing ("selling") commanders back to HQ	Special, see the "Commanders" section for details

Start of scenario

Take the influence value of the most expensive unit type in these classes: Artillery, AT, AA, tank, fighter, level bomber, tactical (if no unit types in class, ignore the class).

Calculate the total average influence cost.

Multiply this by number of free core slots.

If campaign, multiply this by 0.6 – this is how much the player gets on the start of the scenario.

If standalone scenario, multiply by 1.2 instead.

General is awarded some influence prior to each scenario. Some influence is awarded by HQ each turn. Also, in some cases HQ will award large amount of influence on special turns during the scenario.

MANAGE UNITS MENU



This menu consists of Acquire units and Review Units tabs

Acquire units menu is used for buying equipment and personnel – for details please consult Buying/Selling Units setion

Review Units tab shows a list of all units under general's control and in current general's unit pool

Units can be filtered to show only Air, Land or Sea units and/or just a particular class.

Each unit has three buttons: Upgrade unit (if applicable), Release Unit and Commander Info. Also, for each unit show commander name and level. The release Unit button will allow the unit to be released back to the HQ in exchange for increase in general's influence, effectively selling the unit. If commander has leveled up, show icon. Clicking on icon opens a commander info menu.

FILTERING MENUS



Units can be filtered for easier management. Just below the "Deployed/Undeployed" filter is the MEDIUM filter. Use this to show Land, Air or naval units only. Notice that once the medium is selected, unit class filters appear for that medium. In this case, to the left of the unit list you see filters for Infantry, Tanks, Artillery, Tank Hunters, Anti tank cannons, Recon, Anti-aircraft units and Armored Trains. For planes the classes are Fighters, Tactical bombers and Level bombers. Transport classes are Trains, Transport ships, Transport planes, Gliders and Heavy gliders. Units can also attach Trucks and Halftracks for extra mobility.

UPGRADE MENU



As the war progresses technology will evolve rapidly. First tanks weighted 5 tons, and the late war ones can easily weight more than 70 tons! To keep up with the technology evolution, you will occasionally need to upgrade your troops to the latest models of tanks and planes. This is done in the Upgrade menu, accessible from the Review army menu. Simply select the unit you want to upgrade, then press the Upgrade button. On the Upgrade screen, select the new model to upgrade into.

PERSONNEL MENU

There are two tabs in this menu:

- Commanders review tab (replacing (moving to/from commander pool...), adding new). This is a list of both assigned and unassigned commanders, with filtering option for each/all. Each commander has three or four buttons (icons): Info (opens the commander info screen), replace button and assign/unassign button (only one possible, depending on if the commander is assigned to a unit). If the commander can be upgraded, an upgrade icon button is also shown.
- Generals review tab (transfer (buying) of the new ones). Influence cost: $100 \cdot (1 + \text{level})$, Raising a general's level. This looks like a commander info window since there will be a maximum of 3 generals (one for each army group)

HQ HELP MENU



Select it from the HQ Buttonstrip. This is where all the army group management will take place:

- Speeding up unit type introduction date:
 - Level 1: 2*IPC influence for 4 months (80% chance),
 - Level 2: 6*IPC (70% chance for 8 months, 90% chance for 4 months),
 - Level 3: 12*IPC (60% chance for 12 months, 80% for 8 months, 95% chance for 4 months)

IPC is influence production cost of the unit. Must be done at least 12 (18 for Level 3) months before default introduction date. Can be tried unlimited number of times, but only one success is possible. New introduction date is invisible to the player (success and failure are visible).

- Scouting (snapshot of an area) – 3 hex radius, fog of war removed during player's turn. Base cost is 60 influence, with extra 60 if enemy AA, fighter or capital ship unit is discovered. Limited to one per turn.
- Information on enemy:
 - Total influence: Information on deployed units total influence value, compared to player's total, with +/-10% error – 40 influence cost
 - troop composition: Information on number of enemy units in each class, but with error of +/-1: 60 influence cost
 - troop positions: Shows an icon for each unit on the map (20% chance for each to be shown, 70% chance for the generic medium icon to be shown): 100 influence cost
- More transport units (transport planes, gliders, ships...)
- Renting HQ units (units cost the same as regular units, when returned to the HQ player gets back 2/3 of the surviving influence (so for unit strength 6 that's $\frac{2}{3} * 6 / 10$))
- Buying HQ help:
 - Supply unit – must be ordered one turn in advance (so unit is supplied on the start of the following turn). Supply is calculated as going from the nearest supplied hex. The shortest/cheapest route is calculated, then it is divided by number of turns a truck would take to pass it. Each truck-day costs 10 influence.
 - Air supply – Supplies the unit on the same turn. Costs 100 influence. Can only supply ground units.

Naval transport:

- Map with no sea, map with sea with no friendly units: No transport
- Map with sea, only friendly naval units present: 2 transports
- Map with sea, invasion: $1.2 * \text{num friendly ground units (core \& HQ)}$

Air transport:

- gliders are 0 by default, can be bought after introduction date
- air transports are 2 for german player from 1940+ and 2 for UK and USA each from 1943+, 0 for USSR (can be bought)

Rail:

- Germany and USSR have 4 trains available for free
- UK has 3
- France and Italy have 2
- USA has 4 in USA (Germany has 1 in USA), 1 in all others
- Number of available trains is 0 in desert maps for all nations

In all cases, numbers defined for a specific map in a scenario file have a priority, even if they are 0.

BUYING/SELLING UNITS

Each unit type will have different availability, depending on production cost, time passed from the introduction and demand for the type. Example: First Tiger unit will be expensive, but the price will fall with time due to mass production. Buying more units will temporarily increase their price, but will also increase by how much price falls over time (factories concentrate on producing that model since it is popular). Also, new units will be available in only limited quantities. Prices will generally fall over time.

Value of equipment will fall if newer better equipment is available. Example: Panzer IV costs 300 influence and can be returned for 200. But if Panzer V arrives, panzer IV can be returned for only 100 or 150, depending on the rarity of Panzer V.

Note that destroying a unit of certain type leads to reduced availability in next scenarios, so there will be a global counter of available units.

Availability:

	Max number available	% of sparse model price
Prototype	1	200
Rare	1-3	140
Sparse	2-4	100
Sufficient	3-6	80
Common	6-10	70
Abundant	10-16	60

USA and USSR models start from Rare availability.

Each unit type will have an initial production capacity based on the actual numbers produced during the war.

There are six production capacities: Very low, low, normal, good, high, very high. Starting from the introduction date (one unit available), extra unit will be available each 6, 3, 2, 1, 0,5 and 0,25 months.

Each unit of certain type bought has a chance to move production capacity to a higher level (demand leads to higher production).

Note that price changes due to availability are effective immediately, so buying rare units can push unit to Prototype status with the corresponding increase in price.

Capacity can also be increased by personal intervention to HQ, but this will cost a lot of influence.

Production Capacity	Time to next unit (in months)	Chance to increase production capacity per unit bought	Influence cost to increase by general's intervention (% price of the sparse model)
Very low	6	90%	150
Low	3	80%	200
Normal	2	50%	250
Good	1	20%	300
High	0,5	7%	400
Mass production	0,25	N/A	N/A

STRENGTHENED UNITS

Player can attach increase strength over 10, but such unviably units are difficult to command properly. Strength cannot exceed 15 (unless commander has an “Overseer” skill, in which case maximum strength is 18 for commander level 5+).

Each commander level above 1 reduces penalty by 10% (commander level 4 can command a unit of maximum strength 13 without penalties)

Unit will get a penalty to attack and initiative if commander is not of high enough level or if he doesn't have a Mentor trait with “Skillful officers” skill. Each “Skillful officers” level reduces penalty by 10%. Unit of strength 15, commander level 3 with Skillful Officers level 1 will have a (50-20-10) 20% penalty to attack and initiative.

Strength increase	Penalty (% of attack and initiative) for each +1 strength over commander level	Required commander level (for no penalties)
1	10	2
2	20	3
3	30	4
4	40	5
5	50	6

The price to add one strength point is equal to buying one veteran replacement point.

PERSONNEL COST



Units consists of equipment and of personnel. When a new unit is acquired player will have an option to hire experienced troops from the HQ pool at a double the normal unit price.

Personnel will have availability depending on experience and time passed from the beginning of war. Prices will generally rise over time. Units can be returned (sold) to the HQ. In some cases, at the beginning of the war it will be possible to earn influence by battle-forging green troops and releasing them to HQ. Note that player can also replace experienced units with inexperienced, giving the player a net influence gain. Experienced troops are in high demand by HQ.

As the war progresses and the losses mount, infantry units will increase in price.

Infantry percentage increase per year and experience for:

Multiplier	1939.	1940.	1941.	1942.	1943.	1944.	1945.
Germany	100	110	120	170	260	330	400
USSR	100	100	100	110	130	180	250
UK	100	100	130	140	150	170	180
USA	100	100	100	120	130	170	180
Other	100	100	100	100	130	150	160

Maksimum experience per year:

Exp cap	1939.	1940.	1941.	1942.	1943.	1944.	1945.
---------	-------	-------	-------	-------	-------	-------	-------

Germany	Regular	Experienced	Experienced	Veteran	Veteran	Veteran	Veteran
USSR	Green	Green	Green	Regular	Experienced	Veteran	Veteran
UK	Green	Green	Regular	Experienced	Experienced	Veteran	Veteran
USA	Green	Green	Green	Green	Experienced	Experienced	Veteran
Other	Green	Green	Green	Regular	Experienced	Experienced	Experienced

Legend:

Exp level	Experience
Green	0
Regular	50
Experienced	100
Veteran	200

Ships - should not be part of the Army group, only HQ

When relasing personnel to HQ, player receives back 67% of the requitment costs listed above, accounting for the current experience level.

Replacing lost personnel with green recruits reduces a total experience of the unit. Total unit experience is divided between remaining strength and green troops. If unit of 260 experience has three remaining veterans, and is replaced with 7 green recruits, unit's experience is $260 \cdot 3 / 10 = 78$ after the replacement.

If Veteran replacements are used, unit is returned to full strength and no experience is lost.

MORALE

Morale is a separate multiplier that increases or decreases total attack and defense strengths of a unit.

ONLY FOR INFANTRY : Morale: Fanatical, Elite, Professional, Good, Stable, Low , Nervous, Shaky, Cowardly

(+4,+3,+2,+1,0,-1,-2,-3, -4))

OTHER CLASSES HAVE ONLY: Professional, Good, Stable, Low , Nervous (2,+1,0,-1,-2)

For unit to have good morale, it must be level 2, Professional - level 3...

Each morale level gives +/-1 attack and defense.

Country	Year	Morale modifier
---------	------	-----------------

Germany, UK, USA	ALL	0
USSR	1941.	-1, RND +/-2
USSR	1942+	0
All others	ALL	-1

For each level under normal, it is increasingly likely unit will disengage. Also, professional units disengage like in Pgeneral, while each level of morale lower means it HAS A HIGHER CHANCE disengages sooner (so professional disengages at strength 4, and weak morale unit at strength 6). Most major armies have no problem, but Romanian/Bulgarian, Italian, Yugoslav etc. have problems.

Being dug-in lowers chance of retreat.

UNITS

Units represent various military formations on the map. Units are divided in classes depending on the type of equipment and their role in combat.

UNIT CLASSES

Ground classes:

INFANTRY

Infantry is the only class that doesn't have combat penalties in closed terrain. It's close defense is equal to regular defense. Infantry is the only class that uses other classes close defense value instead of regular defense when fighting in close terrain. Consists of roughly 10,000-15,000 personnel for divisions and 3,000 - 5,000 for brigades. Infantry receives full dug-in bonuses (max +8).

Infantry units can have a transport.

Infantry types:

Regular

Cavalry (no transport available)

SMG - lower initiative (this is good in closed terrain)

Pioneer - infantry unit with one brigade replaced by engineers., reduces dug-in bonus by 3 per attack, ignores half dug-in bonus when attacking, and have a 12 hard attack when attacking buildings). They have lower attack and defense than regular infantry.

Paratrooper - can paratroop

Mountain - ignores movement penalties

Mechanized (only regular transport) – armored (hard target), , tracked move, expensive.

Engineers - only basic combat values, can build fortification, lay minefields, regenerate town supply and destroy/repair bridges. They can act as a bridge when on river hex, clear minefields, speed up fixing of bridges, speed up town supply counter regeneration, can destroy bridges (similar to clearing of the minefields). Engineers can lay down minefields, two hex sides per turn, with each costing 30 influence (when on a hex, all surrounding hexes get an icon to lay down a minefield. Engineers can also build fortifications in the same way as they lay down minefields.

So available actions per hex type:

Town/port: repair damage

Bridge: Repair/destroy

other hexes: build fortifications/lay minefields

This is done using the "engineer" icon in Controls menu

In 1942. USA has introduced Bazooka, a revolutionary anti tank weapon. IN 1943. UK, Germany and Russia each introduced new AT weapons (PIAT for UK, Panzerfaust for Germany and RPG-43 for Russia). New versions of infantry are available from that point onwards. UK SMG infantry is only available from 1941, when they introduced a mass-produced Sten gun.

When attacking buildings, all infantry has a minimum attack of 8 due to its ability to exploit weak spots (12 for pioneer infantry).

ARTILLERY

This is an artillery unit with an infantry component for protection. Some 150 canons/howitzers for a division and 50 for brigades. It receives half the infantry dug-in bonuses (so max +4 instead of +8, all values are halved). Since it has the highest initiative in open terrain, it usually fires last in close terrain (see terrains and initiative for details).

Artillery reduces defense bonus of the defending unit. Please see the Ground Combat section for details.

Artillery protects the first attacked unit in range if not adjacent to a unit, else it protects the adjacent unit.

ANTI-TANK

A group of roughly 150 towed anti tank cannons (50 for brigades) with an infantry component for protection. It receives full infantry dug-in bonuses Since it has a high initiative in open terrain, it usually fires last in close terrain (see terrains and initiative for details).

Anti tank unit defending against an armored unit (tanks, tank hunters and recon) receives a +6 initiative bonus, in both open and closed terrain.

ANTI-AIRCRAFT

A group of 150-400 pieces (50-120 for brigades), depending on the caliber (bigger the caliber, less pieces in unit), mixed with infantry elements for protection.

It receives half the infantry dug-in bonuses (so max 40% instead of 80%, all values are halved). Since it has the high initiative in open terrain, it usually fires last in close terrain (see terrains and initiative for details).

Anti aircraft unit can have towed guns or be self-propelled. Towed option is cheaper but self-propelled units are much more maneuverable and can protect units while moving.

Anti aircraft units with a range of 3 or more are considered heavy, the rest are considered light. Ships are considered heavy. Planes get double the maneuver bonus to their defense when defending against heavy AA.

Anti aircraft units get a -3 penalty when attacking air units (when not counterattacking air unit).

TANK

Tank division consists of 150-400 tanks (150 for heavy tanks, 400 for light tanks) and accompanying infantry. It receives no dug-in bonus (digging in increases defense but removes mobility). Note that tanks uses a close defense value in close terrain when fighting against infantry.

TANK HUNTER

Tank hunters division consists of 150-250 armored vehicles (150 for heavy vehicles, 250 for light) and accompanying infantry.

in general, tank hunters have either lighter armor compared to tanks or no turret which makes them cheaper/simpler to produce.

Turretless tank hunters receive -4 initiative penalty when attacking.

It receives no dug-in bonus (digging in increases defense but removes mobility). Note that Tank hunters use a close defense value in close terrain when fighting against infantry. Most Tank hunters have a view range of 1, while most units has a view range of 2.

LAND TRANSPORT

Land transports are groups of transport vehicles attached to land classes that have no mobility on its own. This applies to towed artillery, anti-aircraft and non-cavalry infantry.

Horses (note - this is only for towed equipment - mounted infantry is a different type of unit) – this is default for infantry, no effect

Trucks - best movement on the roads, slow outside the roads and in mud/snow

Halftracks - almost equal to tanks in movement but very expensive, not available for infantry

TRAIN

There are two types of trains - transport trains and armored trains. Armored trains are closest to tank division regarding values, but move only on railroad tracks. Trains have a very high movement in one turn and can transport land units over large distances.

AIR CLASSES:

All planes must be based on an airfield. During one day, planes can do multiple sorties by taking of, attacking, and returning to air bases to rearm and refuel. For this reason, bombing of the airfield on which planes are based will damage all planes based there regardless if they are on a mission over another hex. Note that planes can only attack once per turn, except when intercepting. They are considered landed when their base is attacked. Putting a fighter next to an airfield or an anti-air unit will drastically reduce damage from attack on the airfield since attacker will suffer damage before attacking the airfield.

Air units have 2 radii of operation: Combat radius and ferry radius.

Combat radius is the maximum distance in hexes from the airbase a plane can operate without the risk of part of the unit crashing for losing fuel.

Ferry radius is a maximum distance a unit can reach, only used for rebasing to another airfield.

FIGHTER

Fighters are used for combating other fighters for air supremacy, intercepting enemy bombers and attacking enemy moving columns as a secondary role. Fighters can be used in two ways: As an escort and in patrols.

Fighters in patrol will attack all enemy air units attacking in certain radius around the fighter unit. They will also attack enemy ground units passing through their patrol radius. Fighters have a chance of doing multiple interceptions. Number of interceptions, chance of interception and patrol radius increase as unit and its commander gain levels. Each successive interception attempt has a lower chance of succeeding.

Fighters next to friendly bombers will act as an escort and will not perform patrol interceptions.

When attacking airfields, fighters attack all units on the airfield.

TACTICAL BOMBER

Tactical bombers are used for ground support by attacking point targets. They make precision strikes at enemy mechanized units, ships and bridges. They attack from low altitudes and must rely on maneuverability and being a smaller target to survive. Their bomb capacity is lower than level bombers so they are less efficient when bombing areas (carpet bombing).

When attacking airfields, tactical bombers attack all units on the airfield.

LEVEL BOMBER

Level bombers carry a big bomb payload but are bigger and less maneuverable. For this reason, they usually attack from high altitudes, relying on volume of bombs rather than precision. Level bombers are used for airfield attacks, railroad/town attacks (interdiction), naval attacks and against moving units. They can be used against units as a secondary role. Level bombers ignore dug-in bonuses. Also, they cause efficiency loss. However, they have a low ground attack. This means that they are best used when attacking dug-in units or moving units. level bombers were a good 40-50% of the Luftwaffe and Luftwaffe was 40% of the Wehrmacht budget. Also, level bombers have an area attack which becomes less efficient the weaker the target.

When attacking airfields, level bombers attack all units on the airfield.

AIR TRANSPORT

Air units that can be used to quickly transport light units by air or perform an airdrop. They consist of transport planes and gliders.

Transport planes can carry light units (see transport section for details) to another airfield (and any accessible hex around it). Paratroopers can perform air drops and land on any empty accessible land hex. Note that paradrop uses unit to temporary scatter, during which time it is very vulnerable to attacks.

Scatter: (4 to 7 - (unit level/2))

Gliders can be used to land any unit that can be transported by them (see transport section for details) on any non-closed terrain land hex. Note that there are heavy gliders that can even transport medium tanks, but this is very expensive and therefore used rarely.

Landing in gliders doesn't scatter the units.

AIR SUPPLY

These units of transport planes can supply one unit per turn. Supply unit must finish its turn over the unit to be supplied. Note that this is a very expensive and should only be used if the situation is dire.

NAVAL CLASSES

CARRIER

Carriers serve as sailing airfields. Results of the WW2 established carriers as deadliest class of ships. Since aircraft have a much longer range than any cannon, it allows carriers to sink enemy ships far before they close in to the range of main cannons.

Carriers had more influence in calmer seas of Mediterranean and Pacific, but were also important in other theaters.

Carriers work the same as airfields, with a capacity of 2 (regular airfields have 6) - clicking on a carrier opens a popup with available planes shown.

Also, level bombers cannot land on or operate from carriers.

Carriers are slow, big targets, not maneuverable and have limited armament - their weapons are their planes.

BATTLESHIP

For a long time a mainstay of great fleets, battleships are by far the most powerful ships ever built. Heavy armor and heavy broadside (weight of shells fired in one salvo of the main guns) meant that until aircrafts were introduced only other battleships could face them. For example, a Rodney battleship of 41,000 t had more than 8 times heavier broadside compared to the Hiper heavy cruiser of 16,000t.

They have best armament, best armor but are big target and are not maneuverable and therefore easier to hit than other classes. Battleships are so expensive that they were rarely used, for the reasons obvious from the sinking of HMS Hood - takes years to build, minutes to sink.

HEAVY CRUISER

Cruisers are fast, well armed and armored ships mostly used on patrols, either for scouting ahead of the fleet or protecting and attacking commerce.

They have good armor and weapons, and are smaller targets to hit compared to battleships. They also use torpedoes similar to destroyers.

LIGHT CRUISER

Light cruisers are multi-purpose vessels that can easily adapt from supporting lighter destroyers, attacking/protecting commerce, anti-aircraft duties, and other fleet support duties. Most of the light cruiser in ww2 were built according to London Naval Treaty that limited the total cruiser weight to under 10,000 tons. After the treaty started being ignored, most of the nations started building heavy cruisers instead.

They have limited armor and armament, but are small targets and very maneuverable. They also use torpedoes similar to destroyers.

DESTROYER

The purpose of the destroyer is patrol, escort and supporting the fleet, mostly against torpedoes and planes. They were also used to attack capital ships with torpedoes as a secondary role. They were usually between 1,500 - 2,500 tones in displacement.

Destroyers use torpedoes for battle against heavier ships, but are mostly used as a support for bigger vessels. They work as scouts, anti-submarine and anti-aircraft defense.

SUBMARINE

Submarines are slow, but barely visible and deadly. Only destroyers and tactical bombers can attack submarines.

TRANSPORT FLEET

Transport fleet is a group of ships for transporting land units. The number of ships is equal to transported unit strength and if some are sunk unit strength is reduced by the same amount.

SUPPLY FLEET

A group of ships supplying invasion forces. Please see the “Supply” section for details.

MINEFIELDS AND FORTIFICATIONS



Minefields must be hex side oriented (so index 1-6). They work only on attacks going through that hex side. Friendly units can freely pass through them AND be on the same hex as the minefield. Enemy units cannot enter the hex (if there is a minefield facing them) until minefield is cleared. Engineers can lay down minefields if allowed in the scenario. Most of the battles were too fluid to allow laying down major minefields. Any unit can reduce minefield by attacking or attempting to move through it. This represents finding a route through the minefield and damages unit. Unit has 35% chance of destroying the minefield in each attempt (for detected minefield only).

Minefields can be detected by land units moving next to them. Attempting to move through the minefield triggers the combat and reveals the minefield if not detected earlier. Only ground units can detect and be damaged by minefields. Recon units detect all minefields in their visibility range. This is because recon units are counted as moving/scouting through all the hexes in their visibility range. Engineers can clear enemy minefields in one turn and take no damage. Defending player has varying available minefields that it can deploy prior to the operation/scenario. Most of them are preset, so it is 20 on the average - depending on historical context (how long the defender was in the positions prior to the

start) on how expected was the operation to the defender. They can also be assigned to defender during the scenario, similar to influence.

Fortifications - trenches and barbed wire. Orientation and building them is similar to minefields, they add defense bonuses to the defender.

Minefields and fortifications can both be on the same hex side. Minefields are displayed the first (outermost part of the hex). Defending player can also lay fortifications prior to scenario start, only in some scenarios

FORTS AND BUNKERS

Forts and bunkers are defense buildings made to withstand the hardest attacks. They are usually made of reinforced concrete and dug-in making them very hard to destroy by anything but the direct hits from heaviest weapons. They are almost immune to artillery fire and bombardment, and can withstand regular attacks by infantry and tanks, but are very vulnerable to combat engineers.

During the German attack through the Ardennes in 1940, Maginot line was penetrated when a single engineer used two explosive packs which started a fire that killed the entire crew of the fort.

Forts and bunkers behave similarly, with forts being much tougher.

Forts also have an artillery attack similar to medium artillery.








Forts and bunkers are considered armored targets. They deal area damage when attacking, direct damage when defending.






When attacking buildings, all infantry has a minimum attack of 7 (pioneers = 12) due to its ability to exploit weak spots.

Unit's attack is capped at 16 when attacking buildings.

Super heavy artillery reduces current strength of the building by 40% with each hit.

UNIT TRAITS

	BRIDGING	this unit acts as a bridge when on river hex
	ENGINEER	see engineer infantry class for details
	COMBAT_ENGINEER	see pioneer unit class for details
	TURETLESS	tank hunters with this trait receive an initiative penalty when attacking.
	GLIDER	unit is glider
	HEAVY_GLIDER	unit is a heavy glider (can transport heavy equipment such as medium tanks). Only unit in game with this trait is Me323, which was closer to a glider than transport plane in many aspects
	PARATROOPER	unit can jump from an airplane, but only on hexes that it can normally access.

	LIGHT	unit can more easily move through difficult terrain (can enter Mountains)
	LOW_RATE	unit has low rate of fire, gets penalties to attack every second turn (30%, if it was fighting the ground unit on the previous turn). For tanks with two piece ammunition, heavier than 45 kg (usually 120+ mm cannon) (KV-2, T30, Is-2...)
	FRONT_ARMOR	unit gets penalties to armor if fighting against a ground unit and lost initiative (front armor is good only while attacking):
	HIGH_MORALE	unit has a +1 morale bonus
	HEAVY_BOMBER	unit cannot interdict

TERRAIN

Each hex has a terrain type assigned.

Terrain types are:

GRASSLAND, BAREN, FARMLAND, BOCAGE, SWAMP, FOREST, THICK_FOREST, JUNGLE, HILLS, LOW_MOUNTAINS, MOUNTAINS, DESERT, ROUGH, GORGE, SEA, LAKE.

The following terrains are close terrains:

Bockage, Swamp, Forest, Thick Forest, Jungle, Hills, Low mountains, Mountains, Gorge.

Towns, ports and fortifications are also considered close terrains.

NOTE: Initiative is reverted in close terrain (lower number has a higher chance of winning initiative)

	Dry				Muddy				Snow			
Terrain	Foot	Wheeled	Tracked	All Terrain	Foot	Wheeled	Tracked	All Terrain	Foot	Wheeled	Tracked	All Terrain
Grassland	1	2	1	1	1	3	2	2	1	2	1	2

Baren	1	2	1	1	1	3	2	2	1	2	1	2
Farmland	1	2	1	1	1	3	2	2	1	2	1	2
Bockage	1	100	4	2	2	4	3	3	1	4	3	3
Swamp	2	100	4	4	4	100	100	100	1	3	2	2
Forest	1	3	2	2	2	4	3	4	2	3	2	3
Thick Forest	3	100	100	100	4	100	100	100	3	100	100	100
Jungle	3	-1	4	4	4	-1	100	4	3	-1	100	4
Hills	2	4	2	3	3	100	3	4	3	4	2	3
Low Mountains	2	100	100	3	4	100	100	4	4	100	100	4
Mountains	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
Desert	2	3	1	2	3	3	1	2	2	3	1	2
Rough	2	4	2	3	3	100	4	4	3	4	2	3
Gorge	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
Sea	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
Lake	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
Road	1	1	1	1	2	2	1	1	2	2	1	1

Numbers are rounded down.

Road

WEATHER

Weather will be the same on the whole map for simplicity of presentation to the player.

Weather will have 5 conditions: Clear, cloudy, rain, snow, dust storm (dust storm only in africa).

Clear has no effect,

Cloudy reduces planes bombing/interdiction (bombing all - bridges, towns, units) effectiveness and chance of intercept.

Storm blocks planes - they cannot relocate as well.

Rain or snow change ground condition to saturated. Another day of rain(snow) on wet(cooled) ground leads to muddy(frozen) ground.

Saturated ground doesn't change the current terrain presentation (dry, muddy or snow).

Rivers freeze. They are treated as frozen plains for movement and defense when frozen.

Weather	Plane relocate	Plane attack penalty	Intercept chance multiplier	Land combat attack penalty, BOTH SIDES	Sea combat attack penalty (% rounded down), BOTH SIDES, only if range > 1 and gun combat only
Clear	Y	0	1	0	0
Cloudy	Y	-3	0.5	0	0
Rain	N	N/A	0	-3	30
Snowing	N	N/A	0	-3	30
Dust storm	N	N/A	0	-3	30

Next turn ground conditions based on current ground conditions and current precipitation.

Saturated has no effect - Ground is still Dry or Muddy/Snow - it just tells what will happen on the next turn

Current Ground condition	Clear	Cloudy	Rain	Snowing
Dry	Dry	Dry	Dry/Saturated	Dry/Saturated
Saturated	Dry	Dry	Muddy	Snow
Muddy	Muddy/Saturated	Muddy/Saturated	Muddy	Snow
Snow	Snow/Saturated	Snow/Saturated	Muddy	Snow

See terrains section for costs on movement.

See combat section for effects of weather on combat.

NOTE:

Moving in mud or snow removes a supply counter.

Attacking in mud or snow removes a supply counter.

Supply regenerates one point per turn slower if the unit is in muddy or snow terrain.

See the climate section for bad weather chances.

CLIMATE

Each map will be assigned one climate. Climate will be split in 4 seasons. For each climate, each season will have chance of storms/overcast defined for each.

If the weather date is neighboring two seasons equally distant to center date of neighboring seasons), then bad weather chances are calculated using BOTH seasons as follows:

Each season has a predefined central day. Each day will determine chance of bad weather by applying more weight to one or the other season's chances, depending on relative distance to center of both seasons. Example:

Center of summer is 7th of August, center of Fall is 7th of November. Date is 25th September, so that is 48 from summer and 42 from fall.

So, chance for storm is $(48/90 * (\text{fall storm chance}) + 42/90 * (\text{summer storm chance}))$

Bad weather will come in groups. So, if one day has a chance of bad weather, another has much greater chance to also be a bad weather.

Each day, throw a chance for overcast/storm (BC). Once bad weather starts, calculate according to formula:

Daily bad weather chance = $DC - (N * 15 / 100)$

Where:

BC is a BASE CHANCE,

DC is a DAILY CHANCE and

N is the number of days it has been bad weather (it starts from 1).

Daily bad weather chance is never less than base chance.

So if we have a BC of 12 and DC of 80, we expect bad weather to start each 8 days on average, with 80% chance of having two days of bad weather, 65% for three, 50% for four and so on.

Note that there are 3 separate BC/DC values for each climate and season combo - one for cloudy chance, one for rain and one for snow/duststorm.

Also, chance for storm (rain, snow, dust) should be 3 times bigger if the current day is also cloudy.

So, transition from cloudy to storm will be much more common than from clear to storm.

Each climate and each season will have a separate BC and DC numbers.

MOVEMENT

There are 7 types of movement in the game and each terrain has a different movement cost for each type.

The types of movement are foot (infantry and cavalry), wheeled (trucks), tracked (tanks and halftracks), all-terrain (some recon units), naval, air and rail. Air movement allows movement to all hexes on the map except those of neutral countries. Naval movement only allows moving on sea hexes. Wheeled movement is mostly limited to roads, with heavy penalties for the off-road movement. Tracked units have the cheapest movement costs on all terrains but are generally very expensive.

Each nation will have ground and/or sea undeploy fields. Any unit ending its turn in them is moved to the undeployed list. It CAN be redeployed later.

Ground and sea units entering the enemy zone of control (one hex around enemy ground or naval unit) lose all the remaining movement.

Air units are placed on one hex on the map (in their range) and remain fixed for the rest of the turn (they can intercept units in their intercept radius in some circumstances).

Planes flying to their destination can be surprised/ambushed, triggering combat under unfavourable conditions. Please check the “Ambush” section for details.

Planes fly too high to be able to detect ground unit during movement from the airfield to the patrol area.

ZONE OF CONTROL

All hexes neighboring a non-air unit are considered ZOC (Zone of Control) hexes. These are the hexes where unit can engage and stop enemy unit from moving.

Unit can only stop a unit in its own medium (land units can stop land units and sea units can stop sea units)

Units entering the enemy zone of control (one hex around enemy ground or naval unit) lose all the remaining movement.

TRANSPORT

Each unit has an individual weight (one soldier/cannon/tank), and will be assigned transport level based on it. Each transport will have a maximum allowable level.

KG/empty unit	Transport level
100	1
500	2
1500	3
5000	4
20000	5
40000	6
60000	7
100000+	8

LEVEL:

ALL Infantry except mechanized - Level 1

Light cannon/AA/AT - Level 2

Trucks - Level 3

Heavy cannon/AA/AT - Level 3

Halftracks - Level 4

Light tanks - Level 4

Medium tanks - Level 6

Heavy tanks - Level 7

Super heavy - Level 8

Sea transport: level 8

Air transport:

Transport aircraft - Level 2. Load in airfield only and neighboring hexes. Unload also in airfield and airfield hexes only, EXCEPT paratroopers!

All gliders: Load on airfield, unload anywhere in OPEN terrain where unit has movement cost greater than -1 (no sea hexes)

Loading to gliders should cost about 0.3-0.5 of the unit able to be transported - check prices

Troop gliders (GLIDER trait) - 2

Heavy gliders (HEAVY_GLIDER trait) - 6

Ground transport:

Railroad transport:

Can move only on railroads

Load/unload everywhere: Level 2

Load/unload at towns: Level 8

Transport can be:

Regular (horse-drawn) – Movement 1 hex, except for infantry – 3 hexes.

Motorized (truck transport) - trucks should be expensive at the beginning of war, probably should bring price close to panzer division. Infantry unit had around 800, panzer unit around 1200 trucks

Halftrack – extremely expensive

If unit has truck transport bought, it can load/unload at any time.

Note that unit with truck transport has a transport level increased:

Truck – level 4

Halftrack – Level 5

MAPS HAVE FIXED FREE TRANSPORTS AVAILABLE IN SCENARIO PROPERTIES (e.g. 10 landing craft, 4 trains, 4 transport aircraft).

When unit unloads, they return to transport pool. If destroyed they are removed from the transport pool.

Player can buy more transport in HQ (landing craft, trains...).

VISIBLE RANGE

All units see one hex around them. Recon units have a visible range of 4 hexes due to the fact that they move around and scout each of the hexes in range. Planes only see 2 hexes around them but don't see hexes on their movement path. Planes visibility range can be extended with commander's Hawkeye ability.

MANEUVER

Maneuver is the ability of units to gain advantage using either superior mobility (for ground units) or maneuverability (for air and naval units). For ground units, powerful engine compared to the weight of the vehicle is important, as well as suspension and ground pressure (Russian T-34 is considered the best ww2 tank in this regard). For planes and ships, turning radius and rate of turn are one of the more important characteristics.

Each unit type has a maneuver from 0-8 depending on the historical characteristics.

Maneuver is calculated as follows:

Maneuver is not calculated when fighting in different mediums (ground vs air unit etc).

Maneuver is not calculated if armored unit is attacking Anti tank (AT) unit or when fighting buildings.

When heavy AA is shooting at planes, maneuver value is doubled and added to their defense.

It is 0 in closed spaces or when attacking dug-in units (both attacker and dug-in unit have a Maneuver of 0).

Delta is calculated (Attacker maneuver minus defender maneuver).

Delta is added to the initiative of the attacker.

Delta is limited to 4.

If initiative is won by unit with higher maneuver, delta is added to attack for attacker or defense for defender for unit that won the initiative.

COMBAT



Combat occurs when one unit attacks opposing side unit or when attacked unit is defending. Before the attack you can hover over the target unit and check the average damage both units will receive.

The first two numbers are expected damage and scatter to the target, and the numbers to the right show expected damage to the attacker.

Combat results are unpredictable and can be different from the expected ones. Scatter represents the soldiers that are not dead but are unable to fight at the moment, so the unit will fight the next combat like it has less strength points than it actually does.

Artillery and bombers do area damage that inflicts more scatter and less direct damage.

Area damage is when a unit saturates the area with a large amount of fire. Cannons, AA guns and level bombers deal area damage.

Units using direct damage will always destroy the same amount of opponent's strength regardless of the enemy strength while with area damage attack will be more efficient if the enemy unit is stronger.

Area damage units don't receive any damage in return, which makes them ideal for softening up the enemy. Just keep in mind that you have to move in with infantry and tanks afterwards if you want to win the war.

Scattered part of the unit doesn't take part in combat.

Before combat starts, defending artillery, fighter or anti-aircraft unit fires on attacker if applicable (see defensive fire section).

For naval combat, see section of the same name.

There are two types of fire: Direct and area fire. In direct fire, each strength point of the firing unit tries to hit one strength point of the target unit.

In area fire, each point of firing unit tries to hit all strength points of the target unit. For this reason, area fire is much more efficient when unit is close to full strength.

Area fire happens for:

1. artillery attack on ground units
2. naval attack on ground units
3. naval and ground attack on level bombers

Here attack means shooting while either attacking or defending.

Damage done during combat for regular (point) attack is calculated per the following expression:

First a chance to hit is calculated

$$CTH = 0.35 + (ATT - DEF)/10*4$$

Where CTH is chance to hit, ATT is total attack of the shooting unit and DEF is the total defense of the target.

Max chance to hit is 0.95, min is 0.05.

Now a range of possible damage is determined (AS is the strength of the shooting unit):

$$LE \text{ (Low end): } CTH * AS * 0.33$$

$$HE \text{ (High end): } CTH * AS * 1.67$$

A random 1-100 number (RND) is generated. Total damage done is:

$$DAM = LE + (HE - LE) * RND$$

For area attack the CTH expression from above is divided by 10. Then a DAM is multiplied by a strength number of the target unit.

67% of the damage done in the area attack is scatter (temporary damage), rounded up. The rest is permanent damage (reduced from the unit strength).

If more than one friendly unit is present around the defender that can attack, defender gets a -1 penalty to defense for each (-2 if surrounded by 3 units). This is true for ships and planes, although note that only fighting units (not bombers and transports) count, and only of the same medium (ships for sea battles etc)

Combat on rivers: Unit standing on rivers is considered crossing the river and receives the following penalties:

Unit's defense is reduced by 50%, unit's maneuver is set to 0 and unit attacking unit on river automatically wins the initiative.

The opposite is true if the unit is in town with a river: Unit is considered waiting on the other bank so any ATTACKING unit receives the same penalties as if standing on a river.

AMBUSH/SURPRISE ENCOUNTER

If during its movement a unit runs into an undetected enemy unit (trying to enter the hex of the undetected enemy unit) it is considered “Ambushed” (for land units) or “Surprised” (for sea and air units).

This activates combat, with the following penalties for the moving unit:

Maneuver/Evasion are set to 0 for the moving unit.

Unit automatically loses the initiative and suffers a penalty (PN) to defense:

$$PN = (\text{delta} + 4)$$

Where delta is the ((enemy unit level) – (moving unit level)). Delta cannot be negative, so minimum value is 0.

PN is always negative and subtracted to moving unit defense but cannot reduce the moving unit defense to less than 1.

Unit always triggers combat with the first enemy unit it encounters (if there are more units in the unit's path) and is stopped on the last unoccupied hex of its path. Running into an ambush removes the undo option.

GROUND COMBAT

Combat is always calculated as happening in defending unit's terrain.

Unlike air or naval combat, defending unit in ground combat gets +1 initiative bonus.

The following terrains are close terrains:

Bocage, Swamp, Forest, Thick Forest, Jungle, Hills, Low mountains, Mountains, Gorge, Town, Port.

When fighting in close terrain initiative is inverted - units with lower initiative have a higher chance of shooting first.

When attacking buildings, all infantry has a minimum attack of 7 (pioneers = 14) due to its ability to exploit weak spots.

DEFENSE BONUS

Defense bonuses (adds bonus to ground defense of the land unit after a few turns, see below):

RIVER: Special, see Ground combat for details

SEA, LAKE: 0

DESERT: 1

GRASSLAND, BAREN, FARMLAND, ROUGH: 2

SWAMP, FOREST: 3

THICK_FOREST, JUNGLE, HILLS, GORGE, BOCAGE: 4

LOW_MOUNTAINS, MOUNTAINS, TOWN (Level 1-5): 5

CITY (Level 6-8), FORTIFICATION: 7

CITY (Level 9-10): 8

When fighting in towns with rivers attacker gets get river defense and initiative penalties instead of the defender.

Each turn unit will dig in 1/4 of the possible total, rounded down. This is stored as float number and is cumulative, rounded down for calculation purposes.

Unit gets ¼ of the max dug-in immediately after entering the hex, stored as float and rounded down.

So unit still needs 3 turns to dig in to level 1 in desert or to the level 5 in a small town.

Unit must not move or attack in the previous turn in order to increase the defense bonus. Please note that only infantry gets full defense bonuses. Tanks, recon and tank hunters receive no defense bonuses while the rest only receive half of the defense bonuses.

Defense bonuses are increased at the beginning of the next turn.

Artillery and bombardment reduce defense bonus.

Light artillery, Destroyers (75mm or less, hard attack ≤ 6), fighters or regular attack: 0-1 level reduction

Medium artillery, Light Cruisers (105mm, hard attack 6-12), tactical bombers: 0-2

Heavy artillery, Heavy Cruisers (203mm, hard attack 12-19), level bombers: 1-2

Super heavy artillery (above 203mm, hard attack > 19): 0-2

Battleships: 1-3

Heavy artillery is artillery that has hard attack larger than 12.

Super heavy artillery and Battleships (hard attack > 19) also remove 40% of the remaining strength of the forts and bunkers (rounded down), with a minimum of 1.

Super heavy artillery is ineffective against other terrains due to very low rate of fire.

Defense bonus repair: $+1/8$ total defense bonus if attacked previous turn, $+1/4$ otherwise. This is stored as float number and is cumulative, rounded down for calculation purposes.

Hard attack by artillery ignores $2/3$ of the total defense bonus.

When attacking, artillery units can use their hardAttack value instead of attack to determine damage, whichever is larger/better.

By default, Units start scenario with maximum defense bonus for the terrain they are on.

RETREAT

Ground unit suffering heavy losses has a chance to retreat in the direction opposite the attacker.

NOTE: Only units with a base defense bonus of 6 or less can retreat.

This chance depends on:

- Remaining unit strength
- Damage sustained in the current attack (If defending unit has suffered more than 4 damage in one hit)
- Unit morale (each level under normal increases the above limits by 1). The opposite holds for the positive morale.

$$RT = (4-RS) * 15 + (DMG-4) * 15 - MRL * 10$$

RT -retreat chance

RS – Remaining strength (after received damage)

DMG – damage sustained by unit in this attack

MR – morale level (+4 to -4)

Unit will retreat to a free hex furthest from the attacker. If no hexes are free, unit will surrender, and attacker gets 20% influence value of the unit.

Planes and ships don't retreat. If their airfield is conquered, they try to relocate to the nearest friendly airfield in range.

Please consult the "Airplanes" section for details.

COUNTERFIRE

In some cases, attacker can get attacked by a unit defending the attacked unit. This happens before the attack on attacked unit gets resolved.

This happens in the following cases:

Ground unit attacking ground unit defended by an artillery unit. Attacked unit's hex must be in range of the artillery.

Air unit attacking ground unit defended by an anti-aircraft unit will get attacked by the defending anti-air unit. Attacked unit's hex must be in range of the anti-aircraft unit.

Fighter attacking tactical or level bomber defended by a fighter unit adjacent to the attacked unit (escorted unit).

Fighters not adjacent to a friendly air unit are on patrol and have a chance of intercepting any enemy unit attacking in their intercept radius. Please consult the paragraph on interception for details.

COMBAT MODIFIERS

The following modifiers apply:

Commander modifiers (please see commanders' section for details).

Dug-in modifiers.

Supply and efficiency modifiers

Weather modifiers (attacker defense penalties, reduced planes efficiency).

Terrain modifiers (close terrain).

Unit modifiers (special abilities)

Scatter modifiers (part of the unit not taking part in combat)

Morale.

NAVAL COMBAT

In reality, ship battles were short and extremely destructive. Battleships took 3-4 years to complete, and most battles were over within a few hours. In reality, most ships could travel almost 1200-1400km in a day, but this is significantly reduced in the game to make sea combat more compatible with ground operations.

Ships can do in a turn roughly what they could do in an hour in real life. So fastest ships have a speed of 6 hexes.

Submarines have a speed of 3 hexes.

Ships have 4 types of attacks (some of them not available to all classes): Canons, torpedoes, air group and anti-air attacks. Carriers work as a mobile airfields, allowing for up to two fighters and/or tactical bombers to be based on them. Carriers have a strong air defense.

Battleships have the strongest canon attack in the game, but that is their only attack. They have strong air defense, but no anti-air attack.

Heavy cruisers have a strong canon attack and low torpedo attack. They have a moderate air defense.

Light cruisers have a moderate canon attack and a moderate torpedo attack. They also have a moderate air attack and defense.

Destroyers are the only class of naval units that can detect submarines. Any other unit (including other submarines) can only detect them if they move over them, at which point they are subject to a torpedo attack by a submarine. Submarine is again hidden after it moves. Destroyers have a moderate torpedo attack and low canon attack. They also have a low air defense and attack.

Submarines have a high torpedo attack and no canon attack. They have a very low air defense.

Planes have a 30% chance of spotting a sub in their patrol range. Once detected, a sub can be attacked by a tactical bomber unit.

Moving over a hidden submarine:

If a ship should move over a hex where containing a hidden submarine or any of the neighboring (submarine zone of control) hexes, it is subjected to a torpedo attack. The ship stops in a free hex next to a sub, sub fires, and then ship proceeds to its destination (if not destroyed).

Note that if a hidden submarine is surrounded on all surrounding sea hexes by enemy ships, it is automatically detected.

Torpedo boats: The largest ship sunk in ww2 by torpedo boats was light cruiser, so they had negligible influence on major naval operations and are therefore not represented in game.

	DEFENCE	EVASION	GUN ATTACK	TORPEDO ATTACK	SUB ATTACK	MOVE	AIR ATTACK LOW	GROUND ATTACK	HARD ATTACK
DESTROYER	45	30	10	35	20	7	6	3	2
L. CRUISER	55	25	15	N/A	N/A	6	8	4	4
H. CRUISER	60	20	20	N/A	N/A	6	10	5	6
BATTLESHIP	70	5	30	N/A	N/A	5	16	6	10
SUBMARINE	60	30	5	35	N/A	3	-3	0	0

CARRIER	60	5	15(30*)	N/A(30*)	N/A	5	*	*	*
TROOP TRANSPORT	10	20	N/A	N/A	N/A	4	0	0	0

* depending on the based planes

Naval combat will be performed in the following way:

Ship attacks another ship. If destroyer is next to enemy ship, it uses its torpedo attack value. If destroyer is next to a submarine, it uses its Sub Attack (Attack against submarines using depth charges) value. Submarine must be next to enemy ship and always uses its torpedo attack.

In all other cases, gun attack is used.

Initiative is calculated, and whoever wins shoots first if in range (destroyer will not fire back if battleship shoots from 5 hexes away for e.g.).

For gun attack, sinking happens if:

$$ATT + RND50 + EXP > TOTDEF$$

Where:

ATT is attackers gun attack value

RND is a random number between 1 and 50

EXP is the attackers's experience level

DEF is defender's defense

EVA is defender's evasion, rounded down

TOTDEF is total defense, $DEF + EVA/2$

Shooter attack and a 1-50 random roll are added together. This is compared to defender's defense and evasion. There are 3 possibilities: If total attack value is less than 40% total defense value nothing happens. If it is from 40-99% total defense target is damaged. All above the total defense results in immediate sinking of the target.

If the range is point-blank (ships next to each other), defender evasion is not added to total defense ($TOTDEF = DEF$)

% total defense	40-49	50-59	60-69	70-79	80-89	90-99
DESTROYER	damaged AA	torpedo banks destroyed	main turret lost	engine damage	severe hull damage	ship on fire
L. CRUISER	damaged AA	fire control damaged	main turret lost	engine damage	severe hull damage	ship on fire
H. CRUISER	damaged AA	fire control damaged	main turret lost	engine damage	severe hull damage	ship on fire

BATTLESHIP	damaged AA	fire control damaged	minor hull damage	main turret lost	severe hull damage	ship on fire
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For torped attack, sinking happens if:

$TORP + RND50 + EXP > DEF + EVA$

Where TORP is torpedo attack value of the shooter.

Torpedo damage table:

% total defense	70-79	80-89	90-99
DESTROYER	N/A	N/A	severe flooding
L. CRUISER	N/A	severe flooding	rudder damage
H. CRUISER	N/A	severe flooding	rudder damage
BATTLESHIP	minor flooding	severe flooding	rudder damage

When attacking submarines, sinking happens if:





$SA + RND50 + EXP > DEF$










Where SA is the Sub Attack value of the shooter.

If $SA + RND50 + EXP$ is over 60% of the DEF, a damage to the sub occurs:

% total defense	60-69	70-79	80-89	90-99
SUBMARINE	minor hull damage	minor damage	letting in water	flooded compartments

Damage effects are given in the following table:

	torpedo banks destroyed	torpedo attack =0
	damaged AA	AA attack -15%
	main turret lost	gun attack -15%
	severe hull damage	defense -10%

	minor flooding	evasion -20%, mov -1
	severe flooding	evasion -20%, defense -10%, mov -2
	rudder damage	evasion =0, defense -10%, mov =1
	minor damage	defense -10%, evasion -10%
	letting in water	defense -20%, evasion -20%
	flooded compartments	Torp attack = 0, mov -1, defense -20%, evasion -20%
	engine damage	mov =50% (rounded down), evasion =0
	minor hull damage	defense -5%
	ship on fire	Each turn ship receives additional damage, checked from the gun damage table. If location is already damaged, check the “Second hit in the same location” effect in the table below. Each turn, there is a 30% chance the fire is extinguished, checked after the damage is applied.
Second hit in the same location		Checks one damage above (81-90 if 71-80 is rolled). If all locations above are damaged, starts checking locations below (61-70). If all locations are damaged, ship is scuttled.

Troop transport and Supply Fleets are considered to be a fleet of ships with number of ships equal to the transported unit strength (supply strength in the case of the Supply Fleet). Here total attack number is divided by troop transport (or Supply Fleet) defence and the resulting number is number of troop transports/supply ships sunk:

Example: destroyer attacks troop transport - $10(\text{att}) + 25(\text{rnd}50) + 2(\text{exp}) = 37/10$ (transport defence) -> 4 troop transports are sunk.

In the case of the Supply Fleet, total supply strength is divided by a number of surviving ships, so it's $3 * (\text{number of supply ships})$ outside the port and $(3 + \text{port level}) * 10\%$ in a port.

When attacking, submarines don't get fired upon by defending ships, nor do they return fire when attacked. Submarines fight submerged and their speed while submerged was between 4-8 km/h.

Ships fire torpedoes (if applicable) when adjacent to another unit (not on submarines – ASW value is used against them). If separated, ships use canon.

Canon range is 5 hexes for Battleships, 4 hexes for heavy cruisers, 3 hexes for light cruisers and 2 hexes for destroyers. torpedoes have a range of 1 hex, except for Japanese which have 2 for ships torpedoes (not applicable currently).

Example: German Battleship fights British destroyer.

	Init	Canon attack	Torpedo attack	Evade	Armor	Air attack
Scharnhorst	15	25	NA	10	65	-9
Destroyer	4	10	35	30	50	6

German battlecruiser Scharnhorst wins initiative, fires canon from 4 hexes away. It rolls 22 on d50 (1-50) roll. This is $22+25$, and destroyer's defense is $50 + 30/2 = 65$, so attack is 47 and defense is 65. This is not enough for immediate sinking, but is more than 41% of the total defense. $47/65$ is 73%, looking into the gun damage table, we see that the destroyer has suffered engine damage. Its movement falls from 7 to 3. Next destroyer moves to 2 hexes and fires its cannons. It rolls 18 on d50. Destroyer attack is 28, and Scharnhorst defense is $65 + 10/2 = 70$. $28/70 = 40\%$, not enough to cause damage. In next round Scharnhorst again wins the initiative, and rolls 24 – this is 75%, which would again cause engine damage. Since this is not possible, we look at one location above on the gun damage table – severe hull damage. Destroyer defense drops to 45. Destroyer moves next to Scharnhorst and fires torpedoes. It rolls 31, which makes for attack of 66. Scharnhorst tries to evade with defense of 75 ($65 + 10$) which is $66/75 = 88\%$. Looking at the torpedo damage table we see it suffers from severe flooding – evasion drops to 8, defense to 58 and move to 4. In the next turn Scharnhorst wins the initiative again. It fires point-blank. It gets 25 on the damage roll, which means its total attack is 50. Destroyer is too close for maneuvering so it defends only with defense of 45 due to the severe hull damage it sustained. This means it starts sinking as total attack is higher than total defense. An “Abandon ship” order is given.

Ground and air units can attack naval units using Gun Attack value. Naval units use regular Attack, Air Attack and Hard Attack values when attacking ground and air units.

If ground or air unit has a strength different from 10, modify unit attack according to this:

$NA = OA - (10 - STR)$

NA – New attack

OA – Old attack

STR – unit strength

Some naval units can also attack towns using Strategic Attack value but there are usually better targets for such valuable units.

Naval units don't return fire when attacked by ground units.

INITIATIVE

Initiative represents chance for the unit to shoot first and inflict casualties before enemy can fire back. It is mostly related to the range of the unit, with longer ranged weapons having higher initiative, but can also be influenced by terrain (units receive initiative penalty on rivers, and initiative is INVERTED in close terrain like towns and forests), context (defenders receive initiative bonus), unit experience (veterans have a higher chance of shooting first) and commander skills. Defending units receive +0,5 initiative bonus (rounded down) for each point of defense bonus.

SUPPLY

Supply is a major part of the game, as it was a major part of the WW2. The whole concept of blitzkrieg and Russian deep combat was to prevent bloodshed by removing the unit's ability to fight rather than destroying the units.

Low supply will reduce the efficiency of the unit.

Supply starts from a supply source hex and is distributed through railroads, so source supply hexes should lie on the railroad.

Supply source can either be on the edge of the map (usually for attacker), major towns (usually for defender - Poland or Switzerland will have 2-3 main towns as supply sources) or supply fleet placed next to the coast.

Supply source is always one-side only.

Supply Fleet is a special unit that when placed next to a coast behave as a Supply Source. The supply fleet always consists of 10 ships. Total supply strength is divided by a number of surviving ships, so it's $3 * (\text{number of supply ships})$ outside the port and $(3 + \text{port level}) * 10\%$ in a port.

Railroad supply is spread from the source until blocked by enemy zone of control or enemy owned town. From there, it is spread as if by truck transport (so each railroad hex behaves as if it has a trucked placed in it and supplied hexes are all hexes in truck's range).

Towns (only railroad connected) behave the same, except range is increased to 3 turns (truck moving for 3 turns – range is dependent on the terrain and is considerably larger if roads are available).

Isolated units (not on supplied hex) can be supplied by special truck convoys. Some number convoys are given for free by HQ (different for each map), and assigned automatically if unit is out of supply (each turn a list of units is created, ordered by proximity to enemy held objectives AND unit value and supplied).

Also, units can be supplied by airdrops but that is EXTREMELY expensive - they must cost as transport plane (similar to level bomber cost) and they are easily shot down. No air supply units are ever available from HQ for free. If any units are not on supplied hexes, a popup at the start of the turn will inform player how many units are affected. If this is more than 30% of the player units, it will be orange (or similar) coded. If it is more than 50%, the notification will be red (or similar).

Units embarked on ships, planes or trains don't lose efficiency when unsupplied.

Hidden enemy units will block supply during supply calculation but will not be revealed. Experienced player will be able to determine presence of hidden enemy units by changes in supply distribution but will not see the details.

UNIT SUPPLY

In WW2, units could become ineffective without the reduction in number of tanks or personnel or a single shot being fired.

Some of the mechanisms are lack of fuel, dispersion of constituent subunits or destruction or insufficient number of (supply) trucks.

This loss of efficiency was usually gradual.

In Klotzen! unit has 10 supply counters. Supply loss is simply a minus counter (e.g. -1,-2,-3...)

Ships carry all of their supplies so they don't have supply counters.

The following table shows actions causing loss of supply counters. Only units in unsupplied hexes are affected (unit doesn't get affected if attacking and moving on supplied hexes)

	Supply counter
Each turn in unsupplied hex/airfield	-1
land units ending turn in unsupplied hex	-1
Unit moving up to 3 hexes	-1
Unit moving more than 3 hexes in dry ground conditions	-2
Unit moving in mud or snow (additional cost to above)	-1
Non-artillery unit shooting	-1
Artillery units shooting	-2
Air units attacking (including interdiction)	-1
Air unit ending turn outside of the airfield (in addition to supply loss for attack):	-1

Having low supply affect combat performance of the units – fuel and ammo are sparse and used only in emergencies.

Unit low supply effects:

GOOD (supply 4+): no effect

LIMITED (supply 2-3): Land Unit attacks and movement (combat radius for planes) drop to 2/3, rounded down. Maneuverability drops to 1/2, rounded down.

LOW (supply 1): Land Unit attacks and movement (combat radius for planes) drop to 1/2, rounded down. Maneuverability drops to 0.

CRITICAL (supply 0): Attack not possible. Defenses are 2/3 for land units, rounded down. Maneuverability is 0. Move is 1 for all units. Planes land on airfield and can only rebase.

Each turn started on supplied railroad or next to supplied town – full supply.

Each turn started in supplied hex, with no actions taken the last turn: +5 supply counters.

Each turn started in supplied hex: +3 supply counters (+2 if ground condition is muddy or snow).

up to a maximum (usually 10). Units cannot have less than 0 supply counters.

Unit can have more than 10 supply counters, but this has no positive effect.

If unit ends turn in supplied town, full efficiency is restored.

Note that commander skills can reduce the efficiency loss.

Interdiction attack does not inflict unit supply damage.

SCATTER

Scatter is part of the unit that is disabled and not counted in during attack. It is a temporary counter similar to efficiency loss except it lasts only until the next combat. Example: Bombers attacking unit, AA unit scatters part of the bombers - bombers attack the unit using only partial strength, but have full strength later during enemy's turn when attacked by enemy fighters. Scatter is not counted as efficiency loss and does not contribute to efficiency penalties (no 30% attack penalty etc).

Each scatter effect the unit has sustained will be used only once. If unit suffers scatter and attack other unit, scatter will be taken into account and then discarded. If unit wins the initiative in combat and receives scatter that scatter obviously has no effect on that combat, so it will be used on the next combat. Also, scatter from artillery and bombers will persist until unit is attacked again.

Note that if unit has scatter from previous combat/attack, and is subject to counterattack, only scatter from counterattack is used.

BOMBING

Level bombers are used for airfield attacks, railroad/town attacks (interdiction), naval attacks, moving (on the road) units. They are not that efficient against units but can be used against them in a pinch.

Tactical bombers are used against point targets: Units, bridges. They can be used against ships and subs when necessary.

Bombing supply:

Bombing towns reduces supply flowing through that town.

Bombing dug-in units: Level bombers ignore dug-in bonus

Bombing moving units - see interdiction bonus

BOMBING TOWNS

Town center is marked with a flag.

Bombing town center damages town supply and transit capability - there are 10 supply counters, regenerated 1 per turn if town was attacked turn before, two per turn otherwise.

Depending on the damage the town has $((10 - \text{damage}/2) * 10\%)$ chance a town further from it by railroad receive ANY supply (railroad infrastructure destroyed, for 5 damage it's 75%). Also, units supplied from that town have only $(10 - \text{town damage}) * 10\%$ chance being supplied on that turn (60% chance if the town has 4 damage).

Town will have a level of 1-10.

Town center has an air defense equal to town level. Any bombing damage is done to supply counters.

Artillery has the same effect, only town defense is town level*2.

Note that this damage persists if town changes owner so attacking player should be careful with bombing.

Town supply damage can be repaired by both engineers. Engineers next to or on the town center hex can repair the damage up to half the town level, or add +1 per if town is above the half supply counters.

Only bombers, artillery and some ships can attack towns. Strategic attack value is used. If enemy units are in the bombed hex both town and unit get attacked. Note that bombing or shelling a unit in town also damages town's supply value, so attackers should be careful with excessive bombing if they plan on using that town for latter supply of their units.

BRIDGES

Bridges allow free movement over river. They can be bombed by both level bombers and tactical bombers. For level bombers, each strength point has 4% chance of destroying a bridge (40% for full unit). For tactical bombers, each point has 8% chance. AA fire will cause some efficiency loss which will reduce number of strength points participating. Destroyed bridge will get repaired in next turn if engineering unit is on it or in 1-5 turns (random, determined at bridge destroy instance) if it is not repaired by engineering unit.

BRIDGES



Planes are based on airfields.

Clicking on the airfield will open the airfield dialog. Here you can see if a plane has attacked, moved, and if a plane is currently outside of the airfield (First icon under the last plane shown above).

The numbers below the airfield show how many planes are based on the airfield, how many planes are currently landed, and how many planes can still attack.

AIRPLANES

Planes work differently compared to the ground units.

Instead of fuel and speed, planes have 2 ranges depending on the actual ranges ratios of the actual ww2 planes.

Planes are based on airfields.

Planes can be deployed next to the friendly airfield. In that case they are considered deployed on that airfield and are flying an air patrol.

Rebasing from one airfield to another goes as follows: Player selects a friendly plane, clicks on the friendly-controlled airfield within double to usual combat range. Plane loses a turn for this.

There is a menu-like box that shows planes in the currently selected airfield.

Clicking on a plane icon will focus a screen on that plane (if it is on a mission away from the airfield).

Plane is immediately shown in the airfield planes list box. Friendly plane cannot fly above the friendly airfield (airfield hexes must be empty so enemy bombers can bomb them, see below).

Each airfield can take 6 plane units. Carriers can support two.

Player can then select a plane and select any hex within the combat range. Planes will move to that hex and player can either attack with them or leave them (they are considered on patrol).

Note that friendly planes cannot fly directly over friendly airfields - clicking on the airfield while plane is selected will result in that unit landing on the airfield.

Planes only see hexes around the target hex. They DON'T see hexes on their way from airfield to the target hex - no detection, no removing of fog of war.

If their airfield is conquered, airplanes will try to relocate to the nearest friendly airfield in range that has free capacity. Air units suffer some damage due to the hasty retreat - planes needing repair or unable to take off in time will be lost. This will remove 20-

60% of the current unit strength, for each air unit that can rebase, and 100% that cannot. Air units rebase starting from those with lowest range to those with the highest.

If plane is selected, its airfield and range will be shown as a new color-coded area in the minimap. Also, detected enemy units will be clearly shown as symbols on the minimap.

Airplanes don't have a ZOC, so they can fly freely around enemy air units.

PARATROOPERS AND GLIDERS

Paratroopers are specially trained troops that can make airdrops behind front lines. Paratroopers can land anywhere where they can walk in (meaning water hexes, gorges and high mountains are excluded). Paratroopers can spread units across wide areas making them ineffective until they group. Paratroopers add scatter penalty as follows:

Scatter: $(4 \text{ to } 7 - (\text{unit level}/2))$

Drop penalty is removed the next turn regardless of whether unit is on a supplied hex or not, but after that it behaves as a normal unit meaning its efficiency drops if on unsupplied hex.

Gliders are cheap expendable aircraft with no engines, so they must be towed. Gliders can load and land any unit that matches weight criteria, usually only infantry and lightest AT, AA and Artillery guns). Gliders can only land in open terrain. Also, landing troops in gliders doesn't incur efficiency penalty.

AIRPLANES MOVEMENT RANGES



Planes have a maximum ferry range. This is a maximum distance a plane can reach before running out of fuel. It is used when calculating to which airfields plane can relocate.

Planes have a combat radius. This will be 30% of the maximum range for fighters and 40% for bombers. Combat radius around the airfield is shown when the plane is selected.

BOMBING AIRFIELDS

Enemy fighter or bomber can move over the airfield and bomb it. Bombing the airfield will attempt to deal damage to each unit based on it.

Attacking planes use soft attack values instead of air attack, and defending planes use ground defense divided by 3.

. Also, attacker uses it's level/experience bonuses and defender doesn't (since pilots are not in the planes).

Friendly planes cannot be moved over full airfields (airfield hex is not on the list of movement hexes)

INTERDICTING AND INTERCEPTING

In ww2 motorised infantry divisions were taking as much as 50 km of road when moving making the vulnerable to air attacks.

Planes that had not acted during their turn are considered to be patrolling. They will attempt to attack any enemy units taking action (moving or attacking) in a certain radius around the plane.

Attacking units moving through planes patrol range is called interdiction.

Interdicting units attack exposed moving columns and receive a large attack bonus because of this:

Unit class	Attack bonus	Hard attack bonus
Fighter	+5	+3
Tactical bomber	+3	+3
Level bomber	+1	+2

Some bombers have a trait „HEAVY_BOMBER“. Those units are too large to interdict.

Fighters not neighboring friendly bombers are considered patrolling. They will attempt to intercept any air units performing an attack in a patrol radius.

If fighter is neighbouring the friendly bomber, it is considered escort fighter and will not attempt intercepts. It will intercept only enemy air units attacking escorted bombers, with 100% chance.

Interdiction will damage unit strength. This is to show that destruction of supply trucks created lasting damage that needs to be replaced.

Fighter planes attack any enemy planes that try to perform attack ($2 + 1 * \text{skilllevel}$) hexes around the fighter plane.

Fighter commanders will be able to select Hawkeye skill. Each of the 3 levels will add +1 intercept radius (max of 5). So for commander with 3 levels of Hawkeye, this is 5 hexes, PROVIDED they are all in combat range (distance from base airfield where no out-of-fuel losses occur) of an intercepting fighter.

Fighters can attempt up to one interception per level of Interceptor skill, each with less chance: $(90 - \text{numberOfInterception} * 30 + 10 * \text{level})$. So chance for 3rd interception for 3rd level Interceptor is $(90 - 90 + 30) = 30\%$

Bombers remain over target during enemy's turn. So they attack, and enemy can attack them on his turn. Note that enemy fighters can get intercepted if friendly bomber is within the intercept range of a friendly fighter - please see above.

Bombers that have not attacked are on patrol. Any ground/sea unit passing through can get attacked.

Rules are the same as for the fighters intercept - so a bomber with 3rd level Hawkeye has a patrol radius of 5 hexes and can attempt 3 intercepts with level 3 interceptor skill. Chances of success are 90, 60 and 40%.

