

20. FORTIFICATIONS

Focus: This section covers the rules on building up fortifications, how they are maintained (or reduced) and the impact of fortifications on combat.

Key Points:

- How Fortifications are created
- Construction Values and Construction Points
- How Fortifications are maintained or reduced
- Special rules for Fortifications in, or adjacent to, Major Cities
- How Fortifications affect combat
- Special Rules for Fortified Zone units



20.1. FORTIFICATION LEVELS

Manmade fortifications and entrenchments are represented by a fort level in each hex ranging from zero to five. The fort level in a hex and any construction towards a higher fort level is displayed in the hex pop-up for each hex (6.4).

Ground units will seek to prepare fortifications automatically if they end a turn in a hex. All defending units in a hex benefit from the fort level of the hex when in combat.

The different levels of fortification in the game reflect the amount of preparation and resources available. The following gives some idea what each level reflects:

- Level 1 - Hasty dug-in defensive positions with some earthen (just dirt) overhead cover. Heavy weapons are in basic defilade without overhead cover. Minimal camouflage. Can be accomplished within a week,
- Level 2 - Continued position improvement with squad trenches and crew served weapons pits. Moderate camouflage. Additional week or two.
- Level 3 - Connected trench networked system with both primary and alternate dug-in positions. Crew served positions in earthen bunkers with overhead cover. Additional week or two. More extensive camouflage. Typical WW1 or static eastern front positions.
- Level 4 - Introduction of interlocking concrete field fortifications with elaborate defensive engineering works - tank traps, minefields, etc. Examples are the Panther Line and West Wall. Field units are not able to build these

on their own and require substantial engineering assets and planning over a period of 3-6 months.

- Level 5 - The only true “forts” in the game. Massive defensive works that take years to build. Sevastopol is an example of this type of fortification.

20.2. FORT LEVEL CONSTRUCTION

For construction on a fort level to begin in a hex, there must be a combat unit in the hex. Depleted and/or frozen combat units cannot construct fort levels, isolated units are limited to building fortification levels no greater than two.

20.2.1. UNIT CONSTRUCTION VALUES

Each combat unit has a construction value (displayed on the left hand side of the unit detail window). This is the sum of the construction values for each of its ground elements.

This value is affected by the fatigue and experience of the unit's ground elements.

During the enemy player's logistics phase, units will use their construction value toward building a fort level. Units that moved during their turn construct fort levels with the percentage of their MPs that are left. For example, if a combat unit used 4 of its 12 MPs, it will only have two thirds of its normal construction value available for building fort levels.

The construction value of a unit is further modified as set out below.

17th Infantry Division^W
 13,567 153 0 Wins : 7 Losses : 1

XX
 3-12

READY
 ● 43 ✕ 2

Combat Value 3.86 / 3.79
 TOE 61 / 73
 MAX TOE 100

HHQ XIII Corps
 OHQ Army Group Center

Morale 80 (75)
 Nation Germany

Supply/Need 147 / 184
 Fuel/Need 16 / 17
 Ammo/Need 185 / 371
 Support/Need 478 / 386

Construction Value 40
 Transport Cost 2701 / 1155

Vehicles/Need 150 / 116
 NON-MOTORIZED (1)
 Supply status In Supply

ASSIGN SUPPORT UNITS

SUPPLY DETAILS
 MERGE UNIT
 MOTORIZED UNIT (1111 / 3)
 DISBAND UNIT

Elements			Assigned (0)		
EXP	RDY	DAM	GROUND ELEMENT	FAT	
78	1	0	SdKfz-221 Armored Car	40	
80	178	39	Rifle Squad 40	47	
80	17	7	Pioneer Squad 39	46	
80	9	3	Bicycle Recon Squad 40	45	
79	9	6	Cavalry Squad	46	
80	68	9	7.92mm Anti-tank Rifle	46	
80	74	12	7.92mm Machine Gun	44	
80	57	8	50mm Mortar	41	
80	42	3	81mm Mortar	43	
80	34	8	37mm Anti-tank Gun	46	
80	4	0	50mm Anti-tank Gun	51	
80	25	4	105mm Howitzer	40	
80	9	3	150mm Howitzer	44	
80	4	1	150mm Infantry Gun	45	
80	14	3	75mm Infantry Gun	48	
80	453	8	Support	41	

The existing **fortification level** affects the construction values as:

- Fortification level 0 - x 3
- Fortification level 1 - x 1
- Fortification level 2 - x .25
- Fortification level 3 - x .05
- Fortification level 4 - x .01 (these cannot be increased past 10%)

Admin Checks: Fortification build rates for building fortifications greater than 3 can be divided by 2 if a leader admin check fails.

Terrain: In a swamp hex, these values are reduced by .25 (and the maximum fortification level in a swamp hex is 3). In clear terrain, the speed of constructing a level 1 fortification is doubled to 6.

Weather affects the construction values as:

- Light Mud/Light Snow - x .75
- Snow - x .5
- Heavy Mud/Heavy Snow - x .33

Unit mode: A unit in static mode has their construction value multiplied by 1.1.

Proximity to the enemy: Any ground elements in the unit that are not engineer or construction types have their construction value divided by five when adjacent to an enemy unit.

Supply Levels: Construction values are also reduced based on the supply level of the unit. In no event will they be reduced below 20 percent of normal due to supply level.

20.2.2. SUPPORT UNIT CONSTRUCTION VALUES

Any attached Support Units will have their construction value shown separately but this will be added to the overall construction value of the unit(s).

Using the example above, the 635th Pioneer Battalion has been added to the Infantry Division. In turn this will add 12 Construction Points to any fortification building:

635th Pioneer Battalion
 880 0 0 Wins : 1 Losses : 2

II
 1-0

READY
 ● 0 ✕ 50

Combat Value 0.68 / 0.46
 TOE 77 / 81
 MAX TOE 100

HHQ 17th ID.*

Morale 80 (85)
 Nation Germany

Supply/Need 5 / 9
 Fuel/Need 7 / 10
 Ammo/Need 12 / 16
 Support/Need 33 / 16

Construction Value 12
 Transport Cost 400

Vehicles/Need 106 / 105
 MOTORIZED
 Supply status In Supply

SUPPLY DETAILS
 DISBAND UNIT

Elements			Assigned (0)		
EXP	RDY	DAM	GROUND ELEMENT	FAT	
80	21	1	Pioneer Squad 39	0	
80	33	0	Support	0	

Construction and engineer support units attached to headquarters units in the combat unit's chain of command can assist those combat units in constructing fort levels if the applicable headquarters unit passes a leader admin

XIII Corps
 Hans-Gustav Felber Wins : 24 Losses : 3

XXX
 HC 0-30

13 K
 A

SET COLOR

Elements Assigned (10)

4th Army

ASSIGN SUPPORT UNITS

Infantry (8)

- 17th Infantry Division
- 1/131st Infantry Division
- 1/167th Infantry Division
- 258th Infantry Division
- 263rd Infantry Division
- 3/268th Infantry Division
- 3/167th Infantry Division
- 2/59th Infantry Division

Construction (2)

- 9th Construction Battalion
- 134th Construction Battalion

TOE 98 / 99
 MAX TOE 100

HHQ 4th Army
 OHQ Army Group Center

Morale 80 (75)
 Nation Germany

Supply/Need 31 / 51
 Fuel/Need 22 / 37
 Ammo/Need 0 / 0
 Support/Need 226 / 12

Transport Cost 1685

Vehicles/Need 256 / 246
 MOTORIZED
 Supply status In Supply
 Withdraw 186WE

check. Units can draw help from support units in any HQ up the chain of command, out to a range of 20 hexes for High Command HQs, 15 hexes for Army Group HQs, 10 hexes for Army HQs and 5 hexes for Corps HQs.

Keeping with the same example, the division reports to the XIII Corps and that has 2 Construction battalions attached. These can be used to support the construction of fortifications by any unit in the same command.

Each eligible support unit may assist the fort level building of no more than one combat unit per turn.

20.2.3. CIVILIAN POPULATION ASSISTANCE

Town, city and urban hexes can use their population as civilian labour to help construct fortification levels to a maximum of 8 hexes if a supplied enemy unit is within 25 hexes. This range is partly dependent on the size of the population and only large cities will send out civilian labour more than a few hexes.

For Axis controlled town, city, or urban hexes that are not of German nationality, a combat unit must be present in the town, city or urban hex as well as any other hexes where fortification levels are being constructed.

The town hex must have a population of at least two. Civilian labour can only assist the construction of fortification levels in hexes with combat units where the construction of fortification levels has already begun.

Each eligible town, city or urban hex will calculate a City Labour Value (CLV) based on the population of the hex divided by eight (divided by twelve if not German or Soviet nationality), rounded down. In either case, the CLV can never exceed eight.

The town, city or urban hex will form labour teams with a construction value equal to the CLV times five, with a minimum construction value of five (for German or Soviet nationality cities, the CLV is multiplied by twenty and the minimum value is 20).

The maximum number of labour teams that may be formed is equal to the CLV of the city, with a minimum of at least one team, and only 1 team may be sent to any given hex. These teams may help in fortification level construction in hexes that are within the CLV number of hexes from the town, city or urban hex. The hexes nearest to enemy units will tend to get the help first.

The construction value of the labour team is modified in the same way as combat and support units are modified by fortification level, terrain and weather to determine the net construction points provided to a hex they are assisting.

In addition, if there are no enemy units within twelve hexes of the city, the construction value of each team is divided by four.

A hex may receive labour teams from more than one town, city or urban hex per turn. The population may become damaged from participating in fortification level construction.

For example, Koenigsberg with a German population of 17 has a CLV of 2 (17/8 rounded down). This means Koenigsberg will send out labour teams to hexes up to 2 hexes away from the city hex as soon as there is an enemy unit within 25 hexes. Each team will have a basic construction value of 40 (2x20). Up to 2 different hexes may receive help per turn. If no enemy unit was within 12 hexes of Koenigsberg (but there was an enemy unit within 25 hexes), each labour team would have a reduced construction value of 10 (40/4).

Koenigsberg

Nation: Germany	Supply: 425
Player: Axis	Fuel: 192
Population: 17	Oil: 0
	Resource: 0

NUM	DAM	DEL	FACTORY TYPE
1	0	0	Armaments Production
4	0	0	Port
3	0	0	Railyard
17	0	0	Manpower
3	0	0	Heavy Industry



City labour may also continue to build up the fortification level of an unoccupied hex as long as the hex has some construction already underway, however, fortification level decay (20.3) may more than offset any additional fortification construction done by the city labour.

20.2.4. CONSTRUCTION POINTS

It requires fifty Construction Points to build each fortification level.

In effect, apart from in the most adverse of circumstances a division will usually be able to build a level 1 fortification in a single turn. A broken down German regiment will probably need 2 turns but this might be completed in one turn if a support unit is provided by a suitable HQ.

Any individual unit may never provide more than fifty construction points per turn (after modifications) to the construction of a hex.

In addition, a single hex can only gain fifty net construction points of fortification level per turn. For example a hex that currently is at fortification level two with fifteen percent towards fortification level three constructed, would be limited to building up to no more than fortification level three with fifteen percent towards fortification level four.

20.2.5. SUPPLY COSTS

The supply costs for fortification construction are as follows:

- Fortification 0->1: Nil
- Fortification 1->2: 2 tons per construction point (no cost for isolated units, construction rate is halved)
- Fortification 2->3: 20 tons per construction point
- Fortification 3->4: 200 tons per construction point
- Fortification 4->5: 2000 tons per construction point

Supplies are taken from a unit building the fortifications (but the unit will always retain 33% of its needs) and nearby towns. If this is not sufficient, it will be drawn from the depot network.

20.3. FORTIFICATION LIMITS, DECAY AND DESTRUCTION

20.3.1. LIMITS ON FORTIFICATION LEVELS

Different Fortification Levels have particular requirements and constraints:

- Fortification Level 5: Cannot be built during the game.
- Fortification Level 4: Must have a fort unit in the hex and the hex must either be City/Urban/Heavy Urban terrain or contain a port (of any size). Once built, no unit is not needed to keep the level 4 fortification.
- Fortification Levels 2 or 3: Must either be 1) adjacent to an enemy hex, or 2) a City/Urban/Heavy Urban terrain hex, or 3) contain a port (of any size), or 4) contain a fortified zone unit in the hex. Once the level 3 is reached, the condition does not have to continue to be met to keep the level 3 fortification.
- Fortification Level 1: Must be within 20 hexes of an enemy controlled hex.

If a hex meets the requirement to build to a given level, it need no longer meet the requirements of the lower levels in order to build to the lower level (i.e. a hex that qualifies for level 3 only needs to meet the Level 3 requirements in order to build to level 1, 2 or 3).

Fortification levels that have reached their maximum fortification level for the hex may continue to build up to 10 percent towards the next fortification level. So, 'Level 5 fortifications may continue to build up to 10 percent over level 5. This allows them to take some damage and still remain at Level 5.

20.3.2. FORTIFICATION DECAY

Once a fortification level is constructed, it will start to decay if the hex is not occupied by a combat unit or a city fort (with or without units inside). The chance that the fortification will decay increases as the fortification level decreases.

Depleted and Routed units will not prevent fortification decay.

Level 4 and 5 fortification levels and fortification levels on coastal hexes do not decay.

There is no fortification decay on turn 1 of any scenario.

Decay for level 0-2 fortifications may be greater due to weather conditions as follows:

Fortification Level	GROUND WEATHER AND ADDED DECAY		
	Clear	Light Mud/Light Snow/Snow	Heavy Mud/Heavy Snow
0	20%	40%	80%
1	12%	14%	48%
2	4%	8%	16%

20.3.3. FORT DESTRUCTION

The fort level of a hex is set to zero whenever the control of a hex changes sides.

During an attack a fort may be partially or fully destroyed (with a corresponding effect on the defender's CV). This can happen due to the numbers of engineers, artillery, and overall size of the attacking force. If any of these factors have reduced the fortification value it will be shown in the battle report with an indicator of how much damage they did.

In the screenshot below, a German attack was supported by sufficient combat engineering assets to degrade the defender's fortifications even before the close combat began.

In the lower screenshot, a hasty German attack tried to dislodge a Soviet rifle brigade. Although the attack failed, the fortification level was reduced by 1, leaving the Soviet unit vulnerable if another attack occurs.

For the overall size to have had an impact then the battle must close to 50 yards in order for there to be a chance of a fort reduction.

20.4. FORTIFICATIONS AND COMBAT

Each fortification level modifies the defensive combat CV of any units in the hex (23.8.7). This will influence both the CV shown before combat starts and after the fighting is complete (so in the second example above, the Soviet brigade still gained some benefit from the remaining fortifications).

20.4.1. ARTILLERY AND FORT LEVELS

To better simulate the ability to pre-register fire locations, the effectiveness of the Defender's artillery fire is related to the fort level of the hex containing the firing artillery. The higher the fort level, the more effective artillery in that hex will be in combat.

Due to their ability to participate in multiple battles, artillery support units attached to headquarters units do not receive any benefit from fort levels when committed to combat, so this benefit is limited to artillery organic to the combat units as well as artillery support units directly attached to fortified units.

1 of 1 Turn:12 Sep 7 1941 Gnd: Clear Air: Clear 249,179 Urban(Stalino) 0.07.26

ATTACKER Combat Value 421 => 1070	86482 -170 0 (0)	976 -2 0	0 0 0	6344 -8619 0	96 -198 0	0 0 0	DEFENDER Combat Value 135 => 3
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III Motorized Corps * E. von Mackensen
 44th Infantry Division (48)
 295th Infantry Division (59)
 - II/60th Heavy Cannon Battalion (2)
 - II/63rd sFH Heavy Howitzer Battalion (2)
 - 607th Howitzer Battalion (2)
 - 731st Gun Battalion (1)
 - 800th Gun Battalion (2)
 - I/814th Howitzer Battalion (1)

356.6 : 1
 284th Rifle Division SURRENDERED

STAVKA * G. Zhukov
 284th Rifle Division (135)

1 of 1 Turn:12 Sep 7 1941 Gnd: Clear Air: Clear 192,115 Heavy Woods 0.07.26

ATTACKER(H) Combat Value 31 => 23	17904 -63 3 (0)	207 -4 0	0 0 0	2249 -165 18	0 16 0	0 0 0	DEFENDER Combat Value 35 => 12
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XXVIII Corps * M. von Wiktorin
 122nd Infantry Division (29)
 - II/44th sFH Heavy Howitzer Battalion (0)
 - II/47th sFH Heavy Howitzer Battalion (0)
 - II/84th Howitzer Battalion (0)
 - 153rd Heavy Cannon Battalion (0)
 - 625th Gun Battalion (0)
 - 843rd sFH Heavy Howitzer Battalion (0)

1.9 : 1
 Defending Forces HELD

Neva OpGr Army * V. Konkov
 9th Naval Infantry Brigade (35)

20.4.2. FORT LEVEL AND AFV DAMAGE

There is a small chance that attacking AFV ground elements may become damaged during combat by mines. The probability of damage increases with the fort level, representing the higher density of minefields.

20.4.3. FORT LEVEL REDUCTION IN COMBAT

Fort levels can be reduced during combat if the attacking force contains combat engineer ground elements (e.g. Axis Pioneers, Finnish Combat Engineers or Soviet Assault Sapper Squad) participating in the battle and due to the impact of very heavy artillery guns. These units are collectively called Engineer or Mechanized Engineer squads.

This reduction can be fractional, i.e. it doesn't have to reduce a fort by one entire level, and it can just reduce a part of one level. Fractional reductions in fort levels take place in two percent increments. The more engineer ground elements participating, the better the chance for fort level reduction.

Engineer values are divided by the fort level when calculating their ability to reduce fort levels in combat. The chance of reducing fort levels is far greater in a deliberate attack, as engineer values are divided by four during a hasty attack and are reduced to zero if the hasty attack is changed to a scouting attack.

Fort level reduction caused by engineers can result in the reduction of the final defending modified combat value (23.8.7) with this seriously reducing the defensive CV applied in the final combat calculations.

In addition, if the attacking force is unable to force a retreat on the defender, but has a combat value ratio between 1:1 and 1:1.99, there is a chance that the defending fort level will be reduced up to one additional level, with fractional reductions once again possible. This additional one fort level reduction does not require engineer ground elements to occur, but the presence of engineers will increase the chances.

If all defending units are forced to retreat, then any fort levels in the hex are reduced to zero.

Artillery (especially Heavy Artillery) can also cause small fort reductions during combat.

In summary, the impact on fortifications of combat is:

- From artillery fire during fire combat, with heavy artillery weapons causing the greatest reduction. These reductions are generally small fractional reductions.
- If the attack was not halted, the full engineer value is applied prior to the odds calculation and may reduce the fort levels.

- Once the final combat odds and intensity level of the combat is calculated (defined by the unit size of the attacking force where a division equals 9 points but support units are not counted for this purpose), forts may be destroyed if; i. Odds are ≥ 1.5 or combat intensity is > 30 , in this case there is an automatic 50 point fort reduction (one full fort level reduction) and possibility of additional fort reduction based on the engineer value as above but with the engineer value divided by 2. ii. Odds are ≥ 1 and < 1.5 or combat intensity is higher than 15 then $1/4$ of engineer value attempts to reduce forts as above.

20.5. FORTIFIED UNITS

Fortified units are special combat units designed to supplement regular combat units by assisting in the construction of fortified hexes, helping to avoid the decay of fortification levels and adding additional support units to the defence of the hex it occupies. Fortified region units have zero movement points and can never move.

These include the pre-war Soviet Fortified Zones along the border and the old Stalin Line in the Ukraine as well as placed at some key port locations. In addition, it includes the various fortified units that both sides can build as the game progresses.

20.5.1. CREATING A FORTIFIED UNIT

Fortified units can be created through the expenditure of admin points by either player by selecting a hex and then



selecting the "Create fortified unit" button on the map information tab or by right clicking on any hex and selecting the 'create fortified unit' option.

Soviet Fortified Units cost 2 and are limited to a total of 40. German units cost 4 administrative points. If the German

player creates a fort in Hungary this will be of Hungarian nationality. If the fort is in Rumania, and Rumania has not yet surrendered, it will be of Rumanian nationality. If Rumania has surrendered to the Soviets then this fort will be German nationality.

Fortified units can directly attach up to three support units of any type (21.5).

The computer ignores the Admin Points for fortified unit building, but is not programmed to abuse this by building lots of fortified regions, it also faces the same absolute limit as the player(s).

20.5.2. TOE FOR FORTIFIED UNITS

Fortified units can set their Max TOE level to 1 if desired. Units with their Max TOE set below 50 will not receive a morale increase in the logistics phase.

Note that since Depleted units will not prevent a fort level from decaying, it is important to keep the actual TOE of a Fort unit over 10 percent in order for it to prevent fort level decay and it is suggested that Max TOE be set to at least 15 for fortified zone units.

Fort type units (Fortified Regions and Fortified Zones) will become depleted if isolated and not in a hex with a friendly combat unit. If they are depleted they may then surrender if an enemy units moves adjacent to them.

20.5.3. VALID LOCATIONS FOR FORTIFIED UNITS

Fortified zones can be placed in any friendly controlled hex, with the exception that Players may not build Fortified units in a hex next to an enemy combat unit unless that hex is also occupied by a friendly combat unit. Axis and Soviets fortified regions will be German and Soviet nationality respectively.

20.5.4. DISBANDING FORTIFIED UNITS

Fortified units can be disbanded like any other unit, with the exception that they do not need to be three hexes away from enemy units.

20.6. CITY FORTS

To reflect the ability of both the Germans and Soviets to defend urban terrain, WiTE2 relaxes the normal stacking rules in urban and port hexes.

Kursk Fortified Region
 90,552 1,357 16 Wins: 0 Losses: 0

REFIT: 0 / 0

Combat Value: 58.38/660.01
 TOE: 100/100
 MAX TOE: 100

HQ: STAVKA

Morale: 44 (50)
 Nation: Soviet Union

Supply/Need: 0 / 0
 Fuel/Need: 0 / 0
 Ammo/Need: 0 / 0
 Support/Need: 0 / 0

Construction Value: 0
 Transport Cost: 0 / 0

Vehicles/Need: 0 / 0
 Supply status: NON-MOTORIZED (0)
 In Supply

SUPPLY DETAILS
 MERGE UNIT

Elements Assigned (0)

Units Attached 6 / 10 Stacking 60 / 100

1st Motorized Rifle Division	3rd Shock Army	9
2nd Guards Rifle Division	3rd Shock Army	9
8th Guards Rifle Division	3rd Shock Army	9
3rd Guards Rifle Corps	3rd Shock Army	15 <detach>
9th Guards Rifle Division	3rd Shock Army	9
298th Rifle Division	21st Army	9

This shows a city fort in the Soviet city of Kursk. In this case 5 divisions and a Rifle Corps are now present in the city creating an impressive defensive force. This bundle of units only takes up one stacking slot (21.12) so two other Soviet units could also be in the hex.

These units do not create additional fortification levels but do make capturing well defended hexes more difficult.

A "City Fort" is a notional unit that allows players to stack more combat and HQ units in any city or port hexes. The only units not allowed in a City Fort are High Command HQs, FBD/NKPS rail repair units and Fortified Zones.

20.6.1. CREATION

To create one, you must select a unit in or adjacent to the urban/port hex (other than a High Command HQ) where you want to create the City Fort (currently named Fortress for Axis and Fortified Region for Soviets). On the right unit bar you will see a button on the unit that says City Fort. Clicking on this button will pop up to allow you to attach the unit to an existing City Fort within 1 hex and/or to create a new City Fort in a potential location within 1 hex of the unit.

City Forts can only be created in friendly national hexes, so the Soviets can only build them within the 1941 boundaries of the Soviet Union and the Axis can only build them in regions owned by, or allied to Germany, on 21 June 1941.

Note that some scenarios have at-start city forts that breach this rule but no new ones can be created outside these areas.

To create a city fort (this shows how to build the one shown above), any unit in the city or adjacent should be selected and then click on the city fort option:



This will then see the two pop-ups below appear. This tells you that this will build a new city fort in Kursk (some hex locations may be adjacent to more than one eligible city) and that it will cost you 10 Admin Points. If you confirm, then the fort will be built.



If you click on other units (in that hex or adjacent) then you now have the option to add them to the existing Kursk fortified region (which was originally the 3rd Guards Rifle Corps). Note this costs no administrative points.

Any unit assigned to the fort can be removed and when the last one is redeployed the fort will cease to exist.

20.6.2. EFFECT

If you create a new City Fort the unit will immediately attach itself to the City Fort. The City Fort can't move or attack, but it acts like an on map

combat unit with all attached combat units participating in combat (including units attached to the combat units and any support units that commit to the battle from HQs contained in the City Fort or from HQs outside the fort helping combat units in the fort). The City Fort counter has its own symbol (34.2), and uses a xxx for size. On the unit bar it always shows the Defense CV - 0 MPs as it is a purely defensive unit.

In effect, the on-map City Fort counter is a container that allows additional combat and HQ units into the fort. You can view the units in the fort by going to the city fort unit detail screen and looking at the fort's elements tab. From this tab, you can detach units from the fort, in which case they appear on map in the hex or an adjacent hex where space is available.

Each city fort can attach up to 10 on map ground units (combat and/or HQ) of up to 100 stacking point limit (where corps=15, division =9, brigade=5, regiment=3, HQ and support units=0). City fortress unit can exist on the map without any unit attached. However, they will be destroyed if an enemy unit is adjacent to them and they contain no combat units with a valid CV value (i.e. HQs/support units and depleted units don't count).

Units in a city fort will gain 16 CPP per turn.

20.6.3. ENTERING AND LEAVING

Units that have moved in the turn are unable to either create or move into a city fort.

Units that leave a city fort will have a reduced MP but full SMP (i.e. 200).

20.6.4. CITY FORTS AND FORTIFICATION UNITS

You cannot build a fortification unit (20.5) in a hex with a city fort. However, it is possible to create a city fort in a hex that already has a fortification unit.

A city fort will prevent fortification decay (20.3.2) but will not build fortifications unless at least one non-depleted, non-routed unit is within the fort.



21. GROUND UNITS

Focus: This section explains the nature of Ground Units in WiTE2 and the role of HQs and leaders.

Key Points:

- Differences between Combat and Support Units
- How the Table of Equipment affects the composition of the ground elements that make up a unit
- The role of Support Squads
- How to attach and detach Support Units
- Different Types of HQ and how they influence the performance of combat units



21.1. TYPES OF GROUND UNITS

Ground units consist of combat, headquarters, support, and multi-role units.

Combat (CU) and headquarters (HQ) units are deployed as on-map units. Support units (SU) are attached to headquarter and eligible combat units and are normally off-map. In addition some units can be treated as either Combat Units (i.e. on map) or Support Units (off map). These are described as Multi-Role Units (MRU).

Ground units are either motorized or non-motorized. Motorized and Non-Motorized Units are treated in different ways in terms of tactical movement and supply. Motorized units use vehicles and fuel for tactical movement, combat, and supply, while non-motorized units have far fewer vehicles and depend on supplies for tactical movement and supply. Players can verify whether a unit is motorized or non-motorized on the right hand side of the applicable unit detail window. There are four types of non-

READY	⊗ 100
Combat Value	0.23/0.10
TOE	46/46
MAX TOE	100
HHQ	OKH
Morale	71 (75)
Nation	Germany
Supply/Need	6 / 6
Fuel/Need	0 / 0
Ammo/Need	20 / 20
Support/Need	18 / 6
Construction Value	1
Transport Cost	97 / 48
Vehicles/Need	0 / 0
NON-MOTORIZED (0)	
Supply status	In Supply

REFIT	⊗ 60
Combat Value	1.80/3.02
TOE	77/89
MAX TOE	100
HHQ	41st Army
OHQ	Voronezh Front
Morale	60 (55)
Nation	Soviet Union
Supply/Need	41 / 50
Fuel/Need	6 / 4
Ammo/Need	68 / 95
Support/Need	111 / 96
Construction Value	10
Transport Cost	1519 / 726
Vehicles/Need	24 / 19
NON-MOTORIZED (1)	
Supply status	In Supply

REFIT	⊗ 49
Combat Value	2.31/2.09
TOE	85/98
MAX TOE	100
HHQ	1st Shock Army
OHQ	Bryansk Front
Morale	59 (55)
Nation	Soviet Union
Supply/Need	59 / 67
Fuel/Need	139 / 236
Ammo/Need	75 / 198
Support/Need	256 / 301
Construction Value	3
Transport Cost	7866
Vehicles/Need	1203 / 1028
MOTORIZED	
Supply status	In Supply

REFIT	⊗ 0
Combat Value	0.56/0.56
TOE	94/94
MAX TOE	100
Morale	70 (75)
Nation	Germany
Supply/Need	76 / 74
Fuel/Need	13 / 19
Ammo/Need	301 / 348
Support/Need	150 / 102
Construction Value	0
Transport Cost	1528 / 675
Vehicles/Need	66 / 130
NON-MOTORIZED (4)	
Supply status	In Supply

motorized units based on their relative mobility and the use of vehicles by ground elements:

- 0 – no vehicles (1)
- 1 – vehicles for supplies only
- 2 – vehicles for supplies and all non-infantry, non-infantry weapon elements
- 4 – Railroad Anti-aircraft (Flak) (2)

Notes

(1) For anti-aircraft units, non-motorized 0 represent fixed/immobile flak emplacements like Flak Towers.

(2) Can only move through non-damaged rail line hexes

Motorized units are either designated as permanently motorized or are non-motorized units that have been allocated additional trucks. Non-motorized units are divided between cavalry and infantry formations for movement purposes (22.1).

All ground units consist of a certain type and number of ground elements and have a Table of Equipment (TOE) that determines the number and type of ground elements required for the unit to be fully manned and equipped. For most units in WiTE2 this TOE will change across the course of the game,

All ground units have a combat value (CV). Depending on the unit type, its current percentage of TOE and status this value may be zero.

Typically this will happen if the unit is currently routed (23.12.5) or if the combination of low morale and low percentage of TOE is such that it is treated as depleted (21.9.1).

21.2. GROUND ELEMENTS AND TABLES OF EQUIPMENT (TOE)

21.2.1. GROUND ELEMENTS

All ground units are composed of multiple types and numbers of ground elements. These ground elements represent individual squads, guns, AFVs, and other combat vehicles such as halftracks and armoured cars. Every ground element consists of manpower and equipment (such as a tank and its crew).

Each ground element is rated for speed, size and armour. Only AFVs and other combat vehicles have an armour rating with this reflecting front, side, rear and top armour as appropriate.

Ground elements are equipped with devices that represent the actual weapons they would fire (or throw/emplace for devices such as grenades and satchel charges) during combat.

For AFV and combat vehicles, the equipped devices are considered part of the vehicle and may have their rate of fire modified to reflect the restrictions of operating the device inside the vehicle. The manpower that is part of the AFV or combat vehicle ground element is inside the vehicle operating it and employing the equipped devices.

So while a given weapon system has some notional capabilities it may be lower in practice when assigned to a particular tank or vehicle. As an example, the Soviet 152mm gun is less effective mounted on a KV-2 than on a late war ISU-152.

For other types of ground elements, the manpower employs the equipped devices directly, whether the device is a 150mm Howitzer or a hand grenade.

Large (20mm or greater) direct fire devices may have a positive modifier that increases the accuracy of the device to reflect both a more stable firing platform and superior optics.

Each device is rated for range, accuracy, rate of fire, ability to affect different types of targets (air, personnel, vehicles), and ability to penetrate armour.

105mm Howitzer		Artillery					
Nation: Germany		Type: Artillery					
Men:	8	Front Armor:	0				
Speed:	0	Side Armor:	0				
Size:	1	Top Armor:	0				
Load Cost:	2	First Year:	1936				
Fuel Use:	6	First Month:	1				
Ammo Use:	252	Last Year:	1941				
Reliability:	0	Last Month:	12				
Build Cost:	42						
Pool (GE):	369						
DEVICE		AMM	ROF	ACC	RGE	vMAN	vARM
1 x 105mm leFH18 Howitzer		70	7	1000	12000	172	92
8 x 7.92mm Kar 98k Rifle		35	5	250	550	8	0

Note this information can also be accessed from the Commander's Report (35.8)

21.2.2. SUPPORT SQUADS

A significant number of ground elements in all units are support squads, which provide the administrative and logistical backbone required for a unit to operate effectively.

Note that, despite the similarity in name, support squads and support units are different entities.

Each unit has a notional TOE for support squad ground elements but the actual requirement for support squads, listed by 'NEED' in the unit's detail window, is based on the current strength, and type, of the unit. This need is recalculated during each logistics phase and, if appropriate, during the air phase and when units motorize/de-motorize or if they change to/from Static mode.

For the Axis side, if losses to the rest of the unit result in excess support squads, some may be converted to rifle squad ground elements or returned to the manpower pool during the replacement phase

1/26th Infantry Division^W
 Wins: 3 Losses: 2

DEPLETED: 9 / 0

Combat Value: ROUTED
 TOE: 3/39
 MAX TOE: 100

HHQ: V Corps
 OHQ: Army Group North

Morale: 75 (75)
 Nation: Germany

Supply/Need: 42 / 51
 Fuel/Need: 3 / 4
 Ammo/Need: 49 / 35
 Support/Need: 155 / 51

Construction Value: 9
 Transport Cost: 755 / 329

Vehicles/Need: 37 / 31
 NON-MOTORIZED (1)
 Supply status: In Supply
 Withdraw: 170WE

Elements		Assigned (0)		
EXP	RDY	DAM	GROUND ELEMENT	FAT
78	0	0	SikFs-221 Armored Car	0
75	1	38	Rifle Squad 40	10
76	0	4	Pioneer Squad 39	8
78	0	3	Bicycle Recon Squad 40	7
78	0	6	Cavalry Squad	8
77	4	17	7.92mm Anti-tank Rifle	12
78	1	17	7.92mm Machine Gun	13
78	2	8	50mm Mortar	13
78	0	8	81mm Mortar	7
78	0	1	37mm Anti-tank Gun	8
78	0	1	50mm Anti-tank Gun	8
78	0	0	105mm Howitzer	9
78	3	0	150mm Howitzer	13
78	1	0	150mm Infantry Gun	13
78	0	0	75mm Infantry Gun	0
78	155	8	Support	9

This German infantry regiment has been heavily defeated in a localised Soviet offensive. As it only has 1 undamaged rifle squad, it is possible that some of its support squads will be converted in the next turn.

The unit detail screen Support/Need for non-HQs shows the support received during the last logistics phase

(including organic support and HQ support help) and the need during the last logistics phase. Specific information on the HQ unit detail screen regarding support help includes:

- Total Support: Total support used (organic plus HQ help) by units in the chain of command under this HQ during last logistics phase.
- Organic Support: Total available support squads in units in the chain of command under this HQ during last log phase.
- Total Support Need: Total support needed by units in the chain of command under this HQ during last log phase.

XX Corps
 Friedrich Materna
 Wins: 18 Losses: 5

XXX HQ 0-46

20K A

SET COLOR
 SUPPLY DETAILS

Elements Assigned (13)

EXP	RDY	DAM	GROUND ELEMENT	FAT
80	247	3	Support	0

TOE: 98/100
 MAX TOE: 100

HHQ: 9th Army
 OHQ: Army Group North

Morale: 80 (75)
 Nation: Germany

Supply/Need: 44 / 52
 Fuel/Need: 34 / 37
 Ammo/Need: 0 / 0
 Support/Need: 51 / 14

Transport Cost: 4447

Vehicles/Need: 255 / 247
 MOTORIZED
 Supply status: In Supply

Support Level: ++ LOCKED --

Total Support	1923
Organic Support	1729
Total Support Need	1801

SUPPLY PRIORITY (3)
 SHOW SUBORDINATES (CR)
 RELOCATE UNIT
 DISBAND UNIT

In this case, the units that report to the XX Corps have sufficient support squads either organic (i.e. in the units) or sent by appropriate HQs.

By contrast, a typical Soviet HQ at the same stage of the game (August 1941) lacks the support squads to cover all its needs.

A unit that lacks Support Squads will try to make up for the lack by drawing on any spare support squads in its controlling HQ. However, the headquarters unit must be within a certain distance from the attached unit in order to do this. This distance, termed "Command Range," is measured in hexes and is based on the type of headquarters unit (15.5.4). Any headquarters unit in a unit's chain of command that is in command range can provide support with its excess support squad ground elements.

HQ's will provide support help to units as long as they are within the command range of the HQ (5 for corps, 15 for army, 45 for Army Group and 90 for high level HQs).

24th ArmyW
Georgy Zakharov

Wins : 1 Losses : 15

XXXX
HO
0-50

TRANSFER UNIT
SUPPLY PRIORITY (3)
SHOW SUBORDINATES (CR)
RELOCATE UNIT

SET COLOR
SUPPLY DETAILS

Elements		Assigned (18)		
EXP	RDY	DAM	GROUND ELEMENT	FAT
50	72	0	Support	0

Support Level ++ LOCKED --

Total Support 2098
Organic Support 1885
Total Support Need 2346

TOE 39/39
MAX TOE 100

HHQ Western Front

Morale 50 (50)
Nation Soviet Union

Supply/Need 13 / 12
Fuel/Need 13 / 10
Ammo/Need 0 / 0
Support/Need 2 / 2

Transport Cost 7081

Vehicles/Need 79 / 72
MOTORIZED
Supply status In Supply

During the logistics phase, support from HQ units is passed down from HQs.

When viewing an HQ's own unit detail screen, the Support/Need numbers shown are the number of support squads the HQ used for itself versus the need it had in the last logistics phase.

This provision of support occurs automatically during the phasing players logistics phase. To provide support help, an HQ unit must be able to trace a land path to the unit being supported. The exception is that a non-isolated HQ unit may send support up to 3 hexes to a non-isolated unit no matter the terrain (i.e. may go through water/impassable hexes).

A HQ will always satisfy its own need before using any of its support squads to help units under it. If the Support value shown is higher than the need, then it means the HQ had excess support that it did not give out to units. HQs whose support equals its need, have given out all their support squads as help and there are probably units in the chain of command that are short of help.

A HQ unit has two different calculations of the number of support squads and how many it needs for its own purposes.

If a HQ unit has fewer support squads than its 'NEED' its leader will not gain certain bonuses when trying to pass admin checks (15.5.1).

A headquarters unit can provide assistance to its attached units' support squad needs using excess internal support squad ground elements,

Note: Use the command range for the type of HQ unit involved, however, for purposes of Leader checks, any

check of an air command HQ leader will treat the range to the HQ unit as 0 if it is less than 91 hexes to the HQ.

21.2.3. IMPACT OF SUPPORT SQUADS ON UNIT PERFORMANCE

The level of logistics support provided by Support Squads has an impact on the following:

- Impacts the formulas that determine the amount of supply a unit receives based on its supply trace.
- Attrition suffered by vehicles during freight operations.
- The amount of fatigue added or removed from a unit during a turn.
- The ability of leaders to conduct successful administrative checks; and
- The amount of attrition a unit suffers due to movement.

21.2.4. HIWIS

The Axis player will gain additional manpower from 1942 to fill out the support and labour squads by recruiting Hilfswilliger (auxiliary volunteers, also known as Hiwis). These were soldiers and civilians, mostly Russian prisoners, who served as support personnel for German units during WWII. Generated from captured manpower, Hiwi ground elements are equivalent to support squad ground elements and provide the same amount of support and engineer values as a normal support squad.

This Axis generic manpower is generated from Soviet captured manpower (8% each turn) and from captured Soviet city manpower (3 manpower points per factory and production multiplier applies to this calculation).

Hiwis can only fill out a given percentage of Axis generic elements:

- Labour - 70%
- Support in Axis SS Elite - 10%
- Support - 30%

21.2.5. TABLE OF EQUIPMENT (TOE)

The Table of Equipment is a vital part of WITE2 as it determines the type and number of ground elements that will be assigned to that particular Combat or Support Unit.

Each unit in WITE2 in effect has three different types of TOE:

The **generic TOE** lists the ground elements the unit should contain, this will specify for example that the unit needs x medium tanks but not the actual models to be assigned. Note that different apparently similar units can be assigned to different generic TOEs, so for example

some German Panzer divisions in 1941 will be assigned to the Czech TOE rather than the Standard TOE.

This information can be found in the 'OB' column of the Commander's Report as:

Unit Name	Size	OB	HHQ
1st Panzer Division	XX	41 2 x PzG Bn Panzer Division	XXXXI Motorized Corps
6th Panzer Division	XX	41 Czech Panzer Division	XXXXI Motorized Corps
8th Panzer Division	XX	41 Czech Panzer Division	LVI Motorized Corps
13th Panzer Division	XX	41 Standard Panzer Division	III Motorized Corps
14th Panzer Division	XX	41 No PzG Bn Panzer Division	III Motorized Corps
9th Panzer Division	XX	41 Standard Panzer Division	XIV Motorized Corps
16th Panzer Division	XX	41 No PzG Bn Panzer Division	XIV Motorized Corps
11th Panzer Division	XX	41 Standard Panzer Division	XXXXVIII Motorized Corps
1st Rum. Armored Division	XX	41 Rum. Armored Division	Cavalry Rum. Corps
3rd Panzer Division	XX	41 Standard Panzer Division	XXIV Motorized Corps
4th Panzer Division	XX	41 Standard Panzer Division	XXIV Motorized Corps
10th Panzer Division	XX	41 1 x PzG Bn Panzer Division	XXXXVI Motorized Corps
17th Panzer Division	XX	41 Standard Panzer Division	XXXXVII Motorized Corps
18th Panzer Division	XX	41 Standard Panzer Division	XXXXVII Motorized Corps
7th Panzer Division	XX	41 Czech Panzer Division	XXXXIX Motorized Corps
20th Panzer Division	XX	41 Czech Panzer Division	XXXXIX Motorized Corps
12th Panzer Division	XX	41 Czech Panzer Division	LVII Motorized Corps
19th Panzer Division	XX	41 No PzG Bn Panzer Division	LVII Motorized Corps

In turn the ideal TOE for that unit type will show as:

This generic TOE is used to derive the **prescribed TOE** for that unit, referred to as TOE (OB), and this lists the actual ground elements needed. This will indicate the actual tank or artillery model needed to fill out the requirements of the generic TOE.

TOE	
41 Czech Panzer Division	
num	ground element
14	Armored Car
12	Light Armored Car
99	Motor-Inf Squad
39	Engineer Squad
9	Mech-Inf Squad
9	Mech-Engr Squad
33	Motorcycle Squad
52	Infantry-AT
74	Machinegun
4	Mech MG Section
48	Light Mortar
28	Mortar
48	AT Gun
36	Artillery
4	Heavy Infantry Gun
20	Infantry Gun
1	HT AT-Gun
2	HT Mor
6	SP Inf-Gun
109	Light Tank
167	Medium Tank
30	CS Tank
559	Support

men: 15996

Current TOE(OB)	
41 Czech Panzer Division	
num	ground element
99	Motorized Rifle Squad (+)
9	Panzer Grenadier Squad 40
39	Pioneer Squad 39
9	Panzer Pioneer Squad 40
33	Motorcycle Squad
74	7.92mm Machine Gun
52	7.92mm Anti-tank Rifle
48	50mm Mortar
28	81mm Mortar
2	Sdkfz-251/2 Mortar Carrier
20	75mm Infantry Gun
4	150mm Infantry Gun
30	37mm Anti-tank Gun
18	50mm Anti-tank Gun
24	105mm Howitzer
12	150mm Howitzer
4	Panzer Heavy MG Section
1	Sdkfz-251/10 Halftrack
6	Sdkfz-231 Armored Car
8	Sdkfz-221 Armored Car
8	Sdkfz-222 Armored Car
4	Sdkfz-223B Armored Car
55	Panzer III
167	Panzer 35(t)
30	Panzer IV
54	Panzer Ib
6	sIG33
559	Support

In turn, each unit has a current TOE which will often differ from the notional TOE to reflect both losses and the allocation of different elements to fill out slots in the specific TOE.

TOE		UNIT	
41 Czech Panzer Division		8th Panzer Division	
num	ground element	num	pct
14	Armored Car	14	100%
12	Light Armored Car	19	158%
99	Motor-Inf Squad	99	100%
39	Engineer Squad	39	100%
9	Mech-Inf Squad	9	100%
9	Mech-Engr Squad	9	100%
33	Motorcycle Squad	33	100%
52	Infantry-AT	52	100%
74	Machinegun	74	100%
4	Mech MG Section	4	100%
48	Light Mortar	48	100%
28	Mortar	28	100%
48	AT Gun	48	100%
36	Artillery	36	100%
4	Heavy Infantry Gun	4	100%
20	Infantry Gun	20	100%
1	HT AT-Gun	1	100%
2	HT Mor	2	100%
6	SP Inf-Gun	0	0%
109	Light Tank	49	44%
167	Medium Tank	118	70%
30	CS Tank	30	100%
559	Support	559	100%

In turn, if the 'Show Ground Unit Mapping' option is selected then the actual way in which the current TOE is built up will be shown. This will also show where the unit is using a non-standard ground element in order to maintain its combat performance.

The computer will use a unit's actual TOE as compared to its notional TOE to determine what ground elements will be provided as replacements during the logistics phase. The actual TOE of a unit will often not match its current prescribed TOE. This can be for numerous reasons, including losses, unavailability of replacements, transition to an upgraded TOE or even a downgrade of specific ground element types due to a surplus of old equipment and a lack of new equipment.

The number of men listed in the unit detail window showing the actual TOE (OB) does not include the manpower in support units that are attached to the unit.

On the unit TOE screen, in the unit's actual TOE, substituted elements appear with an * sign. Thus while the TOE (OB) may specify exactly which type of tank should be used, it is quite possible for a given unit to be using different models (or types) of tank if they fill a similar role.

TOE		UNIT	
41 Czech Panzer Division		8th Panzer Division	
num	ground element	num	pct
33	motorcycle squad	33	motorcycle squad
52	Infantry-AT	52	100%
52	7.92mm Anti-tank Rifle	52	7.92mm Anti-tank Rifle
74	Machinegun	74	100%
74	7.92mm Machine Gun	74	7.92mm Machine Gun
4	Mech MG Section	4	100%
4	Panzer Heavy MG Section	4	Panzer Heavy MG Section
48	Light Mortar	48	100%
48	50mm Mortar	48	50mm Mortar
28	Mortar	28	100%
28	81mm Mortar	28	81mm Mortar
48	AT Gun	48	100%
30	37mm Anti-tank Gun	30	37mm Anti-tank Gun
18	50mm Anti-tank Gun	18	50mm Anti-tank Gun
36	Artillery	36	100%
24	105mm Howitzer	24	105mm Howitzer
12	150mm Howitzer	12	150mm Howitzer
4	Heavy Infantry Gun	4	100%
4	150mm Infantry Gun	4	150mm Infantry Gun
20	Infantry Gun	20	100%
20	75mm Infantry Gun	20	75mm Infantry Gun
1	HT AT-Gun	1	100%
1	Sdkfz-251/10 Halftrack	1	Sdkfz-251/10 Halftrack
2	HT Mor	2	100%
2	Sdkfz-251/2 Mortar Carrier	2	Sdkfz-251/2 Mortar Carrier
6	SP Inf-Gun	0	0%
6	sIG33	0	sIG33
109	Light Tank	49	44%
55	Panzer IIf	5	Panzer IIa
54	Panzer Ib	44	Panzer IIc
167	Medium Tank	118	70%
167	Panzer 35(t)	118	Panzer 38(t)
30	CS Tank	30	100%
30	Panzer IVf	15	Panzer IVc
		15	Panzer IVe
559	Support	559	100%
559	Support	559	Support

If a unit is set to less than 100% of its TOE it will take on less equipment than its notional prescribed TOE requires.

21.2.6. TOE UPGRADES

The ground unit TOE s may change during the game, once the new TOE has been adopted elements will generally change gradually over a number of turns rather than all at once.

The chance of a unit adopting a new TOE is influenced by its mode and location.

- Units that are in the national reserve TB or on a National Supply Source (25.2.3) and that are in refit mode will change automatically to the new TOE.
- Units that are in refit mode elsewhere will have a 50% to update in the first possible turn.
- Units that are not in refit mode will have a 20% to update in the first possible turn.
- Units that are isolated have a 0% to update in the first possible turn.

Each month, after the initial month for the new TOE, these chances will increase by 5%. So, for example, a unit not in refit mode will have a 25% to upgrade in the second month, 30% in the third.

In any case, a unit will not change its TOE if it is more than ten hexes from a depot.

When a TOE upgrade occurs, ground elements will be sent back to the pool if there is none of the same generic type of ground element (i.e. AT-gun, Heavy Tank) in the new TOE. Otherwise they remain and this can cause some types to exceed 100 percent of the new TOE. A specific type of ground element is not eligible for additional replacements, however, until it falls below 100 percent of its prescribed allowance. In addition if a unit contains more than 125 percent of the TOE need of a specific ground element, there is a chance each turn that the unit will return some of the over-strength ground elements to the production pool.

In a few cases, the TOE upgrade for support units requires completely different equipment to that previously allocated. If this would leave the Support Unit depleted, it is automatically transferred to the National Reserve.

TOEs are segregated by type of unit and time of the war. For example, there is a prescribed panzer division TOE for every year. Not only are there separate TOEs for unit types (e.g. armour versus infantry) but separate TOEs even within types. For example, the elite SS divisions at times will have three different TOEs running simultaneously.

Players can view future upgrades by accessing a particular units TOE window.

Current TOE(OB)	TOE(OB) of December 1941
41 4th Wave Infantry Division	42 Infantry Division
num	ground element
num	ground element
324	Rifle Squad 40
36	Pioneer Squad 39
9	Cavalry Squad
24	Bicycle Recon Squad 40
112	7.92mm Machine Gun
90	7.92mm Anti-tank Rifle
87	50mm Mortar
54	81mm Mortar
20	75mm Infantry Gun
6	150mm Infantry Gun
67	37mm Anti-tank Gun
6	47mm Anti-tank Gun
36	105mm Howitzer
12	150mm Howitzer
544	Support
336	Rifle Squad 40
18	Cavalry Squad
36	Pioneer Squad 39
54	81mm Mortar
20	75mm Infantry Gun
6	150mm Infantry Gun
33	37mm Anti-tank Gun
30	50mm Anti-tank Gun
36	105mm Howitzer
12	150mm Howitzer
84	50mm Mortar
112	7.92mm Machine Gun
96	7.92mm Anti-tank Rifle
539	Support
men: 16941	men: 16773
OB#: 274	OB#: 262
	Upgrade in 24 turns
	Next TOE(OB) >>
	Switch to TOE display

21.2.7. GROUND ELEMENT UPGRADE/DOWNGRADE AND SWAPS

Ground elements may change to different ground elements of the same or a different type during the ground element segment of the player's logistics phase. In the upgrade sub-segment, the ground element may upgrade in accordance with its upgrade path as listed in the ground element detail window (37.6) and the city production list window (37.13). It may also downgrade to older equipment if this will fulfil its TOE needs. Many upgrades will remain within the same ground element type (e.g. Rifle Squad, Medium Tank, Heavy Artillery, etc.), but some will result in a change of type such as maybe using a Light Tank Destroyer in place of a Light Tank.

In the swap sub-segment, the computer may change out existing ground elements with ground elements of the same type, but not necessarily along the upgrade/downgrade path, though priority will be given to newer equipment. For example, a Panzer IVg is a medium tank ground element, which upgrades to the Panzer IVh and downgrades to the Panzer IVf2. In the swap sub-segment, however, Panzer IVg ground elements may be changed out to another medium tank, such as a Panzer IIIj L/60, depending on the availability of medium tank equipment in the production pool.

21.2.8. AFV AND COMBAT VEHICLE RELIABILITY

All AFV s and other combat vehicles are rated for their reliability. This is checked when they are moved, with those that fail the reliability check becoming damaged.

To reflect initial production "teething" problems, AFV/ Combat vehicle reliability will be less when they first come into production and then improve until they reach their standard reliability rating. The reliability rating of obsolete (out of production) aircraft is treated as higher than their normal reliability rating, which will make them more susceptible to attrition.

The reliability rating of an AFV is actually two different items.

The first digit represents the reliability of the AFV when moving (if only 1 digit is shown the 1st digit is assumed to be 0). The higher the number, the less likely the AFV will become damaged during movement.

The second digit is survivability, and the higher the survivability the less likely the AFV will be destroyed in combat during a special survival check as opposed to just being damaged.

Reliability can be checked on the ground element tab (37.6) as:



Panzer IVe



Nation: Germany
Type: CS Tank

Men: 5
Speed: 26
Size: 4

Load Cost: 23
Fuel Use: 59
Ammo Use: 174
Reliability: 6550

Build Cost: 265
Pool (GE): 10

Front Armor: 49
Side Armor: 34
Top Armor: 11

First Year: 1940
First Month: 9
Last Year: 1941
Last Month: 3

DEVICE	AMM	ROF	ACC	RGE	vMAN	vARM
1 x 75mm KwK37 L/24 Gun	80	12	500	2500	128	76
1 x 7.92mm MG34 CMG	1500	56	750	1500	59	0
1 x 7.92mm MG34 BMG	1200	56	500	1000	59	0

So in this case, the Pzr IVe has a reliability of 65 when moving and 50 when in combat.

By contrast, the notoriously unreliable Panther D has ratings of 45 and 40:



Panther D



Nation: Germany
Class: AFV
Type: Medium Tank

Start Date: 4-1943
End Date: 8-1943
Upgrade: -

75mm KwK42 L/70 Gun
medium gun

Men: 5

Load: 0
Effect: 0
Range: 4000
Accuracy: 500
Ceiling: 0
Rate of Fire: 14
Blast: 4

Anti-Air: 0
Anti-Soft: 68
Anti-Armor: 17
Penetration: 189
HEAT Pen: 0
HVAP Pen: 275

Speed: 29
Size: 5

Ammo Use: 182
Fuel Use: 92

Build Cost: 512
Build Limit: 39

Reliability: 4540

Front Armor: 122
Side Armor: 45
Top Armor: 21

This also shows two ways to access this information. The information for the Pzr IV was taken from a ground

unit tab while for the Panther came from the 'elements' tab on the Commander's Report (35.8.1).

21.2.9. ADJUSTING TO CHANGES IN TOE

If a unit exceeds the set TOE (either due to an upgrade or the player reducing the max TOE), then it will respond differently according to its location:

- Units in TBs other than the Reserve Boxes will immediately send back to the active pool any elements over 100% of TOE (note if the maximum TOE is under 100 then these elements will be removed in the next logistics phase).
- Units in the Reserve Boxes will immediately send back to the active pool any elements over their Maximum TOE.
- Units on the map will slowly send back to the active pool any elements over 100% of TOE.
- If a unit exceeds the maximum TOE due to being built from other units (such as a Soviet rifle corps from 3 rifle divisions) then the excess elements will be removed.

21.3. COMBAT UNITS (CU)

Combat units are the on-map battalion, regimental, brigade, divisional and Corps sized units that manoeuvre to take control of enemy territory and engage enemy units in battle. All combat units, unless they are routed or depleted, have a Combat Value (CV) and exert a Zone of Control (ZOC) into their six adjacent hexes (7.4). Combat units are the only ground units that can convert enemy controlled hexes to pending friendly hexes (7.3.1).

In addition, there are several types of combat units that have special characteristics or can perform specific missions. Non-motorized combat units can be transported by air between friendly air bases (22.5) and airborne units can be air dropped into another hex. Fortified Zones are immobile combat units that are used primarily to build fortification levels. Some combat units, including fortified zones and most divisions, can directly attach support units, and these are automatically committed to any battle the combat unit itself participates in.

21.3.1. TYPES OF COMBAT UNIT

Combat Units are divided into four main types: Motorized; Cavalry; Infantry and Fortified Zones.

Unit type affects the movement points the unit possibly can have (22.1) and the costs of movement and combat.

Combat Units can often have directly attached Support Units. Also divisional/corps sized CUs can be broken down into smaller (usually regimental) sized units. In addition, under-strength combat units can be merged with each other to create a stronger unit (at the cost of one administrative point). Note that Multi-Role units can be either on the map or attached to combat units, so a Soviet Rifle Brigade can be attached to a Soviet HQ or combat formation or placed on the map.

Combat units smaller than a division do not take control of hexes in their ZOC, just hexes that they move through (7.3.1).

21.3.2. COMBAT UNIT BUILD-UP, BREAKDOWN AND MERGING

Certain combat units can be built up into larger formations or broken down into smaller units.

Building Up units and merging units

In addition, an equivalent size or smaller combat unit can be merged into another combat unit of the same type, eliminating the former and strengthening the latter.

Units building up or merging must be in the same hex in movement mode. Unit build-up or breakdown is accomplished by selecting the unit(s) and then either left clicking the build-up/breakdown button on the map information tool bar or using the Hotkey-'b'. Breakdowns cannot exceed stacking limitations, so combat units can only breakdown if they are the only unit in the hex. Routed and frozen units cannot build-up, breakdown, or merge.

Note that units that will be withdrawn at a later stage cannot be combined using the build up routine. This is most likely to affect the creation of Soviet Corps sized formations or converting Soviet rifle brigades into rifle divisions.

338th Rifle Division
7,981 102



READY

● 13 ✕ 93

Combat Value	7.82/5.40
TOE	61/66
MAX TOE	100
HHQ 2nd Shock Army OHQ Southwestern Front	
Morale	49 (45)
Nation	Soviet Union
Supply/Need	109 / 89
Fuel/Need	4 / 5
Ammo/Need	124 / 130
Support/Need	177 / 170
Construction Value	5
Transport Cost	1521 / 696
Vehicles/Need	50 / 39
NON-MOTORIZED (1)	
Supply status	In Supply
Withdraw	204FE

Even though this unit will be withdrawn to the Far East at the end of the game it cannot be combined into a Soviet Rifle Corps. This restriction is removed if the player(s) opt to use the Enhanced Player Theatre Control option (13.3.4) as they then have more control over deployment to and from the various Theatres.

Soviet build up options include:

- Two Rifle Brigades can build up to form a Rifle Division
- From March 1942, 3 Soviet airborne brigades can build up to form a Guards Rifle Division

The rules for building up to form Corps are in section 27.5.5.

Unit Breakdown. Most Axis Divisions can breakdown into three regimental equivalent combat units numbered 1/2/3. The same three sub-units can be built back up into a division if they are in the same hex. Broken down divisions with regiments designated 1/2/3 may assign one support unit to each regiment. When the parent division is first broken down, any attached support units will be divided up one per regiment. If the parent division is reformed, all support units attached to the 1/2/3 regiments will once again be attached to the parent division.

When broken down, these regiments or brigades will be bordered in blue on the map area when one or more of the broken down units from the same larger unit has been selected.

Soviet divisions cannot be broken down and some Soviet Corps (Tank and Mechanised) will break down into three brigades while Soviet Rifle, Cavalry and Mountain Corps will break down into their component divisions. Since these units are initially formed from specific divisions they will break down into those original components.

Soviet Corps can then be rebuilt either using the original divisions (for no Administrative Points) or any divisions (in which case there will be a cost).

Here the Soviet 1 Guards Rifle Corp has been broken down. The original rifle divisions have reverted to their original titles but with (1GRC) added to the title to remind the player. If the unit is rebuilt with different formations (here the 235 RD was substituted for the 107) then the original unit will revert to its normal title.

Note that while Soviet tank brigades are initially treated purely as Support Units (21.5) this status changes if they have been previously combined to form a Tank Corps. Thus a Soviet Tank Corps will break down normally and the resulting brigades will appear as independent combat units on the map.

Here the Soviet 23rd Tank Corps has been broken down and the component brigades are treated like normal combat units.

Merging Units. Under certain circumstances, two combat units of the same type can merge together, resulting in one stronger unit. In order to merge, there must be another unit of the same type (infantry, armour, motorized, etc.) in the hex. The merging unit must be of smaller or equal size to the gaining unit. For example, a brigade could merge into another brigade, division or corps, but a division could not merge into a brigade.

In order to merge, the sum of the ready ground elements of the two units cannot exceed 100 percent of the TOE of the unit that will remain. If the merging unit is a smaller size unit, than only one third of its TOE percentage counts. For example, if a brigade with 90 percent of its TOE was merging into a Corps with 70 percent TOE, the sum would still meet the requirement as 90 divided by 3 would be 30, which added to 70 is just 100.

When the merge is completed, all elements of the merging unit will be placed in the gaining unit, and the merging unit is considered destroyed and permanently removed from the game. Merging is accomplished by selecting the 'MERGE' link in the detail window of the combat unit (37.3) that will be merging into the other combat unit.

Note that merging units will cost 1 Administrative Point.

When a merge unit is executed, any elements over 100% of TOE will be sent back to the pool (damaged elements first).

21.4. MULTI-ROLE UNITS (MRU)

Multi-Role units are units that can change during the game from an "on map" combat Unit to a support unit. In order to convert from a combat unit to a support unit, the unit must be stacked with the HQ unit to which it is attached. 'Convert' then becomes a selectable option on the unit's detail window. Once the unit is a support Unit it may be attached directly to another combat unit. When attached to a unit or HQ unit as a support unit, it may convert to an on map combat unit as long as this would not exceed the stacking limits.

When it converts to a combat unit, it will be placed in the hex with the HQ unit and will have one movement point remaining. When a multi-role unit converts to a support unit, it is flagged with an asterisk and will not be able to be reassigned elsewhere during the current turn.



In this example, the 125 Rifle Brigade is in the same hex as its controlling HQ so is eligible to convert from being on-map to an off map Support Unit. On the other hand, 16 Rifle Brigade is attached to a HQ so can be converted to an on-map Combat Unit.

Multi-Role units cannot convert while embarked/loaded on ships or trains.

Multi-Role units that arrive as reinforcements will be placed on the map as a combat unit rather than attached to an HQ unit as a support unit.

21.5. SUPPORT UNITS (SU)

Support units are independent companies, battalions, brigades and regiments of various types such as artillery, howitzer, mortar, rocket, anti-tank, anti-aircraft, ski, engineer, sapper, tank, tank destroyer, construction, and labour groups.

Support Units have a TOE and this affects the ground elements assigned to the unit.

With the exception of construction battalions, which can be automatically detached to repair rail lines, support units will not appear on the map, but will be attached to headquarters and certain combat units and will be listed in the detail window of the unit to which they are attached.

Rules for attachment and transfer of Support Units to Combat and to HQs are set out below.

Construction and labour support units are used to assist in the building of hex fortification levels and the repair of rail lines. All other support units are used to assist combat units in battle, either from an eligible headquarters unit not more than five hexes away from the battle, or from being directly attached to a combat unit participating in the battle (23.6).

Though they have no organic movement capability, support units will consume supplies and fuel and gain fatigue when units to which they are attached are moved. They will also take combat and non-combat losses and suffer retreat attrition along with the unit to which they are attached.

Support units in the various National Reserve boxes can be set not to refit. This will stop them absorbing new elements and building up their TOE.

21.5.1. ATTACHMENT OF SUPPORT UNITS TO COMBAT UNITS

The player can manually attach support units (SU) to some types of combat units (CU). Unlike support units attached to headquarters, those directly attached to combat units are automatically committed though only to a battle in which that combat unit is a participant (23.60). Direct attachment thus provides certainty at the expense of flexibility.

There are limits in the type of support units that can be attached to most Combat Units. Construction, labour, artillery, mortar, and rocket support units, or support units with the designations LW, cannot be directly attached to any

combat unit apart from a Fortified Zone units. These can have up to three of any type support unit attached to them.

Axis infantry, Panzer and Motorized divisions can all have up to 3 support units directly attached. Axis independent Brigades can have 2. Axis regiments broken down from their division can have 1.

Soviet Corps can have 3 support units. Soviet Rifle and Security divisions can have 1 support unit attached. Soviet mountain, cavalry, tank and early war mechanised divisions cannot have any directly attached support units.

Multi-role units that convert to off-map status will send any attached support unit to their immediate HQ.

Players can physically manage support unit attachments by opening the detail window of eligible combat units (37.8). The "ASSIGN" button can be selected to access the "PICK SUPPORT UNIT TYPE" window to select an available support unit to transfer to that combat unit.

Pick Support Unit for '34th Army'		
TOE	SUPPORT UNIT	HHQ
Armor		
100	5th Tank Brigade	STAVKA
122	23rd Tank Brigade	STAVKA
97	36th Tank Brigade	STAVKA
223	21st Tank Brigade	STAVKA
122	7th Tank Brigade	STAVKA
100	31st Tank Brigade	STAVKA
116	2nd Tank Brigade	STAVKA
116	55th Tank Brigade	STAVKA
124	10th Tank Brigade	STAVKA
98	47th Tank Brigade	STAVKA
100	45th Tank Brigade	STAVKA
121	145th Tank Brigade	STAVKA
121	37th Tank Brigade	STAVKA
122	48th Tank Brigade	STAVKA
100	68th Tank Brigade	STAVKA
100	69th Tank Brigade	STAVKA
122	104th Tank Brigade	STAVKA

To transfer the attachment of a support unit from a combat unit to another headquarters unit, the player selects the support unit to bring up its detail window and then selects the HHQ or OHQ link to bring up a list of eligible headquarters units to which it can be transferred. Depending on its location on the map, a support unit may also be transferred to another Theatre using this option.

There is no automatic method to transfer support units to or from combat units.

Support units can only be attached to commands within the range of that particular HQ type (21.11.4) and combat units must be in supply in order to transfer support units. The exception is that there are no range limits if attaching

Pick New HQ for 10th Gds Corps Artillery Regiment			
RG	HQ UNIT	UNITS	LIMIT
1	Moscow M.D.	cup: 35	max: 36
1	Western Front	cup: 76	max: 120
2	Moscow Defense Zone	cup: 10	max: 36
3	59th Army	cup: 0	max: 21
4	1st Reserve Army	cup: 0	max: 21
5	32nd Army	cup: 20	max: 21
6	Kalinin Front	cup: 88	max: 120
7	39th Army	cup: 14	max: 21
8	24th Army	cup: 18	max: 28
8	5th Airborne Corps	cup: 3	max: 9
9	4th Army	cup: 14	max: 21
9	54th Army	cup: 16	max: 28
10	31st Army	cup: 16	max: 28
10	49th Army	cup: 14	max: 28
11	Northwestern Front	cup: 53	max: 72
23	Central Front	cup: 44	max: 72
27	Bryansk Front	cup: 55	max: 72
39	Volkhov Front	cup: 26	max: 72
41	Southwestern Front	cup: 68	max: 120
44	Leningrad Front	cup: 62	max: 72
66	Stalingrad M.D.	cup: 43	max: 36
71	Southern Front	cup: 67	max: 72
76	Crimean Front	cup: 4	max: 72
80	North Cauc. M.D.	cup: 0	max: 36
81	Southern Urals M.D.	cup: 0	max: 36
DEL	THEATRE BOX	CV (REQ)	
1	Soviet Reserves	-	
4	Far East	0 (100)	
2	Transcaucasus	0 (100)	
2	Northern Front	0 (100)	

an SU from the relevant high command HQ (such as OKH or Stavka).

A specific support unit attachment can only be transferred once per turn, they will suffer a - 1 for admin rolls on the turn the change was made and will be marked with an asterisk in the combat unit detail window to denote that it cannot be transferred again that turn.

Attaching a support unit to an airborne unit or unit prepping for an amphibious invasion will result in the loss of 10 preparation points, though prep points will never drop below zero.

Note that for those Support Units which can build up Combat Preparation Points, half of these will be lost if the unit is reassigned to another HQ or a combat unit.

21.5.2. ALLOCATION OF SUPPORT UNITS TO HEADQUARTERS UNITS

The bulk of Support Units in the game will be attached to one or other of the HQ units (or deployed to one of the Theatre Boxes).

Support unit attachments can be transferred between headquarters units manually during the ground phase and automatically during the logistics phase.

There is no range limitation to the transfer of support unit attachments; however, headquarters units must be in supply in order to transfer support units.

Support units may be transferred either directly between commands at the same level, along a command chain or to another Theatre but there are range limits for each of these actions.

For the Axis player, Romanian support units cannot be assigned to a Hungarian HQ (or vice-versa).

A specific support unit can only be transferred once per turn and will be marked with an asterisk in the headquarters unit detail window to denote that it cannot be transferred again that turn. In addition, support units will suffer a -1 penalty for admin rolls on the turn the change was made. There is no limit to the number of support units that can be attached to a single headquarters unit, though a large number of non-construction support units can impact the commitment of support units during combat (23.6.1).

Air headquarters units are limited to attaching only anti-aircraft support units.

Rail repair units can only attach construction battalions and labour groups, and while these support units can be manually transferred from the rail repair unit, there is no ability to transfer additional support units to the rail repair unit (or to return units that were detached).

21.5.3. ATTACHMENT OF SUPPORT UNITS TO CITIES

Construction and AA units can also be attached to cities at the cost of Administrative points (9.2). These are attached to cities using the City Detail screen (37.13).

Construction Units

Construction units can be sent back to their HQ at no AP cost by pressing the X next to their name in the City Detail screen. Construction units in cities will automatically attempt to repair factories (including ports and railyards), and repair/expand airbases. Construction Units attached to the city will be used first, but if deemed insufficient, additional construction units may still be summoned automatically to the hex. Units attached to cities will not be used by the automatic rail repair system.

If a city is captured, all of the assigned Construction Units may escape as long as there is a working rail link.

If they are in an isolated city or more than 10 MP from a railhead they will be lost if the city is captured.

Rail repair units (21.6.1) attached to a city will not carry out any repairs. These only function when deployed on map according to section 21.6.

Anti-Aircraft Units

Antiaircraft (AA) or Flak type support units can be assigned directly to a town, city or urban hex for air defense and can be transferred from one city to another or back to their highest HQ unit. Though listed in the city detail window as assigned, AA units actually remain attached to their original Headquarters unit, but will have a 'c' in front of their name in the HQ unit detail window. In addition, AA units assigned to cities will be listed in the Commander's report with the applicable city in the HHQ column. German and Soviet AA units can be assigned from their HQ unit to any friendly town, city or urban hex. Axis Allied flak units may be assigned from their respective High Command HQ unit, but only to town, city or urban hexes of that particular nationality.

To reflect the political cost of decreasing urban air defence, AA units in town, city or urban hexes can only be transferred back to their highest headquarters at a cost in admin points (9.2). To move an AA unit out of a city to the highest level HQ select the X next to the AA unit name from the city detail window.

AA units attached to town, city or urban hex may be destroyed if the hex is captured or destroyed/removed as applicable if in an Axis allied country that surrenders (14.3). A text message will display when AA units in cities are destroyed due to the city being captured. Mobile flak in cities may escape to a nearby HQ or friendly city when the city is captured if that hex is not isolated. The probability of escaping is dependent on the type of AA unit as follows:

- Type (0) non-motorized (in the game these are the German flak towers) --- 0 percent;
- Type (1) non-motorized --- 15 percent (the unit must be in a hex that is not isolated and within ten movement points of a railhead);
- Type (2) and Type (3) non-motorized --- 66 percent;
- If Type (2) or Type (3) are isolated or more than 10 MP from a railhead they will be lost; and,
- Type (4) non-motorized --- 100 percent if adjacent to a connected rail hex. This type of AA unit represents a Mobile Railroad flak unit.

21.5.4. MOVEMENT OF SUPPORT UNITS INTO AND OUT OF THEATRE BOXES

Support Units can be moved into and out of Theatre Boxes (chapter 13) as with any other unit. This can be done using the Theatre Box display, the Commander's Report or the unit tab.

Some units will be locked in the Theatre depending on the scenario set up and the options selected by the player(s). If they are moved to the map they will initially appear attached to the relevant High Command unit (usually either OKH or the Stavka) and can be re-assigned as normal.

While most transfers do not cost Administrative Points, moving Anti-Aircraft units from any Theatre (apart from the National Reserve) will cost administrative points as set out in 9.2 as they are originally attached to cities in the relevant theatre.

21.5.5. DEPLETED SUPPORT UNITS

At the end of the logistics phase any depleted non-isolated Support Unit will be transferred to the Reserve Theatre. This may happen due to combat losses or a TOE upgrade that significantly changed the equipment the unit uses.

21.5.6. AUTOMATIC ATTACHMENT OF SUPPORT UNITS

Each eligible headquarters unit can have its support unit level set by the player. To do this you will need to either open the detailed unit window or use the Commander's Report. Frozen HQ units and frozen support units cannot be set for auto attachment.

On the unit window the options are to leave the Support Level 'locked' (in which case all SU deployments must be done manually or to use the '+' or '-' keys to increase or reduce the desired support level).

The Commander's Report (35.3) also has the option to set or change the Support Level of a number of HQs at the same time. To access this, you will need to open the HQ tab and then amend the 'support level' to either 'locked' or a number between 0 and 9.

On the CR screen, each HQ can be set individually to a new Support level or the option 'Support Level' can be used to set a value for all the selected commands.

The chosen level setting indicates the number of each type of support unit that the computer will attempt to provide to that particular headquarters unit, based on availability. For example, if the player sets "Support Level" to 3 the computer would attempt to provide 3 support units of each type, to include Armoured, Anti-Tank, Artillery, Anti-aircraft, Rocket, etc.

This process occurs automatically during the phasing player's logistic phase and consists of two cycles during which support units are moved first up the chain of command (excess) and then down the chain of command (demand). Support units in an unready status will be transferred to the applicable High Command headquarters unit during the first cycle.

The entire automated support unit transfer system can be disabled by checking the appropriate sides 'Lock HQ Support' buttons in the Game Options screen (36.17.1). In addition, the player can disable the automated transfer function for a particular headquarters unit by selecting the 'LOCKED' button in its detail window. Note that all headquarters units subordinated to a particular High Command headquarters unit will be locked out of the automatic attachment transfer of support units if their High Command headquarters unit has its Support Level set to "LOCKED." In addition, if any of the higher headquarters units in a particular HQ unit's chain of command is set to "LOCKED," that headquarters unit will not have the ability to utilize the automatic transfer of support units.

Unit Name	Type	HHQ	ThBox	Supply Priority	
				Supl	CU
3rd Army	Army	Western Military District	MAP	3	0
4th Army	Army	Western Military District	MAP	3	0
10th Army	Army	Western Military District	MAP	3	1
13th Army	Army	Western Military District	MAP	3	0
21st Army	Army	Western Military District	MAP	3	0
20th Army	Army	Western Military District	MAP	3	0
16th Army	Army	STAVKA	MAP	3	0

Construction and engineer support units have permanently assigned support level settings that override player support level settings, with the exception of "LOCKED," which will stop the automatic transfer of any support units from the "LOCKED" headquarters unit. The permanent support level settings for construction and engineer values are as follows:

HEADQUARTERS TYPE	CONSTRUCTION	ENGINEER
High Command (Type 1)	0	0
Army Group (Type 2)	16	4
Army (Type 3)	3	3
Corps (Type 4)	2	2

If you want to minimize the number of support units in a HQ unit, but still allow automatic transfer through that HQ unit? Use a setting of '0' so that the only support units the computer will send to the HQ will be the permanent levels of construction and engineers.

21.5.7. MANUAL ATTACHMENT OF SUPPORT UNITS

Players can physically manage support unit attachments through the detail window of eligible headquarters units. The 'Assigned' tab must be selected and this will show both the units currently reporting to the HQ and enable the option 'ASSIGN SUPPORT UNITS'.

When this is selected, all eligible SUs, currently attached to HQs higher up the command chain, will be shown and can be selected,

To prevent the computer from transferring the support units that have been moved manually, the player can either increase the applicable headquarters unit's Support Level to account for the newly attached support units or change the Support Level to "LOCKED," which will prevent that headquarters unit from automatically returning any support units or receiving any additional support units during the logistics phase.

21.5.8. MANUAL TRANSFER OF SUPPORT UNITS

Support Units can be transferred between units and HQs. The procedure is slightly different to that used to attach them.

If the support unit is attached to a combat unit then it will be shown on the 'Assigned' tab. If the [X] button is selected the support unit will be removed and automatically transferred to the controlling HQ (this will also happen if a

unit is disbanded). Alternatively, click on the support unit name and its detailed unit screen will appear. In this case, selecting HHQ will bring up the range of HQs that the unit can be moved to.

If the support unit is attached to a HQ then it can be transferred by clicking on the unit name. Again selecting the HHQ will bring up a list of commands it can be transferred to.

Note this option allows you to transfer a SU to any eligible HQ regardless of its position in the chain of command. So an Army HQ can transfer a SU to a Corps HQ that belongs in a different command if wished.

21.6. CONSTRUCTION UNITS

Construction units are a particular type of Support Unit. They are assigned to HQs as usual and then allocated to tasks within the range of their controlling HQ. Only rail repairs are conducted by putting construction units directly on the map, other construction assets will be temporarily attached to the city, airfield or depot as appropriate.

Some have a specialist role as rail repair units but most can be used to speed the construction or repair of ports, factories, depots and airbases.

21.6.1. RAIL REPAIR UNITS

Only designated Rail Repair units can only be used to repair damaged train lines.

Unlike other support units, these units will appear on the map in the hexes they are repairing, but may not be moved by the player other than to send them back to their attached headquarters unit by selecting the construction unit and then clicking the 'RETURN TO HQ' link in the unit bar.

For human players only, these units will only be allocated up to the command range (21.11.4) of their controlling HQ. For example, if a construction unit is assigned to a Corps HQ unit, it can only repair rail line hexes up to 5 hexes from that HQ, but the same construction unit attached to a High Command HQ unit (e.g. OKH or Stavka) could operate up to 90 hexes away.



Auto-repair units will not usually be deployed to a hex adjacent to a FBD/NKPS rail repair HQ (21.11.1). Equally, due to the phasing of actions in the logistics phase, rail repair units are assigned before hexes repaired by the FBD/NKPS are treated as operating (they retain the notional 1 point of damage from the last ground phase) so the automatic repair units will not repair in advance of such a stretch of rail.

In addition, the automatic rail repair units will not move adjacent to an enemy unit.

In combination this means that the auto-repair units will tend not to operate in co-operation with the FBD/NKPS rail repair HQs.

Note that a rail repair unit will continue to repair a given hex even if its controlling HQ moves away while it is working. It will then revert to the HQ (and will also do so if ordered to stop the repair work manually).

Detached support units will generally repair one damaged rail line hex per turn. Repair during poor ground weather conditions will proceed much slower. The movement and repairs of these support units takes place during the player's logistics phase.

The computer will return them to their headquarters unit when their rail repair work is completed on a particular section and then automatically send them back to another section that requires repair.

Rail repair can only be carried out by Soviet Railroad repair units, and Axis units with the designation R.A.D., O.T, or have the title 'rail construction'.

21.6.2. OTHER CONSTRUCTION UNITS

These are all controlled by the AI and this allocates construction units to the location (city/airfield) automatically rather than to the map. The AI will now try to send multiple construction units if needed to a location (especially for the smaller Soviet construction units).

Every logistics phase the construction units re-evaluate where they are needed and will automatically move to another location. Units in HQs and locations are freely moved by the computer, those attached directly to a combat unit will not be moved automatically. The highest priority requirement will be allocated construction units first, and then on down the list. The priority order from highest to lowest is:

1. Priority Factory Repair (damaged factory player has given priority repair status)
2. Depot Repair (damaged rail and/or railyard in depot hex)
3. Airbase Construction and/or repair
4. Non Priority Factory Repair

Any unit that has been sent out to perform one of these repairs is no longer available to be used to assist ground units attached to that HQ in fort level construction (which happens at the end of the turn).

They can be manually returned to their controlling HQ by opening the location screen and pressing X next to the unit.

21.7. FROZEN UNITS

Some units begin a scenario frozen in place with zero movement points for a set number of turns. The number of turns is shown in the hex pop-up text but only for the player that owns the unit (Fzn 2 indicates frozen for two more turns). Other units may be frozen by scenario specific rules. These units do not show the number of turns remaining in the hex pop-up text and unfreeze under the special conditions specified in the scenario rules.

During each friendly logistics phase, the unit's frozen turn counter is reduced by one, and when it reaches 0, the unit is no longer frozen and it will be given MPs for that turn. A unit frozen in this way may also be unfrozen if it is attacked, or if it is within 3 hexes of an unfrozen non-isolated enemy unit either during the logistics phase or after the amphibious phase.

Frozen units are unable to move using either tactical or strategic movement. Frozen units cannot build forts, although construction units may build forts in hexes they occupy. Frozen units cannot disband, merge or build-up with other units or breakdown into smaller units. Frozen units can change their maximum TOE setting. Air Groups attached to frozen air base units may conduct automated intercept missions.

21.8. STATIC COMBAT UNITS

Throughout the war, the German army stripped many units in quiet fronts of their vehicles and had them dig in and reduce their fuel consumption in order to focus resources in areas where offensives were planned.

To simulate this practice, both sides have the ability to place combat units in static mode during the game, turning

in their organic vehicles for use by other units or the supply motor pool. Static mode takes vehicles out of a unit and reduces the unit to two movement points. Motorized units in the static mode pay non-motorized movement costs when they move. The at-start forces in some scenarios may have units already in static mode.

21.8.1. SETTING UNITS TO STATIC MODE

Any non-isolated, non-frozen combat unit on the map may be placed in static mode if that unit has not moved during the turn and is currently located in a hex with a manmade fortification level of two or greater (the AI is not held to the fort level requirement). Combat units are placed in static mode by selecting the hex they are in and then selecting the "STATIC" button on the desired counter in the unit bar.

Note that the "STATIC" button will not be displayed if the combat unit is not eligible to be placed in static mode.

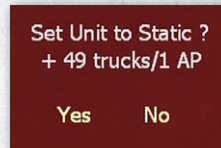


In this case, the 340 Rifle Division is eligible to move to a static mode as it occupies a hex with a level 2 fortification.

The unit will immediately be reduced to no MPs for that turn and all of that unit's vehicles will be immediately returned to the motor pool (keep in mind that there are many vehicles in HQ units and in the supply system that are still being used by the unit, but it is assumed that the unit has given up all of its organic vehicles).

The phasing player will immediately receive an admin point bonus based on the number of organic vehicles returned to the motor pool that is equal to $1 + ((\text{trucks in unit} + \text{Random}(100))/100)$ (truncated). When showing how many points will be gained, the displayed amount is $1 + (\text{trucks in unit}/100)$ (i.e. the lowest possible gain). The number of vehicles and the admin point gain will be shown to the player prior to confirmation of static mode.

Taking the example above, this will gain the Soviet player 49 trucks and 1 Administrative Point.



And the unit has 0 MP for the rest of the turn.

Static units have only two Movement Point per turn until they are reactivated, but may use strategic rail, naval or amphibious transport. Static units can build up (recombine) as long as all units doing the build-up are static. Static units can breakdown while static. Static units cannot merge or combine with non-static units. Static units cannot disband (21.10).

Again, using the same example as above, 340 Rifle Division is now static and has 2 MP:

Units in static mode will appear bordered in white when the Map Information tab: View Unit Modes button has been toggled on. Static units that retreat or rout as a result of combat remain in static status.

Note that units cannot be set to Static Mode in 1941.

21.8.2. REACTIVATING STATIC COMBAT UNITS

Non-isolated static units that have not moved, may be reactivated at any time during the movement phase by spending admin points. To mobilize a STATIC unit, vehicles are taken from the motor pool if there is sufficient freight in nearby depots to convert to vehicles, (if there are insufficient vehicles in the pool the static unit cannot be reactivated). Combat units are reactivated by selecting the hex they are in and then selecting the "MOBILIZE" button on the desired counter in the unit bar. Static units may not be reactivated the same turn they are made static. Combat units may not attack on the turn that they are reactivated from static mode.

Activated units will immediately receive 50 percent of their vehicle requirement from the pool and 50 percent of their maximum movement points (25 for motorized, 11 for cavalry and 8 for infantry types). The admin cost for activations is equal to $1 + ((\text{truck need of unit when mobilized} + \text{Random}(50))/50)$. When showing how many points it will cost, the display shows the AP gain as $1 + (\text{truck need of unit when mobilized} + 50)/50$. This is (the most that could be charged, it could be one less than this).

Note that units with a withdrawal date to another Theatre (13.1.3) cannot be set to Static mode.

21.9. DEPLETED AND UNREADY UNITS

21.9.1. DEPLETED UNITS

Units at 10 percent or less of TOE are in a depleted status, have no ZOC and will automatically displace if they end up next to an enemy unit and not stacked with a combat unit that is in a ready or unready status. Note that there are instances, such as if a unit becomes depleted during the air execution phase, where a depleted unit can end up next to an enemy unit and not automatically displace. Displacement will then occur when an enemy unit moves next to such a unit.

21.9.2. UNREADY UNITS

Units that have the sum of their current morale and actual TOE percentage equalling less than 90 are in an unready status. Unready combat units do have a ZOC, but may only conduct an attack if they have not expended any movement points during the turn.

21.10. DISBANDING AND MERGING UNITS

Units that are due to be withdrawn cannot be disbanded or merged (this can be checked both on the unit counter and using the Commander's Report).

21.10.1. DISBANDING UNITS

Most ground units and Air Groups may be permanently disbanded and removed from the game.

The exceptions are high command (type 1) headquarters units, all types of air headquarters units, and units of any type that are scheduled to be withdrawn. To disband a unit, select DISBAND from the unit detail window. This will send the aircraft and pilots and aircrew manpower from Air Groups or the manpower and equipment from all of the ground elements in ground units back to their respective production pools. Any support units that are assigned to a unit that is disbanded are automatically reassigned to the next higher HQ unit of the disbanded unit.

Note that units (both ground and air groups) can also be disbanded using the functions in the Commander's Report.

Units can only disband if they have enough movement points remaining to move to a rail hex that is connected to the supply grid, and if they are not within three hexes of an enemy unit. Frozen or static units cannot be disbanded.

A unit is required to have at least one movement point remaining to disband. Fortified zones are an exception as they may disband even though they have zero movement points and they are not required to be three hexes from an enemy unit; the only requirement is that they not be frozen.

The Disband Unit option will not appear in the unit detail window if the above conditions are not met. Disbanding requires and expends one Admin point (for this purpose merging a unit is treated as disbanding a unit and will also cost one Admin point).

21.10.2. MERGING UNITS

It is sometimes possible to merge two (or more) weakened units to create a single stronger formation. For this to happen, there must be a reasonably close match in the elements present in both formations (so for example a normal Soviet rifle brigade can be merged into a Soviet rifle division or rifle corps) and the merged unit will not substantially exceed the TOE.

The unit lost when the merger is due to happen must not be scheduled to move to another Theatre Box later in the game (13.1,3) unless the player(s) are using the Enhanced Theatre Box Control option (13.3.4).

21.11. HEADQUARTER (HQ) UNITS

Headquarter units provide a chain of command for command and control of units in *Gary Grigsby's War in the East 2*. With the exception of High Command headquarters units, all units, including support and Air Groups, have a higher headquarters unit to which they are attached. The current command and control arrangement for the phasing player can be viewed either through the Order of Battle (OOB) screen in the info screens tab (36.1) or through the Commander's Report.

For on-map units, this immediate higher headquarters unit can provide logistical and combat support if within the applicable range. There is no limit to the number of combat units that can be attached to a Headquarters unit, however, ground headquarter units that exceed their normal capacity, termed command capacity (21.11.3), will become less effective. Most combat units will normally

be attached to lower level headquarters units, but direct attachment of combat units to any ground headquarters unit is permitted.

Normally a HQ unit is commanded by a leader of the same nationality.

21.11.1. TYPES OF HEADQUARTER UNITS

There are seven types of headquarter (HQ) units as follows:

High Command headquarters units (Type 1): Each nation represented in the game has High Command headquarters units, one that all other units on that side are ultimately attached. These headquarters units do not have a higher headquarters and effectively report to themselves. High Command headquarters units cannot be disbanded. Unfrozen units can be transferred from these headquarter units even if the HQ unit is frozen. The following headquarter units are designated High Command headquarters units:

- OKH – Germany (in addition the Germans have the OKW as a High Command with its own OOB tree, but mostly only for units in the Theatre Boxes)
- Italian High Command – Italy
- Hungarian High Command - Hungary
- Romanian High Command - Romania
- Slovakian High Command - Slovakia
- Stavka – Soviet Union

Army Group//OKL/Hungarian, Slovakian, Romanian Air Commands/Regia Aeronautica; Soviet Fronts, Military Districts (Type 2): These are ground or air headquarter units with large capacities that are attached to a High Command (Type 1) headquarters unit and normally serve as higher headquarters to the rest of their nations units.

Army, Air Force, Air Fleet or Air Command/Soviet Air Armies /German Luftflotte (Type 3): Army headquarter units are ground headquarter units with medium capacities that are attached to either type 1 or 2 HQ units. Though they are ground units, Air headquarter units do not have any capacity limitations and can only attach lower level air

headquarter units, such as air base units, air divisions and anti-aircraft support units.

Air Base Units (Type 5): Air base units are different than other headquarter units in that their purpose is to support Air Groups. They are stationary installations and new Air Base Units can be built during the game. Air base units are the only on-map units to which Air Groups can be attached. Air Base Units cannot attach any combat or support units.

Rail Repair headquarter units (Type 6): These are rail repair units that also function as headquarters for construction and labour support units. Only construction and labour support units can be attached to Rail repair headquarter units.

Amphibious headquarters units (Type 7): Amphibious HQ units do not have leaders and must be attached to a High Command (Type 1) HQ unit. Amphibious HQs are used for the amphibious movement of combat units and the naval transport of units and supply over beaches, represented by a temporary port, (when a permanent port is not in the amphibious invasion target hex). Amphibious HQ units may have attached naval support groups representing ships to provide artillery support for amphibious assaults and ground combat in adjacent land hexes. Amphibious HQ units will also have a number of transport and cargo ships assigned to support lift required for amphibious invasions and maintenance of temporary ports.

Amphibious HQs may only use amphibious and naval strategic movement. They may never enter a non-port land hex. They may enter a ferry hex and assist units attacking over a ferry hex. Neither enemy supply trace nor enemy naval transport can pass through hexes adjacent to an Amphibious HQ unit and an amphibious HQ unit will destroy any enemy units embarked on ships in water hexes to which they move adjacent. In addition, Amphibious HQ units will bombard any enemy units in adjacent land hexes at the end of that players air execution phase, potentially causing damage to ground elements.

STAVKA	OKH	Hun. High Cmd	RM High Cmd	Slovak High Cmd
 XXXXX HQ 0-36 200 SUPPLY PRI 2 COM REPORT 194127 535:999 1015 101% 124 109%	 XXXXX HQ 0-50 0 SUPPLY PRI 1 COM REPORT 32342 288:999 130 135% 30 117%	 XXXXX HQ 0-0 0 SUPPLY PRI 1 COM REPORT 20148 20:999 4 120% 0 98%	 XXXXX HQ 0-0 0 SUPPLY PRI 1 COM REPORT 29761 87:999 177 111% 0 103%	 XXXXX HQ 0-0 0 SUPPLY PRI 1 COM REPORT 20000 0:999 0 0% 0 0%

21.11.2. ASSAULT HQS

Some Axis Armies and Soviet Fronts can be designated as Assault HQs. Each will cost the Soviet player 20 Administrative Points and the German player 10 Administrative Points. If a HQ is transferred to a Theatre Box, or withdrawn due to OOB changes, it will lose its assault status.

Setting an Assault HQ is done from the HQ unit detail screen (using the button on the unit counter). Assault HQ appear with 'Aslt' on HQ Commanders Report tab. In addition, current Assault commands are show at the top of the OOB screen (36.1).



In this image, Western Front is set to assault status (and has extra command capacity) while Bryansk Front is not (but could be converted if the Soviet player has not exceeded their capacity for the current turn).

When a unit is made an Assault HQ its Command Point Capacity is multiplied by 5 and divided by 3 and this new value is shown on the HQ unit bar (6.5.6).

The command capacity of all attached HQs is increased by 4/3 (so, for example, if the standard value is 9 this will be increased to 12).

All the units that report (directly and indirectly) to an Assault HQs are affected by the following changes:

- Double the rate of gaining Combat Preparation Points compared to other units (23.2).
- An increased chance to pass all relevant support checks.
- Soviet artillery gain 50% extra ammunition (before 1944) compared to the normal rules.
- Units may not build fortifications beyond level 1.

These advantages do not accrue if:

- The unit itself or its HQ has just been attached to the relevant Axis Army or Soviet Front this turn.
- If either the Assault HQ or any other HQ in the command chain is overloaded in terms of Command Points (21.11.6).

- If any HQ in the command chain is outside the command range for the Assault HQ (21.11.4).

The number of Assault HQs that can be created varies as the game progresses:

DATE	AXIS	SOVIET
1941	6	2
1942	5	3
1943	4	4
1944	3	5
1945	2	6

Note that if the Axis player has designated Assault HQs in excess of the allowed number for that year, they will retain the status but no new ones can be created until you are below the maximum.

21.11.3. HEADQUARTER UNIT'S COMMAND CAPACITY

Command capacity is a measure of the total number of Combat Units that a given HQ can command effectively.

The command capacity of different levels of HQ varies according to nationality and game turn.

TYPE	6/41-3/42	4/42-3/43	4/43-3/44	4/44-9/45
Corps (type 4)	9 CP	9 CP	10 CP	11 CP
Axis Army (type 3)	27 CP	27 CP	30 CP	33 CP
Axis Army Group (type 2)	108 CP	108 CP	120 CP	132 CP
Soviet Front (type 2)	72 CP	81 CP	90 CP	99 CP
Soviet MD (type 2)	36 CP	36 CP	36 CP	36 CP

Soviet armies (type 3) have differing CP according to type and dates:

TYPE	6/41 - 8/41	9/41 - 3/42	4/42 - 9/45
Tank Armies	N/A	N/A	11 CP
Guards Tank Armies	N/A	N/A	12 CP
Combined Arms Armies	21 CP	21 CP	18 CP
Shock and Guards Armies	N/A	21 CP	21 CP

OKH, Stavka, and the various Axis-allied High Commands have an infinite command capacity but this is displayed as 999.

Note that if an Axis Army or Soviet Front has been set as an Assault HQ that HQ and all HQs that report to it will have additional command capacity (21.11.2).

21.11.4. HQ COMMAND RANGES

The different types of HQs each have a different range over which they can supply leadership modifications and assign support squads.

High Command – 90 hexes

Army Group/Front – 45 hexes

Army – 15 hexes

Corps/Soviet Army after July 1941 – 5 hexes

Air Command – 90 hexes (note that if an air command is within 90 hexes the modification for range (15.5.4) will not take place and the air base will be treated as being 0 hexes from the HQ).

21.11.5. COMMAND BONUS FOR SOME TYPES OF HQ

Certain types of HQs will provide additional bonuses to some or all the units stacked with them.

German Motorized or Panzer Corps: When a motorized unit is performing an admin leader check, leaders of any Panzer Army, Panzer or Motorized Corps HQ units involved in the admin leader check receive a +1 to their admin rating during the check.

German SS Corps and Armies: These can only be controlled by SS Commanders.

Soviet Tank Armies: As with German Motorized or Panzer Corps, there is a bonus of +1 on the admin rating of the commander for motorized units. In addition, if a Soviet Army is designated as a Guards Tank Army there is an increase of 1 in the Command Capacity.

Soviet Shock and Guards Armies: These provide a bonus of +1 to their commander's administrative score. For Guards Armies this is in addition to the bonus for a Tank Army so a Guards Tank Army will provide a +2 bonus to the admin rating if the check involves a motorized unit.

21.11.6. COMBAT UNIT COMMAND POINTS

On map Combat Units cost a different number of Command Points:

- Battalion/Regiment/Brigade: 1;
- Fortified Zone: 1;
- Division: 2;
- Corps: 4

MRU units off map do not cost any Command Points. If the HQ is commanding units of a different nationality it will pay an extra 1 command points for each Combat Unit (CU). Thus a regiment of a different nationality will take up 2 Command Points.

Note this penalty applies all up the command chain to Army level for the Axis player. Thus a German Army HQ indirectly commanding non-German units will also use up more of its command capacity. This penalty does not apply at Army Group or High Command HQs.

21.11.7. HEADQUARTERS EFFICIENCY AND SUPPORT SQUADS

Headquarters units will receive a benefit on all administrative rolls depending on the total number of support squads in the HQ.

21.11.8. HEADQUARTERS CONVERSIONS AND UPGRADES

In the course of the game a number of HQs will change their designation. Some of these will have little impact on gameplay such as the early German motorized corps being re-designated as Panzer Corps.

However, a number of Soviet armies will be created by converting some of the at-start rifle and mechanized corps HQs. Equally Soviet Guards armies will be created according to the historical OOB and almost all will be converted from an existing HQ.

Gameplay Note: Neither player cannot build HQs in WITE2.

21.11.9. HEADQUARTERS UNIT RELOCATION

5th Rifle Corps
Alexsandr Gornov

Wins : 0 Losses : 0

XXX
HQ
0-25

SUPPLY DETAILS
SUPPLY PRIORITY (3)
SHOW SUBORDINATES (CR)
RELOCATE UNIT

		Elements		Assigned (5)	
EXP	RDY	DAM	GROUND ELEMENT	FAT	
34	35	12	Support		23
Support Level		++	LOCKED	--	
Total Support				865	
Organic Support				830	
Total Support Need				928	

Morale	48 (50)
Nation	Soviet Union
Supply/Need	4 / 7
Fuel/Need	7 / 6
Ammo/Need	0 / 0
Support/Need	0 / 0
Transport Cost	1171
Vehicles/Need	24 / 35
Supply status	MOTORIZED
Withdraw	ISOLATED
	24Dis

The player can relocate most types of headquarters unit, including rail repair units, by selecting the "RELOCATE" button in the right upper corner of the HQ unit's detail window (37.2). Relocation is similar to a displacement move (23.13), but is a voluntary action and results in the unit being moved to a friendly town, city or urban hex that is in supply.

The headquarters unit will have its movement points reduced to zero, but there is no relation between the relocation and normal movement. The headquarters unit and any attached support units will suffer retreat attrition (23.12). The town, city or urban hex that the unit is relocated to will generally be to the west for the Axis player and to the east for the Soviet player, but there is a random factor to the relocation so that the player cannot anticipate where the unit will end up.

While airbases cannot be relocated, the planes there can be. If an airbase is overrun any damaged planes will be lost while others will transfer to the nearest operating base.

Game Play Tip: Though a headquarters unit can be relocated multiple times in a turn, relocation is generally only advised for isolated headquarters units you want to get out of a pocket immediately instead of waiting for the unit to be involuntarily displaced by enemy units.

Regular movement is almost always preferable to relocation because the relocation movement is hard to predict and does cause retreat attrition to the headquarters units and any attached support units.

21.11.10. REASSIGNING COMBAT UNITS BETWEEN HQS

A specific combat unit can only be transferred once per turn, they will suffer a -1 for admin rolls on the turn the

227th Rifle Division
 12,834 199

REFIT
 12 12

Combat Value 2.47/4.40
 TOE 85/86
 MAX TOE 100

HHQ 4th Rifle Corps-*
 OHQ Western Front

change was made and will be marked with an asterisk in the combat unit detail window to denote that it cannot be transferred again that turn.

21.12. STACKING

21.12.1. STANDARD STACKING RULES

Usually a maximum of three on-map units, no matter what the type, size or status, may be in a hex at one time.

Units can move through a hex with three units already present, but will be unable to stop in that hex.

Combat unit breakdown can only take place if the broken down units will not exceed these stacking limits.

21.12.2. SPECIAL STACKING RULES (CITY FORTS)

Special stacking rules apply in major urban and some port hexes. In these hexes it is possible to create a 'city fort' unit (20.6) and attach multiple combat and command units to this static command.

Units in a city fort will be shown in the Commanders Report (Appendix 35.2) with the notation 'fort' as opposed to the usual hex location data. By clicking on unit name, the map will center on fort unit with its detailed unit tab open (you can remove units from the fort using this if you wish).

Unit Name ▼	Size ▼	Type ▼	OB ▼	HHQ ▼	ThBox ▼	DtHQ ▼	Men ▼	Gun ▼
Smolensk Fortified Region	XXX	Fort	Soviet City Fortified Region	24th Army	MAP	11	22704	384

22. GROUND UNIT LAND MOVEMENT

Focus: This section explains how to move ground units in WiTE2. Naval transport is covered in chapter 24.

Key Points:

- The different types of movement (tactical, strategic and air transport)
- How Movement Points are calculated for tactical movement
- Tactical Movement costs and the impact of 'administrative movement'
- Interaction of the road system and tactical movement costs
- How to conduct Strategic Rail Movement
- How to conduct air resupply, movement of air transportable units and airborne operations



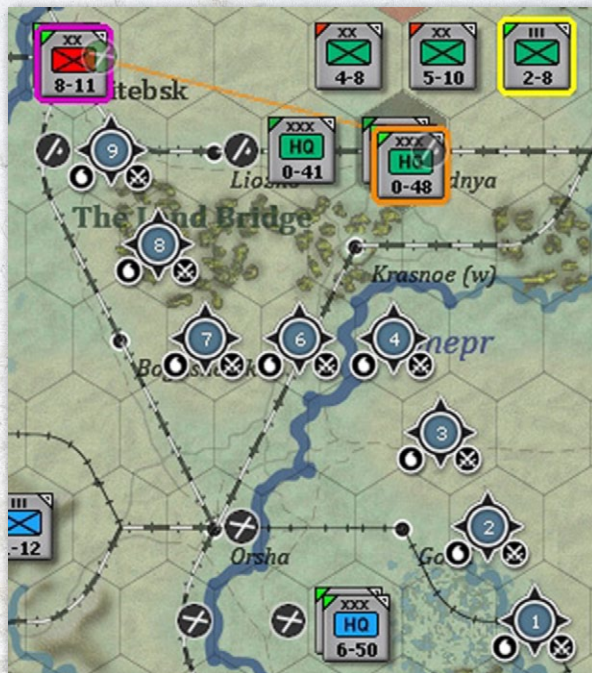
There are two general types of land movement for ground units, tactical and strategic rail. In addition, units can move by sea transport (24.3) and certain combat units can be transported by air (22.5).

Tactical movement is from ground hex to ground hex using movement points (MP) and includes the cost of terrain, of moving into enemy zones of control and enemy hexes, and the cost of attacking enemy units.

Note you do not need to move the unit hex by hex, selecting the intended destination hex will automatically move the unit along the designated movement path. For most purposes, the computer will identify the quickest route between the start and end hex for you.

Here the computer routine has automatically selected the quickest route (in MP expenditure) between the starting and destination hex for the chosen unit. Note it will have 1 MP left on arrival and you could move it another hex (if possible) either immediately or later in the movement phase.

Note that the tactical movement costs are also used to determine the cost of moving supplies by truck.



Strategic rail movement represents loading units on to trains for transport over friendly rail lines uses strategic movement points (SMP), but also depends on the availability of railyard rail capacity and rail usage on rail lines.

Units using strategic rail movement have their tactical MP reduced proportionally to the expenditure of SMP. Equally a unit that has moved by rail or naval transport will have its remaining tactical movement points reduced.

Players can undo a move ('undo' button or hot key 'u') unless the move resulted in losses from air interdiction, turned an enemy hex into a pending friendly hex, attacked an enemy unit or spotted an enemy unit that previously had a detection level of zero.

The phasing player can conduct movement, combat, air transport and transfer missions and other administrative functions in any order desired during the action (move) phase. Assuming enough movement points were available, for example, a combat unit could use tactical movement to move adjacent to an enemy unit, attack, then use tactical movement to move to a rail hex, and then use strategic movement along the rail network and finally detrain. Equally you can move one unit for one or more hexes, leave it, move another and then return to the original unit to use up its remaining MPs.

Many actions require the selection of a specific mode before they can be conducted.

22.1. DETERMINING TACTICAL MOVEMENT POINTS

On-map units begin each turn with a certain number of movement points (MP) determined by a number of factors, including unit type, whether it is motorized or non-motorized (21.3.1), supply status (fuel for motorized units, supplies for non-motorized units), reductions as a result of being attacked the previous turn, vehicle shortages, fatigue, and leader admin and initiative checks.

Units have a maximum MP allowance that they cannot exceed and a minimum that they will always be able to move.

22.1.1. MAXIMUM MOVEMENT POINTS

The following are the maximum MPs for on-map units:

- Non-Motorized Combat units (except Cavalry) units – 16 MP
- Cavalry Combat units – 22 MP
- Headquarters units – 50 MP
- Rail Repair HQ units – 16 MP
- Motorized Combat units – 50 MP
- Static Units – 2 MP

Soviet maximum movement capacity for HQs and motorized units is reduced to:

- 25 in June 1941
- 35 for Motorized Brigades throughout the game
- 35 for divisions between July 1941 and December 1942
- 50 in all other cases

22.1.2. MINIMUM MOVEMENT POINTS

Motorized units will always receive at least one MP, even when out of fuel.

Non-motorized units will always receive at least eight MP, even when out of supplies unless the unit was air dropped in the current turn (23.9). The exception is static units that will receive two MP.

Units can always move at least one hex, even if it costs more than their MP allocation. To make this minimum move, the unit must be the only unit selected if more than one unit is that particular hex.

Determining the Actual Movement Point Allowance
The following steps are used by the computer to determine a unit's MP allowance during the logistics phase at the start of a turn:

- Start with Maximum MPs (22.1.1);
- Calculate average fatigue of the unit based on the number and fatigue level of each type of ground element. Reduce the number of MPs by the average fatigue divided by ten, rounded down;
- Note that the effect of fatigue is cancelled if a unit passes a test comparing a dice roll to its current level of Combat Preparation Points (23.2.3). In addition passing this test will remove the need to check for initiative and administration (as below);
- Check for leader initiative. If all leaders in the chain of command fail the initiative check, then multiply MPs remaining by 80 percent, rounding down;
- Check for leader admin. If all leaders in chain of command fail the admin check, then multiply MPs remaining by 80 percent, rounding down. Note that units that did not move in the previous turn will automatically pass their next turn's admin check;
- Reset the unit's MPs to eight if determined to be lower than eight;
- Determine if fuel (motorized unit) or supplies (non-motorized unit) are sufficient to enable the unit to use the remaining MPs it has. For example, if a motorized unit has only 50 percent of its maximum MPs remaining after the calculations above, it will only require 50 percent of fuel it would have needed to use its maximum MP.

For example: if fuel on hand is 60 percent of what the unit needs to use its remaining MPs, then it can only move 60 percent of those MPs, rounded down.

- The movement allowance is capped by a shortage of vehicles in the unit as follows: Motorized Units = Maximum of $6 + (44 * (\text{vehicles in unit} / \text{vehicles required by unit}))$. For Non-Motorized Units = Maximum of $6 + (10 * (\text{vehicles in unit} / \text{vehicles required by unit}))$. For Cavalry Units = Maximum of $6 + (16 * (\text{vehicles in unit} / \text{vehicles required by unit}))$.
- Note that in each case, the number of trucks available is all those shown as unused (i.e. not taken by the resupply routines) plus 1/3 of those used in the supply process.
- Subtract MPs based on attacks made against this unit during the prior player-turn (22.1.3).
- If it is a non-motorized unit, reset the unit's MPs to eight if determined to be lower than eight. If a motorized unit with zero MPs, reset the unit's MPs to one. If a static unit with less than 2 MPs, reset the unit's MPs to two.

As an example of the above rules, a motorized Axis unit that was not attacked during the last player-turn will start with a base MP of 50.

If average fatigue were 22, then the unit MP would be reduced by 2 to 48.

If all the leaders in its chain of command failed their initiative and admin checks, the unit's MPs would be reduced first to 38 and then to 30.

As 30 is 60 percent of the base MP of 50, the unit would need at least 60 percent of required fuel in order to use these 30 MPs; if it had only 45 percent of its fuel needs, its MPs would be lowered to 22.

If the unit has 80 percent of its vehicles, it has a maximum of $6 + (44 * .8)$ or 42 MPs. Since the unit has only 22 MP, it is not affected further by this level of vehicle shortage.

Had the unit had 100 percent of its fuel and had passed the leader and admin checks, instead of having 48 MPs the truck shortage would be reduced the unit to 43 MPs.

22.1.3. IMPACT OF ENEMY ATTACKS ON UNIT MOVEMENT ALLOWANCE

When a unit is attacked, depending on the odds, it will suffer a loss in movement points during its next turn. The loss of MPs is equal to the standard attack cost that

a unit would have paid had it made the attack (so if it was a deliberate attack and the defending unit is motorized, it would lose 16 MPs from its next turn MPs). This standard attack cost is modified as follows based on the odds of the attack:

ODDS FROM	ODDS TO	IMPACT
1.5:1 or greater		Full Effect
1:1	1.49:1	75%
1:2	1:1.01	50%
1:5	1:2.01	35%
1:10	1:5.01	20%
Less than 1:10		No Effect

Motorized units cannot lose more than 16 MP regardless of how many times they are involved in combat in the previous turn. They will retain a minimum of 6 MP unless they are also affected by fuel shortages when their minimum MP can be 1.

When a unit is attacked in the amphibious phase, which comes after the unit's MPs are set, any loss of MPs due to enemy attacks is immediate and can leave a unit with 0 MPs at the start of their turn.

22.1.4. IMPACT OF AMENDING THE LOGISTICAL LEVEL

If the logistical level is varied from 100 due adjusting the difficulty level when setting up the game this will have an impact on how a shortage of trucks affects the MP available. If it is under 100, then a truck shortage will have a greater impact on MP, if it is over 100 then a truck shortage will have less effect.

22.1.5. MOVEMENT ALLOWANCE FOR AIR DROPPED COMBAT UNITS

Combat units that are air dropped, including in support of amphibious invasions, will have zero movement points remaining for the rest of their turn.

Game Play Note: Given a week long turn, the inability of units to move after being air dropped may seem unrealistic. Basically they are taking a 10x10 mile area (hex) and waiting for troops to link up with them. Their importance is in cutting off enemy unit retreat routes and preventing reserve activations.

22.2. TACTICAL MOVEMENT COSTS

22.2.1. REAR AREA ADMINISTRATIVE MOVEMENT

Ground unit movement costs are reduced if the unit is moving in hexes that were friendly controlled at the start of the turn. In a clear hex in clear weather the cost for an infantry unit will usually be 1 MP compared to the cost of 2-3 MP when entering a hex captured during the turn (i.e. one where you have 'pending control').

The rear area administrative rule will apply when:

- moving in hexes that were friendly controlled at the start of a turn (7.3.1)
- not adjacent to an enemy controlled hex (both the hex exited and the hex entered)
- there is no enemy interdiction in the hex (at any level above zero)

The reduction in the movement cost is based on the lowest quality road system in either the source hex or the destination hex. For poor roads, the reduction is 1 MP per hex, for average roads 2 MP per hex and for good roads 3 MP per hex. The MP for any hex can never be less than 1.

As an example, if a non-motorized unit moves from an average road hex to a good road hex in rough terrain and with heavy mud then the cost would be 2 (for rough) +2 for poor weather - 2 (since the average road is the worst of the two hexes), in combination this will give a 2MP cost.

If this move included crossing a minor river, then the base movement cost would be 2 (rough terrain) +1 (minor river) + 2 (heavy mud) and the road system would then reduce the total cost from 5 MP to 3 MP.

22.2.2. FATIGUE, COMBAT PREPARATION POINTS AND MOVEMENT

As units move they will build up fatigue. This will be higher when units move in hexes that have been captured that turn or are affected by Heavy Mud ground conditions.

Moving units in hexes you controlled at the start of the turn will be quicker and see them gain less fatigue than moving into hexes that were enemy controlled.

Every hex will cost one combat preparation point (23.2) regardless of the notional MP cost per hex.

In this case, administrative movement can still be helpful. If a unit moves its full allowance it will expend more preparation points but if it moves as far as it could without administrative movement it will be left with some unused MP. Since unused SMP contribute to the recovery of Preparation Points, the unit will regain those it lost if you are careful about the speed of advance and keeping a unit in friendly controlled hexes.

22.2.3. IMPACT OF INTERDICTION ON TACTICAL MOVEMENT

Interdiction can be generated by enemy air action (18.1.4), partisans (13.4.2) or as a result of an airborne assault (23.9). Any level of interdiction will prevent the usage of administrative movement through the hex.

Leaving hexes with higher levels of interdiction will impose increased movement costs and possibly extra losses in the form of disruptions, damaged and destroyed elements.

22.2.4. IMPACT OF ENEMY ZONES OF CONTROL

The movement costs for exiting an enemy Zone of Control depend on the morale of the moving unit (38.6.1). If the unit morale is between 81 and 100 the cost is +1, between 51 and 80 it is +2 and at 50 or below the extra cost is 3 MP.

22.2.5. TEMPORARY MOTORIZATION

Any non-motorized combat unit (**except cavalry units**) that is in supply may triple its movement points (MP) for the current turn by clicking on 'motorize unit' from the combat unit detail screen (37.3), but at a cost in vehicles drawn from nearby depots and/or the motor pool as well as administrative points (AP).

As in this example, the cost of motorising is shown on the unit tab (342 trucks and 1 admin point) and will be confirmed when you decide to (or not) to carry out the action.

Only units that have not yet expended any MPs during that turn may temporarily motorize. The unit will show as Motorized for the rest of the player's turn and will pay motorized unit costs. Mountain units that have been

1/99th Light Division^W
 4,201 46 Wins: 2 Losses: 0

READY 29
 Combat Value 2.50/2.48
 TOE 93/99
 MAX TOE 100
 HHQ XXXXIX Mint Crps
 OHQ Army Grp. Anton.
 Morale 76 (75)
 Nation Germany
 Supply/Need 41 / 56
 Fuel/Need 5 / 8
 Ammo/Need 121 / 112
 Support/Need 134 / 115
 Construction Value 17
 Transport Cost 914 / 366
 Vehicles/Need 70 / 56
 NON-MOTORIZED (1)
 Supply status In Supply
 Withdraw 21WE 34FI

SUPPLY DETAILS
 MOTORIZED UNIT (342 / 1)

Elements			Assigned (0)	Air Support	
EXP	RDY	DAM	GROUND ELEMENT	FAT	
76	67	4	Rifle Squad 40	29	
76	16	2	Pioneer Squad 39	28	
76	9	1	Bicycle Recon Squad 40	30	
76	21	0	7.92mm Anti-tank Rifle	28	
76	16	1	7.92mm Machine Gun	29	
76	20	1	50mm Mortar	28	Temporarily motorize this unit.
76	12	0	81mm Mortar	29	
76	12	1	37mm Anti-tank Gun	31	
76	2	1	50mm Anti-tank Gun	30	
76	8	1			
76	2	0			
76	1	0			
76	4	2			
76	134	4			

Motorize Unit?
 Cost - 1 AP, 342 trucks
 Yes No

temporarily motorized pay motorized movement costs in mountain hexes (not mountain unit movement costs).

One vehicle is required for each ground element in the unit (ready or damaged) and there must be available vehicles in nearby depots or the motor pool. When a unit is temporarily motorized, vehicles are taken from the depot that the unit has most recently drawn supply from. If no unused vehicles are in that depot, then freight in the depot can be converted to vehicles from the pool (if there are vehicles in the pool).

If there are not enough vehicles, then the unit cannot be motorized.

The Administrative Point cost to motorize a unit is based on the number of vehicles required from the motor pool and is equal to 1 + number of trucks required / 500 (rounded down). The number of vehicles required to motorize the unit and the number of administrative points required for temporary motorization will be displayed next to the Motorize Unit text in the unit detail screen.

All temporarily motorized units and Soviets motorized infantry units (whether motorization is temporary or permanent) pay an additional +1 MP when moving into an enemy controlled hex (in addition to normal costs).

Normally a temporarily motorized unit will be automatically demotorized in the next friendly logistics phase, but the player will be offered an option to have the unit retain motorization in future turns. In these cases the player must then use the demotorize button to remove

the vehicles and return to non-motorized movement. This demotorization will then occur in the next friendly logistics phase.

Non-motorized support units check in the logistics phase to see if they are attached to a motorized unit, and if so, they are given extra vehicle needs as if they were being motorized themselves. Unlike the on map units, they are not immediately provided with vehicles they need when the parent unit is temporarily motorized. This applies to support units attached to temporarily motorized combat units or attached to permanently motorized combat units. In any logistics phase when the support unit is no longer attached to a motorized unit, it will reduce its needs and return the excess vehicles.

Support units don't cost AP to motorize (they just do it automatically when called for per above). Note this only applies to support units directly attached to combat units. When attached to HQ units, they remain in their natural state (i.e. they don't motorize even though the HQ is motorized).

No AP's are gained when a unit de-motorizes. Units must be de-motorized prior to being transported by air.

Units that are temporarily motorized and retain their motorization each turn pay admin points for the motorization each turn (in this case if no Admin Points are retained the player will start turn with a negative value)

Using the example above, the unit has been ordered to retain its motorisation. This can be cancelled by clicking on 'DEMOTORIZE UNIT'.

1/99th Light Division^W
 4,201 46 Wins: 2 Losses: 0

READY 29
 Combat Value 1.25/1.24
 TOE 93/99
 MAX TOE 100
 HHQ XXXXIX Mint Crps
 OHQ Army Grp. Anton.
 Morale 76 (75)
 Nation Germany
 Supply/Need 41 / 43
 Fuel/Need 5 / 63
 Ammo/Need 121 / 112
 Support/Need 134 / 115
 Construction Value 23
 Transport Cost 1769 / 366
 Vehicles/Need 412 / 412
 MOTORIZED
 Supply status In Supply
 Withdraw 21WE 34FI

SUPPLY DETAILS
 DEMOTORIZE UNIT

Elements			Assigned (0)	Air Support	
EXP	RDY	DAM	GROUND ELEMENT	FAT	
76	67	4	Rifle Squad 40	29	
76	16	2	Pioneer Squad 39	28	
76	9	1	Bicycle Recon Squad 40	30	
76	21	0	7.92mm Anti-tank Rifle	28	
76	16	1	7.92mm Machine Gun	29	
76	20	1	50mm Mortar	28	
76	12	0	81mm Mortar	29	
76	12	1	37mm Anti-tank Gun	31	
76	2	1	50mm Anti-tank Gun	30	
76	8	1	105mm Howitzer	29	
76	2	0	150mm Howitzer	28	
76	1	0	28mm Anti-tank Gun	28	
76	4	2	75mm Infantry Gun	30	
76	134	4	Support	31	

22.2.6. SPECIFIC MOVEMENT RULES FOR BRIGADES AND SMALLER UNITS

To reflect their lack of combat support elements, brigades and regiments that move into an enemy controlled (and pending) hex must pay a movement cost of at least 3 MP per hex (terrain, weather and interdiction can all increase this to a higher number).

These units move in friendly hexes according to the usual movement rules for their type of unit.



In this case, the German regiment will pay 3 MP to enter a Soviet hex not the 1 MP that represents the base cost for such a hex in good weather.

22.2.7. COMBAT DELAY MOVEMENT COSTS

Whenever ground combat takes place in a hex, a combat delay cost will usually be generated for the hex which will slow down future movement from this hex during the current movement phase.

This combat delay usually accumulates with every battle in the hex up to a maximum of nine points. This combat delay is listed at the bottom of the hex pop up and can be displayed in the hex inside a small movement compass the same colour as the non-phasing player.



In this example, the German 1-1 division has been attacked twice (once hasty, once deliberate) so the hex now has a combat delay of 4 (if any Soviet units ever manage to capture it).

The graphic display can be toggled on or off using Hotkey- Ctrl-d. The effect of the delay is that when a **unit moves out of a hex**, it expends an amount of MPs equal to the combat delay if a non-motorized unit, and three times the combat delay if a motorized unit.

As always it must have enough MPs to successfully complete the move or it is not allowed. All combat delays are removed out at the start of the next logistics phase.

Combat delay points are added to a hex as follows:

- 3 Points – Deliberate attack with final odds < 5 to 1.
- 2 Points – Deliberate attack with final odds >= 5 to 1 and < 10 to 1.
- 1 Point – Deliberate attack with final odds >= 10 to 1.
- 1 Point – Hasty attack with final odds < 10 to 1.
- 0 Point – Hasty attack with final odds > 10 to 1 unless there is an enemy unit (including the original defender) still adjacent to the hex. In this case a delay of 1 is still imposed.
- 0 Point if the attack failed but was changed to a scouting battle (23.4.2).

Note: This rule makes does not make it harder to enter a hex that was taken in combat, but does make it harder to move further than that hex during the current movement phase.

22.2.8. DETAILED MOVEMENT COST TABLES

These can be found in appendix 38.7 of this manual and in the game editor (appendix 41),

22.3. CONDUCTING TACTICAL MOVEMENT (F1)

To carry out any tactical movement, the F1 key must be selected.

There are three slightly different ways in which a given unit may either move or attack (remember that combat is a function of movement in WiTE2).

22.3.1. GROUND MOVEMENT

Summary: Left click as necessary to select the unit(s), right click to move.

Details: First select a hex with units and then if necessary select the unit(s) that will be moving. Selecting a blank part of the unit box will toggle unit selection.

The current movement allowance will always be displayed on the unit counter graphic in the unit bar.

With 'show movement allowed' enabled (default) hexes the unit with the fewest movement points remaining cannot reach will be shaded grey. Impassable hexes, to

include hexes blocked due to enemy units, will be shaded red. If 'show movement path' is enabled (default) then moving the mouse cursor over the hexes where movement is allowed will display a line of symbols, each with a number showing how many movement points the unit with the fewest remaining movement points would have left if it was moved to the hexes along that path.

To move the selected units to an allowed location, right click in the desired hex. If the unit(s) that was just moved is eligible to undo the move, the 'undo move' button (Hotkey-'u') will appear at the right end of the mode tool bar.

While the movement rules may appear complex, in most circumstances actual movement is relatively simple. The screen display will first show all the hexes the unit can reach (subject to FOW) and the actual movement cost of the cheapest option.

22.3.2. PLACING A UNIT IN RESERVE STANCE

Units in the reserve stance can contribute to any battle within their command and movement range at a cost to their MP in the following turn (any battles they engage in will affect their MP, see 22.1.3).

Any unit can be placed into reserve mode regardless of the remaining MP in the current turn but is very unlikely to actually take part as a reserve formation if this is too low.

22.3.3. CONDUCTING A HASTY ATTACK

Summary : From single hex only. Left click as necessary to select unit(s), right click to attack.



Details: First select a hex with at least one combat unit that is adjacent to an enemy unit and use the unit bar to select the units that will participate in the attack. Move the mouse cursor over the hex with enemy units that will be the target

of the attack. The hasty attack symbol will appear if the selected units are eligible to attack. Right click on the target hex to initiate a battle.

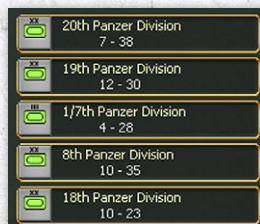
Hasty attacks will cost motorized units 3 MP (plus the cost to enter the target hex) and non-motorized 2 MP.

22.3.4. CONDUCTING A DELIBERATE ATTACK

Summary : Multiple hexes allowed. Shift-left click and Shift-left mouse cursor over to select, shift-right click to attack.

Details: Hold the shift button down and left click on a hex with friendly combat units that will be participating in the deliberate attack. To add additional combat units from other hexes to the deliberate attack, to include on-map artillery combat units firing from two hexes away, move the mouse cursor (with Shift still down) over the applicable hexes, which will result in the selection of all additional units in those hexes.

The unit bar will then change to a list of all units currently selected, with a unit counter graphic followed by the unit name. Units that do not have sufficient movement points to attack will be automatically deselected. Any units in the hexes that the player does not wish to attack can be deselected by left clicking the counter graphic in the unit bar.



De-selection will be confirmed by the counter graphic being removed and units can be re-selected by left clicking again.

In this case any of these units can be deselected, reducing the apparent combat odds and reselected if you want to include them in the battle.

Only combat units will be selected during this process, but combat units not eligible to participate (usually non-artillery combat units two hexes away) in the deliberate attack will need to be manually



deselected in order for the attack to be conducted by the computer. If units lack the MPs to complete the attack they will need to be manually deselected.

The cost of a deliberate attack will vary according to the unit type (38.7.1) but usually motorized units will pay 16 MP

(plus the cost of entering the target hex) and non-motorized 6 MP. The main exception is that non-motorized type 2 units (i.e. those that have both vehicles for supplies and all non-infantry, non-infantry weapon elements) will pay 5 MP.

Once the phasing player has selected all the combat units that will be participating in the attack, move the mouse cursor (with Shift still down) over the hex with the enemy units that will be the target of the attack.

The deliberate attack symbol will appear if the selected units are all eligible to attack. Right click on the target hex to initiate a battle.

Gameplay Note: The phasing player does not initially need to have the shift key down in order to select the initial hex, but adding additional units in other hexes, selecting a target for the deliberate attack and conducting the deliberate attack will require the use of the shift key.

22.3.5. FORCED DISPLACEMENT MOVEMENT

In most circumstances units cannot move in the enemy phases. The exception is if an enemy stack made up of units with no CV values (such as HQs, routed or depleted units) has a friendly unit move next to them, they will make a displacement move.

In some circumstances this might also trigger a surrender if it involves a combat unit that has a low TOE and is isolated (23.14.5 and 23.14.6). In other cases, the unit(s) will move to the nearest hex owned by their side taking attrition losses as they do so. Such displacements may happen multiple times in a turn.

22.4. STRATEGIC RAIL TRANSPORT

Strategic rail movement can be conducted by non-routed, non-frozen ground units. Each unit has a strategic transport cost in tons listed in the unit detail window (37.2, 37.3 and 37.4). For that unit to use strategic rail movement there must be sufficient railyard capacity tonnage available to conduct the movement. The transportation cost of a unit will be deducted from the applicable railyard capacity every turn it uses strategic movement, even if it just moves one hex.

Combat units that are attacked while entrained will only have 10% of their CV in the subsequent battle.

There is a cost in resources (coal) for using rail transport.

22.4.1. BASIC STRATEGIC RAIL TRANSPORT RULES

Strategic rail transport can only be conducted through friendly controlled and undamaged rail line hexes that are connected through the rail network to a permanent supply source. Rail line hexes that are in an enemy ZOC are considered to be cut off from the rail network and cannot be used for strategic rail transport, even if the hex is occupied by a friendly combat unit. The player can view the status of the rail line hexes and the rail network by toggling the Rail Damage Info button (Hotkey- r) in the map information tab (7.2.5)

Selecting a unit that is located on a rail line hex while in Rail Mode (F2) will shade all hexes that that unit cannot move into using strategic rail transport. Note that there is a movement point cost for both entraining and detraining, so that a unit that ends the turn entrained will need to at least expend the necessary SMP to detrain before it can use its remaining MP for tactical movement. See section 6.2.4 for details on using the interface to conduct strategic rail transport.

22.4.2. STRATEGIC MOVEMENT POINTS

All units have 200 Strategic Movement Points per turn, including Static units as these can move by rail. If a static unit is mobilized it will have 100 SMPs on the turn of mobilization (i.e. it will lose half of its potential allowance).

Note that Axis units have no SMP on T1.

Units that are currently routed, or have recovered from a rout in the most recent logistics phase, will have nil SMP. Note that this stops such units being transferred off the map and regaining any CPP.

Tactical MP and SMP are expended proportionally so that use of one movement mode will decrease the remaining allowance of the other.

For example, a headquarters unit with a MP of 50 and a SMP of 200 expends 10 MP of tactical movement to move to a rail hex, resulting in a remaining allowance of 40 MP and 160 SMP.

There is a variable SMP cost to load or unload from trains depending on the presence of a railyard in the hex and the capacity of that railyard. Units without enough remaining SMP at the desired destination will be unable to detrain. Entrained units may not move via naval or amphibious movement.

In general, it is more efficient to entrain and detrain at a rail yard. This will cost less MP/SMP and use up less rail capacity.

Each rail hex moved through costs a certain amount of SMP determined by the current rail line usage tonnage in that hex.

22.4.3. RAIL LINE USAGE AND SMP PENALTIES

Rail line usage is determined by the freight and unit tonnage that has moved through the hex. As the rail line usage tonnage increases in a hex, strategic movement point penalties will apply. The maximum tonnage that is tracked in each hex with a dual track rail is 30,000 tons and for a single track rail this is 12,000 tons. These numbers can be exceeded if sufficient rail capacity is available but each additional ton is charged the maximum SMP penalty (as set out below).

During each logistics phase, accumulated friendly rail line usage in each hex is reduced to the higher of either current rail usage divided by six or the enemy air interdiction value (the actual value of this is shown in a hex pop-up) times 500, with the latter being maxed out at 45,000 tons of rail line usage. In cases where there is no enemy air interdiction, at the start of the movement phase the max rail line usage will be 5,000 tons (for a dual track line and 2,000 for a single track line).

Note that rail line usage has an impact on freight movement to depots during the logistics phase, so moving lots of units over a critical rail line will impact on the amount of freight subsequently delivered to depots at the end of the line.

STATUS	DUAL TRACK	SINGLE TRACK	SMP PENALTY
Bright green	No usage	No usage	None
Dark Green	1 - 4,999 tons	1-1,999 tons	None
Yellow	5,000-9,999 tons	2,000-3,999 tons	+1
Yellow	10,000 - 14,999 tons	4,000-5,999 tons	+2
Orange	15,000 - 19,999 tons	6,000-7,999 tons	+3
Orange	20,000 - 24,999 tons	8,000-9,999 tons	+4
Orange	25,000 - 29,999 tons	10,000-11,999 tons	+5
Red	30,000+ tons	12,000+ tons	+6

Rail usage in tons is displayed in the hex pop-up rollover text (6.4) for each rail hex. If the map information tab logistics info button (Hotkey- n) is toggled on, rail hexes are colour coded based on tons of rail usage. Below are rail usage ranges with associated colour codes and strategic movement point penalties per hex depending on the type of rail system.

22.4.4. RAIL TRANSPORT SMP COSTS

Entrain: The cost to entrain a unit is a minimum of 75 SMP. This cost can increase if railyard capacity has to be drawn from other hexes than the one currently occupied by the unit. The further the distance the greater the increase in load cost. The cost to entrain a unit will be displayed in the general information and City/Airfield Box (6.2.2) as Rail Load MP: xx when a unit is selected in rail mode (F2).



Detrain: The SMP cost to detrain in a hex with a railyard is equal to 75 minus any remaining railyard capacity in that railyard.

For example, a unit detraining in a hex with a level 2 railyard with 10k ton capacity left would change the basic cost of 75, less the remaining capacity (10) to give a 65 SMP unload cost. There is a minimum 30 SMP cost to detrain. The cost to detrain in a city or urban hex without a railyard is 80 SMP. The cost to detrain in any other hex without a railyard, including hexes with towns, is 100 SMP.

The cost to move 1 hex by rail is 1 SMP plus any rail usage SMP penalty, so the maximum cost to move through a hex would be 7 SMP.

22.4.5. IMPACT OF AIR POWER ON STRATEGIC RAIL TRANSPORT

Players can use ground attack and strategic bombing missions to attack railyards and thus lower overall railyard capacity. In addition, the further a unit has to go to find sufficient railyard capacity to use rail transport, the more SMP it takes to entrain, so bombing railyards can both reduce overall capacity and increase the SMP cost of entraining units in specific areas.

Air interdiction can be used to maximize the rail usage SMP penalty on specific areas of the rail network.

22.4.6. CONDUCTING GROUND UNIT STRATEGIC RAIL MOVEMENT (F2)

To entrain a unit or move it by rail the F2 key must be selected. Left click as necessary to select the unit(s), and then use the right click to move the unit as normal (it will then move using rail movement).



Units must start on or be moved to a hex with a friendly undamaged rail line that is not adjacent to enemy units in order to conduct rail strategic movement.

With 'show movement allowed' enabled the hexes the unit cannot reach will be shaded grey. Impassable hexes, including hexes blocked due to enemy units, will be shaded red. As you trace a line of suitable hexes the map will display a line of symbols, each with a number showing how many movement points the unit with the fewest remaining movement points would have left if it was moved to the hexes along that path.

To move the selected units to an allowed location, right click in the desired hex. The on-map counter unit will display the entrained symbol and the 'on train' button will appear in the unit bar.

The unit will remain entrained until either the 'on train' button is selected or movement mode (F1) is selected, returning the unit to its previous status. Units without sufficient SMP available will be unable to detrain.

Remaining Railyard Capacity will be displayed for each railyard when in rail move mode with the number in the rail circles on the map equal to 1,000 tons of remaining load/unload capacity. If the unit(s) that was just moved is eligible to undo the move, the 'undo move' button (Hotkey-'u') will appear at the right end of the mode tool bar.

22.5. AIR TRANSPORT

The Air Transport mode (F9) can be used to conduct three types of air transport missions; airdrop of freight (supply)

(22.5.1), air transport of non-motorized combat units to friendly air base units (22.5.2), and the airdrop of airborne combat units (22.5.3). This will open this screen which can then be used to order the air movement of freight, units or airborne operations.

Freight
Unit
Airborne

Transport: **FREIGHT**

Destination: Left click on MAP to select destination

Selected staging base

Moscow 10,008,604 -

Change staging base

Air Base	Freight	Rng
Saratov	10,000,118	-
Batumi	321,541	-
Arkhangelsk	237,458	-
Astrakhan	109,998	-
Makhathkala	108,921	-
Penza	79,998	-
Tambov	24,799	-
Gorky	19,030	-
Prokhladny	17,699	-
Cherepovets	17,164	-

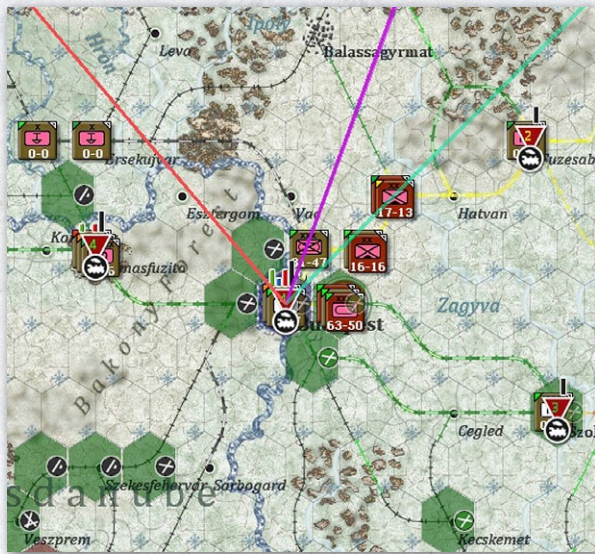
Air Group	Rdy	Aircraft	Rng	Type	Trav %
1 PDA GVF	32	Li-2	-	TR	0%
69 CAP GVF	32	Li-2	-	TR	0%
40 GAP GVF	32	Li-2	-	TR	0%
23 CAP GVF	31	Li-2	-	TR	0%
7 CAP GVF	31	Li-2	-	TR	0%
30 CAP GVF	31	Li-2	-	TR	0%
1 Airborne OAPP	31	Li-2	-	TR	0%
600 TAP	30	C-47 (50)	-	TR	0%
3 TBAP	40	IL-4 1943	-	LB	0%
223 DBAP	39	IL-4 1943	-	LB	0%
40 DBAP	39	IL-4 1943	-	LB	0%

When in Air Transport mode (F9), assigned (pending) amphibious invasion and associated airborne landing hexes will be displayed on the map. Amphibious landing ground hexes will be shaded red, the water hexes Amphibious HQ units will move to will be shaded blue and airborne landing hexes will be shaded light blue.

22.5.1. AIR TRANSPORT OF FREIGHT

To transfer freight, you will need to select your target hex (left click) and then a staging base will be identified. You can change this either from the list in the screen or by right clicking on a suitable on-map airbase. Those with sufficient freight are marked in blue, those lacking sufficient freight are in green (a warning message will appear if you try

to select a green air base). In most circumstances the computer will identify a suitable staging base for the chosen target.



In this case, the computer routine has identified Budapest as the best staging base for the target hex. The transport planes are deployed elsewhere (hence the purple line to the NE). Note that none of the other Soviet airbases in this region are eligible as staging bases as they lack sufficient freight.

Selected staging base		
✈ Budapest	7,840	24
Change staging base		
Air Base	Freight	Rng
✈ Tarnobrzeg	1,239	26
✈ Lukow	589	30
✈ Komarno	1,693	35
✈ Koenigsberg	586	36
✈ Tilsit	1,705	41
✈ Kolomyia	1,780	42
✈ Memel	838	43
✈ Zhitomir	2,573	56
✈ Riga	1,149	57
✈ Ploesti	1,603	58
✈ Kishinev	1,847	63
✈ Kiev	838	63
✈ Vitebsk	409	68
✈ Velikie Luki	471	72
✈ Constanta	830	72
✈ Odessa	3,837	72
✈ Nikolaev	3,851	76
✈ Kherson	4,367	80

You can also change the staging base from the pop-up screen:

The target hex can be any hex but is more effective if an airbase is chosen. All cargo capacity is halved when transporting to a non-airbase hex (i.e. parachuting supplies) and, in addition, only 25-75 percent of the freight air-dropped will arrive in a non-airbase hex.

Eligible air transport units and fighters will be automatically selected and you can add other eligible units if you wish (possible transport groups, including level bombers, that are set to rest, are marked with a cup symbol).

Air Group	Rdy	Aircraft	Rng	Type	Trav %
✓ 69 CAP GVF	32	Li-2	44	TR	0 %
✓ 1 Airborne OAPP	31	Li-2	44	TR	0 %
✓ 30 CAP GVF	31	Li-2	45	TR	0 %
✓ 124 GIAP	33	P-47D (SO)	32	FB	0 %
7 CAP GVF	31	Li-2	45	TR	0 %
23 CAP GVF	31	Li-2	45	TR	0 %
42 GBAP	28	A-20G (SO)	42	LB	0 %

Note that adding level bombers will cost you one administrative point for each such formation.

Once you have selected a suitable set of air groups, the option to launch the air supply will appear at the top of the screen. You can tab between ordering multiple missions and a single mission. Once you are ready, press LAUNCH and the air supply mission will be conducted.

Freight
Unit
Airborne

LAUNCH
MULTIPLE MISSIONS

Transport

Transports / Escorts

Destination

FREIGHT

94 / 33

✈ Koeniggraetz Air Base (150,188)

Note: This mission will be more successful if (a) there is adequate freight at the airbase with the transport planes and (b) if it targets a friendly air base (even one you have just captured), if no airbase is available it is better to drop into a clear terrain hex.

When air freight is air transported to a hex, if there is no depot in the hex, a temporary depot is created. Whether a temporary depot or an already existing depot receives the air transported freight, the instant an air transported shipment arrives in a hex, a special distribution takes place

of freight from the depot in the hex. This special distribution is of supplies, fuel and ammo only (no replacements) and goes to units in the hex or adjacent to the hex.

If there is already freight in the depot, then some of this existing freight may be distributed out along with the freight that was dropped. It is much more efficient to transport freight to a hex with an air base unit than to a hex with no airfield. If there is no airfield, it is better to drop in clear than in worse terrain. Temporary and isolated depots are not allowed to convert freight into vehicles from the pool. They are not allowed to distribute replacements during the logistics phase, but can replenish units in the pocket with them during the logistics phase using standard non-vehicle methods as well as by using any vehicles already in the depot or vehicles requisitioned to the depot from units in the pocket.

Temporary depots created under this routine remain until the hex is linked to a supply source, at which point the temporary depot is disbanded.

Non-transport aircraft have their cargo capacity halved when performing air transport. In addition, it also costs one AP to assign a Level Bomber to an air transport mission (whether set to Single or Multiple Missions). Level bombers pay four times the normal miles flown when they fly air transport missions.

22.5.2. AIR TRANSPORT OF NON-MOTORIZED UNITS

Select the transport unit mode (F9) and select Unit from the tabs.

You can select a suitable air base either by scrolling down the list of airbases or right click on an airbase on the map. You will also select the target airbase where the units will be landed.

Once you have selected a suitable airbase the possible units are shown together with their load cost.

To be eligible, a combat unit must be either in a hex with a friendly air base unit or adjacent. A unit must have at least 1 MP remaining in order to be air transported.

If a non-motorized unit has ground elements that cannot be air transported these will be transferred into combat units in or adjacent to the hex with the air base unit that the unit flew from. If there are no eligible combat units, then the ground elements will be transferred back to the production pool. Any vehicles and excess supply will be transferred to the air base unit that the unit was stacked with prior to being air transported.

Freight	Unit	Airborne		
Transport	2nd Airborne Brigade			
Load cost / Capacity	1269 / 0			
Destination	Koenigsberg Air Base (166,151)			
Selected staging base				
Bucharest	1	74		
2nd Airborne Brigade				
	Load cost: 1269			
Change staging base				
Air Base	Unit	Rng		
Bischofsburg	1	5		
Boguslaw	1	26		
Pasewalk	1	28		
Breslau	1	28		
Neubrandenburg	1	29		
Fuerstenwalde	1	30		
Guben	1	30		
Richtenberg	1	30		
Sagan	1	30		
Strausberg	2	30		
Schoenefeld	1	33		
Oschatz	2	37		
Riesa	2	37		
Strehla	2	37		
Pomssen	1	39		
~	~	40		
Air Group	Rdy	Aircraft		
40 GAP GVF	32	Li-2		
600 TAP	30	C-47 (50)		
1 PDA GVF	32	Li-2		
7 CAP GVF	31	Li-2		
1 Airborne OAPP	31	Li-2		
30 CAP GVF	31	Li-2		
23 CAP GVF	31	Li-2		
69 CAP GVF	32	Li-2		
		Rng		
		Type		
		Trav %		
		94	TR	0 %
		94	TR	0 %
		96	TR	0 %
		116	TR	0 %
		118	TR	0 %
		118	TR	0 %
		118	TR	0 %
		118	TR	0 %

Once a unit has been selected, left click on the intended destination. As with freight transport missions suitable air groups (and escorts if any are available will be selected). If insufficient transport capacity exists to move the unit in a single operation then air transport of non-motorized units can be conducted in up to 2 sorties. If more than 2 sorties would be needed, the unit cannot be air transported.

The computer does not account for possible combat and operational losses when figuring the number of sorties required.

22.5.3. AIR DROPPING AIRBORNE COMBAT UNITS

Select the transport unit mode (F9) and select Airborne from the tabs. Airbases with eligible brigades or regiments (23.9.1) will be shown and split between their airbases.

This routine is used both for ordering the actual drop and setting the target hex of any eligible airborne units. In the example below, the Soviets have airborne brigades at two locations (Glubkoe and Kacha).

Freight	Unit	Airborne			
LAUNCH AIRDROP					
Airdrop	1st Airborne Brigade				
Airborne Prep	95 %				
Load cost / Capacity	1366 / 1692				
Destination	Hex (177,146)				
Transports / Escorts	128 / 113				
Selected staging base					
Glubkoe	1	17			
1st Airborne Brigade	Load cost: 1366 Airborn prep: 95				
Change staging base					
Air Base	Unit	Rng			
Kacha	2	83			
Air Group	Rdy	Aircraft	Rng	Type	Trav %
7 CAP GVF	32	LI-2	26	TR	0 %
3 CAP GVF	32	LI-2	28	TR	0 %
1 Airborne OAPP	32	LI-2	50	TR	0 %
8 CAP GVF	32	LI-2	50	TR	0 %
46 GIAP	36	P-40N (SO)	24	FB	0 %
51 GIAP	37	P-40N (SO)	24	FB	0 %
80 GIAP	40	P-39Q (SO)	24	FB	0 %

If insufficient air capacity is not available then the load cost/capacity will show in red.

Click on LAUNCH AIRDROP and the mission will be executed and the mission will appear as a battle report.

Airdrops are a special type of air transport that requires several turns of preparatory time before they can be conducted. Normal airborne drops are executed during the player's movement phase. Airborne drops in support

of an amphibious invasion are executed after the enemy player's logistic phase just prior to the execution of the amphibious invasion in the amphibious phase.

The combat unit must begin the process in a hex with a friendly air base. The air drop mission will be conducted only by transport air group units. The airdrop of airborne combat units has to be the first and only mission conducted by a transport air group unit in a turn. Once a transport air group unit has used miles for any other purpose, it will be unavailable for airdrop of airborne combat unit missions.

Air drops are not allowed in mountain and impassable hexes. They are allowed in all other terrain; although air dropped units will take more losses during a drop into more congested terrain (such as forests or rough terrain or urban centres). Airborne units can drop onto a hex already containing friendly units as long as they do not exceed stacking limits, in which case they will scatter to an adjacent hex.

Preparation Points accrue in each friendly logistics phase equal to $(100 - \text{current prep points}) / 2$, with a minimum per turn gain of 20, and a max prep point value of 95. Airborne units must be on an airbase to set a target.

Note this does not have to be same airbase hex as when it first started to prepare for the mission. Moving between airbases allows a unit to preserve its preparation points.

Airborne units may not order an airdrop unless they have at least 50 prep points.

Airborne landings that are within 8 hexes of a supplied friendly unit (traced over land hexes) take place immediately upon selecting the Drop button. Airborne landings that are supporting an amphibious landing (i.e. don't qualify as being within 8 hexes of a supplied friendly unit but are within 1 hex of a hex that has an ordered as the target of an amphibious invasion) are executed after the enemy player's logistic phase just prior to the execution of the amphibious invasion in the amphibious phase and will automatically be a night drop.

Airborne target hexes can only be set in the movement phase, not the air planning phase.

Remember you must order the amphibious invasion before ordering an air drop that will be in support of the invasion.

An airborne unit that drops and can't trace to a friendly hex is immediately considered isolated and will surrender if forced to retreat.

The air drop of airborne units will result in additional interdiction added to the drop hex and adjacent hexes.

22.6. RAIL REPAIR MOVEMENT

Friendly rail line hexes must be undamaged in order to be used for strategic rail transport and the transport of freight. Rail line hex damage ranges from one to one hundred percent, but even one percent damage will prevent the hex from being usable for unit-strategic rail movement and transport freight by rail.

A change in hex control usually results in an automatic one hundred percent damage to that rail line. The exception to this is rail hexes in the Baltic region that maybe captured intact during the first three turns of a game starting on 22 June 1941 (11.4).

A player can view the status of the rail network by selecting the map information tab rail damage info button. The actual percentage of rail damage can be viewed in the particular hex pop-up rollover text.

Damaged rail line hexes can be repaired either automatically by special on-map construction type support units or manually by the player through the use of rail repair headquarters units.

22.6.1. AUTOMATIC RAIL LINE REPAIR

Repairs will be made during the logistics phase as headquarters units automatically detach appropriate construction units and send them to damaged rail line hexes (21.6.1). These units will tend not to repair rail hexes adjacent to a rail repair HQ.

Game Play Tip: For the most efficient use of detached construction and labour support units, they should only be manually returned to their headquarters unit if the player believes they are in danger of being attacked or isolated in their current position.

22.6.2. MANUAL RAIL LINE REPAIR

Players may also repair rail lines by manually using rail repair HQ units. Players must manually move rail repair HQ units and designate which hexes they will be repairing during a turn.

In order for an rail repair HQ unit (21.11.1) to use its special ability to repair rail hexes, the player must manually move the unit into a hex that is suitable for repair, and then select the RRC value that will appear on the rail repair HQ unit in the unit bar if the unit has enough MPs to perform the repair. Selecting the RRC number will set the damage of the hex to one percent, and this last point of damage will automatically be repaired during the player's next logistics phase.

Designating a hex to be repaired expends movement points. The number next to the RRC indicates the MP cost



to the rail repair HQ unit to repair the current hex. If the rail repair HQ unit is not in a location that it can conduct a rail repair operation, the RRC number will display a '-' instead.

The hex to be repaired must be adjacent to another undamaged hex or be a hex that has been repaired during the current turn. This could allow the player to double up repairs and repair one track a long way in one turn. If a rail hex is not eligible for repair, the RRC will not display in the rail repair unit's info area.

The MP cost of manual rail repairs are based on the unit's RRV: RRV1=4MP per hex; RRV2=3MP per hex, RRV3=2MP per hex; and, RRV4=1MP per hex.

There is no limit on the number of hexes that can be repaired by a rail repair unit other than the MPs the unit has to expend.

Note: RRV is based on the number of construction and labour support units attached to the rail repair HQ unit and will decrease if attached support units are removed. Players can manually disband support units from a rail repair HQ unit, but there is no mechanism, automatic or manual, to transfer additional support units into a rail repair HQ unit

22.6.3. RAIL REPAIR HQ UNIT MOVEMENT

This requires the F1 key to be selected. Move the Rail Repair HQ unit into a hex that is suitable for rail repair using tactical movement. Select the RRC (Rail Repair Cost) number that will appear on the Rail Repair HQ unit in the unit bar if the unit has enough MPs to perform the repair.

Selecting the RRC will set the damage of the hex to one percent, and this last point of damage will automatically be repaired during the Rail Repair segment of the player's next logistics phase.

Designating a hex to be repaired expends movement points. The number next to the RRC indicates the MP cost to the rail repair unit to repair the current hex. If the Rail Repair HQ unit is not in a location that it can conduct a rail repair operation, the RRC number will display a '-' instead.

22.6.4. RAIL REPAIR FROM A CAPTURED PORT

Note that rail lines in a port can be repaired and then extended from the port, even if the rail line is not directly connected to a NSS. However, rail capacity on this isolated line will be limited to that provided by its own network of railyards.

23. GROUND COMBAT

Focus: This section explains how to ground combat is conducted in WtE2

Key Points:

- How Combat Values are calculated and their effect on combat
- How Combat Values are modified by leadership, terrain and weather
- How Combat Values might change during the combat resolution
- The importance of Combat Preparation Points and combat
- How Support Units are committed to combat
- How Combat Units in reserve mode are committed to combat
- The effect of combat on Ground Elements



- Combat Casualties
- Air drops and Combat
- Displacement Moves and their consequences
- Special rules for Isolated Units

Ground combat takes place in the ground phase and is represented by combat units of the phasing side expending movement points to attack enemy units. The resulting battle can include Air Groups from both sides providing ground support or interception, the commitment of attached support units, and the commitment of nearby combat units in reserve status. The actual fighting takes place between the individual aircraft and ground elements attempting to fire and hit each other in order to disrupt, damage, or destroy.

Terrain and fortification level, air interdiction levels, leader initiative and combat rating, unit morale, ground

element experience and fatigue, ammo status, and the type of attack all play a role in the determination of the initial and modified Combat Value as well as how the battle is fought. At the conclusion of combat, the modified Combat Value ratio determines whether the defender holds or is forced to retreat, which may lead to rout, shattering or surrender, resulting in additional losses from retreat attrition.

Depending on the outcome and odds ratio, defending units may have their movement points for their next turn reduced and combat delay may increase the movement cost of attacking units moving out of the battle hex.

23.1. COMBAT VALUE (CV)

All ground units have a combat value (CV) that is used to determine the results of a battle. The unit CV is equal to the sum of the individual CV's for each ground element in the combat or support unit. The CV is representative of the ability to take or hold territory, often referred to as "boots on the ground." Thus the CV ratings of ground elements are weighted toward infantry and AFV ground elements, while artillery and other guns, though they have good firepower, tend to have low CV's.

The CV in *Gary Grigsby's War in the East 2* is a calculated value that can only provide players an idea of the combat ability of the unit. This is partly due to FOW, partly due to the possibility that additional formations may join in a battle and partly as each battle will disrupt (or more) a variety of elements and each such element is then subtracted from the final CV score.

Displayed Unit CV's are determined by a complex formula that takes into account the different ground elements making up the unit as well as unit morale, experience, fatigue, leadership and supply. CV values displayed for units are non-random approximations of what in combat is a series of die rolls and thus somewhat random values, so no single CV can be more than a guide to how the unit will perform in any particular combat. When Fog of War (FOW) is enabled the accuracy of estimates of enemy CV will be further degraded at lower detection levels (10.2).

The elements that go into calculating the CV are set out in annex 34.4. Elements may be more or less effective than this notional value. For example, each heavy tank contributes a value of 9 but a late war IS-2 or King Tiger will be far more effective in combat than an early war KV-2. Equally, in 1941 both the Soviet BT-7 and T-34 are medium tanks but the latter is far more effective.

This may not affect the combat result (hold or retreat) but may have a major impact on the losses incurred.

23.1.1. INITIAL AND MODIFIED COMBAT VALUES

At the beginning of combat the initial CV is displayed on the combat resolution report and then, after combat is finished, the resulting modified CV is displayed in the battle report. The final ratio between attacker and defender modified combat values is used to determine whether the defenders held their position or will be forced to retreat, rout or shatter (23.10).

The combat value displayed on the counters and shown as the initial CV in the combat resolution window can be radically different from the modified CV shown at the end of the battle, not only due to combat losses, but due to the many random factors and leader rating checks that occur to determine the modified combat value. Also artillery and air attacks in the early stages of a battle may disrupt, damage or even destroy Ground Elements and those elements are then not available for later in the battle if the attacker closes to close quarters.

In figure 23-1, both sides saw significant loss of at-start combat values. For the German defenders a major reason is the loss of the fortifications as the battle progressed due to the amount of Soviet artillery present. On the Soviet side, substantial numbers of elements were disrupted or damaged in the assault.

If the show details option is chosen, that screen will expand to give an overview of how this happened (see figure 23-2 for an example). More details are available in the other tabs (37.1)

In addition, note that calculated CV's are fairly large numbers, so for ease of visualization the CV displayed on the unit counter on the map and in the unit bar are divided by 100 and rounded down, while the unit CV's displayed in the combat resolution display have been reduced by a factor of 10 and rounded down. The CV displayed on a unit counter will not be displayed as less than one unless it is a HQ, depleted or routed unit, but due to rounding, on-map units with a CV of one as shown on the map could have an actual CV that ranges between 1 and 99.

DEFENDER		ATTACKER	
Combat Value	291 => 69	Combat Value	479 => 194
Infantry	10512	Infantry	91573
Tanks	111	Tanks	1649
Aircraft	0	Aircraft	142
Losses	-592	Losses	-791
Other	0	Other	-14
Final CV	0	Final CV	-2

DEFENDER	RATIO	ATTACKER
Kempf Det. Army * 206th Infantry Division (291) W. Wetzel	2.8 : 1	38th Army * 9th Rifle Corps (87) 5th Rifle Corps (95) 124th Guards Rifle Division (28) 34th Guards Rifle Division (32) 206th Rifle Division (38) 23rd Guards Cavalry Division (37) - 60th Tank Brigade (27) - 93rd Tank Brigade (24)
206th Infantry Division RETREATED		

General Info		Ground Losses		Ground Combat		Air Losses		Air Combat				
Units in Battle	1					GROUND ELEMENTS		MEN		Units in Battle	13	
On Map Units	1					AXIS	SOVIET	AXIS	SOVIET	On Map Units	6	
Support Units	0					DESTROYED				Support Units	7	
Ground HQ	1					Ground	101	576	791	Ground HQ	3	
						Air	0	0	0			
						Retreat	3	16	0			
						TOTAL	71	592	791			
Ground Elements						DAMAGED				Ground Elements		
Ready	875					Ground	116	232	960	1664	Ready	9769
Damaged	3					Air	0	0	0	0	Damaged	711
Disrupted	0					Retreat	0	0	0	0	Disrupted	0
TOTAL	878					TOTAL	116	232	960	1664	TOTAL	10480
Air Missions						DISRUPTED				Average Morale	51	
Bomb	0					Ground	216	3047	1714	25242	Average Experience	54
Escort	0					Air	0	0	0	0	Average Fatigue	49
Sweep	0					Retreat	0	0	0	0	Air Missions	
CAP	0					TOTAL	216	3047	1714	25242	Bomb	0
											Escort	0
											Sweep	0
											CAP	0

■ DESTROYED 'DAMAGED'

23.1.2. ZERO CV UNITS

To reflect their inability to participate in ground combat, some ground units will have a combat value (CV) of zero and will perform an automatic displacement move (22.3.5) if an enemy combat unit moves adjacent unless they are stacked with a friendly combat unit with a CV of at least one.

A unit with a CV of zero will not participate in combat, but may take losses due to being forced to retreat or displace.

Headquarter units will always have a combat value (CV) of zero. Units in a routed or depleted (actual TOE of ten percent or less) state will also have a CV of zero.

Note that there are instances, such as if a unit becomes depleted during the air execution phase, where a zero CV unit can end up next to an enemy unit and not automatically displace. Displacement will then occur when a different enemy unit moves next to such a zero CV unit.

Units embarked on ships moving by sea transport (24.3) in water hexes can move adjacent to enemy ground units regardless of their notional CV value.

23.2. COMBAT PREPARATION POINTS AND COMBAT

Combat preparation points (CPP) reflect the advantage of allowing units to rest and plan before they enter combat. While the obvious advantages apply to the attacking side, units with a high preparation value also gain defensive advantages.

You can also see the combat preparation points of units in the Commanders Report.

23.2.1. GAINING COMBAT PREPARATION POINTS

CPP are gained at the end of the friendly movement phase. All units will gain one CPP for each 24 unused SMP. If units end the turn neither adjacent to the enemy nor in a hex that was not friendly controlled at the start of the turn then they will gain triple the number of CPPs. Note that no unit can ever have more than 100 CPP.

If at all possible keeping units in friendly controlled hexes at the end of the movement phase and out of contact with the enemy will allow units to build up and retain CPP more efficiently. Equally trying to end a phase with at least some CPP is essential to regain lost CPP.

Units attached to a Soviet Front or Axis Army set to Assault Status (21.11.2) will gain one CPP for each 12 unused SMP.

23.2.2. LOSING COMBAT PREPARATION POINTS

CPP 's will be lost at a rate of one per hex as they move using the tactical movement mode.

Units that participate in an attack will lose half their CPP once the battle is resolved.

If a unit is attacked and forced to retreat it will lose all its CPP. If it is attacked and the attack fails the lost CPP

will vary according to the final odds and the intensity of the attack:

- if the odds were ≥ 1.5 to 1, then the defender will lose half their CPP
- if the final odds were ≥ 1 to 1, the defender will lose one quarter of their CPP
- if the final odds were less than 1-1 the defender will lose 10% of their CPP

A SU gains or losses CPP according to the actions of the unit they are attached to. In addition, if a SU is re-attached (either to a different HQ or to or from a Combat Unit) it will lose 50% of its existing CPP.

Units sent to the National Reserve will also lose all their retained CPP.

23.2.3. EFFECT OF COMBAT PREPARATION POINTS

Attacking units will have their CV for combat calculations modified by the number of CPPs they possess if they are attacking. Every 1 CPP adds 1% to the final CV so a unit with 100% preparation points will have their attacking CV doubled. In effect, CPPs primarily affect the final combat odds – and thus the chance of winning or losing a battle.

In addition, CPPs affect the chances of passing administrative rolls for resupply and to reduce fatigue when in contact with the enemy. In addition, the chances of Support Units being committed and the effectiveness of artillery are also influenced by the number of CPP a unit possesses.

Units with 100 CPP can store up to 150% of their ammunition, supply and fuel needs if they are set at supply priority 4 and do not move.

In effect CPP primarily gives an advantage to a well rested and prepared attacking force. However, the secondary advantages (supply, fatigue reduction and Support Unit commitment) also benefit the defender.

Note that in addition, CPP can have a substantial effect on the MP of a unit (22.1). If the unit passes a test comparing CPP to a dice roll (higher the CPP, the greater chance to pass) then the movement allowance will not be affected by fatigue, or missed initiative and administration tests. It will still be affected by shortages of fuel, supply or trucks or having been attacked in the previous turn.

The importance of this cannot be overstated. When advancing try to ensure your units retain as many CPP as possible and are in a position to regain as much in the next phase. Overall your units will move faster, especially if there is adequate supply, fuel or trucks.

23.3. COMBAT SEQUENCE

The following is a general outline of how a battle proceeds. Some steps, such as participation by Air Groups or commitment of combat units in reserve status, may not take place.

- Initiate battle (see section 22.3 regarding use of movement mode (F1) to attack)
- Determine the defence modifiers from terrain and fortification level (23.5)
- Commit support units (23.6)
- Calculate Combat Values (CV) and estimate the odds ratio to determine if reserve commitment might take place (23.7.1)
- Commit reserve units (Defender first, then Attacker) (23.7)
- Calculate initial CV's and odds ratio
- Conduct battle
- Air Mission sub-phase (18.1.3 and 18.1.7)
- Attacker interdiction in the defender's hex will cause damage/disruption to the defending units while defender interdiction in the attacker's hex(es) will cause damage/disruption to the attacker. Each unit in combat is impacted by the enemy interdiction in their hex.
- Both players' Air Groups committed for ground support
- Both players' Air Groups committed for air intercept of enemy Ground Support
- Air to Air combat
- Ground to Air (AA) and Air to Ground combat
- Ground Combat sub-phase with elements being selected by range in a series of rounds
- Calculate final CV and odds ratio
- Determine Winner and Loser (23.11)
- If the Defender lost, determine retreat result (23.12). This could be a retreat, rout and displacement move (23.13), shatter, or surrender and involve retreat attrition (23.12)
- If the Attacker lost, determine retreat attrition on the attacking units (they are considered to be retreating back from the defender's hex).

- Determine reduction in MP's for defending units for next turn (22.1.3).
- Determine any Combat Delay movement costs to be added to the hex. (22.2.7)

23.4. TYPES OF ATTACKS

There are two types of attacks that are distinguished by the amount of time, represented by movement points, spent in preparation and the ability of the attacks to mass forces against the defender.

Hasty attacks expend fewer movement points, but at a cost of reduced combat power. Deliberate attacks expend far more movement points, but allow the fullest application of force. Amphibious assaults (24.6.1) and Air Drop combat (22.5.3) are types of deliberate attack.

23.4.1. HASTY ATTACK

Defined as "...an attack in which preparation time is traded for speed in order to exploit an opportunity," hasty attacks will generally result in higher attacker and lower defender losses than a deliberate attack.

A hasty attack will require the expenditure of three MP's for a motorized combat unit and two MP's for a non-motorized combat unit. Only a single stack of combat units can participate in a hasty attack and their Combat Value (CV) will be reduced by one half for all steps in which CV is calculated.

Support units can only be committed from eligible headquarters units that have not expended any movement points during the current turn. Note that support units attached directly to combat units will always be committed to battles when the combat unit is a participant.

23.4.2. RECONNAISSANCE IN FORCE

Prior to a hasty attack, a special modified CV calculation is conducted and an odds ratio generated. This calculation is not displayed in the combat resolution window and will most likely result in modified CV's and odds ratio that are different than the initial CV's displayed on the counters and in the combat resolution window (37.1).

If this modified CV ratio is less or equal to 2 to 1 (2.01 to one is greater than 2 to 1), than an initiative check is conducted for each combat unit participating in the hasty attack. If all the units pass their leader initiative checks, then the attack is turned into a reconnaissance in force.

If any unit in the attack fails the initiative check, then the attack remains a regular hasty attack.

A reconnaissance in force will result in reduced fighting and losses on both sides and the attacker will have no chance to cause a retreat. This result will be reflected by the combat resolution message "Defending forces were scouted."

23.4.3. DELIBERATE ATTACK

Defined as "A type of offensive action characterized by pre-planned coordinated employment of firepower and manoeuvre to close with and destroy or capture the enemy."

Deliberate attacks require the expenditure of sixteen MP's by motorized units and six MP's by non-motorized units (five by type (2) non-motorized units). Multiple stacks of combat units can participate in a deliberate attack against an adjacent defending stack.

Unlike a hasty attack, support units can be committed from eligible headquarters units that have moved during the current turn. In addition, Artillery combat units that have sufficient movement points remaining may participate in a deliberate attack from two hexes away from the defending unit. The artillery combat unit must be selected just as any unit would be selected to add into a deliberate attack.



In this instance the 4 Artillery Division can join in the attack on the German 7-10 Infantry Division even though it is not adjacent.

If all units launching an attack are artillery combat units that are two hexes from the target hex, then only artillery

Game Play Note: The artillery combat units are not actually firing from twenty miles away; the ability to add artillery combat units two hexes from the battle is an abstraction representing the massing of artillery for an intense pre-attack bombardment and the actual firing can take place at ranges as low as 1,000 yards.

units from both sides can fire and no support, reserve or Air Groups will be added into the battle for either side.

23.5. FORTIFICATION AND TERRAIN DEFENSIVE MODIFIERS

In WITE2, the defender can gain bonuses both from man made fortifications and the terrain. The combat value of defending units can be increased by the fortification defense modifier, which is a combined value that takes into account both the intrinsic terrain and any man made fortification level in the hex.

The combat value of each defending unit is modified by multiplying the CV by one plus the total fortification defense modifier. In many cases, this defensive multiplier will also be increased due to the terrain occupied or in the intervening hexside(s).

23.5.1. FORTIFICATIONS

All hexes have a manmade fortification value, called a fort level (20.3), that ranges from Fort Level 0 (no benefit) to Fort Level 5 (maximum benefit).

Each fort level gives a +1 Defense Modifier.

23.5.2. TERRAIN

Terrain can be thought of as possessing an intrinsic fortification level that is added with the manmade fortification level to provide the total fortification defense modifier for that hex.

TERRAIN TYPE	DEFENSE MODIFIER	REMARKS
Clear	+0	
Bocage	+2	Dense (1)
Desert	+0	
Sand	+0	
Tundra	+0	
City	+2	
Urban	+6	+3 if Isolated Hex Double Dense (2)
Heavy Urban	+8	+4 if Isolated Hex Double Dense (2)
Light Woods	+1	
Heavy Woods	+2	Dense (1)
Rough	+3	Dense (1)
Mountain	+3	Double Dense (2)(3)
Swamp	+2	Dense (1)
Impassable	N/A	

Notes

- (1) In dense terrain, the CV of infantry type ground elements is doubled and the CV of AFV and combat vehicle type ground elements are halved (23.8.3).
- (2) In double dense terrain the CV of infantry type ground elements is quadrupled (x4) and the CV of AFV and combat vehicle type ground elements is quartered (x1/4).
- (3) Mountain and type 0 non-motorized combat units are more effective during battles that take place in a mountain hex both defending and attacking such hexes.

The terrain type in a hex also determines the average distance (range) for combat between ground elements.

This is important as it reduces the natural advantage that some longer range weapons (such as tank guns) and improves the importance of shorter ranged weapons (such as infantry carried anti-tank weapons). Thus tanks will tend to take heavier losses when attacking infantry in closed rather than open terrain.

The table above summarizes the terrain fortification modifiers:

23.5.3. COMBAT INTENSITY IN URBAN, HEAVY URBAN OR PORT HEXES

Any combat that takes place in these hexes will see heavier losses for both sides. In particular defender losses will be higher and deliberate attacks will always be resolved at close range.

23.6. SUPPORT UNITS IN COMBAT

Support units can participate in combat on either side. Support units that are directly attached to combat units will automatically be added to the battle. Support units attached to headquarters units must pass a series of checks in order to be committed to a battle. Headquarters units can only commit support units to attached combat units. The HQ unit must be within five hexes of attached combat units and be able to trace any path of friendly hexes, which can be in EZOC, to those combat units in order to commit support units during combat.

Note that the actual distance through friendly hexes from a HQ unit to an attached combat unit does not impact the ability to commit support units, as long as the HQ unit is within five hexes "as the crow flies".

Support units committed to support a cross river attack will be subject to additional disruption (23.8.9).

23.6.1. SUPPORT UNIT COMMITMENT

The maximum number of attached support units that can be committed by headquarters units to a single battle is 6, with the exception where the defending combat units are in a light urban or heavy urban hex, where the maximum is 18.

Note this limit is in addition to the commitment of Support Units that are directly attached to Combat Units involved in the combat.

Support unit commitment from headquarters units is not automatic. For each support unit attempting to be committed, the leader of that headquarters must pass an initiative check. The support unit must then pass several checks, with the checks becoming more difficult based both on the number of support units already committed and the total number of non-construction support units attached to the headquarters unit. This means that Headquarters units with large numbers of non-construction support units will have more opportunities to commit support units; however the overall probability of each support unit being committed will be less than if the headquarters units had fewer non-construction support units.

Support units can only be committed if the relevant HQ is five or less hexes from the combat.

The chance of successful commitment will also be affected by the number of vehicles in the unit defined as the percentage of needed vehicles. This will vary as:

- 90+% +2
- 80-89% +1
- 70-79% 0
- 60-69% -1
- 50-59% -2
- 49 or less% -3

The chance of support units being committed can also be increased by the level of fortification in the defending hex. Equally the number of Combat Preparation Points of the units involved in the combat will affect the chances of support units being committed and the effectiveness of any artillery allocated (23.2.3).

HQ units that have moved during the current player-turn will see -1 deducted from the initiative value when determining if an attached Support unit is committed to a deliberate attack.

If the attack is a hasty attack (23.4.1) then only HQs which have not moved can commit Support Units.

23.6.2. DEFENDER ARTILLERY SPECIAL COMMITMENT

Artillery support units attached to a defending HQ unit have priority to be committed into a battle during a special commitment phase. During this round of commitments, defending HQ units have a chance of committing 3 more than the normal limit of Support Units (so 9 or 21 instead of 6 or 18). After this round, the normal commitment round is conducted.

23.6.3. SOVIET ARTILLERY LIMITATIONS

Before 1944, Soviet artillery and rocket ground elements (i.e. both those in units and specialist Support Units) will have a notional requirement for only 60% of their ammunition needs. In turn, this will reduce the rate of fire.

Units reporting (directly or indirectly) to a Front set to Assault Status (21.11.2) will have a notional requirement for 90% of their ammunition.

23.7. RESERVE COMBAT UNITS

Combat units in reserve mode may be committed to a nearby battle, both offensively and defensively. The type of attack itself, whether hasty or deliberate, has no effect on the commitment of units in reserve mode. Any Ready combat unit may be placed into Reserve mode by selecting the Ready/Refit/Reserve toggle on the counter or the combat unit detail window (35.2) until Reserve is displayed. Units that move, retreat or rout are taken out of reserve mode.

Reserve units that are committed to combat do not move, but they must have the MPs required to be expended in order to reach the battle hex. The MPs a unit has when it ends its player turn are the MPs available for it to use for commitment as a defensive reserve during the enemy player's turn. Reserve units committed to support a cross river attack will be subject to additional disruption (23.8.9).

During a battle all defensive reserve commitments are made first, and then followed by offensive reserve commitments.

23.7.1. RESERVE UNIT COMMITMENT

To be committed in defence, a unit in reserve mode must be within 6 hexes of the battle hex. To be committed to an attack, a reserve unit must be within 3 hexes of the battle hex.

A unit in reserve mode may never commit to a battle if it is adjacent to an enemy unit. A unit in reserve mode will never commit into a battle if the initial combat value (CV)

1 of 1	Turn:103	Jun 6 1943	Gnd: Clear	Air: Clear	224,166	Clear	0.07.27	X
DEFENDER Combat Value 235 => 93	16469 -442	211 -10	22 -13	73136 -1010	1557 -30	407 -22	ATTACKER Combat Value 495 => 260	
LII Corps * 18th Panzer Division (223) - 731st Gun Battalion (1) - 628th Siege Mortar Battery (0) - 457th Mixed Artillery Battalion (1) - III/70th Werfer Battalion (1) - II/51st Werfer Battalion (1) III Panzer Corps 6th SS Flan. Motorized Brigade (8) R	K. von Briesen 	2.7 : 1 18th Panzer Division RETREATED	1st Shock Army * 9th Guards Cavalry Corps (87) 49th Guards Rifle Division (45) 80th Guards Rifle Division (45) 35th Guards Rifle Division (37) - 1st Gds Howitzer Brigade (16) - 30th Mortar Brigade (8) - 7th Gds Separate Tank Regiment (26) - 8th Gds Motorcycle Regiment (13) - 1st Gds Army Artillery Regiment (5)	R. Malinovsky 				
Show Details								

odds ratio is over 10 to 1. A defending reserve unit will also never commit into a battle if the odds are less than 1 to 4.

Units next to enemy amphibious HQ units are not eligible to be committed from reserve.

If the above commitment pre-requisites are met, the unit must then check to see if it has enough MPs to commit to the battle. If it does, then the unit must pass a leader initiative roll to be committed to the battle. The unit must also pass a check based on the MPs to be expended such that Die (MPs to be expended if committed) must be less than or equal to Die (Units MPs).

In the above case the 6th SS Flander's Motorized Brigade entered the battle as a reserve reaction. This is shown on the combat report by an 'R' next to the unit name. Since the Germans lost that battle, its MP is now set to 0 and it cannot take part in any further combats as a reserve reaction.

A unit may participate in multiple battles in the same turn as long as it meets all of the requirements and has sufficient MPs to expend. Defending units in reserve mode that participate in a battle that is lost have their MPs reduced to zero, so will be unable to participate in any other battles that turn.

All reserve combat units committed will suffer a reduction in their combat value if they have a vehicle shortage (23.8.3).

Reserve units may not trace a path to a battle over a ferry hex.

23.7.2. RESERVE COMMITMENT AND COMMAND ASSIGNMENT

Units are more likely to be committed to a battle as reserves if they share the same commanding HQ (23.8.6) as the Unit(s) directly involved in the battle.

For the Axis player, this penalty will be reduced if the units either report to another Corps in the same Army or

directly to the relevant Army HQ. For the Soviet player, the important relationships are either to be linked to another Army in the same Front or directly to the Front HQ.

In effect, the lower the command battle modifier (i.e. distance to the HQ), the higher the chance the unit will be committed from reserve, especially those units with a command modifier below 10 percent.

23.7.3. RESERVE COMMITMENT LIMITATIONS DUE TO UNIT SIZE

Corps sized combat units are less likely to be committed offensively as they add one to the leader initiative roll. Brigades and Regiments are more likely to be committed as they subtract one from the leader initiative roll. In addition, as units in reserve mode from one side are committed to a battle, the chance of further commitments to the battle decline, based on the size of the combat units that have already been committed.

23.7.4. DEFENSIVE RESERVE UNIT SPECIAL RULES

Defending units committed from reserve may rout if the battle result forces the defender to retreat from the combat. These rules are the same for any other rout (23.12.15).

The AI will never put a unit with morale less than 50 in reserve mode.

Defending reserves are considered to be counter-attacking forces and normally do not get the benefit of fortification levels in combat, though they do benefit from all terrain modifiers that are valid for the hex being attacked. The exception is that reserves committed in defence to fighting in urban hexes will receive the full defensive fortification modifier of both the terrain and fortification levels in the hex.

There are special rules regarding a defending unit's ability to react from reserve into a battle in a city, light urban or heavy urban hex. Any reserve unit within 2 hexes of a battle in a city or urban hex that can trace its way to the hex and has at least one movement point remaining may be committed from reserve even if the number of MPs to reach the battle exceed the number the unit has remaining.

The unit is thus exempt from the normal distance checks. If the unit commits to the battle, it will expend the normal cost to commit from reserve, but if this is more than the remaining MPs of the unit, the unit will simply be reduced to zero MPs.

Even in the case of supporting urban combat, units can never be adjacent to an enemy unit to react in from reserve and must still pass a leader initiative roll to be committed. In this case, the normal Die (18) die roll used to compare against the number of units committed is changed to Die (36) for light-urban and Die (72) for heavy-urban (instead of Die (18)).

23.8. GENERAL GROUND COMBAT RULES

23.8.1. DESCRIPTION OF GROUND COMBAT

Ground combat is conducted by an automated tactical combat system consisting of a variable number of rounds where the various ground elements engage each other. In general, the computer first determines the opening range at which combat will take place. This is largely based on defending terrain, with battles in city and urban hexes commencing at shorter initial ranges. The attacker fires first at ranges of 3,000 yards or greater, while the defender fires first at ranges less than 3,000 yards.

Depending on the initial exchanges of fire, the attack may stop before the two sides are fully committed. In this case, the battle report will indicate the range at which the attack 'stopped'. However, when the defending force is less than 1 regiment (1 or 2 battalions), the battle is never stopped due to poor odds (i.e. the range will close to minimum range in every battle).

The next step is to determine **which ground elements will be able to fire**. There are multiple factors involved, including the type of attack (hasty or deliberate), enemy unit detection level (DL), defending fortification modifier, attacking unit morale and supply status (especially ammo),

individual ground element experience, fatigue, ammo usage and range of their equipped devices, and leader initiative and ground combat rating (mech or infantry) checks (15.5).

Ground elements that have successfully passed their checks will then **fire their equipped devices once they are within range of an opposing ground element**. The chance to hit, and inflict damage and the number of shots taken, is dependent on the factors listed above and issues such as ground element speed, size, and the firing devices' accuracy, rate of fire, and blast radius against soft targets. For AFV and combat vehicles, additional factors apply such as where they are hit.

Detailed information on the attributes of elements can be found on the Commander's Report Equipment tab (35.8) or the element detail window (37.6).

In addition, Anti-aircraft guns in the attacker's units will not fire 75 percent of the time.

The amount of **ammunition on hand impacts the number of shots** taken in combat. If this is over 100 percent, the combat unit may gain an extra shot. If less than 50 percent, the combat unit will likely have fewer shots than their weapon might allow. Longer range artillery units will fire less often if their ammunition stock is under 75 percent.

Note that having CPP at 100 allows the unit to store extra ammunition.

Artillery in support units will tend to fire more often, depending on the ammunition stocks on hand. Artillery ground elements in support units and on-map artillery combat units will be more willing to use up their ammunition when they are in a battle than artillery ground elements in other combat units, because the support units and on-map units are less likely to be in additional battles while a non-artillery combat unit must retain some ammunition for other possible battles in the turn.

Low experience combat elements will expend more ammunition when they fire. Defensive fire will be reduced to conserve ammunition if the attacker is relatively very small (roughly less than half the size of the defender). If an artillery element is firing with its non-main gun devices only, only a small amount of the standard ammunition is used.

The **size of the attacking force will also impact the number of shots taken in combat**. This fire penalty

occurs in combats where there is a large number of attacking units. The force value of the attacking side is calculated using the following values for each non-support, non-artillery division unit attacking:

- Corps 15
- Division 9
- Brigade 5 (3 if the brigade has less than 2,000 men)
- Regiment 3

Once the force value exceeds 28 there is a chance that elements will not get to fire during combat. Artillery elements are much less affected (and this rule only affects them at closer ranges in combat), and the chance that elements will not fire increases as the force value increases. In general though, adding more units should result in more elements firing, but a lower percentage of the total elements will generally be firing as the force increases. The CV values of the attacking units are not changed by this rule.

Ammunition allocation during deliberate attacks will be restricted to what is needed rather than what is available. Units that start with over 150% of ammunition need should end with more than 50%. In consequence, more ammunition will then be available for direct fire use later in the combat resolution due to this cap on artillery usage.

In addition, bombardment artillery fire will receive a bonus when firing if the enemy (defending or attacking) has more units. This bonus is limited if a side has more than 3 divisions (or equivalents) in the battle, although it increases as more units are engaged, so in most cases it will only cause higher losses to an attacking force.

If the targeted ground element is hit, then the result is determined based on the defending fortification modifier, the defending ground elements speed and armour, and the attacking ground element's device lethality and penetration capability. The result could be no effect, disrupted, damaged or destroyed. AFV ground elements may become damaged during combat due to breakdowns or mines using their reliability scores (37.6).

Any result other than no effect removes the targeted ground element from further participation and they will no longer contribute to the overall combat value in the current battle. In addition, disrupted and damaged ground elements may suffer additional effects depending on which side wins the battle.

Generally, the range at which firing takes place will decrease for the ground elements such as infantry squads

Note this rule is one reason why the pre-attack estimated CV can be misleading. A side that is well equipped with artillery, or is backed by substantial ground support, may be able to disrupt and damage sufficient enemy ground elements to change the final odds or perhaps stop an attack before it moves to close range fighting.

as they manoeuvre to come to grips with the defending ground elements, though indirect fire and longer range direct fire ground elements may continue to fire at longer range. After all engagements between ground elements are complete, the computer will move on to the next step of determining the winner of the battle.

23.8.2. INITIAL CV VALUES.

At the start of the battle, the combat resolution window will display each participating combat and support unit along with its CV in parentheses as well as an overall combat value at the bottom of each side's section.

These initial CV's are essentially the CV displayed on the on-map combat unit counters multiplied by ten. The only modifiers applied to the initial CV's are the fortification defensive modifier and the halving of attacking unit CV's if the attack is hasty. The combat values of the individual units may not add up to the total CV because the total accounts for any loss of CV due to the command battle modifier, while the individual unit value does not. Note that the displayed CV's in the combat resolution predictor window will reflect disruption caused by any cross river attack (23.8.9).

The final overall combat values displayed at the bottom of the screen at the end of the battle may not bear any resemblance to the CV's on the counters as they not only reflect losses suffered during the battle, but have been heavily modified due to numerous random factors.

23.8.3. COMBAT VALUE (CV) MODIFICATION FOR GROUND COMBAT

Unit Combat Values (CV) are subject to the modifiers detailed below.

The CV predictor that is available as a hex pop up (6.8.2) when the normal or hasty attack symbol appears on the map (indicating an attack can be conducted in the hex) provides the adjusted CV values of the units

Hold down shift key for DELIBERATE ATTACK
 Atk CV 2.1
 Def CV 0.8

Clear - 216, 153
 Soviet Union(Orel) - Poor Roads

Climate: Humid
 Ground: Clear Air: Rain
 Water: 0 Snow: 0

Fort 1 (10%)

Soviet Rail

Rail: W NE

298th Rifle Division (0.3 / 0.8)

Hex Isolated

that accounts for factors such as terrain, forts, dense modifiers, weather, fuel and ammunition shortages.

It is not adjusted for the factors in sections 23.8.4 to 23.8.7.

This value is fogged up for the enemy if FOW is on.

also a 1.25 multiplier for CV values of non-mountain units that are non-motorized type 0 (no vehicles) for battles fought in a mountain hex.

Units defending in Heavy or Light Urban terrain receive a doubling of their Combat Value when determining the winner and loser of the battle. This doubling is in addition to all other modifiers.

These effects can be summarised as:

- Infantry elements double their CV in Dense terrain.
- AFV elements halve their CV in Dense terrain.
- Infantry elements quadruple their CV in Double Dense terrain.
- AFV elements quarter their CV in Double Dense terrain.
- Combat elements in Mountain Infantry divisions get a 2x multiplier on top of the above in Mountain hexes.
- "Leg" infantry units get a 1.5x multiplier on top of the above in Mountain hexes.
- Defenders in light or heavy urban get a 2x multiplier at the end of combat on top of the above.
- Artillery does not get affected by any of these modifiers.

Weather CV Modifier. Attacking CV values are reduced by the ground weather in their hexes (8.5). The exact modifiers are based on the specific ground weather and road system in the attacking unit's hex and the hex pop up CV combat predictor will reflect these modifiers.

The following table shows the weather CV modifiers:

WEATHER IN ATTACKING UNITS HEX	GOOD ROADS	AVERAGE ROADS	POOR ROADS
Light Mud	.90	.80	.75
Heavy Mud	.50	.25	.125
Light Snow	1.00	1.00	1.00
Snow (1)	.90	.80	.75
Heavy Snow (1)	.90	.80	.75

Note

(1) Ski units will have their combat value (CV) doubled in snow hexes and tripled in heavy snow hexes and are not affected by the above weather CV modifiers for snow and heavy snow.

Play note, it is possible that attacking units in different hexes may be affected by different weather modifiers.

This is a very important tool as it's the only way for the attacker to know how their unit's CVs are going to be impacted by the terrain in the hex being attacked.

Vehicle Shortage CV Modifier. All attacking and defending units suffer a reduction in CV if they have a vehicle shortage. This penalty is a percentage reduction equal to $((1 - (\text{vehicles}/\text{vehicle need})) \times 20)$. The reduction is multiplied by 2.5 if the unit is motorized. For example, a motorized unit with no vehicles would suffer a 50 percent reduction in CV, while a 40 percent shortage in vehicles would cause a 20 percent reduction in CV.

The CV modifier for units affected by a shortage of vehicles is reflected in the CV values shown on the unit counters.

However, since it does not impact defending units, unless committing from reserve and since static units cannot attack, this modifier will not impact the CV values on the counters for static units, and will not impact the defence CV value shown for all units (the value shown after the equal sign).

Terrain CV Modifier. The CV values of certain types of elements are modified in terrain designated as dense and double dense.

Dense terrain is Swamp, Heavy Forest, Rough, and Bocage. Infantry type elements are doubled and AFV and combat vehicle type elements are halved in dense terrain.

Double dense terrain is Mountain, Light Urban, and Heavy Urban. Infantry type elements are quadrupled (x4) and AFV and combat vehicle type elements are quartered (/4) in double dense terrain.

Mountain units have their CV doubled in battles fought in mountain hexes, no matter what the weather. There is

Ammunition and Fuel Impact on CV Values. All units with less than 100 percent of their required ammunition, and motorized units with less than 50 percent of their required

In this example, the two units are probably the worst combination possible. Not only do they not share the same Corps HQ, their respective Army HQs report to different Army Groups. Note that the weaker unit has the penalty applied.

The greater the number of HQ units that the unit must trace through to reach the commanding HQ unit, the greater the modifier.

In addition, units that are attached directly to a high command (type 1) HQ unit suffer an additional 20 percent modifier, and those that are attached directly to an Army Group (or Soviet Front command) suffer an additional 10 percent modifier (these are shown as part of the total modifier percentage displayed) in addition to any penalty for coming from a separate command.

Note this rule rewards trying to organise your overall Order of Battle so that units from different commands are not mixed up. If this cannot be avoided, then try to organise your forces so that units likely to share a mission (defending or attacking) report to closely related HQs.

23.8.7. COMBAT VALUE MODIFICATIONS DURING COMBAT

In addition, as noted above the CVs can be modified as the battle continues. Elements that are disrupted or damaged will be removed from the calculation as well as those that are destroyed. In addition both engineers (especially in a deliberate attack) and heavy artillery will reduce fortification values during combat thus reducing the defensive CV modification derived from those fortifications (20.4).

In effect, ensuring an attack is well supported by air power, heavy artillery and combat engineers can make a real difference in terms of the chances to actually capture a well defended hex.

23.8.8. UNREADY COMBAT UNITS ATTACK RESTRICTIONS

Combat units that have the sum of their current morale and actual TOE percentage equalling less than 90 are in an unready status, which is reflected in the unit bar when the unit is selected. Unready combat units may only attack if they have not expended any movement points during

the turn. With the exception of unready artillery combat units firing at a distance of two hexes, this means unready combat units must start their turn adjacent to an enemy unit in order to be eligible to attack.

Unready combat units have their attack CV reduced by 50 percent.

23.8.9. CROSS RIVER ATTACKS

Combat units attacking into a hex through a non-frozen (ice level four or less for minor rivers and ice level 7 or less for major rivers) minor or major river hex sides are required to expend additional movement points above the normal attack MP cost (38.7.6). All ground elements that cross the river to attack are subject to a disruption check prior to the initial computation of combat value.

Ground elements with longer range indirect fire devices will normally not check for disruption while infantry and combat engineers most likely will check.

Infantry type ground elements will tend to suffer approximately the same amount of disruption for both minor and major rivers, but AFV and combat vehicle ground elements will suffer more disruption in crossing a major river than a minor river.

Since disrupted combat units do not contribute to overall CV, players can anticipate a reduction in overall CV of up to half for minor rivers and up to two-thirds for major rivers prior to any other modifications.

23.8.10. ATTACKING FROM A FERRY HEX

If the phasing player can enter a ferry hex (7.3.5), then they can attack from that hex. If the attack fails, the attacking units will be retreated from the ferry hex.

23.8.11. BEACHHEAD BONUS

Defending units on or adjacent to a temporary port hex will have their end of combat CVs multiplied by 4 when determining whether they retreat. If they hold, but would have retreated had they not received this bonus, they will instead suffer additional losses to reflect their fighting to the last to hold the beachhead. This will only apply if they are also in a hex that is next to a sea hex.

23.9. AIRBORNE OPERATIONS AND COMBAT

Airborne operations can result in combat if the drop hex contains enemy units. In other instances the immediate

effect may be seen more as attrition losses suffered by the airborne units and increased air interdiction in the drop hex and the surrounding hexes.

Airdrop scatter - Airborne brigade and regiment size units that are dropped have a 2/3 chance of scattering 1 hex. If they scatter into a water hex they are destroyed. No more than one airborne unit will scatter onto any given invasion beach (i.e. scattering airborne will not stop a two unit invasion from coming ashore). There will be a flak combat report in the original drop hex, and then a drop combat report in the hex the unit scatters to.

Airdrop fatigue - Broken down divisions will suffer 50 additional fatigue points when airdropped. Independent brigades will suffer 25 additional fatigue points when dropping.

23.9.1. UNITS THAT CAN BE AIRDROPPED

Only brigade or smaller units may drop.

For the Axis, only the 7th Flieger Division, 1st FJ Division, 185th Folgore Division and the Ramcke brigade can be dropped (in each case the divisions must drop broken down into the component regiments).

Soviets may drop any airborne brigade.

Units must have average unit experience of at least 39.

23.9.2. AIR DROP COMBAT

When an airborne unit is dropped on a hex with enemy units, a special form of deliberate attack is resolved. In this combat the defending terrain is not considered for determining the combat value (CV) of the defending units. Also, the defending units have their CVs divided by 3 to simulate surprise.

If the defending units lose the battle they will be retreated and the attacking units may either land in the hex or scatter to an adjacent unoccupied hex. If the defender holds, then the airborne unit will scatter to an adjacent unoccupied hex.

If forced to retreat and there is no empty hex to retreat to, the airborne unit will be destroyed. If the defending hex is a city, urban or heavy urban hex, or if it contains a fort level greater than 3, or if the hex is also the target of an amphibious invasion, then the chance the defending unit will retreat is greatly reduced.

Airdrops on HQ units may result in the attacking airborne unit being forced to retreat. In this case, a normal battle with casualties is not fought, but there is an odds calculation and retreat losses.

Airborne drops into an empty hex may be engaged by nearby units in reserve mode. After the combat, if the airborne unit has lost the combat, it will be destroyed.

Note that an airborne unit can lose a battle to airfield ground crew, flak attached to a city or a HQ unit. In this instance no units will appear listed for the defender in the combat report.

23.9.3. AIR DROP ATTRITION

Airborne units conducting an air drop will undergo a series of checks to determine attrition losses. These checks are based on the type of terrain in the drop hex, the number of preparation points the unit had accumulated prior to the drop, presence of other units, proximity to an amphibious invasion hex, the experience of the unit and whether the drop is at night or in bad weather. If the drop hex contains enemy units, a special deliberate attack combat will take place.

First the unit may have elements damaged or destroyed due to losses to the air transports while en-route to the drop target hex. Next, there is a chance an element not yet damaged will be damaged during the drop based on the terrain in the target hex. The relative damage caused by each terrain type is as follows:

- Clear and Desert: 1
- Sand: 2
- Bocage: 3
- Tundra: 5
- Light Woods: 10
- Rough: 20
- Swamp and Forest: 25
- City: 40
- Light Urban: 50
- Heavy Urban: 60

It is quite possible to see units taking percentage damage due to the terrain equal to roughly one half of the relative number of elements. So landing in rough could lead to 10 percent of the dropping units being damaged just from the terrain (plus or minus a sizable amount).

In addition, elements that are not yet damaged may be damaged based on the unit's number of prep points if random $(200) < (100 \cdot \text{prep points})$.

Finally, once units end up in their final hex (either the drop hex or after a retreat if they lose a battle in the drop hex), any undamaged elements at this point must conduct an additional attrition check. First the following is added for each target hex or adjacent hex to the drop to arrive at an attrition value (AV):

- +15 if water hex or enemy unit (of any kind) in hex (+6 if hex is adjacent hex)
- If not item 1, then +10 if the hex is the target of an invasion (+4 if hex is adjacent hex)
- If not 1 or 2, then +5 if there is a friendly unit in the hex (+2 if hex is adjacent hex)

For each element in the airborne unit, a check is done and if random (200+experience of unit) < AV the element is damaged.

There will be extra attrition to air drops at night and during bad weather. At night, if random (10)>rnd(pilot skill which is experience modified by fatigue) then ground elements being transported by that aircraft will be damaged. Weather based attrition will occur to ground elements if random (100)<weather effect*5 where clear=0, rain=1,heavy rain=2, cold=3, snowfall=4, blizzard=5.

23.9.4. AIR DROP SPECIAL AIR INTERDICTION

Interdiction created by airborne regiments and brigades is 8 points per hex. This affects the drop hex and every hex adjacent when they drop. This additional air interdiction abstractly represents the confusion caused by airborne landings and the impact of paratroopers scattering into other hexes during the drop.

23.10. COMBAT RESULTS AND BATTLE LOSSES

23.10.1. COMBAT RESULT EFFECTS

A ground element that is hit by enemy fire can suffer one of three adverse effects (or can escape with no damage).

Disruption: Disrupted ground elements can no longer fire and they will not contribute their combat value to the

final CV computations. At the end of the battle they are set to normal but with additional fatigue so will take part in subsequent battles that turn but with progressively less effect (23.8.3).

Damage: Damaged ground elements are out of action and can no longer fire or be fired at. They no longer contribute to a unit's CV, and can be destroyed or lose their devices as a result of the determination of which side won or lost the battle.

Destruction: Destroyed ground elements are eliminated immediately, though men and devices may be captured and there is a ten percent chance that the manpower associated with that ground element will be disabled instead of being killed in action. Approximately 1 in every 25 men from destroyed elements will be captured as a result of combat.

In addition to the effect on Ground elements, any generic organic vehicles in the unit can be damaged or destroyed as a result of combat.

If a combat or support unit surrenders then all the elements are eliminated but some men and equipment might be deemed to have escaped (and will be placed in the pool). Equally, if the unit has shattered, again all the elements are treated as destroyed but a proportion of the manpower will actually be retained. This information can be seen in the Commander's Report (35.6)

23.10.2. BATTLE LOSSES

Battle losses are reflected in the Combat Resolution Display (37.1). Losses shown in the actual battle report are derived from the assumption that all the men and equipment in destroyed elements are killed or destroyed.

Battle losses are also captured on the losses screen (36.2).

Ground Losses			Air Losses			Destroyed Units			Ground Losses					
			Last Action			Current Turn			Total					
Ger	Panzer Ib	0	0	0	57	Axis Losses								
Ger	Panzer IIc	0	4	402	Men							0	29,635	1,071,476
Ger	Panzer IIIf	0	0	96	Guns							0	53	12,385
Ger	Panzer IIIa	0	0	37	AFV							0	18	3,198
Ger	Panzer IIIe	0	0	74	Men Killed							4,378	325,725	
Ger	Panzer IIIg	0	2	200	Men Captured							178	58,872	
Ger	Panzer IIIh	0	1	106	Men Disabled							25,079	686,879	
Ger	Panzer IIIl	0	1	22	Soviet Losses									
Ger	Panzer 35(t)	0	1	83	Men							0	16,242	3,436,156
Ger	Panzer 38(t)	0	1	279	Guns							0	178	51,640
Ger	Panzer 38(t)E	0	1	207	AFV							0	28	13,002
Ger	Panzer IIIj	0	0	227	Men Killed							8,171	675,884	
Ger	Tauchpanzer IIIf	0	0	37	Men Captured							220	1,436,939	
Ger	Tauchpanzer IIIg	0	0	11	Men Disabled							7,851	1,323,333	
Ger	Panzer IIIIf	0	0	50										
Ger	Tauchpanzer IVd	0	1	17										
Ger	Panzer IVc	0	0	59										

Note that the battle loss screen can sometimes show more losses (especially in a surrender result) than appeared to be present in the battle. Most likely reasons for this are the loss of AA or Construction Units attached to a city or if there were additional routed or depleted units in the hex (these will not have taken part in the actual battle but may take losses as a result of the battle).

The 'Last Action' column will reflect the data that was shown in the battle report.

In addition, as the phasing player moves combat units and causes units with zero CV to displace the "Last Action" will continue to increase until the next battle zeroes that column out and the values start again. Note this column only reflects elements that are destroyed as part of these activities (so not damaged or disrupted).

In some situations this might be an overstatement as a higher proportion of the manpower and weapons of elements destroyed this way (in effect, by being forced to retreat) will be returned to the pools.

Note that the "Last Action" column is zeroed out when the phasing player first goes to the map area at the start of a turn, and just before each battle.

The two Permanent Losses columns (current turn and total) seek to convert how the game engine handles losses (by element) to a calculation of losses in terms of manpower, guns, tanks and planes. Each time an element is destroyed a proportion of the manpower etc. may be treated as killed, disabled or captured (in part, depending on the circumstances of the battle (23.10.1).

So while the immediate reports use the relationship of destroyed element to indicate all the components are killed, the permanent lost calculations take into the possibility that some escaped (and were returned to the pool). Equally some parts of a damaged element might be later treated as KIA. In the main, the battle report and the last action column will tend to overestimate the permanent losses from a battle.

Some losses are treated as disabled and over time one percent of the men listed as disabled are returned to the manpower pool per turn. Equally one percent of the total are converted into KIA to reflect the severity of their

wounds. Thus, the disabled column will alter even if no other actions take place.

Note that although some disabled troops will return to duty, since their devices were destroyed this might be slowed and until they have returned to duty they still count for victory purposes (used in most scenarios, 29.2) and are reported as "permanent" losses.

Depending on the relative flow of new battlefield losses and earlier losses (who are more likely to have recovered and be returned to their units) then the 'disabled' entry on the loss screen may be negative (i.e. more men recovered from being disabled that turn than became disabled).

In combat, units can also take damage or disruption from enemy interdiction in the hex before the ground elements start engaging. The losses from interdiction during a combat will be listed in the combat report.

Losses caused by bombing in the air execution phase are shown at the end of that phase and carried forward into the current turn total. However, the displayed losses can be limited by phase using the options at the bottom of the screen:



23.10.3. DAMAGED AND DISRUPTED ELEMENTS

If an element is damaged then it might be subsequently either fully recover or be lost. Damaged manpower is best seen as men with significant wounds that require a degree of hospitalisation but most will return to their unit. The chances of being able to recover and repair damaged vehicles will in part depend on which side won the relevant battle.

Elements disrupted in a battle will recover at the end of that action. Some extra fatigue will be assigned to reflect the impact of light wounds or limited damage to equipment.

Note that elements disrupted in the air phase recover for the ground phase (19.4.6) but have additional fatigue as a result.

23.10.4. IMPACT ON MORALE

If a unit loses a battle it may also lose some morale. This can be up to 3 points if the unit fails both a check against its leader's morale rating and its own morale value.

Units that win a battle may gain 1 morale point, again relying on their leader morale value.

Note the chances of both these events happening will alter (sometimes dramatically) if the morale level is set over or under 100 when the game is set up.

23.11. DETERMINING THE WINNER IN GROUND COMBAT

At the end of all combat, the modified combat values for both sides are calculated and compared as a ratio (attacker/defender) to determine the winner and loser of the battle. If the displayed modified CV ratio is 2:1 or greater, the defender will be forced to retreat.

Note that due to rounding in the combat displays, odds of less than 1:1, for example 1:1.001, will be shown as 1:1.0. All of the defending units in a hex will be forced to retreat if the battle is lost. The attacking force will win the battle if the defenders are forced to retreat. The defenders will win the battle if they hold their ground.

The displayed modified combat values are rounded down to a whole number, but the odds ratio uses the actual numbers, which are in the 1,000's. As an example, a zero could be anywhere between an actual 0.0 and 999 and a 1 could reflect a value between 1,000 and 1,999. Occasionally there will be a zero in the odds ratio, meaning that the unit was so weakened during the battle that its real (not rounded down) modified CV was zero.

23.12. EFFECT OF DEFENDER RETREAT RESULT

When defending combat units are forced to retreat, each unit first suffers retreat attrition. Ground elements in the unit have a chance of being damaged or destroyed, and some ground elements may be captured, with damaged ground elements being much more likely to be captured.

Retreating over unfrozen minor river hexside causes double retreat attrition, while retreating over an unfrozen major river hexside causes triple retreat attrition.

Next, each unit must check to see if it shatters or routs. A unit that is in Supply and forced to retreat may shatter at the conclusion of the combat instead of retreating due to a combination of low morale, experience and a low TOE percentage and is then no longer considered a viable combat unit.

A combat unit that is in supply and forced to retreat will rout at the conclusion of combat if the final combat value odds ratio is greater than the morale of the unit. For example, at the conclusion of a battle, a unit with morale of forty will rout if the attacker's adjusted CV is greater than forty times the defender's adjusted CV. The exception is that if a unit has a valid hex to retreat to, then it will not be susceptible to a rout as long as it passes a check where the unit Morale is greater than or equal to 40+Die (15).

Note this means that units can rout as a result of combat even if they otherwise have a valid retreat path. As a practical play note this rule will particularly affect vs AI games if the AI's morale is set to 120. Attacks by the AI are more likely to cause extra disruptions, lowering the defender's cv and increasing the chance of a rout.

This provides an example of this AI bonus. Here extra Soviet elements were disrupted at the end of the combat resolution and as a result the final odds exceeded the Soviet morale – converting a retreat into a rout.

An exception to this is if the unit is a division or smaller unit (less than 9 stacking points) that is defending alone in a battle (no other units in the hex or committed from reserve). In this case the morale check needs to be greater

1 of 1		Turn:7		Aug 3 1941		Gnd: Clear Air: Rain		195,108 Heavy Woods		0.07.12									
ATTACKER						DEFENDER													
Combat Value						Combat Value													
327 => 353						255 => 0													
IIII 29306 -91 0 (0)			327 -2 0			IIII 16798 -3727 159 -1			245 -63 112 -4			0 0 0							
XXXXI Motorized Corps * 1st Panzer Division (209) 35th Motorized Division (103) - II/41st Heavy Cannon Battalion (4) - II/67th sFH Heavy Howitzer Battalion (4) - 615th Howitzer Battalion (5) - III/52nd Werfer Battalion (2) - 2/59th SP Army Light Flak Company (0)				G. Reinhardt 				353.0 : 0 305th Rifle Division ROUTED				27th Army * 305th Rifle Division (247) - 613th Corps Artillery Regiment (2) - 91st Naval Infantry Battalion (6)				L. Govorov 			
Show Details																			

than or equal to 40+Die (30). This means that normally units with morale that is 55 or greater will never rout, however a division (or smaller unit) defending alone with morale between 41 and 55 will be more likely to rout, and between 56 and 70 will still have a chance to rout.

Units that rout will perform a displacement move (23.13) instead of a normal retreat. Support units suffer the same fate as that suffered by the unit they are attached to, although support units never remain routed.

Ground elements from units that shatter or surrender may be captured, or may escape. Ground elements that escape are returned to the production pool and will be listed as escaped in the battle tab of the commander's report (35.6). Some units that shatter or surrender will attempt to reform. Isolated combat units that shatter suffer the effects of surrendering instead of the effects of shattering.

Units that retreat or rout are automatically taken out of reserve mode.

There may be a combat delay movement point cost assessed in the defender's hex against any attacking units that move out of that hex during the current player turn (22.2.7).

Units on ships that are in a port hex that falls during combat will retreat out to sea (or will be destroyed if there is no hex to retreat to).

Units that have no valid retreat path will always either rout or surrender if forced to retreat.

23.12.1. RETREATING MORE THAN ONE HEX

In some circumstances the defender may be forced to retreat more than one hex. This is more likely if the final combat odds indicate an overwhelming victory and/or if the defender has low morale or experience.

23.12.2. DEFENDER RETREAT PATH PRIORITIES

Defending units that have not shattered or routed will then attempt to retreat to a friendly controlled hex using the following priorities.

- Retreating units will tend to retreat to hexes not adjacent to enemy units.
- They will try to avoid retreating into an over stack condition (i.e. a hex that already has three friendly units), but if they do, they must continue to retreat and take additional retreat attrition losses for each additional hex that they retreat through.
- Retreating units tend to retreat to hexes that cost fewer MPs to reach, have rail lines, have fort levels and contain fewer friendly combat units.

At the conclusion of the retreat, the retreating unit suffers retreat attrition once for each adjacent hex that contains an enemy combat unit.

23.12.3. EFFECTS OF SHATTERING

When a unit shatters, it is considered destroyed and removed from the map. Ground elements in the unit are affected as follows:

- Damaged ground elements are captured.
- Undamaged ground elements may be captured depending on their experience, the distance from their unit to an in supply friendly unit, and whether their unit is completely surrounded by enemy controlled hexes (If Rnd (60 + range in Hexes to an in supply friendly unit) > experience of ground element + Rnd (200*), the ground element is captured. *this value is 100 if the unit is completely surrounded by enemy controlled hexes).
- If the ground element is not captured then the ground element's AFV/Combat vehicles, devices and manpower are returned to the appropriate production pools.

Result	Type	A Men	A Gun	A Afv	D Men	D Gun	D Afv	A MenL	A GunL	A AfvL	D MenL	D GunL	D AfvL	D MenE
Shattered	Hasty	17032	198	0	5530	64	197	46	3	0	4490	59	154	32
Shattered	Hasty	15742	137	164	10398	88	206	123	1	15	6750	59	135	0
Shattered	Hasty	15851	137	257	9686	216	0	154	14	3	9686	216	0	0
Shattered	Hasty	4797	55	0	1466	45	0	94	4	0	1466	45	0	0
Shattered	Hasty	16936	200	0	5278	82	27	5	1	0	13441	244	27	0
Shattered	Hasty	15830	139	206	9064	217	0	160	6	5	11257	232	51	0
Shattered	Hasty	29931	281	257	1192	2	0	167	8	0	3631	125	0	177
Shattered	Hasty	16976	200	0	5855	206	0	13	0	0	6377	215	0	0
Shattered	Hasty	4244	50	0	3251	66	0	0	0	0	3211	66	0	40
Shattered	Hasty	15804	136	232	2125	18	3	91	2	1	1858	24	3	0
Shattered	Hasty	16936	200	0	5767	199	0	59	1	0	5767	199	0	0
Shattered	Hasty	4753	53	0	3584	130	0	12	1	0	1540	83	0	20
Shattered	Hasty	4505	62	0	2732	112	0	9	1	0	6404	189	0	20
Shattered	Hasty	5634	66	0	2480	101	0	5	1	0	3050	125	0	12
Shattered	Hasty	18101	217	5	6821	72	34	19	0	1	3549	44	9	0

Note that the battle report in the Commanders Report tabs will show how many men and equipment of a shattered unit managed to escape.

Shattering is more likely if the defender has low morale or experience and is a non-motorized unit that is attacked by motorized units.

23.12.4. EFFECTS OF SURRENDER

When a unit surrenders (whether due to combat or in the logistics phase due to isolation) it is considered destroyed and removed from the map. Ground elements in the unit are affected as follows:

- Damaged ground elements are captured.
- Undamaged ground elements may be captured depending on their experience and the distance from their unit to an in supply friendly unit (If Rnd (120+range in Hexes to an in supply friendly unit) > experience of ground element, the ground element is captured).
- If the unit was isolated all the ground elements are captured.

If the ground element is not captured then the ground element's AFV/Combat vehicles, devices and manpower are returned to the appropriate production pools.

23.12.5. EFFECTS OF ROUTING

When a combat unit routs, it has its CV set to zero and then the unit performs a displacement move (23.13). Units can rout through a port to another port without additional impact (other than normal rout/retreat attrition).

Routed units may move but may not move adjacent to an enemy unit unless stacked with a friendly combat unit. Routed units do not participate in combat, but if part of a stack that is attacked and is forced to retreat, the routed unit will be shattered. Routed units do not have a ZOC and will not gain control of adjacent unoccupied enemy hexes.

Routed units are forced to make a displacement move if they are alone in a hex and are next to an enemy unit (if the routed unit is isolated, it will shatter). Routed units may not move via rail or naval transport. Routed units will not change their TOE, cannot receive replacements and cannot gain morale (12.1). Support units don't remain routed, but do take retreat attrition and displace if the unit they are attached to routs.

Each turn during the friendly logistics phase a routed unit will attempt to pass a range test to an HQ unit in its chain of command in which Rnd (range to the HQ unit) must be less than six. If this test is passed then the leader

of the HQ unit attempts to rally the unit with a successful morale rating check.

23.13. DISPLACEMENT MOVES

A displacement move is a special type of movement by non-phasing combat units that have been routed or zero CV units that find themselves adjacent to an enemy combat unit.

There are several conditions that cause a unit to make a displacement move:

- A combat unit routs following a retreat result after combat.
- A unit with zero CV finds itself adjacent to an enemy unit while not stacked with a friendly, non-depleted combat unit. This would include HQ units, on-map construction support unit, or a depleted or routed combat unit. Note that there are instances, such as if a unit becomes depleted during the air execution phase, where a zero CV unit can end up next to an enemy unit and not automatically displace. Displacement will then occur when an enemy unit moves next to such a unit.
- In some cases when a unit with a zero CV is part of a stack forced to retreat due to combat.

A unit performing a displacement move takes retreat attrition, and then will displace to the hex containing the HQ unit to which it is attached, or to a hex adjacent to its HQ unit.

The displacing unit cannot move next to an enemy unit if there is no friendly combat unit in the hex. If it is not possible to displace to or adjacent to its HQ unit, or the HQ unit is greater than 10 hexes away, then the unit will displace to a nearby town, city or urban hex, generally to the east for the Soviets and to the west for Axis units.

A unit will not displace to a hex that has a non-isolated enemy unit within two hexes. Units will not displace to an isolated town, city or urban hex or HQ unit unless the unit is already adjacent to the HQ unit. Units that rout may only move to cities/towns that are less than 24 hexes away and which are on a linked rail line or are a linked port. If they are unable to rout move to a valid HQ unit or city/town, they will surrender.

On the first turn of any scenario, units will not displace to their HQ units, but instead only displace to nearby town, city or urban hexes. Support units that are attached to a displacing unit will suffer retreat attrition and move with the displacing unit.

Note: voluntary relocation of a headquarters unit (21.11.9) has the same adverse effects as a displacement move, and the HQ unit will not relocate to its HHQ unit, but always to a nearby town, city or urban hex.

23.14. SPECIFIC RULES FOR ISOLATED UNITS

The combat system treats isolated units in different ways to others. They are more likely to shatter or surrender after an adverse combat result and will usually shatter if forced to displace.

Admin and Initiative checks are twice as hard to make for isolated units. Players who desire to remove headquarters units from a pocket of isolated units rather than wait for the enemy to displace them can voluntarily relocate the HQ unit during their ground phase. Isolated units are limited to building fortification levels to no more than fort level two and may well lack the supply even for this.

Isolated on map units can change attachments only to HQ units inside the pocket with them, and only if within 100 MPs. Support units attached to isolated HQ units can only be reassigned to other HQ units in the same isolated pocket and only if within 100 MPs.

Isolated units are not eligible to be sent to any Theatre Box.

23.14.1. ISOLATED HEXES

Units and unoccupied friendly hexes are isolated if they cannot trace a path of any length to a railhead (which in turn links to a NSS) either overland or via the sea. Units cut off in the opposing player's turn don't gain isolated status until the next player's turn in the logistics phase. Isolated hexes that are not occupied by a friendly unit, or adjacent to a friendly combat unit will often switch control to the other side automatically during the next friendly logistics phases (7.3.3).

23.14.2. ISOLATED UNITS AND DEPOTS

Depots in isolated hexes will lose five percent of their freight each turn in the logistics phase to reflect that some of the freight would not be material that is needed by the isolated units.

Isolated units can draw replenishment using non-vehicle methods (25.5.5). They can also draw freight from depots inside the isolated pocket by using vehicles already

in the depot or by having the depot take vehicles from the units to use to distribute freight.

Isolated units cannot receive replacements.

Isolated units that are very low on supplies will suffer additional fatigue and damage to their elements during the logistics phase.

Isolated units will try to resupply themselves from any accessible depots to avoid isolation damage. During the logistics phase, isolated units will initially receive freight from depots that are in their hex or an adjacent hex, and they will follow the normal rules for obtaining this freight.

In addition, at the end of their turn, isolated depots will try to resupply any units that they can trace a path to (units inside the same pocket). They will attempt to fill up these units with 100% of their supply, fuel, and ammo requirements, spreading their freight out to all the units they can trace to.

23.14.3. ISOLATION AND AIR-RESUPPLY

A unit at the end of its turn that can trace to depots that have received a combined total of 500 or more tons of freight during the turn will be considered in supply (not isolated) during the enemy player's turn.

This allows air resupply to prevent units from facing isolation penalties when defending in combat, however, they will still be considered isolated during their player turn (when they might attack for example)

23.14.4. ISOLATED UNIT COMBAT VALUE PENALTIES

When a unit is isolated, the CV value in combat divided by 2. If it fails a morale check triggered by the range to a friendly supplied unit, the units have their CVs reduced in combat by 3 instead of 2.

Isolated units in ports that have a fort level of 2 or greater do not suffer a combat penalty for being isolated. They still suffer normal penalties for any shortages of supply, fuel, or ammo.

23.14.5. ISOLATED UNITS RETREAT AND ROUT RESULTS

An isolated unit that ends its retreat adjacent to an enemy unit will surrender if Die (50) is greater than the morale of the unit. Units that are isolated will also surrender if they have no permissible hex to which to retreat. Combat units that are in supply will rout if they have no permissible hex to retreat to.

Note: units cut off in the opposing players turn don't gain isolated status until the next player's turn in the logistics phase.

Isolated combat units will not rout, but will surrender instead.

Isolated headquarters units will undergo a displacement move (23.13).

23.14.6. ISOLATED UNIT DISPLACEMENT

Isolated combat units will shatter if forced to displace. Isolated non-combat units performing a displacement move will suffer double retreat attrition but they can displace to a location where they are no longer isolated. This represents the fact that the assets of a non-combat unit, such as headquarters units, can be spread over a very large area and many of them would not actually be trapped when a pocket is formed.

23.15. RETREAT ATTRITION

When a unit retreats or displaces, it suffers retreat attrition, which can result in some of its ground elements becoming damaged, destroyed or captured. The extent of retreat attrition is based on the unit's current morale and the experience and fatigue of the unit's ground elements. Units with higher morale and ground elements with higher experience and lower fatigue will suffer less from retreat attrition.

Damaged ground elements are more likely to be captured, dependent on their experience and whether the unit has a support squad ground element shortage. Damaged ground elements can also have their equipment destroyed while the manpower in the ground element is classified as disabled.

Organic generic vehicles can be damaged or destroyed as a result of unit retreat attrition.

Units that are forced to retreat across a river hexside will suffer double the normal retreat attrition for a minor river and triple the retreat attrition for a major river.

The amount of motorization of the unit, the morale of the unit, and the final odds of the battle all impact the retreat attrition suffered by defending units that lose a battle.

Defending units that retreat do have a chance to avoid retreat attrition. First the unit checks to see if the number of vehicles in the unit is greater than $\text{rnd}(\text{number of vehicles needed to fully motorize the unit})$. If it is, then the odds are changed to 1 to 1 and virtually no retreat attrition will occur. If the unit fails this check, it makes a morale check and if $\text{rnd}(50) < (\text{rnd}(\text{unit morale} - 50))$ then the effective odds are doubled for determining retreat attrition. If the unit fails the vehicle test, it gets one more chance to reduce the odds to 1 to 1 (no matter the result of the morale check just mentioned). The unit once again checks morale to see if $\text{rnd}(50) < (\text{rnd}(\text{unit morale} - 50))$ and if it passes this test, then the odds are reduced to 1 to 1 with the results above.

23.16. CAPTURED CITIES, DEPOTS, AND AIR BASE UNITS

When a town, city or urban hex changes control, factories, and other facilities, located in that hex will sustain damage. In addition, anti-aircraft units and construction units stationed in the city will either be destroyed or evacuated to their assigned HQ unit. Mobile anti-aircraft units assigned to cities that are not in isolated status may escape to a nearby HQ when that city is captured (21.5.3).

Depots and Air Base Units are fixed facilities that cannot retreat or displace. Enemy Air Base units that are captured will attempt to evacuate their Air Groups and then convert to an empty friendly air base unit (16.6.8).

When a depot is captured, most of the freight is destroyed (causing the destruction of some fuel and supplies from the player's pool), but a small amount of freight is captured resulting in the placing of fuel and supplies in that location for the capturing player's use. In addition, a small number of vehicles are destroyed and the rest are returned to the pool.

With the exception of depots in port hexes, captured depots are destroyed. If a port is captured, either an existing depot is transferred to the new owning player or one is automatically built with priority 3 in the hex.

Remember that if a rail yard is captured it is likely to sustain damage. As long as this is damaged, any depot in the hex will operate at less than its full capacity.

24. NAVAL AND AMPHIBIOUS OPERATIONS

Focus: This section covers the various naval operations that can take place in WiTE2. This includes the naval transport of units and supplies, crossing contested ferry hexes and amphibious invasions.

Key Points:

- How Ports enable both the movement of supply and units
- How Temporary Ports are created
- How to move ground units by Naval Transport
- How Naval Transport moves Freight
- How to set up and conduct Amphibious Operations



Naval movement and operations in *Gary Grigsby's War in the East 2* include naval transport, amphibious transport, assault and naval gunfire support. In addition, naval units can combine with air units (18.1.8) to generate interdiction over sea hexes, disrupting or denying enemy operations in that zone.

Eligible units may utilize naval or amphibious naval transport to move through sea and ocean water hexes. Ground Units can move by naval transport between friendly ports and by naval amphibious transport from a friendly port to assault any eligible coastal hex. A shipping pool of troop and cargo ships is used to move units and freight by sea using strategic movement points (SMP). Amphibious transport and assault is limited to non-armoured combat units, is conducted in the amphibious phase during the enemy player turn, and requires the use of amphibious headquarters units and a certain amount of preparation time over a number of turns.

When in Naval Transport mode (F3), Amphibious Transport mode (F4), or Air Transport mode (F9), assigned (pending) amphibious invasion and associated airborne landing hexes will be displayed on the map. Amphibious landing ground hexes will be shaded red, the water hexes Amphibious HQ units will move to will be shaded blue and airborne landing hexes will be shaded light blue. In addition, when in either naval movement mode, the remaining Port Capacity for friendly ports will be displayed on the map for each port with the number in the port circles on the map equal to 1,000 tons of remaining load/unload capacity.

When in naval transport or naval amphibious modes and a unit is selected for movement, the naval contested hexes will be slightly darkened and enemy controlled hexes will be dark. Movement through these hexes is allowed, but at greater attrition levels (6.8.8). Units cannot move through or adjacent to an enemy amphibious HQ unit while in naval transport mode.

Units loaded 'on ships' are automatically put into ready mode and cannot be put into reserve or refit as long as they are on ships.

Entrained units may not move via naval or amphibious movement.

24.1. TRANSPORT SHIPS

There are two types of ships used for naval transport, troop ships for units and cargo ships for freight.

Troop ships have a capacity of 1,000 tons of unit load and cargo ships can carry 1,250 tons of freight. Each transport ship in the pool may be used for one mission per turn. Cargo ships used during the supply phase may not be used during the action (move) phase. Transports will be removed from the pool and attached to Amphibious HQ units to allow amphibious movement. When in naval or amphibious transport mode, the number of available troop and cargo ships is displayed in the general information and city box in the right hand corner of the screen.

For the Axis player, the map is divided into three areas, Baltic, the Black Sea and the connected Sea of Azov. For the Soviet player, their naval assets are split between five areas:

the Baltic and Black Seas, the Sea of Azov, Lake Ladoga and the Caspian Sea. Each of these sea areas has its own allocation of cargo, and, if appropriate, transport, ships.

Only the Soviet player has the ability to conduct amphibious invasions and only in the Black Sea region.

24.2. PORTS AND DEPOTS

There are two types of ports. Permanent ports are fixed pre-existing facilities that can be damaged, but will always be on the map. Temporary ports are established as a result of a successful amphibious invasion and represent the over the shore movement of units and freight at a beachhead that has been established by an amphibious landing.

24.2.1. PORT CAPACITY AND DAMAGE

Each undamaged port has 15k tons of load/unload capacity. For example, an undamaged port level 2 will have 30k of capacity and will show a value of 30 in the port circle at the start of the turn when in F3 or F4 mode. Units cannot load/unload to/from ships at permanent ports unless sufficient port capacity is available. As port capacity is used up, the tonnage number in the port circle will decline. Loading/Unloading of freight in permanent ports also uses port capacity.

Ports with five percent or more damage will only operate at half of their normal capacity. A level 2 port with 20 percent damage would normally get $2 * 15,000 * .8$ or 24,000 tons, but because it is over 5 percent damage, it will only get 12,000 tons.

When temporary ports are captured they are destroyed and removed from the map.

On the turn a permanent port is captured by either player, a depot is automatically built with supply priority 3 in the hex. If an amphibious landing succeeds in capturing the target hex then a temporary port with a level 2 depot set to priority 4 will automatically be formed in that hex.

Ports have their port transportation capacity generated near the end of the logistics phase, so when a port is captured by regular ground combat rather than an amphibious invasion, it will not receive any capacity until the end of the next logistics phase, so no freight will enter on the next turn. Since amphibious invasions occur during the Axis player's turn, in the Soviet logistics phase of the turn of invasion, they will gain some port capacity, but not much tonnage as the port is damaged at the time it

receives its capacity. The port will receive some freight dependent on its size and percentage of damage.

If the port capacity is not used up loading or unloading units during the movement phase, it will be available in the next logistics phase to unload/load freight.

Barrage Balloons – All ports are assumed to have barrage balloons that will impact any raid that is bombing anything in the port's hex. Aircraft bombing under 3,000 feet have a chance of being destroyed by the barrage balloon equal to two times the size of the port (so a port 3 means there is a 6% chance bombing aircraft will be destroyed). For night missions, the chance is tripled (so port level 3 has an 18% chance).

24.2.2. INLAND PORTS

Not all ports are directly on a sea hex. For example, Stettin in hex 143,164 traces a link to the Baltic via the Stettiner Haff.

For an inland port to function, the player must have control of all of the land hexes along the river and/or ferry hexes between the sea and the port (both for unit and supply movement to/from the port).

On the main part of the map both Nikolaev and Kherson are dependent on control over the river and ferry hexes stretching down to Ochakov for them to function.



24.2.3. SPECIAL RULES FOR TEMPORARY PORTS

Temporary ports are only created in target hexes that don't already have a permanent port, but if there is a size 1 or 2 port in the invasion target hex, the port will be immediately fully repaired upon capture.

Unloading of units in temporary ports does not use port capacity as the temporary port is simulating units and freight being offloaded at a beachhead. In all cases for loading/unloading, Transport ships must be available.

When a temporary depot is created (or a permanent port is captured) during an invasion, 250 tons of freight are placed in the depot for every cargo ship with the amphibious force being landed. In addition, an airfield, with 50 damage points, will be created in the hex if it is clear terrain and freight from attached cargo ships will also be used to fill out the airbase units TOE

A temporary port can only survive if a naval HQ is in an adjacent sea hex, so if there is no amphibious HQ adjacent, the temporary port will cease to exist but any airbase in the hex will remain.

Note: The Amphibious HQ can move during the Ground Phase with no effect. What matters is that at least one Amphibious HQ is adjacent to the temporary port during the logistics phase.

Temporary ports may be used for strategic naval movement, but not for accumulation of preparation points for amphibious invasion.

Temporary ports are considered to be national supply sources for the purposes of determining isolation. Newly created airfield units and those created in temp ports are given a supply priority of 3 when they are created.

Freight coming ashore to a temporary port takes attrition based on the air weather value (Clear 0, Rain 1, Heavy Rain 2, Cold 3, Snowfall 4, Blizzard 5) and the following formula:

$$10 + (\text{weather value} * 15) \%$$

So in rain, 25% of the freight shipped to the depot will be lost.

24.3. GROUND UNIT NAVAL TRANSPORT

Naval transport can be conducted by non-routed, non-frozen ground units. Each unit has a naval transport load cost listed in the unit detail window in tons. For that unit to use naval

transport movement there must be sufficient troop ships available to conduct the applicable type of movement.

The number of troop ships required to transport the unit will be deducted from the troop ship pool for that naval zone every turn it uses naval transport movement, even if it just moves one hex. Units can end the turn at sea or in a port still loaded on ships.

Units on ships are automatically put into ready mode and cannot be put into reserve or refit as long as they are on ships. Though support units do not use naval transport movement per se, changes in attachment between HQ and combat units that are separated by sea and ocean water hexes will result in the use of freight points from port to port for each transfer.

24.3.1. STRATEGIC MOVEMENT POINTS AND NAVAL TRANSPORT COSTS

All units have 200 Strategic Movement Points (SMP) per turn, including Static units, and this is used for naval transport. As described in section (22.4), there is an interaction between the available strategic movement points and tactical movement.

There is a variable SMP cost to load or unload from ships. Units without enough remaining SMP at the desired destination will be unable to unload and must remain 'on ships' until the next friendly movement phase.

To load a ground unit at a port the SMP cost is 50-(remaining capacity in 000s of tons/7.5). For example, a level 2 port 30k ton capacity remaining would require the loading unit to expend 50-(30/7.5) or 46 SMP. To unload a ground unit at a port the SMP cost is 150-(remaining capacity in 000s of tons/1.5).

24.3.2. UNITS ON SHIPS INTERACTION WITH ENEMY UNITS

If a unit on ships is in a port hex with no friendly combat unit stacked with it, it will make an offset move out to an adjacent sea or ocean water hex, without suffering any losses, if an enemy unit moves next to it. It will also make an offset move to an adjacent water hex if other friendly units lose a battle in the same hex and are forced to retreat. In addition, it will make an offset move to an adjacent water hex if it tries to move into a port that is next to an enemy unit if there is no combat unit already present.

Units in naval transport mode located on a coastal hex that was a temporary port can always move out to sea even if the temporary port subsequently is removed from play.

Enemy units that remain in a sea or ocean water hex 'in ships' at the end of their turn block the naval transport of friendly units through that hex. Units on ships in water hexes and the transports on which they are embarked will be destroyed if an enemy amphibious HQ unit utilizing amphibious transport moves adjacent.

24.3.3. INTER-THEATRE NAVAL TRANSPORT

There is no direct water connection between the various Lakes and Seas (apart from between the Sea of Azov and the Black Sea) in WtE2. Thus each is treated as a separate region for game purposes.

24.4. CARGO SHIP FREIGHT TRANSPORT

Cargo ships are used to transport freight, normally between friendly ports during the logistics phase. Cargo ships are also attached to amphibious HQ units to deliver freight required to support amphibious assaults, to include temporary depots and air base units built as the result of a successful landing.

The number of ships in each sea area can be found on the production screen (36.3), as:

Troop Ships:	Baltic Sea: 27	Black Sea: 40	Azov: 5	Caspian: 4	Ladoga: 5
Cargo Ships:	Baltic Sea: 65	Black Sea: 135	Azov: 24	Caspian: 7	Ladoga: 9

Ladoga:	Cargo Ships Unused	9
Ladoga:	Cargo Ships Used	0
Baltic:	Cargo Ships Unused	65
Baltic:	Cargo Ships Used	0
Black:	Cargo Ships Unused	135
Black:	Cargo Ships Used	0
Azov:	Cargo Ships Unused	24
Azov:	Cargo Ships Used	0
Caspian:	Cargo Ships Unused	0
Caspian:	Cargo Ships Used	7
Ladoga:	Troop Ships Unused	5
Ladoga:	Troop Ships Used	0
Baltic:	Troop Ships Unused	27
Baltic:	Troop Ships Used	0
Black:	Troop Ships Unused	40
Black:	Troop Ships Used	0
Azov:	Troop Ships Unused	5
Azov:	Troop Ships Used	0
Caspian:	Troop Ships Unused	4
Caspian:	Troop Ships Used	0
Amphib	Troop Ships Lost	0 (total 2)
Amphib	Cargo Ships Lost	0 (total 64)
Amphib	Troop Ships in use	0
Amphib	Cargo Ships in use	0

Further information about usage of cargo and troop ships in the logistics phase can be found in the Logistics Phase Log (36.9) under the 'Freight' sub-category:

Information about losses can also be seen on the ground loss tables (36.2.1).

24.5. TRANSPORT SHIP ATTRITION AND INTERDICTION

Ships may be lost, along with their cargo, whenever they are used for naval transport, amphibious transport, or for movement of freight during the logistics phase. Ships may also be lost when in an amphibious HQ unit. Note that for the purposes of this game, when a ship is described as being sunk, it actually represents ships sunk or damaged sufficiently to take them out of action for the rest of the game.

Half of any lost manpower in destroyed elements is placed in the manpower transit pool.

Players will get a message on the screen if a troop ship is sunk during a naval transport move.

24.5.1. LOGISTICS PHASE SHIP ATTRITION

Cargo ships used for movement of freight in the logistics phase have a one percent chance of being considered sunk but no freight will be lost as a result.

24.5.2. NAVAL SEA AND AIR INTERDICTION

Naval air and sea interdiction determines control of sea hexes through the interaction of naval air patrols, air superiority and fighter interception, and naval interdiction from ports and the impact on ships moving through those sea hexes. Remember that air superiority missions can be used to reduce the level of naval interdiction from the previous air phase.

In addition to the effect of naval air patrols (18.1.8), naval interdiction points are automatically projected from ports. Every port projects naval interdiction points approximately five to seven hexes out based on the port level, damage level, and weather. Ports within 5-7 hexes of each other will aggregate interdiction levels over some hexes.

Interdiction is also affected by the presence of Naval Task forces.

Ships conducting naval and amphibious transport and carrying freight in the logistics phase as well as the cargo they carry are subject to naval interdiction attrition based on the movement path they follow. Such losses will increase for every hex that is entered (and this will increase if the hex is contested or enemy controlled) and as the weather worsens (naval movement in blizzards or snowfall will lead to high levels of attrition).

Naval Interdiction values printed in sea hexes are displayed in brown for Soviet and grey for Axis. Control of

a water hex is defined as having a map display adjusted interdiction level that is 2 greater than the enemy level. The map displayed values are the true value that is a number from 0-99, divided by 10 and then truncated. The true values are displayed in the hex pop-up, but the values shown on the map are the truncated /10 values, and it is these that are used for determining naval control of a hex.

If the interdiction level is then less than 1, the presence of interdiction is shown by a simple symbol but the actual levels can be seen using the mouse roll-over.



When interdiction is shown, enemy controlled sea hexes are shown in red, neutral are shown darkened, and friendly control is shown normally. The hex pop up will display current control as follows:

Hex control will be indicated by Axis, SU (Soviet Union), or Neutral, which indicates contested water hexes.

In the Action (Move) phase, if naval transport (F3) or amphibious transport (F4) mode is selected, then the impact of control of sea hexes on those modes of travel will be indicated as follows:

- Friendly controlled – nothing displayed
- Neutral – SHIPPING CONTESTED
- Enemy controlled – SHIPPING HEAVILY CONTESTED
- Enemy amphibious HQ unit and adjacent hexes – SHIPPING PROHIBITED

When a ship is sunk due to interdiction, the material on the ship is destroyed.

24.6. AMPHIBIOUS NAVAL TRANSPORT

Amphibious naval transport (F4) includes preparation, amphibious movement to the target hex, amphibious

invasion operations, to include landing attrition and assault combat to take the target hex, and establishment of a beachhead, to include a temporary port, depot and airfield.

Amphibious HQ units represent the naval forces, possibly made up of the transport ships and naval gunfire support needed to conduct an amphibious invasion and provide over the shore resupply through the beachhead.

24.6.1. AMPHIBIOUS INVASIONS

Amphibious invasions may be initiated by Soviet Amphibious HQ units (21.11.1) in the Black Sea region using combat units to invade clear, woods, and city terrain hexes.

The steps involved in an amphibious invasion are first; having the amphibious HQ and units stacked in a port, target an enemy hex for invasion. After spending turns accumulating preparation points for this invasion, the HQ can be ordered to execute the invasion once it has accumulated at least 50 prep points.

The combat units themselves must have at least 30 prep points before they can participate in an invasion.

The invasion will then take place after the enemy player's next logistics phase. Armoured divisions and HQ units other than amphibious HQ units cannot participate in amphibious invasions (but all support units attached to the invading units can be used). Note that there is no restriction on these types of units utilizing regular naval transport to move to ports opened by a successful amphibious invasion.

Players can target hexes for amphibious movement no matter what the sea control status, i.e. even if the path goes through enemy controlled water hexes. Amphibious HQ units will be able to select INVAD if the path goes through enemy controlled water hexes, but this will see significant attrition to cargo and troop ships and their cargoes. A warning text box will display after the standard Amphibious invasion Y/N confirm message when the path is going through enemy controlled sea hexes: Amphibious path contains x enemy hexes – continue? Y/N.

When an invasion is ordered during the movement phase, the amphibious HQ and associated combat units conducting the invasion are moved out to sea to the hex next to the beach hex being landed at.

Amphibious invasions are executed after the enemy player's next logistics phase. If a target hex is unoccupied by enemy combat units then the amphibious combat units

will move into and take control of the hex. If a target hex is occupied by enemy combat units then the amphibious combat units will attack the targeted hex from the sea hex adjacent to the targeted landing hex.

24.6.2. AMPHIBIOUS HQ UNITS

Amphibious HQs are used for the amphibious movement of combat units and the naval transport of units and supply over beaches (when a port is unavailable). Amphibious HQs may have attached naval support groups representing ships to provide artillery support for amphibious assaults and ground combat in adjacent land hexes.

Amphibious HQs may only use amphibious and naval transport movement. They may never enter a non-port land hex. They may enter a ferry hex and assist units attacking over a ferry hex.

Neither enemy supply trace nor enemy naval transport can pass through hexes adjacent to an Amphibious HQ unit.

If an amphibious HQ unit moves next to an enemy unit at sea (on ships), the enemy unit as well as the naval transports on which they are embarked will be destroyed. When an amphibious HQ unit is ordered to invade, any enemy unit at sea along its path will be destroyed.

In addition, Amphibious HQ units will bombard any enemy units in adjacent land hexes at the end of that player's air execution phase if they have any suitable elements attached, potentially causing damage to ground elements. At the end of the Soviet player turn air execution phase, each amphibious HQ unit with combat ships will automatically bombard all adjacent Axis ground units potentially causing damage to some Axis ground elements in both the combat units and any attached support units.

Level 1 and 2 ports that are adjacent to an amphibious HQ unit are immediately fully repaired in the Soviet logistics phase.

24.6.3. NUMBER OF SHIPS ATTACHED TO AN AMPHIBIOUS HQ

Troop and Cargo transport ships must be attached to amphibious HQs to allow amphibious transport movement. If the naval HQ is in a port then no supply or transport ships will be assigned.

Transport and cargo ships are moved from the ship pool to the amphibious HQ unit at the moment units are told to launch an amphibious invasion and can be seen listed on the unit detail screen for the HQ unit.

Black Sea Amphibious HQ
 20,000 Tons, 0 Troop Ships, 0 Cargo Ships, Wins: 0, Losses: 0

Supply Details
 RELOCATE UNIT
 DISBAND UNIT

	Elements			Assigned (1)	Air Support
	EXP	RDV	DAM	GROUND ELEMENT	FAT
TOE	99	100		Support	0
MAX TOE	35	1	0	Troop Ship	0
	35	1	0	Cargo Ship	0
HHQ	STAVKA -*				
Morale	35 (50)				
Nation	Soviet Union				
Supply/Need	180 / 179				
Fuel/Need	187 / 149				
Ammo/Need	0 / 0				
Support/Need	990 / 42				
Transport Cost	6085				
Vehicles/Need	1287 / 990				
Supply status	In Supply				

The number of troop transports required for amphibious movement is equal to the number required for the naval strategic movement of land units for the land units that are invading. The number of cargo ships attached is equal to the number of troop ships.

If at sea, the number of troop or cargo ships falls below 10, then the appropriate ships will be taken from the pool and attached to the amphibious HQ to bring the number of troop and cargo ships back up to 10 (10 for each, although if there are not enough ships in the pool to reach 10, no ships will be moved from the pool).

Example: An amphibious HQ and an infantry division are given amphibious orders. The division has a transport cost of 22,000 tons. 22 troop ships and 22 cargo ships would be required for amphibious movement. For regular naval transport movement, only 22 troop ships are required.

24.6.4. AMPHIBIOUS HQ AT SEA ATTRITION AND DAMAGE TO AMPHIBIOUS HQS

Amphibious HQ units that are at sea (defined as being in a water hex or a temporary port hex) during the logistics phase will suffer damage and transport ships attached to them may be sunk. The amount of damage will be related to the level of enemy interdiction in the hex and the air weather.

This damage can be repaired when in a permanent port during the logistics phase (the larger the port, the more damage repaired). The current damage of an amphibious HQ unit is shown on the right unit bar. Damage is added to an amphibious HQ unit at sea each turn.

Once an amphibious HQ unit's damage is greater than 99, it is permanently withdrawn from the game.

24.6.5. MOVING UNITS USING THE NAVAL TRANSPORT MODE (F3)

To actually move a unit between friendly held ports (i.e. Naval Transport), the F3 mode must be selected. Left click as necessary to select the unit(s), right click to load on ship and move, left click in unit bar or select movement mode (F1) to off load from ship. Note a unit can move from port and remain at sea or move from being at sea and enter a port during the movement phase.

Units can mix tactical movement (say to move to a port hex) with strategic movement during the ground phase. The current strategic movement point (SMP) allowance for a unit will always be displayed next to the SMP symbol just below the unit counter graphic in the unit bar.

With 'show movement allowed' enabled hexes the unit with the fewest movement points remaining cannot reach will be shaded grey. Impassable hexes will be shaded red. If 'show movement path' is enabled, then moving the mouse cursor over the hexes where movement is allowed will display a line of symbols, each with a number showing how many movement points the unit with the fewest remaining movement points would have left if it was moved to the hexes along that path.

Units cannot load/unload to/from ships at permanent ports unless sufficient port capacity is available.

The remaining Port Capacity for friendly ports will be displayed on the map for each port with the number in the port circles on the map equal to 1,000 tons of remaining load/unload capacity. To move the selected units to an allowed location, right click in the desired hex.

Units cannot move through or adjacent to an enemy amphibious HQ unit while in naval transport mode. Enemy units that remain in a water hex 'in ships' at the end of their turn block the naval transport of friendly units through that hex. Units on ships in water hexes and the transports on which they are embarked will be destroyed if an enemy amphibious HQ unit utilizing amphibious transport moves adjacent to them (16.6.2).

If a unit using naval transport ends the turn adjacent to an enemy unit or port it will automatically displace one hex out to sea during the logistics phase.

When in naval transport mode and a unit is selected for movement, the naval contested hexes will be slightly darkened and enemy controlled hexes will be dark. Movement through these hexes is allowed, but at greater attrition levels.

24.7. AMPHIBIOUS INVASION AND ASSAULT

During the amphibious phase in the enemy turn, the invading ground units will attempt to move into the target hex. First the invasion force transport ships and ground units undergo landing attrition. If the target hex has defending enemy units, the invading ground units will conduct a deliberate attack to capture the hex.

24.7.1. PREPARATION FOR AMPHIBIOUS OPERATIONS

Eligible combat units that begin their turn in a port, stacked with an amphibious HQ that has targeted a hex for invasion, will accumulate amphibious preparation points (APPs). Units may accumulate a maximum of ninety APPs. The number of APPs that may be accumulated in a single turn is dependent on the size of the port and varies with the size of the unit as follows:

- Add truncated (port value/2)
- Add truncated (54/size of forces in hex) where each combat unit in the hex has a size value where Division=9, Independent Brigade=5, Regiments and Broken down division units (1/ 2/ 3/ regiments and brigades) =3 and a permanently motorized unit has 1 added to the size.

Amphibious HQs may not order an Invasion unless they have at least 50 prep points (no Invade button will be visible on the unit). Combat units must have at least 30 APP before they can participate in an invasion.

APPs will be set to zero whenever a unit completes an amphibious invasion or if the unit spends a logistics phase not in a permanent port hex or not stacked with an Amphibious HQ (moving from port to port will not cause the loss of prep points). Note that as long as a unit remains in a port in each logistics phase, it won't lose prep points. It checks only during the logistics phase that it is in a port, and if not, that's when it would lose prep points.

Attaching a support unit to a unit prepping for an amphibious invasion will result in the loss of 10 preparation points, though prep points will never drop below zero.

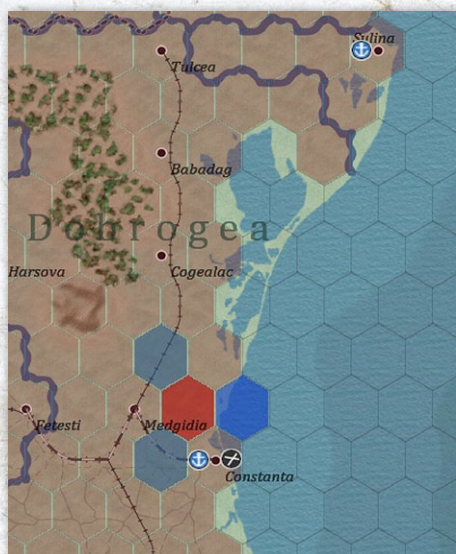
Amphibious HQ units and units stacked with them will not gain prep points when in a temporary port, nor will an amphibious HQ gain prep points when not stacked with an invasion capable combat unit.

APPs limit the amount of damage that the unit incurs while making an amphibious move.



In this case the Soviet 408 RD will accompany the Naval HQ in a planned invasion of Rumania. Note the unit has amphibious preparation points of 90.

If the amphibious transport mode (F3) is selected the target hex is shown in red. The two light blue hexes indicate pre-planned airborne missions in support of the landings.



24.7.2. AMPHIBIOUS INVASION ATTRITION

Several factors go into determining the number of troop and cargo ships lost during an amphibious invasion, along with the number of ground elements that are destroyed and damaged, before any ground combat against defending units in the invasion hex is resolved.

The number of ships lost is dependent on the enemy naval sea and air interdiction capability, the fortification level of the defending hex (and hexes adjacent to the water hex containing the amphibious HQ) and the weather. These adverse factors are partly offset by the number of Preparation Points possessed by the invading force.

24.7.3. AMPHIBIOUS LANDING AND ASSAULT

If a target hex is occupied by an enemy combat unit(s) then the amphibious combat units must fight their way ashore with a deliberate attack. Naval support groups attached to the amphibious HQ will contribute fire support. If enemy units are in the target hex, the attackers will come ashore one landing at a time in a randomly determined order.

When an opposed amphibious landing results in a combat, the defender's combat value is divided by a number equal to one plus the number of adjacent land hexes that are controlled by the attacking side.

So if there was one adjacent hex controlled by Soviet airborne units and one hex controlled by a force from an invasion that just successfully came ashore, the defending force would have its CV divided by 3 (1+2) when determining the final combat odds. With the exception of naval support groups attached to the amphibious HQ unit, support units in HQ units will not participate in amphibious landing combat,

During an amphibious invasion attack against a non-port hex, the defending units may only use the CV value of the largest unit in the hex, and if that unit is a larger than a regiment or brigade, it will only use 1/3 of that unit's CV value. All units will participate in the battle, but only the one unit will count in the after battle CV value that determines the winner of the battle. Axis units next to enemy amphibious HQ units are not eligible to come in to a battle from reserve.

If an amphibious assault fails, the ground units will remain 'on ships' in the same water hex with the amphibious HQ unit, representing the evacuation of the surviving assault forces back to the transport ships. All prep points are lost.

Amphibious HQ units will use their naval support units to fire into any combat where the defender in the combat is adjacent to the Amphibious HQ (they will fire as an attacker or defender, as long as they are adjacent to the defender's hex). Naval support units suffer disruption prior to their firing in combat when adjacent to enemy hexes with forts and/or ports. The amount of disruption is determined by adding up the fort levels of every enemy hex adjacent to the Amphibious HQ, and adding 1 for every enemy port adjacent to the Amphibious HQ. The larger this number, the greater the disruption. This represents the effects of enemy naval guns within range of the Amphibious HQ.

At the end of every Soviet player turn air execution phase, any amphibious HQ unit with combat vessels will

automatically bombard all adjacent Axis ground units potentially causing damage to some Axis ground elements in both the combat units and any attached support units.

24.7.4. HOLD AT ALL COSTS DEFENCE

Defending units on a temporary port hex, or adjacent to a temporary port hex and also adjacent to a sea hex, will have their end of combat CVs multiplied by 4 when determining whether they retreat. I

If they hold, but would have retreated had they not received this bonus, they will instead suffer additional losses to reflect their fighting to the last to hold the beachhead. The existence of a temporary port is noted in the hex pop-up information.

25. LOGISTICS

Focus: This section set out how the logistics system in War in the East 2 works.

Key Points:

- How the supply grid works;
- The role of Depots in the supply chain;
- The interaction between HQs and Depot capacity;
- How setting depot and HQ priority affects the allocation of freight and supplies



"Amateurs study tactics; professionals study logistics."

All units must have access to an adequate amount of supply and replacements to continue to function effectively. There are three types of supply in *Gary Grigsby's War in the East 2*; general supplies, ammunition and fuel.

These items are generated by each side's production system. In addition, replacements provide the manpower and equipment, in the form of ground elements for ground units and aircraft, pilots and aircrew for Air Groups, to replenish losses from combat and attrition.

In order for units to receive supplies during the supply/replacement segment of the logistics phase, they must be within range of a depot that has freight.

To receive replacements they must be able to not only trace to a depot with freight, they also must not be isolated.

In order for depots to receive freight, they must be connected to the supply grid. This is made up of permanent national supply sources connected by a rail network of undamaged rail line hexes to a depot in town, city and urban hexes. Ports can also be connected to the supply grid, allowing tracing of supply lines over water. The generic vehicles of the motor pool are used to bridge the gap between the depots and the ground unit requiring supply and replacements.