3.1.10 TROOPTYPE EDITOR

An intermediate editor that allows you to make trooptype libraries. Trooptypes are infantry squads or AFVs. Please see the separate scenario design pdf or go to www.vrdesigns.net to find this documentation.

3.1.11 HISTORICAL UNIT EDITOR

An intermediate editor that allows you to make model libraries. Historical Units are basically Table of Organization and Equipment (henceforth TOE) formats like ideal infantry divisions or tank battalions. Please see the separate scenario design pdf or go to www.vrdesigns.net to find this documentation.

3.1.12 OFFICER EDITOR

An intermediate editor that allows you to make officer libraries. Officers are the generals, like Guderian or Zhukov. Please see the separate scenario design pdf or go to www.vrdesigns.net to find this documentation.

3.1.13 MAP EDITOR

An intermediate editor that allows you to make your own maps. Also allows cutting bigger maps into smaller pieces. Please see the separate scenario design pdf or go to www.vrdesigns.net to find this documentation.

3.2 WHAT IS MY GAME VERSION?

To identify the game version you have installed, look in the bottom of the main menu. Noting the game version and scenario version is important when reporting any possible glitches or bugs to the developer on the forums.

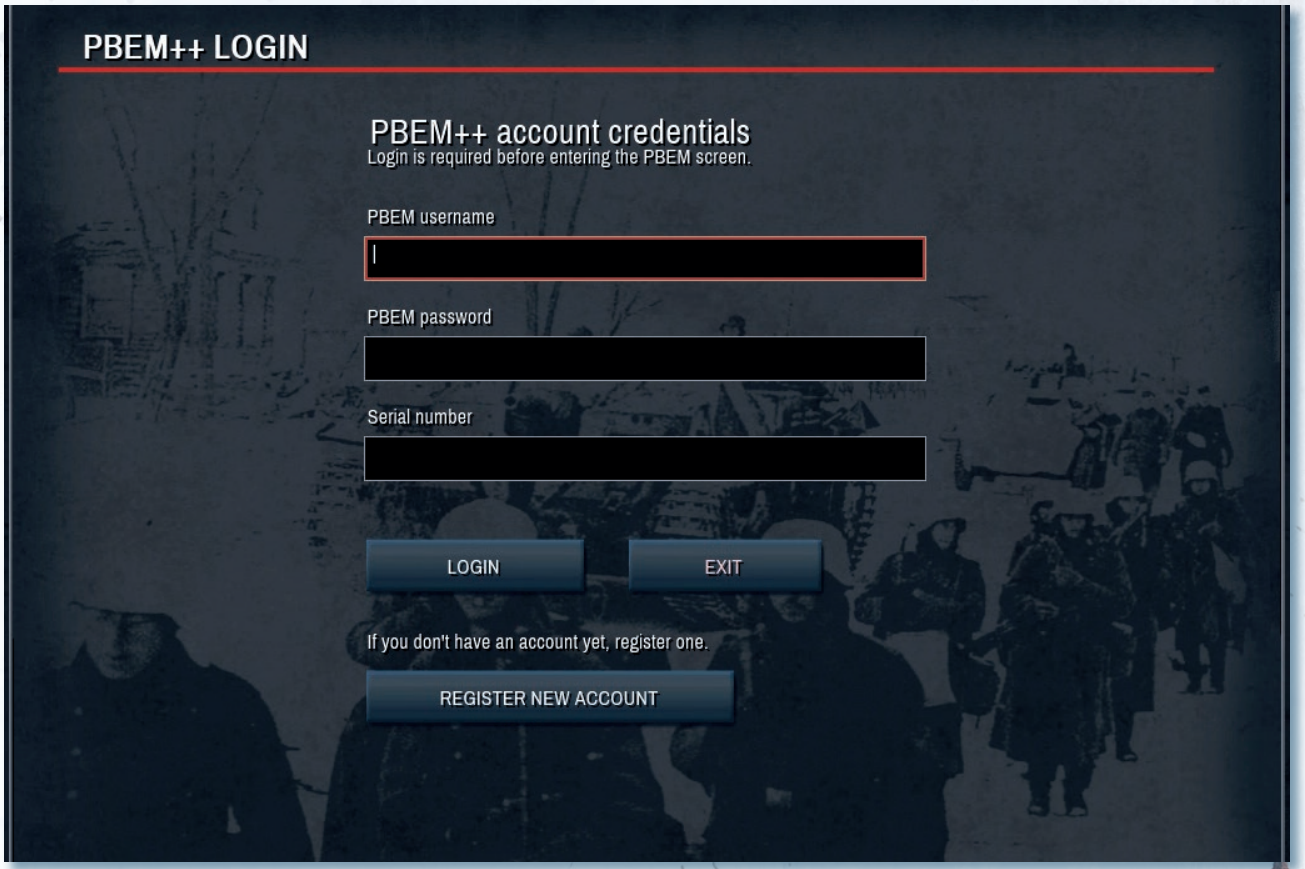
3.3 PBEM++

The game start main menu allows access to PBEM++. Before getting to the actual PBEM++ screen you will have to either login or register.

3.3.1 LOGIN

After pressing the PBEM++ button in the main startup menu you will be asked to login.

If you do not have a Matrix or Slitherine account yet, you can register one from inside the game using the "register" button.





3.3.2 PBEM++ SCREEN OVERVIEW

Once properly logged-in you will get to the actual PBEM++ screen.

Running games

Here you can see the currently active games you are participating in. If it's your turn to play you can press the "play turn" button to do so.

Finished games

These are old games that have been finished. You can still inspect the end state of the game by pressing "open final file".

When you download a finished game instance it is automatically decoupled from the PBEM++ server. Both players will be able to continue playing both sides if they desire so and the scenario supports it. This is mostly useful to get a peek at the adversary's final positions. Players will be reminded on start turn text screens that it is an old now decoupled PBEM++ game.

Open challenges

Here you can see if there are other players looking for an opponent. If you like to play someone you can use the "accept challenge" button. Upon doing so the other player will be notified he has an opponent and the game will formally start.

Your challenges

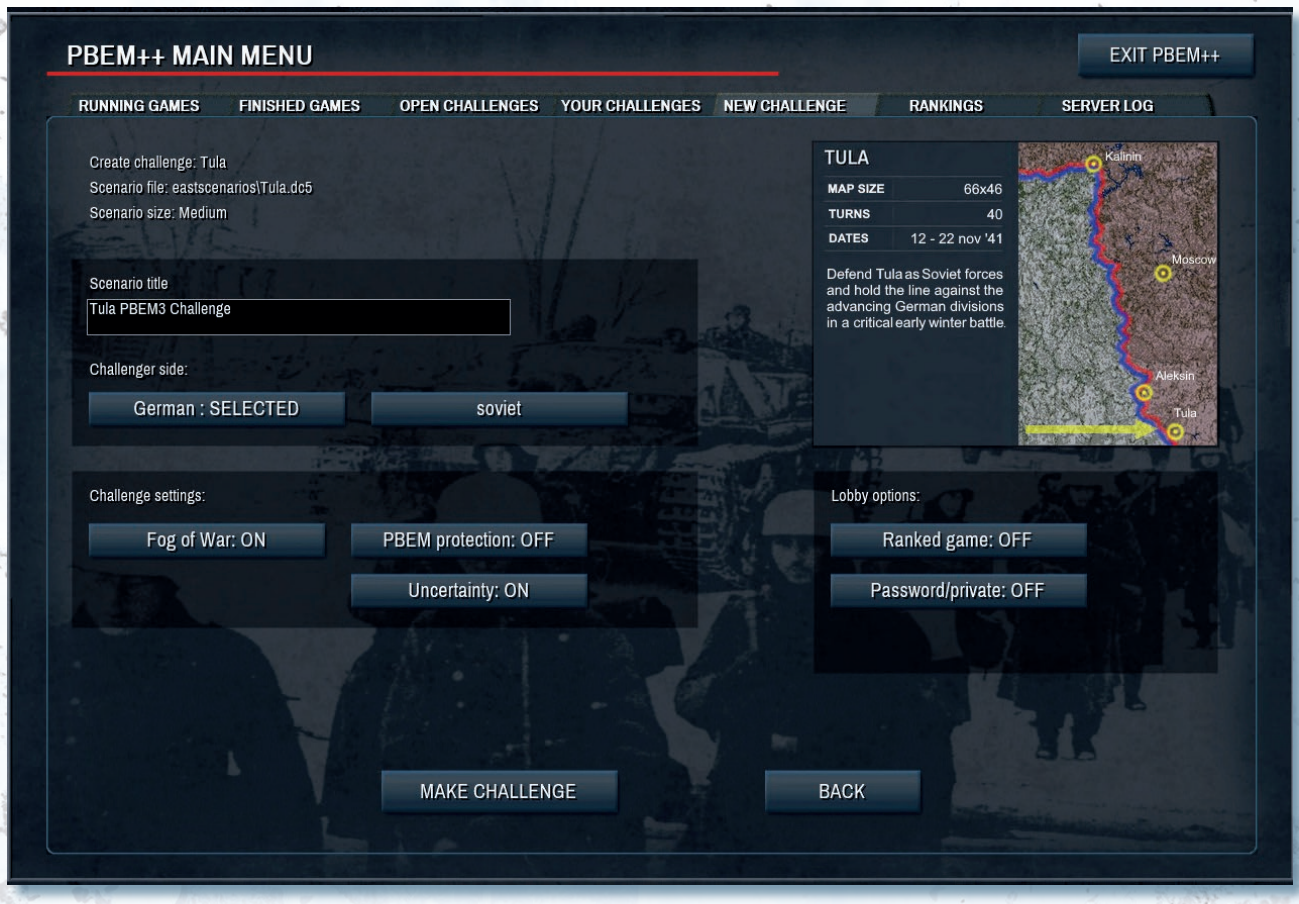
Here you can see the challenges you posted. If your challenge is still visible here it means no other player has accepted to play you yet. Once somebody accepts a challenge the game will be moved to the running games tab. (see above)

Note: while nobody has accepted yet you can use the "cancel challenge" button to remove it.

New challenge

If you want to create a new challenge this is where you go. It allows you to pick a scenario of choice. After doing so a second page will open, allowing you to configure your challenge. Once you have done so you can press the "make challenge" button to actually post it. It will then appear in the "your challenges" tab. (see above)

Most options here are already explained in the scenario setup section of this manual. But there are a few extra options here.



PBEM protection

Basic advice is to play without! If you do play with it, it gives extra PBEM protection, but it might be inconvenient, constraining and sometimes prone to giving false positives.

If PBEM protection is active:

- You cannot save during your turn and replaying a turn (or even playing on a different pc) will be reported as potential cheating.
- It will also make the players give and use extra passwords
- Does allow however taking a clone of the game out of the PBEM++ system to continue for example hotseat or through manual system. (through the in-game Prefs Tab)

Ranked game

If this is switched on you and your opponent's ELO ratings will be updated once the game is finished.

Password / private

If you enable this option you can enter a password. Only a player that knows this password will be able to accept your challenge. Good idea to use this if you want to play a specific friend and not just anybody.

Rankings

Shows the ELO ratings of all players that have one. You must have played at least 1 ranked game to appear in this listing.

Server Log

Shows an overview of all the communications the game is doing with the server. Could be useful to check in case of weird behaviour or bugs.

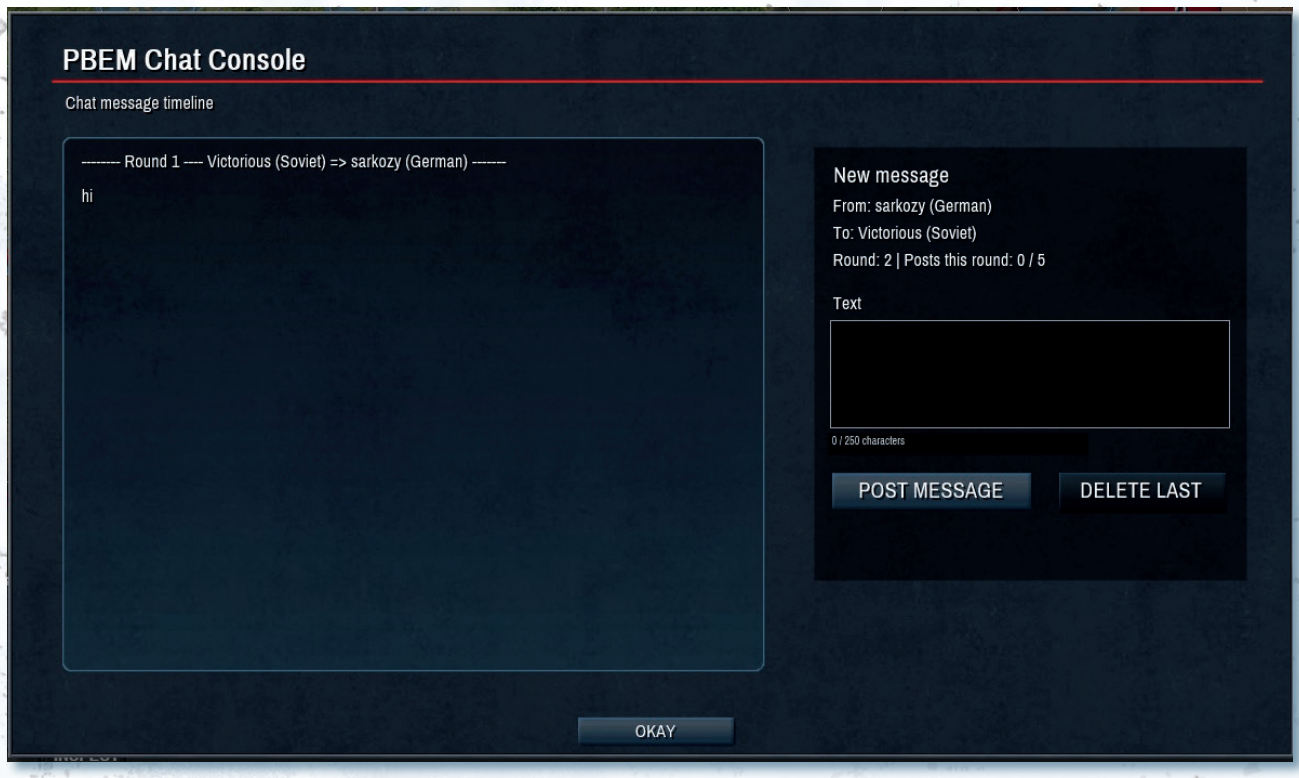
In case of the latter in the game's logs/ directory there is also the pbem3log.txt that keeps track of full logging.

3.3.3 PLAYING A PBEM++ GAME

Chat console

When you start your turn and end your turn the chat console will popup.

It will allow you to communicate with your opponent as the turns go by. It is very basic, but it allows you to read and write short messages to each other.



Disconnect PBEM++

If you want to continue playing the game differently (like old school PBEM or hotseat) you can disconnect the PBEM++ game. This will create a clone. This is only possible if you were playing with PBEM protection turned on.

The "Disc.PBEM++" button can be found in the prefs tab.

3.3.4 OVERVIEW OF MULTIPLAYER MODES

You can thus use PBEM++ that downloads and uploads games from the Slitherine servers. You can also play manual PBEM where you save the files yourself and actually email them to your opponent yourself.



MULTIPLAYER MODES	
Settings required	**Type of PBEM mode**
Launched through PBEM++ UI. with “PBEM Protection” turned off	PBEM++ normal
Launched through PBEM++ UI. with “PBEM Protection” turned on	PBEM++ with extra cheat protection and passwords
Launched through regular UI with 2 human players	Manual PBEM or hotseat, without passwords
Launched through regular UI with 2 human players and with “Passwords” enabled	Manual PBEM or hotseat, with passwords
Launched through regular UI with 2 human players and with “Passwords” and “PBEM protection” enabled	Manual PBEM or hotseat, with extra PBEM protection + passwords

3.4 SCENARIO SETUP SCREEN

After loading a scenario you will be presented with this screen. Here you can configure the scenario and start it by pressing the “start” button.

3.4.1 AI SETTINGS

Here you can configure your AI opponent. You can set the “difficulty” and the “speed”. Higher difficulties grant the AI more combat and mobility bonuses while the slower you set the speed for the AI the more time it will take to ponder its moves.

3.4.2 SETTINGS

Some general settings can be set here as well as some scenario specific settings (like weather).

Fog of War

Enable for a realistic experience. If disabled, it means you can see all enemy units, even without any line of sight. However when disabled the actual combat calculations still take place based on actual recon points. (So even though the players see everything, that does not mean your soldiers see everything.)



4. THE RULES

This chapter discusses all the rules of the game. At the start of your round, your logistics system will try to get supplies and fuel from your supply sources to your units. After this, the unit will take their upkeep and recover or increase some of their statistics. The player will then be allowed to start their turn, and it will be up to you to move your units and give other orders.

4.1 DEFENSIVE LINE MODE (DLM)

You can split large units in 2 or maximum 3 DLM parts. These DLM need to remain in contact with each other and always need to be in a hex next to where another part of the DLM is.

They are useful to man a large frontage while in defense. Usually, a battalion can be split into 3 parts, smaller units than battalion size should still be able to split into 2 parts.

When a unit goes into DLM mode it will henceforth consist of several DLM parts.

4.1.1 LIMITATIONS

Really small units cannot use DLM. Smaller units can only split into 2 DLM parts. You can split units as long as the split component unit remains above two times the battlegroup minimum. Thus the component minimum limit is equivalent to about 100 soldiers. HQ units can never be split with DLM mode.

4.1.2 ENTER DLM MODE

To break a unit into multiple pieces each to be formed "DLM part" must conform to the minimum battlegroup power size.

4.1.3 JOIN DLM PARTS

For this all DLM parts need to be able to move into the hex of the most centrally positioned DLM part.

4.1.4 MOVEMENT RULES

While in DLM mode you can move only 1 hex. It is meant to be used on the defensive to form a long frontline, for mobility you should switch out of DLM mode.

You can only move a DLM part to a hex where all DLM parts stay in contact with all other DLM parts.

4.1.5 COMBAT RULES

DLM units can only retreat to a hex where all DLM parts stay in contact with all other DLM parts. If this is not possible the retreating DLM part and other (or all) parts will be joined together. Rejoining of parts can also happen upon a DLM part being completely destroyed.

DLM parts suffer -15% in attack (but not in defense) and do not receive any multi-unit bonuses. Being spread out has its disadvantages.

4.1.6 CHANGE HQ

All DLM parts must have the same HQ.

4.1.7 AUTO REPLACEMENT TROOPS

They'll only be requested and returned by the "core" part of the DLM. However the "core part" also manages redistribution with the others parts.

4.1.8 ENGINEER POINTS

These cannot be amassed while in DLM.

4.1.9 MICRO TRANSFER TROOPS

They'll only be able to be received by the "core" part of the DLM. However, the "core part" also manages redistribution with the other parts.

4.1.10 WHAT'S THE DIFFERENCE WITH BATTLEGROUPS?

DLM is the way to go when you are on the defensive:

- DLM mode makes it easy to split and does not require PP to do
- DLM parts are easy to join again
- DLM mode units spread their individual troops around between them every start of turn keeping all parts at equal strength

- However, DLM parts can move only one Hex and are thus more relevant for Infantry or units on foot than Mechanized formations

4.2 FIRE BRIGADE MODE (FBM)

This mode allows some of your units to react to and move during the enemy's turn. This is to bolster your other units that are defending against regular enemy attack.

4.2.1 ENTERING AND EXITING FBM

You can set a Unit to FBM, which costs 33 AP. Getting out of FBM is free of AP cost.

Other requirements for going into FBM mode:

- Not being in DLM mode
- Not being in March mode

If an FBM unit participates in regular or ranged combat it always loses FBM mode and will stay in the hex where it fought.

4.2.2 FBM ACTION POINT REDUCTION

At start of turn FBM units will lose 33% of their action points as a trade off for having been ready to bolster the line during the enemies' turn.

4.2.3 FBM BOLSTER MOVE

A unit that is in FBM will be able to move during the enemies turn to bolster a friendly force that is under regular attack.

Note: this allows a new way to set sneaky ambushes or counter-attacks to overwhelm relatively weak attacking forces that fought while picking an easy target. This also increases your front's overall strength over multiple hexes if facing a not-that-strong enemy that cannot attack throughout the whole frontline.

An FBM can only bolster units that are under the same HQ as the FBM Unit's HQ.

Note: this gives some incentive to keep some Units under corps instead of divisional control.

Note however that this "bolster move" is never assured and the danger of intercept fire on the trajectory could prevent the FBM move. The clever reader will realize that using FBM out in the open is thus harder than using FBM in a more defensible landscape like forests. Any possible intercept fire on a FBM Unit planning its "bolster move" is never actually executed, it just lowers the chance of the "bolster move" taking place.

The FBM unit will arrive in a combat round equal to AP cost to move to the battle hex, divided by 15 (and rounded up). It will quit fire brigade mode upon arriving in the battle hex.

Note: due to the ZOC cost already (15AP) we'll see FBM units enter combat around combat round 2-3 at best and 4-5 at worst. Placing an FBM unit too far from the frontline will make it unlikely that it arrives in time to bolster during combat.

4.2.4 FBM PRIORITY

Only one FBM unit can "bolster move" into a specific defensive combat Hex. The one chosen will probably be the one that has to expend the least amount of AP to arrive, but this is somewhat randomized.

4.3 UNIT UPKEEP AND RECOVERY

At the start of every turn, after receiving supplies and fuel from your logistical network, your units will consume upkeep. They may also recover readiness and morale as well as increase their engineer points and entrenchment.

4.3.1 SUPPLY CONSUMPTION AND READINESS DETERMINATION

If troops can consume supplies their readiness will recover. This represents the consumption of rations, medical supplies, non-combat related losses, batteries, spare parts and ammunition for minor fire fights.

Every troop type has a basic supply usage. The unit's ideal supply consumption usage will be the sum of that of all its troops.

If the supply points for this supply consumption are present, the supply consumption stat will increase up to 20 points and readiness also increases by up to 20 points.

If the supply points for this supply consumption are not present, the supply consumption stat will decrease by 10 points and readiness decreases by 20 points but will never go below 10 points.

If the supply points for this supply consumption are partially present, the negative effects will be reduced, and readiness might still go up a little bit.

4.3.2 MAXIMUM READINESS DETERMINED BY VIGOR

Maximum readiness = SQR(Vigor)*10

Maximum readiness is determined by vigor. Vigor itself can go down at start of turn when a unit moved or attacked the previous turn (-5) or by suffering combat casualties (half the percentage of KIA percentage applied as vigor loss).

It can go up by not having moved or offensively attacked/bombarded/ fired for a full turn (+15 vigor). There is also a +50% bonus to the increase if there is no enemy ZOC on the hex. A further +50% bonus is applied to the previous subtotal if the previous turn was a night turn.

The vigor increase can be reduced if the unit was attacked during the enemy's turn. A reduction between 50% and 100% depending on readiness will be applied, the lower the readiness the logarithmically the bigger the reduction.

Recovery of vigor is modified for inverse current vigor to simulate the effect of it being more difficult to recover from over-exhaustion. Strong advice: rest your units before their vigor drops below 50 points.

4.3.3 ACTION POINTS DETERMINATION

Readiness determines action points. After readiness has been updated, the action points for this unit will be set to 50 + readiness / 2. These action points are then modified with the supply consumption stat if it is below 100. It is therefore possible to end up with a unit that has 0 AP, though this will only happen many rounds after a unit has been cut off from receiving supplies.

4.3.4 RESERVE ACTION POINTS

Units that did not move can gain reserve action points. If a unit did not move in the previous turn, it will get reserve action points awarded. These are separately tracked from normal action points, and they can only be used for the first move to a neighboring hex. In normal conditions 20 reserve action points can be gained per round, and you can keep gaining them until 100 reserve action points have been reached.

The purpose of these points is to allow a unit to do an especially difficult move like crossing a river without a bridge or mounting a very steep forested hill.

Reserve APs are immediately lost if a move is made or a retreat to another hex is made during combat. Partial loss occurs when readiness is lost in combat and 50% readiness loss corresponds with full loss of reserve AP, 10% readiness loss corresponds with 20% loss of reserve AP.

If the regular AP has been determined to be lower than 50, for example due to lack of supply consumption, then the reserve AP total will (newly added and already existing) suffer a penalty. This will occur rarely but helps enforce that a unit will become almost completely immobile at some point after running out of supplies.

4.3.5 SUPPLY DEFENSIVE AND OFFENSIVE PENALTIES

Low supply or fuel stocks means rationing and thus combat penalties. Offensive operations require more stocks than defensive operations. If too few supplies and fuel are in stock with the unit, its defensive and/or offensive performance might be reduced. This happens when there is not enough stock to allow full usage of the unit's weapons for all the projected combat rounds. Supply and fuel consumption for defensive combat is usually 3 times lower than for offensive combat. Inspect the troops type details if in doubt.

To determine the defensive penalty, we calculate the number of defensive combat rounds the unit has stocks for. If this is lower than 20 combat rounds, rationing will take place and a defensive penalty will be incurred.

To determine the offensive penalty, we calculate the number of offensive combat rounds the unit has stocks for. If this is lower than 12.5 combat rounds rationing will take place and an offensive penalty will be incurred.

Note: these penalties can be deceiving in the case of a shortage of fuel stocks. In actual combat the penalty for low fuel stocks is only applied to the troop types that use fuel. For example, a motorized infantry formation (with trucks) will fight just as well with missing fuel stocks as with full fuel stocks. This is because the trucks do not participate much in the fight and it's the foot soldiers who'll be doing the fighting.

4.3.6 MORALE RECOVERY

Morale of well stocked units will always slowly increase back towards base morale.

Morale of badly stocked units will go down.

If the unit is suffering a defensive penalty due to lack of adequate supply/fuel stocks it has a chance to get morale reductions instead of morale increases. At 100% defensive penalty this will always be a decrease, at -50% defensive penalty there is a 50% chance it will be a decrease instead and at -10% defensive penalty there is just a 10% chance it will be a decrease. If no decrease is suffered, then this means morale will increase.

If morale is to be increased, it will slowly recover up to the base morale of the troop type in question. 5% of the base morale will be added to the morale score. This can be further boosted if the unit is in HQ power range of a HQ with adequate staff percentages. The commander of the HQ with adequate staff percentages can further help increase morale.

If morale is to be decreased, it will be reduced by up to 10 points if the unit's experience is at 0. It will go down 7 points if the experience is at 30. It will go down 5 points if the experience is at 50. Only 1 point will be removed if the experience is 90.

4.3.7 ENGINEER POINTS INCREASE

Your engineers will get new EP start of every turn. Note however if a unit moves it loses all its EP.

Engineer points (EP) go up every turn based on the amount of AP available. So if 50 AP is available the EP will go up with 50% of the EP gain statistic of its troop types. At 100 AP full EP growth will be awarded.

4.3.8 ENTRENCHMENT INCREASE

Your entrenchment will automatically go up the start of every turn.

Note: if a unit moves it loses its entrenchment.

The entrenchment will go up with the entrenchment capability of the troop type and up to the landscape type's maximum entrenchment value. The troops will always reach the minimum entrenchment of the landscape type of the hex they are in.

TROOP TYPE ENTRENCHMENT CAPABILITY	
Troop type	**Entrenchment capability**
Engineers	60
Infantry	40
Artillery / guns / flak	40
Tanks / afv / trucks	20

Snow hexes will halve entrenchment speed. This represents the difficulties of digging fox holes and trenches in snow covered and partially frozen ground. Units cannot gain or retain entrenchment while on a frozen lake hex.

LANDSCAPE TYPES MINIMUM AND MAXIMUM ENTRENCHMENT VALUES		
Landscape type **	**Infantry minimum entrenchment ***	**Infantry maximum entrenchment ***
Marsh	20	100
Plains	40	150
Fields	50	180
Light Forest	60	200
Forested swamp	60	200
Heavy Forest	70	225
Rural Village	50	200
Light Urban	75	225
Heavy Urban	100	300
Mud	No modifier	No modifier
Snow	+20	No modifier

* = Artillery/guns and flak have half these values. Tanks/afv and trucks have a quarter of these values.

Fieldworks, fortifications and heavy industry can further increase minimum and maximum entrenchment. See the locations section for their exact values.

4.4 NEW WINTER RULES & NEW WEATHER RULES

4.4.1 DEEP SNOW

After snow piles up to 400mm or more movement becomes very difficult for everybody (except ski movement type). For both sides, Soviet tracked vehicles however have less problems with the deep snow than the German ones.
Auto-entrenchment in deep snow is also higher.

Artillery is less efficient as well as the blast gets partially absorbed by the snow.

Attack modifiers are more negative for all in deep snow as the advantage now is with the side that doesn't have to move cumbersomely. Soviet wide tracked vehicles are less impacted here too.

Exact rules summed up:

- Extra movement costs in off-road deep snow hexes (less so for wide tracks)
- Auto entrench +33% compared to normal snow
- 50% attack reduction on the offensive (wide tracks only get -25% attack reduction, ski get no attack reduction)
- Artillery also gets 50% attack reduction when it concerns defensive fire (supporting the defenders)

4.4.2 FROZEN RIVERS AND LAKES

Rivers and lakes can freeze when sufficiently cold weather persists. Freezing is tracked using cumulative freeze points.

An average temperature of -7.5°C for one day (4 rounds) results in 30 cumulative freeze points.

Freeze Points are lost three times faster than they are gained. For example, one day (4 rounds) at +5°C results in the loss of 60 cumulative freeze points.
Frozen rivers no longer cause the normal river AP movement penalties or river combat penalties.
Frozen lakes can be moved across, but units cannot entrench on them.

Be very careful when using frozen lakes. If a lake hex unfreezes while a unit is on it, that unit disappears as if drowned or completely dispersed.

4.4.3 WINTER-PREPAREDNESS PERCENTAGE

Every unit can have winter stock points. To be optimally prepared for winter conditions and winter fighting every manpower point requires one winter stock point, which would result in 100% winter-preparedness.

A player can have cards available to distribute more winter clothing, but often the winter-preparedness is set at scenario start.

A lack of winter-preparedness can result in taking freezing/frostbite casualties, readiness and AP loss. Lack of winter-preparedness will also hamper snow camouflage employment and can give extra resulting combat penalties in snowy hexes.

The winter-preparedness % is the key value you should observe during winter. Low values here will expose the unit to frostbite and will limit its winter-camo capabilities. High values (ideally 100%) here will mean the unit can function very much as it would during summer.

4.4.4 SNOW CAMO RULES

First, it is important to realize it takes time to get winter/camo clothing distributed or to repaint a tank. Once weather changes to the right conditions when snow starts falling, it takes infantry 4 turns (1 day) to get their snow camo on, it takes vehicles 8 turns (2 days) to get their paint job done.

Absence of winter camo during snow fighting will give modest combat penalties.

In order to avoid "no snow camo penalty" your troops need to have their snow camo on (or paint job done) and have adequate winter-preparedness. Under 100% winter-preparedness there is a chance "no snow camo penalty" is applied for infantry, under 50% there is a chance it is applied to vehicles.

RIVER AND LAKE FREEZING		
River/Lake	**Freezes at**	**Unfreezes at**
Minor Riv	200 cumulative freeze points	100 cumulative freeze points
Med Riv	300 cumulative freeze points	150 cumulative freeze points
Major Riv	400 cumulative freeze points	200 cumulative freeze points
XL Riv	500 cumulative freeze points	250 cumulative freeze points
Lake	600 cumulative freeze points	300 cumulative freeze points

The "no snow camo penalty" for infantry is -30% on hit points in the offensive and -10% on the defensive. For vehicles it is -20% on the offensive and -10% on the defensive.

4.4.5 CERTAINTY WEATHER PREDICTIONS

Now 5% percent uncertainty per round when predicting into the future instead of the 10% we had in DC:AO.

4.4.6 WINTER CLOTHING

It also takes 4 turns of cold level 1+ to get winter clothing (not to be confused with snow camo) distributed to the frontline, you cannot have snow camo while winter clothing has not yet been distributed. Winter clothing is thus an extra delay for applying winter camo, but that should be rare. Its effect is thus mostly visual only as the % of troops shown with winter clothing will correspond with the winter-preparedness percentage. This is fully automatically handled by the game.

4.4.7 FROSTBITE & EQUIPMENT FREEZE RULES

Once it gets really cold the absence of winter preparedness % in combination with cold level will result in penalties and casualties (frostbite/broken equipment).

Note: winter-preparedness is only applied if winter clothing has been distributed (can take 4 turns after cold level reaches 1+).

Cold level is the base cold level + 1 extra level per 2 height levels.

Effective cold level = cold level - max(city level, fortification/fieldworks structural points/500) - (winter-preparedness%/10)

EFFECTIVE COLD LEVEL EFFECTS ON INFANTRY/GUNS

Effective cold level	Frostbite casualties	Readiness mod after calculations	AP mod after calculations
4	-	-	-
5	0.1%	-	-
6	0.2%	-5%	-
7	0.4%	-10%	-10%
8	0.7%	-15%	-20%
9	1.1%	-20%	-30%
10	1.6%	-25%	-40%
11	2.2%	-30%	-50%
12	2.9%	-35%	-60%
13	3.7%	-40%	-70%
14	4.5%	-45%	-70%
15	5.4%	-50%	-70%
16	6.4%	-55%	-70%

EFFECTIVE COLD LEVEL EFFECTS ON VEHICLES

Effective cold level	Equipment break down / frostbite	Readiness mod after calculations	AP mod after calculations
4		-	-
5	-	-	-
6	-	-	-
7	0.1%	-	-
8	0.2%	-5%	-
9	0.4%	-10%	-10%
10	0.7%	-15%	-20%
11	1.1%	-20%	-30%
12	1.6%	-25%	-40%
13	2.2%	-30%	-50%
14	2.9%	-35%	-60%
15	3.7%	-40%	-70%
16	4.5%	-45%	-70%

The average effective cold level (whole map taken into account) is the supply freeze level.

Which is applied to logistics / supply, including replacement troops.

SUPPLY FREEZE LEVEL	EXTRA AP ALREADY SPENT ON SOURCE HEX
4	-
5	+30AP
6	+60AP
7	+90 AP
8	+120AP
9	+150AP
10	+180AP
11	+210AP
12	+240AP
13	+270AP
14	+300AP
15	+330AP
16	+360AP

4.5 UNIT MOVEMENT

Moving troops into a neighboring hex costs action points (AP). The cost is determined by a number of factors. Each landscape type has an AP cost for each movement type. This AP cost might be replaced by the AP cost of a movement type for a road connecting the source and the target hex.

Then there might be additional costs in the form of AP cost for height levels, crossing rivers without bridge, ZOC (zone of control) penalties and/or previous battle AP.

It is important to be fully aware that almost all units are composed of different troop types. Troop types that might have different movement types. Especially on roads, the wheel and tracked movement types are much faster than the foot or artillery movement type. It is possible for faster troops to carry slower troops, as well.

4.5.1 LANDSCAPE TYPES

Basically villages, urban areas, plains and fields allow for good speed for motorized and mechanized troop types, but forests and marshes are hard to traverse for vehicles, but less so for infantry.

Note: The scale used (1km hexes) in the game presumes some tracks and particularly logging roads to be present in almost all hexes. Their existence is modeled in the landscape type AP costs and is not modeled visually on every hex graphic. This note also explains why, for example, heavy tanks can drive through heavy forest hexes, albeit at a hefty AP cost.

ACTION POINT COSTS TO MOVE IN TO LANDSCAPE TYPES, PER MOVEMENT TYPE						
Landscape type	**Artillery**	**Foot**	**Horse**	**Wheel**	**Tracked**	**Logistics**
Marsh	100	30	65	75	60	58
Marsh snow	75	25	45	42	29	41
Plains	60	20	40	32	24	32
Plains mud	70	25	40	42	24	41
Plains snow	75	25	45	42	29	41
Fields	60	20	40	32	24	32
Fields mud	70	25	40	42	24	41
Fields snow	75	25	45	42	29	41
Light forest	70	25	45	42	32	41
Light forest mud	80	30	45	52	32	46
Light forest snow	85	30	50	52	37	46
Forested swamp	100	30	65	75	60	58
Forested swamp snow	75	25	45	42	29	41
Heavy forest	80	35	55	55	40	48
Heavy forest mud	90	40	55	65	40	58
Heavy forest snow	95	45	60	65	45	58
Rural village	60	20	40	32	24	32
Rural village mud	70	25	40	42	24	41
Rural village snow	75	25	45	42	29	41
Light urban	60	20	40	24	18	24
Light urban mud	70	25	40	24	18	24
Light urban snow	75	25	45	34	23	24
Heavy urban	60	20	40	24	18	24
Heavy urban mud	60	20	40	24	18	24
Heavy urban snow	60	20	40	24	18	24

Note: There are some troop types with 4x4 wheel movement type. This movement type acts exactly the same as the tracked movement type. The AP cost for horse movement type might seem high, but keep in mind that it concerns horses that will be pulling equipment like artillery guns.