

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

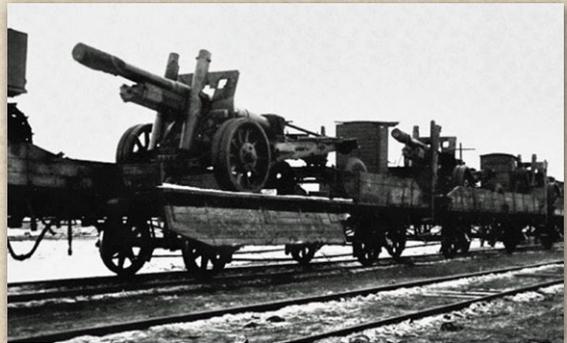
If they hold, but would have retreated had they not received this bonus, they will instead suffer additional losses to reflect their fighting to the last to hold the beachhead. The existence of a temporary port is noted in the hex pop-up information.

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.

Freight is the common measure of all material transported by rail or over water hexes from port to port. Limited mainly by rail and cargo ship capacity, freight tonnage is sent, via ships and rail, for storage at depots where it can be converted to provide supplies, fuel, ammo, and replacements drawn from available pools.

Supply priority can be set for each headquarters as well as each depot. The amount of supply and replacements delivered is dependent on many factors, including the distance from the depot to the unit, whether the unit moved during the last turn, and vehicle shortages in both the motor pool and the unit.

Units can be in one of two supply states; in supply or isolated.

Isolation is caused by an inability to trace to a supply source that is connected to the national supply grid. Isolated units can still draw supplies from a nearby depot, and can be supplied by air (which can also mitigate some of the effects of isolation). Town, city and urban hexes that are isolated or lack a nearby supply source will suffer starvation damage to their manpower.

There are numerous sources of information regarding logistics in *Gary Grigsby's War in the East 2* (6.9), such as the logistics phase event log screen (Hotkey- shift-e), the view logistics information button (Hotkey- n) the show freight shipments (Hotkey- 8), the metrics screen (36.4), the Commander's Report (35), and the individual unit supply detail window (37.2 and 37.3).

25.1. THE SUPPLY/REPLACEMENT SEGMENT

During the supply/replacement segment of the general logistics phase units have multiple chances to be resupplied and/or receive replacements. Units attempt to draw freight to be converted into supply and replacements from the nearest depot, up to 30 hexes (and not more than 75 MP) from the unit. Once the closest depot is depleted of freight, a unit will try to obtain its remaining needs from the next closest depot.

A unit can only receive freight from up to five different depots in a logistics phase, although it will usually receive from only one or two in a turn.

Units that do not have the required support (21.2.2) may receive less supply and replacements, with the greater the shortage the greater the impact on deliveries.

25.1.1. SUPPLY/REPLACEMENT SEGMENT

The standard Resupply/Replacement segment is broken into many smaller segments in which units, depending on their supply priority and how much they have of an item relative to their need, may attempt to draw supplies, fuel, ammo, vehicles, and replacements from freight at nearby depots.

In each segment, the logic is that higher priority units always try first, but lower priority units will try to obtain some freight before the higher priority units can obtain large amounts (including overstocking). Whenever a unit qualifies to try to obtain supplies, it must pass administrative and support checks (15.5).

So in a given phase, all units that meet the criteria will try to obtain supplies. Low priority units actually go first until they drop out of the system. Thus while high priority units may gain more supply than lower priority ones this will depend on how much supply is available locally.

When successful, motorized units can gain more fuel, while artillery units can gain more ammunition in any particular sub segment.

For the unit to draw replacements, it must either be in refit mode (26.3) or pass both administrative and support checks. Also, if the ground element has less than 81 percent of need, and the unit is in refit mode, if it passes both administrative and support checks, it will generally receive a larger batch of replacements in any given sub segment.

Note that the supply need of units will change as replacements flow into/out of units in replacement phases to allow the unit to obtain additional required supplies after replacements arrive but during the same logistics phase. A supply priority 4 unit that did not move on the prior turn and is not adjacent to an enemy controlled hex will have an extra opportunity to replenish to a higher level. Replacements will always cap out at 100 percent of need and all Max TOE settings and TOE limitations will also be followed.

Combat Preparation Points also allow a unit to obtain and store more than 100% of its notional need for supply, fuel and ammunition.

25.1.2. SUPPLY SEQUENCE

Broadly the supply phase will follow this order:

- Freight will be moved from a NSS to the depots
- Exporting ports will then send freight by sea to importing ports
- Depots then will ship by rail to other depots

25.1.3. LEADER AND SUPPORT CHECKS

Each phase sub-segment where a unit is eligible to attempt to draw freight to meet an item need, the unit must pass both an administrative leader roll and a support check. If the unit fails either, then this is counted as an Admin Failure (listed on the unit supply detail screen (35.2.2) and the unit will not receive anything in this sub-segment.

UNIT SUPPLY DETAIL					
10th Motorized Division					
Current Status					
Priority 4					
	In Unit	Required	Used	Attrition	
supplies	73 [54%]	135			
fuel	141 [68%]	206			
ammo	291 [83%]	350			
vehicles	1672 [92%]	1814	23	3	
support	514 [100%]	514			
Turn 12 Supply Details					
Depots					
	Range	MP	FrRec	FrLost	VehRec
Klintsy	10	10	22	5	0

Received					
supplies	22 [16%]				
fuel	0 [0%]				
ammo	0 [0%]				
vehicles from pool	0 [0%]				
replacements	-460 [0 freight]				
supplies consumed	43 tons				
admin failures	0 [penalty:0]				
no freight	70				
no trucks	0				
no fuel	0				
no supply	0				
no manpower	0				

In this case, the unit has passed its leadership checks but faces shortages as it is drawing supply from a depot (Klintsy) that itself has limited freight. This situation is not unusual for the Axis player by late summer 1941.

If it passes the checks, then it is free to receive all of the items that it qualifies for in the current sub-segment. Once the unit has accumulated four administrative failures, no further attempts at replenishment will be made.

Note that the more Combat Preparation Points in the unit (23.2), the greater the chance of passing leader administrative checks

25.1.4. AIR BASE UNIT RESUPPLY

In addition to the normal supply/replacement segment during the logistics phase, Air base units can receive fuel and ammunition only (no replacements or supplies) during the air execution phase. Each night during the 7 days of the air execution phase, if an air base unit has less than 80 percent of needed fuel or ammunition, it will go through the same prioritized resupply routine as in the logistics phase.

Note that air base units set to priority 0 will never receive resupply. Equally airbases with no planes will request very little (often no) supply as it seeks to match its requests to need.

25.1.5. RESUPPLY DURING COMBAT

During each round of combat, defending units in the combat with less than 60 percent of their needed fuel and/or ammunition or less than 40 percent of their needed supplies will attempt to draw freight to convert to the needed item(s) from nearby depots. Each resupply attempt may lead to receiving up to 20 percent of the total need of the type of supply (fuel, ammo, or supplies).

Note that attacking units cannot resupply during the combat phase.

25.2. THE SUPPLY GRID

The supply grid consists of five parts: national supply sources; the rail network; town, city and urban hexes on the network, ports, depots in town, city, urban, and airfield hexes; the motor pool; and, the shipping pool.

Supplies and fuel generated by the production system are stored in town, city and urban hexes on the rail network to be drawn upon by factories.

Factories don't necessarily need to be on a rail line, and can function if they are within 5 MPs from a working rail link. Much of City to City or City to Pool deliveries of oil and fuel are conducted by pipelines independent of the rail

network. Half of all oil and fuel delivered in these cases do not use any rail capacity.

Supplies stored in a city cannot be used by units, which need to be supplied by a depot. Supplies stored in a city can be used by construction projects and fuel can be used for vehicles in a depot at the city.

Freight flows from national supply sources through the rail network and/or port to port to depots for conversion to supply and replacements when drawn upon by nearby units.

Depot priority is important in this regard, depots will only send freight to another depot at a higher priority. The various NSS are set to 0 so will send to any depot at 1 or higher that needs supplies. A priority 4 depot will not send on supply to another depot.

The ability of a unit to receive replacements and supplies/fuel/ammo, and repair damaged aircraft and ground elements is dependent on its location in relation to the supply grid, specifically the distance from the depot or depots from which they are drawing supply

and replacements. All these functions are conducted automatically during the logistics phase (5.3.1).

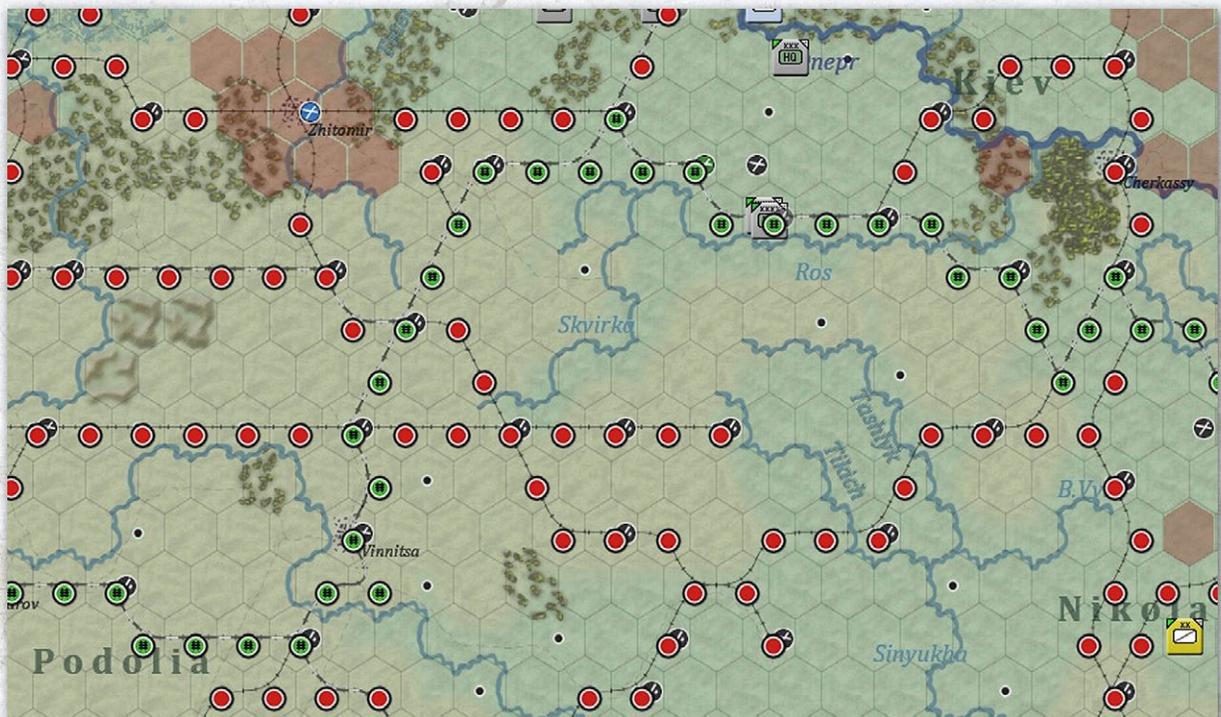
At the end of the air execution phase, the supply grid is recalculated to account for changes in control of ocean and sea water hexes due to naval interdiction (24.5.2).

25.2.1. THE RAIL NETWORK

A rail network consists of a contiguous path of friendly controlled undamaged rail line hexes connected to a functioning national supply source, or to a port that is considered connected to a national supply source, or a combination of the two. Ports are considered to be on the rail network even if there is no undamaged rail in their hex as long as they are connected via non-enemy controlled sea hexes to another port that is connected to a national supply source.

As an example, a series of undamaged Axis rail hexes can lead back to Riga which is, in turn, connected to a port in Germany that is itself connected by rail to a functioning national supply source, and all of these rail hexes are considered to be on the rail network.

This shows part of the Axis rail net in the Ukraine in the summer of 1941 (using the rail damage map mode). In



effect the Germans have a single repaired line (the green circles) so, for example, Vinnitsa is on the rail net.

A line of depots along this line will draw freight forward and supply airbases and combat units as needed.

Units can draw supply from depots that contain freight, although there are some limitations if the depot is isolated from the rail network. Note that rail hexes that are adjacent to enemy units are considered not to be functioning for the purposes of determining the rail network. These hexes may not be used for strategic rail movement but supply will enter those hexes by rail if appropriate. .

In some limited map scenarios, rail hexes outside of the limited area can provide supply trace. This may prevent some units along the map edge from being isolated, and will also allow OKH and other HQ units positioned outside the play area to be considered in supply.

Rail usage due to freight movement is reduced during the logistics phase, so if a given rail branch is heavily used in one turn it might take a few turns for the impact to be removed.

25.2.2. PORTS AND THE SUPPLY GRID

A port is considered to be connected to the supply grid if it can trace a path of ocean or sea water hexes that does not enter enemy controlled water hexes (7.3.6) to at least one other friendly port connected to the supply grid via rail lines.

Freight is transported between ports connected to the supply grid during the logistics phase by cargo ships from the shipping pool (24.4). This path may be blocked by naval interdiction and/or amphibious HQ units. Interdiction will block freight shipments, and can cause isolation (24.5.2), if the enemy has 2 or more interdiction levels in a sea hex than the tracing side (hex control).

Interdiction can also result in either partial loss of freight in transit or the prevention of any freight shipments leading to the isolation of any units in the port.

Ports with depots containing freight will be able to resupply units with supplies, fuel, and ammo as long as they have freight remaining. However, this in itself does not prevent isolation

25.2.3. NATIONAL SUPPLY SOURCES (NSS)

The establishment of a rail network and connection to the supply grid requires the tracing of a contiguous path of rail line hexes (and/or port to port connections over water) to a National Supply Source.

In the late game, the Axis player is most likely to lose all these connections as the Western Allies advance (13.3) unless they are able to hold the Soviets back from breaking the direct connections between Berlin, Prague and Vienna.



The depot is marked with a star (black or brown depending on the side).

To function as a NSS a centre must also be able to trace a rail link to another NSS.

Axis on map National Supply Sources in the campaigns:

- Berlin
- Frankfurt
- Vienna
- Prague

Soviet on map National Supply Sources in the campaigns:

- Moscow
- Kazan
- Saratov
- Chkalov
- Chelyabinsk
- Sverdlovsk
- Chelyabinsk
- Krasnovodsk

Non-campaign scenarios that do not use the entire map area may have additional National Supply Sources added for each side.

Railyards located in the same hex as a National Supply Source will produce twenty times the tonnage capacity as regular railyards. For example, an undamaged level 2 railyard will produce 20k capacity (10k x 2)

Berlin (39) (AA:201)
 Heavy Urban - 139, 172
 Germany(Brandenburg) - Good Roads

Depot: National Source (4) trucks: 226 freight: 2501467
 Depot freight level: 1000000
 Rail: 1800000 : 90000
 Logistics Freight

Received: 1658 - 2%
 Stored: 2501467 (2575868) - 999%
 Sent Out: 192509
 Lost : 0
 Capacity: 60000 (60000)
 Unit Truck Use: 0

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

Axis Rail Usage 5416

Minor River: NW NE
 Rail: E SE SW NW NE

Attached to city:
 - 22nd Flak Regiment

Berlin Air Base. Size 2 (0%) / Dam 0 / Det 1 / Fzn 0

Off Rail MP: 0

but, the same railyard in Berlin, a national supply source, would produce 400k capacity (200k x 2).

National Supply Sources are permanent physical locations that represent the insertion point of production and logistics material from the virtual production pools, as well as freight tonnage. Each national supply source is set to generate 2.5 million tons of freight in each supply phase.

If a NSS is adjacent to an enemy unit, it will be reduced to 50,000 tons of freight and will not receive an automatic delivery of freight. It will continue to function as an NSS for determining whether units and hexes are isolated.

A depot will totally cease to function as a NSS if it cannot trace a rail link to another on map NSS. Under these circumstances it will not prevent unit and hex isolation, although the depot may continue to store freight, after having the freight present reduced to 50,000.

25.2.4. LOSS OF AXIS NSS

If the Axis lose a NSS to either the Western Allies (by event) or the Soviets then destroyed units will no longer be placed in the National Reserve to refit. In addition, any frozen units will unfreeze in the next German turn.

25.2.5. MAXIMUM RANGES

The maximum distance a unit can access a depot is cannot be more than 30 hexes away. Ideally, the routine will try to avoid paths that cost 75 or more movement points but such a path might occur depending on the circumstances.

These values will vary if the morale or logistics levels are set above 100.

25.2.6. IMPACT OF WEATHER

Supply costs are charged using the motorized movement cost (38.6) so are variable according to the weather and road quality.

In addition, the impact of weather on Axis supply tracing is doubled up to the start of April 1942.

25.3. FREIGHT

Freight represents the generic capability to transport material through the supply grid. As such, freight is not converted to the actual material, whether as fuel, supplies, ammunition, vehicles or ground elements, until it is drawn upon by the end user. At that stage, the actual items needed are drawn from the production pools, if they are present.

For example, when one ton of freight is moved to a unit that is getting supplies, it is converted into one ton of supplies and at the same time one ton of supplies is consumed from the general supply pool (25.2). A shortage of needed material in a pool or a shortage of freight in a player's depots will have the same result of not being able to meet a unit's supply and replacement needs.

Freight can be damaged by air attacks and interdiction against railyard hexes with depots and when it is being transported, resulting in the damage or destruction of ground elements and the removal of supply from applicable pools (36.3.1).

Freight is composed of both different types of supply and replacement ground elements.

Supply is composed of three types: General Supplies (supplies); Ammunition; and, Fuel. Each type of supply is used for different purposes. In general, supplies are more important to non-motorized units and fuel is more important to motorized units, but all combat units require ammunition.

25.3.1. GENERAL SUPPLIES

All units require supplies for food and general maintenance. Supplies also represent fodder for horses and thus are required by non-motorized units for movement (22.1.2). Note that the consumption of supplies for food and general maintenance occurs during the logistics phase prior to the turn. Many non-motorized units require more supplies for fodder that is expended during movement.

Since motorized units do not need supplies for horses, they require much less supply.

Supplies are also used to reduce fatigue in ground elements during the logistics phase.

25.3.2. AMMUNITION

All units require ammunition for combat. Combat units with a low ammunition percentage will suffer a significant decline in combat effectiveness (23.8.3), especially when attacking. In addition, units that are adjacent to enemy units during the logistics phase will use up approximately one percent of their ammunition to reflect scouting, patrols and low level combat.

Ammunition is not produced separately, but is initially considered integral to general supplies. General supplies are converted to ammunition when freight is delivered to units from depots.

Defending units have a chance of receiving additional ammunition shipments during any combat they are involved

in. If this happens, any trucks used for delivery will not be available in the next friendly logistics phase and will be shown as 'used' in the supply screen.

25.3.3. FUEL

Motorized units require fuel for movement during the movement phase (22.1.2). Vehicles that are used to move freight from depots will also consume fuel during the logistics phase. This fuel can be drawn from fuel stored in cities in the same hex as the depot.

25.4. MOVING FREIGHT BY RAIL

25.4.1. RAILYARD CAPACITY

Railyards represent the rolling stock available for moving units and freight. If the railyard size is greater than 1, then each undamaged railyard factory point, or level, produces 10k tons of rail capacity per turn with the exception that railyards located in the same hex as a national supply source (25.2.3) will produce 200k tons of capacity per level per turn.

Note that size 1 railyards do not contribute rail capacity but do aid the loading and un-loading of freight and units and influence the capacity of any depot in the same hex.

The opposite is true, you need to repair and integrate level 2 (or more) railyards into your rail net to have sufficient rail capacity to move both freight and combat units.

Remaining railyard capacity will be displayed for each railyard when in rail move mode (F2) with the number in the rail circles on the map equal to 1,000 tons of remaining load/unload capacity.

This shows the current rail capacity of the three railyards in the Berlin region. West and NE Berlin each have level 6 railyards while Berlin itself is an NSS. Since it is also a level 9 rail yard its capacity is 1800 (the display only clearly shows the middle 2 numbers so at first glance looks misleading).



So a unit with a carry cost of 2,000 tons would

For example, an undamaged level 2 railyard with 20k capacity (10 x 2) will show a value of 20 in the rail circle when in F2 mode. If this has been used for freight or units then it will be reduced (subject to rounding).

decrease the number of the railyard capacity by 2 if it was in the same hex as the railyard when it started its rail move. There is an increase in the Strategic Movement Point cost (22.4.4) for the unit to entrain as the system goes further to find sufficient railyard tonnage capacity.

Note that for rail movement in the logistics phase of freight (either for the production system or movement to depots) also can cost additional railyard tonnage as the system goes further to find available capacity at other railyards. It also costs additional railyard capacity as freight moves depending on the SMPs needed to complete the move.

There is a 30 hex limit to how far from a unit or freight location a railyard can be in order to use its railyard capacity for rail movement.

In general, a unit or location separated from a railyard by ocean/sea hexes will not be able to draw on that railyard capacity.

25.4.2. DAMAGED RAILYARDS

Railyard damage will reduce the amount of freight that would be shipped and unloaded at a railyard depot in the hex. There is a percentage chance equal to the railyard damage that the amount shipped to a railyard depot will be divided by 10.

If a railyard is damaged either due to being recently constructed or captured, then it will automatically try to assign any available construction unit to speed repairs.

25.4.3. RAIL TRANSPORT AND FREIGHT

Freight is transported by rail during the logistics phase (5.3.1). Unlike ground units utilizing rail transport, freight has unlimited SMP's, but the amount of railyard tonnage capacity required to move the freight is variable and increases with distance from the railyard(s) and increased rail usage in particular hex(es).

Movement through undamaged rail hexes is possible even if rail usage is maxed out (22.4.3), but at a greatly increased cost in either SMP's (units) or railyard capacity (freight). Movement continues until railyard capacity is exhausted. Thus congestion results in less freight being moved by rail in the logistics phase to the extent that rail

usage causes the railyard capacity to run out and freight deliveries to drop.

Freight can be moved into a rail hex adjacent to an enemy unit but not from one hex adjacent to an enemy unit directly to another hex that is also adjacent to an enemy unit.

25.4.4. DEPOT PRIORITY AND RAIL FREIGHT ALLOCATION

In each logistics phase, depots will seek to gain freight according to the set priority. A priority 4 depot will generally receive much more freight than lower priority depots, while priority 1 and 2 depots will tend to receive very small amounts of freight. Exporting ports will generally be eligible to receive more freight than other depots. Except for ports, or depots containing an FBD/NKPS unit that did not move in the previous turn, it is rare for depots to receive near their freight capacity on any given turn.

Remember that single track rail lines only have 40% of the capacity of dual track lines (22.4.3) and thus have a critical capacity of 12,000 tons per turn. Once this critical usage is reached, there is a growing risk that the lines will still be congested in the next turn. Usage of the rail lines are only partially cleared each turn, so overuse on multiple turns can leave rails operating with much lower throughput on succeeding turns.

Gameplay note: Player's should be wary of using up all the rail capacity on key single rail lines going to depots near the front to move units as this will likely reduce the amount of freight that can be moved up that rail line in the next logistics phase. Even worse, all this usage will not clear at the end of the logistics phase and will hamper movement for several turns.

Note that depots set to priority 0 will not attract any freight but can still ship out any freight they have stored. Disbanding a depot will lead to the depot attempting to send out its freight to other nearby depots.

25.4.5. FREIGHT RAIL MOVEMENT BETWEEN DEPOTS

Depots will not send freight to another depot with the same or lower priority level. However, a lower priority depot that receives freight as it transits towards a higher priority depot will retain some if it is needed for nearby airbases.

25.4.6. AXIS RAIL PENALTY

As noted in 8.6.1, Axis rail freight pays a higher cost from 22 June 1941 up to the end of March 1942.

When Axis trains are moving freight by rail, the MP cost for each hex is increased by 10 plus the snow level in Blizzard hexes. In non-blizzard hexes if the snow level in a hex is over 5, then the MP cost per hex will be increased by the snow level/2.

25.5. MOVING FREIGHT BY ROAD

Road movement mainly relies on trucks but sometimes units can draw supply using horses (25.5.5). Road movement will be used either when a depot needs more freight than can be allocated by rail or to move freight from depots to HQs and Units.

25.5.1. THE MOTOR POOL

The motor pool represents the generic vehicles not yet in use by units or depots. All vehicles are "2.5 ton equivalents." Vehicles are used by depots to truck freight to units. Vehicles move from the pool to depots as needed by the depots to deliver freight, and some portion of unused vehicles go back to the pool. Vehicles can also go from units to depots and the pool as the system tries to balance all needs. When a vehicle is returned to the pool, one ton of freight is placed in a nearby depot.

During the logistics phase vehicles will be re-allocated as needed back and forth between depots, units and the pool. This process does not happen immediately.

The production screen (36.3.2) shows the number of vehicles in units with the number in parentheses next to it being the total number of vehicles the units require. The number of vehicles in depots is also shown along with the number of vehicles in the pool.

Vehicles in Units:	295,855 (290,272)
Vehicles in Depots:	109,607
Vehicles in Pool:	21,478
Vehicles in Repair:	33,340

Vehicles are also used and stored by theatre boxes and this allocation is shown in the theatre boxes when the on-map view is displayed.

In turn the Logistics Report (36.9) will show how many trucks notionally assigned to units have been used in the supply process – this can be found under the freight section of the report.

In addition the depot tab of the Commander's Report (35.7.3) can be used to identify which depots are using

Far East	
###	539,794
✈	8,965
🚚	1,864
+	2,138
status	ground air
[+]GROUND	184.70 (155) : 119%
[+]AIR DAY	51.80 (40) : 129%
Combat Divisions:	35.88
Freight:	191158 (300000)
Trucks (Used):	0 (6213)
Gnd Elem. Received:	947
Aircraft Received:	16

Unit Trucks Used	21201
Trucks Lost in Freight	4085
Total Freight Losses	8003
Axis Trucks Captured	19962
Soviet Trucks Captured	19570

most vehicles and which have an excess (this may indicate that their priority level is drawing in more freight than they actually need). The image below is sorted on 'unused vehicles' as an example (see figure 25-9).

Vehicles are also drawn from depots by units that have a need.

If there are not enough vehicles in units, depots, and the production pool to meet all of the needs, then the system will try to balance the different needs as best it can.

If a unit is short of vehicles for its own use it will retain any that are used to deliver supplies during the logistics phase.

Depots further from enemy units will return more unused trucks to the pool if the pool is short of vehicles

25.5.2. EMERGENCY USE OF VEHICLES ALLOCATED TO UNITS

Units with more than 33 percent of their needed vehicles can use these vehicles to resupply themselves if there are no vehicles at the depot and none available in the motor pool.

Use of these vehicles in the logistics phase for supply runs to a depot will reduce the MPs the unit starts with in the turn as per section (22.1) (as they are considered unavailable when determining a unit's percentage of needed vehicles for MPs).

25.5.3. GENERIC VEHICLE ATTRITION

Vehicles in depots suffer attrition based on their activity during the supply and replacement segment moving freight from depots. Vehicles in units on the map suffer attrition during the logistics phase based on the amount of MPs expended by the unit during the previous movement phase. The above is specific to generic vehicles; AFV and combat vehicle breakdowns are calculated using reliability ratings (21.2.8).

25.5.4. GAINING ROAD SUPPLY

Play Tip: Careless placement of combat units in relation to depots will cause your motorized units to lose lots of MPs in those turns when you are burning tons of fuel and running far from your supply grid. Don't forget you can conduct air transport missions to drop freight to combat units, although it is much more efficient to send to air transport to an airfield than to drop directly on a unit not on an airfield.

The movement point cost for all supply path traces are calculated as if the path was being travelled by a motorized unit with a morale of 99 (38.7.1).

All motorized movement point costs are taken into account, including EZOC, weather, terrain, and river hexsides. Supply can be traced through an enemy ZOC as long as the hex is friendly controlled or pending friendly, though tracing supply this way will result in increased MP costs. Supply paths cannot be traced through enemy controlled hexes or across unfrozen impassable lake or river hexsides.

Normally vehicles are used for the delivery of supply and replacement to units from depots. When a vehicle is

City Name ▼	Depot ▼	Priority ▼	Freight ▼	Unused Veh ≈ ▼	Used Veh ▼
Torkovichi	Railyard	4	29353	1096	0
Gorlovka	Railyard	2	0	518	12
Tikhvin	Railyard	1	1280	510	3
Bryansk	Railyard	4	1269	372	8
Sluditsa	Railyard	4	23526	324	0
Novgorod	Railyard	4	29380	256	0
Moscow	National Src	0	2490747	256	349
Smolensk	Railyard	4	1596	242	0
Staraya Toropa	Railyard	4	25576	166	503
Malaya Vishera	Railyard	1	2340	153	0
Kaluga	Railyard	1	0	125	268
Lychkovo	Railyard	3	27201	111	284
Dmitriev	Railyard	3	0	87	15
Pochep	Railyard	4	0	79	1
Pochinok	Railyard	4	12445	74	0

taking freight from a depot to a unit, it traces the range in both hexes and the MP cost to the unit. This is important as the further the path in MPs, the less can be carried by each vehicle and the greater chance of loss enroute.

When the range is close enough to deliver goods with animal drawn transport the MP cost will always be one.

25.5.5. USING HORSES FOR SUPPLY

Axis and Soviet units can receive supply and replacements from a depot without having to use vehicles up to 3 hexes from the depot through the use of animal drawn transport. However, this will cost double the freight being delivered as the animal drawn transport is assumed to be consuming fodder (if the unit is isolated, it receives the delivery but does not pay double freight).

25.5.6. AXIS ROAD FREIGHT PENALTY

As noted in 8.6.1, Axis road freight pays a higher cost from 22 June 1941 up to the end of March 1942.

When carrying freight, Axis vehicles pay double the normal weather movement costs. They also pay an additional 8 MPs for each Blizzard hex entered.

25.6. MOVING FREIGHT BY SEA

25.6.1. THE SHIPPING POOL

Each side has a shipping pool consisting of a number of troop and cargo transport ships. For both sides, their shipping pools are divided into the various sea zones. In the Baltic and Black Sea (including the Sea of Azov) both sides potentially have naval capacity but only the Soviets can have shipping on Lake Ladoga and the Caspian Sea.

The number of transport and cargo ships in each sea zone are displayed in several places, including the production screen (36.3.2), via the right click on a sea or port hex and accessing the sea zone info, and in the general information at the top of the screen when Naval Transport (F3) or Amphibious Transport (F4) mode is selected in the action (move) phase (T = Troop ships and C = Cargo ships). In this latter case the number displayed is the number of ships unused and available to be used at this moment.

NAVAL MOVE Shipping: T:5 C:51
Cargo ships are used in the logistics phase to deliver freight, while transport ships are used during the movement phase to move units. Both are used by the one Soviet Amphibious HQ and in amphibious landings.

25.6.2. PORT DEPOT PRIORITY AND FREIGHT ALLOCATION

All ports are set by the player to either export or import freight. A port set to export will usually receive freight by rail and then send this on to another port in the same sea area.

A key issue to remember is that depots can only send freight to depots with a higher priority so your desired import ports must have a higher priority than your exporting port.

You can swap a port between exporting and importing freight by right clicking on the hex, select 'port depot' which opens the 'switch to export port' option, this will allow you to swap the port between receiving or sending supplies.



Alternatively a port status can be changed by clicking on the top left hand box or using the city detailed tab. The image below shows how you can toggle using the top screen.

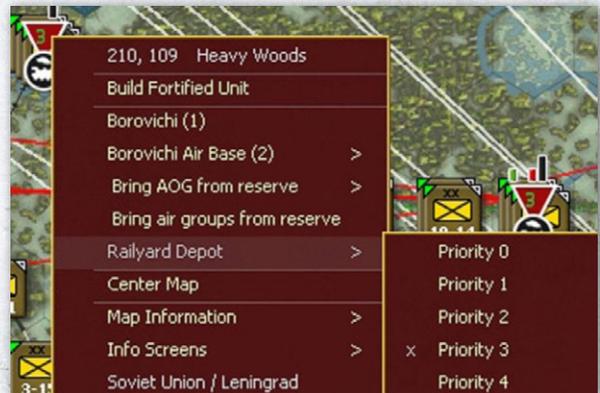


If you set a port depot to export, it will generally try to get more freight by rail so it can ship freight to other ports by sea. If you set it as an import port, it will not ship out freight by sea, but will try to draw freight from other ports depending on priority. If you do not want an import port

The red lines are drawn from the depot that sent most freight to a unit. Blue coloured lines display freight moved from ports to port while white lines display rail movements of freight between depots.

This shows how the two map views can be combined (often it is better to use one or the other). In this case the Soviet depot at Alekseevka (1) is drawing supply from Svobida (2). The Soviet 8-13 Guards Rifle Division is drawing supply from Alekseevka (the red line) but the 6-11 Rifle Division at the top of the image is using a different depot (not shown but in this case it is Voronezh).

For this view, remember that the lines show the connection to the most important supply source, both units and depots may be taking supply from more than one source. So in the example below the 302 Mountain Division draws supply from two depots but only the link to Vyshny Volochek would be shown on the map.



With the exception of depots set to supply priority 0, the higher the number the higher the priority for the depot to receive freight. Depots with higher priorities will be given the first chance to receive freight before railyard and/or port capacity is used up. Depots with priority 0 will not receive any freight from other depots in the logistics phase, so this setting should be used only when the player wants to drain a depot.

In addition if a NKPS or FBD rail repair unit spends the entire turn (and uses no movement points) on a depot then this will greatly increase freight deliveries to that depot in the next logistics phase. Note that this may reduce the allocation to nearby depots as it ensures the chosen depot has priority for deliveries.

UNIT SUPPLY DETAIL

302nd Mountain Division

Current Status
Priority 3

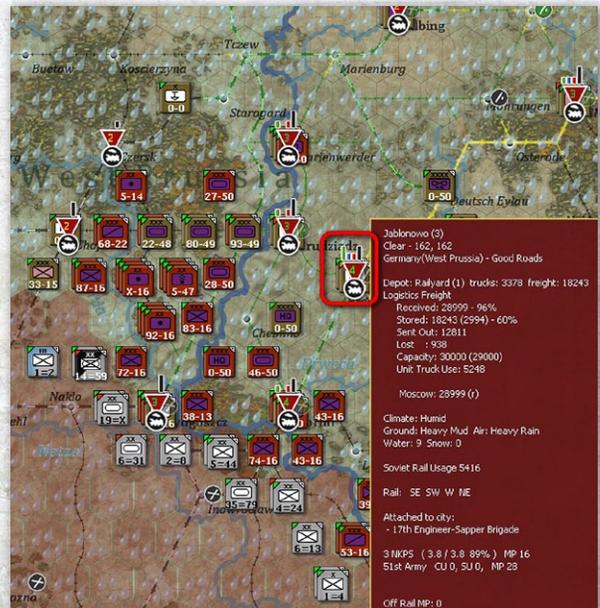
	In Unit	Required	Used	Attrition
supplies	117 [70%]	167		
fuel	3 [60%]	5		
ammo	96 [66%]	144		
vehicles	46 [127%]	36	41	5
support	321 [151%]	212		

Turn 34 Supply Details

Depots	Range	MP	FrRec	FrLost	VehRec
Vyshny Volochek	5	32	338	26	12
Maksatikhha	7	32	66	20	0

Note that depots will function less efficiently if either the railyard or port in the hex is damaged. In turn they will function more efficiently if a HQ (other than a type 4, High Command level HQ or any air HQ) is stacked in the same hex or a FBD/NKPS unit is in the hex for the entire turn and expends no movement points.

Depot Supply Priority: Each depot has a priority from 0-4, which can be set in the city detail window, through the general information and city/airfield box, in the Depot section of the Locations tab of the Commander's Report, or from the map by right clicking on a location and selecting the depot type.



This shows the impact of setting up a depot this way. The NKPS formation at Jablonowo ensures that all the possible capacity to acquire and pass on freight is being used (with this capacity enhanced by the presence of the Soviet Army HQ). To some extent this is done by distorting the local supply grid to allocate freight there but the effect is to have a depot close to the front line that functions at full capacity. Ideally, this would be at a location with a larger railyard (enabling even more capacity).

This also shows how the best use for the NKPS/FBD formations is not always actively repairing rail lines. One strategy is to move such units every third or fourth turn so they can repair another stretch of rails and then create a new 'super' depot at their new location.

When a non-port depot is created by a player, its priority is set to 3 by default. When a depot is created automatically in a port that is captured, its priority is set to 3 by default. When a port or temporary port depot is created, it is set to priority 4 by default.

25.7.1. DEPOT TYPES

When the toggle logistics info is on, depot hexes are displayed with an inverted triangle. Depot priority (0-4) will be displayed inside the depot symbol, with 0 in red, 1 in orange, 2 in yellow, 3 in dark green, 4 in light green. A symbol below each type of depot will also be displayed. There is a hierarchy of depots as follows:



- Depot 4 (Star symbol) – National supply source (25.2.3) – this is a permanent depot that cannot be disbanded and is the source of freight tonnage to be distributed to other depots.
- Depot 3 (white port symbol) – Export Port – this is a port that can be used as a source of freight to be shipped via naval transport over sea and ocean water hexes to another port.

- Depot 2 (blue port symbol) – Import Port Depot – this is a port that can receive freight over water.
 - Depot 1 (Rail Line symbol) – Railyard Depot – This is a depot that receives freight via rail or road using trucks.
- In the example above, the ports around Kobona are set to export (white) and Osinovets to import (blue). Other shown depots are all railyards (marked with a train symbol).

Player created depots will either be type 2 if in a hex with a port or type 1 for all other hexes.

Players can switch port depots from importing to exporting as required using various tools:



If the port is selected, the port role can be swapped using the port symbol at the top of the screen or by right clicking on the hex and altering the port type as shown.

25.7.2. CREATING DEPOTS

Players can create a depot in a town, city, urban or airfield hex (in each case these must be on a rail line), or any other hex just containing a rail line at the cost of one AP point, and can disband eligible depots at any time. Whenever a depot is created in a rail line or port hex without an existing railyard, a level 1 railyard will be created with 100 percent damage at that location.

Depots cannot be created in a hex that is pending control unless there is an existing town, city or airbase in the hex.

As usual this can be done using the top of the game screen or by right clicking. As there is no existing depot in the hex,



display at the top has no location name (once a depot is placed it will have a name such as 'Depot #3').

If this depot is not connected to the rail net it will not function but will build up the railyard so it can function normally once the rail connection is in place.

Players Note: This rule means you can set up depots in advance of your rail heads and they will repair their railyard meaning they will function more efficiently when they are linked to the supply grid.

Reminder – a level 1 railyard does not create additional rail capacity (i.e. rolling stock etc.) but does affect loading and unloading costs of units and freight and determines the effective size of the attached depot.

25.7.3. AUTOMATING DEPOT CREATION

If the player wishes the process of depot creation can be automated .

To do this either depress the AI depot management tab or select CNTRL+C and up to a maximum of 10 new depots will be created (at a cost of 5 Administrative Points if all 10 are built) and the computer will also disband and change the priorities of existing depots (using the same strategy as it would for the AI player).

If you are using the automatic depot creation option, you will need to confirm you wish to do this and will then be reminded of the option every time you press F12 to end a turn.



If the player has less than 5 AP points this procedure will not work and a warning message will be displayed.

It is recommended this is not done till a player has completed all the rail hex repairs they intend to do in a turn.

The same system is used by the AI in creating its own depots.

If an unmoved FBD/NKPS formation is in hex with a railyard then the automatic depot management routine will generate a depot (priority 4) if one is not already present.

25.7.4. DISBANDING DEPOTS

Depots can be disbanded at any time in the air or ground phases.

Disbanded depots will try to ship some of their freight by rail to other type 1 (rail yard) depots. Also, a small amount of the freight will be removed, a small amount will be destroyed (with destruction of fuel and supplies from the pool), and some will convert to fuel and supplies and be placed in the location.

25.7.5. CAPTURING DEPOTS

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 some 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.

25.7.6. ISOLATED DEPOTS

Units in isolated areas (23.14.1) can also use freight in a depot. Depots in isolated hexes will lose 5 percent of their freight each turn in the logistics phase to reflect that some of the freight is not the material that is needed by the units that are drawing from it.

25.7.7. DEPOTS AND TRUCK ALLOCATIONS

There is also a limit to the number of trucks in any depot. The cap is depot capacity/10 so a railyard level 1 depot has a capacity of 10,000 tons and can have a maximum of 1,000 trucks. The cap is increased by 50% during the ground phase.

25.7.8. HQS AND DEPOTS

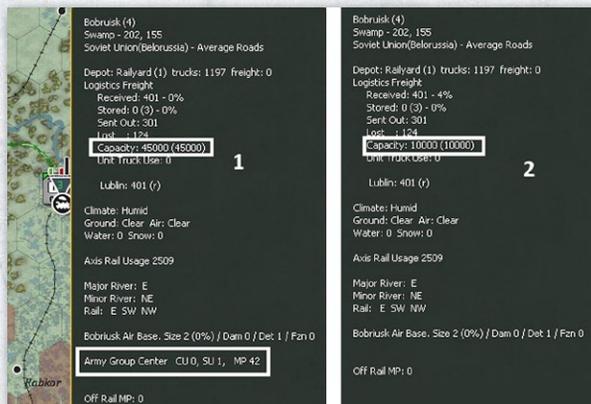
The maximum capacity of a depot can be increased temporarily if there are HQs stacked in the hex with the depot.

Some HQs can increase the depot maximum capacity by 100 times the number of support squads in the HQ, subject

Note that HQs improve both the capacity of the depot (i.e. the ability to receive and send on supply) and the amount of freight that can be stored at the depot.

to limits due to the type of HQ. A type 2 HQ can increase capacity by up 35k, type 3 HQ can increase capacity by up 20k and type 4 HQ can increase capacity by up to 5k.

This has also an impact on the maximum number of trucks at the depot (which is the maximum depot freight divided by 10). As soon as a HQ is in the hex, the maximum capacities are changed and the new values will be shown in the rollover text.



In this example, (1) shows the capacity of the depot when Army Group Centre is stacked in the hex and (2) if the HQ is absent.

Type 1 HQs (i.e. Stavka and OKH), Rail Repair HQs and Air Command HQs do not increase the depot maximum capacity

The bonus for a HQ placed on a depot can never add more than 4 times the damage adjusted depot capacity from the railyard and port values. This means a brand new depot created at a 0 railyard location will only be improved slightly till the railyard is built and starts repairing.

In combination these rules are very important. If you can, make sure that every depot near the front line has a HQ stacked on it. Equally deploying units in REFIT mode on a depot with a HQ (not necessarily the one they report to) will ensure it receives as much new manpower and equipment as can be delivered.

25.7.9. RAIL REPAIR UNITS AND DEPOTS

The German FBD and Soviet NKPS formations are usually used for manual repair of rail lines (21.6.1). However, if they are on a depot and did not move in the previous turn (and

expended no MP, such as on rail repair), then that depot will attract a large amount of additional freight compared to others on the same supply network. In addition, the cost of moving this freight will be reduced.

As with the deployment of HQs, this gives the player a practical and powerful tool to influence the allocation of freight between depots and to draw supply to critical sectors. Combined with HQs, this can be a powerful tool for bringing a large amount of freight to a depot, potentially bringing in as much as 60k of freight to a depot in one turn.

If an unmoved FBD/NKPS formation is in a hex with a railyard then the automatic depot management routine (25.7.3) will generate a depot (priority 4).

25.8. UNIT SUPPLY PRIORITY

Each HQ has a supply priority from 0-4 and, in turn, this will affect the supply priority of directly attached units. Units with the highest priority will have the first chance to receive supply and replacements. Units with lower priorities may be forced to try to get their supplies from more distant depots as depots run out of freight, and in most cases will not attempt to receive all of their requirements.

25.8.1. SUPPLY PRIORITY AND MAXIMUM SUPPLY ALLOCATION

Units linked to a HQ with a supply priority of less than 4 will not try to receive all the supply they notionally need. The chart below shows how unit supply priority will limit the extent that a unit will try to attempt replenishment during a particular supply/replacement segment.

UNIT PRIORITY	PERCENT OF NEED
4	< 90% (1)
3	< 90%
2	<70%
1	<50%
0	<30% (2)

Notes

- (1) This is <110% if the unit did not move in the prior turn and is not adjacent to an enemy controlled hex.
- (2) Air Base Units will not receive any supply or replacements if set to supply priority 0.

Note: If the needed supply is not in local depots a unit will start to use its own trucks to gain supply up to the percentages above. Since these missing trucks impact both MP (21.1.2) and CV (23.8.3) it may leave your units with less mobility if they have a high supply priority. In effect, the unit will have the supply it needs but lack mobility so on some sectors you may find it useful to set your HQ priorities to relatively low levels.

In addition, individual units can try to acquire freight up to 130% of supply and fuel needs and 180% of their ammunition needs if the following conditions are met:

- Report to a HQ with supply priority 4
- Have 100 CPP
- Do not move in the turn and
- Are not adjacent to an enemy unit

25.8.2. SETTING AND CHANGING HQ SUPPLY PRIORITIES

Priorities are shown and set in the HQ Unit Detail Window (37.2), using the HQ counter (6.5.6) or through the supply priority function in the HQs tab of the Commander's Report (35.3) or by clicking on the supply priority for a unit in the CR screen. When an HQ unit changes its priority all units attached to that HQ unit (as well as all units down the chain of command under this HQ) will change to the same priority).

For example, if the 6th Army HQ unit is changed to supply priority 4, all the HQs directly attached to the 6th Army and down the chain of command will now have a supply priority of 4.



25.8.3. EFFECT OF COMBAT PREPARATION POINTS

Combat Preparation Points (23.2) also affect the proportion of supply and ammunition a unit will seek to hold during the logistics phase. Units with 100% CPP can store up to 180% of their ammunition, and 130% of their supply and fuel needs if they are set at supply priority 4 and do not move.

In addition, the number of CPPs affects the chances of passing administrative rolls for resupply.

25.8.4. AIR BASE SUPPLY PRIORITIES

Air base unit supply priorities are set by the supply priority of the AOGs based there (if planes are present from more than one AOG then the one with the most is used). So the supply priority of an air base can alter during the turn as air groups are physically moved on the map or alter their command assignments.

By definition, if an airbase is empty it will be set to zero supply priority.

25.9. SUPPLY STATES

During the supply portion of the logistics phase, units of the phasing player are determined to be in one of two possible supply states: In Supply; or, Isolated.

25.9.1. IN SUPPLY

A hex is in supply if it can link to a functioning NSS. This can include tracing over water from one friendly port to another, but cannot go through enemy controlled hexes. Supply can be traced through enemy Zones of Control (EZOC).

If a valid path cannot be traced then the hex is considered Isolated but the unit is only considered to be isolated if the rules in 25.9.2 apply.

The counter in the unit bar and on the map will always be bordered in the appropriate colour if the unit is not in supply. These border colours will change if units change their supply state during the Action (move) Phase and will be red if the unit is isolated:

Supply states are also displayed in the commander's report



Unit Name ▾	Size ▾	Type ▾	OB ▾	HHQ ▾
30th Cavalry Division	XX	Cav	41b Cavalry Division	2nd Shock Army
9th Cavalry Corps	XXX	Cav	41 Cavalry Corps	40th Army
15th Tank Brigade	X	Arm	42a Tank Brigade	9th Cavalry Corps
1st Tank Brigade	X	Arm	42a Tank Brigade	9th Cavalry Corps
22nd Rifle Brigade	X	Inf	41 Rifle Brigade	9th Cavalry Corps

Isolated

No (2272)

Yes (7)

This shows all the isolated Soviet units (including the Cavalry Division above). These can be selected by using the 'Isolated' filter at the foot of the screen and selecting 'yes'.

Note a unit can be 'in supply' according to these rules but still lack all the supplies it needs for efficient movement and combat.

25.9.2. ISOLATION

If the unit does not qualify as in supply then it is isolated. This stage occurs if begins a friendly player-turn in an isolated hex.

Isolated units can only receive supplies, fuel and ammo through air transport drops to temporary depots or freight from isolated depots also in the pocket. Isolated units can draw replenishment using non-vehicle methods (25.5.5) or by using vehicles already in depots and units inside the pocket. Isolated units cannot receive replacements and will not return damaged ground elements to the production pool.

Isolated units that have 0 supply will have 75% of their elements damaged in the logistics phase.

See section 23.14 for combat related effects on isolated units.

Players Note: You will need to stockpile freight in a depot if you expect to become isolated, as the depot will be able to distribute its freight to units in the hex or in a small pocket. You should also place depots in fortifications, ports or hexes that you otherwise wish to hold.

The toggle unit modes/isolated button in the map information tab (25.9.1) will highlight map counters so that isolated units will be highlighted in red.

An isolated hex and any unit in the hex will cease to be isolated if it is relinked to a functioning NSS. At

the completion of each air execution phase, and whenever a non-isolated unit moves, or a battle is resolved, hexes recheck their supply state. If one of these actions has reconnected the hex with a path of any length to a functioning NSS, then the hex will no longer be isolated. Whenever a unit occupies a hex that is not isolated, the unit is considered in supply. The current supply state of each unit is displayed in its detail window as either 'In Supply' or 'Isolated'

25.9.3. AIRHEAD SUPPLY AND ISOLATION

If the depots in a given pocket collectively receive at least 500 tons of freight via air-drops this will trigger 'airhead supply'. Units that can trace to these depots are not considered to be isolated in the next enemy turn but are treated as isolated in their own turn.

Players Note: Dropping sufficient supply to meet this threshold will allow units that are cut off to survive for some time. They will slowly lose morale and suffer some of the effects of isolation but will not readily surrender to the attacker unless their morale is already low.

Note this does not apply to the Soviet side in June 1941 (11.3.5)

25.9.4. EFFECT OF LOW SUPPLY LEVELS ON UNITS

The further a unit is from a depot, the less supply, replacement and repair will be received. The main impact of low levels of supply is the reduction of movement points through lack of supplies (non-motorized units) or fuel (motorized units). As units run low on supply they will tend to use up less supply. This causes a greater chance

30th Cavalry Division
3,761 38

XX
1-16

READY
45 50

Combat Value 1.01/0.89
 TOE 68/84
 MAX TOE 100

HHQ 2nd Shock Army
 OHQ Southwestern Front

Morale 50 (50)
 Nation Soviet Union

Supply/Need 24 / 41
 Fuel/Need 1 / 2
 Ammo/Need 59 / 63
 Support/Need 91 / 75

Construction Value 0
 Transport Cost 1253 / 600

Vehicles/Need 20 / 14
NON-MOTORIZED (1)

supply status ISOLATED

for ground elements to become damaged and destroyed during the logistics phase. Front line attrition is especially high for units that are running low on supplies.

A unit's combat value (CV) will be impacted by ammunition and fuel shortages (23.8.3).

The amount of ammunition on hand impacts both the overall combat effectiveness, especially of attacking units, as well as the number of shots in combat (23.8.1).

Low levels of supplies will impact the ability of a unit's ground elements to recover from fatigue.

26. REPLACEMENTS

Focus: This section covers how units will receive replacements as a specific aspect of the wider logistics processes.

Key Points:

- How Replacements are allocated to combat and support units
- Refit Mode
- Usage of the National Reserve



The replacement part of the supply/replacement segment simulates the flow of men and equipment back and forth from the "home front" and the various production factories, through intermediate locations such as repair depots and hospitals, to the combat zone and the front lines.

Ground unit losses, whether combat or non-combat related, while expressed in terms of men, guns and AFV's, are actually based on destroyed and damaged ground elements.

Ground elements consist of manpower combined with AFVs, combat vehicles or Armament Points, which represent all other weapons.

During the replacement segment, available manpower is matched with the equipment in the pools to form complete ground elements. Men and equipment from damaged ground elements are included in this process, but are treated slightly differently.

Approximately (with the exception of AFV ground elements - see 26.1.4) 25 percent of the manpower and equipment from damaged ground elements are returned to the transit pools each turn. Over time these will move to the active pools and become available as replacements in future logistics phases, representing wounded troops that

are lost for short periods of time before being sent back to units, equipment that has to be repaired at non-divisional repair facilities that are then sent back to different units, and men transferred from one unit to another.

Isolated units cannot receive replacements.

Note also that replacements are sent as freight from depots along with supplies, ammo and fuel based on the priority set by the HQ unit that they are assigned and percentage of need (25.8.1).

26.1. RECEIVING GROUND ELEMENT REPLACEMENTS

The replacement part of the supply and replacement segment involves the return of damaged ground elements, return of excess support squads, refit, and normal replacement.

Units must be in supply to receive replacements. Routed units will not receive replacements.

Replacements coming into units will bring down the average experience for that type of ground element by a small amount. Experience reduction caused by replacements is based on the relative amount of replacements received.

The higher the average experience of the elements, the less the decrease that can be expected as replacements are added. Experience levels in destroyed units being rebuilt will tend to be lower than high experience units receiving a steady stream of replacement ground elements.

26.1.1. ALLOCATION OF LOSSES TO THE TRANSIT AND REPLACEMENT POOLS

First, 25 percent of all damaged ground elements (apart from AFV ground elements, see 26.1.4 below) from units are returned to the transit production and manpower pools to be made available to return as replacements.

However, only sixty percent of the manpower from the damaged ground elements goes to the transit pool; the other forty percent is placed in the disabled pool. All other things being equal, returning ground elements are more likely to be returned to their original units.

Damaged equipment, and manpower returned to the pool during the logistics phase are not available immediately to be used as replacements. Although they appear in the pool on the production screen, they actually are put in the transit pool.

At the start of each friendly logistics phase, 25 percent of the amount in the transit pool is moved to the available pool. This represents the lost time from the front of lightly wounded soldiers and damaged equipment.

When damaged ground elements are sent back to the pool, freight is placed in a nearby depot equal to one half of the freight tonnage of the ground element. Elements that are returning to the pool do not pay any shipping/rail costs.

26.1.2. GROUND ELEMENT REPLACEMENTS AND TOE

The player can manually set the maximum percentage of TOE for which a unit's ground elements can receive replacements within a range between 50 and 100. Fortified Zone (21.2) units can be set below 50.

The supply priority of the unit (set by HQ unit they are attached to, see 25.8.1) impacts the chance of units getting replacements, and how much they will get in the same manner as supplies/fuel/ammo.

The supply priority interacts with the TOE percentage of the unit so that lower priority units will not fully fill up with replacements, even if all freight/manpower/equipment is available, while high priority can reach their set TOE (and occasionally exceed this by a few elements).

26.1.3. GROUND ELEMENT REPLACEMENT AVAILABILITY

In order for units to receive replacement ground elements, these must be either in the pool, or, alternatively for ground elements, built from armaments points, there must be sufficient armament points in the pool to build the devices associated with that type of ground element.

In the case of damaged ground elements being returned to the pool, if there is already appropriate equipment in the pool to outfit the particular ground element, then no additional armaments points are used and instead the pool of that type of equipment is reduced by one for each element sent as a replacement. Also, there must be manpower in the active pool to match with the equipment and build out the ground element.

However, simply having the ground element equipment and manpower available doesn't mean they will get to the unit that requires replacements. Constraints in the supply network and the impact of interdiction can slow or stop this process meaning that ground element equipment and manpower might remain in the pool even though there are units that need them as replacements. Units may replace a type of ground element in their TOE with other types if there are shortages and other suitable equipment is available (21,2,7).

26.1.4. AFV GROUND ELEMENT REPLACEMENT LIMITATIONS AND EQUIPMENT LOSSES

There are several special rules for AFV ground element replacements. The percentage of damaged AFV ground elements returned to the production pools varies based on the ground weather as follows:

- Clear - 22.5%
- Light Mud - 20%
- Heavy Mud - 10%
- Light Snow - 17.5%
- Snow - 15%
- Heavy Snow - 10%

In addition, there is a chance that the equipment from an AFV ground element (i.e. the 'tank', but not the manpower) will be destroyed rather than being returned to the pool. The chance that AFV equipment will be lost increases the further the unit is from a railhead.

26.1.5. EXCESS SUPPORT SQUAD GROUND ELEMENTS

Starting in October 1942 Axis units can use ready support squads to "repair" damaged elements. Damaged rifle and

motorized rifle squads can be repaired, 10 at a time in a unit. In this case half of the men in the damaged squads are put in the disabled pool. Enough support squads (2 or 3) are removed to replace these disabled men. Any excess men remaining are placed in the pool.

As an example, if a the squads require 10 men to be fixed, then 10 damaged squads would become ready, 50 men would go to the disabled pool, 3 support squads would be removed from the unit, and 10 men would be placed in the pool.

26.1.6. PANZER REPLACEMENT BATTALIONS

The Axis player receives a number of Panzer Replacement Battalions in the National Reserve. These can be assigned to Panzer Divisions and the component assets will be absorbed into the host unit.

At that stage the Support Unit will be removed from play.

In effect, these provide the Axis player with a tool to allocate replacement tanks either to the Panzer divisions or to keep as Support Units and allocate to other formations as conventional Support Units.

Given the problems especially in 1941 and later in 1942 of bringing replacements to front line formations via the normal freight system, using these to rebuild weakened Panzer formations is probably the best choice.

26.2. AIRCRAFT AND PILOT REPLACEMENTS

26.2.1. AIRCRAFT REPLACEMENTS

Air Groups may receive replacement aircraft during the replacement segment. The air base unit to which the Air Group is attached must be in supply in order for the Air Group to receive replacements and any air group placed in the National Reserve (13.2) is always considered to be in supply.

The number of aircraft received is based on the amount of that model of aircraft available in the production pool and the need of the Air Group, which is defined as the difference between the maximum number allowed and the actual number of ready and damaged aircraft in the Air Group. Reserve aircraft will be reallocated during the replacement phase.

Damaged aircraft are not returned to the production pool, and can only be repaired at the air base unit to which their Air Group is attached (or in the reserve if the air group is transferred off map). However, if the air group changes base then any damaged planes are sent back to the production pool.

26.2.2. PILOT AND AIRCREW REPLACEMENT

Each turn every nation gets a certain amount of trained pilots added to their pilot pool with an experience level equal to the current air national morale (12.1 and 38.2). When replacement aircraft are assigned to units, manpower is deducted from the manpower pool to fill the pilot and associated air crew.

If there are not enough of these pilots available, then remaining vacancies will be filled with new pilots with an experience level set according to 12.3.2.

The number of trained pilots received each turn is listed in the Commander's Report in the pilots screen under the Air Groups tab (35.4.4).

26.2.3. AIR GROUP REPLACEMENT PRIORITY

Players can set the priority for Air Groups to receive replacements or to decide that a unit will not receive replacements. Trained Pilots (first chance at getting replacement planes and pilots and will only take trained pilots from the pilot pool), Priority (next chance at getting planes/pilots, will accept untrained pilots), Normal (last groups to get replacements, will accept untrained pilots),

275 BAP
Pe-2 1943 - Level Bomber
Pe-2
1943
LB
✕

Air Directive: None

Mission Setting: Rest

Replacements: **Trained Pilots**

Aircraft change: **Manual** >>

Send To Reserve
Disband

17th Air Army		241 BAD		Schigry	
AOG		241 BAD		Schigry	
Loc		241 BAD		Schigry	
Grip type (max)	Polk (30)	Aircraft	Pilots	Planes	
Experience	50	Max speed (mph)	289	Engines	2
Morale	76	Cruise speed (mph)	205	Armor	1
Fatigue	0	climb rate (ft/min)	1530	Durability	36
		Max alt (ft)	27890	Maneuver	21
		Max load (lbs)	2207	Reliability	15
		Radius (miles)	256	Crew	3
		Sortie ammo (lbs)	2306		
		Sortie fuel (lbs)	2708		
Aircraft ready	30	Aircraft Weapons			
damaged	0	1x 12.7mm LBS MG		Fwd	
reserve	0	1x 7.62mm SHKAS MG		Fwd	
Aircraft in pool	381	1x 12.7mm LBT MG		TR	
Ready pilots	30	1x 12.7mm LBT MG		BR	
Aircraft kills	0	Load Out >>			
Traveled (%)	0	4x 250kg SC Bomb		Ext	
Naval only	NO				

Restricted (no replacements). These settings can be changed on the CR air group screen en masse or by group, and also on the air group detail screen where the current replacement setting is shown.

26.3. REFIT MODE

26.3.1. ON MAP REFIT

Using the refit mode will help the chosen units to regain losses more quickly.

Units in refit mode on any depot will try to fill up to their MAX TOE percent in every supply sub-segment, drawing from other depots as well as the one in which they are located. Units in refit mode located in the same hex as a national supply source depot (type 4) will have access to virtually unlimited freight.

The unit still follows the supply priority order to determine when it attempts to get replacements, but as soon as there is a phase that matches the supply priority of the unit, the unit will receive replacements even if it is at a higher TOE level than the sub-phase calls for. Note that the bonus that refitting units in depots receive is only true for replacements, not for supply. They will go through the normal phases to draw supply based on priority.

However, a unit in refit with less than 81 percent of need, which passes both administrative and support checks will be allocated 40 percent of the supply need instead of just 20 percent, but they are dependent on supply priority limits, unlike the special refit replacement rule above. Since the needs of the unit are constantly being updated as it goes through all the replacement/replenishment phases, what will happen is that in the first phase a refitting unit on a depot will take all the manpower it can get. This will cause the need to go up for supply replenishment. In subsequent phases, the refitting unit will try to get the other items it needs as normal with the refitting bonus of 40 percent instead of the standard 20 percent.

The consequence is that a unit on a depot may obtain all the manpower it needs and be 100 percent of TOE but not have much in the way of needed supply. It may take longer to get those items, so having a high supply priority will help this situation, as will being near depots with lots of freight and capacity.

The mode button in the unit bar or detailed unit tab can be used to toggle individual units to refit mode.

This can also be done using the Commander's Report (35.2.1).

110th Guards Rifle Division

10,557 173 0 Wins : 16 Losses : 1

REFIT

39 100

Combat Value 7.34/14.68
TOE 86/94
MAX TOE 100

HHQ 41st Army
OHQ Voronezh Front

Morale 54 (60)
Nation Soviet Union

Supply/Need 103 / 117
Fuel/Need 5 / 7
Ammo/Need 187 / 248
Support/Need 227 / 297

Construction Value 7
Transport Cost 1945 / 890

Vehicles/Need 63 / 49
NON-MOTORIZED (1)
Supply status In Supply

SUPPLY DETAILS

MERGE UNIT
MOTORIZE UNIT (1299 / 3)

Elements			Assigned (0)		
EXP	RDY	DAM	GROUND ELEMENT	FAT	
56	144	12	Rifle Squad 41	43	
56	163	12	Rifle Squad 42	35	
57	47	6	Submachine Gun Squad	45	
55	20	3	Engineer-Sapper Squad	44	
58	1	3	Cavalry Squad 41v2	42	
56	277	12	14.5mm Anti-tank Rifle	41	
57	152	11	7.62mm Machine Gun	42	
56	52	4	50mm Mortar	33	
56	70	10	82mm Mortar	36	
57	23	5	45mm Anti-tank Gun	39	
57	6	2	122mm Howitzer	45	
57	6	3	12.7mm Anti-aircraft MG	37	
59	0	2	37mm Anti-aircraft Gun	0	
56	12	2	76mm Field Gun	41	
55	19	4	120mm Mortar	39	
58	7	2	76mm Infantry Gun	42	
57	198	9	Support	41	

413th Rifle Division

41st Army (2/15)

REFIT

200 100
9820 98%
157 75%
0 85%

110th Gds RD

41st Army (2/15)

REFIT

200 100
10557 87%
173 62%
0 75%

26.3.2. REFIT IN THE NATIONAL RESERVE

The basic rules above will apply. So units in refit mode in the National Reserve will be able to gain additional supply and replacements compared to other units. In effect, units in the National Reserve will be treated as a priority for the receipt of replacement manpower and equipment. Note that this also means that HQ and Support Units in the National Reserve should be set to refit if they need to take on fresh elements.

This means that units in the National Reserve may obtain so many replacement elements that there are few, if any, left for on map units.

To prevent this happening, the player can set the status of all units in the National Reserve to READY thus slowing the flow of manpower and equipment to those units. In addition, the maximum TOE can be adjusted to below 100% to ensure that not all available resources are taken up by units in the National Reserve.

27. REINFORCEMENTS AND WITHDRAWALS

Focus: This chapter sets out the rules for the receipt of fresh units (reinforcements) and the scheduled withdrawal of units using the historical pattern of transfers to different Theatres.

Key Points:

- How Reinforcements, New Units and Rebuilt Units enter the game
- Transfer of Units between Theatre Boxes
- Unit Withdrawals



27.1. RECEIVING REINFORCEMENTS AND CREATING NEW UNITS

Both sides receive complete new units as reinforcements during the game with these listed in the reinforcement

screen (36.7). This screen can be filtered in various ways to help identify key data (such as withdrawals from the main game map).

Destroyed Axis and Soviets units are usually allocated to the appropriate National Reserve and can be rebuilt as

2387 Unit Reinforcements & Transfers									
Unit Name	Turn	Type	Men	Gun	Afv	Transfer	From	To	Hex
Turn 2 29-Jun-1941									
132nd Infantry Division	2	Inf	16957	197	0	Reinforcement	-	MAP	(172,187)
96th Infantry Division	2	Inf	16720	186	0	Transfer	Western Europe	MAP	
46th Infantry Division	2	Inf	16951	195	0	Reinforcement	-	MAP	(199,200)
15th Infantry Division	2	Inf	16976	200	0	Reinforcement	-	MAP	(163,171)
93rd Infantry Division	2	Inf	16720	186	0	Transfer	Western Europe	MAP	
98th Infantry Division	2	Inf	16720	186	0	Transfer	Western Europe	MAP	
94th Infantry Division	2	Inf	16762	186	0	Reinforcement	-	MAP	(168,187)
112th Infantry Division	2	Inf	16555	203	0	Reinforcement	-	MAP	(172,170)
Turn 3 6-Jul-1941									
95th Infantry Division	3	Inf	16720	186	0	Reinforcement	-	MAP	(178,176)
4th Mot. Machine Gun Battalion	3	MG	907	12	0	Transfer	Norway	Finland	
260th Infantry Division	3	Inf	16941	201	0	Transfer	Western Europe	MAP	
294th Infantry Division	3	Inf	16714	186	0	Reinforcement	-	MAP	(165,174)
60th Motorized Division	3	Mot	14295	161	0	Reinforcement	-	MAP	(186,186)
3/608th SP Army Light Flak Company	3	AA	176	0	10	Reinforcement	-	MAP	

required. If they are then ordered to another Theatre, or to the map, this will be recorded in the reinforcements and withdrawals table.

27.1.1. REINFORCEMENT PLACEMENT

Reinforcements appear as set out in the unit reinforcement and withdrawal info screen (36.7). There are three methods of reinforcement placement for on-map combat, multi-role and HQ units.

Where a unit transfer (such as to the map) is set by the scenario designers then usually it will also have a target hex set.



If the transfer to the map is voluntary, for example from the relevant national reserve, the target hex is either the appropriate national capital or indicated by setting the 'Reserve TB Arrival Hex' (13.2.1)

This can be reset as many times as wished during the turn so that different units appear in different locations. Note that German units must appear within the 1941 German borders (including German occupied Poland) and Soviet units must appear within the 1941 Soviet borders. Stacking limits apply in this respect so if more than 3 units will be in a single hex the excess are usually brought in along the rail line leading back west (Axis) or east (Soviets). See the rules in 13.2.1 for all the relevant conditions.

Returning Axis-Allied formations will appear in (or as near as possible) to current German reserve arrival hex.

Newly arrived reinforcements on the map can be identified when the view unit modes button is toggled on (shift-r), highlighted in green.



Recently arrived units can also be found via the Commander's Report's filter 'Arrived'.

Units arriving on the game map from other Theatres will appear close to the notional border with that Theatre. So Axis units arriving from Italy or the Balkans will appear near the SE edge of the playable area, Soviet units arriving from the Trans Caucasus theatre at Baku and so on.

Unit Name	Size	Type	OB	HHQ	ThBox
X00X Motorized Corps	X00X	Crps	HQ Motorized Corps	OKH	MAP
2nd Panzer Division	XX	Arm	41 Standard Panzer Division	OKH	MAP
5th Panzer Division	XX	Arm	41 Standard Panzer Division	OKH	MAP
Afrika Panzer Army	X00X	Army	HQ Panzer Army	-	NA
1st RFSS Motorized Brigade	X	Mot	41 1st RFSS SS Motorized Bri	-	SG
2nd RFSS Motorized Brigade	X	Mot	41 2nd RFSS SS Motorized Br	-	SG
III/2nd Lehr Gun Battalion	II	Art	41 K39 Gun Battalion	-	AR
8th Fin. Coastal Brigade	X	Inf	41 Fin. Coastal Brigade	-	FI
720th Marine Flak Battalion	II	AA	41 Marine Flak Battalion	-	BA
666th Pioneer Battalion	II	Eng	41 Pioneer Battalion	-	AR

Arrived

No (2386)

Yes (10)

27.1.2. ALLOCATION OF TRUCKS TO REINFORCEMENTS

In the Campaign games (only) reinforcements will draw their truck allocation from the vehicle pool. If there are insufficient trucks in the pool, they will enter with as many as were available and will need to be reinforced using the normal rules.

Given this, it might be useful to allocate new units that will require a lot of trucks to appear in an NSS. If they arrive at some distance, they may not be able to gain sufficient trucks to acquire full mobility.

27.1.3. CREATING FORTIFIED ZONE UNITS

Fortified zones (20,5.1) can be created by either player by right clicking on the map



From the tabs at the top of the screen (when a hex has been selected)

Fortified zones can be placed in any friendly controlled hex, with the exception that Players may not build Fortified Zone units in hexes next to an enemy combat unit unless that hex is also occupied by a

friendly combat unit. Fortified Zone units initially appear with no ground elements or supplies and will have to receive replacements and supplies to become active.



27.2. PRODUCTION OF NEW UNITS

Only the Soviet player can construct new Combat and Support Units. In this respect it is important to differentiate between units that have been destroyed and are being returned to the game, fixed reinforcements and completely new production.

27.2.1. DESTROYED SOVIET UNITS THAT RETURN TO THE GAME

Any Soviet Rifle or Mechanized division destroyed before November 41 will return 4+Random(23) turns later as a Rifle division.

Destroyed Soviet tank divisions will return in 11 turns as a tank brigade

Returning Soviet units will be placed in the national reserve and can be deployed to the map when a player wishes to do so.

All these units will need to take on substantial reinforcements and ground elements in order to become combat ready.

Depending on how they were destroyed (surrendered in a pocket or shattered in combat), they may retain a few of their original elements such as the Soviet Rifle Division below.

Rebuilding units will have their morale set to 30+ (national morale/4)+ random(national morale/4). This will never be lower than 30 or higher than 70. The initial experience for the ground elements in the unit will be set to 15+ (morale/2). This initial experience will affect the first batch of replacements that are received by the unit.

27.2.2. REBUILDING AXIS COMBAT UNITS

Axis combat units that are destroyed will usually be placed in the appropriate National Reserve after a certain number of turns. These units will appear in the National Reserve with a maximum TOE of 0. The Axis player can then change this value when they wish to use resources to refit that unit.

Rebuilding units will have their morale set to 30+ (national morale/4)+ random(national morale/4). This will never be lower than 30 or higher than 70. The initial experience for the ground elements in the unit will be set to 15+ (morale/2). This initial experience will affect the first batch of replacements that are received by the unit.

Destroyed Axis units that are available for rebuilding are given a delay before they are placed in the national reserve related to their size, as:

- Division (including any broken down regiments) – 9 turns
- Brigade – 5 turns
- Regiment – 3 turns
- Battalion or less – 1 turn

German Infantry Divisions destroyed on or after August 1, 1944, will return to the reserve as a VolksGrenadier Division.

In non-campaign scenarios, destroyed units will not return to the game to be rebuilt

27.2.3. REINFORCEMENTS

Some reinforcements arrive on the map or a Theatre Box as fully equipped units. Others will appear as very weak formations and, as in 27.2.1 will need to spend time taking on reinforcements and new ground elements.

27.2.4. NEW UNIT PRODUCTION

Only the Soviet player can build new units.

To access the screen to order units click on any Soviet controlled hex, press Shift+B or select the button on the screens at the top.

The build screen will then pop-up:

204th Rifle Division
👤 96
✈️ 0
🚗 0
✕

Turn	Date	Transfer	From	To
11	31-Aug-1941	Reinforcement	-	Soviet Reserves

0=0

HHQ -

TOE 0/0

Morale 36

Location -

EXP	RDY	DAM	GROUND ELEMENT	FAT
36	0	0	BA-10 Armored Car	0
36	0	3	Rifle Squad 41	0
37	0	0	Engineer-Sapper Squad	0
34	0	0	Cavalry Squad 41	0
37	0	1	7.62mm Machine Gun	0
39	0	0	50mm Mortar	0
36	0	0	Flamethrower Squad	0
36	0	0	82mm Mortar	0
36	0	0	45mm Anti-tank Gun	0
37	0	0	76mm Anti-aircraft Gun	0
38	0	0	122mm Howitzer	0
35	0	0	152mm Howitzer	0
37	0	0	7.62mm Quad Anti-aircraft MG	0
35	0	0	12.7mm Anti-aircraft MG	0
34	0	0	37mm Anti-aircraft Gun	0
35	0	0	76mm Field Gun	0
36	0	0	120mm Mortar	0
37	0	0	76mm Infantry Gun	0
38	0	3	Support	0

type	cost	unit	limit
43a Tank Corps	5	14	29
43a Tank Brigade	1	131	202
42 Heavy Tank Regiment	0	37	56
43 Separate Tank Regiment	0	80	100
43 Separate Tank Battalion	0	21	54
42 Flame Tank Brigade	0	0	1
42 Flame Tank Battalion	0	9	12
43a American LL Tank Brigade	1	131	202
43 Mechanized Corps	5	6	16
43 Mechanized Brigade	2	1	56
43 LL Mechanized Corps	5	6	16
42 Motorized Brigade	2	12	31
43 Motorcycle Regiment	0	40	9
43 Rifle Corps	5	71	193
43 Rifle Division	2	327	8
42 Ski Brigade	0	39	5
42b Rifle Brigade	2	116	118
43 Rifle Brigade	2	116	118
42 Naval Infantry Brigade	2	116	118
43 Guards Airborne Division	2	10	19
43 Airborne Brigade	2	5	25
43 Cavalry Corps	5	14	12
43 Cavalry Division	2	39	4
43 Breakthrough Artillery Division	2	12	30
43 Cannon Artillery Division	2	12	30
42 Howitzer Brigade	0	26	26
42 Light Artillery Brigade	0	26	26
42 Cannon Brigade	0	26	26
43 Corps Artillery Battalion	0	221	282
42b Gun Regiment	0	221	282
42a Howitzer Regiment	0	221	282
43a Army Gun Artillery Regiment	0	221	282
43b Army Gun Artillery Regiment	0	221	282
42 BM Howitzer Regiment	0	221	282
41 Heavy Gun Regiment	0	221	282

new units	toe
12th Tank Corps	
✓ 9th Gds Tank Brigade	toe:100
✓ 94th Tank Brigade [SR]	toe:100
✓ 2nd Motorized Brigade [SR]	toe:100

toe(ob)	num	ground element	ground type pool
43a Tank Corps			
Feb 1943 - Oct 1943			
162 Rifle Squad (+)			109142
36 Submachine Gun Squad			1211
27 Engineer-Sapper Squad			1818
57 7.62mm Machine Gun			4996
48 82mm Mortar			5712
6 120mm Mortar			1520
84 14.5mm Anti-tank Rifle			8209
12 45mm Anti-tank Gun			4614
24 76mm Anti-tank Gun			4614
12 76mm Field Gun			4422
30 12.7mm Anti-aircraft MG			809
16 37mm Anti-aircraft Gun			2914
7 BA-20 Armored Car			3505
9 BA-64 Armored Car			3505
17 SU-76			365
8 SU-122			0
63 T-70 M1942			4344
99 T-34 M1942			10369
221 Support			12961

existing units	toe	name	mor
102		1st Guards Tank Corps	64
96		2nd Guards Tank Corps	59
97		8th Tank Corps	61
100		2nd Tank Corps	53
100		10th Tank Corps	55
96		3rd Tank Corps	55
97		5th Tank Corps	59
100		3rd Guards Tank Corps	57

On the right hand side is the name that will be given to the new unit(s). Below this is the current TOE of that unit type (21.2.5) and how many of each ground element is currently in the production pool. This will show all the elements of that particular type, and all the feasible substitutes that the game engine might use.

Below this again is a complete list of all the existing units that share the same TOE type.

At the top of the screen, the player can opt to build between 1 and 10 of the chosen type by changing the 'Build 1x' indicator.

Note that after the build number the total number of men, guns and armoured vehicles in the new unit(s) will be shown as if the unit was at 100% of the TOE.

New units are initially assigned to the National Reserve.

The player can then make adjustments such as lowering the %TOE or setting the mode to ready rather than refit.

Note that the list of units that can be built and the cost per unit and total number that can be in play at any one time will vary across the game.

On the left hand side are the names of the unit types, their cost in administrative points (9.2), the number that already exist in the game (in all locations) and the production limit.

Note that some units do not have an administrative cost but will still demand manpower and other resources to become combat effective.

Note also that some unit types share the same cost and production limit among similar types. So the various types of Soviet artillery regimental SU all have a common cap but the player can decide which type to build.

Using these tools allows the Soviet player to control the process by which new units (whether returning, reinforcements or newly built) build up to full effectiveness. If all the units in the National Reserve are left on REFIT (especially in 1941 and early 1942) then they will all build up to their full TOE very slowly. Placing a small number on REFIT will ensure that resources are allocated to those units meaning they become combat ready much quicker.

27.2.5. PRODUCTION OF SOVIET AIR UNITS

The production of new Soviet air units is automated.

Up to 1943 only a few new Soviet air units will be created in the national reserve. After this date, units will be created to make use of suitable pools of aircraft, including those that have just entered production.

These new units can be retained and will train up over time, deleted or swapped to obsolete planes as the Soviet player prefers.

27.3. IMPACT OF ALLIED AND SOVIET GAINS IN GERMANY

If the Soviet player controls one of Essen, Frankfurt, Berlin, Vienna or Prague (whether by Soviet control on the map or the relevant regions being captured by the Western Allies), the following rules are in effect:

- German units that are destroyed will not return to the game, and
- All frozen German units will unfreeze in the next German logistics phase.

Any German units due to transfer to a different Theatre Box will continue to do according to the set schedule.

27.4. UNIT WITHDRAWAL

27.4.1. NORMAL RULES

If the option to use the enhanced control of the Theatre Boxes is not used (13.3.4) then unit withdrawals will follow these rules.

Certain units will be withdrawn from the game as specified in the Reinforcements and Withdrawals screen (36.7). A unit will shift into Withdrawing Mode between 4-6 turns prior to the date listed on the Reinforcements and Withdrawals screen. The unit will be withdrawn from the map during the logistics phase of the turn listed. When an on-map unit is withdrawn from the map, any support units attached to the unit will remain in the game by automatically transferring to the withdrawing units' higher headquarters unit.

Units scheduled to be withdrawn cannot be disbanded or merged. Units in static mode scheduled to withdraw will automatically reactivate in the same logistics phase as they are withdrawn, expending administrative points as for a normal reactivation. This reactivation may cause the number of available administrative points to go to zero, though they will never fall below zero.

Units scheduled to withdraw are removed immediately on their withdrawal date, regardless of their current TOE. This might lead to shortages in the destination Theatre as they may be weaker than needed to maintain a suitable commitment to that theatre. This includes units that were destroyed before their withdrawal date and never rebuilt in the national reserve.

27.4.2. ENHANCED CONTROL

If the players opt to use full control then scheduled withdrawals and transfers can be cancelled if desired.

27.5. SOVIET UNIT CONVERSIONS

Over the course of the game some Soviet units will convert to a new TOE or type of unit. This is sometimes linked to the unit being destroyed or depleted in combat.

27.5.1. AT-START TANK AND MECHANIZED DIVISIONS

Any Soviet Tank Division that shatters, is destroyed or becomes depleted will convert to a Tank Brigade and return 11 turns later in the National Reserve. If a Tank Division routs and then rallies there is a 20% chance it will be converted to a Tank Brigade.

Any surviving Soviet Tank Divisions will convert to Tank Brigades in March 1942.

Soviet Mechanized Divisions that shatter or are destroyed before November 1941 will return as Soviet Rifle Divisions. Any surviving Mechanized Divisions will convert to Rifle Divisions by March 1942.

27.5.2. MILITIA UNITS

Some Soviet units are formed as militia (DNO) units. These will all have converted to regular Rifle Divisions with the usual TOE by late January 1942.

Unit Name	Size	Type	OB	HHQ	ThBox
44th Naval Infantry Battalion	II	Inf	41 Naval Infantry Battalion	4th Shock Army	MAP
91st Naval Infantry Battalion	II	Inf	41 Naval Infantry Battalion	4th Shock Army	MAP
45th Naval Infantry Battalion	II	Inf	41 Naval Infantry Battalion	20th NKVD Rifle Divisio	MAP
31st Naval Infantry Battalion	II	Inf	41 Naval Infantry Battalion	151st Rifle Division	MAP
42nd Naval Infantry Battalion	II	Inf	41 Naval Infantry Battalion	4th Shock Army	MAP
47th Naval Infantry Battalion	II	Inf	41 Naval Infantry Battalion	383rd Rifle Division	MAP
5th Workers Moscow Militia R.	XX	Inf	41 Moscow Militia Rifle Divisio	31st Army	MAP
18th Moscow Militia Rifle Divi	XX	Inf	41 Moscow Militia Rifle Divisio	39th Army	MAP
13th Moscow Militia Rifle Divi	XX	Inf	41 Moscow Militia Rifle Divisio	32nd Army	MAP
9th Moscow Militia Rifle Divisio	XX	Inf	41 Moscow Militia Rifle Divisio	54th Army	MAP
5th Moscow Militia Rifle Divisio	XX	Inf	41 Moscow Militia Rifle Divisio	56th Army	MAP
8th Moscow Militia Rifle Divisio	XX	Inf	41 Moscow Militia Rifle Divisio	34th Army	MAP
1st Leningrad Militia Rifle Divi	XX	Inf	41 Militia Rifle Division	Luga OpGr Army	MAP
290th Rifle Division	XX	Inf	41c Rifle Division	22nd Army	MAP
120th Rifle Division	XX	Inf	41c Rifle Division	10th Army	MAP
304th Rifle Division	XX	Inf	41c Rifle Division	Volkhov Front	MAP
390th Rifle Division	XX	Inf	41c Rifle Division	50th Army	MAP

These can be identified in the Commander's Report as they have a different OB structure to standard rifle divisions:

27.5.3. SCHEDULED RENAMES OR REORGANISATIONS

Other Soviet units are set in the game editor to rename on a particular date. This will either happen as scheduled or earlier if the unit is destroyed. If the unit is destroyed it will return according to 27.2.1.

Note that Soviet units with later withdrawal dates are restricted in terms of being used to build up Corps or Divisions.

27.5.4. CONVERTING RIFLE BRIGADES TO DIVISIONS

After April 1942, two regular (not naval infantry) Soviet rifle brigades can be combined to form a new division. Brigades with a later withdrawal date can usually not be combined this way (unless the players are using Enhanced Theatre box control).

From March 1942, three Soviet airborne brigades can be combined to create a Guards Rifle Division.

27.5.5. CREATION OF COMBAT CORPS

The Soviet player can begin creating Infantry and Cavalry Corps from December 1941, Tank Corps in April 1942 and Mechanized Corps from September 1942. The maximum number of each type will vary across the game.

There are two basic ways to do this. For Infantry and Cavalry Corps, if the elements are in the same hex on the map, then use the build-up button and the new unit will be created in that hex. Alternatively, the create new unit button will allow you to build the Corps using existing units in the national reserve (it will then deploy in the reserve) or fresh divisions/brigades will be created as the basis for the Corps. Note in this case, the new corps will have low morale and experience as it is based on freshly raised formations.

In December 1941 only 2 Infantry Corps can be created and these must meet the criteria for Guards status (in addition at this stage the Soviet player can create up to 8 Cavalry Corps). From June 1942, they can start to build any type of Infantry Corps up to the limit on the build menu.

Soviet Corps will be created with Guards status if at least 2 of the component elements had Guards status in advance.

The cost, and total number, of each type will vary substantively as the game progresses and the current limit and costs can be checked from the Soviet unit build screen (27.2.4).

Note that if a division or brigade will be withdrawn to another Theatre during the game it cannot be used to build a corps. Long term withdrawals are indicated in the Commanders Report or on the unit counter, as:

The conditions for Corps creation of the various types are summarised below.

286th Rifle Division
 8,332  107

READY 22  100

Combat Value 7.13/44.00
 TOE 63/68
 MAX TOE 100

HHQ 11th Army
 OHQ Volkhov Front

Morale 45 (45)
 Nation Soviet Union

Supply/Need 110 / 93
 Fuel/Need 4 / 6
 Ammo/Need 125 / 124
 Support/Need 198 / 172

Construction Value 6
 Transport Cost 1571 / 718

Vehicles/Need 52 / 40
 NON-MOTORIZED (1)

Supply status In Supply
 Withdraw 148NF 182MAP

TYPE	RULES
Rifle	3 Rifle Divisions in the same hex or use the 'Build new unit screen' (37.5) and can use divisions in the reserve. For this purpose, Mountain, Militia and Motorized Rifle Divisions can also be used (but only if they are in the National Reserve). If so they will convert from their current TOE to that of a rifle division of the appropriate type.
Cavalry	3 Cavalry Divisions in the same hex or use the 'Build new unit screen' (37.5) and can use divisions in the reserve
Tank	2 Tank and 1 Motorized Brigade either in the National Reserve or directly attached to Stavka. Can only be built using the 'Build new unit screen' (37.5).
Mechanized	3 Motorized or Mechanized Brigades using the 'Build new unit screen' (37.5) and can use brigades in the reserve or directly attached to Stavka. Once Mechanized Brigades are available then a Mechanized Corps can only be built with either 3 Mechanized brigades or 2 Mechanized and 1 Motorized brigade.

Note that in every case, if you build the units in the reserve, any missing element will be filled out using a freshly created formation. This will increase the price of creating the corps and lower the starting experience.

27.5.6. CREATION OF GUARDS UNITS

Soviet Guards Armies are created according to the historical timescale .

Combat units may become guards if they have won sufficient battles with the exception of the 1941 at-start Tank and Mechanized Divisions. This process will commence from Turn 18 onwards.

There is no limit on the number of cavalry or airborne combat units that may become guards units. Heavy tank and rocket units are automatically allocated guards status when created.

Up to 35% of Motorized units can become Guards.

For non-motorized type units, the approximate percentage limit varies by year as follows: 1941 - 5 percent; January - June 1942 -10 percent; July - December 1942 - 25 percent; 1943 - 25 percent; 1944 and 1945 - 30 percent.

The size of the unit impacts the percentages, with larger units taking up more of the possible allocation than

smaller ones. Thus a tank battalion that becomes a Guards formation will take up less of the 35% cap than a tank corps would.

The current proportion of Guards formations can be found in the Event log as:

This will also list any renaming formations in that particular turn.

Rename		
112th Separate Tank Regiment is renamed 7th Gds Separate Tank Regiment		
143rd Tank Brigade is renamed 15th Gds Tank Brigade		
197th Army Artillery Regiment is renamed 4th Gds Army Artillery Regiment		
Armor	GUARDS percentage:	35 %
Motorized Infantry	GUARDS percentage:	9 %
Infantry	GUARDS percentage:	18 %
Cavalry	GUARDS percentage:	52 %
Artillery	GUARDS percentage:	19 %
Anti-Tank	GUARDS percentage:	20 %
Army HQ	GUARDS percentage:	2 %
Mountain Infantry	GUARDS percentage:	25 %
Mortar	GUARDS percentage:	6 %
Rocket	GUARDS percentage:	100 %

28. PRODUCTION

Focus: This chapter sets how the production system in WITE2 operates and the rules for factory damage, repair and relocation.

Key Points:

- Elements of the production system
- How elements are constructed and manpower and equipment combined
- How different types of factories operate
- Factory damage, capture, relocation and repair



28.1. OUTLINE

The production system in *Gary Grigsby's War in the East 2* simulates the generation of war material, manpower, fuel and supplies that flows into each side's supply grid as replacements and supply for the war fronts. All production is based on various factories located in town, city and urban hexes. Resource, heavy industry, oil and fuel factories

produce the basic materials used to run the production system and supply the forces.

There are two types of equipment production in the game: historical production for aircraft and AFV/Combat and generic vehicles based on a fixed amount each turn and demand based production for non-vehicle ground elements based on the difference between the non -

vehicle TOE strength of a unit and its actual strength. However, the latter may also face a cap on total production (28.1.4) so that production does not meet the full demand.

Every aircraft, AFV and named combat vehicle has a build limit which caps the maximum number of frames or chassis that can be converted into elements each turn.

The manpower required is generated through manpower factories that represent the availability of able-bodied men for the armed forces. Factories can be damaged and repaired.

Though not directly part of the production system, ports and railyards are treated as factories that generate a certain amount of transportation capacity (25.4.1 and 25.6.1).

Once produced, supplies, fuel, oil and resources are transported through the supply grid to town, city and urban hexes where they are stored and can be drawn upon as necessary by the factories located in those particular hexes.

Other produced items are held in virtual pools until they are drawn upon to build Air Groups (aircraft), ground elements, and trucks. Each pool has an active (available)

and in transit (currently unavailable) component (36.3.1). Ships (both transport and cargo) as such are not produced but are generated as reinforcements but appear in geographical pools for each sea area (24.4).

The two displays below (figure 28.2), show current German production on T7 of the 1941 Campaign. At the top, the pools show all the possible components, the second image only shows the portion that is 'active' - in other words that could feasibly be used in production this turn.

Each nation in the game has a set of pools used for building aircraft and ground elements. Polish and Czech factories are considered an integral part of the German pools and their production (and a portion of their manpower) is placed directly in the German pools.



28.2

PRODUCTION		CAPACITY	DAMAGED	POOL	BUILT
MANPOWER					
GE	Germany	1628	-	260,294	9,924
FI	Finland	76	-	760	4,560
IT	Italy	898	-	12,075	26,940
RU	Rumania	278	-	39,039	16,680
HU	Hungary	237	-	41,280	14,220
SL	Slovakia	57	-	14,369	1,710
AG	Axis Generic	-	-	84,311	84,311
SPECIAL					
-	Armaments Production	218	0	1,919K	666K
-	Fuel Production	500	0	3,379K	486K
-	Heavy Industry	1389	0	3,688K	790K
-	Manpower	6509	104	452K	159K
-	Oil Production	200	3	0	954K
-	Port	445	4	-	-
-	Railyard	1426	5	-	-
-	Resource Production	1045	15	6,700K	12,285K
-	Synthetic Fuel Production	111	0	-	330K
-	Vehicle Repair	A	-	37,978	6,601
-	Vehicle	536	0	6,953	30,657
AIR					
GE	Bf 109F-4	af:37	-	69	185
GE	Bf 110E-2	af:6	-	45	21
GE	Ju 88C-2	af:1	-	5	6
GE	Ju 87D-1	af:12	-	12	12
GE	Do 217E-2	af:7	-	28	26
GE	He 111H-6	af:23	-	54	117
GE	Ju 88A	af:41	-	118	225
GE	Fw 189A	af:5	-	5	25
GE	Ju 88D-1	af:13	-	29	78
GE	Bf 110E-3	af:6	-	16	12
GE	Ju 52/3m	af:17	-	1	32

PRODUCTION		CAPACITY	DAMAGED	POOL(A)	BUILT
MANPOWER				ACTIVE	
GE	Germany	1628	-	211,859	9,924
FI	Finland	76	-	760	4,560
IT	Italy	898	-	12,075	26,940
RU	Rumania	278	-	36,300	16,680
HU	Hungary	237	-	38,726	14,220
SL	Slovakia	57	-	13,836	1,710
AG	Axis Generic	-	-	84,311	84,311
SPECIAL				ACTIVE	
-	Armaments Production	218	0	1,919K	666K
-	Fuel Production	500	0	3,379K	486K
-	Heavy Industry	1389	0	3,688K	790K
-	Manpower	6509	104	398K	159K
-	Oil Production	200	3	0	954K
-	Port	445	4	-	-
-	Railyard	1426	5	-	-
-	Resource Production	1045	15	6,700K	12,285K
-	Synthetic Fuel Production	111	0	-	330K
-	Vehicle Repair	A	-	37,978	6,601
-	Vehicle	536	0	6,953	30,657
AIR				ACTIVE	
GE	Bf 109F-4	af:37	-	69	185
GE	Bf 110E-2	af:6	-	45	21
GE	Ju 88C-2	af:1	-	5	6
GE	Ju 87D-1	af:12	-	12	12
GE	Do 217E-2	af:7	-	28	26
GE	He 111H-6	af:23	-	54	117
GE	Ju 88A	af:41	-	118	225
GE	Fw 189A	af:5	-	5	25
GE	Ju 88D-1	af:13	-	29	78
GE	Bf 110E-3	af:6	-	16	12
GE	Ju 52/3m	af:17	-	1	32

Note that if you click on the nation (such as Germany) the main display will alter to only show the production from that particular country (or area). You can return the display to show all production by then clicking on 'All Areas'.

Polish and Czech manpower factories can produce manpower for the Soviets if occupied by the Soviets. Soviet resources are used to build equipment and ground elements used by Polish, Czech and Romanian forces that are operating under Soviet command.

Production takes place for each side during their respective logistics phase.

There is no production of any kind during the first player-turn of turn one of any scenario (when the German is the first player then there will be Soviet production on turn one). Note that in scenarios where the Soviets are the first player, there is no Axis turn one.

Production in non-campaign scenarios that do not use the entire map and OOB is reduced for both sides by a certain percentage to account for production going to the off-map forces not involved in the scenario.

28.1.1. SUMMARY OF INFORMATION PROVIDED

The logistics log (36.9) contains several reports that track the moves of various resources from production to usage.

The first shows movement of resources between cities as the various ships items needed for industrial production are moved around:

```
Rail points AFTER moving resources: 47,501,546
Bremen ships 320 resource to Hamburg
Bydgoszcz ships 160 resource to Danzig
Pilsen ships 40 resource to Nuremberg
Oppeln ships 33 resource to Koenigsberg
Ruhland ships 160 resource to Dresden
Waren ships 120 resource to Rostock
Bremen ships 80 resource to Bremerhaven
Waren ships 41 resource to Kiel
Dollbergen ships 58 resource to Bergedorf
Dollbergen ships 58 resource to Schulau
Linz ships 20 resource to Freiberg
Ruhland ships 80 resource to Doebeln
```

The second shows if any factories lack all the resources needed to operate at full effectiveness. In this case, shortfalls can either be related to a location being isolated from the main rail network or that a required input is in short supply across the system.

```
NO OIL in Pardubitz for 8 x FUEL Need: 4000, City: 0, Pool 21000
LOW OIL in Hemmingstedt for 7 x FUEL (85 %) Need: 3500, City: 3000, Pool 11500
NO OIL in Budapest for 7 x FUEL Need: 3500, City: 0, Pool 11500
NO OIL in Bratislava for 6 x FUEL Need: 3000, City: 0, Pool 8500
NO OIL in Brunsbuettel for 6 x FUEL Need: 3000, City: 0, Pool 8500
```

This information is then summarised into a table that shows the proportion of each factory type in use, how much it produces, how much resource it consumes in production and how many factories are operating at restricted production, no production or are isolated:

	PRODUCED	CONSUMED	FACTORIES					
			AVAIL	ACTIVE	DAMAGED	NO RES ISOLATED		
MANPOWER [100%]	12,480	-	12,480	12,480	0	-	-	0
RESOURCES [98%]	2,570K	-	1,040	1,028	12	-	-	0
OIL [97%]	168K	-	172	168	4	-	-	0
HEAVY INDUSTRY [100%]	185K	1,300K	743	743	0	0	0	0
FUEL [67%]	84K	168K	499	343	0	15	156	0
SYNTHETIC FUEL [100%]	55K	222K	111	111	0	0	0	0
ARMAMENTS [100%]	115,600	28,900	578	578	0	0	0	0
VEHICLES [100%]	2,900	14,500	290	290	0	0	0	0
GROUND CHASSIS [99%]	202	1,217	205	202	3	0	0	0
AIRFRAME [100%]	234	7,471	234	234	0	0	0	0

In turn, the Production screen (36.3) shows additional information. The basic table will show both total capacity (unmodified), how many production sites are damaged, how much is in the pool (by default this will be the total but can be filtered just to show the active amounts) and how much has been built all game. In the example below, 2 Soviet manpower factory points are damaged as they have only recently been recaptured.

PRODUCTION		CAPACITY	DAMAGED	POOL	BUILT	UNITS
MANPOWER						
SU	Soviet Union	2985	-	3,166,643	10,448,212	-
SPECIAL						
-	Armaments Production	332	0	5,214K	20,317K	0
-	Fuel Production	493	0	15,613K	29,038K	0
-	Heavy Industry	756	0	15,396K	35,029K	0
-	Manpower	2985	2	3,166K	10,448K	0
-	Oil Production	205	0	632K	59,720K	0
-	Port	69	0	-	-	0
-	Railyard	479	0	-	-	0
-	Resource Production	740	0	55,990K	347,882K	0
-	Vehicle Repair	A	-	33,340	843K	0
-	Vehicle	155	0	21,478	272K	0

Clicking on one of the entries will bring up a more detailed screen listing all the production sites for that item. Delay indicates that the factory is not yet in full production.

In turn clicking on the city name will take you to that location on the map.

Oil Production

	CAPACITY	DAMAGE	DELAY
Sabunchu	40	0	0
Bibi-Heybat	40	0	0
Baku	24	0	0
Surakhani	20	0	0
Grozny	14	0	0
Maikop	12	0	0
Ufa	12	0	0
Makhachkala	10	0	0
Kuybyshev	4	0	29
Kuybyshev	4	0	0
Syzran	4	0	0
Syzran	4	0	29
Guriey	4	0	0
Guriey	4	0	29
Ashkhabad	4	0	0
Krasnovodsk	3	0	0
Tashkent	3	0	off-map
Mozdok	2	0	0
Chusovoy	2	0	0
Tuymaza	2	0	0
Khabarovsk	2	0	off-map
Uralsk	1	0	0
Kotlas	1	0	0
Stalinabad	1	0	off-map

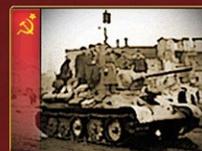
The list of equipment pools in the production screen (36.3) is annotated to reflect their current status as follows:

- No longer in production (#)
- Currently in production (no symbol)
- Not in production yet (**)

SU	#-	T-50 Chassis	ar:need	-	9	60
SU	#-	T-40 Chassis	ar:need	-	9	270
SU	#-	T-60 Chassis	ar:need	-	769	6361
SU		T-70 Chassis		3	488	6897
SU	#-	M3/M5 Chassis	ar:need	-	76	1612
SU		T-34 Chassis		0	3249	26070
SU	#-	M3 Chassis	ar:need	-	86	1382
SU		M4 Chassis		0	554	1104
SU		KV Chassis		0	457	4200
SU	**	IS Chassis		0	0	0
SU		Matilda Chassis		0	20	880
SU		Valentine Chassis		0	50	2200
SU	#-	Churchill Chassis	ar:need	-	30	258
SU	#-	T-20 Chassis	ar:need	-	18	244

The only factories that will be considered physically present in town, city and urban hexes are those currently in production.

Selecting an aircraft or ground element equipment listed in the production screen will bring up information on the element characteristics, where it is produced and the upgrade paths.



T-34 M1942



Upgrade to: T-34/85 M1944
in March 1944

Type: Medium Tank
Nation: Soviet Union

Men: 4
Speed: 33
Size: 4

Front Armor: 82
Side Armor: 50
Top Armor: 20

Load Cost: 33
Fuel Use: 44
Ammo Use: 112
Reliability: 5045
Expansion Rate: 0

First Year: 1942
First Month: 7
Build Cost: 377
Build Limit: 296

DEVICE	FACE	ROF	ACC	AMMO	RGE	vMAN	vARM
1 x 76.2mm F-34 Gun	Turret	8	700	100	2800	112	99
1 x 7.62mm DT CMG	Turret	42	750	1860	1500	45	0
1 x 7.62mm DT BMG	Fwd	42	500	900	1000	45	0

28.1.2. EQUIPMENT DOWNGRADES AND SWAPS

A ground element or Air Group can downgrade to a specific type of equipment if the production system determines that there is a shortage of current equipment that is unable to keep up with the demands of all of the units using that equipment and there is an excess of older equipment in the pool. In this case a unit may downgrade its aircraft or equipment to the item that is back along the upgrade path. For example, a German fighter Air Group that had upgraded from the Bf 109F-2 to the Bf 109F-4, but then took heavy losses, might downgrade back to the Bf 109F-2 if the Bf 109F-4 pool was low and there were excess Bf 109F-2's available.

Under similar circumstances, Anti-Tank ground elements equipped with 75mm AT gun devices might downgrade back to the 47mm AT gun device.

Western Europe: III./JG 2 air group upgraded planes from Bf 109F-2 to Bf 109F-4	28-10
5th Light Division (Ger) upgrades to 41 Standard Panzer Division TOE	
1.(F)/AufklGrGrp 22 air group changed planes from Ju 88D-2 to Ju 88D-1	
I.(Jagd)/LG 2 air group changed planes from Bf 109E-7 to Bf 109F-4	
Stab/JG 27 air group changed planes from Bf 109E-7 to Bf 109F-4	
II./JG 52 air group changed planes from Bf 109F-2 to Bf 109E-3	
Stab/JG 53 air group changed planes from Bf 109F-2 to Bf 109E-3	
Stab/JG 77 air group changed planes from Bf 109E-7 to Bf 109F-4	
I./KG 2 air group changed planes from Do 17Z-2 to He 111H-6	
North Africa: 1a Ital. Recon APC Grp air group changed planes from Ca.111 to Ca.311	
Norway: 13./JG 77 air group changed planes from Bf 109E-7 to Bf 109F-4	
AIRCRAFT SWAP SUMMARY	
45 x Bf 109E-7 to 45 x Bf 109F-4	
11 x Bf 109E-2 to 11 x Bf 109E-3	
30 x Do 17Z-2 to 30 x He 111H-6	
12 x Ca.111 to 12 x Ca.311	
9 x Ju 88D-2 to 9 x Ju 88D-1	
2 x Toldi Chassis (Jan 1938) upgraded to Toldi II (May 1941) in pool (Hun)	
24 x Panzer III Chassis (May 1937) upgraded to Panzer IIIj (Mar 1941) in pool (Ger)	
4 x AB41 Chassis (Jan 1941) upgraded to AB41 Armored Car (Mar 1941) in pool (Ita)	
3 x M13/14 Chassis (Nov 1940) upgraded to Semovente M40 da 75 (Jan 1941) in pool (Ita)	
3 x L6 Chassis (Feb 1941) upgraded to L6/40 (Feb 1941) in pool (Ita)	
11 x Panzer IV Chassis (Oct 1937) upgraded to Panzer IVf (Apr 1941) in pool (Ger)	

In the swap sub-segment, the computer may also change out existing ground elements with ground elements of the same type (21.2). Depending on the unit TOE (21.2.7) it may look to use a different type of equipment than its preferred option. So a late war Soviet tank unit may use either the T34/44 as its medium tank or a lend-lease Sherman tank. These changes are listed in the logistics report, see figure 28-10.

28.1.3. SCRAPPING OF OBSOLETE EQUIPMENT

Equipment that is no longer produced will begin to be removed from the production pool by scrapping after the last year of availability. Scrapping of obsolete equipment does not happen unless the equipment is no longer in a unit and no longer in the current TOE of a unit.

If these conditions are met, then an item can be scrapped. AFVs will not be scrapped if they are being used by any units in the game.

28.1.4. PRODUCTION CONSTRAINTS

Some production is made using generic resources (such as armament points). An important aspect of this is there is a cap on how many such elements can be produced in a given turn even if the resources exist to produce more.

These limits will vary across the game (as will the types of artillery and other guns) produced. The production in the previous turn can be found in the Logistics Log (36.9), as:

```
BUILDING GENERIC GROUND ELEMENTS
8 x Panzer Heavy MG Section [7.92mm MG34 MMG] built (GE)
70 x 50mm Anti-tank Gun [50mm PaK38 L/60 Gun] built (GE)
100 x 20mm Anti-aircraft Gun [20mm Flak38 AA Gun] built (GE)
24 x 88mm Anti-aircraft Gun [88mm Flak18 AA Gun] built (GE)
24 x 75mm Infantry Gun [75mm IG 18 Gun] built (GE)
18 x 150mm Infantry Gun [150mm sIG33 L/11 Gun] built (GE)
190 x 81mm Mortar [81mm GrW 34 Mortar] built (GE)
3 x 28mm Anti-tank Gun [28mm s.PzB41 Gun] built (GE)
11 x Panzer Grenadier Squad 40 [7.92mm Kar 98k Rifle] built (GE)
7 x Panzer Pioneer Squad 40 [7.92mm Kar 98k Rifle] built (GE)
5 x 105mm Field Gun [105mm sK 18 Field Gun] built (GE)
56 x 105mm Howitzer [105mm LeFH18 Howitzer] built (GE)
```

This will particularly affect the Soviet player in 1941 and 1942 when artillery production will be less than required to refit all the potential combat and support units. This means the Soviet player will need to be careful about how many units are placed to 'refit' in the National Reserve and whether it is worthwhile building extra units (even if they cost no administrative points to produce - 27.2.4). Related to this, historically production of Soviet heavy artillery was very low from late 1941 until 1944.

In effect these generic elements are only produced when needed but may not be produced in sufficient quantities to meet all the demand.

28.1.5. EQUIPMENT EXPORTS

The export function in WiTE2 includes both the sending of equipment from Germany to its Axis Allies and the conversion of equipment within the armed forces of each side so that factories don't have to be setup for every variant piece of equipment.

For example, a factory may only produce Me 262A fighters, but a certain number will be automatically converted into the Me 262A-1a/U3 and then placed in the appropriate pool.

When exporting ground elements or aircraft, no more than one quarter of what is currently in the pool will ever be exported on a turn.

Exports in the previous logistics phase can be seen in the logistics log.

```
1 x BA-20 Armored Car captured from Soviet Union goes to pool for Finland as BAB B Armored Car
1 x T-26 M1933 captured from Soviet Union goes to pool for Finland as T-26A
1 x BA-10 Armored Car captured from Soviet Union goes to pool for Finland as BAB C Armored Car
1 x 152mm Howitzer captured from Soviet Union goes to pool for Finland as 152mm Howitzer
2 x 122mm Howitzer captured from Soviet Union goes to pool for Finland as 122mm Howitzer
1 x 76mm Infantry Gun captured from Soviet Union goes to pool for Finland as 76mm Infantry Gun
1 x T-26 M1933 captured from Soviet Union goes to pool for Finland as T-26B
4 x 45mm Anti-tank Gun captured from Soviet Union goes to pool for Finland as 45mm Anti-tank Gun
1 x Panzer 38(t) Chassis exported from Germany to Slovakia as LT-38
1 x G.50bis Freccia exported from Italy to Finland as G.50 (FI)
1 x BF 109E-3 exported from Germany to Rumania as BF 109E-3 (RU)
2 x Re.2000 Falco I exported from Italy to Hungary as Re.2000 Heja
1 x He 111H-3 exported from Germany to Slovakia as He 111H-3 (SL)
```

28.1.6. IMPACT OF DAMAGE ON PRODUCTION

The interaction between damage levels and production depends on the actual size of the damaged factory. A factory of size 2 with 90% damage will have 1 point damaged and the other functioning. A factory with size 11 with 25% damage will have 2 points actually damaged.

In effect, the damage % is applied to the total number of production units in a factory and rounded down.

28.2. THE GENERIC PRODUCTION SYSTEM

Production is conducted by various factories located in town, city and urban hexes. Some factories are located off-map. Each factory point (level) will produce a certain amount of an item each turn if the town, city or urban hex it is located in is connected to the supply grid (25.2) and sufficient basic items are stored at the factory location for local use. There are three basic items required to allow the production system to run; resources, oil and manpower.

Resources are required by Heavy Industry factories to produce supplies and by synthetic fuel factories to produce synthetic fuel. Supplies are required by armament points and these are used, in turn, by, aircraft, AFV and combat vehicle factories to build the equipment for Air Groups and ground elements.

Oil, resources, supplies and fuel are normally moved over rail as freight. Much of city to city or city to pool deliveries of oil and fuel are conducted by pipelines independent of the rail network, so that half of all oil and fuel delivered in these cases do not use any rail capacity tonnage, however there has to be a rail network link in order for the pipelines to be considered to be functioning. Vehicles may be used to transport a small percentage of city needs that are not able to be moved by rail or sea.

Oil is required by fuel factories to produce fuel to allow motorized units to move and generic vehicles to operate.

Manpower factories provide the men that are matched with equipment during the replacement phase to build complete ground elements that flow to the units.

There are two types of production rates used for factories. Some factories (Heavy Industry, Fuel, Synthetic Fuel, Vehicle and Armaments) have a multiplier for each year (1941-45) that is used to determine the amount of production for each factory point.

However, for aircraft, AFV, and combat vehicle factories the number of factory points of each type of factory in each town, city or urban hex will alter over time based on scripted changes.

The economic system forces supplies and fuel to route to cities to meet their civilian production needs. However, if a city does not have enough to meet its civilian production needs, there is no penalty as such, but see 28.3.4 for the risk that manpower might be permanently lost. Military production occurs before any civilian production. Civilian production can be seen in the logistics report (at the bottom of the freight sub-section).

CIVILIAN CONSUMPTION		
	Turn	Game
Axis Supply Tons	144322	858958
Soviet Supply Tons	62822	389685
	Turn	Game
Axis Fuel Tons	130464	776557
Soviet Fuel Tons	56775	352101

For named vehicles and planes, they are first produced as airframes or chassis and then additional equipment and weaponry is added as required for particular types of that

particular tank or plane. So, for example, there is a generic Ju88 airframe and the different models of the Ju88 then alter this as required.

28.2.1. RESOURCE PRODUCTION

Resources represent the raw materials, such as coal, used by heavy industry factories to produce supplies and by synthetic fuel factories to produce synthetic fuel. The system automatically attempts to ship resources to railyards and then the resources are expended to activate the railyards (in effect the trains use up some coal in the process). Each resource factory point will produce 2500 tons of resources per turn.

Resources move as Freight just like other production items and if rail and/or port capacity is available, can be transported from all player controlled resource "factories," to include those in occupied countries.

Resource production is modified by the following multipliers:

YEAR/NATIONALITY	1941	1942	1943	1944	1945
German/Czech/Polish	1.0	1.0	1.0	1.0	1.0
Axis Allies	1.0	1.0	1.0	1.0	1.0
Soviets	1.75	1.75	1.75	1.75	1.75

This, and related tables, can be found by accessing the in-game editor (41). There, the relevant table can be found under the Nat/Weather tab and shows all these multipliers organised by nationality, as:

Soviet Union		EDIT WEATHER EFFECTS					
Road System: Poor (0)		NATION MORALE		NATION COLOR		PRODUCTION MODIFIERS	
		1941	1942	production multiplier (%)		1945	+modifier
				1943	1944		
MANPOWER	3300	4100	2000	900	900	0	0
ARMAMENTS	300	300	300	300	300	0	0
VEHICLES	100	55	55	55	55	0	0
SUPPLY	100	200	250	270	290	0	0
RESOURCE	175	175	175	175	175	0	0
FUEL	200	200	200	200	200	0	0
OIL	200	200	200	200	200	0	0
SYNTH FUEL	100	100	100	100	100	0	0

28.2.2. HEAVY INDUSTRY (SUPPLIES) PRODUCTION AND ALLOCATION

Heavy industry (HI) factories take resources and use them to produce supplies, which represent not only all the materials used in the production of armament points, but

also the general supplies and ammunition used to supply units. Note that a shortage of resources (compared to notional demand) will mean that many HI factories operate at lower than maximum capacity.

Each HI factory point will produce a notional amount of 250 tons of supplies per turn at a cost of 1750 tons of resources.

HI production is modified by the following multipliers:

YEAR/NATIONALITY	1941	1942	1943	1944	1945
German/Czech/Polish	0.4	0.9	0.9	1.1	0.9
Axis Allies	1.0	1.0	1.0	1.0	1.0
Soviets	1.0	2.0	2.5	2.7	2.9

Lack of resources will mean that not all potential factory production is used each turn and any factories lacking resources will be shown in the logistics log as:

LOW RESOURCE in Tbilisi for 30 x HEAVY INDUSTRY (0 %) Need: 52500, City: 9, Pool 56122500
 NO RESOURCE in Grozny for 20 x HEAVY INDUSTRY Need: 35000, City: 0, Pool 55930000
 NO OIL in Konstantinovskiy For 20 x FUEL Need: 10000, City: 0, Pool 653980

28.2.3. ARMAMENT PRODUCTION

Armament factories take supplies and use them to produce armament points, which are maintained in a virtual pool. Armament points are drawn upon to build devices to equip ground elements.

For example, the build cost of the devices for an 88mm Anti-Aircraft Gun ground element is 55 armament points, which includes one 88mm AA Gun and eight 7.92mm Kar 98 Rifles for the ground element's eight men. Since all these are produced using the generic armament production, the ground element will draw on the existing ready pools to complete the ground element.

Each ground element has a build cost and this determines how many armament points are used in its production. Ground elements that use devices built using armament points be marked in the "CAPACITY" column of the production screen as 'ar:xxx':

If the 'ar' is followed by a number then the production system will try to make roughly that many each turn (subject to available armaments) unless there are 10x that number of items in the pool. However, the set cap will not be exceeded regardless of resource availability.

SU	82mm Mortar	ar:675
SU	107mm Mortar	ar:1
SU	120mm Mortar	ar:210
SU	76mm Infantry Gun	ar:75
SU	76mm Field Gun	ar:280
SU	122mm Howitzer	ar:70
SU	152mm Gun-Howitzer	ar:20
SU	122mm Field Gun	ar:6
SU	180mm Naval Gun	ar:need
SU	102mm Naval Gun	ar:need
SU	M-30-4 Rocket Launcher	ar:200
SU	45mm Anti-tank Gun	ar:78
SU	57mm Anti-tank Gun	ar:85
SU	76mm Anti-tank Gun	ar:50
SU	12.7mm Anti-aircraft MG	ar:need
SU	7.62mm Quad Anti-aircraft MG	ar:need
SU	37mm Anti-aircraft Gun	ar:85
SU	85mm Anti-aircraft Gun	ar:50

If the description is 'ar:need' then production will vary according to demand and how many of that item are already in the pool.

Note that many of the listed items are actually made up of more than one weapon system. This can be found on the unit production screen and, for example, the actual weaponry produced for a 1942 Soviet Rifle Squad is:

DEVICE	FACE	ROF	ACC	AMMO	RGE	vMAN	vARM
4 x 7.62mm Mosh-Nagant Rifle	Side	5	250	50	550	8	0
1 x 7.62mm DP LMG	Side	27	400	282	850	30	0
1 x Hand Grenade	Side	2	50	14	50	28	0
3 x 7.62mm SVT40 Tokarev Rifle	Side	10	300	70	550	13	0
1 x 7.62mm PPSH-41 SMG	Side	45	50	142	150	46	0

The production of the items that have a set capacity in the previous logistics turn can be found on the logistics tab under 'production' as:

BUILDING GENERIC GROUND ELEMENTS	
14 x Reconnaissance Squad [7.62mm PPSH-41 SMG] built (SU)	
88 x 57mm Anti-tank Gun [57mm ZIS-2 Gun] built (SU)	
40 x 76mm Anti-tank Gun [76.2mm ZIS-3 Gun] built (SU)	
72 x 76mm Infantry Gun [76mm M27/39 Gun] built (SU)	
70 x 122mm Howitzer [122mm M-30 Howitzer] built (SU)	
675 x 82mm Mortar [82mm M41 Mortar] built (SU)	
210 x 120mm Mortar [120mm M38 Mortar] built (SU)	
20 x 152mm Gun-Howitzer [152mm ML-20 Gun-Howitzer] built (SU)	
20 x M-30-4 Rocket Launcher [300mm M-30 Rocket] built (SU)	
8 x 122mm Field Gun [122mm A19 Gun] built (SU)	

Armament factories and production information is listed under the "SPECIAL" section of the production screen.

Elements built by armaments points will often be built ahead of their being used in order to stockpile the elements for future use. Being in demand by units in the field can increase the likelihood that elements will be built to stockpile.

Armament points are used to produce the chassis for aircraft, AFV or combat vehicles which are then built at individual factories.

PRODUCTION	CAPACITY	DAMAGED	POOL	BUILT	UNITS
SU Soviet Union	2985	-	3,166,643	10,448,212	-
SPECIAL					
- Armaments Production	332	0	5,214K	20,317K	0
- Fuel Production	493	0	15,613K	29,038K	0
- Heavy Industry	756	0	15,306K	35,029K	0
- Manpower	2985	2	3,166K	10,448K	0
- Oil Production	205	0	632K	59,720K	0
- Port	69	0	-	-	0
- Railyard	479	0	-	-	0
- Resource Production	740	0	55,930K	347,882K	0
- Vehicle Repair	A	-	33,340	843K	0
- Vehicle	155	0	21,478	272K	0

Each Armament factory point will produce a notional 200 armament points at the cost of 50 tons of supplies. Armament point production will be modified by the following multipliers:

YEAR/NATIONALITY	1941	1942	1943	1944	1945
German/Czech/Polish	3.75	5.15	5.15	7.50	7.50
Axis Allies	1.0	1.0	1.0	1.0	1.0
Axis Held Countries (2)	1.0	1.0	1.0	1.0	1.0
Soviets	3.0	3.0	3.0	3.0	3.0

Note

(1) Axis Allies (Rumania, Hungary, Finland, Italy, Slovenia, and Bulgaria) produce armaments for their own pools. None of this production goes to Germany.

(2) Includes armaments factories in Axis held France, Belgium, the Balkans, Norway and the Netherlands, This production goes directly to the German pool and built numbers.

28.2.4. SYNTHETIC FUEL PRODUCTION

Synthetic Fuel factories take resources and produce synthetic fuel, which is added to the overall fuel stores pool. Each synthetic fuel factory point will produce a notional amount of 500 tons of fuel per turn at a cost of 2000 tons of resources. Synthetic fuel production will be modified by the following multipliers:

YEAR/NATIONALITY	1941	1942	1943	1944	1945
German/Czech/Polish	1.0	1.4	1.4	1.4	1.4
Axis Allies	1.0	1.0	1.0	1.0	1.0
Soviets	1.0	1.0	1.0	1.0	1.0

28.2.5. OIL AND FUEL PRODUCTION

Oil factories (oil fields) produce oil that is then either stored or used by Fuel factories (refineries) to produce fuel, which is also stored in town, city and urban hexes on the supply grid until drawn upon. The normal production rate for oil

factories is 1,000 tons of oil per factory point per turn. Each fuel factory point will produce 250 tons of fuel per turn at the cost of 500 tons of oil.

Oil and fuel production is increased by the following multipliers for oil and fuel factories:

YEAR/NATIONALITY	1941	1942	1943	1944	1945
German/Czech/Polish/Axis Allies (apart from Rumania)	1.0	1.0	1.0	1.0	1.0
Rumania	0.8	0.8	1.0	0.85	0.85
Soviets	2.0	2.0	2.0	2.0	2.0

Captured oil and resource factories will produce as normal if the hex is connected to the wider supply grid. Captured Soviet oil and resource sites will build at a maximum of 50% of the Soviet multiplier shown above.

28.2.6. VEHICLE PRODUCTION AND REPAIR

Vehicle factories use supplies to produce generic vehicles, which are placed in the motor pool (25.5.1). From there they are drawn to meet the needs of either the motor pool or individual units.

YEAR/NATIONALITY	1941	1942	1943	1944	1945
German/Czech/Polish	0.5	0.7	0.6	0.6	0.5
Axis Allies	1.0	1.0	1.0	1.0	1.0
Soviets	1.0	0.55	0.55	0.55	0.55

Each vehicle factory point (modified as above) will produce 10 vehicles per turn at the cost of 50 tons of supplies. Note that vehicles produced by Axis Allies will be placed in the German Motor Pool.

All vehicles, also known as trucks, are considered as 2.5 ton equivalents. Individual vehicles that are damaged are returned to a virtual pool for repair. Once repaired, they are added back into the motor pool. Repair takes place during the logistics phase.

The repair rate for the Germans is 5% in 1941/42 and 10% for 1943-45. For the Soviets, the repair rate is 25%. This reflects the relative lack of standardized equipment that was a major problem for the Germans.

28.2.7. NAVAL PRODUCTION

For both sides this is abstracted.

On the first turn of each month both sides will receive reinforcements of cargo and troop ships. Germans get 1 of each in the Baltic and Black Seas each month. The Soviets receive 1 transport in the Black and Baltic Seas each month. They also receive 4 cargo ships in the Black Sea, 2

in the Baltic and Caspian Seas, and 1 in the Sea of Azov and Lake Ladoga each month. In addition, as long as they have a friendly port for these sea zones, each side will receive enough cargo ships to have a minimum of 5 cargo ships each turn (the Germans only ever have ships in the Black and Baltic Seas regardless of if they have captured ports on other sea zones).

28.3. MANPOWER PRODUCTION AND MIGRATION

Population is a permanent characteristic of a town, city or urban hex and is provided for reference. A population point represents 50,000 people (in the town, city, urban hexes or surrounding area).

Manpower, represented by factories in town, city or urban hexes, is produced at a variable rate dependent on nationality and the year. Manpower factories can be damaged, destroyed, or can migrate to other town, city and urban hexes.

Each nation has a separate manpower pool. Polish and Czech manpower generated for the Germans is placed directly into the German pool. The number of men added to each nation's manpower pool is determined each turn by taking the number of available manpower factory points times a manpower production multiplier. Manpower is maintained in the pool until the system draws men from it to match with equipment to build ground elements. Manpower multipliers are as follows:

YEAR/NATIONALITY	1941	1942	1943	1944	1945
Germany(1)	1.0	6.0	12.0	14.0	8.0
Axis Allies	10.0	11.00	10.0	10.0	8.0
Soviets	33.0	41.0	20.0	9.0	9.0

German manpower will be increased as various events (40.15) occur. Some are related to actions on the Eastern Front and other due to Western Allied progress in the West Front theatre box.

Note (1) Includes Axis Czech and Poles, but only ten percent of this manpower (by location) is actually placed in the German pool. Manpower recruited from Luxembourg is allocated at the normal rate as if it was a German nationality manpower centre.

Remember that the manpower generated by a country has to cover all the demands it faces both on the map and in the various Theatre Boxes.

28.3.1. MANPOWER EVACUATION AND MIGRATION

Manpower factory points of German or Soviet nationality town, city and urban hexes may evacuate/migrate when the hex is captured by enemy units. For purposes of migration, each manpower factory point represents 50,000 people. There is no limit to the amount of migration that can occur in a turn.

The more manpower factory points in a hex, the better the chance some will migrate. When manpower factory points migrate, they will try to move to another town, city or urban hex (including off map cities) at least 14 hexes away from an enemy unit. Town, city or urban hexes recaptured by friendly units will not undergo migration.

28.3.2. MANPOWER FACTORY DAMAGE AND DESTRUCTION

Manpower factory points can be damaged and/or destroyed whenever combat occurs in a town, city or urban hex, and whenever control of a town, city or urban hex changes.

Manpower factories can also be damaged and/or destroyed through lack of supply (28.3.3).

28.3.3. MANPOWER LOSSES DUE TO POOR SUPPLY

Every turn town, city and urban hexes must trace supply and will suffer a starvation damage percentage equal to the supply path MP cost minus 5. For example, suppose a city has to trace 13 MPs to the nearest railhead due to a combination of destroyed rail, contorted lines and enemy ZOCs. This would result in the city adding 8 percent each week to its manpower damage percentage.

Manpower factories recover 3 percentage points per turn, so the net increase in damage would be 5 percent per turn. If a town, city or urban hex cannot trace a supply path and is isolated it takes 25 percent starvation damage every turn.

When a town, city or urban hex's manpower reaches 100 percent damage, additional damage may cause the permanent loss of manpower factory points from the hex. Town, city and urban hexes will only take starvation damage if a supplied enemy unit is within four hexes of the hex. This will be offset if they can trace a path of friendly ground hexes to a railhead of four hexes or less, regardless of enemy ZOC or the number of MPs to the railhead.

Manpower production centres that are isolated will not produce any manpower till they are linked back to the main supply networks (25.9.2).

28.4. AIRCRAFT, AFV AND COMBAT VEHICLE PRODUCTION

The chassis for aircraft, AFV and combat vehicles are built at individual factories by using Armament Points, with one item being built for each factory point. In WITE2, aircraft and AFVs are built as airframes or chassis which are subsequently converted to actual combat planes and vehicles.

For example, assuming sufficient resources are available, the He 111 factory in Rostock, with a capacity of 23 factory points, will build 23 He 111 airframes every turn.

Rostock			
Nation:	Germany	Supply:	218
Player:	Axis	Fuel:	239
Population:	2	Oil:	0
		Resource:	0
PRIORITY (1) DISBAND DEPOT ASSIGN / FORM UNITS ATTACHED Markgrafenheide Air Base			
NUM	DAM	DEL	FACTORY TYPE
1	0	0	Armaments Production
3	0	148	**He 219 Airframe
23	0	0	He 111 Airframe
4	0	9	**Fw 190 Airframe
1	0	0	**He 162 Airframe
2	0	0	Ar 196 Airframe
4	0	0	Port
3	0	0	Railyard
2	0	0	Manpower

Aircraft, AFV and combat vehicles include installed devices, but will not become complete ground elements until they are matched with manpower for the crew, during the replacement segment.

28.4.1. PRODUCTION OF AIRFRAMES AND VEHICLE CHASSIS

The production screen shows the capacity to build each type of basic airframe or chassis each turn as:

GE	Ar 196 Airframe	2	0	4	12
GE	Bf 109 Airframe	46	0	95	276
GE	Bf 110 Airframe	6	0	9	36
GE	BV 138 Airframe	2	0	4	12
GE	Do 217 Airframe	5	0	9	30
GE	Fi 156 Airframe	6	0	45	36
GE	Fw 189 Airframe	5	0	10	30
GE	Fw 200 Airframe	1	0	2	6
GE	He 111 Airframe	23	0	44	138
GE	Ju 52 Airframe	8	0	24	48
GE	Ju 87 Airframe	12	0	61	72
GE	Ju 88 Airframe	59	0	104	354
GE	Hs 126 Airframe	7	0	14	42

Clicking on the airframe or chassis will take you to a list of the factories that currently produce that item.

Bf 109 Airframe			
	CAPACITY	DAMAGE	DELAY
Regensburg	40	0	126
Regensburg	40	0	126
Leipzig	29	0	126
Regensburg	21	0	74
Wiener Neustadt	10	0	0
Wiener Neustadt	10	0	0
Regensburg	10	0	0
Leipzig	8	0	0
Leipzig	8	0	0
Prague	4	0	74

The airframes and chassis are converted to particular planes or vehicles.

Each tank or combat vehicle currently in production has a capacity indicated as ch:000. The number after the 'ch' is the maximum number of chassis that can be converted to actual vehicles in any one turn.

Each aircraft type currently in production has a capacity indicated as af:000. Again the number after the 'af' is the maximum number of those planes that are produced each turn.

The cost of building a chassis is taken as supply points. Each supply point is the equivalent of a quarter ton of supplies and each build cost (for the chassis) demands 1/16 ton of supply. So a chassis with a build cost of 40 will use 2.5 supply points.

GE	Bf 109F-4	af:37	-	69	185
GE	Bf 110E-2	af:6	-	45	21
GE	Ju 88C-2	af:1	-	5	6
GE	Ju 87D-1	af:12	-	12	12
GE	Do 217E-2	af:7	-	28	26
GE	He 111H-6	af:23	-	54	117
GE	Ju 88A	af:41	-	118	225
GE	Fw 199A	af:5	-	5	25
GE	Ju 88D-1	af:13	-	29	78
GE	Bf 110E-3	af:6	-	16	12
GE	Ju 52/3m	af:17	-	1	32
GE	Fw 200C-3/U4	af:1	-	7	5
GE	Ar 196A-3	af:2	-	25	10
GE	BV 138C	af:2	-	4	10

The actual building of the combat element requires armament points. For example a Bf 109F-4 has a build cost of 388 so requires 388 armament points to produce one such aircraft. The total production cost includes the frame and supporting items such as the 20mm cannon and 2.7.92mm MG17 as installed devices as well as integral aircrew.

Bf 109F-4

Upgrade To: Bf 109G-2
in May 1942

Maximum Speed: 404
Cruise Speed: 316
Climb Rate: 3400

Max Altitude: 36748
Max Load: 1104
Radius: 145

Reliability: 10
Expansion Rate: 0

Bf 109
F-4
FB

Armor: 1
Durability: 29
Maneuver: 34

First Year: 1941
First Month: 7

Build Cost: 388
Build Limit: 37

QTY	DEVICE NAME	FACE
1	20mm Cannon MG151	Fwd
2	7.92mm MG 17	Fwd

GROUND		TRANSIT				
GE	#- Panzer Ib	-	-	20	0	10
GE	#- Panzer IIc	-	-	42	0	32
GE	Panzer IIc	ch:8	-	15	42	14
GE	#- Panzer IIa	-	-	8	0	12
GE	#- Panzer IIIe	-	-	26	0	8
GE	#- Panzer IIIg	-	-	35	0	20
GE	#- Panzer IIIh	-	-	20	0	12
GE	#- Panzer 35(t)	-	-	12	0	1
GE	#- Panzer 38(t)	-	-	44	0	9
GE	Panzer 38(t)E	ch:11	-	48	55	7
GE	Panzer IIIj	ch:24	-	4	122	7
GE	#- Tauchpanzer IIIf	-	-	14	0	5
GE	#- Tauchpanzer IIIg	-	-	4	0	4
GE	Panzer IIIf	ar:3	-	4	3	6
GE	#- Panzer IVe	-	-	7	0	8
GE	#- Panzer IVe	-	-	13	0	27
GE	Panzer IVf	ch:11	-	0	55	4
GE	#- Tauchpanzer IVd	-	-	2	0	4
GE	#- Panzer IVd	-	-	10	0	8

28.4.4. AIRCRAFT, AFV AND COMBAT VEHICLE FACTORY EXPANSION AND BUILD LIMIT

The cost of a given vehicle or plane can be seen in the commanders report in the Equipment screen (35.8) as well as by opening up the detailed tab for the unit type (37.6).

Once produced, each aircraft of a specific type is placed in a separate pool until it is drawn upon as a replacement. AFV and combat vehicles go to their specific AFV/Combat Vehicle pool until the system determines that both the need exists to build that type of ground element and sufficient manpower is available.

Note that ground elements that have a build cost of 9999 will never be produced.

28.4.2. NEW AIRCRAFT TYPES

A new plane model cannot be used to re-equip existing air units for the first month after it enters production.

For the Soviet player, it may be used to equip completely fresh air units that have been raised in that period and allocated to the National Reserve.

28.4.3. USAGE OF DAMAGED EQUIPMENT

Damaged equipment and manpower returned to the pool during the logistics phase are not available immediately to be used as replacements. Although they appear in the pool on the production screen, they actually are put in a "transit pool".

At the start of each friendly logistics phase, 25 percent of the amount in the transit pool is moved to the available pool. This represents the lost time from the front of lightly wounded soldiers and damaged equipment.

While the default setting is to show all pools, the production screen can be toggled to display only the amount in the active or transit pools. The example below shows some of the tanks in the German transit pool in early August 1941.

Aircraft, AFV and combat vehicle factories may be able to increase their capacity to convert frames and chassis by adding additional factory points over time.

Factories may alter in size over the game according to scripted events.

Each type of Aircraft or AFV/combat vehicle ground element equipment has a build limit that will cap expansion at a fixed number of items per factory location per turn.

28.4.5. FACTORY PRODUCTION

Each type of aircraft or ground element equipment factory has a start production date (first year/first month) and may have a stop production date (last year/last month). Factories with a stop production date will disband when the end of the last month in the last year is reached. Production of new types of aircraft or ground element equipment can occur in two ways. Some new types will appear as new factories when their start production date is reached.

For example, the German Panther A medium tank will commence production in September 1943 with a newly built factory in NE Berlin. Other new types will start production as a result of an existing type of factory being redesignated. Multiple changes of a factory to a new type are possible over time, with the old type ceasing production when the new type starts. Continuing the example, the Panther A factory in NE Berlin, with a build limit of 11 will be upgraded to produce the Panther G, with a build limit of 10 in May 1944. Change of role for a factory only happens after an aircraft or ground element reaches its final month of production (until then it keeps producing the older item).

28.5. PORT AND RAIL YARD CAPACITY

Ports and Railyards are treated as factories in terms of capture, damage and repair, with the exception that ground combat in a hex does not cause any damage to a port.

Damage to railyards and ports will reduce their tonnage capacity and ports with five percent or more damage will only operate at one half of their normal capacity.

Ports and Railyards play only a peripheral part in the production system, but are a critical part of the supply grid and serve as logistics hubs for naval and rail transportation.

Ports will automatically attempt to secure supplies to be kept at the city hex where the port is located.

28.6. FACTORY CAPTURE, DAMAGE, AND REPAIR

Factories will be captured and damaged or destroyed when the city hex that they are located in becomes enemy controlled. Factories can also be damaged by strategic bombing. Damaged factories will be repaired automatically, but the player can use priority repair to focus additional repair efforts on specific factories. Port and Railyard factories (levels) in hexes with depots have an automatic priority repair function.

28.6.1. CAPTURED FACTORIES

Factories in captured town, city and urban hexes can be damaged or destroyed. With the exception of manpower, port, railyard, resource, heavy industry, fuel, synthetic fuel and oil factories, all other factories in captured hexes are destroyed and permanently removed. Those not removed will be damaged.

With the exception of manpower factories, factories that remain will receive a variable amount of damage (damage will be added to the factories equal to $25 + \text{random}(75)$ percent (not to exceed 100 percent)). In addition, oil factories are always set to 100 percent damage when captured.

Captured oil and resource factories will commence producing once damage has been repaired to be less than 50 percent, assuming the hex is linked to the applicable supply grid. No other captured factories will produce. Captured factories will produce at the rate of their actual nationality, except that captured Soviet oil and resources will build at only $\frac{1}{2}$ the Soviet multiplier.

Note that Soviet factory evacuation will occur as set out in section 28.7.

28.6.2. FACTORY DAMAGE

In addition to capture damage, all factories can be damaged by the strategic bombing (bomb city) air mission (18.1.5).

Damage is applied to an entire factory, not to individual factory points. The damage level of a factory is also the probability that the factory will not produce on a given turn.

For example 100 damage means no production, while 25 damage means 25 percent chance of no production and a 75 percent chance of full production. For example a FW-190 aircraft factory with 12 factory points, or size 12, which had 40 damage would have a 60 percent chance of producing 12 aircraft and a 40 percent chance of producing 0 aircraft.

28.6.3. FACTORY REPAIR

Factories will automatically repair themselves during the logistics phase at a rate determined by the type of factory.

Factories located in isolated hexes cannot be repaired.

Note that Manpower is repaired like other factories to reflect the disruption effects of general bombing on the population. Not only is remaining population less effective at production, they also have to be put to work repairing damage and taking care of the displaced population.

Manpower repair represents the reduction of disruption effects over time.

TYPE OF FACTORY	REPAIR RATE PER TURN
Oil, Resource	1%
Heavy Industry, Synthetic Fuel, Fuel	2%
Armament, Vehicle, Manpower, Aircraft and AFV/Combat Vehicle, Port, Railyard	3%

There is an adjustment to the repair percentage based on the size (number of points) of the factory as follows:

- If factory size is 1-3, multiply basic repair rate x3
- If factory size is 4-6, multiply basic repair rate x2

28.6.4. PRIORITY FACTORY REPAIR

The priority factory repair functions allows player to use construction support units to focus repair efforts at the cost of admin points. Players may pay 1 AP and set a factory for priority repairs by accessing the city detail window (37.13) from the general information and city/airfield box (6.2) and then selecting the damage level of the factory they desire to institute priority repair.

An asterisk indicates that priority repairs have been instituted and selecting the damage again will terminate priority repairs.

Setting a factory to priority repairs will result in HQ units automatically assigning construction support units to the hex during the logistics phase. This is the same process as automatic rail line repair (21.6), and there is a limit to the distance that the automated construction units will operate from the HQ unit that they are attached, based on command range (21.11.4).

A support unit may only work on one factory per turn and no more than 25 percent of the damage to a factory can be repaired during the logistics phase.

Additional repair units may be called to the hex. Also, since regular repairs are conducted after priority repairs, and they happen even when priority repairs have been completed, once the damage level gets very low, continuing priority repairs can be very inefficient, with only a small amount repaired by priority repairs. Priority repairs may never repair more than 20% of the damage of a factory in a single turn.

28.6.5. PORT AND RAILYARD FACTORY PRIORITY REPAIR

Hexes with depots will automatically attempt to find construction units to attempt priority repairs on ports and railyards in the hex. This does not cost APs and it will not have the factory item flagged with an asterisk (only player directed priority repairs will flag the factory item in the city detail window). This function is set at a lower priority than any player directed priority repairs.

Both the HQ unit supplying the construction unit and the location being repaired must be in supply.

Damaged ports and railyards at depots will only get automatic priority repair from a construction support unit if the item is damaged at over 30 percent, (if a port and railyard, then if the combined damage is over 30% then it will try to get help). Also, for repairs at depots, a construction unit can split it's time to help repair both the port and the railyard, with the port getting the priority between the two.

28.7. SOVIET FACTORY RELOCATION

In WITE2, the process of Soviet factory relocation in the face of Axis gains in 1941 and 1942 is fully automated.

Basically those factories that were historically redeployed can be moved (and will usually do so automatically) and those that were overrun cannot be relocated.

These factories will evacuate in one of three ways:

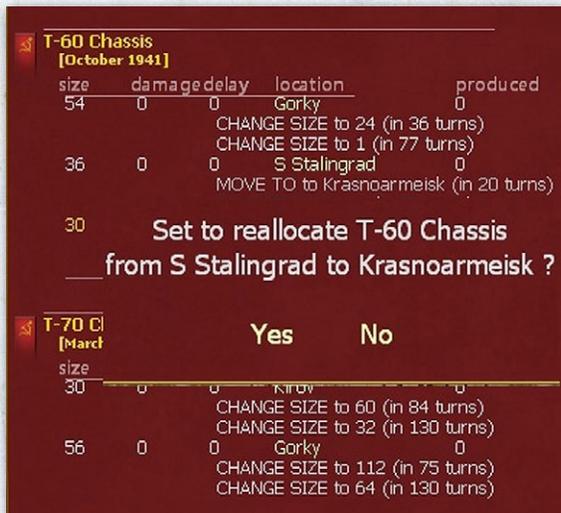
- The Soviet player can manually evacuate them early;
- They will relocate on the historical date; or.
- They will relocate if the Axis capture their location.
- If they are evacuated using the first or third manner they will take more damage and longer to come back into full operation.
- Factories being relocated take up rail capacity during the logistics phase.
- Information about factory relocations can be found in the Factory Navigation panel (ctrl-n):

This will produce a screen that shows all the factory changes planned, including dates for relocation, upgrade, change of production and expansion:

GROUND CHASSIS		251 (649)	
T-50 Chassis			
size	damage	delay	location
6	0	0	Leningrad
			produced 6
		imports	maxlmpo#uilt
		T-50 M1941	60 24
T-40 Chassis			
size	damage	delay	location
18	0	0	Moscow
			produced 18
		imports	maxlmpo#uilt
		T-40 M1941	251 72
T-60 Chassis			
[October 1941]			
size	damage	delay	location
54	0	0	Gorky
			produced 0
			CHANGE SIZE to 24 (in 36 turns)
			CHANGE SIZE to 1 (in 77 turns)
36	0	0	S Stalingrad
			0
			MOVE TO to Krasnoarmeisk (in 20 turns)
			CHANGE SIZE to 1 (in 77 turns)
30	0	24	Sverdlovsk
			0
			CHANGE SIZE to 1 (in 76 turns)
		imports	maxlmpo#uilt
		T-60 M1941	5920 0
T-70 Chassis			
[March 1942]			
size	damage	delay	location
30	0	0	Kirov
			produced 0
			CHANGE SIZE to 60 (in 84 turns)
			CHANGE SIZE to 32 (in 130 turns)
56	0	0	Gorky
			0
			CHANGE SIZE to 112 (in 75 turns)
			CHANGE SIZE to 64 (in 130 turns)
		imports	maxlmpo#uilt
		SU-76M	11694 0
		T-70 M1942	8231 0
		SU-76	360 0

28.7.1. MANUAL EVACUATION

- To manually redeploy factories select the 'factory navigation panel (either the button at the top, or using cntrl-n, or right click on a hex, select map information > FactoryNavigation).
- In this window, if you click on the "Move to..." text (shown in yellow) you will be given the option to order the immediate movement of the factory.



- In this case, the T-60 production in S Stalingrad is due to move to Kastnoarmeisk in 20 turns. Clicking on that entry brings up the dialogue shown and the ability to force the factory to move this turn.

28.7.2. AUTOMATIC EVACUATION

This will happen either at the historical date when a factory was moved or if the Axis captures the location before this date.

28.8. PRODUCTION TO OTHER FRONTS

Given the use of the various Theatre Boxes, in effect WiTE2 reflects the totality of the war effort of both the Soviet Union and Nazi Germany and their allies. As such production is not allocated outside of the game but instead is also used up by the demands of other theatres than the main focus of the struggle between the two powers.

However, Germany will transfer planes, tanks and armament points to their various allies. The latter will happen if Germany has greater than 100,000 armament points at the start of the production segment of the logistics phase, any Axis allied nation with less than 1,000 armament points will be provided 1,000 armament points from the German armament pool.

29. VICTORY CONDITIONS

Focus: This section explains how the game can be won using the scenario set victory conditions.

Key Points:

- Rules for winning a campaign game scenario
- Rules for winning a shorter scenario

There are two systems for determining victory in *Gary Grigsby's War in the East 2*, one for campaign scenarios, and a second for all other scenarios, which cover short time periods and usually a smaller area than the entire map.

Current Victory point (VP) totals for both campaign and non-campaign scenarios are displayed in the General Information and City/Airfield Box (6.2).



29.1. CAMPAIGN SCENARIO VICTORY CONDITIONS

Campaign scenarios start at different points during the war, but all can last as long as August 1945.

For campaigns that start in June 1941 the system basically encourages the Axis player to try and capture more cities (either take them earlier, take cities that historically were not occupied, or hold them for longer). In turn, when the Soviet player regains the initiative, they too gain bonus points for capturing cities in advance of the historical schedule.

For campaigns that start later than June 1941, the VP scores are initially set on the basis of the progress of the historical war.

29.1.1. KEY CONCEPTS

The campaign victory system relies on two key concepts.

Initiative.

At any stage of the game, only one side has the initiative. This side will gain VPs as below as they capture cities and lose VPs if their opponent manages to retake a city.

Initiative Switchover can happen to the Soviets between October 1 1942 and July 1 1943 whenever the German score is 10% or more below the German High Water Mark score. If this has not already happened then the initiative will switch on July 1 1943. Once initiative switches, it never switches back.

Once the initiative changes, the VP score is recalculated using the value of the cities held by the Soviet player at any stage, plus any bonuses for cities that were historically lost but not in the current game.

German High Water Mark (HWM)

This is the highest score ever obtained by the Germans throughout the game. At the time that the initiative changes, the Axis HWM score is frozen, and the Soviets begin to score points (in the same way the Germans have been scoring).

The example below is from January 1942 during the Soviet winter offensive and the Axis have lost some cities

Note that this rule uses the highest score the Germans have achieved at any stage of the game, NOT the score on the turn when the initiative changes.

they originally captured (so their High Watermark exceeds their current VP score):

Victory Points	589		
Cities	540		
+ Bonus	88		
+ Events	10		
- Enemy Bonus	36		
- Enemy Events	13		
Axis High Watermark	640		
Initiative Player	Axis		
Initiative switch check dates	1-Oct-1942 - 1-Jul-1943		
Initiative switch check %	10 %		
Sudden Victory Levels			
Player	VP	Check Date	Turn
Axis	750	1 - Apr - 1942	42

29.1.2. DETAILED RULES

Certain cities are marked as victory locations and each of these cities is given a base victory point value.

Bonuses will be given for capturing cities based on comparing to the historical capture date. A maximum of 6 bonus points can be earned per city. If the city is captured on the historical turn, a bonus of 3 is scored. One additional point is earned for each week earlier the town is taken, and 1 is lost for each week late. So taking a city 3 turns early would score 6 points, and 2 turns late would score 1 point.

Once scored, bonus points will never be lost, but the base points are lost when the city is lost. If a city is retaken, these base points are regained but the bonus points can only be awarded once in the game. If historically a city changed hands more than once (such as Kharkov) then the first capture date (by that side) is the one used to determine the bonus.

Cities that were never historically taken by the Germans will generate the maximum early capture bonus if captured by the Germans at any stage in the game. However, if such a city is retaken by the Soviets there is no bonus for early recapture simply the value of the city itself.

Soviet capture bonuses can be earned while the Germans have initiative when the Soviets recapture a city. When the initiative switchover occurs, Soviet cities (with historical capture dates) never taken by the Germans are considered recaptured by the Soviets at the time of the Initiative switchover for determining Soviet bonus points.

The effect of this rule is to encourage a Soviet player to trigger an early switchover of initiative while the German player gains from delaying this as long as possible.

All points up to the change of initiative are scored by the Germans. Any positive (either from events or the bonus for retaking cities) scoring by the Soviets at this stage become negative German points, and any negative Soviet points become positive German points. Later in the war when initiative changes, only the Soviets score points and any Axis points are used to reduce the Soviet's score.

29.1.3. ACCESSING INFORMATION

To access information on which cities are Victory Point locations, their value and the historical capture turn, right click on the map, select map information>victory locations or press Shift+v.



You can also access this information by toggling the Victory location tab on the top edge of the screen.

When this map mode is in use, the relevant locations will show the base victory value for each location and the bonus that would be

awarded if the city was captured this turn. In the example above (from the German T1 of the 1941 campaign), Riga is worth 10 VP and if it falls this turn will generate a bonus of +4.

The current VP score and which side has the initiative can be seen on the Victory Screen as

This is, again, from the T1 Axis perspective. So the Axis player starts with 370 VP from cities held at the start, will win a sudden death victory if they have 700 VP on 1 October 1941 and face a sudden death defeat if their High Water Mark is below 525 on 1 January 1942.

In addition the Victory screen has a list of all the cities that generate a VP score and the historical turn on which they changed hands (this is shown as '0' if that city was never captured by that side).

Note that many cities have a capture date for both sides reflecting the ebb and flow of the actual war.

In addition to the main Victory Conditions screen, a summary of the current situation can be found on the turn summary screen (36.16).

Victory Points	370
Cities	370
+ Bonus	0
+ Events	0
- Enemy Bonus	0
- Enemy Events	0

Axis High Watermark 370

Initiative Player	Axis
Initiative switch check dates	1-Oct-1942 - 1-Jul-1943
Initiative switch check %	10 %

Sudden Victory Levels

Player	VP	Check Date	Turn
Axis	700	1 - Oct - 1941	16
Axis	750	1 - Jan - 1942	29
Axis	750	1 - Apr - 1942	42
Axis	750	1 - Jul - 1942	55
Axis	750	1 - Oct - 1942	68
Axis	750	1 - Jan - 1943	81
Axis	775	1 - Apr - 1943	94
Axis	800	1 - Jul - 1943	107
Soviet	450	1 - Oct - 1942	68
Soviet	500	1 - Jan - 1943	81
Soviet	525	1 - Apr - 1943	94
Soviet	575	1 - Jul - 1943	107
Soviet	600	1 - Oct - 1943	120
Soviet	650	1 - Jan - 1944	133
Soviet	725	1 - Apr - 1944	146
Soviet	800	1 - Jul - 1944	159
Soviet	850	1 - Oct - 1944	172
Soviet	900	1 - Jan - 1945	186
Soviet	950	1 - Apr - 1945	198

Axis Sudden Loss

Player	HWM	Check Date	Turn
Axis	525	1 - Jan - 1942	29
Axis	575	1 - Oct - 1942	68

Victory Cities

City Name	VP	Turn Ax	Turn So	Bonus
Minsk	10	1	159	3
Riga	10	2	173	4
Smolensk	10	4	118	6
Kiev	10	13	124	6
Orel	10	15	111	6
Varonezh	10	57	84	6
Kursk	10	20	86	6
Kharkov	10	18	87	6
Stalino	10	18	116	6
Rostov	10	22	23	6
Stalingrad	30	73	85	6
Dnepropetrovsk	10	10	123	6
Zaporozhye	10	15	121	6
Krasnodar	10	60	86	6
Lvov	10	2	162	4
Sevastopol	30	54	151	6
Odessa	10	17	147	6
Kalinin	10	17	26	6
Pskov	10	3	161	5
Tallinn	10	10	170	6
Rzhev	10	17	89	6
Moscow	60	0	0	6

29.1.4. VICTORY CONDITIONS

WiTE2 can be won due to the sudden victory conditions, the capture of Berlin, the in-game situation at the end of 1944 or by reaching the scenario end date.

Sudden death victories can come from:

- Axis Sudden Victory (Axis quarterly check value achieved), this gives a Decisive Axis Victory.
- Soviet Sudden Victory (Soviet quarterly check value achieved) gives a Decisive Soviet Victory (if it happens before or on 31 December 1944) and a Major Soviet Victory (if it happens after 31 December 1944 and on or before 1 April 1945).
- Axis Sudden loss will occur if they did not have a High Water Mark score of at least 525 by 1 January 1942 and 575 by October 1942 (note they do not need those scores on those dates but to have achieved them at some stage). Note this will not be applied if the Axis side is controlled by the AI.

The fall of Berlin gives the following outcomes:

- If the Soviets take Berlin then this is a Decisive victory if on or before 31 December 1944, a Major Soviet Victory (if after 31 December 1944 but on or before 1 April 1945), a Marginal Soviet Victory (if after 1 April 1945 and on or before 31 May 1945) or a Draw (if it falls after 31 May 1945 but before the scenario end date).
- If the Western Allies take Berlin then this is a Decisive victory if on or before 31 December 1944, a Major Soviet Victory (if after 31 December 1944 but on or before 28 February 1945), a Marginal Soviet Victory (if after 28 February 1945 and on or before 31 May 1945) or a Draw (if it falls after 31 May 1945 but before the scenario end date).

If on 31 December 1944 the Soviets fail to have matched the Axis high water mark score and the Western allies control no German territory, this is an Axis Major Victory.

Finally if the game reaches the scenario end date without triggering any other victory condition then the result is an Axis Marginal Victory. The end dates vary with the scenario:

- 1941 Campaign – 1 August 1945
- Stalingrad to Berlin Campaign – 1 July 1945
- Vistula to Berlin Campaign – 1 June 1945

The rules for the Sudden Victory conditions can be found by accessing the Victory Point screen, as:

Sudden Victory Levels

Player	VP	Check Date	Turn
Axis	700	1 - Oct - 1941	16
Axis	750	1 - Jan - 1942	29
Axis	750	1 - Apr - 1942	42
Axis	750	1 - Jul - 1942	55
Axis	750	1 - Oct - 1942	68
Axis	750	1 - Jan - 1943	81
Axis	775	1 - Apr - 1943	94
Axis	800	1 - Jul - 1943	107
Soviet	450	1 - Oct - 1942	68
Soviet	500	1 - Jan - 1943	81
Soviet	525	1 - Apr - 1943	94
Soviet	575	1 - Jul - 1943	107
Soviet	600	1 - Oct - 1943	120
Soviet	650	1 - Jan - 1944	133
Soviet	725	1 - Apr - 1944	146
Soviet	800	1 - Jul - 1944	159
Soviet	850	1 - Oct - 1944	172
Soviet	900	1 - Jan - 1945	186
Soviet	950	1 - Apr - 1945	198

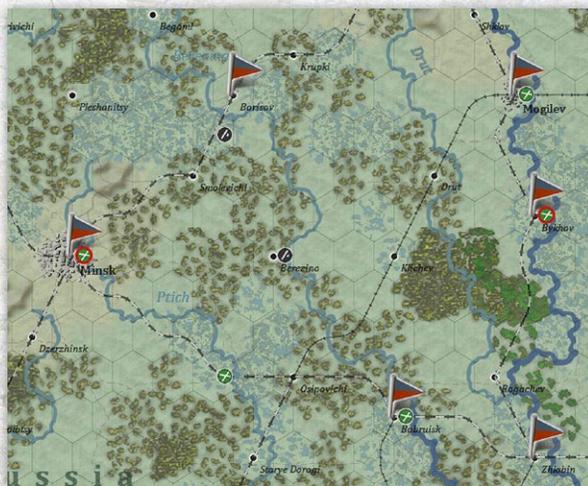
Axis Sudden Loss

Player	HWM	Check Date	Turn
Axis	525	1 - Jan - 1942	29
Axis	575	1 - Oct - 1942	68

29.2. NON-CAMPAIGN SCENARIO VICTORY CONDITIONS

Victory conditions for most non-campaign scenarios are based on control of victory locations, usually specific town, city or urban hexes for each side, and cumulative losses in men, guns, AFVs and aircraft.

Victory points for control of victory locations are awarded each player-turn (twice per complete turn) and



there is also a separate victory point award for controlling victory locations at the end of the scenario.

Victory locations can be applicable to both sides or be specific to one side only. Victory point locations can be displayed by selecting the Toggle Victory Locations button in the map information menu tab. Red flags are Soviets VP locations, black flags are Axis VP locations, and black and red flags are VP locations for both sides.

In this case, this shows the victory locations in the Road to Minsk introductory scenario.

Losses are based on the number of men, guns, AFV or aircraft that must be destroyed for the opposing side to gain one victory point. This base number for losses can be further modified for each side by a certain percentage. Note that only outright losses count for this not damaged elements.

For example, the scenario may be set up so that each player will "earn" 1 VP for each 1,000 men lost by the other player, but if the Soviets player has a twenty percent

modifier, the Axis will not gain a victory point the Soviets have lost 5,000 men. Victory levels for non-campaign scenarios are based on the ratio of the side with the most points to the side with the least points.

Again from the same scenario this shows the VP scoring for city occupation and combat losses.

This ratio is shown on the screen along with either an Axis or Soviets VP Advantage and the number (to one decimal place) or "No significant VP advantage" if the ratio is under 1.1.

Victory levels are as follows:

- Decisive Victory - ratio greater than or equal to 5.0
- Major Victory - ratio less than 5.0 but greater than or equal to 2.0
- Minor Victory - ratio less than 2.0 but greater than or equal to 1.1
- Draw - ratio less than 1.1

Note: Each side will start a non-campaign scenario with a minimum VP point score of one.

VICTORY POINTS

AXIS				SOVIET			
	ET	EG	PTS		ET	EG	PTS
Minsk	200	0	0	Minsk	500	500	500
Polotsk	0	25	0	Polotsk	0	50	0
Lepel	0	25	0	Lepel	0	50	0
Borisov	0	25	0	Borisov	0	50	0
Bobruisk	0	25	0	Bobruisk	0	50	0
Vitebsk	0	50	0	Vitebsk	0	50	0
Orsha	0	50	0	Orsha	0	50	0
Mogilev	0	50	0	Mogilev	0	50	0
Bykhov	0	50	0	Bykhov	0	50	0
Zhlobin	0	50	0	Zhlobin	0	50	0

SU LOST (100)			AX LOST (100)		
	NUM	PTS		NUM	PTS
Men (1000)	7582	7	Men (100)	0	0
Guns (100)	123	1	Guns (10)	0	0
AFV (10)	30	3	AFV (1)	0	0
Aircraft (10)	888	88	Aircraft (1)	77	77