

EASTERN FRONT 1941-1945

TOAW IV - for PO and PBEM play. V7.0 3/2023

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1-Unzip the scenario file in the folder:

'Documents/My Games/The Operational Art of War IV/Scenarios/WW II - East Front'

2 - Start TOAW and select 'Eastern Front 1941-1945.v7' from the WW II - East Front folder



New in V7: Decreased Axis and Red Army trucks and logistic units in 42-43'. See notes in section 12. Changes in v7 and other important stuff highlighted in red!

Historical Notes: this new scenario follows the entire Eastern Front campaign from the opening of Operation Barbarossa to Spring 1945. This is an ideal campaign for 'TOAW', with many possibilities for replay. Great care has been taken to model the Order of Battle and weapons production of every army involved. With over a decade of research and testing, 'Eastern Front 1941-1945' (EF) aims at modeling history closely in a scenario that is challenging and fun to play, with an emphasis on playability and operational choices, with the goal of providing a realistic portrayal of this titanic struggle well beyond the first months of the campaign and over 200+ turns! This scenario includes several of the design improvements made possible by the upgrade to TOAW IV. It models the slow raise of the Red Army over the war and the strong effects of geography and weather on movement, supply and air operations. The scenario has several Theater Options (TOs) to model unit upgrades and production changes. *Players in a hurry to play should read sections 2, 3 (Axis) and 4 (Red Army) and hope for the best... Background on the actual campaign is given in the references section. Comments welcome!*

Index.

1. Main Features -----	Page 2.
2. Game Options-----	Page 3.
2.1-2.5 Map, Weather, Blizzard, Rasputitsa & Historical constraints-----	Page 3.
2.6 The Evacuation of Soviet Factories-----	Page 4.
2.7 Production, Replacements and the Disband Units' System-----	Page 5.
2.8 Reinforcements -----	Page 5.
2.9 Variable OOB and Productions, Theater Options (TOs)-----	Page 5.
2.10 Unit Co-operation -----	Page 5.
2.11 Partisans-----	Page 6.
2.12 The Equipment File -----	Page 6.
3. Axis Player Notes -----	Page 6.
4. Red Army Player Notes -----	Page 9.
5. Opening Turns-----	Page 14.
6. The Programmed Opponent (PO)-----	Page 14.
7. Sudden Death & Victory Conditions-----	Page 14.
8. Recommended House Rules-----	Page 15.
9. Attritional Losses-----	Page 15.
10. Air Strategic Reserves-----	Page 15.
11. References-----	Page 16.
12. Changes in Versions 7 and older versions -----	Page 16.
13. Future Updates and Design Notes-----	Page 21.

1. Main Features:

- A detailed Order of Battle, down to the regiments and battalions attached to each army
- 'Sudden Death' victory conditions to simulate the political constraints of each force.
- Lend-Lease shipments and the evacuation of Soviet factories.
- Strong seasonal weather effects.
- Historical production rates for each equipment and seasonal levies
- **Unique equipment file with Separate Rifle Squads for each of the Axis allies.**
- Realistic portrayal of the Red Army's logistics improvements over the course of the war.
- Theater Options to change the production emphasis of each force.
- Strong Fog of War and use of a lot of 'under the hood' TOAW4 features

Map scale: 32Km for 205 weekly turns: from June 22nd 1941 to May 1945.

Units: From Army (mostly Red Army) to brigade scale.

Unit Colors: Red Army: light and dark red

Germany, Rumania and Hungary different shades of gray and blue

Finland: white, Italy: green



2.Game Options: The scenario comes with pre set game options (see previous page). Don't change them (unless you really want to?) EF also uses its own equipment file already embedded in the .sce file. **No need for additional eqp files.**

2.1 The Map:

- Major rivers play a large (historical) role in providing strong defensive opportunities.
- The rail network was drawn from "The Russo German-War" (p.12) and Russian sources.
- Movement rates, plane ranges, entrenchment rates and density penalties are modeled consistently with the scenario scale: (32km/hex).

2.2 Weather: EF aggressively models the effects of weather. Cold fronts and snow storms will occur starting in October, affecting road movements, supply and air operations (with negative Air Shocks). These effects will wane by March every year, followed by the rain/mud season. Combat in Winter and during rain seasons will be difficult. Major rivers will freeze. Players will need to plan their operations accordingly!

2.3 Blizzard 1941: the first Winter proved challenging for the unprepared Wehrmacht. This is simulated by negative shock bonuses and a drop in the supply rate over several turns starting in December. The Axis player needs to follow the news carefully.

2.4 Rasputitsa: In Fall and Spring the rain season (or Rasputitsa, 'season without roads') will make movement extremely difficult, effectively bringing fighting to a halt for both forces. This is modeled with a number of TOAW features, including Negative Shocks (that will drop supply rates and force most formations into reorganization) and refugee effects to model the increased cost of movements along roads.

Rasputitsa Approximate Turns: 17-18 Fall 41
41-44 Spring 41
68-70 Fall 42
93-96 Spring 43
120-122 Fall 43
145-148 Spring 44

2.5 Historical Constraints, or how to avoid an un-historical Russian Campaign

1- Having separate squads, equipment and replacement rates for *each* Axis nationality gives the Red Army a strong historical reason to advance as soon as possible into Rumania, Hungary and Finland to knock them out of the war, and forces the Axis player to defend them. As German units will not receive replacements from the other nations' pools, this approach avoids an unrealistic early withdrawal to 'Festung Germany'.

2- In 1941 the Red Army Player will be tempted to withdraw as fast as possible to avoid the encirclement of many of his units. While a legitimate strategy, this approach was historically severely constrained by the necessity to allow factories and civilians to be evacuated. *Politically it would have been unthinkable for the Red Army to abandon major cities such as Kiev, Sevastopol and Smolensk without a fight.* In order to have a realistic campaign, such constraints had to be modeled in the game. At the start of the scenario major Russian cities contain 'static artillery' units in garrison mode, representing both political and industrial centers. *These units will automatically withdraw as the game progresses, each at a turn marked on the unit. If such a garrison unit is destroyed, the Red Army may suffer extra replacement penalties (section 2.6) AND a low probability chance that the Axis will achieve a 'sudden death victory' following the collapse of the Soviet government. If the Red Army withdraws at full speed and the Axis destroys all the 'sudden*

death' units (corresponding to an advance much faster than historically achieved), the cumulative chance for an instant Red Army surrender becomes significant, if still not certain. This feature will force the Red Army player, faced with a small but real risk of a 'sudden death defeat', to put up an historical 'forward defense' while attempting an ordered withdrawal. *The 'sudden death' units are located in Moscow (T24), Smolensk (T4), Kiev (T6), Dnepropetrovsk (T6), Bryansk (T7), Karkhov (T8), Sevastopol (T8) and Rostov (T10) (parentheses mark the turn of withdrawal of the garrison/factory units. Units withdraw automatically at the beginning of the turn, just before the Axis move). Hitler and OKH believed that the capture of Moscow would have forced the Soviet Union to ask for peace. If the 'Moscow T24' unit is destroyed there is a 25% chance of a Soviet Sudden Death. This rule gives to the Axis player an historical incentive to continue the offensive, at the expense of delaying preparations for Winter. After Turn 24 the chances of a Soviet*

Soviet Armies				
Early Army	Late Army	Reserve-Eng Army	Early Tank	Guard Tank
Low Proficiency	Good Proficiency	Not for front	Fair Proficiency	Start as shell.
Low Supply	Supply improves	lines! Disband	Low Supply	Good Proficiency
High Repl. Priority	with time. Slots	for Infantry.	Disband when	and Supply.
Disband in 42-43	for T34-85s.	Use to dig.	GD arrives	Powerful.

Sudden Death for the loss of Moscow drop to 10%.

3- 1943 and later: a large percentage of the Red Army's infantry replacements arrive at major cities as on-map units to be disbanded (look for the dark man's silhouette symbols), arrival times follow the historical advance timetable, with Moscow, Leningrad and Kiev being major manpower centers. This will give the Axis player a strong incentive to hold on to conquered territories in Ukraine and Belarus. A slower than historical advance will most certainly cause Rifle Squad shortages for the Red Army.

2.6 The Evacuation of Soviet Factories is modeled in the scenario by a series of events and special units. *The Red Army will suffer penalties depending on the speed of the Axis advance. Karkhov, Smolensk, Dnepropetrovsk and Bryansk (also marked by factory symbols) contain 'static guns' units in garrison mode representing factories (the same as in section 2.5). Their turn of withdrawal is marked on each unit. 1) If the Axis destroys any of these units, it means that the factories at that location have been captured and destroyed before they could be evacuated. The Red Army will suffer a larger than historical replacements penalty (around 10% per factory). There is also a small chance that the Red Army will sue for peace. 2) if the Axis occupies any of these cities after the Factory unit withdraws, the factories have been successfully evacuated and the Red Army will suffer a smaller replacements penalty (6% each, for a total of about a 20% cut in production). The fall of the four cities in 1941 would be the historical outcome and ensuing Red Army production will be historical. 3) If the Axis fails to take any of the four industrial centers, or takes them later than historical (late Fall '41) the Red Army's production will be higher than historical. This scheme, gives the Axis a true sense of urgency, forcing them to choose between Moscow and the industrial objectives in Southern Russia.*

2.7 Production, Replacements and the Disband Units' System. *To check the number of available replacements for a given unit type, click 'View' and then 'Inventory and Replacements'.* For a campaign of this size and scope it is vital that the scenario adopts correct replacement rates. The scenario models in great detail the replacement rate per turn for each weapon and infantry type as provided by the historical sources. While Rifle Squad replacements peaked for each side in 41-42, decreased later on in the war, and had distinct peaks following the Spring/Fall levies. the production of heavy guns and tanks followed an opposite trend as the industrial output of the Axis and the Soviet Union peaked in 1944. Lend-Lease was a major source of trucks, tanks and planes for the Red Army. This complex process is accurately modeled by combining 1) the scenario's varying replacement rate and 2) numerous 'disband unit' events that dump equipment into the replacement pool. Most of the 'disband unit' events happen automatically and are transparent to the player. This allows the scenario to have *a unique production rate for *every* equipment entry based on historical sources.* **For flexibility some replacement units arrive on map and need to be disbanded by hand when the player needs them (look for units with a brown background, do not use them as combat units!).**

2.8 Reinforcements: new units arrive according to the historical schedule. At variance with most TOAW scenarios **some units arrive split in sub-units and/or as empty shells with low supply and readiness values. It will take them a few turns to become fully combat ready as they receive items from the replacement pool. Premature commitment or 'by rail' movement of these reinforcements should be avoided.** This approach forces the Red Army player to make important decisions: commit his forces too early to see them evaporate in combat or due to air bombing while being moved to the front, or wait too long and let the Fascist hordes advance unchecked. The Axis player will face similar problems in the late stages of the campaign. In 1943 and later some Red Army Infantry units are scheduled to arrive in Ukraine and Belarus (i.e South and West of Moscow). The Red Army will gain infantry reinforcements earlier if it makes progress faster than historically achieved. The reverse is true if the Axis is able to hold ground longer than historically done. *Bleeding the Red Army to death while holding the Ukraine as long as possible is the best strategy for the Axis to 'win' the scenario after 1942* (N.B. if playing vs. the computer: The PO automatically disbands the Red Army reserve units after arrival).

2.9 Variable OOB and Productions Theater Options (TOs): in a campaign extending over almost four years it was necessary to give players some realistic options to change the production of replacements. Within the limits of the production capacities of the Axis countries and the Soviet Union, this makes a lot of sense! A campaign where trench warfare prevailed would have required more emphasis on artillery than on tanks. A successful Axis campaign able to decrease the Red Army supply rate or its logistical support (modeled in the game with Supply Squads) would have forced STAVKA to decrease the resources assigned to the Air Force. Every change in production was designed estimating the resource cost of the equipment involved (one medium tank corresponds to fifty-seventy Rifle Squads). Estimates came from the total tonnage of the units involved. Every production change is a zero sum change in industrial output. Production changes TOptions appear in 1942-43 and amount to about 10-20% per year.

2.10 Unit Cooperation: Wehrmacht units (but not some SS) are on Force support, but because most have the same color scheme they are effectively on Free support. Axis Allies are on Force Support. Red Army Forces are divided into Fronts. In TOAW combat penalties for non cooperating units are harsh. The players should use the attack planning screen often to check for orange or red flags.

2.11 Partisans: soviet partisans are modeled by several 'guerrilla events' occurring at different times over the campaign. Late in the war some of the Axis Rail Repair units and Security divisions are withdrawn to represent increased anti-partisan efforts. Guerrilla events flip hex control and destroy rail lines. The Axis player can reduce the effects of partisan activity by stationing split Security units at major railway nodes and keeping some Rail Repair units readily available to restore broken railroads behind the lines.

2.12 The Equipment List File: EF uses its own equipment file **(in TOAW4 the eqp file is included in the scenario file itself)**. The range of all planes used in the scenario has been rescaled (and sometimes corrected) to reflect the actual scale of the game (32km/hex, roughly 20miles/hex). The database includes Rifle Squads for each nationality (German, Finnish, Hungarian, Rumanian, Italian and Slovakian), and differentiates between combat units as Pioneer/Sapper and Construction units with engineering capabilities, allowing for a much more realistic description of construction and replacements rates. With this approach, when an Axis Ally surrenders (usually when its capital is conquered, see section 3.1 and check the yellow diamonds on the map), its units will be withdrawn and their replacements will not benefit the remaining Axis units.

3. AXIS PLAYER NOTES

3.1 Locations affecting Withdrawals, Supply, Replacements and arrival of AXIS units.

These cities (marked with a yellow diamond) cause the specified Axis Ally to withdraw if occupied by the Red Army:

Bucharest (13,56): Rumanian Forces.

Budapest (2,39): Hungarian Forces.

Helsinki (34,6): Finnish Forces.

Riga (29,16): Finnish Forces (Axis player be careful in winter '41!).

Hexes that affect the Axis if occupied (and penalties if taken by the Red Army):

Ploesti (13,53) -5% Supply for the Axis if the oil fields get occupied by the Red Army.

Dnepropetrovsk (39,49) +2% Supply for the Axis, starting 4 months after occupation.

Tallinn (33,9) +1% replacements for the Axis, starting 4 weeks after occupation.

Koenigsberg (18,18) permanent negative (down to 99%) Shock for the Axis when lost.

Budapest (2,39) permanent negative (99%) Shock penalty and -1% Supply penalty

Most Axis units arrive and reconstitute on the Western border of the map on rail lines.

V7: The Axis will incur some supply penalties and reduced truck replacements if they make further progress than historical, occupying Leningrad, Moscow or Baku. This in order to simulated the extra strain on the overextended rail lines and the necessity to control large cities. This feature reduces the appeal of unrealistic 'deep raids' vs the AI.

Supply Points and City Fortresses: The Axis player has a few supply points across the map. Many deliver much less supply than the global supply rate from the main supply sources on the West edge. These secondary sources represent fortified 'Festungs' cities where the Axis player can stations units, as historically happened in Latvia, Prussia and the Northern coastline of Europe. Units left behind can survive indefinitely behind the frontline without withering away out of supply (they will also reconstitute when eliminated). The Red Army will have to actively attack to get rid of them! This is a great

way to use Volksgrenadier units (with AT squads) for delaying actions. To allow for a small element of surprise I have not posted a list of 'Festungs' here, but the Axis player can find them directly on the map. **Capture of the ports in Volkhov (48,11) and Novorissiyk (42,60) will remove the Red Army supply points in Leningrad and Sevastopol respectively, making impossible for those cities to resist a long Axis siege if completely isolated.**

3.2 AXIS PRODUCTION & THEATER OPTIONS. A number of TOs allow the Axis player to modify or streamline the production of tanks over the course of the war. These options and their effects are realistic and were debated by the Nazi government during the War.

- **More U-Boats less Red Army Supply & Replacements:** Available between Fall 1942 and Spring 1943. It reduces the Red Army supply by -2% and replacements by 1% for 80 turns. (it is assumed that Germany eventually loses the U-Boat war). The Wehrmacht receives less heavy tanks, as industrial resources go to sustain the U-Boat fleet instead.
- **No Heavy Panzer Jagers (Tank Hunters).** Available from early in 1943 to Turn 95. The heavy Panzer Jagers are never produced (such as the Elefant, which was used at Kursk, not very successfully). Production is converted to about twice as many medium tanks (PzKw IVs).
- **Less Heavy Tanks (Tigers and Jagdtigers)** Available turns 140-149. Less Tiger II tanks are produced, replaced by twice as many medium tanks (PzKw IVs).

Selection of all three options together results in supply penalties for the Red Army in exchange for a severe cut in the production of heavy panzers and an emphasis on the production of more late models type PzKw IVs.

Supply and Replacement Rates: will peak for the Axis in 1943-44 and plunge in 1945.

Axis Withdrawals: several Axis units will withdraw as they get redeployed to other theaters (Italy, Africa and the West Wall). These withdrawals are announced in the news a few turn in advance to allow the Axis player time to prepare. Examples are the 10th Pz Division relocating to Tunisia, the SS divisions redeployed in France in 44 and the 19th Mountain Korps redeployed to Norway after Finland asks for peace. *Honor rule: players should not disband units about to be withdrawn in order to get their equipment!*

Supply Units: The Axis has four supply units at the beginning of the scenario. Their effect is to locally increase supply rates. They will all withdraw as the campaign progresses, UNLESS the Axis conquers Stalingrad or Moscow (each event will retain one Supply Unit). This effect is to simulate the effect on logistics of a better than historical campaign. *For best usage: keep them a few hexes from the nearest railhead. Kiev, Minsk, Rostov and Moscow where transportation hubs and supply depots for the Axis. Their garrisons also function as static Supply Units (using the 'double icon' feature). See section 12 for details.*

Army and Army Group HQs: have traffic control, bridging units and limited railroad repair capabilities. Army HQs contain support squads, their loss affecting the supply rate of the parent formation. **HQs should rarely be used in direct combat avoid losses. Place them one hex behind the frontline for artillery support and on river crossings to help other units.**

RR repair units: they are vital to move supply forward. Their number (four) has been chosen to allow an historical rate of advance of the rail heads. *Each Axis RR units start split in 3, providing the maximum rail repair rate.* Two hexes are repaired automatically every turn (1 from late Fall 1942 and later). Some RR units withdraw in 1942.

Spring bonuses: The Axis will receive a supply bonus and extra support squads in Spring of '42,'43 and late Summer '44, to simulate the historical surges in replacements.

Axis Rail, Sea, Recon and Airlift rates: start high, but will decrease starting in 1943.

Air and Elite Units: some German elite Panzer divisions start as Motorized regiments (Grossdeutschland, LSAH, Totenkopf) before withdrawing for refit and expansion to full Divisions. Some SS and air units withdraw to the Western Front in 1943-44. These events are handled by the event engine and withdrawals are announced in the news.

Hiwis: Starting in 1942 The Wehrmacht used more than one million Russian POWs as forced labor attached to fighting units. This extra manpower is represented by a 'Hiwis' unit, containing ~1000 Construction Squads, that arrives in Ukraine (hex 26,41) in Summer 1943. *This units must be disbanded manually by the Axis player,* so that its squads join the replacements pool. Construction Squads increase the engineering/entrenching capabilities of their parent units, but not their combat power.

3.3 AXIS OFFENSIVES THEATER OPTIONS. The Axis player should carefully decide how/if to employ them, as they will strain the supply network and result in long term penalties.

SPRING-SUMMER 42 OFFENSIVE: This TO arrives in Spring 1942 and is cancelled by Summer 42. The Axis player receives air and ground shock bonuses for a few turns, starting three turns after the TO has been selected (Turn X+3). The Red Army suffers a theater recon penalty to simulate the Axis deception strategy during the preparation of the offensive. *However, after activating this option the Axis receives a permanent reduction in supply (1%) and replacements (1%) starting on Turn X+8.*

SPRING-SUMMER 43 OFFENSIVE : This TO arrives in Spring 1943 and is cancelled by late Summer. The Axis player receives a 115% ground shock bonus for a few turns, starting three turns after the TO has been activated (if the Axis player activates the TO at turn X, the bonus arrives on turn X+3). *After activating this option the Axis receives a permanent reduction in supply (2%) and replacements (4%) starting on Turn X+8.*

- **Long Game - Axis Resurgent '45.** How to motivate the Axis player to play past 1943 ... 100 turns on the defensive with no real goal other than delaying and (almost) inevitable defeat? This TO tries to solve this issue: If Berlin is NOT captured by Turn 203 (the historical date) the Axis player gets a TO to continue the game until August 1945 AND to receive significant reinforcements. If not selected the game ends on turn 205 with a normal VP count. **This speculative/non historical option will make playing the historical game to its end in May 1945 more fun,** with something to look forward to. 'Axis Resurgent' (AR) assumes an armistice on the West Front (FDR steps down? The Ardennes Offensive succeeded?), 6th Panzer Army Panzer divisions and infantry are redirected to the East Front, West Front artillery is regrouped to form an artillery Korps (using 3xTOE of the historical 18th artillery division). The Luftwaffe, freed from protecting German cities and factories turns in force to the East. Production restarts.

The Axis gets two companies of Maus super tanks and extra ME262 jet fighters, because...why not. The Lend Lease program ends and the Red Army runs out of manpower. It will be hard for the Axis to turn the Red Tide, but it will be fun to try.

Axis Allies

Italy: the Italian expeditionary force will withdraw in the Summer of 1943, as the Allies invade Sicily. Additional Italian forces will be sent if the Axis occupies Gorki (hex 65,27)

Hungary, Slovakia, Finland and Rumania: *Hungarian and Rumanian forces should never stack together or move North of Lvov (Y: 36)* They will withdraw when their respective capitals are conquered. The Finnish army will withdraw when the Red Army liberates Helsinki or Riga (29,16). Two Soviet, Karelian Front Armies will also withdraw when Finland surrenders, as some other units when Hungary and Rumania surrender. To avoid 'gamey' tactics early in the game the Axis player should make sure Riga is secure when captured in 1941! *The Finns activate on turn 4, but the exclusion zone that separates them from Leningrad is only removed on turn 104 OR if the Axis takes Leningrad. The Finns should never not move South of the area marked by stars.*

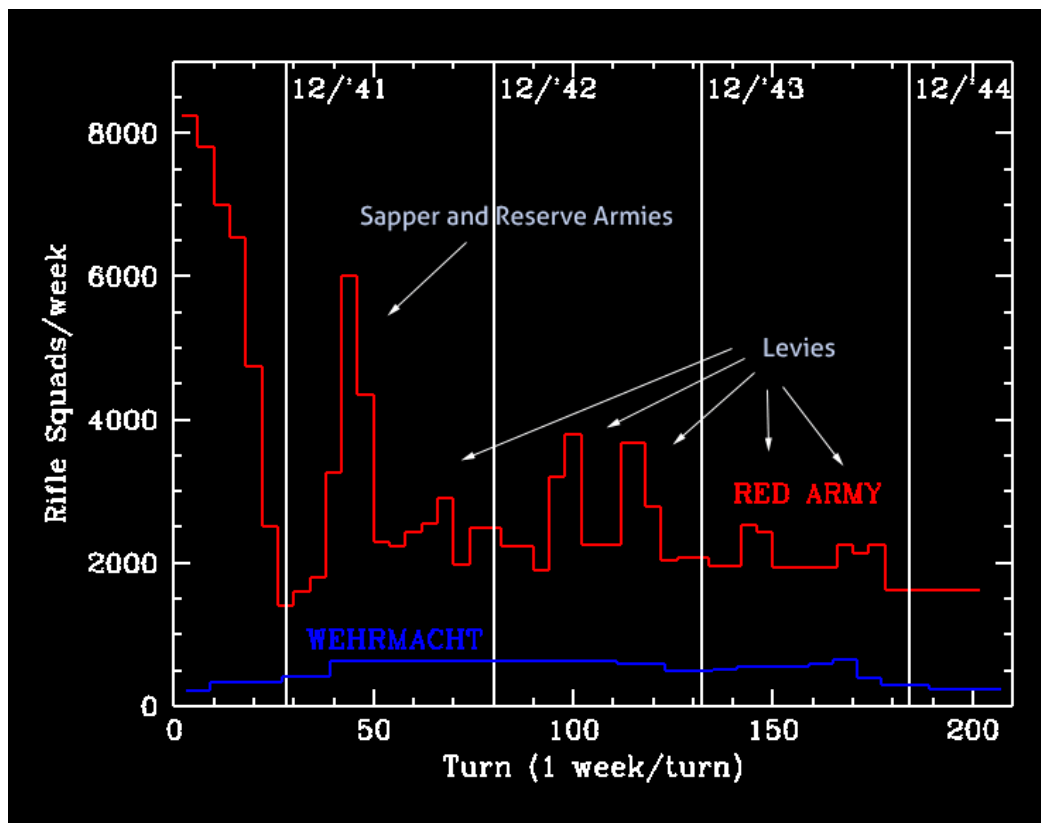
Shock Bonuses: The Axis starts with strong Air and Ground Shock bonuses to simulate the effect of surprise and the better level of strategic organization. These effects will end by Fall 1942, representing the decrease in quality of Wehrmacht replacements. Expect the VVS to gain strategic superiority in 1943. The Luftwaffe can probably achieve tactical superiority as late as 1944.

ZOC Cost Bonus: To simulate German troops prowess at the tactical level, their cost to leave an enemy ZOC is only 0.75-0.9 the normal cost until Fall 1942, 0.95 thereafter.

4. RED ARMY PLAYER NOTES

First Turns: *the opening of the campaign will be brutal and the situation will seem hopeless (as the opening map on page 1 shows). It is historical..and it gets better. Save your HQs (and their Support Squads) at all cost to preserve your logistics and split your Army units stop cover a larger front and avoid encirclements. Two Corps at the front and one in tactical reserve is a good strategy. In 1941 Red Army units will find it difficult to break contact with German units due to slow movement and poor recon abilities. This is by design.*

Infantry replacements and the Levy System: Each side mobilized millions of men as infantry units during the course of the war. The Red Army levy happened twice a year in Spring and Fall. The surge in conscripts coincided with major offensives ([Karkhov](#) 42, Operations [Uranus](#) and [Bagration](#)) and these levies need to be incorporated into the disbandment scheme to realistically time the Red Army offensives. This procedure leads to both a build-up phase and to the eventual end of offensive operation, often dictated by lack of supply and replacements. In later years (from the Summer of 1943) the Red Army raised a substantial (30%) part of its conscripts from recently liberated territories in the Ukraine and Belarus. The units representing these later reinforcements arrive on the map and need to be manually disbanded. These units will have a brown background, 0 MPs and the fixed artillery icon. See page 10 figure to see the replacement rates for each side,



Locations affecting Supply, Replacements and arrival of RED ARMY units: The Red Army will suffer supply and replacement penalties and reinforcement delays if the following hexes are occupied by the Axis:

Industry Icon: hexes that affect Replacements rates (example: 61,51 Stalingrad)

Human Figure: arrival hexes for Red Army Replacements (example: 17,36 Lvov)

Oil Well: hexes that affect the supply rate if taken by the Axis or liberated by the Red Army.

Diamond symbol: hexes that remove supply points in major cities or may trigger Sudden Death events.

Maikop Oil Field (48,62)	-3% Supply
Smolensk (41,28)	-4% Replacements
Kiev (31,39)	-5% Replacements
Murmansk (57,5)	-5% Replacements, Lend Lease reduced.
Kursk (45,39)	-6% Replacements
Dnepropetrovsk (39,49)	-6% Replacements
Stalingrad (61,51)	-6% Replacements
Leningrad (44,11)	-15% Replacements + Railway capacity cut to 8000.
Moscow (54,27)*	-20% Replacements + Railway capacity cut to 8000.
Grozny Oil Fields (60,68)	-3% supply -3% Replacements
Baku (61,72)	-10% Replacements, Lend Lease reduced.
Volkhov (48,11)	Red Army Supply source in Leningrad removed.
Novorossiyk (42,60)	Red Army Supply source in Sevastopol removed.

The Red Army will gain a Supply bonus for occupying:

Danzig +2% (main Axis submarine base)

*there is also a 10%-20% chance that the Soviet Union will collapse if Moscow falls

(see Victory Conditions in section 7).

Warsaw, Lvov, Saratov and several hexes on the East side of the map are Reinforcement arrival points (human figure symbol) for the Red Army. Reinforcements will arrive only if the town/hex is eventually occupied by the Red Army. *A better than historical Axis campaign will adversely affect the Soviet player. Some Red Army units will withdraw shortly after Finland, Rumania and Hungary surrender, as they historically moved off map (to Norway, Yugoslavia and Austria respectively).*

Red Army Units: the quality and composition of the Red Army Forces improved dramatically over the course of the war. This is represented by having two types of combat units (marked by a light or dark red background respectively). **Units with a light red background will not reconstitute.** During the first crucial years of the campaign the Russian player is forced to choose between sending replacements to the front line (early units are low quality) or disbanding some of the early units and letting their equipment transfer to the second generation units, with a much stronger TOE (table of organization and equipment), that will start arriving in Fall 1941 (see below). Disbanding of the early units should happen over time, representing the slow transition of the Red Army from 'stumbling colossus' in 1941 to an unstoppable war machine in late 1944. *(start disbanding when at least 140 Red Army ground units are on the map).*

1941 Units: light red background. They have low proficiency (mechanized units: 35-40, infantry: 40-45) and their parent formations have very low proficiency and supply levels. They have high replacements rates, so they will get a lot of the available replacements. Remember: These units *do not reconstitute*. If disbanded later in the war, men and equipment from the disbanded units will return to the equipment pool and will eventually be issued to new units. These 'early' units are brittle and will run out of supply quickly if used offensively. They will also go into re-organization often. High replacement rates reflect the fact that most fresh recruits had to be sent to the front with little time for adequate training. Red Army Formation HQs have two **command squad** each, making them susceptible to reorganization when lost. Each Formation represents a Front (equivalent to an Axis Army Group) or (in July 1941) a Military District.

1942-1945 Units: dark red background. These units start to arrive in late Summer 1941, have a higher proficiency, their parent formations have a higher proficiency and supply distribution efficiency (which improves with time due to the arrival of more supply squads for their HQs) and reconstitute if destroyed. These units have a stronger TOE that includes many attached arty and tanks regiments and will eventually form the backbone of the Red Army. *Keep your HQs away from the front lines until you have a surplus of Supply Squads, sometime in 1943. Giving up ground is almost always a better option!*

Guards and Tank Armies, upgrades & withdrawals: starting in Spring 1943 several Armies were promoted to Guards status. These new armies contained more infantry divisions (up to 9) and a very large number of support units (artillery regiments, tank brigades etc...). To simulate these upgrades and with them the general improvement of the Red Army, starting in 1943 the Red Army player receives several TOs. On activation the affected Infantry or Tank Army will disband and return with Guards status (dark red background). These new units will eventually become much more powerful than their predecessors, with a better proficiency and allowing for a larger number of squads and more modern tanks and equipment. Withdrawal/upgrades appear as TOs following the historical schedule. First generation Tank Armies (which historically performed very poorly) will be replaced by one Tank Army + one Mechanized Corp. If a TO is not manually activated by the player it will be automatically activated on the specified turn

(usually a few weeks after the historical upgrade). Disbanded equipment will return to the replacements pool. *Guards Armies attached to Stavka are on free support and they will fight with units from other Fronts with no cooperation penalty.*

In late 1941 the Red Army will have relatively few units on the map. The Red Army player should split each Army unit into two or three Corps to cover the front and avoid Armies to be isolated and encircled. This was introduced also to simulate the initial low quality of Russian troops. Armies proficiencies will go up once they get reformed later in the war.

Lend-Lease: the substantial shipping of supplies, guns, vehicles and tanks from the UK and the US (often referred to as Lend Lease, (LL)) is faithfully represented in the game. Historically most of the Red Army's trucks and significant numbers of tanks and AA guns were delivered to the Soviet Union through the LL program, before the Soviet production ramped up. Players will notice how Churchill and Valentine tanks will start showing up in the TOE of Soviet Armies starting in Fall 1941, while US Shermans will arrive in 1944. To illustrate the flow of LL units a number of reinforcements units are scheduled to arrive in 41-43 at the historical locations of Murmansk (57,5) and Baku (61,72). These units need to be disbanded so that their components will go to the replacement pool (they have no MPs and low proficiency). Historically Murmansk and Baku were major strategic objectives for the Axis and need to be carefully defended by the Red Army at all times. If either of the two locations is captured the Red Army will suffer several penalties:

- 1) Permanent replacement penalties
- 2) Withdrawal of some LL units scheduled to arrive before 1942.
- 3) Delay of some Lend Lease units arrival by up to 8 weeks

Eventually, starting in late 1943 the LL reinforcements will arrive off-map and be automatically disbanded. This will simulate the establishment of safer and more flexible routes (through Iran and Siberia as the war in other theaters progresses) and the decreasing strategic importance of Baku and Murmansk.

Engineer and Reserve Units (light brown background): in Spring 1942 the Red Army raised a number of Engineer and Reserve Armies (mostly composed of infantry and construction units). They can be used to create fortified areas, but should eventually be disbanded and not used in combat. Their construction squads will be more useful when incorporated into larger units as they will help them achieve a higher deployment level (Defending, Entrenched or Fortified) faster. Historically the Red Army started with an insufficient number of Construction/Engineer units and was able to raise enough of them only in Spring 1942. At the same time, a number of Reserve units were formed, they were mostly training units with limited combat capabilities. *These units have an extremely low proficiency and virtually no combat value! They must be disbanded to provide replacements for normal combat units. Follow the recent and expected reinforcement screens to see where and when reserve units arrive.*

Supply Units, Support Squads and RR Repair Units: to represent improvements in logistics at the front the Red Army receive several Supply Units during the course of the war. Keep them a few hexes ahead of the railheads. Late Red Army Formations (corresponding to Red Army Fronts) have HQs with Supply Squads. Their supply distribution efficiency will slowly grow as more Supply Squads arrive.

Railroad, replacement, recon and supply rates: all improve considerably with time, starting in Fall 1941. Losing Leningrad and Moscow will decrease the Railroad capacity of

the Red Army, possibly permanently if this happens later in the war.

Leningrad Area: an exclusion zone simulating an extensive line of manned forts separates Finland from the Leningrad Area. This was a quiet area of the front for most of the war. The exclusion zone is lifted if 1) the Axis takes Leningrad or 2) on turn 104 (June 1943).

Red Army Production Theater Options:

Over the scale of four years some realistic (read modest) options for changing production should be available. **In late Spring 1943 The Red Army receives several TO options to switch production between tanks, guns and infantry, changes that amount to about 20% of yearly production.** These options are available until March 1944.

- 1) More Tanks fewer Guns: more T34s, and fewer guns
- 2) More Guns fewer Infantry: more large caliber artillery and fewer Rifle Squads.
- 3) More Infantry fewer Tanks: more Rifle squads and fewer T34s
- 4) Less Planes, more supply: one Air Army withdraws. Red Army Supply +1%, Recon -2% Replacements +1% (The Red Army Air Force was a resource hog).

Combinations are possible: Use of options 1 AND 2 correspond to: 'More Tanks, fewer Infantry'. Options 1 AND 3 corresponds to 'More Infantry, fewer Guns' (smart eh?).

Red Army Offensives Theater Options

OFFENSIVE I - Uranus: This TO arrives in December 1942 and will disappear on Turn 82. The Red Army receives a small ground shock bonus for a few turns, starting three turns after the TO has been activated (e.g if the Red Army player selects the 'Offensive I' TO on turn X, the bonus arrives on turn X+3). The Axis suffers a recon penalty to simulate the Red Army's deception strategy.

OFFENSIVE II - Bagration: This option arrives in June 44. The Red Army receives a small ground shock and supply bonus for a few turns, starting three turns after the TO has been activated (e.g. : if the Red Army player selects the 'Offensive II' TO on turn X, the bonus activates on turn X+3). The Axis suffers a recon penalty to simulate the Red Army's deception strategy.

EXTRA FRONT: on Turn 120 the Red Army has the option of creating an extra Front (the Kursk Front). This is a useful option if the Red Army has a surplus of replacements or it 'does not have enough counters'. An extra Front would have required creating extra logistical support. To model the cost of this choice the TO has a supply penalty attached to it. *One HQ, three Infantry Armies, a Tank Army and an Artillery Corp will arrive in a few turns.* Remember that units arrive as empty shells! On top of a supply penalty the Kursk Front HQ will take support units from the replacement pool and will then compete with other existing Fronts for them. This will, on average, bring the supply rate down for the whole Red Army for several turns, unless there is an existing surplus of support squads, (a surplus of support squads is possible by late 1943, at least if the Red Army avoided losing HQs in early battles. This option does not disappear until used.

One TO per side (RED ARMY EXTRA SUPPORT SQUADS on Turn 10 and AXIS REBALANCE OPTION on Turn 50) give the players the option to allocate extra Support Squads for

the other side. This helps balancing the game vs the PO or a less experienced opponent!

5. Opening Turns in 1941 and strategic situation by Front:

Army Group North: terrain is difficult but Red Army forces in front of Leningrad are not strong. Diverting mobile forces from AGN to AGC in the Fall will be necessary to conquer Moscow. Leningrad can survive a siege. If conquered the Finnish units will be activated. They are strong, but have almost no replacements and should be used very sparingly.

Army Group Center: in the opening turns the Wehrmacht has the opportunity to create several large pockets by attacking the weak spots along the border and pushing as far forward as possible with the panzers. The German player will need to decide if it is better to leave Red Army units behind to be mopped up by the infantry, or to secure supply lines. RR units will need to be left split to maximize rail repair. Remember that occupying Moscow will not automatically win the game for the Axis, but it will cripple the Red Army. It will be tempting to push towards Moscow through December, but tired, low supply German units will be very vulnerable when 'General Winter' arrives.

Army Group South: the Donets basin and the Caucasus contain primary objectives vital for the survival of Soviet industry. In the beginning the Red Army has several mechanized units with which to counterattack, but these forces will be prone to reorganization and it will be very vulnerable to being forced into large pockets by the fast Panzer divisions. In late Summer, once the Dnieper has been crossed by German tanks, the Red Army will find itself exposed and weak. Many Russian units will have to be split into sub-units to cover the frontline. However, Sevastopol can resist a long siege unless attacked in force.

In 1942 the Axis can try to weaken the Red Army by taking Leningrad, Moscow and/or Stalingrad+Grozny, cutting the replacement rates and supply for the Red Army. A successful drive South aiming for Baku will also make life very difficult for the Red Army.

6. The Programmed Opponent (PO): Elmer, the game PO puts up a decent fight particularly through Spring 1942. If playing against the PO, human players are strongly advised to help Elmer every few turns to reorganize armies, defend major cities and move air units closer to the front. The player should modify PO objectives as the game progresses. These actions will greatly help "Elmer" to provide an interesting challenge. The PO uses multiple tracks for both sides

7. Victory Conditions: the scenario will end with a Red Army Victory when Berlin is captured. There is a 10% probability that the same will happen if Moscow is captured by the Axis. Alternatively, the scenario will end in May 1945 with a normal victory count.

7.1. PBEM Sudden Death Victory Conditions: this section describes a set of recommended Victory Conditions to be applied at the end of every year (unless otherwise specified). **These victory conditions are house rules that have to be agreed upon by both players. These rules are not enforced by the event engine!**

1941 The Axis player wins by 'Sudden Death' if he holds Leningrad, Moscow, Rostov and one of Grozny, Stalingrad or Murmansk *at any time in 1941*. The Red Army Player wins if by the end of 1941 he holds all the cities in the 1941 Axis list, plus Kiev and Riga.

1942 The Axis player wins by 'Sudden Death' if by the end of 1942 he holds Moscow,

Leningrad, Stalingrad plus Baku or Murmansk. The Red Army Player wins if he holds all the cities in the 1942 Axis list, plus Kiev OR Warsaw.

1943 The Axis player wins by 'Sudden Death' if by the end of 1943 he holds Moscow, Leningrad and Stalingrad. The Red Army Player wins if he holds all the cities in the 1943 Axis list, plus Kiev AND Warsaw.

1944 The Axis player wins by 'Sudden Death' if by the end of 1944 he still holds Minsk, Budapest, Bucharest, Kiev and Riga. The Red Army Player wins ...by occupying Berlin.

8. Recommended House Rules: optional, but they make for a more historical game.

Loss Tolerance & Supply: Until 1942 The Red Army used massed infantry attacks with some disregard for human life and equipment losses. *The Red Army player should never set their units on 'Minimize Losses'.* Attacks with units 'in the red' should be used sparingly to avoid excessive losses. Red Army offensives were historically launched after a substantial build-up of supplies that took several turns in game terms.

Sea Invasions: the Axis Player should NOT use his sealift capacity for sea invasions after 1942. Red Army forces should refrain from invading proper Germany by the sea at any time, and should not attempt a sea invasion of Rumania earlier than 1943.

Air Forces: Starting in 1943 the Red Army Player will enjoy strong air supremacy and high air replacement rates. Both Combat Support to aid ground units, using Ignore Losses settings and attacks on Axis airfields are encouraged and reflect historical tactics.

Bridge blowing by air units : *should *not* be used by either force. On the Eastern Front this tactic was not as extensively used at the strategic level as it was on the West Front. Blowing bridges by ground units is OK.*

Airborne Operations: the Red Army has a few Corps with airborne capabilities. However, these units were not used in airdrop operations after 1944. The players should agree if they want to stick to the historical role of these units. The default is that both forces can do limited airborne operations, as allowed by the scenario's Air Transport Capacity. *Airdrops should be limited to a range of 3 hexes from the nearest friendly supplied ground unit.* Both players have strong Anti-Aircraft units garrisoning vital locations.

9. Attritional Losses and Sink Units This is an important addition as TOAW's engine does not allow for operational losses, meaning that tanks never break down, or for removal of obsolete models. These shortcomings of the engine are moderated by the addition of 'sink' units. This change is transparent to the players (who have no control on them). 'sink' units, arrive with empty slots that will slowly fill up with by then *obsolete and unused* tanks and AT guns equipment existing in the replacement pool. Axis sink units arrive on turns 13 and 120, and withdraw on turns 60 and 180 respectively. Red Army sink units arrive on turns 16 and 110 and withdraw on turns 60 and 180. Fall '41 and Fall '43 correspond to times when operational losses were high for both sides and when old equipment was being phased out. *The players should not disband or try attack the sink units. They are on the lower left of the map.*

10. Air Strategic Reserves. These hexes (surrounded by dark lines, for example 2,22 and 65,15) mark areas and airfields that are 'far away' from the map and unreachable by enemy air units. The players can place air or ground units there, while they acquire replacements or rest.

11. Scenario Sources and Readings: some entries have links to the on line sources.

Stalin's Key to Victory by Walter S. Dunn Jr. (great source on the OOB and production)
[Soviet Casualties and Combat Losses in the Twentieth Century](#) by G.F. Krivosheev et al.
[The Storm of War](#) by A. Roberts (Lend-Lease and production)
When Titans Clashed by D.M. Glantz (great introduction with a lot of detail)
Stumbling Colossus by D.M. Glantz (June 1941 OOB and arrival of units)
Colossus Reborn by D.M. Glantz (TOEs and production)
Absolute War by C. Bellamy (production options)
[The Road to Stalingrad](#) by J. Erickson, my favorite reading on the Eastern Front Campaign!
The Road To Berlin by J. Erickson (see above)
The Russo-German War 1941-45 M.Seaton
The Last Year for the Luftwaffe A. Price (Luftwaffe OOB for 1944)
Clash of Wings by W.J.Boyne
Panzer Battles by F.W. Von Mellentin (OKH biased...)
Crumbling Empire The German defeat in the East, 1944 by S.W. Mitcham, Jr
German Tanks at War by B. Carruthers (useful notes on German tank production)
Kiev 1941 by D. Stahel. Modern description of Barbarossa. Easier to read than Glantz.
Several existing TOAW Scenarios and games including 'Soviet Union 41' by B. Cross
Matrix's 'War in the East' PC game: www.matrixgames.com
Image credit: wikipedia.com

[German Tank Strength in June 1941](#)

[Luftwaffe Production](#)

German Tank Production: [Source 1](#) and [Source 2](#).

[Glantz's 45 minute video lecture on the Eastern Front.](#)

[German Replacement Rates](#) (this is a rare find)

[German Railroad Repairs](#)

[German Weapons Production](#) (only a fraction of production went to the Eastern Front)

[Axis Allies' Production](#)

[Red Army Tank and Gun Production](#)

[Russian Railroads Map](#)

Acknowledgments: Many thanks to Chris Horn for a careful editing of this document and to Mark Dabbs, Mike Campbell, Jeff Norton, Ed S., 'Ogar', Carlos Summers and several others for play testing various versions of this scenario.

12. Changes in Version7 3/2023

- Playable distant hexes were removed as they created unwanted effects
- Mariupol re-added as urban hex.
- trucks and logistic units replacements (Bridging, construction squads) were further reduced for both sides in 42-43. Axis supply units will withdraw a turn or two earlier. This should make offensive shorters and longer to prepare. Rivers will be order to cross for the Axis in '43 and later.
- truck slots were added to all sink units AND German garrisons in main cities. This will decrease the amount of trucks available to ground forces and simulate the strain on longer supply lines and efforts to control large population centers. At the same time a small supply penalty has been added to the Axis side if Moscow, Leningrad or Stalingrad are captured.

Changes in Version 6.

MAJOR CHANGES

- Cut Axis Truck production. The Axis should now suffer some truck shortages starting from late Summer 1941 to at least 1943. This will make the Panzers units slower starting in Fall 1941. Note that one can use the option to dump trucks from units in static parts of the front into the replacement pool. Open the unit report and click 'Dismount'.
- Mud will dry faster. Mud & Snow parameter. Increased from 100 to 1000 as mud was drying up too slow at the end of each Winter. Value has been chosen so that ground is dry in the Ukraine by mid May and by mid June further North in Bielorussia to match the Kharkov and Barbarossa offensives start dates.
- AXIS Resurgent Summer 1945 Theater Option. If Berlin is NOT captured by Turn 203 (the historical date) the Axis player gets a Theater Option to continue the game until Turn August 1945 AND to receive significant reinforcements. If NOT selected the game ends on turn 205 with a normal VP count. (See section 3.2 for details).
- PO scripts have been updated. The PO and should provide a better challenge by forming better front lines and being less insanely aggressive. Remember it's not a true AI but just a smart script.

MINOR CHANGES

- Rumanian and Italian units have better proficiency as supported by recent historical studies less linked to post war german memoirs :).
- Wehrmacht Supply dumps: Garrisons in Minks, Rostov and Kiev have a secondary icon as supply depot. Units resting within 3 hexes from these cities will receive a supply bonus.
- Map Changes: Thanks to Russian materials and the work done by the 'War in the East 2' team the railway/road network has been corrected in places. It will be easier to supply units in the Valdai hills (Operation Mars anyone?) for both sides and harder for the Wehrmacht to go South from Smolensk, unless Kiev has been captured. (Btw at the scale of EF roads really represents minor railways.)
- playing hexes behind Berlin and Budapest have been added (these cities were surrounded after all so the extra space was needed).
- a few marsh hexes added East of the Pripyat marshes
- Several locations across the map up/downgraded to/from dense urban based on new population data from the time.
- a few cities now show the date they were captured by the Nazis during Barbarossa.
- more neat but minor stuff I forgot.

- Changes in Version 5.0 and 4.0* (this is mostly for scenario designers)

- 1) MAJOR Version 5 includes the Overextended supply feature. Units in areas that receive less than 3% supply will suffer from penalties as described in the manual. This addition is important to model the equipment losses of the Wehrmacht Summer offensives in 1941 and 1942 and the Red Army in later years.
- 2) MAJOR The equipment file has been slightly modified to allow for larger anymore historical tank losses, especially of Soviet tanks, which operated at a tactical level disadvantage compared to the German ones (due to lack of radios, worst optics, buttoned up tanks etc). Historically the Red Army lost 10,000+ tanks per year. I followed values according to a specific WWII.eqp file that had been shared on the TOAW forum.
- 3) MAJOR Grozny (60,68) is now a major objective for the Axis, marked with both 'Oil field' and 'factory' icons. Its capture brings supply and production (replacement rate) penalties for the Red Army. Supply and replacement penalties for the loss Maikop and Stalingrad have been reduced. These changes highlight the strategic value of the 'deep Caucasus' campaign and the need to balance between political and industrial objectives faced by the Axis.
- 4) MAJOR The Soviet Air forces Shock penalty has been increased on turn 1 and its units have been set on Air Superiority and Combat Support as even bombers were historically ordered to counterattack. The Axis should be able to destroy about 2000+ planes during the first two turns!

- Increased the slots for SdKfz 251/1 in Panzer divisions and Korps, to model the widespread use of such chassis in many variations. As a result the defense strength of Axis Panzer/mech units will increase a bit vs artillery in the late stages of the war.
- Added SdKfz 251/9 to AT Kampfgruppen units. They have AT and recon capabilities
- Changed the TOE of some Caucasus Front Armies as they used many Lend Lease tanks.

- Added slots for Sherman tanks in some Red Army units, such as the 1st Polish Army and a few late war Mech Corps, which will use less T34s.
- Added light 'L' tanks to Italian units.
- AT rifles slots added to Moscow defense units.
- Increased frequency of Storm events.
- Red Army supply and artillery corps are a little slower to reflect logistical abilities of the time.
- Minor changes to airport locations on the map. The town of Brest has higher fortification values at start. The Berezina river is now named.

*Version 4 was released only for TOAW III.

Changes in Version 3.6 (April 2015)

This version includes a few minor changes that improve on the realism of logistics in Spring 1942 and 1943. It should take a little longer before the Axis can start its Summer offensives. Supply of the Red Army in the Caucasus has been improved.

- Red Army AT Divisions cooperation set on Free Support
- Red Army Garrisons cooperation set on Force Support
- Red Army Hango Garrison (in Finland) gets no replacements to avoid unrealistic sieges.
- Small increase in entrenchment values around Leningrad to model civilians' work.
- The Red Army gets more supply around Baku and in South Caucasus areas.
- The Caucasus railway system has less 'damaged' hexes to start with and should become operative earlier.
- Axis Rail repair unit withdraws earlier in 1942, but automatic rail repair rate at 2 hex/turn extended. (to slow down the growth of the Axis supply network in 1942)
- Axis '42 and '43 Supply Spring bonus toned down a bit.

Overall the scenario is 'historically balanced' over the whole 200+ turns, meaning that a strong Axis player and a smart, but less experienced Red Army opponent, should expect a fun and realistic game. This is the version that is released with the 'patched' TOAW v3.4 release.

Changes in Version 3.4 (April 2014)

- 1) MAJOR: Added a Red Army 'Moscow T24' in Moscow. If the Axis destroys this unit by capturing Moscow, there is a global 30% chance for a Red Army 'sudden death'. The unit automatically withdraws on turn 24. Design note: it is doubtful if the Soviet government would have collapsed after the loss of Moscow (as Hitler and OKH believed at the time). But it is generally agreed by historians that the chances would have been higher earlier in the war. Most importantly, this event gives the Axis player a strong incentive to push on until late in the season and discourages players from digging in due to historical insight. This change should lead to more historical campaigns and a more dramatic 'blizzard'. Note: after turn 24 the Sudden Death chance for capturing Moscow remains 10% as in previous versions.
- 2) MAJOR: Production of Axis Mounted and Motorcycle squads slowed down significantly after Spring 43 (Turn 100). These squads get replaced with an equivalent number of AT+Heavy Infantry squads that arrive as replacements. This change reflects the historical TOEs of many German units in the second part of the war, as the Wehrmacht shifted to a defensive posture, and adds significant fire power to about 3000 squads, at the expense of units' recon capabilities.
- 3) MAJOR: Added 3000 Axis construction squads in 43+. These additional squads (representing Hiwis, or foreign POW troops) will help Axis units to entrench faster in the late stages of the war. Historically more than one million Russian POW were (usually forcefully) enlisted in the Wehrmacht. Similar to Red Army reinforcement units, one Axis 'Hiwis' unit will arrive in Vitbesk (hex 26,41) in Summer 43 and needs to be manually disbanded by the Axis player. This requires the Wehrmacht to hold South Ukraine to represent access to local manpower.
- 4) Map: more difficult terrain in the Leningrad area. Changes to rail lines in the Murmansk area. Increased supply rate from Baku.
- 5) Red Army shock penalty in Fall 41 and Spring 42 decreased to 50% from 40%. (100% means no penalty). This change makes it easier to defend during mud turns and reflects the difficulty of mounting offensive operations during the rain season. Axis has a similar bonus in 44/45, introduced in version 3.3.
- 6) Negative weather Air shocks in Fall 41, affecting both sides.
- 7) Axis decrease ZOC cost stays at 95% until end of game to reflect the tactical prowess of the Wehrmacht at the tactical level.
- 8) AAA effects increased +5%
- 9) Red Army Air Shock set to 95% in 1943 90% in 1944, and to 85% in 45. This is done to offset the unrealistic high proficiency of Red Army air units late in the game.

- 10) Red army 'Attrition Losses' unit arrives earlier, at Turn 13, with a higher priority for replacements. This will increase Red Army tank losses in Summer/Fall 1941.
- 11) Added 76mm AA slots to Red Army Garrison units. Removed AA trucks slots from Red Army Garrisons. (Stahel's book 'Typhoon' mentions that Moscow had formidable AAA defenses)
- 12) Increased by +10% readiness/supply for 1st Shock Army, Western 10th, Bryansk 60th, 61st armies. This will make them a bit stronger for the Winter offensive.
- 13) Slots for some AA trucks added to TOE of Red Army cadres and Support units (supply, RR).
- 14) Small changes to a few Red Army air units TOEs, to increase their chances of reconstituting.
- 15) Some naval units removed: Kriegsmarine unit removed. Baltic Fleet turned into static artillery unit in Leningrad (they only provided gamey recon capabilities). Volga river flotilla removed.
- 16) Increase proficiency of Kiev M.D Formation/Infantry +5% This will make progress of AGS abit harder in the earlier stages of Barbarossa.
- 17) Totenkopf unit size changed to division (-)
- 18) Axis Air Transport capabilities end in January 1945.
- 19) Proficiency of some Axis Garrisons increased +5%
- 20) More Soviet Mounted Rifle Squads arrive early, but less produced overall.

Changes in Version v3.3 (November 2013)

A few PBEM games continued well into 1944, providing extremely useful feedback. Changes in v3.3 affect mostly the late (post December 1943) stages of the war.

- one exception to the above statement: terrain West of Lvov made more difficult after new information from Google maps and the WITE forum. This will slow down AGS a bit during the first turn or so.
- increased tank attrition losses for the Red Army in 43-44.
- The Brandenburg Regiment can now reconstitute.
- small increase in German Heavy Rifle and Support squads arriving in 44-45. (extra Rifle squads arrive as reinforcements in low proficiency units)
- 1% supply penalty if the Red Army activates the extra 'Kursk Front' option, to better simulate the additional strain on logistics.
- Anti Aircraft lethality increased by 5%.
- changes to Red Army Summer 44 offensive TO: shock reduced to 102%, but added +5% supply bonus for 3 turns. This is to encourage the Red Army to take an operational pause and maximize the supply benefit representing the stockpiling of Fuel and ammunition depots.
- the Moscow - Leningrad highway has been downgraded to a road.
- Loss of Budapest will trigger a 1% Supply penalty for the Axis.
- Axis supply slightly improved in 44+, Red Army supply slightly decreased.
- Axis mud turns penalties decreased in 44+ to simulate better road network in Romania and Bielorussia.
- Some Red Army units withdraw a month after Bucharest and Budapest are liberated, as they push South to Yugoslavia and West to Vienna.

VPs have been rebalanced to better reflect the late stages of the war:

- Losses VP penalty increased for both sides. This will hopefully force both sides, but especially the Red Army, to have some operational pauses in 43-44 in order to increase supply and decrease infantry losses.
- Some VPs are awarded to the Axis player during the late stages of the war. Now the Red Army needs to capture Berlin earlier than historical in order to gain an 'overwhelming victory'.

These two changes should present an interesting and realistic challenge to the Red Army player: push hard irregardless of losses in order to conquer Berlin and East Europe already in 1944, but then risk to suffer so many losses that the post war recovery will be endangered due to lack of manpower (W.Dunn Jr. books were useful here, especially "Stalin's Keys to Victory: The Rebirth of the Red Army"). Note that taking Berlin still triggers a 'Sudden Death' for the Axis, and an automatic Red Army victory.

Changes in Version 3.0 (July 2013)

- The AA-combat patch is included with the scenario. The use of the modified EXE file is recommended as it will ensure more realistic air losses and air attacks.
- Withdrawal of Soviet Garrison/Factory units delayed by a few more turns, to be more in line with the

historical evacuation of factories. This will encourage the Red Army to attempt a forward defense in Summer 1941.

- Introduced a few 'sink units' (lower left of map) to model operational losses due to attrition and the removal of obsolete equipment.
- Proficiencies of 1944-45 units increased for the Red Army and decreased for the Axis.
- Proficiencies of some Axis Allies units decreased by 5%.
- The PO is now a bit more effective, due to the use of multiple PO tracks.
- The diamond symbols in Volkhov & Novorossysk are explained in the text (page nine)
- Added 1945 pestilence effects.
- Reduced the number of tanks in Axis units arriving as reinforcements, to avoid 'double counting' Axis production.
- Slightly increased number German Rifle squads arriving with low proficiency, late war reinforcement, and reduced normal reinforcements accordingly. This approach reduced replacements for veteran, high proficiency units, to better represent the decline of German infantry as the war progressed.
- Reduced supply rate to 5% for supply points in German Festung cities.
- Added Rifle squads slots to Red Army Engineer Armies, to increase their ability to increase the entrenchment levels in a hex, but reduced their proficiencies to 20%, to emphasize their role as non-combat units. Again, these units should be disbanded soon!
- Reduced number of Red Army Sapper Squads arriving in Spring 43 and increased number of Rifle Squads
- The loss of Koenigsberg or Bucharest activates a permanent (negative) shock of 98% for the Axis, to represent the decreased quality of replacements late in the war.
- Air Transport reduced for both sides.
- Sea Transport from Germany to Narvik (49,3) is now possible, but no sea invasions are now possible for Murmansk or Narvik.
- Air Shock return to normal (100%) values at turn 74, instead of 70. This gives the Luftwaffe an extra month of air superiority bonus.
- Fixed a withdrawal effect that left Helsinki without a garrison.
- Tests confirmed that limiting fortified units to 'Limit Losses' gives more realistic results.
- This document has been updated in places to include the above changes.

v3.01 12th Aug 2013.

- Factory units changed to fixed artillery so they will not retreat.

v3.2 25th Aug 2013 (influenced by Stahel's 'Kiev 1941')

- Added refugee events to simulate strain on Wehrmacht logistics if Axis player is able to move East faster than historical in Summer 1941.
- Reduced chances of Red Army Military Districts formations to go into reorganization.
- Some Kiev M.D units have higher proficiency.
- Minor changes to map (Oranienbaum and Odessa are harder to take) and delayed arrival of Axis tank replacements in Summer '41.

Changes in Version 2.0

- reduced fortification levels in the Kiev area and near the Luga river.
- 'Refugees events' have been used to simulated a longer Spring rain season. These events simulate rain patterns moving from the NW in the SE direction and increase the cost of movement along roads.
- reduced fortification and supply levels for a few German cites.
- Kiev and Rostov are not Soviet supply points anymore.
- Reduced pestilence effects for the Axis during Blizzard. I have verified that historical losses were lower during Blizzard than during the Summer and Fall.
- Soviet partisans are now modeled with 'Guerilla events' only. There are no partisan units. This makes for a more realistic partisan warfare and avoids some gamey effects.
- edited the TOE of a few Panzer divisions so that the first entry is the Heavy Rifle Squads (this makes it easier for those units to reconstitute).
- The 800mm German guns 'Gustav' and 'Dora' arrive in Spring 1942, not at the start of the campaign.
- Reduced strength of Axis naval forces in the Black Sea.
- A few early (light red background) Soviet armies return as Corp sized cadres when destroyed. This is to simulate the formation of weak Soviet units from stragglers during the Summer of 1941.
- Most Soviet Armies scheduled to arrive in the Summer and Fall of 1941 arrive on map already split in three sub-units. When recombined their proficiency will increase by 25%. This approach has been chosen to increase counter density during the early stages of the campaign and to better simulate the improvement of the Red Army. Both players will feel necessary to broke down units to cover long stretches of the front. Remember that broken down units suffer a 20% non-permanent decrease of their

proficiency (for example: from 80% to 64%). Proficiency goes up by the same amount when a unit recombine.

- Axis Rail Repair units start broken down in three subunits at the start of the scenario. When in good supply, each broken down unit has a 60-80% chance of repairing a damaged rail hex.
- The Axis Pontoon unit can now repair bridges (duh).
- The PO automatic rail repair capability has been substantially increased for both sides.
- This document has been updated in places to include the above changes.

The AA and patches-Obsolete!

The 2015 v3.4 patch superseded these informal patches.

The scenario was originally distributed with two additional files. The 'AA patch' was created by [kmitahj](#) (from the Matrix TOAW forum) and replaced the standard TOAW executable to fix a well known bug in TOAW v3.4 (version 3.4.0.202 to be precise) that allows only units with the Anti-Aircraft (AA) icon to fire at aircraft. Drop the "AAA2Opart 3" executable in the TOAW folder, make a shortcut to the desktop and double click on it. It will start a version of TOAW with the latest v3.4 that also includes the AA-patch. The use of this patch is recommended to simulate a realistic loss rate of aircraft. It will affect both sides equally. To make it easier to verify the identity of the patch (thus avoiding any mistakes or possible malevolent fakes reposted as the original patch) below are checksums of the patch file:

MD5: 4887107d99e08db5888c48746ae27319

SHA-1: 36a1b3de471b12dde2a78d7a5324069c404374e4

SHA-256: 2f9496d54f6139798c8f32a2b75efb1b07cd78f77f75ed6e858d324aee30b4a3

The Opart 3XBb patch was created by [kmitahj](#) (from the Matrix TOAW forum) and replaces the standard TOAW executable. It includes the AA bug fix and slightly increases the chances that units on ignore losses will retreat. It installs as the AA patch. Note that games saved under the 3XBb cannot be played with other versions of the game! A discussion of this patch is found here on this thread: <http://www.matrixgames.com/forums/tm.asp?m=3056061&mpage=3>.

13. Future Updates and Designer Notes Designer Notes, AARs and possible updates to this scenario are posted on the Matrix TOAW Forums. Here are the links:

For TOAW IV <https://www.matrixgames.com/forums/tm.asp?m=4933221>

For TOAW III <http://www.matrixgames.com/forums/tm.asp?m=3238859>



OLD TOAWIII AARs The scenario has evolved since, but they are fun to read!

<https://www.matrixgames.com/forums/tm.asp?m=3590881>

<https://www.matrixgames.com/forums/tm.asp?m=3353935>