

War in the East Condensed Rules (v1.08.03) (051515)

Table of Contents

Charts and Tables to Print	11
(1.0) Print List (print the following charts and tables pages out):.....	11
General Rules	12
(3.2.1) Hotkey List	12
(5.2.1) Hex Popup	12
(5.2.2.1) Movement Mode Hex Selection	13
(5.2.3) Unit Bar	13
(6.3.1) Control of Hexes	14
(6.3.2) Zones of Control	14
(6.3.3) Conversion of Enemy Hexes	14
(6.3.4) Conversion of Isolated Hexes.....	14
(6.4) Stacking	15
(14.1.1) Maximum and Minimum Movement Points	15
(14.1.2) Determining Movement Point Allowances	15
(14.1.3) Temporary Motorization of Non-Motorized Units.....	16
Unit Rules	16
(5.4.13) Combat Unit Detail Window	16
(7.1.3) Zero CV Units	17
(7.2.1.1) Support Squad Ground Element.....	17
(7.2.2.1) TOE Upgrades	17
(7.2.2.2) Ground Element Upgrade/Downgrade and Swaps.....	18
(7.3) Depleted and Unready Units	18
(7.5.1) Fortified Regions and Zones.....	18
(7.5.3) Combat Unit Buildup, Breakdown and Merging.....	19
(7.5.3.1) Soviet Buildup and Breakdown Availability	19
(7.5.3.2) Soviet Tank and Mech Corps	20
(7.5.3.3) Soviet Cavalry and Rifle Corps	20

(7.5.3.4) Axis Breakdown and Buildup.....	20
(7.5.3.5) Special Rules for Regimental and Brigade Size Units	21
(7.5.3.6) Merging Units.....	21
(7.5.4) Static Combat Units.....	21
(7.5.4.1) Setting Combat Units to Static Mode	21
(7.5.4.2) Reactivating Static Combat Units	22
(10.0) Frozen Units	23
(10.1) Frozen Unit Restrictions	23
(10.2) Soviet Frozen MD and MDZ HQ Units	23
(10.3) Axis Allied Frozen Garrisons.....	23
Support Unit Rules.....	23
(5.4.15) Pick Support Unit Window.....	23
(7.4) Support Units	24
(7.4.1) AA Support Units in Cities	24
(7.5.2) Attachment of Support Units to Combat Units	25
(7.5.2.2) Support Units to Combat Units Restrictions.....	25
(7.6.3) Attachment of Support Units to HQ Units (7.6.3).....	25
(7.6.3.1) Support Units Attachment Restrictions	25
(7.6.3.4) Manual Attachment of Support Units	25
HQ Rules	26
(7.6.2) HQ Command Capacity/Command Points	26
(7.6.4) HQ Support and Command Range.....	26
(7.6.5) HQ Relocation.....	26
Morale, Elite Units, Experience, Fatigue, Attrition and Reliability Rules	27
(9.1) Unit Morale.....	27
(9.1.1) Ground Unit Morale Changes.....	28
(9.1.2) Air Unit Morale Changes	29
(9.1.3) Basic Levels of National Morale	30
(9.1.4) Morale of New Units	30
(9.2.1) Modifiers for Elite Units.....	30
(9.2.2) Creation of Soviet Guards Ground Units	31
(9.2.2.1) Guards Number Limits.....	31
(9.2.2.2) Guards Status Conditions	31
(9.2.2.3) Corps Combat Unit Buildup and Guards Status.....	32

(9.2.3) Creation of Soviet Guards Air Units.....	32
(9.2.4) Soviet Shock Army Attached Unit Morale Bonus	32
(9.3.1) Ground Element Experience.....	32
(9.3.2) Air Group Experience.....	33
(9.4.1) Ground Element Fatigue	33
(9.4.2) Air Group Fatigue	34
(9.5) Attrition.....	34
(9.5.1) Ground Element Attrition	34
(9.5.2) Front Line Attrition	35
(9.5.3) Vehicle Movement Attrition	35
(9.5.4) Air Unit Attrition	35
Aircraft and AFV/Combat Vehicle Reliability (9.6).....	35
(9.6.1) AFV Reliability Based Damage	36
Leader Rules.....	36
(5.4.22) Pick New Leader Window	36
(11.1.1) Leader Designation	36
(11.1.2) Leader Command Restrictions.....	36
(11.2.1) Political Rating	36
(11.2.2) Moral Rating	37
(11.2.3) Initiative Rating	37
(11.2.4) Administrative Rating	37
(11.2.5) Combat Rating	37
(11.2.6) Leader Ratings Increase	38
(11.3) Leader Ratings Checks	38
(11.3.1) Leader Ratings Check Procedure.....	38
(11.3.1.1) Chain of Command Ratings Checks.....	38
(11.3.2) Command Range Modifier	39
(11.4) Leader Promotion and Dismissal	39
(11.4.1) Battle Win and Loss Credit	39
(11.4.2) Leader Promotion.....	40
(11.4.3.1) Leader Automatic Dismissal.....	40
(11.4.3.2) Leader Manual Dismissal.....	40
(11.4.3.4) Dismissal Admin Costs.....	40
(11.4.3.5) Leader Promotion Skill Rating Reduction Check	41

(11.5) Death of a Leader	41
Administrative Point Rules	41
(12.1) Gaining Administrative Points	41
(12.2) Expending Administrative Points	42
Fog of War Rules	43
(13.1) Detection Level	43
(13.2) Air Recon and Detection Levels	43
(13.2) Fog of War	43
(13.2.1) Fog of War	43
(13.2.2) Movement Fog of War	44
Rail and Naval Rules	44
(14.2) Strategic Movement	44
(14.2.1) Strategic Rail Transport	44
(14.2.2) Rail Line Repair	45
(14.2.2.1) Automatic Rail Line Repair	45
(14.2.2.2) Manual Rail Line Repair	45
(14.2.2.3) MP Cost to Repair Rail Line Hexes	45
(14.2.2.4) Repair Eligibility and RRV	46
(14.2.2.5) Repair and the Supply Segment	46
(14.2.3) Naval Transport and Amphibious Naval Transport	46
(14.2.3.1) Sea Zones and Shipping/Amphib Capacity	46
(14.2.3.2) Naval Transport	47
(14.2.3.3) Amphibious Naval Transport	47
(14.2.3.4) Interdiction of Naval Movement	48
Combat Rules	48
(5.4.11) Combat Resolution Window	48
(7.1) Combat Value	49
(7.1.1) Initial and Modified Combat Value in Battles	49
(7.1.2) Vehicle Shortage CV Modifier	49
(15.2.1) Hasty Attack	49
(15.2.1.1) Recon in Force	49
(15.2.2) Deliberate Attack	50
(15.3) Fortification Defense Modifier	50
(15.3.1) Terrain	50

(15.3.2) Fortification Levels	51
(15.3.2.1) Combat Unit Fort Level Construction.....	51
(15.3.2.2) Support Unit Assist to Fort Level Construction.....	53
(15.3.2.3) Civilian Population Labor Assist to Fort Level Construction.....	53
(15.3.2.4) Fort Level Reduction in Combat	54
(15.3.2.5) Fort Level and AFV Damage.....	55
(15.3.2.6) Artillery and Fort Levels	55
(15.4) Support Units in Combat.....	55
(15.4.1) Support Unit Commitment.....	55
(15.5) Reserve Combat Units.....	56
(15.5.1) Reserve Unit Commitment.....	56
(15.5.1.1) Reserve Commitment Limitations Due to Size	57
(15.5.2) Reserve Commitment MP Requirement	57
(15.5.3) Defensive Reserve Unit Special Rules	58
(15.5.3.1) Defensive Reserve Units Commitment to City and Urban Hexes	58
(15.6.1) Description of Ground Combat.....	58
(15.6.2) Combat Value and Ground Combat	59
(15.6.2.1) Vehicle Shortage CV Modifier	60
(15.6.2.2) Command Battle CV Modifier.....	60
(15.6.2.3) Terrain CV Modifier.....	60
(15.6.2.4) Weather CV Modifier	61
(15.6.2.5) Initial CV Values	61
(15.6.3) Unready Combat Units Attack Restrictions	61
(15.6.4) Cross River Attack.....	61
(15.7.1) Combat Results Effects.....	62
(15.7.2) Battle Losses.....	62
(15.8) Determining the Winner in Ground Combat	62
(15.8.1) Factors Influencing Modified Combat Value	62
(15.9) Effect of Defender Retreat Result	63
(15.9.1) Defender Retreat Path Priorities	64
(15.9.1.1) Isolated Units Retreat Results.....	64
(15.9.2) Effects of Shattering.....	64
(15.9.3) Effects of Surrender	65
(15.9.4) Effects of Routing	65

(15.9.4.1) Rallying Routed Units	65
(15.10) Displacement Moves	66
(15.10.1) Displacement Move Procedure	66
(15.10.2) Air Base Displacement	66
(15.10.3) Isolated Unit Displacement	67
(15.11) Retreat Attrition	67
(15.12) Isolated Units and Hexes	67
(15.12.1) Isolated Units Combat Value Penalties	67
(15.13) Captured Equipment	68
(15.14) Captured Supplies and Fuel	68
Air Rules	68
(5.3.5) Air Recon Mode	68
(5.3.6) Bomb Unit Mode	68
(5.3.7) Bomb Airfield Mode	69
(5.3.8) Bomb City Mode	69
(5.3.9) Air Transport Mode	69
(5.3.9.1) Air Drop Supply to Friendly Units	70
(5.3.9.3) Air Drop Airborne Combat Units	70
(5.3.10) Air Transfer Mode	70
(5.4.18) Air Group Unit Detail Window	71
(5.4.19) Select Air Group Unit From National Reserve	71
(8.1.1) Air Group Unit Aircraft Status	71
(8.1.5) Air Group Unit Aircraft Model Upgrade/Downgrade and Swaps	72
(8.1.5.1) Manual Aircraft Swaps	72
(8.2) Air Base Units	72
(8.2.1) Air Base Unit Attachment Restrictions	72
(8.2.3) Disbandment of SAD Air Base Units	73
(8.3) Air HQ Units	73
(8.3.1) Air HQ Units Attachment Restrictions	73
(8.4) National Air Reserve and Air Group Unit Transfer	73
(8.4.1) National Air Reserve Restrictions	74
(16.1) General Air Mission Rules	74
(16.1.1) Air Group Unit Miles Flown	74
(16.1.1.1) Air Base Unit MP and Air Group Unit Miles Flown	74

(16.1.2) Individual Aircraft Abort and Operational Losses	75
(16.1.3) Air Mission Staging Bases	75
(16.1.4) Graphical Depiction of Air Missions.....	75
(16.1.5) Air Missions and Weather Impact	75
(16.1.6) Day and Night Missions.....	76
(16.1.7) Fighter Bombers	76
(16.2.1) Air to Air Combat	76
(16.2.2) Anti-Aircraft Defense.....	77
(16.3) Air Missions	77
(16.3.1) Limits on Conducting Air Missions.....	78
(16.3.2) Air Recon	79
(16.3.3.1) Bombing Missions Against On-Map Units.....	79
(16.3.3.2) Bombing City Mission Target Selection.....	79
(16.3.3.3) Air Interdiction Missions and Restrictions	79
(16.3.3.4) Ground Support Missions and Restrictions.....	80
(16.3.3.5) Air Superiority Missions.....	80
(16.3.4) Air Transport of Supplies and Fuel	80
(16.3.4.1) Partisan Air Resupply	81
(16.3.5) Air Transport of Units	81
(16.3.6) Air Dropping Units	81
(16.3.7) Air Group Unit Transfer	82
(16.4) Air Doctrine	82
(16.5) Determining Win/Loss For Air Missions	83
Soviet Partisan and Axis Garrison Rules.....	83
(17.1) Soviet Partisans	83
(17.1.1) Partisan Night Air Supply	83
(17.1.2) Partisan Attacks.....	84
(17.1.3) Anti-Partisan Attacks and Axis Unit Interaction	84
(17.1.4) Partisan Unit Limitations.....	85
(17.2) Axis Garrisons	85
(17.2.1) Axis Garrison Requirements.....	85
(17.2.2) Partisan Creation From Un-Garrisoned Populations	85
Reinforcements and Replacements Rules.....	86
(18.1) Receiving Reinforcements and Creating New Units	86

(18.1.1) Reinforcement Placement.....	86
(18.1.1.1) Rebuilding Destroyed Soviet Combat Units.....	86
(18.1.1.2) Rebuilding Destroyed German Combat Units	87
(18.1.2) Creating New Soviet Combat and HQ Units	87
(18.1.3) Creating New Soviet Support Units	88
(18.1.4) Creating New Soviet Air Group Units.....	88
(18.1.5) Creating New Soviet Air Base Units.....	89
(18.1.6) Creating Fortified Region and Zone Units	89
(18.2) Replacements	89
(18.2.1) The Replacement Segment	90
(18.2.2) Ground Element Replacements and TOE	91
(18.2.3) Ground Element Replacement Availability	91
(18.2.3.1) AFV Ground Element Replacement Limitations and Equipment Losses	91
(18.2.4) Air Group Unit Replacement Aircraft.....	92
(18.3) Refit Mode.....	92
(18.4) Axis Unit Withdrawal	93
(18.4.1) Withdrawing Units Requirements and Restrictions	93
(18.5) Disbanding Units.....	93
(18.5.1) Disband Requirements and Restrictions	94
(18.5.2) Automatic Disbanding of Soviet Corps HQ Units	94
Axis and Soviet Allied Countries and Armies Rules	95
(19.1.1) Axis Southern Allies General Rules.....	95
(19.1.2.1) Finnish Limitations	95
(19.1.2.2) German Units in Finland	95
(19.1.3) Italian Withdrawal	95
(19.1.4) Surrender of Axis Allied Forces.....	96
(19.1.4.1) Romanian Surrender	96
(19.1.4.2) Hungarian Surrender	97
(19.1.4.3) Slovakian Surrender	97
(19.1.4.4) Finnish Surrender.....	98
(19.2) Bulgaria and Yugoslavia.....	98
(19.3) Soviet Allied Armies	98
Supply Rules.....	99
(5.4.26) Unit Supply Detail Window.....	99

(5.4.26.1) Current Supply Status	99
(5.4.26.2) Turn Supply Details for HQ Units	99
(5.4.26.3) Turn Supply Details for non-HQ Units	100
(20.1.1) Rail Networks and Railheads	100
(20.1.2) Permanent Supply Sources	101
(20.1.3) Port Supply	101
(20.1.4.1) Motor Pool Vehicle Shortage Multiplier.....	101
(20.1.4.2) Emergency Vehicle Reallocation.....	101
(20.1.4.3) Generic Vehicle Attrition.....	101
(20.1.5) HQ Units and Supply	102
(20.1.5.1) HQ Unit Supply and Fuel Dumps	102
(20.2) Supply States	102
(20.2.1) Beachhead Supply States.....	103
(20.3.2) Ammunition.....	103
(20.3.2.1) Soviet Ammo Shortages	103
(20.4.1) Tracing Supply	103
(20.4.1.1) Supply Path Movement Cost.....	104
(20.3.2.1) Supply Over Water Hexes	104
(20.4.1.3) Supply Trace Visualization	104
(20.4.2) Supply Segment	104
(20.4.2.1) Receiving Supply From City and Urban Hexes.....	105
(20.4.3.1) Railhead Distance and Movement Supply Modifier.....	105
(20.4.3.2) Axis Rail Supply Modifier	105
(20.4.4) Return of Excess Supply	105
(20.5) Supply Effects	106
(20.5.1) Manpower Starvation Damage.....	106
(20.6) HQ Unit Supply Buildup	106
(20.6.1) Admin Point Cost.....	108
(20.6.2) HQ Supply Accumulation	108
(20.6.3) HQ Supply Build Up Penalties.....	108
(20.6.4) Attached Unit Supply Accumulation	108
(20.6.5) Supply Segment Effects	109
Production System Rules.....	109
(5.4.3) Production Screen	109

(5.4.3.1) Air and Ground Sections	109
(5.4.3.2) Special Section	110
(5.4.3.3) Captured Equipment Screen	110
(5.4.3.4) Production by Nationality and Availability	110
(5.4.3.5) Manpower, Supply and Vehicle Production Information	111
(21.1) The Production System.....	111
(21.1.1) Resource Production	112
(21.1.2) Heavy Industry (Supplies) Production and Allocation.....	112
(21.1.3) Armament Production	113
(21.1.4) Synthetic Fuel Production	113
(21.1.5) Oil and Fuel Production	114
(21.1.6) Vehicle Production and Repair.....	114
(21.1.7) Aircraft, AFV and Combat Vehicle Production.....	115
(21.1.8) Aircraft, AFV and Combat Factory Expansion and Build Limit.....	115
(21.1.8.1) Build Limit.....	115
(21.1.9) Factory Upgrades	116
(21.1.9.1) Equipment Downgrades.....	116
(21.1.10) Manpower Production and Migration	116
(21.1.10.1) Manpower Production	117
(21.1.10.2) Manpower Evacuation and Migration	118
(21.1.10.3) Manpower Factory Damage and Destruction	118
(21.1.10.4) Local Manpower Recruitment in Isolated Areas	118
(21.1.11) Port and Rail yard Capacity	118
(21.2) Factory Capture, Damage, Repair and Evacuation.....	119
(5.3.2.2) Strategic Rail Movement Soviet Factory Evacuation.....	120
(21.2.1) Soviet Factory Evacuation	120
(21.2.1.1) Disposition and Damage to Evacuating Factory Points	120
(21.3) Captured Equipment	121
(21.4) Production to Other Fronts	121
(21.4.1) German Armament Points to Axis Allies.....	122
(21.5) Lend Lease	122
(21.5.1) Lend Lease Aircraft, AFV and Combat Vehicles	122
(21.5.2) Lend Lease Supplies and Generic Vehicles	122
Weather Rules	123

(22) Weather	123
(22.1) Weather and its Effects.....	123
(22.1.1) Ice Levels and Frozen Lakes and Rivers	124
(22.1.1.1) Ice Levels and Movement Costs.....	124
(22.1.1.2) Supply Trace Over Water Hexes and Lake Ladoga	125
(22.3) First Winter Rule	125
(22.3.1) Combat Value Modifications.....	125
(22.3.2) Ground Element Damage and Disruption.....	126
(22.3.2.1) First Winter Disruption Formula	126
(22.3.3) Unit Morale Reduction	126
(22.3.4) First Winter Supply Modifier.....	127
(22.3.5) Mitigation of First Winter Rules in Cities	127
(v1.06.27) Reduced Blizzard Effect Option	127
First Turn and Early War Rules.....	129
(14.1.4) June 22, 1941 and Early War Movement Costs	129
(23.3.1) Frozen Units, Geographical Movement Restrictions and HQ Conversion	129
(23.3.2) Soviet Rail Capacity Reduction	130
(23.3.3) Soviet Generic Vehicle Mobilization	130
(23.3.4) June 22, 1941 Surprise Rules	130
(23.3.4.1) Designated Map Areas.....	131
(23.3.4.2) Setting Initial Soviet Moral and Experience	131
(23.3.4.3) Initial Damage to Soviet Ground Elements	131
(23.3.4.4) Pre-Battle Damage	131
(23.3.4.5) Movement Costs and Allowances	131

Charts and Tables to Print

(1.0) Print List (print the following charts and tables pages out):

'Hotkey List' on P20
 'Sequence of Play' on P34-36
 'Soft Factors' on P40
 'Command Capacity' Chart on P113

Shock and Guards armies will have 21 CP, in the period when regular armies have 18 CP.
Guards Tank Armies will have 16 CP.

'HQ Support and Command Range' Chart on P115
'Soviet Military District and Front Transformations' List on P116
'Air Group Unit Group Types' (8.1.2) on P118
'Soviet Air Command HQ Re-Designation' Table on P123-124
'Leader Ranks, Designations and Restrictions' Table on P133
'Command Optimum Rank' Table on P136
'On-Map Unit Attachment Change Cost Worksheet' on P138
'Leader Dismissal Cost Worksheet' on P138-139
'Admin Costs for Creating Soviet Units or Forming Soviet Corps Combat Units' on P139-140
'Other Admin Costs' Table on P140
'Tactical Movement Point Cost Chart' on P144-146
'Terrain' Table on P152
'Weather' Tables on P217-218

General Rules

(3.2.1) Hotkey List

Added a new hotkey that shows command links for the selected unit, on the map, graphically with lines. Pressing the shift-z key (or the ` key) will cycle through three modes - show no links, show links to all subordinates (blue-units, turquoise-HQs) and HHQ (orange), show links to subordinate HQs (turquoise) and HHQ (orange).

(5.2.1) Hex Popup

Off Rail Range: Number of hexes from the hex to a railhead linked through the supply grid to a permanent supply source.

Off Rail MP: Number of movement points from the hex to a railhead linked through the supply to a permanent supply source (20.1)

Combat Unit Information: Unit Name (CV/Fortification Defense Modifier CV, Percent of TOE), MP = Current Movement Points, SP = Supply Path where number is distance to nearest railhead.

Isolated units will have '-1' as their SP value in the text box.

Units in Beachhead Supply status will have 150 as their SP value.

Headquarters Unit Information: Unit Name, CU = Combat units attached, SU = Non-construction type Support units attached, MP = Current movement points, SP = Supply Path where number is distance to nearest railhead.

Air Base Unit Information: Unit Name (Number of Ready Aircraft/Total Aircraft attached, Percent of TOE) MP = Current Movement Points, SP = Supply Path where number is distance to nearest railhead.

Aircraft in Range: Displays when air mission modes (F5-F9) are selected and a staging base has been manually selected (16.1.3). Lists the current number of fighter and bomber aircraft that are capable of reaching a target hex using that staging base.

Fighter bombers with their Type Mission set to Fighter will be listed in the fighter row.

(v1.08.00)

Made leaders more visible across the interface.

Leader name and his average skill will be visible in the unit info box below the counter image. Leader rank, full name, his average skill and victory: defeat ratio will be visible in hex tooltip. Average skill is equal to the average of morale, admin, initiative, mech and infantry skills for land leaders, and to the average of morale, admin, initiative and air skills for air leaders.

Also, leader rank will be visible in HQ unit detail screen.

And finally, the names of leaders commanding in land battles (leaders assigned to the commanding HQs, one for each side) will now be visible in battle reports.

(5.2.2.1) Movement Mode Hex Selection

Each selected unit in the stack will be bordered in purple. In addition, other units in other hexes on the map and deselected units in the same hex (5.2.3) that have certain relationships to the selected unit(s) current chain of command will have border colors as follows:

Next Higher Headquarters Unit: Orange

Peers: Yellow

- Those units that are also attached to that unit's next higher headquarters.

Subordinates: Blue or Red

- Those units directly attached to the selected unit.
- Blue if within 5 hexes of the headquarters unit that the unit is attached.
- Red if they are greater than 5 hexes from their HQ unit (no restrictions) or cannot trace a path through friendly or pending friendly hexes less than 20 MPs in length to the HQ unit. With the exception of railroad repair and air base units, this red shading does not apply to other HQ units, as they do not draw supply from other HQ units.

Exceptions to the above are regimental and brigade breakdown units from German Divisions and Soviet Tank and Mechanized Corps, as well as divisions from broken down Soviet Cavalry and Rifle Corps combat units.

Breakdown units in other hexes belonging to the same original unit, for example 1/292 and 2/292 regiments from the 292nd Infantry Division, will have a border color of blue rather than the yellow normally associated with peer units.

Selecting a hex in one of the air modes (F5-F10) will border all friendly air base units in yellow, with exception of air transport mode, which will only yellow border air base units with air group units eligible to conduct the air transport mission. While an air mode is selected, the unit bar will only display air base units.

(5.2.3) Unit Bar

Selecting a hex with units in it will display the unit bar on the right hand part of the game screen.

Note that stacking in a hex is limited to three units, no matter whether it is a combat or headquarters unit. If a unit is currently selected, its unit box will have a white outline and be indented. All units in the unit bar will also display a border color per section 5.2.2 above. Selecting a blank part of the unit box will toggle unit selection. The unit box provides the following information and buttons:

Unit Name: Selecting will display unit detail window (5.4). The unit detail window can also be displayed by right clicking in a blank part of the unit box.

HHQ: Name of headquarters unit that unit is attached to and command range information in the format (x/xx) where the first number is the range in hexes of the unit from its headquarters unit and the second number is the range in hexes that the applicable headquarters unit can provide that unit with support squad Ground element support (7.6.4).

- Selecting will shift map view to center on the headquarters unit and change selected unit to that headquarters unit.

Unit Graphic: Displays CV-MP mode with currently selected soft factor and movement status.

- Movement status is in the small triangle located in the right corner of the unit counter.

If a unit has not moved, then it will be a white triangle with a smaller black triangle inside.

If the unit has moved and still has movement points remaining, there will just be a white triangle.

If the unit has expended all of its movement points, there will be nothing in the right corner.

Supply Percentages: Lists supplies, fuel and ammo for Combat and air base units. Lists supplies and fuel only for FBD and NKPS Rail Repair units.

Command Points: Lists current number of command points of attached units/command capacity for the HQ (HQ units only).

Number of Supply and Fuel Dumps: List number of ground elements of each type for HQ units only.

(6.3.1) Control of Hexes

There are additional costs for all units moving into enemy and pending friendly hexes to account for both timing issues and the inherent difficulty involved in movement through recently cleared areas (14.1.5).

1.08.00

The penalty for units smaller than divisions when entering pending friendly hexes will be reduced from +2 to +1, starting from July 1941.

(6.3.2) Zones of Control

All combat units have a ZOC that extends into the six adjacent hexes surrounding each unit for purposes of increasing the cost of enemy units moving out of a ZOC as well as from ZOC to ZOC.

Routed or depleted combat units, headquarters units, rail repair units and air base units do not have a ZOC.

Note that regiment/brigade sized units do have a ZOC.

(6.3.3) Conversion of Enemy Hexes

For purposes of converting enemy hexes into pending friendly hexes, ZOCs are only effective for larger combat units. All combat units convert the hex they enter as they move into a pending friendly hex. Division and Corps sized combat units convert the hex they enter, and any unoccupied adjacent hexes in their ZOC unless the unoccupied hex is also in the ZOC of an enemy combat unit.

Brigade and regimental size combat unit ZOC will not convert adjacent enemy hexes into pending friendly hexes.

Supply can be traced through an enemy ZOC as long as the hex is friendly controlled or pending friendly, albeit at an increased distance due to additional movement point costs

(6.3.4) Conversion of Isolated Hexes

During the phasing players logistics phase, any friendly hexes that cannot trace a path of friendly hexes to a friendly unit will automatically become enemy hexes.

In addition, friendly hexes that are not adjacent to a friendly combat unit that can only trace a path of friendly hexes to isolated friendly units will also become enemy hexes.

These cases represent the conversion of an empty isolated enemy pocket and the contraction of an existing pocket containing isolated enemy units respectively.

(6.4) Stacking

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

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

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

(14.1.1) Maximum and Minimum Movement Points

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

- Non-Motorized Combat units (except Cavalry) units - 16 MP
- Cavalry Combat units - 22 MP
- Headquarters units - 50 MP
- Rail Repair units (FBD and NKPS) - 16 MP
- Axis Motorized Combat units - 50 MP
- All Soviet Motorized Combat units 1941 - 25 MP (18 for Divisions prior to October 1941)
- Soviet Motorized Combat Brigades 1942-1943 - 30 MP
- Soviet Motorized Combat Brigades 1944 - 35 MP
- Soviet Motorized Combat Corps - 50 MP

Minimum MPs: Motorized units will always receive at least one MP, even when out of fuel. ~~Non-motorized units will always receive at least six MP, even when out of supplies.~~

(v1.06.15)

The minimum MPs for non-motorized units is eight, not six as originally detailed in the manual.

(v1.07.03)

The maximum MPs for Soviet Tank and Motorized Divisions in 1942 are 25.

(14.1.2) Determining Movement Point Allowances

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

- 1) Start with base MPs (14.1.1)
- 2) Calculate average fatigue of the unit based on the number and fatigue of each type of ground element. Reduce the number of MP's by the average fatigue divided by ten, rounded down.
- 3) Check for leader initiative. If all leaders in the chain of command fail the initiative check, then multiply MPs remaining by 80 percent, rounding down.

- 4) Check for leader admin. If all leaders in chain of command fail the admin check, then multiply MPs remaining by 80 percent, rounding down.

Note that units that did not move in the previous turn will automatically pass their next turn's admin check.

- 5) Determine if fuel (motorized unit) or supplies (non-motorized unit) is sufficient to enable the unit to use the remaining MPs it has.

For example, if a motorized unit has only 50 percent of its base MPs remaining after steps 1 through 4, it will only require 50 percent of fuel needed. If fuel on hand is 60 percent of what the unit needs to use its remaining MPs, then it can only move 60 percent of those MPs, rounded down.

- 6) If a non-motorized unit, reset the unit's MPs to eight if determined to be lower than eight. If a motorized unit with zero MPs, reset the unit's MPs to one.
- 7) If the movement point allowance is greater than 16 and the unit is motorized, check to see if the vehicle shortage penalty applies. This penalty creates a maximum number of MPs the unit may have during the turn. For motorized units the maximum is equal to $16 + (34 * (\text{vehicles in unit} / \text{vehicles required by unit}))$. The maximum will never be less than 16.

Note: See example on P144

(14.1.3) Temporary Motorization of Non-Motorized Units

Any non-motorized unit that is in supply may double its movement points for the current turn by clicking on 'motorize unit' from the combat unit detail screen (5.4.13), but at a cost in damaged vehicles and administrative points.

Additional vehicles required to fully mobilize the unit will be taken from the motor pool, but will be damaged at the end of the turn. The admin cost to motorize the unit is based on the number of vehicles required from the motor pool and is equal to the number of vehicles damaged divided by 50.

The number of vehicles damaged and the number of admin points required for temporary motorization will be displayed next to the Motorize Unit text in the unit detail screen.

Only units that have not yet expended any MPs during that turn may temporarily motorize.

The unit will show as Motorized for the rest of the player's turn and will pay motorized unit costs.

Units that have been temporarily motorized may not attack, enter an enemy controlled hex, or move adjacent to an enemy unit.

Unit Rules

(5.4.13) Combat Unit Detail Window

Unit Logistics Requirements:

For supplies, fuel and ammo, the amounts are listed by type of supply on hand compared to 100 percent of the amount of that type of supply required.

For support squad ground elements, the first number signifies the total support available to the unit as of the previous supply phase compared to 100 percent of the support squad ground elements required. Total support includes support squad ground elements directly attached to the combat unit as listed on the left side of the screen as well as any support squad ground elements automatically sent from headquarters units in the chain of

command. Excess support squad ground elements in HQ units are parcelled out to attached combat units in range based on the need of the units. On the first player turn of each game, since the logistics phase is skipped, the support units will not show benefits from HQ unit support squad ground elements in range.

(v1.07.11)

Added detailed CV attack and defend values under the counter in the unit detail window.

(7.1.3) Zero CV Units

To reflect their inability to participate in ground combat, some ground units will have a combat value (CV) of zero and will perform an automatic displacement move (15.10) if an enemy combat unit moves adjacent unless they are stacked with a friendly combat unit with a CV of at least one.

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

Headquarter units will always have a combat value (CV) of zero.

Units in a routed or depleted (Actual TOE of ten percent or less) state will also have a CV of zero.

(7.2.1.1) Support Squad Ground Element

A significant number of ground elements in all units are support squads, which provide the administrative and logistical backbone required for a unit to operate effectively, to include fatigue reduction. Note that, despite the similarity in name, support squads and support units are different entities.

While each unit has a TOE for support squad ground elements, the actual requirement for support squads, listed by 'NEED' in the unit's detail window, is based on the current strength of the unit and is recalculated during each logistics phase.

The support need of an air base unit is based on both the number and type of aircraft and anti-aircraft ground elements attached to that unit.

If a HQ unit has fewer support squads than its 'NEED' its leader will have their admin skill rating decreased when conducting admin checks.

If losses to the rest of the unit result in excess support squads, some may be converted to rifle squad ground elements or returned to the production pool during the replacement phase

(v1.08.02)

Added new ground element type 71 - "Air Support". It is similar to regular support squads in all aspects, however it can't be augmented by HQ support squads, may not utilize Hiwi manpower (in case of German units), may not be converted to infantry squads, and counts normally against unit TOE percentage.

(7.2.2.1) TOE Upgrades

Prescribed ground unit TOEs may change during the game, resulting in an upgrade in the applicable unit's actual TOE. Any resulting change in ground elements will generally take place gradually over a number of turns rather than all at once.

A unit will not change its TOE if it is more than 30 MPs from a railhead.

TOEs are segregated by type of unit and time of the War. For example, there is a prescribed panzer division TOE for every year of the War. Not only are there separate TOEs for unit types (e.g. armor versus infantry) but

separate TOEs even within types. For example, the elite SS divisions at times will have three different TOEs running simultaneously.

Players can view future upgrades by accessing a particular units TOE window (5.4.22 and 5.4.23).

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

(7.2.2.2) Ground Element Upgrade/Downgrade and Swaps

Ground elements may change to different ground elements of the same or a different type during the ground element segment of the player's logistics phase (4.2). In the upgrade sub-segment, the ground element may upgrade in accordance with its upgrade path as listed in the ground element detail window (5.4.20) and the city production list window (5.4.4). It may also downgrade to older equipment (21.1.9.1).

Many upgrades will remain within the same ground element type (e.g. Rifle Squad, Medium Tank, Heavy Artillery, etc.), but some will result in a change of type, including AFV in which the upgrade is based on the equipment chassis (i.e. Panzer 38(t) Light Tank to Marder III Light Tank Destroyer).

In the swap sub-segment, the computer may change out existing ground elements with ground elements of the same type, but not necessarily along the upgrade/downgrade path.

For example, a Panzer IVg is a medium tank ground element, which upgrades to the Panzer IVh and downgrades to the Panzer IVf2. In the swap sub-segment, however, Panzer IVg ground elements may be changed out to another medium tank, such as a Panzer IIIj L/60, or even captured Soviet T-34 M1941 ground elements, depending on the availability of medium tank equipment in the production pool.

(7.3) Depleted and Unready Units

Depleted Units: Units at 10% or less of TOE are in a depleted status, have no ZOC and will automatically displace if they end up next to an enemy unit and not stacked with a combat unit that is in a ready or unready status.

These units are listed as "Depleted" and if set to Refit then they will have two asterisks next to the word Refit (Refit**).

Unready Units: Units that have the sum of their current morale and actual TOE percentage equaling less than 90 are in an unready status. Unready combat units do have a ZOC, but may only conduct an attack if they have not expended any movement points during the turn (15.6.3). These units are listed as "Unready" and if set to Refit then they will have one asterisk next to the word Refit (Refit*).

(v1.05.08)

Changed the formula that determines when a unit is unready. Now, Morale+TOE must be less than 90 for a unit to be unready (used to be less than 100).

(7.5.1) Fortified Regions and Zones

Fortified regions (Soviet) and zones (Axis) are special combat units designed to supplement regular combat units by assisting in the construction of fortified hexes, helping to avoid the decay of fortification levels and add additional support units to the defense of the hex it occupies.

Fortified units have zero movement points and can never move. Fortified units can be created through the expenditure of admin points by either player by selecting a hex and then selecting the "Create fortified unit" button on the map information tab (5.1.2.1).

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

Though there will be exceptions, most fortified zones built in Finland will be Finnish, most fortified zones built in Rumania will be Rumanian (until Rumania surrenders), and most fortified zones built in Hungary will be Hungarian (until Hungary surrenders).

Fortified units can be disbanded like any other unit, with the exception that they do not need to be three hexes away from enemy units (18.5).

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

(7.5.3) Combat Unit Buildup, Breakdown and Merging

Certain combat units can be built up into larger formations or broken down into smaller units. In addition, an equivalent size or smaller combat unit can be merged into another combat unit of the same type, eliminating the former and strengthening the latter.

Units building up or merging must be in the same hex in movement mode. Unit buildup or breakdown is accomplished by selecting the unit(s) and then either left clicking the buildup/breakdown button on the map information tool bar.

Breakdowns cannot exceed stacking limitations.

For Soviet units that require the expenditure of admin points to initially buildup (form), the expenditure will take place upon selecting the button or hotkey without any confirmation text box.

Admin points are added when support unit is sent back to the higher HQ in case of unit break down (Soviet corps to divisions that can't have support units attached -1 admin point per support unit sent back).

(7.5.3.1) Soviet Buildup and Breakdown Availability

Rifle Division (22 June 41): Two or more rifle brigades can buildup into a rifle division. Note that Soviet rifle divisions may not breakdown into brigades. Naval brigades cannot buildup into divisions. See below for buildup of airborne brigades.

Cavalry Corps (December 41): Three cavalry divisions can buildup into a cavalry corps. A cavalry corps can be broken down into three cavalry divisions.

Tank Corps (April 42): Three tank brigades can buildup into a tank corps. A tank corps may be broken down into three tank brigades (designated 1/2/3), but may only be built up again if all three are in the same hex (7.5.3.2).

Guards Rifle Division (March 1942): Three Airborne Brigades can buildup into a rifle division, which will automatically be given Guards status. Airborne brigades may not buildup with any other type of unit.

Rifle Corps (June 42): Three rifle divisions or two rifle divisions and one rifle brigade can buildup into a rifle corps. A rifle corps may be broken down into three rifle divisions (7.5.3.3).

Mechanized Corps (September 42): Three mechanized or motorized brigades can buildup into a mechanized corps. A mechanized corps may be broken down into three mechanized brigades (designated 1/2/3), but may only be built up again if all three are in the same hex (7.5.3.2).

Guards Airborne Division (January 1943): Three airborne brigades can buildup into an airborne division, which will automatically be given Guards status. Airborne brigades may not buildup with any other type of unit.

(v1.03 Beta 2)

Naval Rifle Brigades may be used to create Rifle Corps.

Restricted Soviet Rifle brigades so they can't merge into Rifle Divisions prior to May-1942

(v1.06.22)

Heavy Tank Brigades may not be used to form Soviet Corps.

(7.5.3.2) Soviet Tank and Mech Corps

There will be a 20 point admin cost the first time the Soviet player builds up (forms) a Soviet tank or mechanized corps.

It takes three tank brigades to create a tank corps, and three mechanized and or motorized brigades to create a mechanized corps.

Once formed, they can break down into three brigades numbered 1/2/3 and may only build back up together.

Soviet tank and mechanized corps will suffer a 25 percent experience loss from the existing units' experience when they are first formed.

A broken down Soviet tank or mechanized corps with brigades designated 1/2/3 may assign one support unit to each brigade.

(7.5.3.3) Soviet Cavalry and Rifle Corps

There will be an admin point cost the first time the Soviet player builds up (forms) a particular rifle (10 admin points) or cavalry (5 admin points) corps. There is no admin point cost for any subsequent break down and build up of a corps using the same divisions it was initially built from.

The combat unit detail window for the rifle or cavalry corps will list the names of the divisions making up that unit directly under the corps combat unit name

Game Play Info: The major difference between tank and mechanized corps versus rifle and cavalry corps is that that tank/mech corps have unique TOEs they follow while rifle/cavalry corps combat units are simply the sum of three divisions. Therefore while you can form a tank corps from three tank brigades, the TOE of a tank corps is not the same as the TOE of a tank brigade times three

(7.5.3.4) Axis Breakdown and Buildup

Certain Axis divisions can breakdown into three regimental equivalent combat units numbered 1/2/3. The same three sub-units can be built back up into a division if they are in the same hex.

Broken down German or Finnish divisions with regiments designated 1/2/3 may assign one support unit to each regiment.

(7.5.3.5) Special Rules for Regimental and Brigade Size Units

Combat units smaller than a division, to include broken down units, do not take control of hexes in their ZOC, just hexes that they move through (6.3.3).

These regimental/brigade size units pay two additional MP's when moving into an enemy hex.

Numbered (1/2/3) regiments or brigades broken down from German divisions or Soviet tank/mechanized corps will be bordered in blue on the map area when one or more of the broken down units from the same larger unit has been selected.

(7.5.3.6) Merging Units

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

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

When the merge is completed, all elements of the merging unit will be placed in the gaining unit, and the merging unit is considered destroyed and permanently removed from the game.

Merging is accomplished by selecting the 'MERGE' link in the detail window of the combat unit (5.4.13) that will be merging with the other combat unit.

(7.5.4) Static Combat Units

The German army stripped many of the units of their vehicles and had them dig in deep and reduce their fuel consumption in order to focus resources in areas where offensives were planned. To simulate this practice, the player has the ability to place combat units in static mode during the game, turning in their organic vehicles for use by other units or the supply motor pool.

(7.5.4.1) Setting Combat Units to Static Mode

Any non-isolated, non-frozen combat unit on the map may be placed in static mode if that unit has not moved during the turn and is currently located in a hex with a man made fortification level of two or greater (computer players are not held to the fort level requirement).

Exception: Finnish units may never be placed in static mode.

Combat units are placed in static mode by selecting the hex they are in and then selecting the "STATIC" button on the desired counter in the unit bar. Note that the "STATIC" button will not be displayed if the combat unit is not eligible to be placed in static mode.

The unit will immediately be reduced to zero MPs for that turn and all of that unit's vehicles will be immediately returned to the motor pool (keep in mind that there are many vehicles in HQ units and in the supply system that are still being used by the unit, but it is assumed that the unit has given up all of its organic vehicles).

The phasing player will immediately receive an admin point bonus based on the number of organic vehicles returned to the motor pool that is equal to one plus the number of organic vehicles returned divided by one

hundred, with any fractions rounded down. The number of vehicles and the admin point gain will be shown to the player prior to confirmation of static mode.

Static units have only one Movement Point per turn until they are reactivated, but they may use Strategic Movement (rail or sea transport).

Static units fortify 10 percent faster than non-static units.

A unit in static mode will not be able to set to refit or reserve mode, nor will it be able to combine into larger units (e.g. German regiments into a division or Soviet Rifle Divisions into a Rifle Corps).

Static units will not suffer a vehicle shortage penalty for when drawing supplies or fuel from the unit's HQ as long as the distance between the HQ and the unit is both less than 4 hexes and less than 10 MPs. Static units cannot merge or combine with non-static units. Static units cannot disband (18.5). Units in static mode will appear bordered in white when the Map Information tab View Unit Modes button (Shift-R hotkey) has been toggled on.

(v1.04.28)

Static units may no longer use rail, naval or amphibious movement.

(v1.05.18)

Units may not enter static mode in 1941.

Static units no longer lose their static status when they are retreated or routed.

(v1.08.02)

It will now cost AP to put units in static mode. The cost to make a unit static will equal 2 AP for motorized units and 1 AP for the rest.

Cost to reactivate will be the same. Vehicle pool must contain at least 5k vehicles in order to be able to reactivate static units.

It will be impossible to make static or reactivate units in beachhead or airhead supply state.

(7.5.4.2) Reactivating Static Combat Units

Non-isolated static units that have not moved yet may be reactivated at any time during the movement phase by spending admin points. Combat units are reactivated by selecting the hex they are in and then either selecting the "REACTIVATE" button on the desired counter in the unit bar.

Activated units will immediately receive 50 percent of their vehicle requirement from the pool and 50 percent of their maximum movement points (25 for motorized, 11 for cavalry and 8 for infantry types).

The admin cost for activations is equal to two plus the number of organic vehicles required by that unit divided by fifty.

Units that retreat as a result of combat are automatically reactivated at no additional admin cost.

Units that begin their turn isolated will automatically be reactivated at no admin cost, although they will not receive vehicles until a logistics phase when they are no longer isolated. Once reactivated their movement points for each turn will be calculated in the standard way, with the lack of vehicles most likely reducing their movement points.

(10.0) Frozen Units

Some units begin a scenario frozen in place with zero movement points for a set number of turns. The number of turns is shown in the hex pop-up text.

A unit frozen in this way may also be unfrozen if it is attacked, or if it begins a friendly logistics phase within 3 hexes of an unfrozen non-isolated enemy unit.

(v1.06.25)

Frozen support units are now reset during the logistics phase so they are not frozen. The intention is that support units should not be frozen.

(10.1) Frozen Unit Restrictions

Frozen units are unable to move using either tactical or strategic movement.

Frozen units cannot build forts, although construction units may build forts in hexes they occupy.

(10.2) Soviet Frozen MD and MDZ HQ Units

All Soviet Military Districts and the Moscow Defense Zone (MDZ) Headquarters are frozen permanently and may never move. They may be relocated, but may not be disbanded.

If forced to retreat after October 1941, they will disband.

Units reporting to these units may be moved normally, unless they show a Fzn number in their hex pop-up text.

Support units attached to Military Districts and the MDZ HQ may be moved out of these units.

(10.3) Axis Allied Frozen Garrisons

Most Italian and Hungarian units that begin scenarios in Hungary or Yugoslavia or further west are permanently frozen garrison units. If the Soviets capture a Hungarian or Rumanian town either West of hex column 60 or south of hex row 110 that is linked to the Soviet supply network, then all of these Axis Allied units on the map are unfrozen.

(v1.03 Beta)

The 110 in the last sentence of section 10.3 should be replaced with 120

Support Unit Rules

(5.4.15) Pick Support Unit Window

The Pick Support Unit Type window is accessed by selecting the ASSIGN/FORM link in the unit detail window of headquarters units as well as combat units eligible to attach support units and town, city and urban hexes, which can attach Anti-aircraft support units. This window allows the player to view and manually transfer available support units.

Unready support units will not be included in the number in the AVL column.

For the Axis player, only existing available support units are listed.

For the Soviet player, if the unit was an eligible Corps sized combat unit or Corps headquarters unit, only existing available support units are listed. For Army, Front, High Command (STAVKA) headquarters units as well as town, city and urban hexes, all support units are listed, but if there is a zero in the AVL column, selecting the unit name will cause a support unit of that type to be created and a message displayed to that effect.

The Soviet player also has the option of creating new support units even if some of that type already exist through the use of the 'BUILD NEW' function by checking the box next to 'BUILD NEW' at the top of the screen, which will result in any support unit selected being created new rather than being transferred. In addition, enabling 'BUILD NEW' will display the 'BUILD NUM: X' where 'X' is the number of the selected support unit that will be built.

(7.4) Support Units

Construction and labor support units are used to assist in the building of hex fortification levels and the repair of rail lines.

All other support units are used to assist combat units in battle, either from an eligible headquarters unit not more than five hexes away from the battle, or from being directly attached to a combat unit participating in the battle (15.4).

Support units are always in refit status, with the exception of detached construction battalions.

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

V1.05.18

Hiwis (Hilfswilliger-"auxiliary volunteers") - Rules have been added to account for the soldiers and civilians that served as support personnel for German units during WWII (known as Hiwis).

Hiwis are generated from captured men. 8% of captured manpower will go into a Hiwi pool.

Also, captured manpower centers in the Soviet Union produce THREE (this was changed in errata) men for each captured point (theater production limits and damage to manpower centers apply).

Hiwis can be added to German unit's Support and Labor Squads starting from 1942.

Hiwis can't be more than 70% of current labor ground element TOE, 30% of current support element TOE, or 10% of current support element TOE of an SS Elite unit TOE.

Hiwis elements provide the same amount of support and engineer values as a normal support squad.

(7.4.1) AA Support Units in Cities

Antiaircraft (AA) type support units can be attached directly to a town, city or urban hex for air defense. AA units are required to be in a High Command headquarters unit (7.6.1) prior to transfer to a town, city or urban hex, though a Soviet town, city or urban hex can spend admin points to create an AA unit in the hex itself (18.1.3).

German and Soviet AA units can be transferred from OKH/STAVKA to any friendly town, city or urban hex.

Axis Allied AA units may be transferred from the applicable High Command HQ unit, but only to town, city or urban hexes of that particular nationality.

To reflect the political cost of decreasing urban air defense, Antiaircraft units cannot be disbanded while attached to a town, city or urban hex. In addition AA units in town, city or urban hexes can only be transferred back to their highest headquarters at a significant cost in admin points (12.2.3).

A maximum of nine AA units may be attached to a single town, city or urban hex.

AA units attached to town, city or urban hex are destroyed if the hex is captured or destroyed/removed as applicable if in an Axis Allied country that surrenders

(7.5.2) Attachment of Support Units to Combat Units

The player can manually attach support units (SU) to some types of combat units (CU). Unlike support units attached to headquarters units that require passing of a commitment check before they can be committed to a battle, support units directly attached to combat units are automatically committed, though only to a battle in which that combat unit is a participant (15.4). Direct attachment thus provides certainty at the expense of flexibility.

German Divisions and Soviet Corps can directly attach up to three support units while numbered German regimental and Soviet Tank and Mech Corps brigade break down units (i.e. 3/129 regiment) can attach one support unit, but they cannot attach construction, labor, artillery, mortar, and rocket support units, or support units with the designations LW or PVO.

Fortified Region and Zone units can attach up to three of any type support unit.

Note that Soviet Corps combat units, such as Rifle and Cavalry Corps, that were built up from divisions will have any attached support units re-assigned and be unable to attach any support units while the unit is broken down into divisions.

(7.5.2.2) Support Units to Combat Units Restrictions

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

Changing support unit attachments may require the expenditure of admin points (12.2.3). A specific support unit attachment can only be transferred once per turn and will be marked with an asterisk in the combat unit detail window to denote that it cannot be transferred again that turn.

Axis Allied support units cannot be attached to combat units of a different nationality.

(7.6.3) Attachment of Support Units to HQ Units (7.6.3)

There is no limit to the number of support units that can be attached to a single headquarters unit, though a large number of non-construction support units can impact the commitment of support units during combat.

(7.6.3.1) Support Units Attachment Restrictions

Air headquarters units are limited to attaching only anti-aircraft support units and air base units cannot attach any support units.

Rail repair units can only attach construction battalions and labor groups.

Axis allied support units cannot be attached to headquarters or units of a different nationality.

(7.6.3.4) Manual Attachment of Support Units

To transfer the attachment of a support unit from a headquarters unit to another headquarters unit, the player selects the support unit to bring up its detail window and then selects the HHQ or OHQ link to bring up a list of eligible headquarters units to which it can be transferred.

HQ Rules

(7.6.2) HQ Command Capacity/Command Points

Headquarter units do have a command capacity (CC) rating that is expressed in command points (CP) and may change depending on the year. Command points are determined by the size of the attached combat unit. Command capacity includes all combat units attached to all units in the chain of command of the applicable HQ unit.

HQ units whose total command points exceed their command capacity rating will become less effective, which will be reflected by an increased difficulty in passing leader skill rating rolls such as an admin or initiative check

Command Points Cost = Brigade/Regiment 1, Fortified Region/Zone 1, Division 2, Soviet Corps 4, Air Base 1

V1.08.00

It is now possible to assign cavalry units of any size and independent units of brigade size or smaller to German RHG Command HQs.

(7.6.4) HQ Support and Command Range

Unit effectiveness is affected by the number of support squad ground elements. A headquarters unit can provide assistance to its attached units' support squad needs using excess internal support squad ground elements, however, the headquarters unit must be within a certain distance from the attached unit. This distance, termed "Command Range," is measured in hexes and is based on the type of headquarters unit providing the support squads.

Any headquarters unit in a unit's chain of command that is in command range can provide support with its excess support squad ground elements. This provision of support occurs automatically during the phasing players logistics phase.

Range also has a contiguous effect on leader rating checks, with the exception of morale and naval checks. The closer the higher HQ is to the combat unit involved, the higher chance that the higher HQ leader's rating checks will be successful.

Note: Also refer to 11.3.2 (Command Modifier) for formula for how close higher level HQs need to be to be able to provide support squad ground elements, and to be able to pass their leader checks effectively.

(7.6.5) HQ Relocation

The player can relocate any type of headquarters unit, to include air base and rail repair units, by selecting the "RELOCATE" button in the right lower corner of the HQ unit's detail window (5.4.16).

Relocation is similar to a displacement move (15.10), but is a voluntary action and results in the unit being moved to a friendly town, city or urban hex that is in supply. The headquarters unit will have its movement points reduced to zero, but there is no relation between the relocation and normal movement. The headquarters unit and any attached support units will suffer retreat attrition (15.11) and any damaged aircraft in air group units attached to an air base unit that is relocated will be destroyed.

The town, city or urban hex that the unit is relocated to will generally be to the east for the Soviet player and to the west for the Axis player, but there is a random factor to the relocation so that the player cannot anticipate where the unit will end up.

Though any headquarters unit can be relocated multiple times in a turn, relocation is generally only advised for isolated headquarters units you want to get out of a pocket immediately instead of waiting for the unit to be involuntarily displaced by enemy units. Regular movement is almost always preferable to relocation because the relocation movement is hard to predict and does cause retreat attrition to the headquarters units and any attached support units, as well as destroying any damaged aircraft at an air base unit.

Piling on the penalties, whenever a headquarters unit relocates or is forced to perform a displacement move, it will lose all of its fuel and supply dumps.

Morale, Elite Units, Experience, Fatigue, Attrition and Reliability Rules

There are many interrelationships between morale, experience fatigue and attrition. Morale figures into most of these and is the single most important unit attribute.

Morale determines experience level and fatigue gain.

Attrition is based on morale and experience.

Combat Value (CV) is affected by morale and fatigue.

Movement allowance is impacted by morale, fatigue and experience.

In all cases, high morale and experience is good, while high fatigue is bad.

Attrition from being adjacent to enemy units is less for higher experienced units.

Fatigue itself can damage units and can destroy already damaged units. This fatigue impact is much worse when units are adjacent to enemy units, which means that when adjacent to enemy units, not only do they take attrition losses, they also recover less fatigue and will suffer more losses due to fatigue.

Units with high experience levels will be less affected by fatigue.

(9.1) Unit Morale

Morale is a critical factor for all units in Gary Grigsby's War in the East. Morale is figured at the unit level and the higher the morale the better the unit will perform and the less it will suffer adverse effects.

Each nationality in the game has a basic level of national morale. The actual unit morale can be above or below the national morale, but unit morale will tend to gravitate towards the national morale.

Axis Elite and Soviet Guard and Shock Army units have their morale set at a higher level.

The morale of a unit impacts its combat value and thus its ability to win in combat. It also determines the amount of retreat attrition taken by its ground elements if the unit is forced to retreat as well as whether the unit will rout, shatter or surrender as a result of being forced to retreat (15.9). The morale of a routed unit will be a determinant in its ability to rally.

Unit morale is used to determine the movement cost to enter enemy controlled hexes and hexes under the influence of enemy zones of control (EZOC).

For air group units, the morale of a unit impacts the number of miles it can fly in a turn (16.1.1).

Morale is also important in that it limits the ability of a unit's ground elements to train to a higher experience level, as they can only train up to the morale level of their parent unit. In the same way, an air group unit can only train up its experience to match its morale level.

The Morale leader rating is used for determining unit combat value in battle, determining won/loss credit, adding or recovering fatigue in the unit's ground elements, and rallying routed units.

(9.1.1) Ground Unit Morale Changes

The morale of a unit will increase when it is successful in combat (holds on defense or retreats the defender when attacking).

Note that the attacker does not lose a morale point if the defender holds. Only the defender possibly gains a morale point.

The morale of a unit **may** also increase during the friendly logistics phase due to any and all of the following circumstances:

- The unit's morale is below 50, and it is in refit mode.
- The unit's morale is below 50, and it is more than 10 hexes away from the nearest enemy unit.
- The unit's morale is below its national morale. In this case it can recover as much as 10% of the national morale but not more than the country's national morale (Example: German national morale is 70 in 1942 so a unit could recover 7 per turn, not to exceed 70 for a non-elite unit).
- The unit is in a very good supply and support situation and its morale is less than 75. If Die (75) is greater than the unit's morale then a gain for this situation is possible.

Ground unit morale **may** decrease due to losing battles, suffering from air interdiction, being in an isolated state, and Axis morale losses due to the first winter rules (22.3). There is also a morale penalty for Finnish units that move south of specific hexes on the map area (19.1.1).

- Retreated units lose one morale point, which is increased to a loss of two morale points if the leader Morale check fails.
- Routed units lose one additional morale point.
- Isolated units may lose one or more morale depending on existing supply shortages.
- Units attacked by an interdiction air mission that lose more than nine MPs may lose one morale if random(100) is less than unit fatigue and the leader Morale rating check fails.
- Units which are missing morale and fatigue rolls can lose morale during logistic phase.

(v1.04.10)

Adjusted the amount of morale a unit loses after a battle. Now units are not guaranteed to lose a morale point when a battle is lost. The higher a unit's morale is over its national morale, the greater the chance the morale will be reduced when it loses a battle.

(v1.05.18)

Changed rule so that the morale gain from refit when under 50 morale is only gained when the unit in refit is at least 10 hexes from a supplied enemy unit (similar to the current gain if less than morale 50 and 10 or more hexes from enemy unit).

(v1.05.28)

Poorly supplied units can lose morale. If at the end of the logistics phase a unit has less than 20% of needed supplies, it has a chance of losing 1 morale point. If the value is less than 10% there is a chance of losing 2 morale points.

(v1.05.53)

Each logistics phase there is chance that a unit can lose a morale point due to fatigue. The higher the fatigue and the lower the morale of the unit, the greater the chance that the unit must make a leader morale check to avoid a morale loss.

(v1.07.06)

HQ and airbase units do not receive the motorized bonus to national morale.

Units do not gain morale while routed.

Units may only gain morale outside of combat if their morale is less than 10 points above their national morale, or less than 50, whichever is greater.

(v1.07.10)

Possible morale gains for a unit being at least 10 hexes from an enemy unit (in refit or not) will now only happen if the unit's morale is below its national morale, or 50, whichever is lowest. Note it is possible to receive up to 0-2 morale points from this when not in refit mode, and 0-4 points when in refit mode (this has not changed).

(v1.07.10)

Reduced the chance that a unit below its national morale will receive the die(10% of national morale) increase in morale. The chance is now 10% (was 15%)

(v1.07.10)

Units that are below 40 automatically gain one morale point in the logistics phase.

(9.1.2) Air Unit Morale Changes

For air group units, each group will recover morale points equal to 100 minus the current air group morale divided by 10 each turn.

Also, when an air group is sent back to its national air reserve it receives a morale bonus just for going into reserve, which can be up to 15 points, with the lower the morale, the bigger the bonus.

Air group unit morale may increase due to destruction of enemy aircraft in air to air combat as well as when the air group unit receives supplies. Air group unit morale will decrease due to aircraft being damaged or destroyed in combat.

(9.1.3) Basic Levels of National Morale

Refer to printed table of National Morale for each country for each country's national morale.

For Germany and the Soviet Union, the national morale level will change over time.

(v1.03 Beta 3)

Each turn there is a chance that a unit's morale will be lowered by 1 or 2 points if its morale exceeds its national morale by 30 points or more.

(v1.05.18)

~~Soviet National Morale has been changed to 50 in June 1941. One point is subtracted each month after this in 1941 (so it is 44 in Dec 41).~~

(v1.05.59)

~~National Morale of Soviets in 1942 is now 45. Starting with January 1943, the Soviet National Morale increases by 1 each month, until it reaches 60 in March 1944.~~

All Soviet units of size Brigade or smaller have a minimum national morale of 50.

(v1.07.10)

The Finnish National Morale is 70 for the entire war.

(v1.08.00)

Soviet national morale changed to the following:

January 1941 to June 1941 – 40
 July 1941 to March 1942 – 45
 April 1942 to September 1942 – 40
 October 1942 to December 1942 – 45
 January 1943 to June 1943 – 50
 July 1943 to December 1943 – 55
 January 1944 to December 1945 - 60.

Axis Allies morale increased by 5 points (except Finland).

Rumanian and Hungarian will be increased by 5 points after 1942 (to 45 and 50, respectively).

(9.1.4) Morale of New Units

(v1.05.18)

Build morale now equals national morale in all cases (there is no separate build morale table anymore).

(9.2.1) Modifiers for Elite Units

Soviet Guard units receive a ten point bonus to their national morale.

(v1.05.18)

The following units receive bonuses to their National Morale:

All Cavalry, Mountain Airborne and Air Landing units, and Axis Allied motorized units +5
 German Motorized Units +10
 Soviet Motorized Units (from Sept 1942-August 1943) +5
 Soviet Motorized Units (Sept 1943-end of war) +10

(v1.05.59)

The elite bonus for SS units is now only +5 in 1941, +10 in 1942, +15 1943 and later.

(9.2.2) Creation of Soviet Guards Ground Units

Under certain conditions, Soviet combat, support, and corps and army HQ units may become guards units. When a unit achieves guards status, it's TOE will change to the appropriate Guards TOE and it will change its name and be renumbered as a guards unit.

(9.2.2.1) Guards Number Limits

While not exact, there are limits to the number of each type of unit (infantry, armour, mountain, artillery, etc.) that may become guards units. The size of the unit may impact the percentages, with larger units having more impact than smaller ones.

There is no limit on the number of cavalry or airborne combat units that may become guards units.

The limit for motorized type units is approximately 35 percent.

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 - 17 percent
- 1943 - 25 percent
- 1944 - 30 percent

(v1.03 Beta 2)

The game now limits the amount of Soviet Guards Armies to 11 and Guards Tank Armies to 6.

(9.2.2.2) Guards Status Conditions

In order for a unit to become a guards unit, the three following conditions must be met:

Condition One:

- For non-motorized units, the unit's number of wins plus the year modifier must be greater or equal to 8 plus random(8).(see glossary for definition of random(x))
- For motorized units, the unit's number of wins plus the year modifier must be greater or equal to 12 plus random(12)

- For Corps HQ units, the unit's number of wins plus the year modifier must be greater or equal to 15 plus random(15)
- For Army HQ units, the unit's number of wins plus the year modifier must be greater or equal to 75 plus random(75)

Condition Two:

- For all units, the unit's number of wins plus the year modifier must be greater than 9

Condition Three:

- For all units, the unit's number of wins plus the year modifier must be greater than 2 plus the unit's number of losses

Year Modifier: The Year modifier is 3 in 1941, 2 in 1942 and 1 in 1943-45.

(v1.03 Beta 1)

Soviet Rocket and Heavy Tank units get automatic Guards status.

(9.2.2.3) Corps Combat Unit Buildup and Guards Status

When the Soviets combine combat units to form a corps combat unit, if two or three of the units are already Guard units, then the Corps formed will be a Guard Corps.

(9.2.3) Creation of Soviet Guards Air Units

Soviet Air Base units (representing Soviet Air Divisions) can become Guard units if their attached air group units collectively destroy a certain number of aircraft or ground elements. The criterion is based on the year as follows:

- 1941 - **200** destroyed aircraft and/or ground elements
- 1942 - **300** destroyed aircraft and/or ground elements
- 1943 – 1945 - **600** destroyed aircraft and/or ground elements

(v1.08.00)

Requirements for Soviet airbases getting Guards status reduced by half (200 in 1941, 300 in 1942, and 600 in 1943+). PVO, SAD and VVS airbases may not become Guards.

(9.2.4) Soviet Shock Army Attached Unit Morale Bonus

(v1.05.59)

Shock Armies and Guards Armies no longer provide a morale bonus to units that report to them (instead they provide a bonus of +1 to their leader's admin rating).

(9.3.1) Ground Element Experience

Experience mainly impacts combat, affecting combat value, the amount of retreat attrition, and the probability of firing and hitting enemy ground elements.

Ground elements increase their experience level automatically during the replacement part of the logistics phase through training. Though this is the only time ground elements gain experience, the amount of combat the ground element participated in during the previous turn positively affects the ability of the ground element to increase the number of experience points gained.

Ground elements can train up to the morale level of their parent unit (9.1). Ground elements that have an experience level lower than their unit's morale will increase their experience at least one point per turn, but have a chance to gain up to a total of five experience points. The normal experience gain is two to three points per turn.

Ground elements in units in good supply, especially if they are located on a railhead (20.1.1) will be able to gain more experience during training, as will ground elements that participated in combat the previous turn.

Ground elements with an experience level equal to their unit's morale will not be eligible to increase their experience until their unit's morale increases. Ground elements will not lose experience just because their unit's morale dropped below their current experience level.

Replacement ground elements coming into units will tend to bring down average experience, but not by a significant amount.

Newly created units will appear on the map with a low experience level to represent the need for many turns of initial training and the buildup of unit cohesion.

Soviet Tank and Mechanized corps will suffer a 25 percent experience loss from the existing units' experience when they are first formed.

(9.3.2) Air Group Experience

Air group unit experience has a significant impact on combat effectiveness during air missions.

Air group units gain experience based on the number of missions they fly.

Air group units may automatically fly training missions each turn during their player turn logistics phase in order to gain additional experience. These missions will increase the chance of operational losses, resulting in additional damaged or destroyed aircraft from the air group units conducting the training.

Air group units will decrease in experience due to the addition of replacement aircraft and integrated air crew. In addition, air group units that swap (change out) their aircraft model, either automatically or manually, will lose two from their current experience level.

(9.4.1) Ground Element Fatigue

Fatigue impacts the Combat Value of a ground element and this is reflected in the CV value shown for a unit in the game. The CV of a ground element is reduced by 1/3 of the fatigue level. Thus, an element that has a fatigue of 60 will have its basic CV value reduced by 20 percent when calculating the CV of the unit.

Fatigue also impacts movement point allowance (14.1.2).

During the Add Unit Fatigue segment of the Logistics phase, ground elements in units gain additional fatigue based on the unit's morale. Following this the ground elements may take damage based on the fatigue of the ground element.

Successful leader morale rating checks assist in this process by helping units recover morale faster when fatigued.

Units adjacent to an enemy unit during their logistics phase gain 4 times as much fatigue and there is 16 times more probability that damaged ground elements will get destroyed during this phase compared to units not adjacent to an enemy unit.

During the Reduce Fatigue portion of the Logistics Phase, ground elements in units reduce their fatigue based on their supply situation and available support (number of support squads available versus the unit's need).

Next, damaged elements attempt to repair themselves, and the repair chance is impacted by the unit's supply and support, and by the element's experience.

The number of support squad ground elements in a unit (and in HQ units in the unit's chain of command) will influence fatigue recovery (7.6.4).

Disruption from combat is converted into fatigue before any new combat, and is also converted at the very start of the logistics phase, so units will always begin a turn with zero disruption.

(v1.08.00)

Added the ability to repair damaged ground elements immediately after moving (at start of enemy's logistics phase, just like building forts). Repair rate depends on country, weather, experience, fatigue, element class, type and reliability.

(9.4.2) Air Group Fatigue

Air group unit fatigue impacts combat effectiveness, the number of aircraft operational losses and the number of aircraft from that air group unit that will conduct a particular air mission.

Air group units gain fatigue as a result of the air combat and the amount gained is dependent on the number of air attacks made and the total distance flown.

Air group units can recover from fatigue during the supply segment of the logistics phase. As with ground elements, the supply situation and available support squad ground elements at the air base unit the air group unit is attached will determine the amount of fatigue reduction.

Note that this when recovering from fatigue is also when air units attempt to repair damaged aircraft.

(9.5) Attrition

Attrition represents the effect of wear and tear on units, both non-combatant equipment and manpower losses as well as the constant losses suffered by front line units due to low intensity combat operations.

Normal attrition occurs during the phasing player's logistics phase.

In addition, units can suffer retreat attrition as a result of losing a battle (15.11).

For manpower losses due to attrition, approximately thirty percent will be killed and seventy percent disabled.

(9.5.1) Ground Element Attrition

In the attrition segment of the logistics phase ready ground elements may be damaged.

This is followed by reduce fatigue and repair ground elements segment, when damaged ground elements may be repaired, destroyed or cannibalized, which means that two damaged ground elements become one ready element and one destroyed element. One half of the damaged ground elements are sent back to the production pool if the unit they are part of is in supply (18.1.2). Damaged ground elements have a chance of repairing that is affected by their supply status and the number of support squad ground elements in the unit (7.2.1.1).

Note that if units are advancing at the limit of their supply and/or beyond their support network (7.6.4), their ground elements can be worn down from movement alone, without consideration of combat losses.

(9.5.2) Front Line Attrition

Units that begin their turn adjacent to enemy units during their logistics phase will suffer additional attrition losses representing low intensity combat, with approximately one-half to one percent of ground elements in a unit being destroyed (one-half of the manpower is killed and the other half is disabled).

Combat attrition losses are dependent on unit morale, the number of ground elements of a certain type in a unit, and the experience level of each type of ground element. The higher unit morale and ground element experience level, the fewer combat attrition losses.

This attrition is in addition to the additional fatigue effects from being adjacent to enemy units (9.4.1).

(v1.04.10)

Increased front line attrition, but reduced the proportion of these attrition loss that is KIA to 30% (was 50%). The net impact should be similar KIA but an increased amount of manpower disabled due to front line attrition.

(v1.05.28)

Reduced front line attrition by 30-50%.

In addition, Static units will now only suffer half of the normal front line attrition.

(9.5.3) Vehicle Movement Attrition

A certain percentage of a unit's organic vehicles will be destroyed and damaged during its side's logistics phase based on the number of movement points the unit expended during the previous turn.

If a unit expended 100 percent of its allowed (not base) movement points, 2 percent of the unit's vehicles will be destroyed, and 18 percent will be damaged. Reduced expenditure will result in proportionally reduced destruction and damage.

(9.5.4) Air Unit Attrition

Air groups will have aircraft become damaged if the air base unit they are attached to has insufficient supply and/or support squad ground elements. The airbase unit ground elements will suffer normal attrition and fatigue losses.

Game play tip: Be careful about letting your unit's fatigue get too high, especially for units adjacent to the enemy. Rotate highly fatigued units to the rear if possible. Units with experience that is far below the unit's morale can benefit from being in the rear far away from enemy units. Put them in refit mode on a rail line hex connected to the rail network and they should rapidly gain experience up to their morale level.

Aircraft and AFV/Combat Vehicle Reliability (9.6)

All aircraft and AFV/Combat vehicles have a reliability rating which ranges from "really good" (lower numbers) to "really bad" (higher numbers). An example of a 5 would be an armoured car and a 45 would be a Panther D AFV.

These reliability ratings are checked when aircraft conduct a mission or AFV/Combat vehicles are moved, with those that fail the reliability check becoming damaged. To reflect initial production "teething" problems, aircraft and AFV/Combat vehicle reliability will be increased by five when they first come into production and then decrease by one each month until they reach their standard reliability rating.

(v1.05.18)

Soviet aircraft reliability decreases in 1942-1943 (the reliability rating is treated as higher than shown due to the quality drop resulting from factory evacuations).

The reliability of old (out of production) aircraft decreased (reliability rating is treated as higher than shown).

(9.6.1) AFV Reliability Based Damage

Reliability is a factor in several instances where AFV ground elements may become damaged due to breakdowns.

- Small chance an attacking or defending AFV will breakdown in combat and become damaged.
- Increased probability that Axis AFV's will breakdown during the first winter blizzard turns (22.3).

Leader Rules**(5.4.22) Pick New Leader Window**

The current leader's leadership ratings and number of victories and defeats is listed at the top of the window for comparison purposes.

Selecting a leader will place him in command of the headquarters unit and dismiss the current leader, who will be returned to the leader pool as an unassigned leader.

If the new leader requires a promotion to assume command of the headquarters unit, there will be a 'P' next to the admin cost.

(11.1.1) Leader Designation

A leader may not be placed in command of a headquarters unit that is at a higher level than his Max Command level. This maximum command level cannot be changed by promotion to a higher rank.

(11.1.2) Leader Command Restrictions

Leaders may be restricted as to what kind of headquarters unit they can command. The restrictions include ground only, SS only, air and ground, and air only. German SS headquarter units may only be commanded by a SS leader. In addition, a SS leader cannot command a non-SS headquarters unit.

(11.2.1) Political Rating

The political rating affects the cost to replace the leader, as well as the probability that the leader will be promoted for victories or dismissed for defeats.

Generally, the higher the political rating, the greater the cost in admin points to replace a leader.

For the Axis player, there may be an additional admin cost for transferring combat units from one headquarters to another, dependent on the political rating differential between the two leaders of the involved headquarters.

A high political rating also decreases the chance that the leader will be dismissed and possibly executed due to a poor win/loss ratio.

In addition, a leader with a high political rating will have a greater probability of being promoted.

(11.2.2) Moral Rating

The Morale leader rating is used for determining unit combat value in battle, determining win/loss credit, adding or recovering fatigue in the unit's ground elements, and rallying routed units.

(11.2.3) Initiative Rating

The Initiative leader rating is used for determining the actual number of movement points a unit will have during the turn, the ability of ground elements to fire and to hit during combat, the ability of support units and combat units in reserve status to commit to a battle, and the ability to reduce casualties by turning a low odds hasty attack into a reconnaissance in force.

(11.2.4) Administrative Rating

The Admin leader rating is used for determining the actual number of movement points a unit will have during its turn, checking for repair of damaged aircraft and ground elements, determining the cost of attaching units to the leader's headquarters unit and determining fuel and supplies wastage as a result of air missions.

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

Admin checks are specifically affected by the actual number of support squad ground elements in the leader's HQ unit as compared to the HQ unit TOE.

(11.2.5) Combat Rating

Mechanized (Mech) and Infantry Ratings: These ratings for leaders assigned to a headquarters unit with combat units attached are part of the ground combat system and are used to determine the overall combat value as well as the ability of the ground elements in the units under their command to be able to fire and to hit opposing ground elements. Successful rating checks will increase combat value and improve the chance of ground elements to both fire and to hit.

Air Rating: For air leaders, a successful air combat skill check will result in more ready aircraft from an air group unit participating in a particular air mission (16).

Naval Rating: A Leader's naval rating is only used during strategic amphibious transport (14.2.3). A successful naval skill check will reduce the chance of air interdiction, reduce the number of ground elements disrupted during an amphibious assault on an occupied coastal hex, and reduce the amount of retreat attrition a unit takes if an amphibious assault fails and the unit must retreat to its port of embarkation.

(v1.05.59)

Army leaders get +1 added to their Mechanized rating in combat rolls involving motorized units under their command.

(11.2.6) Leader Ratings Increase

Based on the number of wins compared to losses (11.4.1), leaders may see some of their skill ratings increase.

Administrative, initiative, mech, infantry, and air ratings can only be increased if they are currently less than six.

Political and morale ratings can only be increased if they are currently less than eight.

The naval skill rating cannot be increased.

The chance of increasing a skill rating becomes more difficult as the type number of headquarters unit the leader commands decreases. For example, a leader in a High Command (Type 1) command will have a much more difficult time increasing their skill rating than a leader in command of a Corps (Type 4).

Leaders check to see if any of their ratings increase once each turn during their side's logistics phase.

(11.3) Leader Ratings Checks

Leader ratings can have an impact on virtually all actions taken by units; to include both the logistics and action phases of the turn.

Leaders will literally conduct thousands of checks using one or more of their ratings for everything from combat value (CV) determination to the number of admin points expended to attach a unit. Initiative, admin and morale checks are the most ubiquitous, but infantry or mech checks figure prominently in ground combat, air rating checks are made for every air mission, and naval rating checks occur during amphibious strategic transport.

There are no political rating checks, though the political rating is used to determine Leader promotion, dismissal and the admin costs for attaching units (11.4).

(11.3.1) Leader Ratings Check Procedure

Each leader rating check is essentially the computer generating a Random(x) value where if the result is less than the leader rating then the check is passed, but if the result is greater than the rating, the check fails.

Leaders of headquarters units where the number of attached units exceeds the command capacity (7.6.2) will have their chances of making the leader rating check reduced with the more excess units, the less the chance of a successful check.

In addition, leader admin checks are modified by the amount of support squad ground elements in the HQ unit of the leader conducting the check (7.6.1.1). Approximately one admin point is subtracted from the leader's admin rating for every ten percent the HQ unit is below its TOE support squad strength, with a max reduction of five points.

(11.3.1.1) Chain of Command Ratings Checks

If a leader fails their rating check, the leader of the next higher headquarters unit in the chain of command will then conduct the check, but with the base value of the check doubled. Each failed check will in turn result in the leader of the next higher headquarters in the chain of command conducting a check with the base value doubled each time until the leader of the High Command headquarters unit in the chain of command succeeds or fails the check.

In addition to the doubling of the base value for higher headquarters units, a modifier based on the level of the headquarters unit and the range from the combat unit to that headquarters unit is also included in most checks (11.3.2).

(11.3.2) Command Range Modifier

A command range modifier is applied to leader rating checks conducted by leaders in headquarters units to which the unit involved is not directly attached, i.e. HQ units higher up the chain of command.

Naval and morale leader rating checks are exempt from the command range modifier.

Each level of headquarters unit has a designated number that the range from it to the unit is divided by to get the modifier as follows:

Headquarter Unit Level	Range Modifier Divisor
Corps (Type 4)	1
Army (Type 3)	2
AG/Front/MD (Type 2)	3
High Command (Type 1)	4

For example, if the leader of an Army Group HQ unit that was 15 hexes away from a unit was conducting an initiative check, 5 (15/3) would be added to the random number value.

Also, see example on P135

(11.4) Leader Promotion and Dismissal

Leaders can be automatically promoted or dismissed depending on their performance as measured in wins as compared to losses as well as their political rating. In some cases, the dismissed leader may be executed and permanently removed from the game.

Players can also manually dismiss leaders and select another leader as a replacement.

(v1.08.00)

Added popups with information about leader skill decrease when promoted during owner's turn.

(11.4.1) Battle Win and Loss Credit

A leader may be credited with one win or one loss every time a combat unit in their chain of command participates in a battle.

For Air leaders, a win/loss situation occurs if an air group attached to an air base unit in their chain of command participates in an air mission that results in a set differential in losses (16.5).

In each case, this includes all higher headquarters up to the combat unit's High Command headquarters.

Wins and losses are recorded in the individual leader detail windows as well as in the unit list in the commander's report.

When a leader earns a win or a loss, there is a chance that it will not count for promotion or skill rating increase purposes. Although the total wins and losses are displayed for the leader as described above, the actual total used by the promotion system is tracked separately and will in most cases be less than the total wins and losses shown on displays.

Whenever a leader wins or loses a battle, there is a chance that the win or loss will not be counted when calculating whether the leader is promoted or increases a skill rating. This probability changes over time for each side. Generally fewer Axis wins and more Axis losses will be counted in 1941, with the percentages slowly shifting to more Axis wins and fewer Axis losses over the years. Counting of wins and losses for the Soviets is generally the reverse.

(11.4.2) Leader Promotion

Leaders undergo a promotion check once each turn during their sides logistics phase.

A leader is promoted to the next rank if they pass the check, which is based on their political rating and their number of combat wins and losses. Promotion will result in the zeroing out of that leader's number of wins and losses.

In order for a leader to be promoted to Field Marshall, an Axis leader must be in charge of an Army, Army Group, High Command, or OKH, while a Soviet leader must be in charge of a Front, Military District, or STAVKA.

(11.4.3.1) Leader Automatic Dismissal

Leaders can be dismissed automatically by the computer (representing the national political and military leadership) due to a poor win/loss ratio. In some cases the leader will be executed and permanently removed from the game rather than being returned to the leader pool.

The computer will automatically select a replacement and the event will be reflected in the logistics phase event log. There is no admin point cost associated with automatic dismissals.

(11.4.3.2) Leader Manual Dismissal

The player can manually dismiss a leader and replace them by first selecting the leader in the headquarters unit detail window (5.4.16) and then selecting the dismissal cost link in the leader detail window. This will bring up the pick new leader window (5.4.22).

(v1.03 Beta 2)

Eliminated German leader dismissals prior to 12/15/1941.

(11.4.3.4) Dismissal Admin Costs

A leader with a rank one higher than the optimum rank may fill an HQ position at no extra admin cost, but a leader with a rank one lower than the optimum rank that fills an HQ position will normally require the expenditure of extra admin points. The exception is that Soviet Major Generals (GENM) may fill an Army HQ position at no extra admin cost (12.2.2).

When a leader is dismissed, some leaders that are available as replacements will have less than the optimum rank to take the new position. These leaders have a P in the Pick New Leader window next to the number of admin points it will take to appoint the leader, which will usually be significantly higher than the admin points required for a leader with the optimum rank for the position.

(v1.08.00)

The base cost to dismiss leaders is now based on double the square root of HQ command points limit (0 for High Command).

For air HQ units, the cost is equal to the cost for a land HQ of similar size (corps, army).

This cost is doubled for Axis Allies during the entire war, and increased by 50% for Soviet Union corps and army leaders in 1941.

Political rating of the dismissed leader will be added to this value, and political rating of his superior leader (High Command has no superior leader) will be subtracted from this value.

The final cost cannot be less than 1.

(11.4.3.5) Leader Promotion Skill Rating Reduction Check

For Corps and Army headquarters units, the leader will be automatically promoted if selected. If promoted this way, the leader must make a check for each skill rating to see if it drops one point. There is less of a chance for a particular skill rating to drop if that skill rating has been previously reduced. If a leader is killed and the computer replaces the dead leader with a leader that requires a promotion, a similar check for a drop in skills occurs.

Leaders who are promoted through the normal promotion check process do not check for a decrease in skill ratings.

(11.5) Death of a Leader

Leaders who are automatically dismissed due to poor performance (losing battles) may be executed. A low political rating increases the chances of a dismissed leader being executed.

There is a 15 percent chance that when a headquarters unit is relocated or forced to execute a displacement move, the assigned leader may be killed or captured. In either case, if the HQ is isolated the chance of the leader being killed increases to 50 percent.

There is also a very small chance of a leader being killed if their headquarters unit suffers casualties from enemy air attack, to include bomb ground unit, air interdiction and ground support missions.

Finally, there is a small chance that leaders may be killed due to other enemy action. The probability of this occurring is impacted by the distance the leader's headquarters unit is located from enemy units.

(v1.03 Beta 1)

Reduced the chance each turn of a leader being killed due to the distance to the enemy by 2/3. In addition, any leader in an HQ that is more than 10 hexes from the enemy will have his chance of being killed reduced by an additional 2/3.

(v1.08.00)

Reduced leader death rate to 5% (15% during land battle) of previous rate from air attacks, to 80% (20% before their end date) of previous rate from regular attrition, and to 5% (10% when not in supply) of previous rate from HQ displacement.

No more than one leader may be lost to attrition per turn and Army Group/Front/Axis Army leaders have smaller chance to die this way (High Command leaders were already protected).

(v1.08.00)

Added information about leader changes (and units destroyed and rebuilding under different name) during enemy turn to the logistics phase log. Leaders killed "in an air attack", "in battle" or "during retreat" are those killed during enemy turn. Leaders killed "in an accident" are those killed during your logistics phase.

Administrative Point Rules

(12.1) Gaining Administrative Points

Information on the number of admin points each side will receive in a scenario can be found in the scenario description on the Load Scenario screen (3.3.6), with the exception that Soviet admin points will increase from 50 to 60 the first turn in April 1942 during the 1941-45 Campaign Scenario.

The arrival as a reinforcement or conversion of certain headquarters units will include a onetime addition of admin points. When a Soviet Front headquarters unit arrives as a reinforcement 125 admin points will be added to the Soviet admin point pool. The Soviet player does not receive the 125 admin points for any Military District headquarter units HQs that are converted into Front headquarter units in June 1941 (7.6.6).

When a new German Army headquarters unit arrives, 45 admin points are added to the German admin points.

Placing a combat unit in static mode will result in the gain of a certain number of admin points (7.5.4).

Each player may have a maximum of 500 admin points.

(12.2) Expending Administrative Points

Administrative Points are expended for combat unit transfers between HQs and for transfer of support units between HQ units, combat units and town, city and urban hexes. Admin points are also expended to change the leader of an HQ unit, to temporarily motorize units, and for HQ unit supply buildup.

The Soviet player expends administrative points to create or form combat units, HQ units, Fortified Zones and support units, while the Axis player expends points for creating Fortified Zones.

One admin point is required to disband a unit. It also costs one admin point to change a fighter bomber air group unit mission setting from fighter to bomber or vice versa.

Placing a unit in static mode will generate additional admin points for the player; however, reactivating a static unit will require the expenditure of admin points. Static units that are withdrawn will automatically be reactivated in the same logistics phase, resulting in an involuntary expenditure of admin points. In all cases, the admin points gained or expended is based on the number of organic vehicles in or needed by the unit (7.5.4).

The actual admin points expended at the moment a change of attachment is executed is half of the unit transfer cost shown in the tables below if the admin leader rating check is successful (11.3). A successful leader admin check that normally costs one point will reduce the admin cost of transferring that unit to zero.

(v1.08.00)

Changed on-map unit reassignment costs.

For combat units, the cost is based on the number of men in the unit (1 AP per 10 000 men).

For land HQ units, the cost is based on double their command points limit.

For air HQ units, the cost is based on command points limit of a land HQ of similar size (corps, army).

For airbases and rail repair units it is equal to 1.

For any reassignment a "root HQ" is determined, which is the first HQ unit that both the reassigned unit and its new HQ have in common. If the current HQ of the reassigned unit is the "root HQ", then the cost will be always 0, with the exception of nationality mismatch penalty. **Instead of always reassigning units to High Command and then somewhere else for free, players are encouraged to reassign units within the same armies, army groups or fronts, which should be cheaper now. Units can also be kept assigned to armies or army groups, not only to High Command, because all reassignments to subordinate HQs will be for free.**

Fog of War Rules

(13.1) Detection Level

Each unit on the map is automatically assigned a detection level from one to ten, based on factors to include distance from enemy units, covering terrain (6.2.1) and the results of air reconnaissance.

A higher detection level will increase the effectiveness of ground and air combat against that unit.

During the logistics phase, an airbase unit will have its DL decline by one, while non-airbase units will have their DL decline by Die(5). The DL levels of enemy combat units that are adjacent may then increase. Adjacent enemy combat units compare scouting values for the different units to determine changes in DL levels. In addition, every time a unit moves next to an enemy unit, the enemy's DL will usually go up due to automatic scouting and probing attacks. Losses from these scouting and skirmishing actions are represented by higher attrition levels for adjacent enemy units (9.5.2). Combat against enemy units will also increase their DL.

(13.2) Air Recon and Detection Levels

For non-air base units, air reconnaissance can raise detection levels up to a maximum of four as follows:

Maximum Detection level 1: Non-Air base units located in non-clear terrain further then 3 hexes from supplied enemy units.

Maximum Detection level 2: Non air base units located in non clear terrain and not adjacent to enemy units.

Maximum Detection level 4: Non-air base units located in clear terrain.

(v1.05.18)

Air recon will not increase an enemy air base's detection level above 5.

(13.2) Fog of War

Enabling the Fog of War (FoW) game option (3.3.3) does not change how the DL is computed, however, all enemy units must now be sighted (have a detection level greater than zero) to be seen on the map. Note that computer players are not affected by FoW, however, the AI does have the same DL restrictions as human players. In addition, detection level determines both the amount and the accuracy of the information known about a unit.

Accurate combat values (CV) may not be displayed even at the highest detection level, and the potential size of the error increases as the DL number decreases.

(13.2.1) Fog of War

As detection level increases, the on-map unit and its hex pop up will display the following information:

Detection Level 1: If the unit is an air base, the type will be displayed; otherwise the unit counter will be blank.

Detection Level 3: The Unit type will be displayed

Detection Level 5: The Unit name, unit size and CV will be displayed. Enemy units that start adjacent to friendly units will have a minimum DL of 5.

Detection Level 7: Soft factors can be observed (5.1.3).

Stacked Units: When FoW is enabled, no CV/MP numbers will be printed on an enemy counter if there is no unit with a detection level greater than 4 in the stack. If there are units with DLs both greater than four and four or less in a stack, numbers will be printed, and a '?' will be printed instead of the - or = between the numbers to indicate that in addition to the estimated CV strength in the hex, there are units of unknown strength in the hex. If the top unit in the stack has a DL of 1 or 2, a blank unit type box will appear on the top unit counter to indicate it is of an unknown type.

Air Mission Graphics: The graphic display (16.1.4) of any enemy air interdiction and interception missions on the map area will only show the direction the enemy air group units came from, not the entire line back to the air base unit they flew in from when FoW is enabled.

Enemy Fortification Levels: When FoW is enabled, information on enemy fortification levels (15.3.2) will only be displayed for hexes that are adjacent to a friendly unit or for hexes that contain a detected enemy unit with a DL of at least three.

(13.2.2) Movement Fog of War

If movement FoW is enabled, the show movement path and show movement allowed preferences will only display movement options to hexes if the movement path could be traced via friendly/pending friendly hexes or to hexes adjacent to friendly/pending friendly hexes.

Movement FOW takes away an "enhanced recon" feature caused by the nature of the movement system, but at a cost in play time. Basically, you will have to make an increased number of shorter moves when using move FOW as you won't be allowed to move far into enemy territory. Ultimately your unit can cover the same ground, but with more mouse clicks and more individual moves. Also, it won't be as easy to determine the fastest path to an enemy hex deep in enemy territory.

Rail and Naval Rules

(14.2) Strategic Movement

Each unit has a strategic transport cost listed in the unit detail window. For that unit to use strategic movement there must be sufficient rail capacity, transport shipping, or amphibious shipping points available to conduct the applicable type of movement. The transportation cost of a unit will be deducted from the pool of available points every turn it uses strategic movement, even if it just moves one hex.

The cost to entrain or embark shipping is 30 strategic movement points (SMP) and the cost to detrain or disembark is 15 SMP. Units without 15 remaining SMP at the desired destination will be unable to detrain and naval or amphibious transport to that hex will not be allowed.

Each rail or sea hex moved through costs one SMP. Most units will start a turn with 100 SMP.

Note that combat units using amphibious transport movement will lose all remaining movement points upon disembarkation on a coastal hex.

(14.2.1) Strategic Rail Transport

Rail line hexes that are in an enemy ZOC are considered to be cut off from the rail network and cannot be used for strategic rail transport, even if the hex is occupied by a friendly combat unit.

Selecting a unit that is located on a rail line hex while in Rail Mode (F2) will shade all hexes that that unit cannot move into using strategic rail transport.

Combat units that are attacked while entrained will suffer a significant degradation in CV in the subsequent battle.

(14.2.2) Rail Line Repair

Rail line hex damage ranges from one to one hundred percent, but even one percent damage will prevent the hex from being usable for strategic rail movement and supply purposes.

Since the Soviet Union used a different gauge rail than the rest of Europe, a change in hex control results in an automatic one hundred percent damage to that rail line.

Rail line hexes can also be damaged by partisan attacks.

(14.2.2.1) Automatic Rail Line Repair

Repairs will be made as headquarters units automatically detach construction and labor support units and send them to damaged rail line hexes. Unlike other support units, these units will appear on the map in the hexes they are repairing, and may not be moved by the player other than to send them back to their attached headquarters unit by selecting the construction or labor support battalion and then clicking the 'RETURN TO HQ' link in the unit bar.

For human players only, there is a limit to the distance that the automated rail repair units will operate from the HQ unit that they are attached, which is based on command range (7.6.4). For example, if a construction battalion is assigned to a Corps HQ unit, it can only repair rail line hexes up to 5 hexes from that HQ, but the same construction battalion attached to a High Command HQ unit (e.g. OKH or STAVKA) could operate up to 90 hexes away.

Detached support units will generally only repair one damaged rail line hex per turn. Repair during Mud and Blizzard weather will proceed much slower, while repair in the Baltic Rail Zone prior to December 1941 will be quicker.

The automatic movements of these support units and the repairs they perform take place during the player's logistics phase. These support units will not move to hexes containing or adjacent to a friendly FBD or NKPS rail repair unit. They will also not move adjacent to an enemy non-partisan unit, or in the same hex as a Soviet partisan unit.

Prior to December 1941, Soviet rail repair units will not automatically move to rebuild damaged rail lines that are within 5 hexes of an enemy unit.

(14.2.2.2) Manual Rail Line Repair

In order for an FBD/NKPS unit to use its special ability to repair rail hexes, the player must manually move the FBD/NKPS unit into a hex that is suitable for repair, and then selecting the RRC (Rail Repair Cost) text that will appear on the FBD/NKPS unit in the unit bar if the unit has enough MPs to perform the repair. Selecting the RRC will set the damage of the hex to one percent, and this last point of damage will automatically be repaired during the Emergency/FBD and NKPS Rail Repair portion of the player's next logistics phase. Designating a hex to be repaired expends movement points. The number next to the RRC indicates the MP cost to the rail repair unit to repair the current hex. If the FBD/NKPS unit is not in a location that it can conduct a rail repair operation, the RRC number will display a '-' instead.

(14.2.2.3) MP Cost to Repair Rail Line Hexes

- In Baltic Rail Zone (prior to December 1941): 1
- All Other hexes: 3

(14.2.2.4) Repair Eligibility and RRV

A hex is eligible for FBD/NKPS repair if 1) the hex is in the Baltic zone (prior to Dec 1941) and within 6 hexes of a railhead, or if not in the Baltic zone within 4 hexes of a railhead, and 2) the number of hexes to the railhead does not exceed the RRV (Rail Repair Value) of the FBD/NKPS unit. Since both of these conditions must apply, players will never be able to use an FBD/NKPS unit more than 6 hexes from a railhead in the Baltic zone (prior to Dec 1941), or 4 hexes from a railhead outside the Baltic zone. If a rail hex is not eligible for repair, the RRC will not display in the FBD/NKPS unit's info area.

Note that RRV is based on the number of construction and labor support units attached to the FBD/NKPS repair unit and will decrease if attached support units are removed. Players can manually transfer support units from an FBD/NKPS to a higher headquarters, but there is no mechanism, automatic or manual, to transfer additional support units into a FBD/NKPS.

(14.2.2.5) Repair and the Supply Segment

During the Emergency/FBD&NKPS Rail Repair sub-segment of the Logistics Phase supply segment, all rail hexes with one percent damage will be repaired automatically. At this time hexes with less than eleven percent damage have a chance of being repaired by automatically detached on-map construction and labor support units.

Rail line hexes that are repaired in this sub-segment will function as railheads if otherwise eligible during the second supply delivery sub-segment in the logistics phase (20.4.2).

In some cases repairs by automatically detached on-map support units will not take place in the Emergency Repair sub-segment but will happen during the normal rail repair segment.

Emergency repairs will help reduce the impact of partisan attacks on the flow of supplies.

(14.2.3) Naval Transport and Amphibious Naval Transport

All naval movement must begin and end in a coastal hex during the turn; units may not remain at sea at the end of a turn.

(14.2.3.1) Sea Zones and Shipping/Amphib Capacity

Sea hexes and associated ports are designated on the map as part of one of four sea zones; Baltic Sea, Black Sea, Sea of Azov and Caspian Sea. There is also a zone associated with Lake Ladoga hexes and associated ports.

Both sides can conduct naval transport between friendly ports within certain sea zones.

The Soviet player can conduct naval transport in all four sea zones and the Lake Ladoga zone, however, the Axis player is limited to conducting naval transport only in the Baltic and Black Sea zones.

In addition, the Soviet player can conduct amphibious landings from a friendly port to any coastal hex in the same sea zone in the Black Sea and Sea of Azov sea zones, with the exception that Soviet amphibious movement is not allowed into Rumanian or Bulgarian coastal hexes that are south of Constanta, Rumania (hexes where $y > 124$ and $x < 71$).

Players accumulate shipping points in each zone, and the number of points a player has accumulated is shown in the hex pop-up text when moving the mouse cursor over a water hex in these zones.

The Soviet player will also accumulate amphibious points in the Black Sea and Sea of Azov zones.

Each turn, each friendly port will add shipping points equal to $100 \times \text{port level}$ to the accumulated shipping points available, and $25 \times \text{port level}$ to the amphibious points available. The port level is equal to the number of port

factory points listed in the city detail window (5.4.27) for that port. If a port is damaged, the number of points accumulated for that turn will be reduced by the percentage of damage.

Shipping points may be accumulated up to a maximum of 2000*port level of all friendly ports in the particular zone.

Amphibious points may be accumulated up to a maximum of 500*port level of all friendly ports in the sea zone.

The port must be of the nationality of the player in order to provide shipping/amphibious points, for example captured Soviet ports do not provide points for the Axis player.

A quick way to figure out how many shipping points you have in a particular sea or lake zone is to move the mouse cursor over the water. The hex pop-up will list any available shipping (naval transport) and amphib (Soviet amphibious transport) points in that zone.

(v1.05.18)

Amphibious landings are not allowed west of x coordinate 76 (Rumania) until 1944.

Added Naval/Amphibious movement capacity limits for Axis as follows:

- Lake Ladoga - 3000
- Baltic Sea - 10000
- Black Sea - 4000
- Sea of Azov - 1000

Added Naval/Amphibious movement capacity limits for Soviets as follows:

- Lake Ladoga - 4000
- Baltic Sea - 8000 (decreases by 1000 each year)
- Black Sea - 10000 (decreases by 1500 each year)
- Sea of Azov - 4000 (decreases by 500 each year)
- Caspian Sea - 5000
- Black Sea Amphibious Movement - 2500 (decreases by 100 each year)
- Sea of Azov Amphibious Movement - 1000 (decreases by 100 each year)

Set shading for valid naval destinations during naval movement. This doesn't mean the current unit can reach the hex, just that it is a valid hex for the appropriate type of naval movement. Yellow shading indicates an enemy hex; green shading indicates a friendly hex.

(14.2.3.2) Naval Transport

Naval transport to/from Kerch is unique in that a unit in either a Sea of Azov port or a Black Sea port may use naval transport to move to Kerch. Also, a unit in Kerch can move via naval transport to either a Black Sea port (using Black Sea shipping points), or to a Sea of Azov port (using Sea of Azov shipping points). However, naval movement to/from Kerch is not allowed if hex 109,116 is not owned by the moving player.

Note that naval transport from Leningrad to ports on Lake Ladoga is not permitted.

(14.2.3.3) Amphibious Naval Transport

Amphibious points are expended whenever a Soviet combat unit attempts to move from a port to a coastal hex (whether enemy or friendly) while in Amphibious Transport mode (5.3.4).

Only non-motorized combat units may move by amphibious transport.

Units that move by amphibious transport will conduct a hasty attack whenever they attempt to land in a hex with enemy units. If they win the battle, they will advance into the hex and will have 0 MP's remaining. If they lose the battle, they will retreat back to the port of embarkation and suffer retreat attrition (15.11). Combat units that have successfully conducted amphibious transport into a coastal hex without a port may be eligible for beachhead supply (20.2.1).

Amphibious transport from Kerch is unique in that a unit in Kerch can move via amphibious transport to either a Black Sea coastal hex (using Black amphibious points), or to a Sea of Azov coastal hex (using Sea of Azov amphibious points). However, amphibious transport from Kerch is not allowed if hex 109,116 is not owned by the moving player.

(v1.05.18)

Amphibious movement cost per hex is x4 before 1943 and x3 from 1943-45 (reduces the range of an amphibious assault).

(14.2.3.4) Interdiction of Naval Movement

Air units can interdict the movement just as they can interdict movement on land (16.3.3).

Every friendly port (Soviet Nationality for Soviet player, Axis nationality for Axis player, i.e. not captured ports), exerts control over an area that extends out from the port the number of hexes equal to the port level (number of port factory points). Enemy naval movement cannot enter a hex within that area. However, if an enemy port's control area overlaps the friendly port's control area, they will cancel each other out, allowing both sides to use naval and amphibious (Soviet only) transport.

The range of control in hexes is reduced by the percent of damage to the port. So a port with a value of 10 that has 20 percent damage will have its control range reduced to 8.

Naval supply can be blocked by naval interdiction.

Naval interdiction cannot be projected from captured ports so, for example, a captured Riga cannot shut down Kuressare, however Kuressare could block the Axis from getting supplies into Riga.

Combat Rules

(5.4.11) Combat Resolution Window

Reserve combat units successfully committed to the battle will be annotated with an 'R' next to their name (15.5).

Combat Value: This is the total combat value of all the Axis units participating in the battle prior to the commencement of combat, to include any fortification defensive modifiers for defending units (15.3)

Command Mod: This is the command battle modifier (15.6.2), a percentage modifier for all combat values due to units from different commands being involved in the battle.

Modified Combat Value: Displayed at the end of the battle and used to determine the winner, this CV reflects losses incurred during combat as well as the results of random factors and numerous leader checks that can significantly modify the final figure.

Eng Value/Fort Level: For the attacker, this will display the relative value of the number of engineer type ground elements participating in the attack. Note that Engineer values are divided by the fort level when calculating their ability to reduce fort levels in combat. For the defender, this will display the man-made fortification level, which will change if the fort level is reduced during the battle. The post-battle display will show any reduction in fort level due to the battle in the format Fort: x->y, where x is the initial fort level and y is the reduced fort level (15.3.2).

(v1.08.00)

The game will now display the sum of Combat Values of the attacker and defender as a level 2 combat message (press "2" to see them), each time a new such value is determined during battle.

(7.1) Combat Value

All ground units have a combat value (CV) that is used to determine the results of a battle. The unit CV is equal to the sum of the individual CV's for each ground element in the combat or support unit. The CV is representative of the ability to take or hold territory, often referred to as "boots on the ground." Thus the CV ratings of ground elements are weighted toward infantry and AFV ground elements, while artillery and other guns, though they have good firepower, tend to have low CV's (26.1.4).

Unlike fixed combat factors that are found in other games, the CV in Gary Grigsby's War in the East is a calculated value that can only provide players an idea of the combat ability of the unit. Displayed Unit CV's are determined by a complex formula that takes into account the different ground elements making up the unit as well as unit morale, experience, fatigue, leadership and supply.

(7.1.1) Initial and Modified Combat Value in Battles

At the beginning of combat the initial CV is displayed on the combat resolution report and then, after combat is finished, the resulting modified CV is displayed as well. The resulting ratio between attacker and defender modified combat values is used to determine whether the defenders held their position or will be forced to retreat, rout or shatter (15.8).

The combat value displayed on the counters and as the initial CV in the combat resolution window can be radically different from the modified CV shown at the end of the battle, not only due to combat losses, but due to the many random factors and leader rating checks that occur to determine the modified combat value.

In addition, note that calculated CV's are fairly large numbers, so for ease of visualization the CV displayed on the unit counter on the map and in the unit bar are divided by 100 and rounded down, while the unit CV's displayed in the combat resolution display have been reduced by a factor of 10 and rounded down. The CV displayed on a unit counter will not be less than one unless it is a HQ, depleted or routed unit (7.1.3), but realize that due to rounding, on-map units with a CV of one could have an actual CV that ranges between 1000 and 1999, a substantial spread.

(7.1.2) Vehicle Shortage CV Modifier

The CV modifier for units with a shortage of vehicles (15.6.2) is reflected in the CV values shown on the unit counters. However, since it does not impact defending units unless committing from reserve and since static units cannot attack, this modifier will not impact the CV values on the counters for static units, and will not impact the defense CV value shown for all units (the value shown after the equal sign).

(15.2.1) Hasty Attack

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

Support units can only be committed from eligible headquarters units that have not expended ANY movement points during the current turn.

(15.2.1.1) Recon in Force

Prior to a hasty attack, a special modified CV calculation is conducted and an odds ratio generated. This calculation is not displayed in the combat resolution window and will most likely result in modified CV's and odds ratio that are different than the initial CV's displayed on the counters and in the combat resolution window (7.1). If this modified CV ratio is less or equal to 2 to 1 (2.01 to one is greater than 2 to 1), then an initiative check is conducted for each combat unit participating in the hasty attack. If all the units pass their leader initiative checks, then the attack is turned into a reconnaissance in force. If any unit in the attack fails the initiative check, then the attack remains a regular hasty attack.

A reconnaissance in force will result in reduced fighting and losses on both sides and the attacker will have no chance to cause a retreat.

This result will be reflected by the combat resolution message "Defending forces were scouted."

(15.2.2) Deliberate Attack

Deliberate attacks require the expenditure of sixteen MP's by motorized units and six MP's by non-motorized units. Multiple stacks of combat units can participate in a deliberate attack against an adjacent defending stack. Unlike a hasty attack, support units can be committed from eligible headquarters units that have moved during the current turn. In addition, Artillery combat units that have sufficient movement points remaining may participate in a deliberate attack from two hexes away from the defending unit.

If all units launching an attack are artillery combat units that are two hexes from the target hex, then only artillery units from both sides can fire and no support, reserve or air group units will be added into the battle for either side.

Game Play Note: The artillery combat units are not actually firing from twenty miles away; the ability to add artillery combat units two hexes from the battle is an abstraction representing the massing of artillery for an intense pre-attack bombardment and the actual firing can take place at ranges as low as 1000 yards.

(15.3) Fortification Defense Modifier

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

The combat value of each defending unit is modified by multiplying the CV by one plus the total fortification defense modifier, which is the sum of the terrain modifier and the fort level.

Combat units can increase the Fort Level of a hex by occupying the hex for successive turns. Each turn the hex is occupied there is a chance the Fort Level will increase, however; the higher the current fort level, the lower the chance of it increasing.

(15.3.1) Terrain

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

The terrain type in a hex (6.2.1) also determines the average distance (range) for combat between ground elements. This is important for things like AFV versus infantry combat, as the closer ranges in urban hexes will allow infantry to do better versus AFVs.

(v1.08.00)

Towns with a population of at least 3 in clear terrain will now give a defensive CV bonus, like the light woods (+1).

V1.08.00

Adjusted fort defensive CV bonus formula, so that partially built forts will increase defensive CV proportionally to their size. For example a fort with level 1 and 50% completion towards next level will give 1.5 the bonus of a level 1 fort.

(15.3.2) Fortification Levels

~~Forts cannot be increased in size to greater than 2 if the hex is more than 25 hexes from an enemy unit.~~

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

The fort level in a hex and any construction towards a higher fort level is displayed in the hex pop-up for each hex. A level zero on the map means a fort is under construction.

(15.3.2.1) Combat Unit Fort Level Construction

For construction on a fort level to begin in a hex, there must be a combat unit in the hex.

Depleted and/or frozen combat units cannot construct fort levels, security type units cannot build a fort level greater than one and isolated units are limited to building fortification level no greater than two.

Once a fort level is constructed, it will start to decay if the hex is not occupied by a combat unit.

The chance that the fortification will decay increases as the fortification level decreases.

Each combat unit has a construction value (displayed on the right hand side of the unit detail window) that is the sum of the construction values for each of its ground elements. This value is affected by the fatigue and experience of the unit's ground elements.

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

During the enemy player's logistics phase, units will use their construction value toward building a fort level.

Units that moved during their turn construct fort levels during the next logistics phase with whatever percentage of their MPs that are left.

It requires fifty construction points to build each fort level, with one point represents two percent of the needed construction. The construction value of a unit is modified based on the current fort level of the hex, the terrain of the hex, and the weather to determine the number of construction points it provides as follows (effects are cumulative):

- Fort level 0 - x 3
- Fort level 1 - x 1
- Fort level 2 - x **.25**
- Fort level 3 - x **.05**
- Fort level 4 - x **.01**
- Swamp hex - x .5 (Maximum fort level in a swamp hex is **2**)
- Snow - x .5
- Mud - x **.25**
- Blizzard - x .25

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

A unit may never provide more than fifty construction points per turn (after modifications) to the construction of a hex. In addition, a single hex can only gain fifty net construction points of fort level per turn.

Decreased the fort build rates as follows:

- Fort Level 0- 3.0 (was 3.0, no change)
- Fort Level 1 - 1.0 (was 1.0, no change)
- Fort Level 2 - 0.25 (was 0.33)
- Fort Level 3 - 0.05 (was 0.10)
- Fort Level 4 - 0.01 (was 0.02)

Construction values are reduced based on the supply level of the unit. In no event will they be reduced below 20% of normal due to supply level.

~~Level 5 forts may continue to build up to 10% over level 5. This allows them to take some damage and still remain at Level 5.~~

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

Fort build rates for building forts greater than 3 can be divided by 2 if a leader admin check fails.

(v1.05.18)

~~Requirement to build up to Fort Level 5 - Only will be built in port hexes that have a fort unit. Once built, the fort unit is not needed to keep the level 4 fort. Not possible in a swamp hex.~~

~~Requirement to build up to Fort Level 4 - Must have a fort unit in the hex. Once built, the fort unit is not needed to keep the level 4 fort. Not possible in swamp hex.~~

~~Requirement to build up to Fort Level 3 - Must be adjacent to an enemy hex, be an urban or city hex, or be in or adjacent to a fort unit. Once the level 3 is reached, the condition does not have to continue to be met to keep the level 3 fort.~~

Fort levels that have reached their maximum fort level for the hex may continue to build up to 10% towards the next fort level.

Building forts in mud now uses a .25 modifier (instead of .33).

Level 4 and 5 forts do not decay.

Doubled the rate of fort decay.

Added supply cost for fort construction as follows:

fort 0 - > 1 = 1 tons per fort point (no cost for isolated units, construction rate is halved)

fort 1 - > 2 = 2 tons per fort point (no cost for isolated units, construction rate is halved)

fort 2 - > 3 = 20 tons per fort point

fort 3 - > 4 = 200 tons per fort point

fort 4 - > 5 = 2000 tons per fort point

*note each fort point represents 2% toward the next fort level

V1.08.00

Added "Super Heavy Gun" ground element type, to be used for guns with a caliber of 210mm and above. In games started under previous version, "Heavy Artillery" elements were not swappable. In games started under this version, "Super Heavy Gun" elements will have that restriction instead. "Super Heavy

Guns” require trucks to move, have a supply requirement of 90 (vs 30 of “Heavy Artillery”) and have double the effect on fort destruction compared with “Heavy Artillery”.

V1.08.00

Reworked unit construction strength formula (used to build forts), to take morale and experience into account. Previously only fatigue counted (and morale for elements other than engineers).

However, Soviet units will have an additional bonus to construction strength, as they were renowned for their entrenchment speed.

V1.08.00

Changed fort construction rules.

Fort level 5 can be built only in cities with large port containing a fort unit.

Fort level 4 can be built only in big cities (city, light urban or heavy urban terrain) or towns with port containing a fort unit.

Fort level 3 can be built only in big cities, towns with port, in hexes with a fort unit or adjacent to an enemy.

Fort level 2 can be built only next to a fort unit, in coastal zones or up to 3 hexes from a supplied enemy unit.

Fort level 1 can be built only up to 20 hexes from a supplied enemy unit.

In swamp terrain the fort cannot be larger than 2.

V1.08.00

Forts level 3 and above will count as dense terrain.

V1.08.00

Added a hard limit of 150 fort units, with an increasing cost in AP after 50 fort units (+1 for each unit over 50), for human players.

V1.08.00

Forts may be built by units in newly captured territory, albeit at 25% speed and with full penalty from spent movement points (normally only up to half of construction points are lost when the unit has spent all of its movement allowance).

(15.3.2.2) Support Unit Assist to Fort Level Construction

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

The headquarters unit that the combat unit is directly attached must be within five hexes of that combat unit. In addition, no more than three levels of headquarters units in the combat units chain of command can assist, and each higher headquarters unit that may provide support units must be within five hexes of the next lower level headquarters unit.

(15.3.2.3) Civilian Population Labor Assist to Fort Level Construction

Town, city and urban hexes can use their population as civilian labor to help construct fort levels within up to 8 hexes if a supplied enemy unit is within 25 hexes.

The town hex must have a population of at least two.

Civilian labor can only assist the construction of fort levels in hexes with combat units where the construction of fort levels has already begun. For Axis town, city, or urban hexes, a combat unit must be present in the town, city or urban hex as well as any other hexes where fort levels are being constructed.

Each eligible town, city or urban hex will calculate a City Labor Value (CLV) based on the population of the hex divided by six for Soviets and twelve for Axis, rounded down. In either case, the CLV can never exceed eight.

The town, city or urban hex will form labor teams with a construction value equal to the CLV times twenty, with a minimum construction value of twenty.

The maximum number of labor teams that may be formed is equal to the CLV of the city, with a minimum of at least one team, and only 1 team may be sent to any given hex.

These teams may help in fort level construction in hexes that are within the CLV number of hexes from the town, city or urban hex. The hexes nearest to enemy units will tend to get the help first.

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

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

A hex may receive labor teams from more than one town, city or urban hex per turn.

The population may become damaged from participating in fort level construction.

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

See example on P155

V1.08.00

Improved the way units and population build forts. They can now build a part of the fort if not enough supplies are available, with proper costs being incurred when fort size changes during build. City population will build forts more often now, the biggest change being unlocking fort building by cities with population smaller than 6.

(15.3.2.4) Fort Level Reduction in Combat

Fort levels can be reduced during combat if the attacking force contains engineer ground elements (e.g. German Pioneer, Soviet Sapper; any type Engineer or Mech-Engineer ground elements) participating in the battle. This reduction can be fractional, i.e. it doesn't have to reduce a fort by one entire level, and it can just reduce a part of one level.

Engineer values are divided by the fort level when calculating their ability to reduce fort levels in combat. Fort level reduction caused by engineers can result in the reduction of the final defending modified combat value (15.8).

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

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

V1.08.00

Reworked unit engineer strength formula (used to destroy forts), to take morale, experience and ammo level into account. Previously only fatigue counted.

(15.3.2.5) Fort Level and AFV Damage

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

(15.3.2.6) Artillery and Fort Levels

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

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

(15.4) Support Units in Combat

Support units that are directly attached to combat units will automatically be added to the battle.

Support units attached to headquarters units must pass a series of checks in order to be committed to a battle. Headquarters units can only commit support units to attached combat units.

The HQ unit must be within five hexes of attached combat units and be able to trace an indeterminate path of friendly hexes, which can be in EZOC, to those same combat units in order to commit support units during combat. Note that the actual distance through friendly hexes from a HQ unit to an attached combat unit does not impact the ability to commit support units, as long as the HQ unit is within five hexes "as the crow flies".

(15.4.1) Support Unit Commitment

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

For each support unit attempting to be committed, the leader of that headquarters must pass an initiative check. The support unit must then pass several checks, with the checks becoming more difficult based both on the number of support units already committed and the total number of **non-construction support units** attached to the headquarters unit. This means that Headquarters units with large numbers of non-construction support units will have more opportunities to commit support units; however the overall probability of each support unit being committed will be less than if the headquarters units had fewer non-construction support units.

Support units directly attached to eligible combat units will be automatically committed to a battle involving that combat unit and do not count against the HQ unit maximums discussed above.

Note that the only combat units that artillery support units can be directly attached to are fortified region and zone units (7.5.2).

HQs that have not moved during the current player-turn have an increased chance of committing support units to battle.

Note to remember that in a hasty attack a HQ that has moved cannot commit any support units.

(v1.04.10)

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

The amount of support units can be increased by the level of fortification in the defending hex.

(15.5) Reserve Combat Units

Combat units in reserve mode may be committed to a nearby battle, both offensively and defensively. The type of attack itself, whether hasty or deliberate, has no effect on the commitment of units in reserve mode.

Any Ready combat unit with at least 3 MPs may be placed into Reserve mode by selecting the Ready/Refit/Reserve toggle on the combat unit detail window (5.4.13) until Reserve is displayed.

Units that move, retreat or rout are taken out of reserve mode.

Reserve units that are committed to combat do not move, but they must have the MPs required to be expended in order to commit to the battle.

The MPs a unit has when it ends its player turn are the MPs available for it to use for commitment as a defensive reserve during the enemy player's turn.

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

(v1.05.59)

Reacting units (reserve and support units) can now get river/winter/first turn disruption effects.

(15.5.1) Reserve Unit Commitment

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

A unit in reserve mode may never commit to a battle if it is adjacent to an enemy unit.

A unit in reserve mode will never commit into a battle if the initial combat value (CV) odds ratio at the time the unit checks are over 10 to 1. A defending reserve unit will also never commit into a battle if the odds are less than 1 to 10.

If the above commitment pre-requisites are met, the unit must then check to see if it has enough MPs to commit to the battle (15.5.2). If it does, then the unit must pass a leader initiative roll to be committed to the battle. The unit must also pass a check based on the MPs to be expended such that Die (MPs to be expended if committed) must be less than or equal to Die (Units MPs).

A unit may participate in multiple battles in the same turn as long as it meets all of the requirements and has the MPs to expend.

Units in reserve mode that participate in a battle that is lost have their MPs reduced to zero.

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

(v1.04.10)

Changed the way reserves are committed to battle. The lower the command battle modifier, the higher the chance the unit will be committed from reserve (especially those units with a command modifier below 10%).

Also increased the chance of motorized units being committed.

(v1.04.28)

Reserve units no longer receive benefits during fire combat from the fort/terrain levels in the defending hex unless the battle hex is urban.

(v1.08.00)

Removed odds restriction on reserve commitment, for both the attacker (over 4:1) and defender (outside 1:10 and 10:1).

The odds were based on randomly determined CV, thus not very representative of the actual combat.

This may also mitigate the problems with attacking strong positions being impossible due to low stack limit - just provide the reserves in the rear. In a way this may also help the return of the soaking attacks tactics, since it will be easier to exhaust defender's reserves. In a way this allows for a more mobile warfare (easier breakthrough) and bloodier combat (more units engaged).

(15.5.1.1) Reserve Commitment Limitations Due to Size

Corps sized combat units are less likely to be committed offensively as they add one to the leader initiative roll. Brigades and Regiments are more likely to be committed as they subtract one from the leader initiative roll.

In addition, as units in reserve mode from one side are committed to a battle, the chance of further commitments to the battle decline, based on the size of the combat units that have already been committed as follows:

- Corps =15
- Division = 9
- Brigade = 5
- Regiment = 3

Using the above values, as additional units attempt to be committed, they check to see if Die(18) is greater than the value of units already committed. If not, the unit is not committed.

(15.5.2) Reserve Commitment MP Requirement

To determine the MPs required for commitment, a unit in reserve mode traces a movement path to the battle hex if defending, or to the closest hex containing an attacking unit if attacking.

The MPs to this hex are modified based on the units involved in the combat. If the combat unit in the battle that is attached to the same HQ unit as the unit in reserve mode, the MP costs to the battle are multiplied by three.

Failing that, if there is a combat unit attached to an HQ unit that is one level removed from the reserve mode unit's HQ unit, then the MP cost is multiplied by 4.

In addition to the cost to reach the hex, the unit must pay an additional 8 MPs if it is a motorized unit or 2 MPs if it is a non-motorized unit.

For example, a motorized unit in reserve mode that is located 4 movement points from a defending combat unit, with both units being attached to the same corps HQ unit, will require and expend 20 MP if it is committed to the battle as $(4MP \times 3) + 8 = 20$.

(15.5.3) Defensive Reserve Unit Special Rules

Defending units committed from reserve may rout if the battle result forces the defender to retreat from the combat.

Defending units committed from reserve will not be eligible to rout if they pass a check where their Morale is greater than or equal to $40 + \text{Die}(15)$. This means that if their morale is 55 or greater they will never rout from a reserve commitment, but if their morale is 40 or lower they always will be eligible to rout. The computer will never put a unit with morale less than 50 in reserve mode.

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

(v1.06.11)

The limitation that a unit will not be eligible to rout if it passes a check where its morale is greater than $40 + \text{Die}(15)$ is now $40 + \text{Die}(30)$ for any brigade or regiment sized unit that is defending alone in a battle (no other units in the hex or committed from reserve are participating in the battle). Thus, a regiment or brigade defending alone with morale between 41 and 55 will be more likely to rout, and between 56 and 70 will now have a chance to rout.

(15.5.3.1) Defensive Reserve Units Commitment to City and Urban Hexes

Any reserve unit within 2 hexes of a battle in a city or urban hex that can trace its way to the hex and has at least one movement point remaining may be committed from reserve even if the number of MPs to reach the battle exceed the number the unit has remaining. The unit is also exempt from the normal distance check. If the unit commits to the battle, it will expend the normal cost to commit from reserve, but if it is more than the remaining MPs of the unit, the unit will be reduced to zero MPs.

Units can never be adjacent to an enemy unit to react in from reserve and must still pass a leader initiative roll to be committed. In addition, the normal $\text{Die}(18)$ die roll used to compare against number of units committed is changed to $\text{Die}(36)$ for light-urban and $\text{Die}(72)$ for heavy-urban (instead of $\text{Die}(18)$).

(15.6.1) Description of Ground Combat

Ground combat is conducted by an automated tactical combat system that consists of a variable number of rounds where ground elements engage each other.

In general, the computer first determines the opening range at which combat will take place. This is largely based on defending terrain, with battles in city and urban hexes commencing at shorter initial ranges. The attacker fires first at ranges of 3000 yards or greater, while the defender fires first at ranges less than 3000 yards.

The next step is to determine which ground elements will be able to fire. There are multiple factors involved, to include the type of attack (hasty or deliberate), enemy unit detection level (DL), defending fortification modifier, attacking unit morale and supply status (especially ammo), individual ground element experience, fatigue, ammo usage and range of their equipped devices, and leader initiative and ground combat rating (mech or infantry) checks (11.3).

Due to Soviet attack doctrine, defending Axis ground elements will have a better chance to fire at attacking Soviet ground elements.

Ground elements that have successfully passed their checks will then fire their equipped devices that are within range at an opposing ground element. The number of shots taken, the ability to hit the target, and for AFV and combat vehicles where the target is hit, are dependent on the same factors listed above as well as ground element speed, size, and the firing devices accuracy, rate of fire, and blast radius against soft targets.

The amount of ammo on hand impacts the number of shots taken in combat. If over 100%, the combat unit may get an extra shot. If less than 50%, the combat unit will likely get fewer shots. Longer range artillery units will fire less often if ammo is under 75%. Soviet Artillery Divisions firing from 2 hex range and artillery in support units will tend to fire more often, depending somewhat on ammo on hand.

If the targeted ground element is hit, then the result is determined based on the defending fortification modifier, the defending ground elements speed and armour, and the attacking ground element's device lethality and penetration capability. The result could be no effect, disrupted, damaged or destroyed. AFV ground elements may become damaged during combat due to breakdowns or mines (9.6.1, 15.3.2.5).

Any result other than no effect removes the targeted ground element from further participation, to include contributing to the overall combat value, in the current battle; however, disrupted and damaged ground elements may suffer additional effects depending on which side wins the battle.

Generally, the range at which firing takes place will decrease for the ground elements such as infantry squads as they maneuver to come to grips with the defending ground elements, though indirect fire and longer range direct fire ground elements may continue to fire at longer range.

After all engagements between ground elements are complete, the computer will move on to the next step of determining the winner of the battle.

(v1.04.14)

Added code to make low experience combat elements expend more ammo when they fire.

(v1.04.28)

Added a fire penalty in combat when there is a large number of attacking units. The force value of the attacking side is calculated using the following values for each non-support, non-artillery division unit attacking:

- Corps 15
- Division 9
- Brigade 5 (unless the brigade has less than 2000 men in which case it is 3)
- Regiment 3

Once the force value exceeds 28 there is a chance that elements will not get to fire during combat.

Artillery elements are much less effected (only impacted at closer ranges in combat), and the chance that elements will not fire increases as the force value increases.

The CV values of the attacking units are not changed by this rule.

(15.6.2) Combat Value and Ground Combat

(v1.03 Beta 3)

For combat value reductions due to ammo/fuel/supply shortages, these will be limited such that all units will be considered to have at least a minimum of 25% of each of these items.

(v1.04.10)

Introduced the concept of a commanding HQ for each side for each combat. Generally this commanding HQ is selected because it has the most CVs directly reporting to it in the battle. Units not reporting directly to the commanding HQ will suffer command battle modifiers that will reduce their CV for the battle.

The greater the number of HQ's that the unit must trace through to reach the commanding HQ, the greater the modifier. In addition, units that report directly to a high command HQ suffer an additional 20% modifier, and those that report directly to an Army Group or Front suffer an additional 10% modifier (these are shown as part of the total modifier percentage displayed).

(v1.05.09)

Altered engineer values so that they are divided by 4 during a hasty attack and are 0 if the attack is changed to a scouting attack.

(15.6.2.1) Vehicle Shortage CV Modifier

All attacking units and units committed from reserve for the defense suffer a reduction in CV if they have a vehicle shortage. This penalty is a percentage reduction equal to $((1 - (\text{vehicles}/\text{vehicle need})) \times 10)$.

The reduction is multiplied by 2 if the unit is motorized.

(15.6.2.2) Command Battle CV Modifier

If all participating combat units are attached to the same headquarters unit, then there is no CV penalty.

If at least one combat unit is attached to a different Corps headquarters unit, there will be a ten percent reduction in overall CV.

If at least one combat unit is attached to a different Army Headquarters unit, there will be a twenty percent reduction in overall CV.

Finally, if at least one combat unit is attached to a different Army Group/Front headquarters unit, there will be a thirty percent reduction in overall CV.

(15.6.2.3) Terrain CV Modifier

~~AFV and combat vehicle type ground elements will have their CV (26.1.4) reduced by half when attacking or defending in urban, heavy woods, swamp, broken and mountain hexes.~~

~~Infantry type ground elements will have their CV doubled when in urban, heavy woods, swamp, broken and mountain hexes.~~

Mountain units have their CV doubled in mountain hexes, no matter what the weather.

Ski units will have their combat value (CV) doubled in snow and tripled in blizzard (22.1).

(v1.03 Beta 3)

Units defending in Heavy or Light Urban terrain receive a doubling of their Combat Value when determining the winner and loser of the battle. This doubling is in addition to all other modifiers previously reported. Prior to this version, this doubling also applied to defenders in Swamp, Rough, Mountain and Heavy Forest terrain. This has been removed, so the doubling now only occurs in Heavy or Light Urban terrain.

(v1.07.12 Beta)

Dense terrain modifier is applied to ground element's CV during combat (attacker and defender alike) in mountain, rough, swamp and heavy wood terrain as well as in cities with population greater than 14. Ground elements of class "infantry", "mech infantry", and "infantry weapons" have their CV doubled. Ground elements of class "SP Weapon", "Armored Car", "SP Artillery", and "AFV" have their CV halved.

(15.6.2.4) Weather CV Modifier

Attacking units have their CV divided by 8 during mud.

(15.6.2.5) Initial CV Values

At the start of the battle, the combat resolution window will display each participating combat and support unit along with its CV in parentheses as well as an overall combat value at the bottom of each side's section. These initial CV's are essentially the CV displayed on the on-map combat unit counters multiplied by ten.

The only modifiers applied to the initial CV's are the fortification defensive modifier and the halving of attacking unit CV's if the attack is hasty.

The combat values of the individual units may not add up to the total CV because the total accounts for any loss of CV due to the command battle modifier, while the individual unit value does not.

Note that the displayed CV's, both on the counters and in the combat resolution window, reflect disruption caused by any cross river attack (15.6.4).

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

(15.6.3) Unready Combat Units Attack Restrictions

Combat units that have the sum of their current morale and actual TOE percentage equaling less than 90 are in an unready status, which is reflected in the unit bar when the unit is selected.

Unready combat units may only attack if they have not expended any movement points during the turn. With the exception of unready artillery combat units firing at a distance of two hexes, this means unready combat units must start their turn adjacent to an enemy unit in order to be eligible to attack.

(v1.05.18)

Changed the formula that determines when a unit is unready. Now, Morale+TOE must be less than 90 for a unit to be unready (used to be less than 100).

(15.6.4) Cross River Attack

Combat units attacking into a hex through a non-frozen (ice level four or less) minor or major river hex sides are required to expend additional movement points above the normal attack MP cost.

All ground elements that cross the river to attack are subject to a disruption check prior to the initial computation of combat value.

Ground elements with longer range indirect fire devices will normally not check for disruption while infantry and combat engineers most likely will check.

Infantry type ground elements will tend to suffer approximately the same amount of disruption for both minor and major rivers, but AFV and combat vehicle ground elements will suffer more disruption in crossing a major river than a minor river.

Since disrupted combat units do not contribute to overall CV, players can anticipate a reduction in overall CV of up to half for minor rivers and up to two-thirds for major rivers prior to any other modifications.

(15.7.1) Combat Results Effects

Disruption: Disrupted ground elements can no longer fire and they will not contribute their combat value to any future overall CV computations.

Damage: Damaged ground elements are out of action and can no longer fire or be fired at. They no longer contribute to a unit's CV, but can be destroyed or lose their devices as a result of the determination of which side won or lost the battle.

Destruction: Destroyed ground elements are eliminated immediately

(15.7.2) Battle Losses

Disabled Men: Permanent losses are not 100 percent permanent, because one percent of the men listed as disabled are returned to the manpower pool per turn.

(15.8) Determining the Winner in Ground Combat

At the end of all combat, the modified combat values for both sides are calculated and compared as a ratio (attacker/defender) to determine the winner and loser of the battle (7.1). If the displayed modified CV ratio is 2:1 or greater, the defender will be forced to retreat.

Note that for the Soviet player as attacker, if the actual modified CV ratio is greater than 1:1, due to Soviet attack doctrine, one level will automatically be added to their side of the ratio. For example, a 1.5:1 ratio will become 2.5:1 for determining the winner.

The attacking force will win the battle if the defenders are forced to retreat. The defenders will win the battle if they hold their ground.

(v1.05.18)

The Soviet attack doctrine discussed in section 15.8 of the manual now only applies from June 1941 to February 1942 (inclusive).

(v1.08.00)

Added the ability to alter "Soviet Combat Odds" special rule (see 15.8) in the game options screen. Besides remaining as is, it can be now reversed to give defensive odds shift or turned off completely.

(15.8.1) Factors Influencing Modified Combat Value

There are many factors that go into determining the modified combat values used in deciding the winner and loser in a ground battle.

One of the most critical is the leader combat (mech or infantry) rating check. A successful check can result in the CV of the combat unit being doubled. Several failed checks can result in the CV being halved. As with other leader checks, a failed check by one leader will allow the next leader in the chain of command to attempt a combat rating check, albeit at a reduced chance of success.

Other factors that impact the modified combat value include battle losses, the fortification defense modifier (possibly reduced due to attacking engineers), type of attack (hasty attacks halve the overall CV), command battle modifier, leader and unit morale, leader initiative and admin ratings, ground element experience and fatigue, supply status (severe penalty possible if units are isolated), vehicle shortages for attackers and defending reserve units, and effect on fighting in an urban hex for AFV/combat vehicles (halved) and infantry (doubled).

Units that have no hex to retreat to and that are not in an undamaged port may have their CV divided by 10 (depends on unit morale).

Game Play Info: The Soviet ability to force a retreat at a 1:1 modified combat ratio may seem a huge advantage, but remember that the attack doctrine that allows this also normally results in lower final CV due to more exposure to defensive fire causing additional casualties. Also recall the multiplying impact of fort levels on defensive CV and the fact that engineer ground elements can reduce man made fort levels during the battle. For the Soviets, getting those sappers in action is the only way to reduce fort levels if the defender is not forced to retreat and can make the difference in reaching the elusive 1:1 ratio. An Axis attack that, gets close, but no cigar, to that 2:1 CV ratio required to win still has chance of reducing fort levels, which will be further enhanced if engineers are participating. Bottom line - make sure you have some engineers in the attack force if you are going up against hexes with high man made fort levels!

(v1.03 Beta 3)

Made an adjustment to the section 15.8.1 rule in the rules addendum regarding units that have no hex to retreat to. Originally this rule never applied to units with a morale of greater than 75. Now it never applies to units with a morale greater than 60. Also, the chance of this happening to qualifying units has been reduced.

(15.9) Effect of Defender Retreat Result

When Defending combat units are forced to retreat, each unit first suffers retreat attrition (15.11). Ground elements in the unit have a chance of being damaged or destroyed, and some ground elements may be captured, with damaged ground elements being much more likely to be captured.

Next, each unit must check to see if it shatters or routs.

A unit that is in Supply and forced to retreat may shatter at the conclusion of the combat instead of retreating if it is extremely weak due to a combination of low morale, experience and TOE percentage and is no longer considered a viable combat unit.

A unit that is already routed may shatter if in a hex that is attacked and forced to retreat (15.9.2).

A combat unit that is in supply and forced to retreat will rout at the conclusion of combat if the final combat value odds ratio is greater than the morale of the unit. The exception is that if a unit has a valid hex to retreat to, then it will not be susceptible to a rout as long as it passes a check where the unit Morale is greater than or equal to $40 + \text{Die}(15)$. This means that units with morale that is 55 or greater will never rout.

Units that rout will perform a displacement move instead of a normal retreat.

Ground elements from units that shatter or surrender may be captured, may escape or, if Soviet infantry or cavalry squads, may form a partisan unit.

Ground elements that escape are returned to the production pool and will be listed as escaped in the battle tab of the commander's report.

Axis units that shatter or surrender will attempt to reform (18.1.1.2).

Soviet units that shatter or surrender are permanently destroyed.

Isolated combat units that shatter suffer the effects of surrendering instead of the effects of shattering.

Units that retreat or rout are automatically taken out of reserve mode.

(v1.06.11)

The limitation that a unit will not be eligible to rout if it passes a check where its morale is greater than $40 + \text{Die}(15)$ is now $40 + \text{Die}(30)$ for any brigade or regiment sized unit that is defending alone in a battle (no other units in the hex or committed from reserve are participating in the battle).

(15.9.1) Defender Retreat Path Priorities

Defending units that have not shattered or routed will then attempt to retreat to a friendly controlled hex using the following priorities:

Retreating units will tend to retreat to hexes not adjacent to enemy units.

They will try to avoid retreating into an over stack condition (i.e. a hex that already has three friendly units), but if they do, they must continue to retreat and take additional retreat attrition losses for each additional hex that they retreat through.

Retreating units tend to retreat to hexes that cost fewer MPs to reach, have rail lines, have fort levels and contain fewer friendly combat units.

Retreating over unfrozen minor river hexside causes double retreat attrition, while retreating over an unfrozen Major river hexside causes triple retreat attrition.

At the conclusion of the retreat, the retreating unit suffers retreat attrition once for each adjacent hex that contains an enemy combat unit.

(15.9.1.1) Isolated Units Retreat Results

An isolated unit (15.12) that ends its retreat adjacent to an enemy unit will surrender if $\text{Die}(50)$ is greater than the morale of the unit.

Units that are isolated or in beachhead supply status will surrender if they have no permissible hex to which to retreat.

Fortified Regions and Zones that are forced to retreat will always surrender.

Combat units that are in supply will rout if they have no permissible hex to retreat to.

Note that units cut off in the opposing players turn don't gain isolated status until the next player's turn in the logistics phase.

(15.9.2) Effects of Shattering

When a unit shatters, it is considered destroyed and removed from the map. Ground elements in the unit are affected as follows:

- Damaged ground elements are captured.
- Undamaged ground elements may be captured depending on their experience, the distance from their unit to an in supply friendly unit, and whether their unit is completely surrounded by enemy controlled hexes (If $\text{Rnd}(60 + \text{range in Hexes to an in supply friendly unit}) > \text{experience of ground element} + \text{Rnd}(200^*)$, the ground element is captured. *this value is 100 if the unit is completely surrounded by enemy controlled hexes).

- If a ground element is not captured, and it is a Soviet infantry or cavalry squad, then there is a chance the unit will become a partisan squad in a newly created partisan unit.
- If the ground element is not captured and does not become a partisan squad, then the ground element's AFV/Combat vehicles, devices and manpower are returned to the appropriate production pools

(v1.06.11)

The chance of men in shattering units being captured has been increased (by at least double).

(15.9.3) Effects of Surrender

When a unit surrenders (whether due to combat or in the logistics phase due to isolation) it is considered destroyed and removed from the map.

Ground elements in the unit are affected as follows:

- Damaged ground elements are captured.
- Undamaged ground elements may be captured depending on their experience and the distance from their unit to an in supply friendly unit (If Rnd (120+range in Hexes to an in supply friendly unit) > experience of ground element, the ground element is captured).
- If a ground element is not captured, and it is a Soviet infantry or cavalry squad, then there is a chance the unit will become a partisan squad in a newly created partisan unit.
- If the ground element is not captured and does not become a partisan squad, then the ground element's AFV/Combat vehicles, devices and manpower are returned to the appropriate production pools

(15.9.4) Effects of Routing

When a combat unit routs, it has its CV set to zero and then the unit performs a displacement move (15.10).

Routed units may move but may not move adjacent to an enemy unit unless stacked with a friendly combat unit.

Routed units do not participate in combat, but if part of a stack that is attacked and is forced to retreat, the routed unit will be shattered.

Routed units do not have a ZOC and will not gain control of adjacent unoccupied enemy hexes.

Routed units are forced to make a displacement move if they are alone in a hex and are next to an enemy unit (if the routed unit is isolated, it will shatter).

Routed units do not receive replacements.

Support units don't remain routed, but do take retreat attrition and displace if the unit they are attached to routs.

(15.9.4.1) Rallying Routed Units

Each turn during the friendly logistics phase a routed unit will attempt to pass a range test to its HQ in which Rnd (range to the unit's HQ) must be less than 6. If this test is passed then the leader of the HQ unit attempts to rally the unit with a morale rating check.

There is a twenty percent chance that when an NKVD regiment (not division) rallies, it will be automatically disbanded.

There is also a twenty percent chance that Soviet tank divisions that rally will either be disbanded and returned as a reinforcement Soviet tank brigade per section 18.1.1.1 (if prior to September 41) or immediately converted to a tank brigade (starting from September 1941 until the end of 1941).

(v1.05.53)

In order for a routed unit to rally, the range test to its HQ must be less than 6, not 2. All HQ's in the unit's change are tested, and if any passes this test, then a normal leader morale check is made to determine whether the unit rallies.

(15.10) Displacement Moves

A displacement move is a special type of movement by non-phasing combat units that have been routed or zero CV units that find themselves adjacent to an enemy combat unit. There are several conditions that cause a unit to make a displacement move:

- A combat unit routs following a retreat result after combat
- A unit with zero CV finds itself adjacent to an enemy unit while not stacked with a friendly, non-depleted combat unit. This would include HQ units, on-map construction support unit, or a depleted or routed combat unit
- In some cases when a unit with a zero CV is part of a stack forced to retreat due to combat.

(v1.05.63)

Friendly non combat units (HQs and air bases) and routed units will no longer displace automatically during their movement phase. These units will be outlined in red as a warning, and will displace automatically in the next logistics phase if they are still next to an enemy unit and not stacked with a unit with a positive CV.

(15.10.1) Displacement Move Procedure

A unit performing a displacement move takes retreat attrition, and then will displace to the hex containing the HQ unit to which it is attached, or to a hex adjacent to its HQ unit.

The displacing unit cannot move next to an enemy unit if there is no friendly combat unit in the hex.

If it is not possible to displace to or adjacent to its HQ unit, or the HQ unit is greater than 10 hexes away, then the unit will displace to a nearby town, city or urban hex, generally to the east for Soviet units and to the west for German units.

A unit will not displace to a hex that has a non-isolated enemy unit within two hexes.

Units will not displace to an isolated town, city or urban hex or HQ unit unless the unit is already adjacent to the HQ unit.

(v1.03 Beta 3)

Units that rout may only move to cities/towns that are less than 24 hexes away and which are on a linked rail line or are a linked port. If they are unable to rout move to a valid HQ or city/town, they will surrender.

(15.10.2) Air Base Displacement

If an Air Base unit is required to displace, all the damaged aircraft in their attached air group units are automatically destroyed. Ready and reserve aircraft are considered to have been able to fly out prior to the displacement.

The ground elements contained in the air base unit suffer normal retreat attrition.

(15.10.3) Isolated Unit Displacement

Isolated combat units will shatter if forced to displace.

Isolated non-combat units performing a displacement move will suffer double retreat attrition but they can displace to a location where they are no longer isolated. This represents the fact that the assets of a non-combat unit, such as headquarters units, can be spread over a very large area and many of them would not actually be trapped when a pocket is formed.

(15.11) Retreat Attrition

When a unit retreats or displaces, it suffers retreat attrition, which can result in some of its ground elements becoming damaged, destroyed or captured. The extent of retreat attrition is based on the unit's current morale and the experience and fatigue of the unit's ground elements. Units with higher morale and ground elements with higher experience and lower fatigue will suffer less from retreat attrition.

Damaged ground elements are even more likely to be captured, dependent on their experience and whether the unit has a support squad ground element shortage. Damaged ground elements can also have their equipment destroyed while the manpower in the ground element is classified as disabled.

Generic organic vehicles can be damaged or destroyed as a result of unit retreat attrition.

Units that are forced to retreat across a river hexside will suffer double the normal retreat attrition for a minor river and triple the retreat attrition for a major river.

(15.12) Isolated Units and Hexes

Units and unoccupied friendly hexes are isolated if they cannot trace a path of 100 MP to a supply source (20.2). Units cut off in the opposing players turn don't gain isolated status until the next player's turn in the logistics phase.

Isolated combat units will not rout, but will surrender instead.

Isolated headquarters units will undergo a displacement move (15.10). Players who desire to remove headquarters units from a pocket of isolated units rather than wait for the enemy to displace them can voluntarily relocate the HQ unit during their action phase (7.6.5).

Isolated units are limited to building fortification levels to no more than fort level two.

(v1.05.18)

Admin and Initiative checks are twice as hard to make for isolated units.

(v1.05.63)

Isolated on map units can now be reassigned only to HQs inside the pocket with them, and only if within 100 MPs. Previously, no on map units could be assigned to isolated HQs. Support units attached to isolated HQs can only be reassigned to other HQs in the pocket and within 100 MPs.

(15.12.1) Isolated Units Combat Value Penalties

Isolated units suffer a supply related CV penalty that is equal to the percentage of needed supplies (or fuel for motorized units) times the percentage of needed ammo.

In addition, when calculating the modified CV ratio to determine whether a defender will be required to retreat, isolated defending units may have their CV divided by ten if they fail certain checks based on their morale, and the distance to the nearest supplied friendly units.

However, when defending units are in a hex with a defensive fortification modifier of five or greater (terrain plus fort level), then the above CV penalty does not apply. Instead, they undergo a check based on the defensive fortification modifier and their morale that may result in their CV being halved (CV halved if (random(25))/fort level is greater than random (unit morale)).

(v1.03 Beta 3)

Isolated units will fire only $\frac{1}{4}$ as much as they would if they were not isolated in order to save ammunition.

(15.13) Captured Equipment

AFV, combat vehicles and guns (devices that are named gun, usually individual ground weapons of 20mm size or greater) from other types of ground elements (e.g. artillery) can be captured as a result of a unit being forced to retreat or conduct a displacement move.

Units that shatter or surrender have a greater chance of having equipment captured along with the manpower in the ground element.

Captured equipment is placed in the "captured" production pool (21.3) and may be used to equip applicable ground elements when a sufficient quantity has been captured.

(15.14) Captured Supplies and Fuel

The retreat or displacement move of any unit may result in the capture of supplies and/or fuel. The captured material will be added as damaged supply or fuel depots to the HQ unit to which the combat unit that caused the retreat or displacement move is attached.

A text message will display in the map area whenever enemy material is captured.

Air Rules

(5.3.5) Air Recon Mode

Details: To conduct air recon missions one target hex at a time, the player first has the option of selecting a specific staging base for the mission by left clicking on a hex with an air base. If the player does not select a staging base, the computer will automatically assign one for the mission.

Right click on the desired enemy target hex. The computer will automatically select air group units and conduct the air recon mission.

(5.3.6) Bomb Unit Mode

Details: Only combat and headquarters units with a detection level greater than zero are eligible to be attacked.

Selecting bomb unit mode will red-shade all hexes with eligible ground units.

The player first has the option of selecting a specific staging base for the mission by left clicking on a hex with an air base. If the player does not select a staging base, the computer will automatically assign one for the mission.

For semi-automatic missions, right click on the desired enemy target hex. The computer will automatically select air group units and conduct the bomb unit mission.

For manual missions, Shift-right click on the desired enemy target hex. The 'Pick Air Units for Mission' window will display. Use left click to select or deselect air group units as desired and left click the 'Launch' button to conduct the bomb unit mission.

Note that a day or night bomb unit mission can only be conducted as an air group unit's first mission of the phase.

(5.3.7) Bomb Airfield Mode

Details: There are two methods for the player to conduct bomb air field missions' one target hex at a time. In either case, the player first has the option of selecting a specific staging base for the mission by left clicking on a hex with an air base. If the player does not select a staging base, the computer will automatically assign one for the mission.

For semi-automatic missions, right click on the desired enemy target hex that contains an airbase unit. The computer will automatically select air group units and conduct the bomb airfield mission.

For manual missions, Shift-right click on the desired enemy target hex with an air base unit. The 'Pick Air Units for Mission' window will display (5.4.29). Use left click to select or deselect air group units as desired and left click the 'Launch' button to conduct the bomb airfield mission.

Note that a night bomb airfield mission can only be conducted as an air group unit's first mission of the phase.

(5.3.8) Bomb City Mode

Details: Selecting bomb city mode will remove all units from the map area and red-shade all hexes with eligible towns, cities or urban areas.

There is only one method for the player to conduct a bomb city mission against a target hex. The player first has the option of selecting a specific staging base for the mission by selecting a hex with an air base unit. If the player does not select a staging base, the computer will automatically assign one for the mission.

For all missions, right click on the desired enemy target hex. This will bring up the 'Pick Target' Window. Left click on the specific factory type to be bombed. The 'Pick Air Units for Mission' window will then display (5.4.29). Select or deselect air group units as desired and select the 'Launch' button to conduct the bomb city mission.

Note that a day or night bomb city mission can only be conducted as an air group unit's first mission of the phase.

(5.3.9) Air Transport Mode

Air Transport mode can be used to conduct three types of air transport missions; airdrop of supply, air transport of non-motorized combat units to or adjacent friendly air base units, and airdrop of airborne type regimental/brigade size combat units (16.3). When air transport mode is selected, only air base units with aircraft capable of performing air transport missions will be bordered in yellow.

Night air transport mission can only be conducted as any eligible air group unit's first mission of the phase.

In addition, non-transport air group units can only conduct a day or night air transport mission as the first mission of the phase.

(v1.06.22)

Air transport missions may only be flown by air groups that are located on airbases within 5 MPs of a supply source (rail net).

(v1.07.11)

Air transport of fuel and supplies is changed as follows:

- 1) Level bombers may not transport fuel
- 2) Only 25-75% of supplies are dropped successfully, while only 16-50% of fuel is dropped successfully (was 33-100% for both)
- 3) Hexes that contain or are adjacent to a friendly air base unit (that is in a valid hex for air operations) will receive all of the supplies and fuel that are dropped (no drop attrition as stated in item 2 occurs)

(5.3.9.1) Air Drop Supply to Friendly Units

The player first has the option of selecting a specific staging base for the mission by selecting a hex with an air base unit. If the player does not select a staging base, the computer will automatically assign one for the mission.

For semi-automatic missions, right click on the desired friendly target hex with a friendly unit. The computer will automatically select air group units and conduct the air drop supply mission.

For manual missions, Shift-right click on the desired target hex with a friendly unit. The 'Pick Air Units for Mission' window will display (5.4.29). Select or deselect air group units as desired and select the 'Launch' button to conduct the air drop supply mission.

(5.3.9.3) Air Drop Airborne Combat Units

Details: There is only one method to conduct the airdrop of an airborne combat unit.

The combat unit must begin the process in a hex stacked with a friendly air base unit.

While in movement mode (F1), select the combat unit to be transported for airdrop. Immediately select air transport mode (F9). The air base unit stacked in the hex with the unit to be transported for airdrop becomes the staging base and will be bordered in blue. Air base units with air group units capable of participating in the air transport mission will be bordered in yellow. Next, Shift-left click on the target hex. The 'Pick Air Units for Mission' window will display (5.4.29). Select or deselect air group units as desired and select the 'Launch' button to conduct the airdrop airborne combat unit mission.

Note that the number of 'Max Sorties' must at least equal the number of 'Required Sorties' for the air group units selected to conduct the mission as displayed in the 'Pick Air Units for Mission' window.

(v1.06.11)

To airdrop a unit, now you must go to air transport mode and then left click on the hex containing the airbase and airborne unit. Make sure the airborne unit(s) you wish to drop are selected in the unit bar. Next, shift-left click on a hex near the airfield. This will cause the pick air units mission window to be displayed. Close this window and you will now see the hexes where you may conduct an airdrop lit up, while those that are not possible will be displayed in. Shift-left click on the hex you wish to drop the airborne unit and the pick air unit's mission window will appear. Due to some issues with the interface, the only way to indicate the valid hexes to airdrop in is to click on a valid hex. If you click on an invalid hex it will not bring up the air window nor will it indicate the valid hexes. This is why we suggest you click somewhere near the airbase. Whenever the air window appears, you can execute the air drop. It is important that you select the airborne unit after you have entered air transport mode (previously the airborne unit was supposed to be selected while still in movement mode).

(5.3.10) Air Transfer Mode

Details: To transfer air group units between friendly air base units while in air transfer mode (F10), the player first selects an air base unit, which will bring up the list of air group units attached to the air base unit in the unit bar

(5.2.3). Next select the air group units to be transferred by left clicking on the far left side of the rectangular unit box that contains the applicable air group unit's name. This will display a small unit icon from the air base unit the air group units are attached to as verification that the air group unit has been selected. The air group unit can be deselected by left clicking on the applicable air base unit icon in its rectangular unit box, which will also remove the air base unit icon. Finally, right click on the air base unit to transfer the selected air group units.

The target air base unit must be in range of the air group units and the transfer cannot violate the maximum of nine air group units attached to an air base unit.

An air transfer mission can only be conducted as an air group unit's first mission of the phase and no air transfers can be conducted as night missions

(5.4.18) Air Group Unit Detail Window

Manual: Displays list of aircraft models and number of that model that to which the air group unit could possibly upgrade or downgrade, with number of aircraft in the production pool in parentheses. Aircraft models in blue text with link are currently available for change out, which will occur if link is selected (8.1.5).

(5.4.19) Select Air Group Unit From National Reserve

This window is accessed from the air base unit detail window ASSIGN link (5.4.17) and displays a list of air group units in the Strategic National Reserve as well as allowing the player to transfer them to air base units.

Information provided includes the air group unit designation, current experience level (EXP), number of ready aircraft (RDY) in the air group unit, total number (TOT) of aircraft in the air group unit, the model number of the aircraft in the unit (i.e. HE-111), and the aircraft type (i.e. Level Bomber).

Selecting the air group unit designation will transfer it to the selected air base. The list can be sorted by EXP, RDY, and TOT. Selecting TYPE brings up a aircraft type filter that allows the player to display all, none or specific types of aircraft in the reserve.

(8.1.1) Air Group Unit Aircraft Status

Damaged aircraft require repair and are unavailable to fly, but do count against the maximum number of aircraft allowed by the group type.

Reserve aircraft are categorized as unready and do not fly in air missions, but are considered flyable if the air base unit their air group unit is attached to undergoes a relocation (7.6.5) or displacement move (15.10). Reserve aircraft are not counted against the maximum number of aircraft in the unit, but may be re-designated as ready aircraft during the logistics phase if the number of ready and damaged aircraft is below the maximum number of aircraft allowed in the unit.

If the number of ready aircraft in an air group unit exceeds the maximum number allowed, aircraft designated as reserve in the air group detail window will automatically be sent back to the applicable production pool over a number of logistics phases, while the excess ready aircraft will be moved to the reserve designation over a number of logistics phases.

(v1.05.18)

Damaged aircraft which were not repaired during the logistics phase can be written off (destroyed). Older aircraft with low durability and low reliability have a greater chance of being written off.

(8.1.5) Air Group Unit Aircraft Model Upgrade/Downgrade and Swaps

Dependent on the availability of aircraft models in the production pool, air group units may change to a different model aircraft during the aircraft segment of the player's logistics phase (4.2).

In the upgrade sub-segment, the air group unit may upgrade in accordance with its current aircraft upgrade path as listed in that aircraft model's city production list window (5.4.4). It may also downgrade to older aircraft (21.1.9.1).

In the swap sub-segment, the air group unit may change out the existing aircraft model with an aircraft model of the same functional type (8.1.4), but not necessarily along the upgrade/downgrade path. For example, a Yak 1 is a fighter aircraft that upgrades to the Yak 1B and downgrades to the I-16 Type 18 fighter. In the swap sub-segment, however, an air group unit with Yak 1B aircraft may be changed out to another fighter functional type, such as a La-5, or a lend lease Hurricane IIB aircraft,

The computer will only swap out aircraft in air group units that have less than 50 percent of maximum aircraft allowed, with the lower the percentage below 50, the higher the chance for an aircraft swap. Once again, these changes are dependent on the availability of numbers of different models of fighter aircraft in the production pool.

(8.1.5.1) Manual Aircraft Swaps

Players have the option to manually change (swap) the aircraft model through an air group unit's detail window (5.4.18), with possible aircraft models listed when the "CHANGE" link has been toggled from "Automatic" to "Manual" and models available for change out highlighted in blue and selectable.

Changing the aircraft model in an air group unit will expend one admin point, reduce the air group unit experience level by two and may result in up to thirty percent of the new aircraft becoming damaged.

Manual aircraft swaps are not allowed on turn one of any scenario.

The air base unit to which the air group unit is attached must be located at least three hexes away from a supplied enemy unit.

The change out cannot occur unless the number of desired aircraft in the production pool is at least fifty percent of the max number of aircraft allowed for the air group unit.

The air group unit cannot have flown any missions yet in the turn and will be unable to fly any missions after the change out.

(8.2) Air Base Units

Air base units consist of only two types of ground elements, support squad ground elements and anti-aircraft guns.

Air base units will have a better chance of repairing damaged aircraft if they have more support squad ground elements assigned than their support need.

(8.2.1) Air Base Unit Attachment Restrictions

Air base units cannot have more than nine attached air group units of any size.

Note there is no limit to the number of air group units that can be assigned to a country's national air reserve (8.4).

Air base units can only attach air group units of their own nationality.

With one exception, air base units can only attach to air headquarters units. The Germans have Luftwaffe air base units and army air base units, the latter whose air group units are used to conduct recon air missions. Each German Army headquarters unit has an attached army air base unit that cannot be transferred to any other headquarters unit.

Air Base units must be located in a clear, city or light woods hex in order for their attached air group units to conduct any air missions.

(v1.07.07)

Only recon air groups may be transferred to German Army Airbases. No air groups may be assigned directly from the National Reserve to German Army Airbases.

(8.2.3) Disbandment of SAD Air Base Units

After 01 February 1942, there is a fifty percent chance that SAD (composite air division) air base units will be disbanded at a rate of not more than three per turn. Attached air group units in disbanded SAD air base units will be automatically transferred to the Soviet national air reserve.

(8.3) Air HQ Units

Air headquarters units fulfil the same function as other headquarters units with the exception that they cannot attach any combat units and the only support units that can be attached to air headquarters units are anti-aircraft support units.

In addition, there are no limits or penalties related to the number of air base and other air headquarters units that can be attached to air headquarters units.

(v1.05.59)

Air HQ will share their support for ground elements at air bases under their control.

Note: Air HQs have never provided support for aircraft at airbases under their control.

(8.3.1) Air HQ Units Attachment Restrictions

With the exception of German army air base units, all other air base units can only be attached to air headquarters units (8.2.1).

German Fliegerkorp air headquarters units can only attach to German Luftflotte headquarters units or Army Group headquarters units.

German Luftflotte air HQ units can only attach to Army Group headquarters units.

Axis Allied air HQ units can only attach to Army Group headquarters units of the same nationality. There are two exceptions. The Slovakia Air Command starts attached to Army Group South and cannot change, while Finnish Air Command starts attached to Finnish 1st Army and also cannot change its attachment.

Soviet air headquarters units can attach only to Front and Military District headquarters units.

(8.4) National Air Reserve and Air Group Unit Transfer

Each country's national air reserve simulates the network of training and repair facilities well behind the lines that prepare new air group units and build back up old air group units worn out due to heavy losses.

Since air group units can only be attached to air base units of their own nationality, accessing the Axis national reserve will only bring up the list of air group units of the same nationality as the currently selected air base unit.

The air unit tab of the Commander's Report (5.4.9) lists the location of all of a particular side's air group units, to include those in the various Axis national air reserves.

(8.4.1) National Air Reserve Restrictions

Air group units transferred to the national air reserve will not be listed in the national air reserve display until the following turn and thus cannot be transferred back to an air base unit in that same turn.

Air groups that have conducted any missions in the current turn may not be transferred to the national reserve. Air groups transferred from the national reserve to an air base unit will be unavailable to conduct any missions during the turn they are transferred.

(v1.05.18)

Added a chance that aircraft can be damaged or destroyed when an air group is transferred from one base to another, or whenever an air base moves.

(16.1) General Air Mission Rules

Air group units cannot conduct air missions unless the Air base unit they are attached to is located in a clear, city, urban or light woods hex.

(16.1.1) Air Group Unit Miles Flown

There are several factors that determine how many missions and what type a particular air group unit can conduct during a turn.

An air group unit can only fly a certain number of miles per turn based on its cruise speed (5.4.18) and current unit morale.

The miles flown is tracked and displayed in the air base unit detail window (5.4.17) in parenthesis next to the air group unit name as both actual miles flown and percentage of available miles flown.

An air group unit can continue to fly missions if miles travelled are less than cruise speed times **10+ (morale/4) + (experience/4)**.

(v1.05.53)

Added group experience into the equation that calculates the max miles the air group can travel and reduced importance of morale. It was changed from 10+ (morale/2) to 10+ (morale/4) + (experience/4).

(16.1.1.1) Air Base Unit MP and Air Group Unit Miles Flown

There is a relationship between air group unit miles flown and air base unit on-map movement. As air group units fly missions and their miles flown increase, this can cause the air base unit to expend movement points. Likewise, as an air base unit moves and expends movement points, this can also result in air group units attached to the air base unit expending miles flown.

An air base unit will never have more than 75 percent of its MPs expended due to the activities of the air group units attached to the air base unit. An air group unit will never have more than 75 percent of its potential flyable miles expended due to the movement of the air base unit.

(16.1.2) Individual Aircraft Abort and Operational Losses

There are many factors that impact how many aircraft from an air group unit will actually fly on a particular mission. Missions where fewer than 100 percent of an air group unit's ready aircraft participate will be common occurrences.

The probability of mission aborts by individual ready aircraft will increase as the miles flown by their air group unit's increase.

Air group units conducting their first mission of the turn will have a higher probability of having all ready aircraft participate.

The mileage flown by an air group unit will be modified based on the number of ready aircraft in the air group unit that actually flew the air mission. For example, if 80 percent of an air group unit's ready aircraft flew a 360 mile mission, then the actual mileage cost would be 288 miles.

Individual aircraft may also become damaged or destroyed operational loss) during the course of a turn based on factors to include aircraft reliability (9.6).

(16.1.3) Air Mission Staging Bases

With the exception of air transfer and automatic air interception missions, all air missions, to include automatic interdiction and ground support, will have a player or computer selected staging base. This is an air base unit that all air group units participating in the air mission will first fly to before heading to the target hex of the air mission.

The miles flown by an air group unit will be calculated from its original air base unit to the chosen staging base and then to the target hex, with the return from the target hex being determined in the same manner.

Thus the use of a particular staging base to "extend" the range of an air group unit is likely to have a cost in increasing the total miles flown by that air group unit for that mission.

(16.1.4) Graphical Depiction of Air Missions

The execution of air missions is graphically depicted on the map using lines with the following colors:

- Black - Air group units flying to staging base
- Red - Air Strike flying from staging base to target
- Green - Enemy air group units flying to target for interception

(16.1.5) Air Missions and Weather Impact

Whenever an air mission is attempted in bad weather, defined as mud, snow and blizzard, there is a chance it will be scrubbed and not take place.

If the air mission is scrubbed, the air group unit's miles flown will be increased by one, which will prevent the unit from flying the air missions that require that no missions were flown earlier in the turn (16.3.1).

With the exception of Finland, all Axis air group units will suffer the full effects of weather. Soviet and Finnish air group units will have less chance of suffering weather effects.

Air missions attempted in snow and mud have a forty percent chance of being scrubbed.

The probability of a scrubbed mission increases to eighty percent during blizzard weather.

If the air group unit does conduct the air mission, the distance flown will be multiplied by four in blizzard conditions and by two in mud or snow conditions.

The number of individual aircraft aborting will also increase in bad weather, with blizzard conditions making it twice as difficult to fly as snow or mud.

(16.1.6) Day and Night Missions

Most air missions are conducted during daylight; however, bomb unit, bomb airfield, bomb city, air transport, and interception air missions can be flown at night by air group units that have night missions enabled in their detail window (5.4.18).

Air group units set to perform night missions will only fly night missions if the player toggles the day/night button (default is day) on the mode toolbar to night (5.1.4). Air group units default to daytime missions unless they are specifically designated as night air group units. For example, all night fighter units have been defaulted to fly night missions when they enter the game. Players need to ensure that night missions are set up properly as there is no message text that warns that a night mission cannot be conducted because the night mode button has not been toggled properly.

An exception is night air drops to partisans (17.1), which is handled automatically by the computer, though the air group units that the Soviet player desires to conduct this mission must still be set to perform night missions.

(v1.03 Beta 1)

Air groups may now shift between Day and Night missions even if they have flown or moved during the turn.

(16.1.7) Fighter Bombers

Fighter Bombers (FB) can be assigned to fly either Fighter Missions or Bomber Missions in the air group unit detail window by selecting the "Type Missions:" link (5.4.18). It costs one admin point to change a FB air group unit's mission setting. The setting determines whether they are available for escort duty or to bomb targets. If set to bomber missions, they will show up with a Fighter Bomber -B in the pick air units window (5.4.29) to indicate they are going to be bombing (otherwise they are fighter escorts).

The air group unit detail window lists whether the unit is trained as a Fighter or Bomber unit. If they are performing a mission they are not trained for, they will be less effective (considered to be at half experience).

(v1.04.10)

Changing the Mission setting for a Fighter Bomber group no longer costs AP points (used to cost 1 AP).

Player's should realize that groups flying missions in a role they are not trained for will be flying at a major disadvantage.

(16.2.1) Air to Air Combat

The goal of intercepting fighter air group units will normally be to engage the mission air group units, though they may have to fight their way through the escorting fighter air group units to do so.

Air group units from both sides that suffer losses may break off and return to their air base unit during air to air combat.

The aircraft in air group units will engage in combat with each other using their equipped devices such as machine guns, cannon, and air to air rockets. The ability to hit will depend on the aircraft devices and characteristics such as maximum speed, climb rate, and maneuver.

Aircraft that are hit may be damaged or destroyed, depending on the lethality of the attacker's fire and the defending aircraft's armour and durability rating.

Fighter versus bomber combat will be more lethal to the bombers.

A Fighter air group unit's ability to engage other air group units will decrease based on the distance flown (in hexes) relative to their range, which is calculated as aircraft radius divided by ten, resulting in fewer enemy aircraft being damaged or destroyed during a lengthy mission.

(16.2.2) Anti-Aircraft Defense

During the resolution of an air attack, anti-aircraft support units attached to headquarters units can in some cases provide anti-aircraft support for the headquarters unit as well as any on-map unit that is attached directly to that headquarters unit. This support will happen if the HQ is within 5 hexes of the on-map unit being supported, and the leader successfully makes an initiative roll.

An anti-aircraft support unit is limited to assisting only one unit during the resolution of any particular air mission, but could be involved in multiple separate air missions in a turn.

All enemy units that are flown over during an air mission will attempt to engage the air group units with their anti-aircraft ground elements and any anti-aircraft support units.

For all air missions except bomb city, anti-aircraft fire from the target hex will fire at three times the normal rate.

Anti-aircraft units attached to town, city or urban hexes (7.4.1) will fire at any air missions that fly into or through that hex.

AA units in town, city or urban hexes are more effective firing in defense of factories, and will fire at four times their normal rate at any bomb city air missions targeting their hex.

(v1.08.00)

Reworked strength of anti-air fire formula. Morale and ammo level of the unit, experience and fatigue of the ground element slots, as well as accuracy, range of fire and blast of the weapon are now included in it, rather than only the anti-air strength of the weapon.

This change will result in significantly lower Axis aircraft losses and higher Soviet aircraft losses.

(v1.08.00)

Made sure AA at night will be weaker. It has 10% of the original power.

(16.3) Air Missions

The phasing player conducts recon, bomb unit, bomb airfield, bomb city, air transport, air transfer, and fighter escort air missions as desired during their turn.

Ground support missions, to include fighter escorts, are automatically conducted by the computer based on air doctrine settings.

Fighter interception and interdiction air missions flown by non-phasing air group units are also automatically conducted by the computer based on air doctrine settings.

The computer also conducts air transport missions to air drop supply and ground elements to Soviet partisan units during the Soviet logistics phase.

(v1.03 Beta 3)

The undo command will no longer work once an air mission has been flown. This prevents a player moving an air base, using it as a staging base for a mission and then undoing the air base's move.

(v1.03)

Introduced a new kind of battle called Interdiction that can be shown on the Commander's report list of battles and also as on map battle sites. Friendly interdiction attacks are not cleared at the start of the logistics phase, so you can now view the interdiction attacks that occurred during your opponent's turn.

(v1.04.10)

Units from different Luftflotte's or Air Armies will not participate in the same air mission.

(v1.05.18)

Added a chance that some fighters will be allocated to fly fighter sweeps along with any airstrikes that are ordered. They will fly as part of the original airstrike and combat with this fighter sweep will be resolved with the original airstrike (i.e. it will seem like one mission is being flown, but in reality there are two distinct actions taking place, the bombing raid and the fighter sweep). The higher the escort setting, the greater the chance that a fighter sweep will be flown.

Made it less likely that air strikes will be formed with over 100 fighters or over 100 bombers.

(16.3.1) Limits on Conducting Air Missions

Certain missions may not be flown once an air group unit has flown any missions, to include air transfer missions, or had its air base move. In these cases, the mileage display next to that air group unit in the air base unit detail window will be greater than zero.

Whenever the mileage flown is greater than zero, an air group unit may not participate in a daytime Bomb Ground Unit, Bomb City, or Air Transfer missions, and may not participate in a night-time Bomb Ground Unit, Bomb City, Bomb Airfield, or air transport mission.

In effect, air group units may only perform one of these missions per turn, and only if done before they have done anything else.

All other missions can be flown multiple times in any order as long as the air group unit conducting the mission has enough mileage remaining.

(v1.05.53)

In order for an air unit to participate in a daylight airfield attack mission, it must have flown no more than 1/3 of its available miles.

(v1.08.00)

Each airbase will try to keep at least 500 tons of fuel, 100 tons of ammo and 50 tons of supplies (reduced proportionally by MAX TOE setting) to limit the movement of supplies back and forth (which increased vehicle usage and vehicle damage) when aircraft are moved in or out the airbase.

For level bombers and transport aircraft this will be not enough, so players are advise to move them slowly, rather than en masse.

(v1.08.01)

Reworked formulas that determine how many supplies and fuel are required by air groups stationed in air bases.

Correct amount of extra supplies and fuel will now be requested by air groups using level bombers or transports, taking into account maximum effective cargo load instead of weekly consumption or sortie usage.

Transports will be prepared for up to 8 sorties with each resource, whereas level bombers for up to 4 sorties with supplies.

As a result, supply stocks in airbases with level bombers will increase many times over, while other stocks (and related truck usage) will decrease between 20% and 60%.

This should allow level bomber groups to participate in air supply missions more often, including those flying automatically from certain Soviet air bases to supply partisan units, while at the same time free a lot of trucks for other uses.

(16.3.2) Air Recon

Air recon missions are conducted to raise the detection level of on-map enemy units within three to four hexes of the air recon target hex, to include spotting enemy units that were previously undetected when Fog of War (FOW) is enabled.

Air recon missions can only be conducted by recon type air group units, and can be escorted by fighter air group units.

(16.3.3.1) Bombing Missions Against On-Map Units

Bombing attacks against on-map units can disrupt, damage, or destroy ground elements and reduce unit morale and ground element experience.

Attacks on air base units can also damage or destroy individual aircraft in attached air group units.

During bomb unit missions, each attacking air group unit will pick one unit, which must have a detection level (DL) greater than zero, as a target. Each unit in the hex has an equal chance of being targeted, so if multiple air group units bomb a target hex, multiple units are likely to get bombed.

(16.3.3.2) Bombing City Mission Target Selection

Whenever a bomb city bombing mission is executed the player must select a factory target type in the town, city or urban hex for the attack from the list provided. Only operational factories will be displayed on the 'Pick Target Type' list when bombing a city.

(16.3.3.3) Air Interdiction Missions and Restrictions

Air interdiction is conducted automatically by the computer against some moving units by the non-phasing player's air group units. Interdiction can result in destruction and damage to a unit's elements and a reduction in morale and experience, which will impact the unit's available movement point allowance.

Interdiction missions are much less likely against low detection level targets (13.1). A unit must have a DL greater than zero to be attacked by interdiction.

The chance of a unit being interdicted is based on the DL level multiplied by .1. For example, a unit with a DL2 will have a 20 percent chance of being interdicted, all other things being equal.

(16.3.3.4) Ground Support Missions and Restrictions

Ground Support is conducted automatically by the computer using air group units from both sides. Both attacking and defending air group units may be escorted, resulting in air to air combat as well as AA fire and air to ground combat.

Axis Allied air group units are limited to providing ground support to battles that involve at least one ground unit of their same nationality.

Soviet air group units are limited to providing ground support to battles involving combat units that are attached to a headquarters unit that is in a chain of command that ultimately reports to the same Front headquarters unit as the air group unit's air base unit chain of command. For example, the 5th Guards Rifle Corps combat unit is attached to the 39th Army HQ unit, which is in turn attached to the Kalinin Front HQ unit. Air group units conducting ground support mission in a battle involving the 5th Guards Rifle Corps must be attached to one of the air base units that is attached to the 3rd Air Army HQ unit, as it is the only Air Army HQ unit attached to the Kalinin Front.

Note that German air group units of different Army Groups will support each others units with ground support if in range.

(v1.02 Beta 1)

Less aircraft will be added to the battle if the pre-combat odds are heavily in the side's favor.

(16.3.3.5) Air Superiority Missions

There is no separate mode for conducting a mission consisting of fighter air group units attempting to engage enemy air group units in air to air combat. Players can approximate this type of historical operation by setting up a manual bombing mission and deselecting bomber air group units so that only fighter air group units conduct the mission.

Bomb airfield missions against air base units will usually be the most effective application of air superiority missions.

Note that in a situation where fighters are available and in range, but no bombers are available, players will be unable to set up a bombing mission since the computer won't allow a mission if there are no bomber air group units to initially include.

(16.3.4) Air Transport of Supplies and Fuel

Supplies and fuel can be airdropped to units by transport and level bomber air group units and this mission can be escorted by fighter air group units.

Level bomber air group units can only conduct air transport as their first mission during the phase and must be manually selected by the player to participate in such missions. Level bombers pay four times the normal miles flown when they fly air transport missions.

The player can choose to airdrop either supplies or fuel. If a unit being resupplied by air reaches 125 percent of a type of supply, the remaining supply delivered will be of another type.

German air transport missions cannot take place north of Leningrad.

(16.3.4.1) Partisan Air Resupply

The computer will automatically conduct night air transport missions to drop supply to Soviet partisan units during the Soviet logistics phase at the start of the Soviet turn. These missions are conducted by Soviet transport air group units (17.1).

Note that Air group units conducting partisan resupply are required to have night mission mode enabled (16.1.6).

(16.3.5) Air Transport of Units

The air transport of units from a hex with a friendly air base unit to a hex with or adjacent to another friendly air base unit can be conducted only by transport air group units with aircraft that have a maximum load rating (5.4.18) of at least 2000. The mission can be escorted by fighter air group units.

Any non-motorized unit may be transported, but only non-vehicle ground elements and smaller guns can be lifted.

Any unit lifted will expend all of its MP's. The eligible unit must have at least one movement point remaining and be located in the same hex as an air base unit, which will be used as the staging base.

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

Enemy interception of air transport missions can result in the damage or elimination of the non-motorized unit's ground elements.

Aircraft conducting the air transport mission that are aborted will return the ground elements they are carrying to the staging air base unit where they will be transferred per the above procedure.

(16.3.6) Air Dropping Units

The air drop mission will be conducted only by transport air group units with aircraft that have a maximum load rating (5.4.18) of at least 2000. The mission can be escorted by fighter air group units.

Regimental or brigade sized Airborne type combat units with an average experience level of at least forty can be air dropped into any hex vacant of enemy units within range of the transporting aircraft. The eligible airborne combat unit must have at least one movement point remaining and be located in the same hex as an air base unit, which will be used as the staging base.

When an airborne unit is airdropped, those ground elements that are not allowed to be air dropped will be transferred into units in or adjacent to the hex with the air base unit that the unit flew from. These ground elements will first be given to other airborne units, then to any other combat unit. If there are no eligible combat units, then the ground elements will be transferred back to the production pool. Any vehicles and excess supply will be transferred to the airbase unit that the airborne unit was stacked with prior to being air dropped.

Enemy interception of air drop missions can result in the damage or elimination of the airborne unit's ground elements.

Aircraft conducting the air drop mission that are aborted will return the ground elements they are carrying to the staging air base unit where they will be transferred per the above procedure.

(v1.06.11)

Airborne units may only be dropped within 8 hexes of a supplied friendly unit.

(16.3.7) Air Group Unit Transfer

Air group units can be transferred between air base units, if within range. They can also be transferred to and from the off-map national air reserve (8.4).

Air group units cannot use air transfer if their airbase has moved at all (or is frozen), or if the air group unit has flown any missions. Air Transfers should be done at the beginning of the turn.

(16.4) Air Doctrine

The air doctrine screen settings determine what, if any, priority will be given to the various types of air missions by the computer. It also determines that percentage of ready aircraft an air group unit needs in order to participate in any mission.

These settings can for the most part be overridden by the player by manually selecting air group units to participate in a mission, however, the settings are critical for missions, such as interception, interdiction, and Partisan resupply, where the computer always determines the air group units that will participate.

The percent required to fly setting is important, as air group units that do not meet the criteria will not be available even for manual selection by the player.

Air Doctrine settings over 100 are allowed, although for percent required to fly, anything over 100 would mean no air group units would be available, resulting in no air missions of any kind being conducted.

There are four types of air doctrine settings as follows:

Percent Required to Fly: Indicates the percentage of an air group unit's aircraft that must be ready for the air group unit to be able to participate in any mission. This percentage is based on the air group unit's TOE, not the current number of aircraft present with the air group unit. Any setting over 100 will result in no air missions being conducted.

Ground Support, Interdiction Attack, Ground Attack, Airfield Attack and City Attack: Determines the number of bombers that the computer will attempt to have participate in a ground support or strike mission as a percentage of what the computer would normally attempt to send.

For example, a setting of 50 results in the computer selecting air group units in an attempt to equal half the number of bombers it would select in a notional strike.

For ground support, interdiction attack, and interception air missions a setting of zero will result in these air missions not being conducted.

Note that If one side has ground support set to zero, but interception set to greater than zero, that side's fighters may fly interception missions against the other side's ground support.

Ground Support, Interdiction Attack, Ground Attack, Airfield Attack and City Attack Escort: Determines the number of escorts for a strike mission based on a percentage of the number of bombers in the mission. For example, at a setting of 50, the computer will select air group units in an attempt to have the number of escorts equal half the number of bombers.

Fighter and Night Fighter Intercept: Determines the number of intercepting fighters based on a percentage of the number of enemy aircraft attacking. For example, at a setting of 50, the computer will select air group units in an attempt to have the number of fighter aircraft intercepting equal half the number of attacking aircraft.

Reworked the rules for Interception Air Doctrine. Previously it was impossible to scramble more than 50-70 fighters, whether there were 100, or 200, or 300 incoming aircraft, regardless of doctrine settings. Sometimes higher doctrine setting could result in worse CAP than lower value.

Under new rules, the game will try to scramble as much as 50% of the number of incoming aircraft when set to 100, 100% when set to 200, etc. However it will be getting progressively harder to scramble more than 25%, 50% and 75% of the desired number of aircraft, with each step requiring to pass one leader air skill test.

Game Play Note: Between the number of aircraft in an air group unit and aborts due to reliability and other factors, the actual number of aircraft participating in a mission will seldom result in the exact ratios as set forth in the Air Doctrine settings.

(16.5) Determining Win/Loss For Air Missions

A win/loss (victory/defeat) situation occurs for air leaders when there is a point differential greater than 250 during an air mission. Points are scored for air and ground elements destroyed as follows:

Item Destroyed	Points Awarded
Per Man	1
Per Gun	5
Per AFV/Combat Vehicle	10
Per Bomber Aircraft	20
Per other Aircraft Type	10

Points are also awarded for damaging factories by multiplying the percentage of damage inflicted times the number of factory points of that type of factory in the target hex.

Soviet Partisan and Axis Garrison Rules

(17.1) Soviet Partisans

Partisans may either be inactive or active.

Partisans are first created as an inactive cadre unit. Cadre partisan units have a chance of being created whenever a Soviet unit is shattered or if minimum garrison requirements are not met in captured city or urban hexes.

Combat ready partisan units have a chance of breaking off a part of their unit to create another inactive cadre partisan unit, however, partisan inactive cadres and active partisan units may also be combined automatically in order to keep the number of these units to a reasonable level.

Cadre partisan units are shown to the Soviets but not to the German player (no matter what FOW setting is being used).

Inactive cadre partisan units are indicated by '#' next to the unit name on the right side unit bar.

(17.1.1) Partisan Night Air Supply

Soviet partisan units are supplied through night air transport missions conducted automatically by the computer during the Soviet logistics phase.

The computer will first utilize transport and level bomber air group units set to night missions and attached to VVS type air base units (8.2.1). If those night mission enabled air group units attached to VVS air base units are not sufficient to meet the partisan needs, then transport and level bomber air group units set to night missions and attached to DBAD, AD DD, GAD DD, and GDBAD air base units may be selected by the computer to also transport supplies to partisan units.

In addition to supplies, these missions will also air drop light weapons and NKVD squads to partisan units. NKVD squads are important for raising the morale of the partisan unit and for helping the partisan unit recruit additional partisan squads (recruits may come from the partisan unit's hex and any adjacent hex that is not adjacent to an Axis combat unit).

Air supply to partisans may be automatic, but the Soviet player still needs to ensure that the right aircraft are in the right place to get those supplies delivered behind enemy lines. Make sure you place long range transports and level bombers in VVS air base units that are placed near the front lines so they have the range to resupply partisan locations.

Don't forget to set the desired air group units to conduct night missions!

(17.1.2) Partisan Attacks

Once a partisan unit is considered combat ready (based on morale, number of partisans and supplies), the partisan unit has a chance to attack unoccupied hexes containing rail lines both before the Axis supply segment as well as after the damaged rail line hex repair segment (4.2). The latter attacks cannot be repaired prior to the Axis action phase. A rail hex attacked by a partisan unit will suffer Die(10) percent damage.

The higher the morale of the partisan unit, the further the attack can be from the unit's location, to a maximum of 5 hexes.

Partisans perform better in swamps, mountains, rough and forest terrain and when supplied.

The act of attacking makes the partisan unit active, and it will remain active until it is considered no longer combat ready, usually after being attacked by an Axis combat.

Partisan attacks will display as battle sites when battle locator (5.4.11) mode is enabled.

V1.05.28

Partisan attacks are now allowed in hexes adjacent to combat units.

V1.08.02

Partisan units will attack rail in hexes occupied by enemy units, though the chance will be smaller as the number of undepleted combat units in the target hex increases.

(17.1.3) Anti-Partisan Attacks and Axis Unit Interaction

A partisan unit is automatically attacked when an Axis combat unit moves adjacent to it. At the conclusion of the battle, the partisan unit will always automatically displace to another location and will usually revert to an inactive partisan cadre unit. During this displacement, the partisan may move up to about 12 hexes to find a location that is neither adjacent to a German combat unit nor adjacent to another partisan unit.

When partisan units are first created, they follow the same rules as displacing in order to find a starting hex. If there is no valid hex to be displaced to (or created in), the partisan unit is eliminated.

If a partisan unit finds itself no longer in an Axis controlled hex, it will attempt to displace to another hex that is Axis controlled. If there is no valid Axis controlled hex to displace to, it will be removed from the map.

Inactive cadre partisan units have no impact on Axis units.

Axis HQ units (including airbase and FBD units) cannot attack partisans when they move adjacent and can't move into a hex containing an active ready partisan unit.

(17.1.4) Partisan Unit Limitations

Partisan units have no zones of control.

Partisans may not attack in the Baltic States rail area until after December 1, 1941 (6.1).

Partisans may not be created or recruit in the following areas (by x, y map coordinates): $X < 50$, $Y > 94$ and $X < 70$, $Y > 115$ and $X < 75$, and $Y > 15$ and $X < 100$. In addition, Partisans are much less likely to be formed in the area $x < 70$ and $y < 45$.

(17.2) Axis Garrisons

Soviet city and urban hexes captured by the Axis require a minimum garrison of combat units to avoid the generation of partisan units from the population.

Note that there are no Axis partisans, so there is no requirement for the Soviet player to garrison captured Axis city and urban hexes.

(17.2.1) Axis Garrison Requirements

The minimum garrison requirement is combat units with at least 4000 men for city hexes, 8000 men for light urban hexes, and 12000 men for heavy urban hexes.

The number of men in Security (SEC) combat units counts double when determining garrisons.

Hotkey Shift-K will display color coded shading on all captured cities or urban hexes requiring a garrison where blue equals 100 percent or more, yellow equals 1 to 99 percent, and red equals no garrison present.

With the city or urban hex selected, the name in the General Information and City box (5.1.5) will include the current percentage of any garrison requirement currently being met.

V1.06.11

A Soviet player with FOW on will no longer be able to see the garrison percentage in Axis held cities.

(17.2.2) Partisan Creation From Un-Garrisoned Populations

A number of Partisan squad ground elements are created each turn based on unmet garrison requirements, by taking the city or urban hex undamaged manpower production and multiplying it by the percentage of the unmet garrison requirement, then rounding down.

The newly created partisan squad ground elements are either added to a nearby existing partisan unit or used to create a new partisan unit near the city or urban hex.

For example, in June 1942, the garrison in the city of Brest Litovsk is the 1st regiment of the 403rd Security Division, with 1395 men. Since security combat units count double towards garrison requirements, 69 percent of the garrison requirement (2790/4000) has been met leaving 31 percent unmet. As Brest Litovsk manpower production is eight, two partisan squad ground elements ($8 \times .31 = 2.48$, rounded down to 2) will be created during the next logistics phase if the Axis player takes no action to increase the garrison during their turn.

The Axis AI player is exempt from any garrison requirement and all Axis AI controlled Soviet city and urban hexes are considered to be 100 percent garrisoned at all times.

Reinforcements and Replacements Rules

(18.1) Receiving Reinforcements and Creating New Units

Both sides receive complete new units as reinforcements during the game.

Destroyed German units are returned to play as empty or nearly empty units, requiring replacements and supply before they are usable again.

Destroyed Axis Allied units are permanently eliminated and cannot be rebuilt.

With the exception of some Soviet combat units rebuilt after being eliminated in the beginning of the war, destroyed Soviet units will not return, but the Soviet player can create new units through the expenditure of administrative points (12.2.4). A complete list of new units that can be created by the Soviet player can be found in Appendix B (26.2). New or rebuilt Soviet units also appear as empty or nearly empty units and will require replacements and supply before they achieve a ready status.

Both sides can create fortified region (Soviet) or fortified zone (Axis) units.

(18.1.1) Reinforcement Placement

All ground units that appear as reinforcements are initially attached to their national high command headquarters (7.6.1) unit, for example, all German reinforcements will initially attached to OKH. Reassignment of reinforcements from their national high command headquarters unit to another headquarters unit does not cost any administrative points.

Air group units that appear as reinforcements will initially be attached to their National Air Reserve (8.4).

(18.1.1.1) Rebuilding Destroyed Soviet Combat Units

Soviet Rifle, Motorized and Tank divisions that are destroyed prior to November 1941 will be added to the reinforcement schedule to re-enter as empty or nearly empty units after a certain number of turns with placement on the eastern part of the map per section 18.1.1 regarding previously destroyed units.

~~Soviet Rifle and Motorized divisions will return as Rifle divisions from 4 to 27 turns after being destroyed. Soviet Tank divisions will return as Soviet Tank brigades eleven turns after being destroyed.~~

In addition, **routed Soviet Tank Divisions that rally prior to September 1941 have a twenty percent chance of being automatically disbanded and returned as reinforcement Tank brigades eleven turns later.**

V1.08.02

Improved the way Rifle, Motorized and Tank Divisions are reformed in all aspects.

The state of new formation will depend more on the current morale, experience and TOE percentage of the reformed unit (if it was disbanded after being routed, not destroyed), as well as on current national morale level for given formation type.

Rifle and Motorized divisions will return as Rifle Divisions in 8+Random(8) turns, as opposed to 4+Random(23) turns.

Tank Divisions will return as Tank Brigades in 6+Random(6) turns, as opposed to 11 turns (but they can't show up earlier than turn 12).

Logistics phase log will now contain information about those reforming units, which were destroyed during the previous enemy turn.

(18.1.1.2) Rebuilding Destroyed German Combat Units

German combat units that are destroyed will automatically be rebuilt.

These German units will be brought back on the map as empty or nearly empty units the following turn with placement on the western part of the map per section 18.1.1 regarding previously destroyed units.

The unit placed back on the map will usually have just one ground element and will rebuild over time by drawing replacements. Reforming units are frozen for 6 turns and initially set to refit mode. Rebuilding German units will have their morale set to **30+** (national morale/4) + random (national morale/4). This will never be lower than 20 or higher than 60. The initial experience for the ground elements in the unit will be set to 15+ (morale/2).

Support units that were attached to a German combat unit that is brought back to the map to be rebuilt, will appear as empty support units with that unit.

V1.05.63

German Infantry Divisions destroyed on or after August 1, 1944 will always return to the map as a Volksgrenadier Division (not just 20% of the time as originally detailed in the manual).

V1.05.59

Destroyed German units that return to play are given a morale equal to $30 + (NM/4) + \text{random}(NM/4)$. The formula used to be 20+. There is no change in the formula that sets their initial experience.

(18.1.2) Creating New Soviet Combat and HQ Units

With the exception of certain Soviet combat units prior to November 1941 (18.1.1), destroyed Soviet units are permanently eliminated. However, the Soviet player can build a new unit by selecting a hex on or adjacent to a Soviet urban area, then selecting the create combat/HQ unit (hotkey Shift-b) button on the Map Information tool bar (5.1.2.1).

If the player selects a hex with an HQ unit, then the new unit will be attached to that HQ unit, otherwise the new unit will be attached to STAVKA.

The creation of new Soviet units requires the expenditure of administrative points (12.2.4).

New Soviet combat and headquarters units appear on the map as nearly empty units and will require replacements and supply to become a ready unit. This process will normally take three turns, dependent on the overall availability of supply and replacements. The unit will be in frozen status for the first two turns after it is created.

Gameplay info: Unlike dragon's teeth from Greek mythology, new units do not spring out of the ground fully armed and ready. While the ability to use their admin points to create units of their choice provides Soviet players a flexibility that the Axis lacks, it comes at a price. The three to four turns it takes for a unit to get to ready status is normally sequenced as follows:

1) Player creates the unit using admin points. Unit is placed on the map in refit mode with only one ground element, zero combat value and no movement points due to being in frozen status. This turn represents the time it takes to set up a new unit administratively.

2) During the player's next logistics phase, the unit receives additional ground elements through the replacement process as well as supplies, fuel and ammo. It still has zero movement points due to being frozen. The experience level of the ground elements will still be low. This turn represents the time it takes

to start getting men into the formation and the time it takes for the formation to set up its logistics system. It's really not a functioning combat unit at this time.

3) On the third turn, it will continue to receive supply and possibly additional ground elements, depending on whether it has filled its TOE. The unit will be unfrozen, have movement points and thus be able to move and fight. But take a look at the experience of the ground elements - pretty low, huh? Depending on the situation, you might want to consider keeping that unit in refit mode well behind the lines on a rail line hex for a while in order to maximize the chance to increase its experience through training.

V1.05.63

The Soviet player may not build a new on map unit in an isolated area.

Soviet support units of brigade size will now cost 3 AP to form. Soviet support units of regiment size will now cost 2 AP to form. er may not build a new on map unit in an isolated area.

(18.1.3) Creating New Soviet Support Units

Soviet headquarter and eligible combat units that are in supply can create new support units utilizing the ASSIGN/FORM link in the applicable unit detail window to access the Pick Support Unit window (5.4.15). If there is a zero in the AVL column, selecting the unit name will cause a support unit of that type to be created and a message displayed to that effect.

For Soviet Army, Front and High Command (STAVKA) headquarters units, as well as town, city and urban hexes, the 'BUILD NEW' and associated 'BUILD NUM' functions can be enabled in the Pick Support Unit window (5.4.15). Using those functions allows the Soviet player to create new support units even if that type of support unit is available for transfer and also allows the creation of multiple numbers of any of the same type of support unit.

The new support unit will be attached to the applicable headquarters or eligible combat unit, but will appear as an empty unit that will require replacements to fill out its TOE.

The creation of a new support unit costs one administrative point.

V1.08.00

Soviet support units of brigade size will now cost 3 AP to form. Soviet support units of regiment size will now cost 2 AP to form.

(18.1.4) Creating New Soviet Air Group Units

New Soviet air group units (aviation regimental sized) are automatically created by the computer based on the size of the production pool. The computer compares the production pool of a particular aircraft versus the number of air group units using the aircraft type. If it determines that there are more than sufficient aircraft to meet the needs of the current air group units, than additional air group units will be formed.

Up to five new air group units may be formed per turn. The new air group units are initially attached to the Soviet National Air Reserve.

V1.08.02

Added the ability to select and build air bases and air groups of various types manually. AI will use the old automatic creation routines, but human players will now have more freedom at the price of having to spend more AP.

It will be possible to build 1 air base and 8 air groups per turn (production percentage limit will be applied in smaller scenarios), starting from August 1941.

Each will cost 1 AP.

VVS air bases will be limited to 15 (production percentage limit will be applied in smaller scenarios).

The new function is accessible by using the "Build new unit" function.

Air bases are placed on the target hex, just like any other unit, while air groups will arrive to the National Reserve at the start of next turn.

Plane type is automatically selected based on the highest amount of extra planes available.

(18.1.5) Creating New Soviet Air Base Units

Whenever the number of Soviet air group units exceeds the number of Soviet air base units by a ratio of more than six to one, up to one new air base unit will be automatically created per turn. The new air base unit will be randomly assigned a IAD, BAD, NBAD, SHAD, or VVS designation and will be placed in an open town near Magnitogorsk (X183 Y54).

As with other newly created Soviet units, the air base unit will have no movement points on the turn it appears and will be a nearly empty shell requiring replacements and supply to become a ready unit.

(18.1.6) Creating Fortified Region and Zone Units

Fortified regions (Soviet) and zones (Axis) (7.5.1) can be created by either player at a normal cost of four admin points by selecting a hex and then selecting the "Create fortified unit" button in the map info tab toolbar (5.1.2.1).

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

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

Any Axis fortified zones created within map area coordinates where $Y < 15$ and $X < 111$ will be of Finnish nationality.

Though there will be exceptions, most fortified zones built in Rumania will be Rumanian (until Rumania surrenders), and most built in Hungary will be Hungarian (until Hungary surrenders).

V1.05.18

Creating a Soviet Fortified Regions now costs 8 APs between July 1941 and October 1941 (inclusive). It is still 16 APs in June 1941.

(18.2) Replacements

Much of the logistics phase, particularly the replacement segment, simulates the constant 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 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. The production system builds the individual AFV, combat vehicle or devices from armament point production and places them in the pools, which is what is reflected on the production screen. 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 somewhat differently. Approximately (Exception: AFV ground elements –see 18.2.3.1) half of the manpower and equipment from damaged ground elements become available as replacements in the next logistics phase, 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.

Excess Support Squad Ground Elements: In addition, each turn during the replacement segment there is a chance that some excess support squad ground elements will be returned to the pool or converted to rifle squad ground elements.

The computer checks the current number of support squads in the unit against the number of support squads that are needed. If there are currently more support squads in the unit itself than needed, then 33 percent of the excess support squads will be returned to the pool. Damaged excess support squads will be returned prior to ready excess support squads. Just before excess support squads are returned to the pool, some of the excess may be converted to rifle squad type elements if that type of element is below 50 percent of its TOE.

Up to 30 support squads may be converted in a unit.

Armaments points are expended to conduct the conversion, and any excess manpower remaining is sent back to the pool. Because support squads are 20 men per squad there will almost always be excess.

Each conversion may lead to the reduction in experience of the rifle squad ground element, although it will not be reduced below 40.

Aircraft Replacements: Aircraft replacements are handled in much the same manner as above, however, there is no manpower involved, as for player purposes aircrew are an integral part of the aircraft.

In addition, damaged aircraft are not returned to the production pool, but can only be repaired at the air base unit to which their air group unit is attached.

(18.2.1) The Replacement Segment

The replacement segment consists of four sub-segments; return of damaged ground elements, return of excess support squads, refit, and normal replacement (4.2).

Units must be in supply to participate in any part of the replacement segment.

First, half of all damaged ground elements from units are returned to the production and manpower pools and made available to return as replacements, however, only 60% percent of the manpower from the damaged ground elements goes to the pool; the other 40% percent being placed on the disabled list. All other things being equal, returning ground elements have a better chance of going back to their original units.

Next, excess support squads will be returned to the pool and their manpower made available to build up other ground elements.

During the refit and normal placement sub-segments, ground units may receive ground elements from the production pool as replacements to fill out their TOE.

In the refit sub-segment, units set to refit status have the first opportunity to receive replacements. This is followed by the normal replacement sub-segment, during which all eligible units that are not in refit status may receive replacements.

Replacements coming into units will bring down the average experience for that type of ground element by a small amount.

The closer a unit is to a railhead, the more replacements the unit is likely to receive.

Since the rally segment takes place after the replacement segment, routed units will not receive replacements.

V1.04.10

Damaged units sent back to the pool during the logistics phase now have 40% of their manpower disabled (instead of 20%).

(18.2.2) Ground Element Replacements and TOE

Infantry units that are not set to refit are limited by default in the replacements they can receive.

Soviet Infantry units will not normally receive replacements for a type of ground element that has more than 60% of that types TOE.

After 1941, Axis Infantry units will not normally receive replacements for a type of ground element that has more than 80% of that types TOE.

This is intended to allow units to operate below TOE as they did historically.

The player must set the unit to refit status to get specific units up to full strength.

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. This setting can be accessed either through the MAX 'xxx' link in the individual unit's detail window or the links under the TOEM column in the Commander's Report (hotkey c). The default maximum TOE setting is 100 for all units.

No matter the current maximum TOE setting, the above rules for Soviet and German Infantry unit maximum replacement percentages will take priority for Infantry units not in refit status.

Withdrawing and/or frozen units may not change their maximum TOE setting. Withdrawing units that require rebuilding automatically have their maximum TOE set to 100 percent.

(18.2.3) Ground Element Replacement Availability

In order for units to receive replacement ground elements, there 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 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. The unit must pass several checks to see that they actually get replacements, and how many they get.

As a special case, it will generally be harder for Axis units to receive replacements during the first winter.

(18.2.3.1) AFV Ground Element Replacement Limitations and Equipment Losses

Due to their unique nature, 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 weather as follows:

- Clear - 40%
- Mud - 20%,
- Snow - 30%,

- Blizzard - 20%

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 both the further the unit is from a railhead and the further into the Soviet Union the unit is located (20.4.3.2).

Finally units that are not on or adjacent to a railhead will have a more difficult time receiving AFV ground element replacements.

(18.2.4) Air Group Unit Replacement Aircraft

Air group units may receive replacement aircraft during the replacement segment.

The air base unit to which the air group unit is attached must be in supply in order for the air group unit to receive replacements. The National Reserve is always considered to be in supply.

The number of aircraft received is based on the amount of that model aircraft available in the production pool and the need of the air group unit, which is defined as the difference between the maximum number allowed and the actual number of ready and damaged aircraft in the air group unit.

Reserve aircraft will also be reallocated during the replacement phase (8.1.1).

Note that if the air group unit has replacements toggled to not allowed, it will not receive any replacement aircraft (5.4.18).

(18.3) Refit Mode

All ground units in refit mode will have the first opportunity to receive replacements during the refit sub-segment. Refit mode allows the player to set up two groups of units, those that will receive replacements first, and those that will receive replacements only after those in the refit group have received as much as they can get given their distance from the nearest railhead.

Units in refit mode are normally the only units to receive upgraded equipment, unless the pool of older equipment runs out, at which point units without refit enabled would upgrade if there is newer equipment available.

All newly created and previously destroyed rebuilding units will appear on the map in refit mode.

Units arriving as reinforcements will not be in refit mode.

Note that for replacement purposes, all headquarters units and support units are treated as if they are always in refit mode.

Note that combat units being in refit has NO effect on their combat ability. Of course, whether they are next to an enemy unit (see below) will have an effect, but it does not change their CV in any way. It is just a toggle for determining replacement priority.

Game Play Tip: If you have a unit on a railhead and turn refit on just for that unit, you can get a depleted unit rebuilt to full strength in one turn (assuming you have the equipment and manpower in the pool). If the unit is far from the railhead, it's not likely to have much impact since the replacements can't get to the unit.

V1.04.10

Units set to refit (and those automatically considered in refit) will no longer receive the following benefits from refit if they are adjacent to an enemy controlled hex during their logistics phase:

- Morale bonus if under 50 morale (9.1.1)

- Replacements in the refit sub-segment. Instead they will receive replacements in the normal replacement sub-segment (without priority) and be treated as if they are not in refit mode for the purposes of the TOE limits (18.2.1 and 18.2.2)
- The refit experience (training) benefit when their experience is lower than their morale (previously not clearly documented) - (9.3.1)
- Priority on upgrading and swapping of equipment (18.3)

V1.04.22

Refitting units next to enemy hexes have a 25% chance of getting more replacements than if they weren't on refit, but the exact amount of the additional replacements will vary greatly depending on the distance from the railhead.

V1.05.59

Static units that are below 60% of their TOE will automatically be treated as if they are in refit mode during the logistics phase. Players that do not want a unit to accept a lot of replacements should use the MAX TOE setting to limit the size of the static unit.

(18.4) Axis Unit Withdrawal

Certain Axis units will be withdrawn from the game as specified in the Reinforcements and Withdrawals screen (5.4.8).

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 Axis 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.

(18.4.1) Withdrawing Units Requirements and Restrictions

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 admin points as for a normal reactivation. This reactivation may cause the number of available admin points to go to zero, though they will never fall below zero.

When an on-map Axis unit is withdrawn, if it does not have at least 75 percent of its TOE, it is placed on the westernmost city that has space for it with a maximum TOE setting of 100 percent, and then set to frozen status for 250 turns. Once the unit reaches 75 percent TOE, it will be removed from the map.

When a unit is in Withdrawal mode in the turns just before it withdraws, it is treated as if it is in refit mode.

Support units scheduled to withdraw are removed immediately on their withdrawal date, regardless of their current TOE.

If an on-map unit slated for withdrawal is completely destroyed before its withdrawal date it will be returned to the map as a nearly empty unit and sit at frozen 250 until it rebuilds to at least 75 percent TOE.

As an exception to the above, in small scenarios that only include a portion of the total map area, units will be withdrawn off the map even if their TOE is less than 75 percent.

(18.5) Disbanding Units

All ground and air group units may be permanently disbanded and removed from the game, with the exception of units that are scheduled to be withdrawn.

To disband a unit, select DISBAND from the unit detail window. This will send the aircraft from air group units or the manpower and equipment from all of the ground elements in ground units back to their respective production pools.

Any support units that are assigned to a unit that is disbanded are automatically reassigned to the next higher HQ unit of the disbanded unit.

V1.03 Beta 3

On map Soviet air groups with no aircraft can be disbanded automatically before 1943.

(18.5.1) Disband Requirements and Restrictions

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

Frozen or static units cannot be disbanded.

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

The Disband Unit option will not appear in the unit detail window if the above conditions are not met.

Disbanding requires and expends one Admin point.

V1.05.18

NKVD Border Regiments check for disbanding each friendly logistics phase starting in July 1941. The chance the unit will be disbanded is as follows:

- July 1941 - 100% - %TOE of the unit
- August 1941 - 80%
- September 1941 and later - 95%

V1.05.59

The Axis player may disband German units that are frozen if they have an x coordinate less than 20.

(18.5.2) Automatic Disbanding of Soviet Corps HQ Units

Soviet Corps HQ units will automatically disband as follows:

- Soviet Mechanized Corps HQs will be phased out (disbanded) by August 1941.
- Soviet Rifle and Cavalry Corps HQs will be phased out (disbanded) by November 1941.

V1.05.61

Soviet Cavalry Corps HQ will now disband immediately in January 1942.

Axis and Soviet Allied Countries and Armies Rules

(19.1.1) Axis Southern Allies General Rules

Rumanian and Hungarian units are not allowed to move into or be stacked together in the same hex.

Italian, Rumanian, Hungarian and Slovakian units may never voluntarily move north of hex row X 66 (units can move into row 66, but not to row 65 or any other row to the north). This line is displayed on the map and labelled the 'Axis Ally Limit Line' (6.1).

Many Italian and Hungarian units that begin scenarios in Hungary or Yugoslavia or further west are permanently frozen garrison units while others are frozen for a substantial number of turns. If the Soviets capture a Hungarian or Rumanian town either West of hex column 60 or south of hex row 110, then all of these Axis Allied units on the map are unfrozen.

(19.1.2.1) Finnish Limitations

Finnish units may never voluntarily move south of hex row 22, nor may they move east of hex column 110. This line is displayed on the map and labelled the 'Finnish No Move Line' (6.1).

In addition, unless Leningrad (Hexes X81, Y16 and X80, Y15) is German controlled, Finnish ground units may not attack enemy units that are in hexes south of the Svir River, nor may they attack enemy units in hexes X80,Y14, X81,Y14, X81,Y13 or X82,Y13 or any hexes south of this line. This line is displayed on the map and labelled the 'Finnish No Attack Line' (6.1).

Though there is no prohibition from Finnish units moving into hexes south of this line, even if enemy controlled, Finnish units suffer a morale penalty if they are south of the Finnish no attack line.

Finnish morale will drop by one each turn they are south of the no attack line if their morale is above the Finnish Morale Threshold. The threshold is 65 if one hex over the line, and is reduced by one for each additional hex south of the line. There is also an additional cumulative morale reduction of one point for each hex row east of hex row X100 for Finnish units.

Finally, with the exception of ground support, Finnish air missions cannot be conducted on or south of the row Y15 until both Leningrad hexes are captured by the Axis player.

(19.1.2.2) German Units in Finland

German units are permitted in most of Finland, however they are restricted in their ability to move into a small portion of Finland and areas north of Leningrad until certain prerequisites have been met. German units cannot move east from Finland into the zone delineated on the map by the two German No Move Lines and the Finnish No Attack Line unless the Axis control Sviritsa (X90, Y12) or Lodeynoe Pole (X92, Y12) or both Leningrad and NW Leningrad. German units that begin their turn in this zone may move normally even if the Axis no longer meets the prerequisites to relax the restriction, but no other German units will be able to enter the zone until the prerequisites have been met again.

(19.1.3) Italian Withdrawal

All Italian units will check for withdrawal from the game starting in May 1943. If an Italian unit is picked to withdraw, it will have its status changed to Withdrawing, be listed on the Reinforcement/Withdrawal screen and will be withdrawn four turns later. Italian units will continue to check for withdrawal each turn, resulting in all Italian units withdrawing within a period of several months.

(19.1.4) Surrender of Axis Allied Forces

With the exception of Rumania (19.1.4.1), units belonging to Axis allied armies are immediately removed from the game if their country surrenders, to include any anti-aircraft support units attached to towns, cities or urban hexes.

Axis allied countries check during each Axis Logistics Phase to see if they surrender.

Note that when determining Axis allied country surrender, any Soviet occupied town, city or urban hex must be linked to the Soviet supply grid in order to trigger a surrender condition. This means that a Soviet airborne combat unit dropping behind enemy lines and capturing a town that could cause the surrender of an Axis allied country will have no impact on surrender until that town is linked to the Soviet supply grid.

V1.05.32

Hungarian units may now enter Rumania once it surrenders, and Axis Rumanian units may enter Hungary once Hungary surrenders.

V1.05.37

For a city to be considered controlled for purposes of causing the surrender of an Axis Allied country, the Soviet player must be able to trace a supply path of no more than 30 MPs from that city to a rail (if the city is a capital city, the supply path may be up to 100 MPs).

V1.06.19

All Italian units will be removed from the map by August 1, 1943 and Italian production will cease on August 1, 1943. It is assumed that all Italian production is thereafter focused on the Western Front.

(19.1.4.1) Romanian Surrender

Rumania automatically surrenders if Bucharest is Soviet controlled.

There is a chance that Rumania will surrender if, after January 1, 1942, a Rumanian city or town that is located in the area where the Y coordinate of the hex is equal to or greater than 105 is Soviet controlled. If this condition is met, then a Surrender Threshold (ST) value is calculated equal to 2 plus 1 for each German Division in Bucharest plus 2 additional points for each Division that is an Elite SS unit. The ST can never be greater than 9. Once the ST is determined, if Die (10)>ST, then Rumania surrenders.

Game Play Example: 2 Infantry Divisions and 1 Elite SS Division in Bucharest would yield an ST of 7 (2 basic + 3 divisions +2 one of the Divisions is Elite SS). Each turn that the conditions were met for a possible surrender, then there would be a 30% chance that Rumania would capitulate.

Upon Rumanian surrender, all Rumanian air base units, air headquarter units and Army Group and High Command headquarter units will be automatically disbanded.

For other Rumanian ground units, if Rumanian and non-Rumanian units are stacked in a hex, then the side whose units have a smaller combat value will have its units automatically disbanded. Rumanian headquarter units will automatically disband if adjacent to an Axis unit and not stacked with a friendly combat unit.

All Rumanian units not disbanded (due to automatic disbanding or being stacked with Axis units) will automatically convert to Soviet Rumanian units.

When Rumanian units are converted to Soviet Rumanian units, on-map units take Soviet control over all eligible hexes as if they had just moved into that hex. Soviet control of hexes will also occur due to the placement of units created as part of Soviet Rumanian army units (19.3). All Rumanian nationality town, city or urban hexes not occupied by a non-Rumanian Axis unit will also change to Soviet control. Any town, city or urban hex that changes to Soviet control will also have adjacent hexes change to Soviet control as long as no non-Rumanian Axis units are in the adjacent hex.

V1.05.28

When Rumania surrenders, hexes that convert to Soviet control will only have their rails damaged if they are adjacent to a German unit.

V1.08.00

Soviet Rumanian units will use Rumanian national morale (usually 45) instead of Soviet national morale (usually 60 at this stage of the war).

V1.08.00

Non-elite SS units will give an additional +1 bonus to the surrender threshold when stationed in Axis Ally's capital. Elite SS units still give +2.

Regiments from a split German division no longer give bonus to the surrender threshold. Full divisions must be stationed in Axis Ally's capital to get the bonus.

V1.08.00

All fortifications will be deleted upon conversion of hexes during nation's surrender. They are assumed to be facing wrong direction.

(19.1.4.2) Hungarian Surrender

Hungary surrenders if Budapest is Soviet controlled.

There is a chance that Hungary will surrender if, after January 1, 1942, either Nyiregyhasa (X39, Y93) or Arad (X36, Y106) are Soviet controlled. If this condition is met, then a Surrender Threshold (ST) value is calculated equal to 7 plus 1 for each German Division in Budapest plus 2 additional points for each Division that is an Elite SS unit. Once the ST is determined, if Die (10)>ST, then Hungary surrenders.

V1.08.00

Non-elite SS units will give an additional +1 bonus to the surrender threshold when stationed in Axis Ally's capital. Elite SS units still give +2.

Regiments from a split German division no longer give bonus to the surrender threshold. Full divisions must be stationed in Axis Ally's capital to get the bonus.

V1.08.00

All fortifications will be deleted upon conversion of hexes during nation's surrender. They are assumed to be facing wrong direction.

(19.1.4.3) Slovakian Surrender

Slovakia surrenders if Bratislava is Soviet controlled.

There is a chance that Slovakia will surrender if, after January 1, 1942, Lvov or any Slovakian city or town is Soviet controlled. If this condition is met, then a Surrender Threshold (ST) value is calculated equal to 2 plus 1 for each German Division in Bratislava plus 2 additional points for each Division that is an Elite SS unit. The ST can never be greater than 9. Once the ST is determined, if Die (10)>ST, then Slovakia surrenders.

V1.08.00

Non-elite SS units will give an additional +1 bonus to the surrender threshold when stationed in Axis Ally's capital. Elite SS units still give +2.

Regiments from a split German division no longer give bonus to the surrender threshold. Full divisions must be stationed in Axis Ally's capital to get the bonus.

V1.08.00

All fortifications will be deleted upon conversion of hexes during nation's surrender. They are assumed to be facing wrong direction.

(19.1.4.4) Finnish Surrender

Finland surrenders if Helsinki is Soviet controlled.

There is a chance that Finland will surrender if, after January 1, 1942, any Finnish city or town is Soviet controlled or Vyborg, Narva and Pskov are all Soviet controlled. If one of these conditions is met, then a Surrender Threshold (ST) value is calculated equal to 2 plus 1 for each German Division in Helsinki plus 2 additional points for each Division that is an Elite SS unit. The ST can never be greater than 9. Once the ST is determined, if Die (10)>ST, then Finland surrenders.

When Finland surrenders, all Axis controlled hexes in Finland will become neutral, and German units there are removed and returned as normal reinforcements. Axis and Soviet units are then prohibited from entering or taking control of any Finnish neutral hexes, to include any type of movement or airdrop. All Soviet controlled hexes in Finland will remain Soviet controlled and Soviet units in those hexes will remain on the map.

V1.08.00

Non-elite SS units will give an additional +1 bonus to the surrender threshold when stationed in Axis Ally's capital. Elite SS units still give +2.

Regiments from a split German division no longer give bonus to the surrender threshold. Full divisions must be stationed in Axis Ally's capital to get the bonus.

V1.08.00

All fortifications will be deleted upon conversion of hexes during nation's surrender. They are assumed to be facing wrong direction.

(19.2) Bulgaria and Yugoslavia

At the beginning of the game Axis units may move through Yugoslavia and Bulgaria and trace supply from Yugoslav and Bulgarian rail lines. Soviet units may never enter these countries.

When the first in supply Soviet unit moves adjacent to the Bulgarian or Yugoslavian border, that country automatically surrenders and becomes a "total exclusion zone" for both players. No movement of any type may be made into a total exclusion zone and supply may not be traced through a total exclusion zone. Any Axis unit in the applicable country at the moment of surrender (or any unit of either side subsequently forced to retreat into the country) may move out of that country, but may not move back in once it has moved out.

In most cases Bulgarian and Yugoslavian surrenders will be separate events, but a Soviet unit that enters the hex that includes the external borders of both countries (X42, Y120) will trigger the surrender of both countries simultaneously.

(19.3) Soviet Allied Armies

When Rumania surrenders, in addition to the conversion of on-map Rumanian ground units described in section 19.1.4.1 above, the Soviet 1st Romanian Army will appear in random hexes throughout central Romania.

The Soviet capture of Warsaw or Lublin will result in the creation of the Soviet 2nd Polish Army headquarters unit and attached units that will appear east of Brest Litovsk in the vicinity of hex X56, Y68. The 2nd Polish Army will be frozen for 22 turns after arrival. In addition the Soviet Polish 1st Army will arrive through the normal reinforcement process.

Since there is no separate Rumanian and Polish production and manpower for the Soviet side, all Soviet Rumanian and Polish units will utilize Soviet production and manpower for replacements.

When Rumania surrenders all Rumanian equipment and TOE will automatically convert to Soviet (SU) nationality.

Supply Rules

(5.4.26) Unit Supply Detail Window

(5.4.26.1) Current Supply Status

The top part of the screen provides current supply and vehicle status by listing the amount and percentage of supplies, fuel, ammo and vehicles that are in the unit as compared to the amount required to reach 100 percent of required supply and vehicles.

Below this is the range in both hexes and movement points (MP) from the unit to the nearest railhead supply source. For support units, no range information is included. For all other non-HQ units, the range in both hexes and movement points (MP) to the HQ unit that they are directly attached is also included. For HQ units that have used supply build up (20.6), text to that effect will be displayed at the top of the current status section.

(5.4.26.2) Turn Supply Details for HQ Units

HQ Supply %: The percentage of required supplies for attached units that the HQ was able to deliver in each of the two supply delivery sub-segments.

HQ Fuel %: The percentage of required fuel for attached units that the HQ was able to deliver in each of the two supply delivery sub-segments.

Cost of Path (MP): The percentage is the supply delivery modifier based on the distance in movement points (MP) from the applicable unit to the nearest railhead (20.4.3) while the number is the number of MPs from the unit to the railhead.

Cost of Path (Range): The percentage is the supply delivery modifier based on the distance in hexes from the applicable unit to the nearest railhead (20.4.3) while the number is the number of hexes from the unit to the railhead.

Vehicle Pool: The vehicle shortage modifier (20.1.4.1) expressed as a percentage for each of the two supply delivery sub-segments.

Logistics Level: Logistics help setting (3.3.3)

Axis Rail Supply (Axis units only): Axis supply modifier percentage based on date and location (20.4.3).

Vehicles Received: Number of generic vehicles received during the logistics phase.

Supplies Consumed: Tons of supplies consumed during the logistics phase.

New Interface - It is now possible to see chances to succeed various leader rolls (Morale, Initiative and Admin rolls for all units; Mech and Infantry rolls for non-partisan, non-construction combat and support units; Air rolls for airbases) in the Supply Details window.

(5.4.26.3) Turn Supply Details for non-HQ Units

Supplies Received (x%): Tons of supplies received in each of the two supply delivery sub-segments. The percentage is the total amount of supplies received against required supplies.

Ammo Received (x%): Tons of ammo received in each of the two supply delivery sub-segments. The percentage is the total amount of ammo received against required ammo.

Fuel Received (x%): Tons of fuel received in each of the two supply delivery sub-segments. The percentage is the total amount of fuel received against required fuel.

MP to HQ: Number of movement points to trace supply from the unit to the HQ unit it is attached (Not included for support units).

Range to HQ: Distance in hexes to trace supply from the unit to the HQ unit it is attached (Not included for support units)

Cost of Path (MP): The percentage is the supply delivery modifier based on the distance in movement points (MP) from the applicable unit to the nearest railhead (20.4.3) while the number is the number of MPs from the unit to the railhead. (Not included for support units)

Cost of Path (Range): The percentage is the supply delivery modifier based on the distance in hexes from the applicable unit to the nearest railhead (20.4.3) while the number is the number of hexes from the unit to the railhead. (Not included for support units)

Vehicles in Unit: Percentage of organic vehicles assigned to the unit against required number.

Vehicles in Pool: The vehicle shortage modifier (20.1.4.1) expressed as a percentage for each of the two supply delivery sub-segments.

Logistics Level: Logistics help setting (3.3.3).

Soviet Ammo (Soviet non-HQ units only): Percentage modifier due to Soviet ammo shortages (20.3.2).

Axis Rail Supply (Axis units only): Axis supply modifier percentage based on date and location (20.4.3).

Vehicles Received: Number of generic vehicles received during the logistics phase.

Supplies Consumed: Tons of supplies consumed during the logistics phase.

V1.07.12 Beta

New Interface - It is now possible to see chances to succeed various leader rolls (Morale, Initiative and Admin rolls for all units; Mech and Infantry rolls for non-partisan, non-construction combat and support units; Air rolls for airbases) in the Supply Details window.

(20.1.1) Rail Networks and Railheads

A rail network consists of a contiguous path of friendly controlled undamaged rail line hexes connected to a permanent supply source. The last friendly controlled undamaged rail line hexes at the end of these paths is considered a supply source and designated a rail head. The distance requirements for tracing supply do not begin until after the rail head.

(20.1.2) Permanent Supply Sources

All permanent supply source hexes will be shaded in red when the rail damage information button (hotkey r) is toggled on.

(20.1.3) Port Supply

A port hex that borders a sea zone that allows strategic naval transport (i.e Baltic/Black Sea/Sea of Azov/Caspian Sea) that has at least one friendly port connected to the supply grid via rail will be considered connected to the supply grid. However, only the port hex is connected. Tracing from this port hex for supply purposes to a hex or unit can be done along friendly controlled, undamaged rail hexes (even though these rail hexes are considered not on the grid), if not leaving an enemy ZOC, without increasing the hexes from the rail. The MP cost will be increased by 1 for each such hex traced. If the hex traced to is next to an enemy unit 1 will be added to both the hex count and the MP count.

(20.1.4.1) Motor Pool Vehicle Shortage Multiplier

If the actual number of vehicles in the motor pool is less than the required number, then a vehicle shortage modifier will reduce the amount of supplies delivered to units during the supply segment.

The modifier is calculated for each unit by using the formula $A * \text{Vehicles in Motor Pool} / \text{Need for Vehicles in Motor Pool}$, where A equals the Player Logistics Level (help level from game options screen).

If the unit or HQ is <10 MPs from the railhead (or from its HQ if a unit is tracing to its HQ) then $5 * (10 - \text{MPs from railhead or HQ})$ is added to A, but the vehicle Modifier can never exceed 100 percent.

For example, in a game with the logistics level set to 100, a particular unit that is three movement points from its headquarters unit requires 150 fuel points, but will only receive 120 due to the other supply modifiers. The vehicle shortage modifier will impact the 120 fuel set to be delivered. If the current number of vehicles in the motor pool is 80k against a requirement for 200k, then the vehicle shortage modifier will be $(100 + 5 * (10 - 3)) * 80k / 200k$ or 54 percent. The amount of fuel received by the unit will not be 120, but instead will be 64.

The desired situation is to have headquarters units on the railhead and close to their attached units to minimize any vehicle shortage modifier.

One exception to the above is that Static units will not suffer a vehicle shortage penalty when drawing supplies or fuel from the unit's HQ as long as the distance between the HQ and the unit is both less than 4 hexes and less than 10 MPs.

(20.1.4.2) Emergency Vehicle Reallocation

During the Emergency vehicle reallocation sub-segment just prior to the computer setting unit supply requirements, if the number of vehicles in the motor pool are less than one quarter of the needed vehicles, then the computer will automatically transfer organic vehicles from units back to the motor pool to bring the motor pool back above one quarter of needed vehicles.

Once this readjustment is complete, ten percent of the vehicles in the motor pool will be damaged.

(20.1.4.3) Generic Vehicle Attrition

Vehicles in the motor pool suffer attrition based on their activity during the supply segment moving supplies from the railhead.

Vehicles in units on the map suffer attrition during the supply 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 (9.6)

(20.1.5) HQ Units and Supply

Headquarters units that are in range (20.4.1) will serve as supply sources to their attached combat units. The higher headquarters units of these HQ units do not have an impact on supplying attached HQ units, only combat units that are directly attached.

An exception is that Air base and Rail repair units are not considered HQ units for supply purposes and can draw supply from the HQ unit to which they are attached.

(20.1.5.1) HQ Unit Supply and Fuel Dumps

Vehicles in the motor pool are used to move supply from the railhead to the HQ unit. If there are extra vehicles available in the motor pool, then the HQ units will start to stockpile excess supplies and fuel in dumps so as to minimize future needs from the railhead.

Each dump contains one ton of supplies or fuel.

Headquarters units serving as the supply source for their attached units will first use their dumps and then attempt to draw the remaining needed supply from the nearest rail head.

When an HQ unit moves, it instantaneously takes vehicles out of the motor pool in order to move its dumps. The amount taken depends on the percent of the HQ units MPs that are used. If it uses 100 percent of its MPs for the turn, it will take one vehicle for each dump in the HQ unit. If there are not enough vehicles in the motor pool, then the excess dumps will be destroyed.

If the number of vehicles in the motor pool falls below one third of the need (the motor pool number will turn yellow in the City and info box), any headquarters unit that moves will leave behind all supply and fuel dumps in the nearest friendly town, city or urban hex.

Whenever a headquarters unit relocates or is forced to perform a displacement move, it will lose all of its fuel and supply dumps.

The idea is if you are moving your HQ units forward with a lot of dumps, you will be paying a cost in the upcoming supply segment as fewer motor pool vehicles are available to move supply to the HQ units from the railhead and to the units from the HQ units.

(20.2) Supply States

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

A unit is in supply if it can trace a path of 100 MPs or less to a railhead. A unit that is not in supply can be in beachhead supply if it is in a coastal hex in a sea area where its side has the capability to conduct strategic naval transportation. If the unit does not qualify as either in supply or beachhead supply then it is isolated (15.12).

Whenever a unit moves, or a battle is resolved, phasing player units recheck their supply state. If some action during the turn has reconnected the unit with a railhead with a path of 100 MPs or less, then the unit will no longer be isolated.

The current supply state of each unit is displayed in its detail window. If the unit is listed as in supply it will have the current MPs to the railhead displayed in parenthesis (In Supply 54 MP).

The toggle supply state button in the map information tab (5.1.2.1) will highlight map counters so that isolated units will be highlighted in red, units 50 MP or greater from the railhead, but still in supply will be in yellow, and units in beachhead supply will be in orange.

The counter in the unit bar will always be bordered in the appropriate color if the unit is not in supply.

These border colors will change if units change their supply state during the Action Phase.

Supply states are also displayed in the commander's report

(20.2.1) Beachhead Supply States

Units in a beachhead supply state will only receive limited supply; similar to if they were a long distance from a railhead. They will not receive replacements nor will they send damaged units back to the production pool during the logistics phase. If forced to retreat in combat, they retreat as if they were an isolated unit (15.12). For all other purposes they are treated as if they are in supply.

Airhead Supply States (v1.05.18)

If a player flies in supplies to an air base in a pocket, the supplies will immediately be distributed amongst all of the isolated units that can trace to the air base. If the amount received during the turn at some point equals 5% or more of the total needs of the unit, then the unit will be immediately set to beach/air supply status (it will display in orange instead of red when toggle unsupplied units is toggled on). The total needs are the supply+fuel+ammo needs listed for the unit.

This will last until the next friendly logistics phase. Units with beach/air supply will always pay penalties for being short of ammo, so there is a disadvantage in combat to be in beachair supply (but it's better than being isolated where there are additional penalties). The air base must be in a clear or light woods hex.

Units in beachhead/Air head supply will not suffer more than a 33% reduction in CV due to supply shortages

Note: Read this entire rule to get more in depth info on how to do this.

(20.3.2) Ammunition

Combat units with a low ammunition percentage will suffer a significant decline in combat effectiveness, especially when attacking.

Units that are adjacent to enemy units during the logistics phase will use up approximately one percent of their ammo 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 at the individual combat or support unit based on that unit's current demand for both general supplies and ammunition.

(20.3.2.1) Soviet Ammo Shortages

To simulate Soviet ammo shortages in the early part of the war, Soviet units in 1941 and 1942 must conduct a leader admin check when resupplying their units with ammo.

In 1941 they must take two successive checks, in 42 one check. As ammo is distributed, if the check fails, then 50 percent of the ammo is lost during conversion from supplies. If both checks fail, 75 percent is lost.

(20.4.1) Tracing Supply

In order to receive supply, a combat unit first attempts to trace a path to the headquarters unit to which it is attached. The combat unit must be within both five hexes and twenty MPs of the applicable headquarters unit.

In order for a headquarters unit to provide supply to its attached combat and support units, it in turn must be within both 25 hexes and 100 MPs of a railhead.

If a combat unit cannot trace an eligible path to its headquarters unit, it will then attempt to trace a path to a railhead as if it was a headquarters unit, i.e. within both 25 hexes and 100 MPs of the railhead.

Note that Air base and Rail repair units, though HQ units, are treated as combat units for supply purposes per the above.

Also note the distinction between supply state and tracing supply, in that a unit that is within 100 MPs, but not within 25 hexes, is considered in supply, but nonetheless, will not be able to receive supply due to exceeding the 25 hex requirement.

Units which are more than 20 MP away from their HQ but are within 1 hex of the HQ will receive supply from the HQ unit.

(20.4.1.1) Supply Path Movement Cost

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 (14.1.2). All motorized movement point costs are taken into account, to include EZOC, weather, terrain, and river hexsides.

When tracing from a rail hex on the grid to an undamaged rail hex adjacent to an enemy unit, as long as the supply trace is not leaving an enemy ZOC, the supply trace will only cost one MP to trace into that hex, representing limited use of rail lines in hexes adjacent to enemy units.

(20.3.2.1) Supply Over Water Hexes

Note: Read the main rules for this, especially for Lake Ladoga supply.

(20.4.1.3) Supply Trace Visualization

There are several map area aids to help in the visualization of supply traces.

The hex pop-up (5.2.1) will display both the number of MPs (Off Rail MP) and the number of hexes (Off Rail Range) from that hex to the closest railhead.

The toggle rail damage info button in the top panel map info tab (5.1.2.1) also shows additional info about ranges to a railhead. If a hex is greater than 10 hexes or 25 MPs from a railhead, it is shaded light grey. If it is greater than 25 hexes or 100 MPs from a railhead it is shaded dark grey. Enemy hexes will be shaded rose.

(20.4.2) Supply Segment

During the supply segment of the general logistics phase there are two supply sub-segments during which units will attempt to receive supply.

In the first supply sub-segment eligible HQ units receive supply and eligible attached combat units in turn receive supply from their HQ units. If the following circumstances for a HQ unit are true, the HQ unit will receive additional supplies and fuel, and has the potential of receiving more than its requirement (each condition met increases the amount received):

- The HQ has over 50 percent of its vehicle requirement.
- The HQ must be within 10 MPs of the railhead.

- There is a vehicle surplus in the motor pool.

In the second supply sub-segment, combat, air base and rail repair units that could not get supplies from the HQ unit to which they are attached will attempt to trace directly to the railhead as if they were an HQ unit. These units also have the potential for exceeding their needs in the second supply sub-segment if there is a surplus of vehicles in the motor pool.

For scenarios with a difficulty level of normal or greater (3.3.2), combat units will receive significantly fewer supplies and fuel than they would have if they were able to draw supply through their HQ unit in the first supply sub-segment.

(20.4.2.1) Receiving Supply From City and Urban Hexes

Units can draw supplies or fuel directly from a city or urban hex if they are in or adjacent to the hex.

- ✓ *Note that urban hexes, cities and towns, you can open the city detail window to see how much supplies and fuel a city has (see 5.4.27)*

V1.08.00

Upon city capture, between 50% and 100% of current stocks (resource, oil, fuel, supply) in that city will be lost. Ports will be damaged to 100%.

(20.4.3.1) Railhead Distance and Movement Supply Modifier

When tracing supply to a railhead, the distance from the applicable unit to the railhead will modify the amount of supply delivered. Anything under 25 MP's gives full supply, while anything over 25 MP's gives a percent of supplies equal to 25/MP's to the unit.

Supply is also reduced by the distance in hexes from the railhead to the unit. Anything 10 hexes and under gives full supply, while anything over 10 hexes gives a percent of supplies equal to 10/Hexes to the unit. The MP and hex distance reductions are cumulative.

Units that have moved in the previous turn will only draw a percentage of what they require that is equal to 100 - (length in MPs to supply source - 5).

(20.4.3.2) Axis Rail Supply Modifier

There is a modifier that is applied to the delivery of supply to Axis HQ units and combat units based on the date and the location of the unit that is tracing supply. The modifier, once calculated, is multiplied times the supplies and fuel being delivered to the unit. The modifier is equal to $((165 + (5 \times \text{months from December 1941, but not to be a negative number}) / \text{weather adjustment}) - x \text{ coordinate of unit}) + ((y \text{ coordinate of unit} - 69) / 2) / 100$. This modifier can never be less than .33 or greater than 1.0. The weather adjustment is equal to 1 in clear weather, 2 in mud or snow, and 3 in blizzard.

Note: Read the examples here.

(20.4.4) Return of Excess Supply

If a non-HQ unit, to include air base and rail repair units, has 200 percent or more of a type of supply on hand, it will return them to the HQ unit to which it is attached.

An air base units must be within 15 hexes of its HQ unit to return excess supply, while all other units must be within 10 hexes.

V1.06.13

Excess supplies will be sent back to friendly cities instead of to HQs

(20.5) Supply Effects

The further a unit is from a supply source, 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).

Regardless of their supply levels, however, non-motorized units have a minimum MP allowance of six and motorized units have a minimum MP allowance of one.

There are no direct combat penalties for units with low supplies or fuel levels, unless they are completely out of supply. The amount of ammo on hand impacts both the overall combat effectiveness, especially of attacking units, as well as the number of shots in combat (15.6.1).

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

(20.5.1) Manpower Starvation Damage

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, for the supply trace path to Leningrad over Lake Ladoga in the summer the move path MP cost would be 13 (20.1.3), resulting in Leningrad adding 8 percent each week to its manpower damage percentage. Manpower factories recover 3 percent per turn (21.2), 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.

Manpower works just like factories in terms of producing manpower points based on the damage (some up to 50 percent, none once over 50 percent damaged). 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.

Also, town, city and urban hexes won't take starvation damage 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.

(20.6) HQ Unit Supply Buildup

The player has the ability to accumulate supplies and fuel in an HQ unit and fully resupply an HQ unit's attached units in order to maximize their mobility on the following turn.

~~Only Soviet Army and Axis Corps HQ units that have not moved during the current turn may use the Supply Buildup function.~~

Eligible HQ units will have a BUILDUP button on their unit detail screen (5.4.16). Pressing the BUILDUP button will trigger an immediate resupply of the HQ unit and its eligible attached units.

V1.04.22

~~HQ supply buildups are not allowed for HQ's that are more than 20 MPs from their railhead at the moment the HQ buildup is ordered.~~

In addition, the AP cost of an HQ buildup is now increased by the distance in MPs of the HQ from a railhead divided by 3. So for an HQ with 3 attached divisions that is 16 MPs from a supply source, the AP cost would be $5+2+2+2+(16/3)=16$ (used to be just 11). This increased AP cost is used to calculate the other buildup penalties described in section (20.6.3) in the manual.

V1.06.11

Several changes have been made to the HQ Build up rules as follows:

- The amount of supplies and fuel delivered to a HQ conducting HQ Buildup is now equal to the total needs of all of the on map units attached to the HQ (supplies/fuel already on hand do not alter this calculation). This replaces the old method of basing supplies/fuel delivered on the AP cost of the buildup. These will then be distributed to bring the units up to 100% of their need with the unused remainder remaining in the HQ.
- For each 2 tons of supplies or fuel sent to the HQ, 1 vehicle will be damaged and 1 vehicle will be sent to the HQ. The number of vehicles destroyed remains unchanged.

V1.08.00

HQ build up was changed to become part of the normal supply system, instead of being a separate entity. It caused many problems in the past (like units on build up losing morale due to being counted as unsupplied or missing supply details) and was quite overpowered in that the supplies were drawn from any owned city that had them, even if it was 1000 miles away from the unit or in that only the HQ had to be stationary, while the units did not (which led to some gamey tactics of changing HQ attachment for build up). The new build up rules work in the following way:

Any normal HQ (not air HQ, airbase or construction unit) is able to initiate build up, if it has some movement points left and is within 25 hexes from the rail grid.

The cost to be paid in AP depends on the number of men in units doing build up and distance to railhead.

There is no immediate cost to be paid in damaged vehicles.

If the cost is paid, the HQ (with all support units attached to that HQ) and all non-static combat units (with all support units attached to them) attached directly to that HQ, in range of 5 hexes, and having some movement points left, start building up.

The percentage of movement left is recorded as their build up bonus, and then their movement points are reduced to 0.

Support units inherit the build up bonus of their parent unit.

During supply phase those units are eligible to replenish their stocks over the usual 100% by 25% plus the amount of their build up bonus multiplied by 0.75 (rounding up).

The supply procedure remains the same as for all other units and is subject to the same costs, restrictions and penalties with the exception that costs in vehicles and fuel are doubled and the penalties (range to rail, MP to rail, Axis rail modifier, global vehicle shortage and unit vehicle shortage) are halved.

It's important to remember that the HQ must be in range to the rail grid (at most 25 hexes and 100 MP away), otherwise the resupply process will fail.

For example: when one unit had 20 MP left (out of 50) and the other had 50 MP left (out of 50) at the moment of initiating the build up procedure, the first one will try to restock to 155% of normal levels, while the other to 200%.

Current and previous build up bonuses are visible in the supply details window.

V1.08.02

Units doing a HQ BuildUp will not be exempt from MP reduction due to failed leader rolls, although the penalty will be halved (the multiplier will be 0.9, instead of 0.8).

HQ BuildUp bonus to maximum supply levels reduced from $25 + 0.75 \times \text{buildUp score}$ to just buildUp score.

Units will not return extra supplies for two turns after performing a HQ BuildUp, instead of just one turn.

To participate in a HQ BuildUp, units and HQs must have at least 25% of their MP remaining.

(20.6.1) Admin Point Cost

To use the Supply Buildup function, a player must spend admin points equal to five plus an additional cost for each eligible attached unit. An eligible attached unit must be an on-map combat unit within five hexes of the HQ unit.

The additional costs for attached combat units are four for a corps, two for a division, and one for a Brigade/Regiment.

Also, there is no admin point cost for any support units attached to the HQ unit.

(20.6.2) HQ Supply Accumulation

Pressing the BUILDUP button will bring up a confirmation text box stating the number of admin points that will be expended. Selecting 'Yes' will trigger an immediate resupply of the HQ unit.

The HQ will receive Supply and Fuel dumps equal to the admin point cost times 100. These supply and fuel dumps will be taken from town, city and urban hexes connected to the supply grid. The HQ unit will also receive vehicles from the motor pool equal to the admin point cost times 100. To continue the example, the Soviet Army HQ unit would receive 1400 Supplies and 1400 Fuel Depots and 1400 vehicles from the motor pool.

(20.6.3) HQ Supply Build Up Penalties

A number of vehicles will be damaged equal to the admin point cost times 100. These vehicles will be moved from the motor pool to the damaged vehicle pool.

A number of vehicles will be destroyed equal to the admin point cost times ten plus the number of movement points the HQ unit is from a railhead ($AP \times 10$) + MPs from rail). These destroyed vehicles will be permanently removed from the motor pool.

A number of fuel dumps will be expended equal to $(10 + \text{the number of movement points the HQ unit is from a railhead}) \times \text{the admin point cost}$. These fuel dumps will be taken from town, city and urban hexes connected to the supply grid.

To further continue the example, if the Soviet Army HQ unit was 10 MPs from a railhead, the unit supply buildup will result in 1400 vehicles from the motor pool being damaged and 150 vehicles being permanently destroyed. In addition 280 $((10 + 10) \times 14)$ fuel dumps (280 tons of fuel) will be expended from stores in town, city or urban hexes.

(20.6.4) Attached Unit Supply Accumulation

Following the HQ unit supply accumulation, all eligible attached combat units will recalculate their supply and vehicle requirements. These units will then draw supply from the HQ unit to meet 100 percent of their requirements. Also, vehicles will be drawn from the motor pool to reach 100 percent of the unit's organic vehicle requirement.

~~This process will consume all of the combat unit's remaining movement points for the current turn.~~

(20.6.5) Supply Segment Effects

~~During the supply segment on the following turn the HQ unit and its eligible attached combat units will not adjust their vehicle totals or receive any supplies, fuel or replacements.~~

~~When calculating movement points, the units will not be subject to reductions for failing leader admin or initiative checks (14.1.2).~~

~~Since these combat units will have 100 percent of the fuel and vehicle requirements they should be close to their maximum possible movement allowance for the following turn.~~

Production System Rules

(5.4.3) Production Screen

This screen can be accessed from the info screens menu tab toolbar (5.1.2.2) or hotkey 'p' and displays production information for aircraft, ground element equipment, supply, manpower, and various other inputs to the production process. The phasing player will only be able to see information for their side.

(5.4.3.1) Air and Ground Sections

These sections consist of seven columns as follows:

Nationality: All units on the Soviet side, will be annotated SU.

Name: Aircraft, ground element and/or factory name

- Each name links to the applicable city production list window (5.4.4)
- All aircraft and ground element types are coded in the production screen as follows:
 - Currently in production: no symbol
 - Obsolete (no longer in production): '#'
 - Future (not in production yet): '**'

Capacity: Number of factory points either producing the item (or that will produce the item for future items).

- 'A' indicates an item produced by Armament Production factories. Aircraft, AFV's, and combat vehicles are produced by specific factories, but all other ground element devices are built using generic armament points produced by Armament Production factories.

Damaged: Number of factory points that produce that particular item that have suffered fifty percent or greater damage.

Pool: Number of that type of aircraft or ground element equipment available to be used as replacements.

Built: Total number of that type of aircraft or ground element equipment produced since the beginning of the current scenario. Note that these numbers are for what was actually built and sent to Eastern Front instead of all items built by the production system (21.1).

Units: Number of units that contain that type of aircraft or ground element. Selecting the number will take the player to the Commander's report screen and display a list of the applicable units.

(5.4.3.2) Special Section

This section consists of 6 columns as follows:

Factory name: Each name links to the applicable city production window (5.4.4).

Capacity: Total number of factory points, whether damaged or undamaged, that can produce the item.

- 'A' indicates an item produced by Armament Production factories. In the case of the special section, it applies to Vehicle repair, and indicates the use of armament points to repair damaged vehicles.

Damaged: Number of factory points that produce that particular item that have suffered fifty percent or greater damage.

Pool: Number of that type of item available to be used as replacements. In the case of the special section, this column is only applicable to Vehicle repair, Vehicle production, Manpower production, and Armament point production.

Built: Total amount of that type of item produced since the beginning of the current scenario.

Units: This column is not applicable for the special section and will always display zeros

(5.4.3.3) Captured Equipment Screen

This section consists of 5 columns as follows:

Nationality: All units on the Soviet side, will be annotated SU.

Name: Aircraft or ground element equipment name.

- Each name links to the applicable city production window (5.4.4)

Pool: Number of that type of aircraft or ground element equipment available.

Captured: Total number of that type of aircraft or ground element equipment captured since the beginning of the current scenario.

Units: Number of units that contain that type of aircraft or ground element. Selecting the number will take the player to the Commander's report screen and display a list of the applicable units.

(5.4.3.4) Production by Nationality and Availability

The top right side of the screen allows the player to view production by country or captured areas. For the Axis player, the numbers in parentheses by each country is the percentage of total production designated for the eastern front and thus available in the game (21.1.3).

For all nationalities in non-campaign scenarios, the number in parentheses reflects the percentage of production that will be able for the scenario.

For certain countries, such as Poland, a second number will indicate the percentage of total manpower available. Selecting a country will display only that countries production data.

Selecting 'Captured' will display the data from the 'Special' section pertaining to factories in enemy town, city and urban hexes captured by that player.

(5.4.3.5) Manpower, Supply and Vehicle Production Information

The center right side of the screen provides a summary of manpower, supply and vehicle related information for all areas or individually selected country or captured areas as follows:

Manpower in Cities/Towns: Total number of manpower factory points.

Fuel Stores: Total amount of fuel in storage.

Oil Stores: Total amount of oil in storage and available to be refined into fuel.

Supply Stores: Total amount of supply in storage.

Resource Stores: Total amount of resources in storage.

Supplies in Units: Total amount of supplies at the units. Number in parentheses is total amount of supplies needed to bring all units up to 100 percent.

Ammo in Units: Total amount of ammo at the units. Number in parentheses is total amount of ammo needed to bring all units up to 100 percent.

Fuel in Units: Total amount of fuel at the units. Number in parentheses is total amount of fuel needed to bring all units up to 100 percent.

Supply and Fuel Depots in HQ's: Total number of fuel and supply depots attached to headquarter units.

Vehicles in Units: Total number of vehicles attached to units. Number in parentheses is total number of vehicles that would be needed to bring all units up to 100 percent.

Vehicles in Pool: Total number of vehicles in that side's motor pool. Number in parentheses is total number of vehicles that would be needed to bring the motor pool up to 100 percent.

- Note that vehicles in the motor pool are not assigned to units, but are used exclusively to support the supply system.

Vehicles in Repair: Total number of vehicles being repaired.

Fuel Pool: This is a global pool used to fuel vehicles in the motor pool

(21.1) The Production System

Production is conducted by various factories located in town, city and urban hexes. The exception is Lend Lease supplies and vehicles, which are automatically added to the applicable pool during the logistics phase. Some factories, including all Lend Lease factories, are located off-map.

Each factory point 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 (20.1) 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, aircraft, AFV and combat vehicle factories to build the equipment for air group units and ground elements.

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 static multiplier for each year (1941-45) that is used to determine the amount of production for each factory point. The ratio of basic items required to produce the end product remains the same. For example, if a notional amount of 1000 resources is required to produce 1000 supplies, a one to one ratio of resources to supplies will be required no matter what the multiplier may be. Each other factory type has a fixed production rate that will not change.

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 increase over time based on its expansion rate until its build limit is reached.

V1.05.59

Artillery (using on demand production) elements will not be produced for replacements if the element is not in a unit's OB. Example: If a unit with 37mm AT guns changes its OB to one that requires a 47mm AT gun, no new 37mm AT guns will be produced to use as replacements (only 37mm AT guns already in the pool will be used). This will reduce the amount of production of soon to be obsolete equipment.

(21.1.1) Resource Production

Resources represent the raw materials used by heavy industry factories to produce supplies and by synthetic fuel factories to produce synthetic fuel.

Each resource factory point will produce 1000 tons of resources per turn.

(21.1.2) 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 to build equipment, either directly in individual factories or through the production of armament points, but also the general supplies and ammunition used to supply units.

After the production phase, supplies are first allocated to meet at least ninety percent of the production system requirements, with the remaining being available to be drawn on for general supplies during the supply phase.

Each HI factory point will produce a notional amount of 1000 tons of supplies per turn at a cost of 1000 tons of resources. HI production is modified by the following percentages:

Heavy Industry Production Percentage Modifier

Year/Nationality	1941	1942	1943	1944	1945
German/Czech/Polish	100	130	220	270	220
Axis Allies	100	100	100	100	100
Soviet	100	110	130	145	155

For example, in 1941, **500** tons of resources will be required to produce the maximum of **500** tons of supplies per factory point for the Soviets. In 1943, **650** tons of resources will be required to produce the maximum of **650** supplies per factory point.

V1.03 Beta 3

Reduced Heavy Industry output and resource consumption. Each HI point now uses 500 resources to produce 500 supplies.

V1.08.02

Soviet Heavy Industry multiplier changed to 85% of pre-1.08 values (was 75%). This means a multiplier of 110 in 1942 (was 100), 130 in 1943 (was 120), 145 in 1944 (was 130), and 155 in 1945 (was 135).

(21.1.3) 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 at a fixed number of armament points for the devices in each ground element.

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, which will be matched with the devices during a replacement segment to complete the ground element.

Note that armament points are not used to produce aircraft, AFV or combat vehicles built at individual factories.

Ground elements that use devices built using armament points have an 'A' listed in the "CAPACITY" column of the production screen (5.4.3) and armament factories and production information is listed under the "SPECIAL" section.

In addition to building devices for ground elements, armament points are also used for ammunition production. For each ton of supplies used for ammunition (20.3.2) one armament point is expended.

Each Armament factory point will produce a notional 500 armament points at the cost of 100 tons of supplies.

Armament point production will be modified by the following percentages:

Armament Production Percentage Modifier

Year/Nationality	1941	1942	1943	1944	1945
German/Czech/Polish	100	130	210	360	265
Axis Allies	100	100	100	100	100
Soviet	100	100	120	130	135

To continue the example from above, in 1941 50 tons of supplies will be required to produce the maximum of 250 tons of armament points per factory point for the Soviets. In 1943, 60 tons of supplies will be required to produce the maximum of 300 tons of armament points per factory point.

V1.04.15

Armament factory now uses 50 supply points to produce 250 armament points per turn.

V1.05.18

Changed Soviet Armaments multipliers in 1942-1945 to 130 (from 200).

V1.08.00

German armaments production multiplier changed from 220 to 210 in 1943, from 380 to 360 in 1944, and from 280 to 265 in 1945. Soviet supply production multiplier changed from 130 to 100 in 1942, from 155 to 120 in 1943, from 170 to 130 in 1944, and from 180 to 135 in 1945.

(21.1.4) Synthetic Fuel Production

Synthetic Fuel factories take resources and produce synthetic fuel, which is added to the overall fuel stores pool.

There are no Soviet synthetic fuel factories.

Each synthetic fuel factory point will produce a notional amount of 500 tons of fuel per turn at a cost of 500 tons of resources.

Synthetic fuel production will be modified by the following percentages:

Synthetic Fuel Production Percentage Modifier

Year/Nationality	1941	1942	1943	1944(1)	1945(2)
German/Czech/Polish	100	115	135	135	100
Axis Allies	100	100	100	100	100

Note 1: German synthetic fuel production is halved from June to Dec 1944

Note 2: German synthetic fuel production is divided by four during 1945

(21.1.5) 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 500 tons of oil per factory point per turn, however, Rumanian and German oil factories will produce at only sixty percent of capacity. In addition, from August 1943, Rumanian oil production will be further reduced to thirty percent of capacity.

Each fuel factory point will produce 500 tons of fuel per turn at the cost of 500 tons of oil. Rumanian fuel factories will have their production halved starting from August 1943.

Oil/Fuel Production per Factory Point per Turn (in Tons)

Year/ Nationality	1941	1942	Jan-Jul 1943	Aug-Dec 1943	1944	1945
Axis	300/ 300	300/ 300	300/ 300	300/ 300	300/ 300	300/ 300
Rumanian	300/ 300	300/ 300	300/ 300	150/ 150	150/ 150	150/ 150
Soviet	500/ 300	500/ 300	500/ 300	500/ 300	500/ 300	500/ 300

V1.03 Beta 3

Reduced fuel production. One fuel factory now uses 300 oil to produce 300 fuel.

(21.1.6) Vehicle Production and Repair

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

The Soviet player will receive additional vehicles either through mobilization of private vehicles (21.3) or Lend Lease (21.5).

Each vehicle factory point will produce 10 vehicles per turn at the cost of 50 tons of supplies.

Vehicle production will be modified by the following percentages:

Vehicle Production Percentage Modifier

Year/Nationality	1941	1942	1943	1944	1945
German/Czech/Polish	100	120	140	80	60
Axis Allies	100	100	100	100	100
Soviet	100	55	55	55	55

Individual vehicles that are damaged are returned to a virtual pool for repair. Once repaired, they are added back into the vehicle pool. Repair takes place during the logistics phase.

The Soviet vehicle repair rate is twenty percent per turn.

Due to a lack of standardized equipment, the Axis vehicle repair rate is ten percent per turn.

(21.1.7) Aircraft, AFV and Combat Vehicle Production

Aircraft, AFV and combat vehicles are built at individual factories by using supplies, with one item being built for each factory point. For example, assuming sufficient supplies are available, the JU88A factory in Rostock, with a capacity of ten factory points, will build ten JU88A's every turn.

Each aircraft is built as an integral unit, including installed devices and aircrew.

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.

Each item has a build cost that determines how many supplies it takes for production.

The cost to build an aircraft is its build cost divided by 20.

The cost to build an AFV or combat vehicle is its build cost divided by 10.

For example a FW 190A has a build cost of 484, so it would require 24.2 tons of supplies to produce one such aircraft, to include four 20mm cannon, one 250 KG Bomb and two 300 litre drop tanks as installed devices as well as integral aircrew.

A Tiger AFV ground element has a build cost of 673, so it would require 67.3 tons of supplies to produce one such AFV, to include one 88mm gun and two 7.92 machine guns as installed devices.

Once produced, each aircraft of a specific type is placed in a separate pool until it is drawn upon as a replacement or, for Soviet and captured aircraft, enough aircraft are in that pool to allow the creation of a new air group unit.

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.

(21.1.8) Aircraft, AFV and Combat Factory Expansion and Build Limit

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

Each type of factory has an expansion rate listed in that item type's city production list that determines how many factory points will be added. An expansion rate of one or greater will increase that capacity of each factory of that type by that number every turn during the logistics phase for that side.

An expansion rate of zero indicates that expansion will be slower than one factory point per turn; the exact number of turns it will take to increase capacity is variable and dependent on the amount of manpower, rail yard and port points in the town, city or urban hex, with the more of each, the higher chance that the factory capacity will increase.

Factories will only expand if they are completely undamaged.

(21.1.8.1) Build Limit

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.

For example, in June 1941, there are three factories that produce the T-34 M1941, which has a build limit of 75 and an expansion rate of one. The current capacities of the factories are 51, 6 and 6. Assuming no damage, the first factory will reach its build limit in 24 turns, while the other two will take 69 turns to reach full capacity. Once all three factories reach their build limit of 75, the maximum number of T-34 M1941 ground elements that can be produced each turn will be 225.

(21.1.9) Factory Upgrades

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 Soviet SU-122 will commence production in December 1942 with a newly built factory in Sverdlovsk.

Other new types will start production as a result of an existing type of factory being upgraded. Multiple upgrades 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 SU-122 factory in Sverdlovsk, with a build limit of 20 and an expansion rate of 1, will be upgraded to produce the SU-85, with a build limit of 39 and an expansion rate of 3, in December 1943. The SU-85 factory will be upgraded once more in December 1944, this time to a SU-100 factory, with a build limit of 64 and an expansion rate of 5.

The list of equipment pools in the production screen (5.4.3) is annotated to reflect their current status as follows:

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

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 the city production window (5.4.4), which will include information on any upgrades planned for that type of factory.

(21.1.9.1) Equipment Downgrades

A ground element or air group unit 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 unit 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 sufficient 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.

(21.1.10) 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.

(21.1.10.1) Manpower Production

Each nation has a separate manpower pool, with a small percentage of the Czech and Polish manpower going to 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	9	8	8	6	7
Axis Allies	9	9	9	10	10
Soviet Union	50	40	35	30	15

In addition, each turn one percent of the manpower listed as disabled will return to the manpower pool. A percentage of returning disabled Axis manpower goes back to Axis allied countries as follows:

- Rumania - 10 percent
- Hungary - 9 percent
- Finland - 4 percent
- Italy - 1.5 percent
- Slovakia - .75 percent

The remainder of the returning disabled men will go to Germany.

V1.03 Beta 3

Reduced the Soviet manpower production multipliers to 50 in 1941 (from 55) and 45 in 1942 (from 50).

V1.05.18

Changed Soviet Manpower multiplier in 1942 to 40 (from 45).

V1.05.59

The Soviet Manpower Multipliers in 1943, 44 and 45 are reduced by 5 (so they are now 35, 30 and 15 respectively). Including changes in previous versions, the Soviet manpower multiplier table should now read 50, 40, 35, 30 and 15.

V1.08.00

German manpower production multiplier was changed from 7 to 6 for 1944 and from 6 to 7 for 1945.

Axis Ally manpower production multiplier was separated from German multiplier and set to 9 between 1941 and 1943, and to 10 between 1944 and 1945.

(21.1.10.2) Manpower Evacuation and Migration

Manpower factory points in German and 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.

~~In any one turn, up to five manpower factory points can migrate from one town, city or urban hex to another.~~ 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.

Evacuations/migrations will not occur in June 1941 or in Soviet town, city or urban hexes after 1942.

Town, city or urban hexes re-captured by friendly units will not undergo migration.

Only German and Soviet manpower can migrate, but all manpower can be damaged or destroyed.

V1.03 Beta 3

The chance of manpower migration will decline once the city's manpower is less than 50% of its population.

Also, note that the manual is incorrect in that there is no limit to the amount of migration that can occur in a turn.

(21.1.10.3) Manpower Factory Damage and Destruction

Manpower factory points can be destroyed when the town, city or urban hex is first captured.

In addition, one manpower factory point in town, city or urban hexes may be destroyed every turn that the hex is enemy controlled; hexes with larger amounts of manpower have a greater chance of having one manpower factory destroyed (one manpower point is destroyed if $\text{Rnd}(600) < (\text{Manpower in town})$).

Manpower factories can also be damaged or lose factory points through lack of supply (20.5.1).

(21.1.10.4) Local Manpower Recruitment in Isolated Areas

Manpower production from a town, city or urban hex that is in an isolated state will continue at a reduced rate, but will not be added to the global manpower production pool. Termed local recruitment, manpower production will be halved and stored in a separate pool.

This separate manpower pool is retained even if the hex is captured. If the owning nation regains control of the hex and it is in supply, the stored manpower will be added to the global production pool to represent the drafting of recruits from a newly liberated region.

(21.1.11) Port and Rail yard Capacity

Ports and rail yards are treated as factories in terms of capture, damage and repair, but they play only a peripheral part in the production system. The presence of a port or rail yard in the same hex as a factory with a zero expansion rate increases the chance that factory will expand (21.1.8).

In addition, hexes with ports will attempt to accumulate an additional 1000 tons of supplies and fuel in storage every turn.

Each rail yard factory point will produce a notional amount of strategic rail capacity every turn equal to 100 minus the percentage of damage.

In addition, Soviet rail capacity is multiplied times five, with the exception of June 1941, when it is multiplied by 2.5.

Only Soviet nationality rail yards and ports can produce strategic transportation capacity for the Soviet player, and only Axis and Axis allied nationality rail yards and ports can produce strategic transportation capacity for the Axis.

V1.07.04

Ground combat in a hex can no longer cause damage to a port in the hex.

(21.2) Factory Capture, Damage, Repair and Evacuation

Factories in captured town, city and urban hexes can be damaged or destroyed.

With the exception of manpower, port, rail yard, resource and oil factories, all other factories in captured hexes are destroyed and permanently removed.

With the exception of manpower factories (21.1.10.3), factories that remain will receive a variable amount of damage (damage will be added to the factories equal to 25 + random(75)percent (not to exceed 100 percent).

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. Captured factories will produce at the rate of their actual nationality, so captured Soviet oil factories will not be limited to 60 percent output (21.1.5).

Captured rail yards and ports will not provide any strategic transportation capacity to the capturing side (21.1.11).

All factories can be damaged by the bomb city air mission. Only one type of factory can be attacked by a particular bomb city air mission (5.3.8).

Soviet factories that are evacuated (21.2.1) will suffer at least fifty percent damage, with additional damage occurring if they are of the type that automatically destroys any factory points not evacuated. Damaged factory production probability is $\text{Die}(50) > \text{factory damage}$. So having 1% damage will have 2% probability to have 0 production. 49% damage have 98% probability to be not produced this turn.

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

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 Rail yard	3%

Note that Factories located in isolated hexes cannot be repaired.

(5.3.2.2) Strategic Rail Movement Soviet Factory Evacuation

Summary: Left click to select hex, left click to select town, city or urban name in general information and city box, left click '>>' link to select the number of each factory type to be moved, right click on eligible town, city or urban hex to transport selected factories using railroads.

Detail: The Soviet player selects an eligible town, city or urban hex, and then selects the name listed in the general information and city box in the right side of the top panel, which will display a modified city detail window. Note that this modified city detail window will only appear in Rail Mode (F2). The supply, fuel, oil and resource information is replaced by a 'Rail Cost:' item and the list of factory types will include a rail capacity cost per factory point in parentheses and a 'Move' column. Selecting the '>>' button will increase the number of factory point of that type to be transported and change the rail cost to display the number of rail capacity points that will be used for moving the selected factory points. The '<<' button will appear when at least one factory point of that type has been selected to move and can be used to decrease the number of factory points to be evacuated. When the Soviet player has completed selecting the number of factory points of each factory type to be moved, selecting the 'Move' link will bring up the map area with town, city or urban hexes eligible to receive the factories being transported shaded in green. Right click on an eligible town, city or urban hex to conduct the rail transport of selected factory points to the target hex. See section 21.2.1 for details on Soviet factory evacuation.

(21.2.1) Soviet Factory Evacuation

Certain Soviet factories can be evacuated through the use of strategic rail movement (14.2, 5.3.2) at a specific cost of rail capacity for each factory point moved as follows:

Type of Factory	Rail Capacity Cost per Factory Point
Heavy Industry (HI)	5000
Armaments	3000
Generic Vehicles	3000
Aircraft/AFV/Combat Vehicles	Build Cost x2 (21.1.7)

Note that the rail capacity cost per factory point is displayed in parenthesis next to the factory name in parenthesis in the city display window (5.4.26) when in rail mode (F2).

V1.03 Beta 3

Doubled the rail capacity costs for factory rail movement.

No factory movement is allowed on the June 22, 1941 turn.

V1.06.22

Factories that are moved may not be moved again for twenty turns. The turn when it will be able to move again is shown on the city display when in rail transfer mode.

(21.2.1.1) Disposition and Damage to Evacuating Factory Points

For aircraft, AFV and combat vehicles, any factory points of a particular type not moved from a particular city (when some are moved) are destroyed for that particular city.

For Heavy Industry, Generic Vehicle, and Armament factories, any factory points of that type not moved will remain undamaged in their original location and are still available to be evacuated at another time.

Evacuating factories of a particular type from one city will not impact production of that same type of factory in a different city. For example, Kharkov has 51 T-34 M1941 factory points. If the player moved 10 of those points east to Chkalov, it would expend 7140 rail capacity and 41 T34 M1941 factory points would be destroyed. If there had been 51 Armament factory points, however, moving 10 would still expend 30000 rail capacity, but the other 41 Armament factory points would remain in an undamaged state.

All evacuated factory points will be heavily damaged and will require repair before they become operational and recommence expansion.

Game Play Tips on evacuating factories:

1. There are two types of factories you have to consider when deciding how to evacuate. The ones that don't rebuild (HI, generic vehicle, armaments) can be moved piecemeal. The ones that build up to a build limit (aircraft, AFV, Combat vehicles) must be moved all at once, with any part left behind destroyed. The key is, for aircraft and AFV/Combat vehicle factories, you have to get at least one point evacuated or you'll lose the potential to build that factory back to the build limit. But you have to move that particular factory all at once, so there are two decisions to make; when to move it and how much to move when you do. Bottom line for aircraft and AFV/Combat vehicle factories is that if you know you are going to lose the city, if you can get at least one factory point out before it's too late, you'll eventually be able to rebuild.

Note that some factories do not need to be moved due to ending production. For example, the MiG-3 factories in Moscow will be automatically removed in December 1941.

2. To maintain historical production figures the Soviet player needs to move at least half of the capacity of the factories being relocated. For example, in Leningrad there is a KV-1 factory that begins the 1941-45 campaign scenario with a size of 29. KV-1 factories have an expansion rate of one. The factory in Leningrad was historically moved in mid-August 1941, which at an expansion rate of one, should be up to a size of about 32. The only other KV-1 factory is in Chelyabinsk, which initially has a size of zero. Relocating the Leningrad KV-1 factory in mid-August 1941 will result in a sharp drop in KV-1 production as the evacuated factory cannot produce or expand until it has been repaired. In order to maintain historical output, at least half of the initial factory's capacity (16 or greater) will need to be moved from Leningrad.

(21.3) Captured Equipment

AFV/Combat vehicles, generic vehicles, and gun type devices can be captured during combat (15.3). Captured generic vehicles are placed directly into the capturing side's vehicle pool. Other captured equipment is placed in its own pool in the "captured" section of the production screen (5.4.3).

If the production system determines that there is a sufficient number of captured equipment, then they will be matched with manpower to build ground elements that will be sent as replacements to a unit that has a TOE that includes the same general type of equipment.

For example, captured T-34 AFV's could be used in a unit that has the TOE for medium tank type ground elements. On the other hand, captured German Elephant tank destroyers cannot be utilized by the Soviets as it is a Heavy Tank Destroyer, a type of equipment that is not in any Soviet TOE.

(21.4) Production to Other Fronts

Since they were fighting on multiple fronts, not all German and Italian production is available for deployment on map to the Eastern Front. Thus a certain amount of German and Italian production will be automatically unavailable.

The affected factory types are heavy industry (supplies), fuel, synthetic fuel, manpower, armaments, vehicles and individual aircraft and AFV/combat vehicles.

Resources and oil are not affected.

For Germany, this includes production from Czech and Polish factories.

The production screen (5.4.3) will list the percentage of production that will be available to the Eastern Front. Total capacity will be listed, both on the production screen and in the individual City Production windows (5.4.4), but only production that actually is available for the Eastern Front will be displayed in the "Built" column and in the

totals on the right hand side of the production screen. The Logistics Phase Event Log (5.4.12) will also only list production available to the Eastern Front.

The following table is used to calculate the percentage of production placed in the pool per turn by nationality and year:

Nationality	1941	1942	1943	1944	1945
German(1)/Czech/Polish	85%	80%	70%	60%	50%
Italian	10%	20%	30%	N/A	N/A

Note 1: German aircraft have an additional modifier that reduces their production delivered to the Eastern Front by 50%. This represents that the proportion of air forces sent east was always much lower than the proportion of ground forces sent east.

(21.4.1) German Armament Points to Axis Allies

~~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 10,000 armament points will be provided 10,000 armament points from the German armament pool.~~

V1.05.18

~~Germany will export 1000 armaments points in a turn to each Axis nation instead of 10000 points.~~

V1.08.00

Germany will now export 1% of its armament pool, but no more than 4000 points, to every allied country that has less than a certain amount of armament points (20000 for Rumania and Hungary, 15000 for Finland and Italy, 5000 for Slovakia). In addition, information about armament exports is now visible in the Event Log. Previously it was always 1000 points and only when Germany had over 100000 armament points.

(21.5) Lend Lease

Though the Murmansk convoys are the most well known and hard fought examples of the Western Allies sending equipment and supplies to the Soviet Union during World War II, material was also delivered through Iran and across the Pacific to Vladivostok. Lend Lease in Gary Grigsby's War in the East is represented by a fixed amount of Aircraft, AFV/Combat vehicles, generic vehicles and supplies generated through the production system.

(21.5.1) Lend Lease Aircraft, AFV and Combat Vehicles

Lend lease aircraft and AFV/Combat vehicles are produced by off-map factories that do not consume any supplies due to the build cost of the item being set to zero. The off-map location of the factories will be Lend Lease North, Lend Lease South, and Lend Lease Pacific. The type, number, expansion rate, build limits and start/stop production dates simulates the historical flow of American and British aircraft and AFV to the Soviet Union.

(21.5.2) Lend Lease Supplies and Generic Vehicles

Commencing in August 1941, the Soviet player will receive a fixed amount of supplies and generic vehicles every turn that varies by year as follows:

Year	Supplies/Turn	Vehicles/Turn
1941	1000	300

1942	3000	800
1943	5000	4500
1944	7000	6000
1945	6000	1500

V1.04.28

Changed per turn Lend Lease vehicle imports to the following:

1941 - 300
 1942 - 800
 1943 - 4500
 1944 - 6000
 1945 - 1500

Weather Rules

(22) Weather

There are four types of weather (clear, mud, snow, and blizzard) and three types of ice (Loose, Thin and Frozen) (5.1.5).

Weather can have a powerful impact on the game and is mainly represented by its effect on movement costs, which also affects the tracing of supply (14.1.5). In addition, bad weather (mud, snow and blizzard) can reduce or cancel air missions (16.1.5).

Special First Winter rules simulate the ill-preparedness of the non-Finnish Axis forces for the Russian winter (22.3).

The map area is divided into four weather zones (Europe, South Soviet, Central Soviet, and North Soviet), with the chance for more adverse weather increasing as the zones move from west to east (5.4.6).

(22.1) Weather and its Effects

Clear weather is considered good weather and has no effect.

Mud represents wet conditions that restrict movement, most notably during the biannual Russian Rasputitsa when melting snow in the spring or heavy rains in the fall turned unpaved roads into quagmires.

Mud has the most impact on motorized units, with a +4 MP cost for every hex entered compared to +2 for non-motorized units (14.1.5). Note that supply will also be significantly impacted as it is traced using motorized MP costs.

Mud weather also increases the chances that individual aircraft or complete air group units will not participate in missions or that the entire mission might be cancelled due to inclement conditions (16.1.5).

Snow represents mild winter conditions with freezing temperatures and snowfall.

Movement and supply tracing costs are increased by +1 MP for all units.

The impact on air missions is the same as in mud, with an increased chance of aborted aircraft, air group units and entire air missions.

Blizzard weather represents extreme winter weather, with temperatures well below freezing accompanied by high winds and heavy snowfall.

Movement and supply tracing costs are increased by +2 MP for all units.

The adverse impact on air missions is approximately double that of snow or mud, with greatly increased chances of aborted aircraft, air group units and even the cancellation of entire air missions.

Some units perform better in adverse weather. Ski units will have their combat value (CV) doubled in snow and tripled in blizzard. The doubling of a Mountain unit's CV in a mountain hex is not affected by weather conditions (15.6.2.3).

(22.1.1) Ice Levels and Frozen Lakes and Rivers

Each weather zone has an ice level that is shown next to weather if the ice level is greater than zero. Ice levels range from zero (none) to ten (frozen solid).

Ice levels one and two are defined as loose ice, levels three and four are thin ice, and levels five and higher are defined as frozen.

The ice level will rise and fall in each zone based on the weather and time of year as follows:

- Clear: - 3 levels/turn
- Mud: - 1 level/turn
- Snow: +1 level/turn
- Blizzard: **+1, +2, +3, or +4 levels/turn (see 1.05.18)**
- May 1 to September 30: -1 level/turn

Ice levels will never exceed ten or go below zero.

V1.05.18

Ice levels no longer go up by 4 during a blizzard in all areas. The amount of increase is dependent on the weather zone as follows:

- Europe Zone +1
- South Soviet Zone +2
- Central Soviet Zone +3
- North Soviet Zone +4

Major rivers are not considered frozen until the ice level is at least 8 (used to be 5). At ice levels 5-7, the extra cost due to icing is 8 when moving into an EZOC, and 4 when not moving into an EZOC.

(22.1.1.1) Ice Levels and Movement Costs

As with ice free movement across rivers, MP costs are different depending on whether the unit is moving into an EZOC or not (14.1.5).

Note that ice level costs are cumulative with the regular cost to move or attack over river hexsides. For example a motorized unit crossing a major river hexside with loose ice (ice level 2) into an EZOC would expend an additional 22 MPs; 18 for regular crossing plus 4 more for the loose ice.

Frozen ice levels (8+) causes all river hexsides (including impassable) to have no impact on movement or combat. In addition the movement cost for swamp terrain is reduced in frozen conditions.

With the exception of the Lake Ladoga Zone, movement and supply trace over full water hexes is not affected by ice levels.

Tactical movement over full water hexes (small lakes, large lakes, Baltic, Caspian, etc) is not allowed, regardless of ice level.

In addition, strategic naval transport or amphibious transport is not affected by ice levels.

(22.1.1.2) Supply Trace Over Water Hexes and Lake Ladoga

Per sections 20.1.3 and 20.4.1, supply trace over all water hexes requires a port to port connection, with at least one of the ports being on the supply grid. This over water trace is normally free of cost in the same manner as rail hexes are part of the supply grid.

The exception to this is the Lake Ladoga Zone. Port to port supply trace over all water hexes does incur movement point costs based on the current ice level as follows:

No ice (level 0) = 1 MP
 Loose ice (level 1-2) = 2 MPs
 Thin ice (level 3-7) = 6 MPs
 Frozen ice (level 8+) = 4 MPs.

(22.3) First Winter Rule

The following rules impact the Axis player in the section of the map area delineated by coordinates X>72 or X>54 AND Y<95 during Blizzard turns in any scenario that includes the months of December 1941 through March 1942.

With the exception of the supply modifier (22.3.4) Finnish units as well as all Axis Ski and Mountain units of any nationality are not affected by any first winter rules.

Soviet units in areas impacted by the First Winter rules pay half the normal movement points for entering enemy controlled hexes (this halving also applies to the portion of the ZOC to ZOC cost calculated based on the cost of entering enemy controlled hexes, as well as the additional cost for Regiments and Brigades entering enemy controlled hexes)

V1.04.10

It was always harder for German units to received replacements during the first winter (previously undocumented). It is now even more difficult for them to received replacements during first winter.

(22.3.1) Combat Value Modifications

Non-Finnish, non-mountain and non-ski Axis attacking units have their modified combat value (CV) divided by 3 and possibly more if they fail certain leader rating checks (divided by 4 if admin check fails, and divided by 4 if Infantry or Mech Combat rating check fails).

Non-Finnish, non-mountain and non-ski Axis defending units CV are divided by 2 and possibly by more if they fail leader infantry or Mech combat or admin checks (once again, divided by 4 for each failed check).

Because of these modifiers and to better reflect the unit's current status, Axis units will have their normal printed CV divided by three, and their defense CV divided by two, with values rounded down. The leader checks that can reduce CV's further will still occur, but the printed CV values only account for the definite reduction in CV.

To better reflect their impact, the displayed CV values for Finns, Soviets, and Axis mountain and ski units are doubled during first winter blizzard turns to account for the first winter surprise effects on other units.

V1.04.10

Changed the CV modifications in January 1942 as follows:

Attacking CV is divided by 2 (instead of /3). Any missed check (admin or combat skill) causes CV to be further divided by 3 (instead of /4). Defending CV is divided by 1.5 (instead of /2 - previously this was incorrectly listed as /4). Any missed checks causes CV to be further divided by 1.5 (instead of /2).

The displayed on counter CVs are divided by 2 for attack and 1.5 for defense (instead of /3 and /2).

Changed the CV modifications in February 1942 as follows:

Attacking CV is divided by 1.5 (instead of /3). Any missed check (admin or combat skill) causes CV to be further divided by 2 (instead of /4).

Defending CV is divided by 1.33 (instead of /2 - previously this was incorrectly listed as /4). Any missed checks causes CV to be further divided by 1.33 (instead of /2). The displayed on counter CVs are divided by 1.5 for attack and 1.33 for defense (instead of /3 and /2)

V1.05.59

During any Snow turns between December 1941 and April 1942 (inclusive), and any blizzard turns in March or April 1942, German attack CV factors are divided by 1.5. Any missed check (admin or combat skill) causes the attack CV to be further divided by 2.

The displayed on counter attack CV will be divided by 1.5 during these turns.

(22.3.2) Ground Element Damage and Disruption

Axis units will have 5 - 20 percent of their ground elements become damaged at the start of the logistics phase, which allows repair attempts during that same logistics phase. Units with low experience and morale will suffer the most.

Axis AFV ground elements also have an increased chance to be damaged that is based on their reliability, representing AFV breakdowns (9.6.1).

Ground elements will also suffer additional disruption prior to the ground combat sub-phase (15.1) whenever they attack or are attacked. The amount of disruption suffered by defending ground elements will be half that of attacking ground elements. As with damage, units with low experience and/or low morale will suffer additional disruption.

(22.3.2.1) First Winter Disruption Formula

- If attacking, base disruption taken will equal $20 + \text{Die}(10)$
- Then if $\text{rnd}(125) > \text{the unit's experience}$, add additional disruption of $20\% + \text{Die}(20)$
- Then if $\text{rnd}(125) > \text{then unit's morale}$, then add additional disruption of $20\% + \text{Die}(20)$

(22.3.3) Unit Morale Reduction

Non-Finnish Axis units with morale greater than 55 will lose 1 morale points per turn during the logistics phase.

Non-Finnish Axis units with morale greater than 60 will lose 2 morale points just prior to each ground combat they are involved in, whether attack or defense.

V1.04.10

The Morale drop for exposed units was reduced from 2 to 1.

Removed the automatic pre-combat morale reduction of 2 when morale was greater than 60.

Added a loss of 1 morale for non-Finnish Axis units whenever they are attacked and the final end of combat odds are greater than 1:2.

(22.3.4) First Winter Supply Modifier

Axis units tracing supply to a railhead in the affected area (22.3) will have the amount of supply they receive **reduced by 25%** after all other modifications.

V1.04.10

Axis units tracing supply to a railhead in the affected area (22.3) will have the amount of supply they receive reduced by 25% after all other modifications. (previously it was reduced 50%).

(22.3.5) Mitigation of First Winter Rules in Cities

Axis units located in town, city and urban hexes can mitigate the first winter rules regarding damaged ground elements and morale losses to some extent.

Any units in an urban hex will not suffer damage to their ground elements or morale losses during the logistics phase.

In a city hex, the two units with the **largest manpower (including attached support units)** will not be impacted.

In a town hex, one unit with the **largest manpower (including attached support units)** is eligible to avoid the penalty, but only if Die(4) is less than or equal to the population value of the town.

Game Play Tip: Axis Allies will suffer greatly from first winter effects due to their normally low experience and morale. Place them on garrison duty in town, city and urban hexes if possible to mitigate the effects of "General Winter."

V1.04.10

First winter mitigation for towns and cities now protects the units with the largest manpower (including attached support units), instead of those with the largest CV (if any units are protected, as per the existing rules).

(v1.06.27) Reduced Blizzard Effect Option

Added "reduced blizzard effect" option. It can be enabled in Game Options for a new game. When using this option some of the First Winter rules are altered. Simply put Combat Value Modifications are no longer random, in worst case they should be equivalent to the old rules' best case or slightly better, and the player can mitigate those effects to a certain degree by using forts and cities of all sizes.

The detailed rules are as follows:

- The automatic loss of 1 morale for non-Finnish Axis units whenever they are attacked and the final end of combat odds are greater than 1:2 mentioned in patch notes "v1.04.10" is disabled.
- Combat Value of non-Finnish, non-mountain and non-ski Axis units during Blizzard or Snow weather between December 1941 and April 1942 in the First Winter Zone is reduced to 36% plus 4% for each point scored when checking the following conditions (to a maximum of 100% - 16 points):

~~Month is:~~

~~–January, February, March, April +4~~

~~Weather Zone of the battle hex is:~~

- ~~—Europe +3~~
- ~~—Southern Soviet +2~~
- ~~—Central Soviet +1~~

~~When the unit is in or next to the battle's hex and the unit's hex contains:~~

~~—Terrain:~~

- ~~1. Heavy Urban +5~~
- ~~2. Light Urban +4~~
- ~~3. City +3~~
- ~~4. Any terrain with a Town +1~~

~~—Fort +1 (for each level)~~

~~When the unit defends in the battle hex (is not a reserve unit):~~

- ~~—Always +4~~
- ~~—Month is February +4~~
- ~~—Month is March, April +8~~
- ~~—Weather is Snow +6~~
- ~~—Terrain:~~

- ~~1. Heavy Urban +5~~
- ~~2. Light Urban +4~~
- ~~3. City +3~~
- ~~4. Any terrain with a Town +1~~
- ~~5. Light Woods, Heavy Woods, Rough, Mountain terrain without a town +1~~

The displayed CV values for Finns, Soviets, and Axis mountain and ski units are no longer doubled during first winter blizzard turns.

Example: A German division in January '42 (+4) located in Central Soviet Weather Zone (+1) in a town in clear terrain (+1) with a level 2 fort (+2) is defending (+4, +1 from town again). The score is 13, so the CV will be reduced to $36 + 13 \times 4 = 88\%$ of the original CV value. The same division would attack a neighboring hex with 68% of the original CV value.

Note:

The player has to remember that CV is also reduced by damage to ground elements when taking part in combat (rule 22.3.2), so the units are weaker than they seem from the values on counters. However, preparing a proper defensive line based on cities, forts and reserves (perhaps at a cost of reduced gains in November '41), should allow for holding it successfully in most parts of the front, and the units should be in much better shape for a summer offensive.

1.07.12

Updated Reduced Blizzard effect CV reduction rules

Combat Value of non-Finnish, non-mountain and non-ski Axis units during Blizzard or Snow weather between December 1941 and April 1942 in the First Winter Zone is reduced to 36% plus 4% for each point scored when checking the following conditions (to a maximum of 100% - 16 points):

Month is:

- January +4
- February, March, April +7

Weather Zone of the battle hex is:

Europe +3
 Southern Soviet +2
 Central Soviet +1

When the unit is in or next to the battle's hex and the unit's hex contains terrain:

Heavy Urban +5
 Light Urban +4
 City +3
 Any terrain with a Town +1
 Fort +1 (for each level)

When the unit defends (includes defensive reserves):

Always **+3**
 Weather is Snow or month is March, April **+3**
 Terrain:

Heavy Urban +5
 Light Urban +4
 City +3
 Any terrain with a Town +1
 Light Woods, Heavy Woods, Rough, Mountain, Swamp terrain without a town +1

1.08.00

Changed mild winter base defender bonus from +4 to +3, and snow/march/april defender bonus from +5 to +3.

First Turn and Early War Rules

(14.1.4) June 22, 1941 and Early War Movement Costs

June 22 1941 Surprise Rule: During the June 22, 1941 turn Axis unit receive the following advantages to simulate the achievement of surprise.

- Movement costs of attacking are halved (including costs of attacking across rivers), but will cost at least one MP.
- Entering an enemy hex costs only 1 MP.

Early war Soviet Movement penalties:

- During the June 22, 1941 turn, Soviet motorized units have their final adjusted MPs divided by 3, but never to less than one MP. Soviet non-motorized units have their final adjusted MPs divided by 2, but never to less than one MP.
- Prior to October 1941, all Soviet motorized units that are division size may never have a final adjusted MP of greater than 18.

(23.3.1) Frozen Units, Geographical Movement Restrictions and HQ Conversion

The Rumanian Front (both Axis and Soviet units in this area) is frozen on turns 1 and 2.

Axis and Soviet ground units in this area can't move, air units may move and fly missions.

During a Soviet Logistics phase, if Axis forces control any hex that is both east of hex column 51 and in a hex row between 89 and 94 (all inclusive), then these forces will unfreeze.

- Several Axis units are frozen at the start. The Finnish Front is initially frozen for both sides.
- Many Soviet units in the Caucasus are frozen at start with the number of turns frozen shown in their rollover text.
- Axis units may not move through Hungary on turn 1.
- If an Axis unit begins the Soviet turn 1 Logistics Phase closer than 10 hexes from a Soviet Military District, that Military District HQ unit will immediately convert to a Front HQ unit.

V1.04.22

Changed the area of automatic freezing of Soviet units in the northern area of the map (Finnish Front) in scenarios that begin on June 22, 1941. Now, units with an x coordinate >99 will no longer be frozen.

V1.07.10

If the Rumanian front areas is still frozen, Axis movement into Hungary is no longer allowed on turn 2 of scenarios starting on June 22, 1941. More accurately, movement is not allowed in the area both south of hex row 86 and west of column 45. This has always been true for turn 1, but has been extended to turn 2 as described above. The Axis AI may ignore this rule in order to defend its territory.

(23.3.2) Soviet Rail Capacity Reduction

Soviet rail capacity is reduced to fifty percent of normal for turns that take place in June 1941. This represents confusion, the shock of war and conversion of the rail road network to a war setting, as well as trains being utilized to move mobilizing reserve manpower and equipment to their units.

(23.3.3) Soviet Generic Vehicle Mobilization

The Soviet motor pool starts the war at 60,000 vehicles.

In addition to normal production, to represent vehicles mobilized from civilian use, the Soviet player will receive an additional number of vehicles during the logistics phase of the first ten turns of the scenario as follows:

- Turn 1: +50,000
- Turn 2: +40,000
- Turn 3: +30,000
- Turns 4-10: +20,000

(23.3.4) June 22, 1941 Surprise Rules

Each Soviet unit's starting morale, experience and number of damaged ground elements will be variably determined based on unit type and location. All Soviet on-map and support units are affected.

Soviet units attacked during the first turn will also suffer pre-battle damage and disruption.

The exception to the above is that Soviet units located in the occupied Finnish port of Hanko (hex X57, Y14) on turn 1 are not affected by the first turn surprise rule, to include both the random setting of morale/experience and damage to ground elements.

V1.06.11

Axis Brigade and Regiment sized units must pay the standard 2 additional movement points when entering enemy controlled hexes on 22 June 1941 (in addition to the special +1 cost).

(23.3.4.1) Designated Map Areas

See game manual.

(23.3.4.2) Setting Initial Soviet Moral and Experience

The morale and experience of all Soviet units at the start is set as follows (in the order listed):

- Determine initial morale by taking a base of 30 and adding Rnd(24).
- Add 5 to the morale of all NKVD units.
- Further modify the morale of all motorized units, by multiplying their morale by .9.
- Modify the morale of units in the Southwest area by adding 10 and the morale of units in the Moscow area by adding 5.
- The final morale of Soviet units cannot exceed 99 or be less than 30 after all adjustments, to include any difficulty level settings.
- Set the experience level of each type of ground element in all Soviet units using the formula ' $\frac{2}{3} * \text{Morale of unit} + \frac{1}{2} * \text{rnd}(\text{morale of unit})$ ', not to exceed 99 or be less than 20 after all adjustments, to include any difficulty level settings.

(23.3.4.3) Initial Damage to Soviet Ground Elements

As part of the normal automatic game start process, some ground elements in Soviet units will become damaged.

Soviet units in hexes where $Y < 32$ or $x > 79$, which is considered outside of the initial Axis invasion zone, will maintain this automatic damage.

All other ground elements that were damaged as part of the automatic game start process will become ready and then may suffer damage from a special first turn effect.

Units in the Southwest, North and Moscow areas will suffer roughly half as much as Soviet units in the rest of the affected map area.

(23.3.4.4) Pre-Battle Damage

When Soviet units are attacked on turn one, they will suffer additional damage and disruption to their ground elements before the battle takes place.

Again, units in the Southwest, North and Moscow areas will suffer less damage and disruption than units in the rest of the map area.

(23.3.4.5) Movement Costs and Allowances

German Movement Costs:

The Germans get the following movement cost advantages on turn 1:

- Movement costs of attacking are halved (including costs of attacking across rivers), but will cost at least one MP.
- Entering an enemy hex costs only 1 MP.

Soviet Movement penalties:

Soviet motorized units have their final adjusted MPs divided by 3, but never to less than one MP. Soviet non-motorized units have their final adjusted MPs divided by 2, but never to less than one MP.