

Over the Reich

A Scenario for Civilization II ToTPP
By John P. Petroski & Prof. Garfield
2019



“My personal message to you – this is a MUST – is to ‘Destroy the Enemy Air Force wherever you find them, in the air, on the ground, and in the factories.’”

- Hap Arnold’s Christmas greeting to the commanding generals of the Eight and Fifteenth Air Forces, December 27, 1943

It is May 30, 1942. Germany remains all-powerful and conquering. The Wehrmacht is trampling through the Soviet Union and Africa, and Great Britain avoids starvation by a thread as the Battle of the Atlantic is still very much in doubt. The Luftwaffe remains a seasoned and dangerous force over the skies of Europe, though it is showing signs of being overstretched.

Despite being in their fourth year of war, German industry is still not fully geared for war production. Though the exceptionally capable Albert Speer has recently been appointed Minister of Armaments a few months back, there is still considerable work to do. The economy is not on a war footing – consumer goods continue to be produced in large numbers, few women are employed in the factories, and most factories don’t even run through the night. Considering that Germany now faces the combined weight and industrial capacity of the majority of the planet, this is simply unconscionable and must be immediately addressed.

In the East, the titanic clash of dictators continues to wage as Germany and the Soviet Union bloody each other on the Russian steppe. The German summer offensive has recently started with the aim of capturing critical oil fields in the Caucasuses, though one key city must first be taken to secure their flank: Stalingrad.

Britain, for her part, has emerged from her “Darkest Hour” bruised but breathing, the RAF having saved the realm from the Nazi jackboot in the Battle of Britain all those years ago. Now, Arthur Harris’ Bomber Command raids the Reich by night, bringing terror, destruction, and more than a bit of payback to its cities. Tonight, air raid sirens blare as 1,000 bombers approach Cologne in an effort to wipe it from the map.

For years, the Empire carried on the struggle against the Nazi Menace alone, but now, “God’s good time” has arrived, and “the New World, with all its power and might [has stepped] forth to the rescue and liberation of the old.” Even so, the United States has only been a combatant for six months, and has only the most fledging nucleus of a command structure in Britain. It will take time for the Americans to build their strength, but when they do, it may well prove insurmountable—if their crazy idea to revisit daylight strategic bombing is plausible.

Despite the best hopes and theories of air visionaries, the Allies cannot hope to compel Germany’s surrender from the air alone. Northwest Europe will have to be invaded at some point, and territory conquered to end the Nazi blight. This would likely prove impossible in the face of powerful air defenses, so the destruction of the Luftwaffe “in the air, on the ground, and in the factories” is the Allies’ prime objective.

The Luftwaffe, of course, will have something to say about that...

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The 8th Air Force raids Berlin and comes under attack by advanced Luftwaffe aircraft.

1. Scenario Background

I have spent the better part of 20 years dreaming about this scenario, though it took a considerable time to start building. I first decided that I wanted to build this shortly after playtesting Captain Nemo's unreleased *"The Blitz."* Nemo was brilliant – perhaps the greatest designer Civilization II has known – but even he could not tame the AI into using air forces sanely. Nonetheless, I found his efforts engaging and decided then and there that I wanted to create a similar scenario focused on the Allied Combined Bomber Offensive against Nazi Germany.

I should have known from Nemo's struggles that I was getting in over my head. Proof enough of that is the fact that this is my third full-fledged attempt to create the scenario, with the first beginning in February of 2011.

The initial attempt was made before the Test of Time Patch Project ("ToTPP") was around, so it looked considerably different. The game was played on two maps and primarily focused on the USAAF operations – Bomber Command's night offensive was represented abstractly via technologies, and there was nothing the German player could do to prevent it. Fortunately, a computer crash spared the world from having to see it (aside from McMonkey, who helped to playtest it).

I took a second stab at this in the summer of 2017, and built a working prototype that McMonkey and I again playtest. While the scenario was very innovative and took some advantage of ToTPP, it still featured the macro.txt events, and my efforts to achieve a mechanism for strategic bombing, while technically successful, were less than fun to play. For example, each player had to control 3-4 different civilizations each just to make it work. While it was beyond tedious, McMonkey was a sport and played through it long enough for me to learn enough some valuable lessons that would pay dividends a year later.

In the summer of 2018, I took a final shot at the scenario – this time with the benefit of Lua events. These are significantly stronger and broader than the macro.txt version and have allowed me to overcome almost all the things that made the second version so tedious. Much of the “work” is done behind the scenes by lua, making the game much easier to play. For example, all that one needs to do to manage the strategic bombing system is simply attack units and build city improvements—two things that are intuitive to all players.

Lua has improved the “quality of life” for those playing this scenario in several other ways. Prof. Garfield designed a working formation event, where one can move numerous units at once, and has also managed to make flak units start fortified unless there are nearby air units to attack, saving several minutes per turn. The radar mechanism, once so clunky that it required players to move a “radar beam” unit into the sky searching for targets, is now done for your entire forces at a key press. Yet all this is just the tip of the iceberg.

It is fair to say that *Over the Reich* is the perfect example of just how much better Lua can make a scenario. It simply wouldn't be possible for this scenario to be playable and fun without it, and I owe a tremendous amount of gratitude and thanks to Knighttime, Prof. Garfield, and Grishnach. These three Lua coders had an incredible impact on this scenario. Almost all of the Lua events were either written or at least extensively troubleshot, by them. They made many of my ideas better and supplied a few of their own which markedly improved this scenario. Without their efforts, this scenario simply couldn't be.

Point in fact, Professor Garfield did so much work on this scenario that he truly is a co-author. It would be a completely different (and completely lesser) product without his contributions, so I am extremely grateful that he agreed to jump on as a co-designer and devote so much time to making my dream a reality. I hope you enjoy it.

John P. Petroski
October, 2019

2. Installation Instructions

This is a Civilization Test of Time scenario designed to be played with TOTTP version 0.15.1 and Lua and as such requires the following:

1. This scenario requires Civilization II Test of Time. If you don't already have it, you may purchase it on ebay or Amazon.
2. You **must** install the Test of Time v1.1 patch **before** installing this scenario. You may download it here: <http://forums.civfanatics.com/downloads.php?do=file&id=59>
Note: For those users who have the "Sid Meier's Civilization® Chronicles" version of the game installed on their computer, you may use the "CivChroniclesPatch.exe" included in the ZIP file to install the patch.
3. You **must** install version 0.15.1 of the Test of Time Project by TheNamelessOne. You may download it here <https://forums.civfanatics.com/threads/the-test-of-time-patch-project.517282/page-47#post-15089974>
4. **VERY IMPORTANT:** You **must** install the **lua** folder, which is included in the v 0.15.1 ZIP file (and which includes the civlua.lua, functions.lua and init.lua files), in the root directory of your Civilization Test of Time folder.
5. The game has been created and tested on a 64-bit computer and therefore should work on both 32 and 64-bit computers.
6. Download the scenario.

7. Under your ToT directory, create (if you have not already done so) a folder called Scenarios. Do not put this in the Original, Fantasy or Sci-fi folders. It must be directly under the main Test of Time directory. **VERY IMPORTANT:** You **must** name this folder OTR.
8. Inside the Scenario folder, unzip ALL the files you've downloaded into the newly created OTR folder.
9. When you load the scenario (or a saved game) you will be asked if you should load the lua events. You must select “Yes” each and every time.



Bomber Command destroys Hamburg in “Operation Gomorrah.”

3. Designer’s Notes

Every scenario is a balancing act between playability, design restraints, and historical accuracy, and *Over the Reich* is no different. There are a few things we’d like to mention up front:


1. I (Petroski) created this map and any inaccuracies are totally my fault;
2. City names are in English, but you won’t break anything by changing a city’s name, as the events in this scenario are integer-reliant rather than name-reliant, so feel free to customize the world to add to your immersion (indeed, it can be fun to rename airfields after famous units and then use that to organize your forces).
3. Time is an abstract concept here. There are simply “turns” and these don’t represent a certain number of hours. Day and night operations are both conducted simultaneously each turn. While we could have used lua to shut down operations by day or night depending on the turn to make time more linear, we chose not to for several reasons (mostly having to do with how we’re trying to simulate 3 years of war in 125 turns).
4. Please suspend your disbelief regarding which units carry what ammo. There are three types of gunfire: light, medium, and heavy. There are three bombs: 250lb, 500lb, 1000lb. Although many German fighters were equipped with heavy gun packages by the end of the war, only the jets have


that option in this scenario. Likewise, while some US fighters either were or weren't known for carrying bombs, they may or may not have that option in this scenario. This serves variety, gameplay, and sounds.


5. While most airfields either held USAAF or RAF aircraft and not as many serviced both, in this scenario, any aircraft can be built in either (assuming it is the correct map).
6. Some cities were no doubt better-developed historically than they are here, but we tried to keep well-developed cities few and far between to help achieve a fun, "empire builder" type scenario.
7. The Allies and Germans each historically had access to far more aircraft at the start of this scenario than you do (both in type and number). Again, we chose to start the scenario off with relatively few aircraft on the map and researched to help achieve a fun, "empire builder."
8. The Germans start with an overwhelming advantage in ground forces. While they probably didn't have this many in the West, we've given them so many now to compel the Allies to build up their own ground forces and to bomb those of the Germans to ensure a successful invasion of the continent.
9. Some unit stats may seem a little strange. For example, B-24J Liberators can outrun Me109s (though not Fw190s). This is done for gameplay reasons – a main goal here is that every unit serve a purpose and have a unique point. Sometimes that means that you have two bombers to choose from: A B-17 that is rugged yet slow or the B-24 that is fast yet fragile.
10. We are aware of how frustrating it is that the game jumps from day map to night map. It looks for the nearest unit without regard to which map it is on. We are not aware of a way to fix this but if any of you are, please let us know as we agree it is very annoying. The best way to deal with this is to use the 'w' key to instruct the errant unit to wait. Pressing this once or twice usually moves you back to a unit on the map you started with/wanted.
11. We fully acknowledge that the first turn is a bit of a monster. You must go through and organize your forces, determine what specialists you want in your cities and what those cities should build, and come to terms with a very large and unique scenario. We do, however, promise that as you go on, the turns become much quicker. One of our main objectives while designing this scenario was to streamline the amount of time it takes to play, and once you have moved your initial forces and set your initial strategy, turn times of 10-15 minutes are not uncommon. Hang in there!

4. Special Keys


You need to be aware of the following special keys to control your forces:


 The "K" key calls up a unit's primary attack. It is also used by Allied convoys in port to unload their cargo. Finally, flak batteries use this key to fire into the high-altitude daylight map.


 The "Backspace" key calls up a unit's secondary attack, if available. When used by a radar unit, it also serves to call up a dialogue box asking if you would like to fire all radar beams at once. Finally, flak batteries use this key to fire into the high-altitude night map.


 The “U” key serves two functions: (1) it allows the Germans to transfer aircraft between day and night maps once they have researched the “Wilde Sau” technology; (2) it activates a strategic redeployment of ground units along the rail line. See 8.1. The Rail Network


 The “Tab” key will provide additional information for the active unit (including distance to nearest friendly airbase for aircraft).

 Pressing “1” will bring up a dialogue box that keeps track of how many points you and your opponents have, as well as how many bombers have been destroyed out of escort range.

 Pressing “2” will bring up “the newspaper” which will allow you to cycle through prior important text boxes so that you can read them again.

 The “3” key calls up the “veteran swap” field wherein you can move veteran pilots to more advanced aircraft.

 The “4” key calls up the “formation flying” lua script that allows you to move multiple units at once.

 This scenario features a combat reporting system that a player can call up to understand where their units were destroyed the prior turn. “8” calls up the reporting system and 7 and 9 cycle between the different combat locations.

5. Scenario Parameters

The following scenario parameters have been preset in the game or the lua events file:

1. Freight trains cannot pass on any terrain except for rail track, urban, cities, and airfields.
2. Aircraft cannot land in cities with city art (such as Berlin) and can only land in cities with airfield art (such as Duxford). Any aircraft that land in a city with city art will be deleted next turn.
WARNING: Take care with the “move unit” command, as it will often direct your aircraft to the wrong type of city. Move your forces in short hops or do most of your travels on the high-altitude map to avoid this.
3. Only the following aircraft may land on aircraft carriers. All others will be deleted: Spitfires, Hurricanes, Me109s, and Ju87s).
4. If you place any units on a “firestorm” or “rubble” terrain on the high-altitude daylight and night maps, you run the risk that the unit will be deleted when a new unit needs to spawn there when the industry is rebuilt.
5. “Air protected stacks” only work for other aircraft—never target units, ships, or trains. While you can place an aircraft over any unit that you wish, if you stack an aircraft on a target unit, ship, or train, the events will move the aircraft to a nearby tile if any enemy unit calls up ammo next to the target.
NOTE: To take advantage of this with your units as an attacker, you must bring your unit next to the enemy units before calling up ammo. If you attempt to call up ammo from a distance greater than one tile (for example, with a Task Group), the enemy air unit will not be moved, and their stack will effectively be protected.
6. 8th Air Force aircraft cannot land in the Italian Theatre city, or the Russian Front city. Only the 332nd Fighter Group and 15th Air Force Bombers can land in Italy, and only the Yak-3 and Il-2 can land in the Russian Front. All other aircraft will be deleted.
7. Government switching has been disabled.

8. You cannot obtain technologies by conquest.
9. There is no “pollution” in this scenario, but we do use the pollution “slot” for the radar warning icon. You will receive a text box asking if you would like to remove the radar marker icons when you load each turn.

6. Victory Conditions & The Points System

This is an objective-based scenario with the Allies as the protagonists. There are 70 objective cities in the game. To achieve a decisive victory, the Allies must hold 58. A marginal victory requires 38. You have 125 turns to accomplish these objectives.

To win the game, the Allies will eventually need to invade “Fortress Europe.” The first invasion must be successful. If the Germans can throw the Allies back into the sea by capturing all port cities in Allied control from Bordeaux to Hamburg, the Allies will lose the game. Thus, the Allies should land in force, and the Germans would do well to have enough units near major port cities to repel any attack.

While the Allies can land wherever they like, they would be ill-advised to choose the Baltic as the recapture of any city there by the Germans will cost the Allies the game, if they don’t already hold a port from Bordeaux to Hamburg.

The Germans start the scenario with a marginal victory given their occupation of France, and if they can prevent the Allies from gaining a foothold on the continent, it will stay that way. The Germans can also choose to take the offensive and invade England, though they’ll have to get past the Royal Navy first. If the Germans can invade England and capture 10 cities, they’ll achieve a decisive victory.

Task groups are the only units that can carry land units, and they are unbuildable. Army groups are also unbuildable. Each player is awarded new task groups or army groups when they achieve a certain number of “points.” The game remembers how many points the player has accumulated and after a certain number, a reward (in this case, a unit) is given. You can press “1” at any time to see how many points you have.

As the Allies, it is imperative that you earn as many points as possible, as quickly as possible. A delay runs the risk of losing the specific benefit that the points might bring (see below).

The Point system works as follows:

- After accumulating 250 points, the Italian theatre opens, allowing the creation of 15th Air Force Bombers to start hitting targets from bases in Italy.
- At 1,500 points, the Russian Front opens. A land bridge will be established, allowing Soviet forces to attack Germany from the east. Also, the Allies can start building Soviet aircraft in that city.
- **The Allies** will continue to receive reinforcements in Italy at 400, 600, 800, 1000, and 1200 points, **but only if they earn these points by a turn deadline of 40, 60, 80, 100, and 120 turns, respectively.** For example, if it takes the Allies 42 turns to reach 400 points, they will not receive the reinforcements they would have at 400 points, but will still be eligible to receive reinforcements at 600 points, assuming they can accumulate those points before turn 60.
- **The Allies** will receive a new Battle Group (army) unit if they earn 225 points by turn 25, 450 points by turn 50, 675 points by turn 72, 900 points by turn 95, or 1125 points by turn 117.

- **The Allies** will receive a new Task Force unit (naval group that can transport land forces) if they earn 300 points by turn 30, 600 points by turn 60, 900 points by turn 90, or 1200 points by turn 120.
- **Germany** also receives reinforcements based on a point scale. While they do need to earn their points before a timeline, the timeline is flat at 110 turns. Germany will not receive any reinforcements after 110 turns no matter how many points they acquire.
- Germany receives a new Battle Group (army) unit for every 150 points they earn before turn 110, up to 1300 points.
- Germany receives a new Task Group (naval group that can transport land forces) for every 400 points they earn before turn 110, up to 1200 points.

The Allies accumulate points according to the following schedule:

- 2 points for every convoy brought to an English port;
- .5 points for every German aircraft destroyed;
- 7.5 points for every German industrial unit or urban target destroyed (but not railyards or military ports – they have other effects);
- 7.5 points for every German urban target destroyed *inside Germany*. The Allies **lose** 2 points for any urban target destroyed in occupied Europe, though sometimes it might be necessary to strike these.

The Germans accumulate points according to this schedule:

- 5 points each turn automatically;
- 15 points for each convoy they sink;
- 15 points for each urban target they destroy; and
- .25 points for each Allied heavy bomber destroyed.

As you can see, the amount of army and naval units and reinforcements is limited in this scenario, so it is important to conduct air campaigns quickly and efficiently to maximize your points and earn additional reinforcements.

7. House Rules

While we have tried to create a scenario that doesn't require house rules, an annoying bug where sometimes the production queue will "upgrade" USAAF bombers in the city screen to RAF bombers necessitates one:

The Allies cannot use the following aircraft on either day map because they have the sub flag and would imbalance the game:

- Stirling Bomber
- Halifax Bomber
- Lancaster Bomber
- Beaufighter
- Mosquito NF Mk. II
- Mosquito NF Mk. XIII

Further, no American aircraft may be used on the night map. German aircraft are free to transfer to whatever map they would like once the "Wilde Sau" technology is researched.

8. Major Game Concepts

A. The Three Maps

This scenario utilizes three maps, all of which interact with each other in some way:



Low-Altitude Daylight Map (map 0):

This is the map where all daylight aircraft will take off and land. You will also find an extensive rail system for moving freight trains from cities to airfields to disband and produce aircraft. Flak on this map tends to be heavy and dangerous. You should take care when flying low. The allies must capture cities on this map to win the game.



High-Altitude Daylight Map (map 1):

Most strategic bombing targets are located on this map. You'll notice that there is a terrain called "cloud cover." Aircraft (and industrial targets) have a defensive bonus when situated on this terrain. Thus, you should not attack targets obscured by clouds. Aircraft perched on this map can "bounce" aircraft on the lower map.



High-Altitude Night Map (map 2):

Bomber Command takes to the skies to do battle with the *Nachtjagdflieger* on this map, as all population center targets are located here. This map is a bit of a combination of a high-altitude and low-altitude map because it features airfields for the night forces as well as rail tracks, but also high-altitude targets. Some ground forces, like freight trains, can go on this map.

You will also note the search lights in the last screen shot above – Construction teams can create this terrain on the night map. It halves the defensiveness of any units caught in it, so it might be worthwhile to create a belt of these along likely enemy approaches.

Many aircraft can use native transport abilities to fly at different altitudes and therefore switch between map 0 and 1 at will by pressing "n".



Freight trains, Construction teams, and a few other units can move between the low-altitude daylight map and the night map by going to a switchyard and pressing "n".

As discussed in “Section 7. House Rules,” Allied air units are prohibiting from moving between the day and night maps. The Germans, however, can transfer aircraft back and forth from daylight to nighttime operations once they have researched the “Wilde Sau” technology.

B. City Types and Production Limitations

There are two different types of cities in this scenario: airfields, and population centers.



Airfields are the only cities that can produce aircraft, but they typically lack access to high-production terrain squares. While you could theoretically build them next to such squares that are normally used by a city, they can't develop their own.



Population centers, on the other hand, can build factories and a unit called the “Freight Trains” (assuming they have factories). The point of the freight train unit is to take it from a population center, move it to an airfield, and disband it to help build an aircraft.

You are encouraged to create new cities in this scenario to expand and disperse your air force. Each new city will automatically have the terrain below it changed to “airfield” and will also have the “airbase” improvement automatically built. This prevents any factories or refineries from being built in the new airfield. Airfields can never transition into population centers. Building a city on the low-alt daylight map will build a twin city on the high-alt night map and vice versa. You will probably want to rename the twin city as it will default to “New Airfield.”

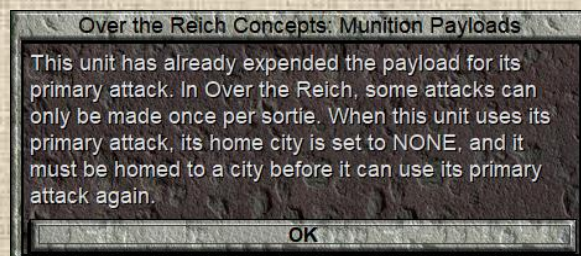
WARNING: Do NOT land any aircraft in population centers. They will be deleted at the start of the next turn (you will want to be careful with your “go to” commands as aircraft sometimes land in the nearest city).

C. Ammo, Payload, and Fuel

Many units in this scenario (including all aircraft) have an attack rating of “0.” To initiate combat, you must press either ‘k’ or in some cases ‘backspace’ to “call up” ammo which can be fired. ‘k’ loads the ammo for the unit’s primary attack (in the case of fighters, typically machine gun or cannon rounds). Some units (such as fighter bombers) can also load a secondary attack munition (typically a bomb) by pressing ‘backspace.’ Finally, heavy flak batteries and flak trains press ‘k’ to fire ammo that appears on the high-altitude daylight map, and ‘backspace’ to fire ammo that appears on the nighttime map.

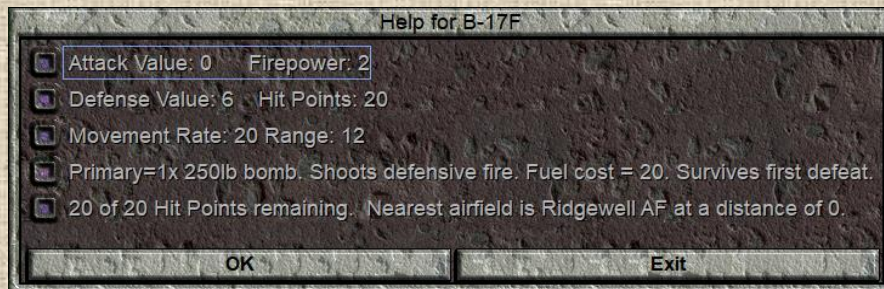
To prevent units from having infinite ammo per turn, each press of ‘k’ or ‘backspace’ will reduce the firing unit’s movement points, often substantially. Aircraft with a movement point of 1 cannot fire any ammo.

Aircraft that carry a payload of bombs must be “armed” before leaving their base. Only aircraft with a legitimate home city can drop bombs. Once they drop their payload of bombs, their home city will be changed to “NONE.” They must then return to an airbase and be “re-armed” by setting that base as their home city before they take off to strike other targets. Units with “None” for a home city will automatically be given the home city of the airfield they sortie from, SO LONG AS THE UNIT IS ACTIVATED BY THE GAME, AND NOT MANUALLY.



Fighter aircraft do not expend their payload by firing their machine guns or cannons. Some fighters are able to carry bombs as a secondary attack and can only use this secondary attack once per sortie.

“Fuel” replaces “gold” in this scenario. While aircraft can take off and move around the map without any cost, whenever they call up ammo fuel is deducted from your stockpile (treasury). Typically, the number of engines of the aircraft determines the amount of fuel deducted, with 5 fuel being used per engine per attack. Thus, most fighters cost 5 fuel to launch an attack, most tactical bombers cost 10, and most heavy bombers cost 20. Jet aircraft are more expensive – they cost anywhere from 25 – 50 fuel per attack. Please see the appendix for a full list of ammo costs per unit. You can also hit “tab” in-game to see the fuel cost (in addition to other information) for the active unit:



Because aircraft require fuel to fight, targeting fuel refineries for strategic bombing runs is a very good strategic choice. When enough of these are destroyed on the map, the opposition may find it very difficult to conduct operations. It should also be noted that the Germans have access to flight schools, which are expensive improvements that allow ace squadrons to be trained. If the fuel supply is shut down, these schools will likely follow...

Though there are a few trade units in this game (prototypes I and II), they do not increase fuel stores – they only contribute to technological progress. Thus, the only way to increase your fuel stores is to build fuel refineries or devote more resources (tax rate) to fuel production. You can also sell certain improvements if you are in a real pinch, but most cannot be sold.

D. Strategic Bombing

At its core, *Over the Reich* is a scenario about strategic bombing. Whereas past versions of this scenario attempted to represent this in very abstract ways, Lua (and the gracious assistance of Knighttime and Prof. Garfield) allows a much more natural, familiar feel in this scenario.

You will notice on the high-altitude maps that there are certain “target” units – industries, refineries, aircraft factories, urban centers, military ports, and railyards:



Each unit correlates to a specific improvement in a city on the low-altitude map. Destruction of the unit removes the improvement and changes local terrain from something beneficial to something useless. Rebuilding the improvement restores the unit and restores the terrain to something useful. Thus, if the Allies successfully attack an “Industry I” unit on the high-altitude map near Essen, the city of Essen will have its “Industry I” (factory) improvement removed, and a terrain tile will change from “factory” to “rubble”. Should the Germans rebuild the Industry I improvement in Essen, the “Industry I” unit will repopulate, and nearby terrain will be restored to “factory”.

VERY IMPORTANT: A core concept of this scenario is that both the Germans and Allies are supposed to build up their industry—they each start with only some developed cities. You mustn’t search for a suitable city to invest in with a “core Civ2” mindset, however, because most under-developed cities completely lack resources. They GAIN resources once the improvements are built, because the building of the improvements also triggers a change to the terrain, which is much more lucrative. See the table below:

| Improvement | Former Type | Terrain | Effect / Notes |
|-----------------------------|-------------------------------|--------------------|----------------------------------|
| Industry I, II, III | Factories, mfg plants, etc. | Production Terrain | +20 shields |
| Refinery I, II, III | Marketplace, banks, etc. | Trade Terrain | +40 trade |
| Aircraft Factory I, II, III | Libraries, Universities, etc. | Some Production | Not always near city |
| Urban I, II, III | Temples, Cathedrals, etc. | Urban | +2 food, +2 shields |
| Military Port | Ports | None | See “The Battle of the Atlantic” |
| Railyards | Superhighways | Rail track | See “The Rail Network” |

As seen above, a city that starts surrounded by grassland and has very limited shields will have a terrain square that provides an additional 20 shields added to its territory once the Industry I, II, or III improvements are built. In short, “don’t judge a book by its cover” when it comes to your cities. Building improvements will improve their production dramatically.

Deciding which targets to attack (and to defend) is one of the main considerations in this game. The following chart provides some detail to help you make that decision:

| Target | Effect |
|-----------------|--|
| Industries | Reduces the other players’ industrial capacity. Attack enough of these, and your opponent will have a difficult time building the aircraft, flak batteries, and ground forces that they need to repel your eventual invasion or launch one of their own. |
| Refineries | Reduces your opponent’s ability to supply their aircraft with fuel. Without fuel, aircraft cannot attack, and improvements will need to be sold. |
| Aircraft Plants | These destroy “science” improvements in your opponent’s cities, reducing the rate at which your opponent researches new technologies. It is also important to note that only cities with aircraft factories can build prototype (trade) units. Most aircraft plants also create a factory tile further away from the city, that certain enterprising players might build airfields near. This is historically accurate as several factories had their own aircraft assigned to defend them. |
| Military Ports | Ports serve several functions in <i>Over the Reich</i> : (1) The number of military ports that Germany possesses determines how frequently convoys appear for the Allies. At the start of the scenario, these convoys appear every third turn or so. The more ports that the Allies destroy, the more likely they’ll get convoys every other turn, or every turn. (2) The Allies can only “dock” convoys in a city that has a military port (See 8.I “The Battle of the Atlantic”). If the port is destroyed, they must move the convoy elsewhere, exposing it to continued attack. Further, if the Germans can knock out enough Allied ports, the Allies will receive less fuel every time a convoy docks at one. |

| | |
|---------------------|--|
| | (3) If the Allies capture a German military port, they received a one-time bonus of three Battle Groups in that port. To counteract this, the Germans can build a “Sabotage Port” city improvement which will destroy the military port, but at a cost of 100 fuel per turn, so it should be used sparingly (once built, it cannot be sold, but it will automatically be deleted when the city changes hands). |
| Railyards | <p>Destroying railyards has several effects:</p> <p>(1) You will hinder your opponent’s efforts to move freight trains from their population centers to airfields where they can be disbanded to build aircraft. Though there is usually a longer route they can take, destroying enough of these can cut off supplies to certain areas.</p> <p>(2) The enemy population center loses the equivalent of a “superhighways” improvement, reducing their fuel production and science rate (as well as prototype/caravan payout).</p> <p>(3) The enemy cannot strategically redeploy flak or army units from or to a city that has had its railyard destroyed (see Section 8.1 “Rail Network”).</p> |
| Urban Centers | <p>Attacks on these targets will have several effects:</p> <p>(1) Useful “urban” terrain will transform to useless “firestorm” and “rubble” (reducing the available food a city has).</p> <p>(2) “Happiness” improvements (the equivalent of temples, etc.) will be removed from the city. In theory, this should force your opponent to reduce the number of specialists they have or expend resources in rebuilding so as to keep their population content.</p> <p>(3) Urban centers work in conjunction with military ports to determine how many convoys can unload freight trains each turn, and how many of those freight trains can move once unloaded. A city requires at least two urban centers to unload two convoys per turn, and not all freight trains from the second convoy will be able to move that turn.</p> <p>(4) While each city can support up to three Industries, Fuel Refineries, or Aircraft Factories, the amount each city can support is tied to its urban centers. For example, a city with only one urban center can only build Industry I and cannot build Industry II until it builds its second urban center. This represents the fact that the urban centers house the factory workers and employees needed to keep the factories running.</p> |
| Airfields | <p>Strafing enemy airfields is a useful tactic in <i>Over the Reich</i>. There is never enough flak to go around, and many aircraft (such as jets) are best destroyed on the ground. The trick is finding which airfields are lightly defended, because the low-altitude map is fraught with danger. When in airfields, aircraft are stationary and on the ground. They will not defend themselves when attacked by munitions.</p> <p>Please note: RAF Bomber Command aircraft cannot attack aircraft with bombs. The defending unit will not take any damage. You must strafe these with your “Intruder” aircraft (such as Mosquitos) instead.</p> |
| Army and Navy Units | <p>While not as glamorous as attacking strategic targets, it is useful to destroy or damage any units that you can. It is important to note, however, that while you can damage Battle Groups with aircraft, they cannot be destroyed exclusively from the air. They can only be destroyed in direct combat with another Battle Group. Naval Task Groups on the other hand can be destroyed by aircraft, so guard them well as they’re the only transport units in the game.</p> |

VERY IMPORTANT: Do NOT place your attacking units on any “firestorm” or “rubble” terrain that is created on the high-altitude maps after a successful bombing run. Any enemy aircraft that occupies a tile that a target unit needs to spawn to will be DELETED when the target unit attempts to spawn there (i.e., when the corresponding city rebuilds the improvement). This probably won’t be an issue in 99% of the time, but it is possible to lose aircraft this way.

E. Reactive Attacks

One of the most exciting concepts introduced in this scenario are reactive attacks. In the base game, a unit attempts to move into the tile of another unit to initiate combat between the two participants. As most units in this scenario have an attack factor of 0, this wouldn’t work. Thus, we’ve implemented a system where a unit can respond and defend itself when another unit calls up ammo. We’ve taken the step further and let *nearby* units respond as well. Let’s take the following situation for example:



On the left, we see an Allied P-47 about to make an attack run on a freight train. Note that there is an Me109 nearby. When the P-47 loads ammo by pressing ‘k,’ the 109 has a chance to intercept it and deal some damage. As we can see from the picture on the right, this was a successful interception. The P-47 has called up ammo (note the unit ‘stack’) but it also has been damaged by the 109. Numerous aircraft and flak batteries can attempt to influence combat between two other units on any given attack.

Aircraft don’t need to be on the same map to intercept others. Fighter aircraft on the high-altitude map can intercept aircraft on the low-altitude map, and they even get a bonus for doing so because they are “bouncing” enemies from above. A successful diving attack will yield massive damage. This opens up some interesting tactical possibilities as you could attach some “high cover” fighter escorts to screen a low altitude bombing raid. If the enemy fails to recognize the danger, a successful bounce might leave the attackers shattered.

Strategic bombers also have reactive attacks, but in their case, it takes the form of their defensive fire. Bombers will usually have a chance to inflict some damage on most interceptors (jets and bomber destroyers are the exceptions). The damage inflicted isn’t particularly strong, but if the bombers travel in large formations then numerous bombers can cover each other at once. With a reactive fire range of 2 tiles, large bomber boxes can be very difficult targets, and interceptors will need to carefully consider their targets (stragglers and those on the outskirts would be safest).

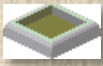
Different aircraft have different probabilities of successfully intercepting other aircraft or striking them with defensive fire. If you are interested in knowing the exact probabilities of the attacks, you can open the events.lua file included with this scenario and search for **local ds = {}**. This will take you to the top of the damage schedule section and you can then scroll down. Instructions for how to read the section are included in the events.

There are a few basics to help you jump into the game without decoding the lua file:

- Bombers are more likely to be intercepted than fighters and tend to take more damage because they are bigger targets;
- Luftwaffe heavy fighters (such as the Me110) are more likely to be intercepted than light fighters (such as the Fw190);
- More advanced, faster aircraft tend to have a better chance of successful interceptions, and their range to intercept tends to be further as well;
- Aircraft tend to be more difficult to intercept at night than at day;

- While all German aircraft can switch between the day and night maps via the Wilde Sau method (see 8.V Wilde Sau), aircraft specifically designed for night operations (such as the He219) are much more likely to successfully intercept enemy aircraft at night than day fighters pressed into nighttime roles.
- Some aircraft do better at certain altitudes. For example, the P-47 comes into its own at high altitude but struggles at low altitude and won't make nearly as many interceptions. In contrast, the early Fw190s struggle at altitude but do better down low (The 109D9 and especially Ta152 will correct this as they were designed to be better at high altitude).
- There are only four propeller aircraft in the game that have any hope to intercept jets (and even they only have about a 20% chance of doing so): The Ta152, P-51D, Red Tails, and Tempest fighters. Jets can intercept other jets if they happen to be in the air between turns, but this would be a very risky way to use these units.
- Aircraft will not react if they are on an airbase. They are considered "landed" at that time and will be highly susceptible to attack.
- Gun batteries will react to any task group that attempts to unload a battle group in the vicinity (See 8.X "Naval Invasions").

F. Installation Terrain & Gun Batteries



Gun batteries can only fire within cities or on special "installation" terrain. You will need to use your Construction Team units to change grassland to "installations" and then place the unit on these installations to use them. Otherwise, pressing 'k' will accomplish nothing as no ammunition will fire. These can only be built on the low-altitude daylight map. As mentioned above, gun batteries will react defensively to naval invasions.

G. Flak

Anti-aircraft batteries, or flak, are very important elements of your defenses. Historically, Hitler favored high concentrations of flak batteries, calling them a "psychological crutch" for the German people. In this scenario they are less expensive to produce than aircraft, can be built in cities, and don't cost any fuel to use. Though these are all benefits, flak can be a little unreliable – the Luftwaffe's quartermaster general, Hans-Georg von Seidel, once estimated that it took an average of 8,000 rounds for the 88mm flak 41 gun to shoot down one American bomber. While it won't take nearly as many in *Over the Reich*, flak is an imprecise weapon to balance its cheaper cost.

Flak is used in two ways:

- Flak can directly fire on enemy forces by pressing 'k' (for daylight attacks) or 'backspace' (for night attacks) to call up a munition unit to attack the enemy.

NOTE: In an aim of simplifying the process and shortening turns, heavy flak (88mm Flak and the 3.7-inch Flak) will automatically fortify each turn UNLESS it is within range of enemy aircraft. Activating these heavy flak units near enemy aircraft will produce a text box advising that a raid is nearby, and on which map. Unfortunately, no text box will appear if you select a flak unit from within a city screen.

- Flak is also a reaction unit, so it can be stacked near targets and will react when enemy bombers approach and drop bombs.

NOTE: A text box will pop up to tell you that your aircraft has been attacked by flak.

There are several flak units, all of which serve a unique purpose:

Light Flak



The German 3.7cm Flak and British 40mm Bofors are light flak units that can appear on the low-altitude day map, and the night map. They can only fire at low-level targets (including RAF Bomber Command, which tended to fly significantly lower than the USAAF). They are strong defensive units but slow and expensive. Their main purpose is to protect your airfields, and radar sets, which is why they can inhabit the day and night maps. Their munitions are significantly stronger and more accurate than heavy flak, as flying at low altitude was fraught with danger.

Mobile Flak



Germany has access to two mobile flak platforms: the Sdkfz 7/2, and Flak Trains. Both units are only allowed on the low-altitude day map, and act as a rapid response as they can quickly move to new defensive positions as needed. The Sdkfz 7/2 fires the same powerful ammunition as the light flak guns above, and therefore is only useful against targets on the low-altitude map. The Flak Train fires heavier flak bursts that can reach the high-altitude map and night map, but it can only move on rail track and urban terrain. It is meant to guard freight trains.

Heavy Flak



The 88mm Flak Battery and 3.7-inch Flak are heavy-caliber weapons designed to hurl high explosive projectiles into the heavens. Each can fire up to four flak bursts per turn in addition to any reactive fire that is triggered defensively. They are also the least expensive flak units to build, but this is because they move very slowly and can only fire from installation terrain as described above, and from within cities. Any well-rounded defense will feature a healthy amount of these units. These units can be strategically redeployed via your rail system (See 8.1 “The Rail Network”).

H. Radar



Over the Reich has three very large maps, and many aircraft are invisible until they attack. This can make for a frustrating experience if you do not invest in radar installations. To use them, select one and press ‘k.’ The units’ movement point will be exhausted, and a text box will appear that explains if enemy aircraft were, or were not detected. If aircraft are detected, yellow icons will appear on the screen. Radar can be used on any type of terrain, but has a movement point of 1, though they can paradrop (deploy) five spaces to aid initial set up.

You can also elect to have ALL your radar sets fire at once to save time. To do so, use the “backspace” key. A dialogue box will pop up that will ask you if you are sure. Bear in mind that if you elect to do this, you won’t be able to move any radar sets that turn.



Radar of the time wasn't necessarily the most precise, and it is also prone to error in *Over the Reich*. When a radar user "sweeps" a tile containing units, a detection "error number" is calculated. Through an incredible amount of Prof. Garfield wizardry behind the scenes (search for "Radar Detectability Details" in the events.lua for an in-depth explanation), a few different outcomes are possible:

1. A radar marker could be placed on the precise tile containing the enemy aircraft;
2. A radar marker could be placed somewhere on the 3x3 diamond that surrounds the tile containing the enemy aircraft;
3. A radar marker could be placed somewhere on the 5x5 diamond that surrounds the tile containing the enemy aircraft; or
4. No radar marker could be placed at all, and a false negative could be reported.

There are several factors that govern this, but there is basically an "arms race" in the scenario between radar detection efforts and electronic counter measures. More advanced radar installations and radar-equipped night fighter aircraft have a better chance of detecting obsolete bombers than new ones. Researching "Advanced Radar I" and "Advanced Radar II" as well as the three "Night Fighters" technologies also increases the prowess of your radar operators. If one side makes a heavier investment in radar and night fighter aircraft than the other, they will tend to have the advantage.

EXAMPLE: *If the Germans have Night Fighters I and the Allies don't, then the Germans will get a bonus to spotting Stirling bombers. The Allies can negate this bonus in one of two ways: research Night Fighters I themselves or build Halifax bombers instead.*



The Allies can also attempt to thwart German radar detection through subterfuge. After researching the "Window" technology, the Allies can build a Pathfinder unit. This special aircraft deploys aluminum foil strips by pressing "k," which then produce a radar return.

I. The Battle of the Atlantic

Britain, being an island nation, is totally reliant on imports from her vast Empire. Through the course of two world wars, Germany tried to sever these ties. *Over the Reich* starts in 1942, when the Battle of the Atlantic was still very much in doubt, and the struggle is featured prominently in the scenario.

Depending on the amount of military port improvements that are operational for the Germans, the Allies will receive three convoy unit reinforcements every 1 – 3 turns. The less military ports the Germans own, the more frequently the Allied convoys will arrive.

These convoys will appear at a random tile in one of three "Convoy Route" boxes that are drawn on the map. The Allies need to move the convoy across the Atlantic to a British port. Once in port, they Allied player will press "k" to receive a fuel and freight train bonus.

The convoy is a slow-moving unit with high defensive value and a nominal attack rating. It can destroy German wolfpacks, but will often take damage doing so, which will cause its arrival in Britain to be delayed.

The Germans' objective is to prevent these convoys from reaching Britain. They have wolfpack units, which are expensive to build and relatively weak. The units fire torpedoes by pressing 'k.' They do not have payload considerations and can fire for as long as they live.

To balance the scenario, if a wolf pack is killed in combat, it has a chance to respawn in a random German military port. If one of the main Atlantic French ports is available, it will spawn there. If these are destroyed, it will spawn in a major German port. We did this because we found that if we didn't, the Battle of the Atlantic was easily won by the Allies. We want German wolfpacks to remain a legitimate

threat throughout the scenario, and for there to be a good reason for Allies to target the French submarine pens.

Each side also receives a special naval bomber. The German Fw200 Condor and the Allied Sunderland aircraft are meant to range far and wide throughout the oceans looking for prey. There's nothing stopping them from also attacking ground targets, but as they factor into the points calculations above, that would be a waste.

Finally, both sides can build aircraft carriers. The Allies start with two, and the Germans can choose to build them as well. Aircraft carriers can only carry Me109s, Ju87s, Hurricanes, and Spitfires.

J. Occupied Europe

The Germans can also receive some assistance via events if they play their cards right. Each turn, a set number of freight trains will spawn in France. The number depends on how many German Battle Groups are in the French countryside. The more Battle Groups available, the greater the freight trains that will spawn. These spawn in random locations and can be moved to airfields and cities to disband for their shields. There is a gray line that runs through Eastern France – one must keep their battle groups west of this line to gain the benefit.

K. Vengeance Weapons



Later in the game, Germany can develop V1 buzz bombs and V2 rockets to hurl against British population centers. Each needs to be launched by their respective launch site unit, which must be situated on an installation terrain to fire. These vengeance weapons are designed to turn the tide of the war, though they may instead prove to be a massive waste of resources.

L. The Rail Network

Anyone who has watched old gun cam footage has seen first-hand that locomotives were a major target of the Allied air forces. *Over the Reich* aims to simulate this. The transportation network of both sides is critical to the production of aircraft and defense of your forces. Maintaining a functioning rail network will also allow you to strategically redeploy ground forces across the continent in a single turn, as discussed further below.

Airfields are the only types of cities that can build aircraft, yet they tend to have limited access to production tiles and therefore rely on population centers or events to provide “Freight Trains” that can be moved into the airfield and disbanded to create the aircraft quicker.

Freight Trains cannot move on grassland or forest terrain and must instead move along “rail track” to reach their destinations. They can also move through urban terrain, and of course can move directly onto airfields and cities.



Throughout the map you will see a sprinkling of icons called “Switchyards” (they look like a tower) – these are “teleporters” that allow Freight Trains to cross over to the night map so as to help build up your night fighter or bomber command forces.



The “Railyard” unit on the high-altitude day map can be attacked which will change the tile on the night and low-altitude day map to “bombed RR” which Freight Trains cannot enter. This is also the tile containing the switchyard icon, so until you rebuild that improvement, you won't be able to use that section of railroad or send supplies to your night forces via that path.

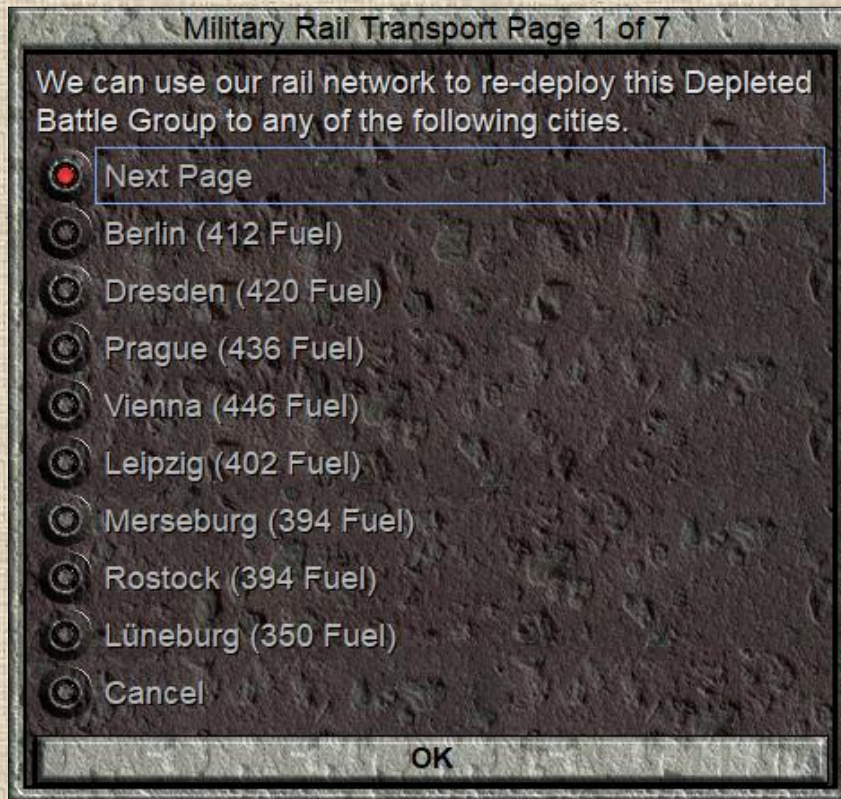
VERY IMPORTANT: It is suggested that you strive to build airfields on locations with access to the rail network. You will note that we've placed several “railroads to nowhere” throughout the map to help

accommodate this and give you options as to where you build your cities. If you don't build your cities next to rail track, there's a good chance you aren't going to be able to move Freight Trains from the population centers to the airfield! Then again, a few out-of-the-way bases would make a great place to hide your jet forces from roaming enemy fighter sweeps...

Military Rail Transportation Network

To decrease each turn's playtime, we have instituted a "strategic redeployment" military rail transportation system for ground units. When a ground unit is activated in a city that contains a railyard, the player can press "u" and will receive a pop-up box with several destination cities for the ground unit. These cities must be connected by terrain that a freight train can pass, and both cities must have railyards, and each city will have an associated fuel cost next to it for moving the unit rapidly. Movements across the continent will be significantly more expensive than short trips. Just like airlifts in the base game, only one unit may transport to or from a city with a railyard each turn.

Note: ground units positioned on a rail track terrain between two cities will prevent a unit from using the military rail transportation network to strategically redeploy.



M. Reconnaissance Flights



The Ju-188 (PR) and Mosquito (PR) units invisible until attack and carry a camera unit (diplomat) that can be called up by pressing, "k." The only diplomat function allowed is to investigate cities, but this will allow you to determine what cities have what improvements, and where your opponent's forces are deployed so you can try to avoid them.

NOTE: Because the camera has the diplomat role, it must be a ground unit. Thus, pressing "k" while over water will not produce any unit.

N. The Italian Theatre and Russian Front

The Allies have two “special” cities on the map. One represents the Italian Theatre and the other represents the Russian Front. As the Allies gather “points,” they will unlock these theatres and units may be built from them. It takes 250 points to unlock the Italian Theatre and 1,500 points to unlock the Russian Front (this also requires that the Allies land in Europe). Thus, as the campaign progresses, Germany will be stretched more and more, as attacks will come from multiple directions.

VERY IMPORTANT: There are no “shuttle missions” in this scenario. You cannot land 8th Air Force or RAF units in Italy or the Russian Front, or vice versa. If you attempt to do this, they will be deleted.

O. Research Boosts



There are two units in this game that act as trade units: “Prototypes I” and “Prototypes II.”

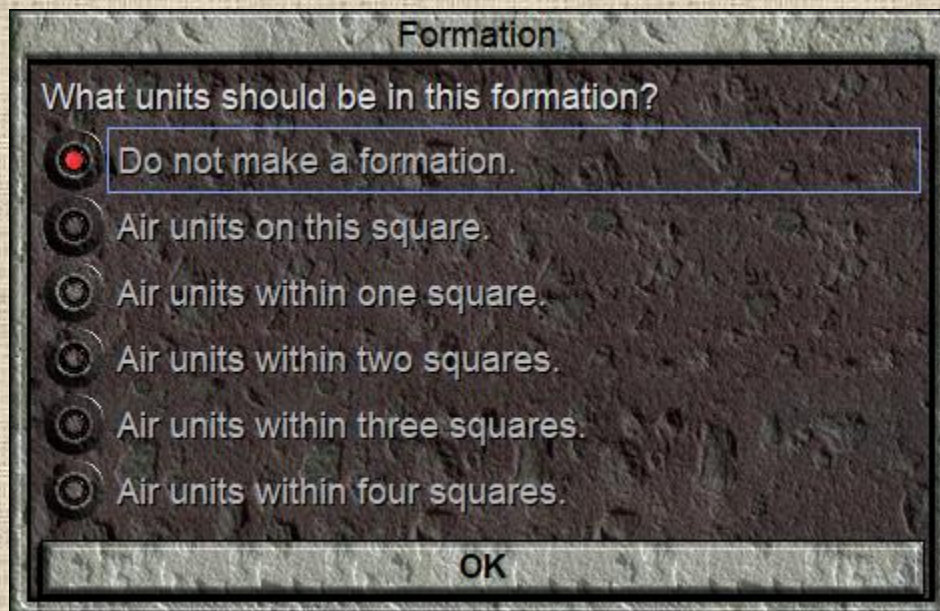
They can only be built in cities that have aircraft factories. Unlike the base game, they do not provide a cash bonus when a trade route is established, but they do provide a science boost.

Both players can take advantage of these, but as Germany starts with considerably more aircraft factories and is also a Republic, the thought is that they will likely benefit more.

P. Formation Flying

We have spent a considerable amount of time trying to make *Over the Reich* as easy and quick to play as possible, and one of the “quality of life” issues that Professor Garfield implemented to address this was to add a “formation flying” script.

Press '4' (above letter keys) to center a formation around the active unit, which will be called the formation 'leader'. The following dialog box will appear, letting you choose how big the formation is:



The formation will consist of all units with same domain as the leader within the number of squares chosen when the formation was created. Units with orders (e.g. sleep, fortify) will not join the formation. Air units in cities/airbases will not be recruited.

Units in the formation will attempt to perform the same movement as the leader. If they can't, they drop out of the formation. Formation units will not attempt to enter an enemy city (and air units won't enter a friendly city either), nor will they attack enemy units in the field or generate munitions.

Ground and sea units will drop out of the formation when they have 0 movement left, air units will drop out when they have 1 movement point left. If a unit drops out of a formation, it will have its remaining movement left, unless it is a ground unit that failed to enter a square because it didn't have enough movement points left (it will try to enter, with a probability of $\frac{\text{movementRemaining}}{\text{terrainMoveCost}}$).

Activating a new unit will break up the formation (the game will not remember the formation when the leader is re-selected). The formation can also be broken up by pressing '4'.

Q. Upgrading Veteran Units

Veteran units are critical in this scenario, as they have stronger defenses and fire veteran munitions that are more likely to damage enemy aircraft. To get an idea about the importance, look at the bullet points below. I tested to see how often a single Fw190A5 could defeat a B-17F in a single pass. Here are the results:

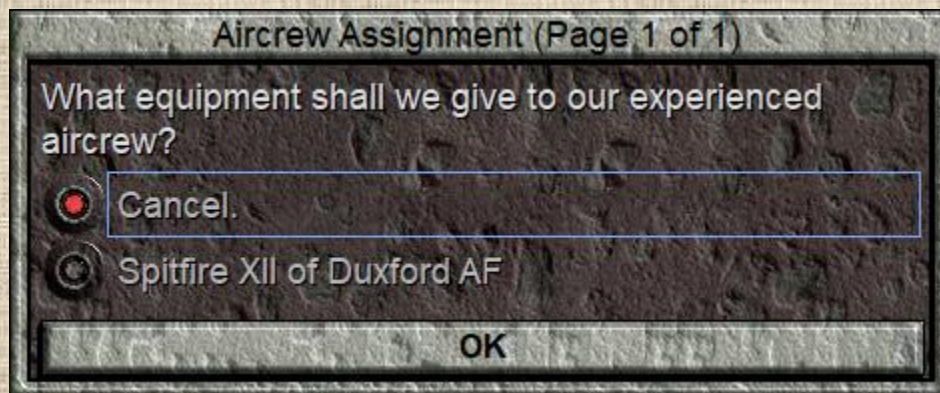
- Veteran Fw190A5 vs. green B-17F: 60% of bombers destroyed in one pass.
- Veteran Fw190A5 vs. veteran B-17F: 15% of bombers destroyed in one pass.
- Green Fw190A5 vs. green B-17F: 5% of bombers destroyed in one pass.
- Green Fw190A5 vs. veteran B-17F: 0% of bombers destroyed in one pass.

Clearly, both sides would be well-advised to preserve their veteran pilots, but we wanted to take things a step further and allow you to transfer these veteran pilots to new aircraft.

To swap out airframes for your veterans, you need to meet a few requirements:

1. You must have two models of the same general aircraft type (for example, two British fighters, or two American heavy bombers) in the same airfield.
2. Both units must have full health and movement points.

Assuming both are true, pressing "3" will cause the following text box to appear, allowing you to select the most appropriate option:



NOTE: Luftwaffe heavy fighters (such as the Me110) can swap with night fighters (such as the Ju88C) but cannot swap veterans with Luftwaffe day fighters.

NOTE: When burning B-17s make it home, they should swap their veteran aircrews to new equipment. Though they can be disbanded, you won't get a very high return on the shields.

R. Air-Protected Stacks Revisited

Because bombs cannot attack air units, we have used lua to remove the ability to protect target units (such as industrial targets or ships) by stacking aircraft on top of them.

Generating a munition will check all adjacent squares for air protected strategic targets (i.e. a square with both an air unit and a strategic target). Where they exist, the event will first try to place the aircraft on an adjacent empty square. If none exists, it will try to place the aircraft on an adjacent friendly square without a strategic target (it will not try to find the square with the fewest units or anything like that). If no such square can be found, the aircraft will be placed on a strategic target not adjacent to the munition generating unit. If there is still no place to put the unit, it will be left where it is.

NOTE: This does not stop you or your enemy from creating a “wall” next to the unit to prevent its attack, but considerably more resources will need to be invested to prevent attacks in this manner.

S. The Newspaper

Pressing “2” will call up a “newspaper” function wherein you can read important messages from prior turns. This is useful for remembering what your special target objectives are without having to consult Appendix D.

T. Historic Missions

This scenario features several historic missions (such as “Operation Gommorrah”). Though these missions are technically optional, you will receive a benefit to successfully completing them, and your opponent will receive a reward if you fail to accomplish the objectives. Please consult Appendix D for the list of potential Historic Missions.

U. Increasing Weapons Effectiveness

Researching Tactics I, II, and III will increase the effectiveness of fighter aircraft munitions by +1 per technology. This effect is cumulative and necessary to continue competing with advancing airframes. Ignore these technologies at your peril.

V. Wilde Sau

All German aircraft can move at will between the day and night maps once the Wilde Sau technology has been researched. This does not require the construction of any improvement. Pressing the “u” key will automatically move the aircraft to the other map.

Note: This will also remove all of its movement points as it takes time to transition aircraft back and forth between day and night fighter units. Unlike the transporter improvement, you can, however, move as many units in a city as you would like in one turn.

W. Weather

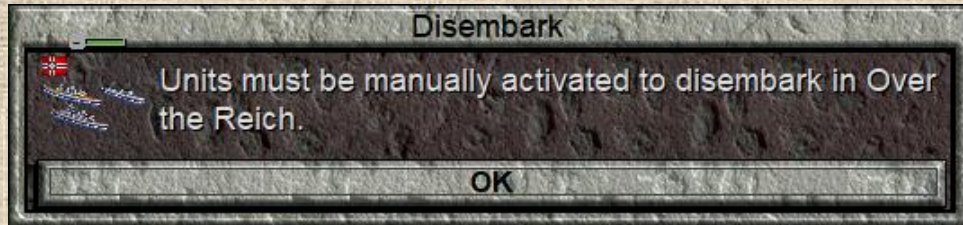
Over the Reich features a weather system. Cloud systems will form and move turn from turn. They can grow larger or smaller as well. They will generally grow smaller over land and larger over water. You have no control over this, but you should be aware of it, as you can forecast (to an extent) approximately where the storm will be in the next several turns once you start observing how far they tend to move each turn. Storms tend to move from west to east and can drift north or south slightly.

Units gain a significant defensive advantage when in cloud cover. Thus, Allied bomber raids against targets obscured by cloud cover will be less effective than those against unobscured targets. Further, reactive attacks from fighters are half as effective if they’re in the clouds. Bombers reactive attacks don’t incur a penalty. Flak’s reactive attack is halved until the Proximity fuses technology is researched.

Note: The daylight and nighttime maps each have their own cloud formations that will not align with each other. Again, time is an abstract concept in this scenario.

X. Naval Invasions

You cannot unload units from task groups by “driving” the task group onto a beach. Instead, you must manually activate the army unit that you want to move by clicking on it. This is done so that the defending gun batteries can fire upon the task group, as they rely on the “onActivation” trigger to work. Invade near enemy gun batteries at your peril.



9. Air Combat Revisited

Air combat is significantly different in *Over the Reich* than in the base game, so please take the time to familiarize yourself with this section.

General Aircraft Characteristics

In addition to the above, you should be aware of the following general characteristics of your aircraft:



Escorts tend to have weaker ammo than other aircraft but can still do some damage. Their main role is to “stack” on top of weaker units to provide them with a better defense. Please note that stack kills are **ENABLED** in this scenario, so don’t risk more units than you can bear to lose in any single attack! Escorts will also attempt to intercept units that attack their charges.



Interceptors can fire up to three times per turn. This allows these units to make slashing attacks – they can approach an enemy aircraft, make a “bounce” and then fly away. This enhances their chance of survival, as the opposing aircraft will need to somehow hunt them down the next turn (not so easy if they are 10-20 spaces away).



Bomber destroyers are slow and cannot move very far after they attack. Their attacks tend to be significantly more powerful than escorts or interceptors and don’t trigger defensive fire from bombers, but they are very vulnerable afterwards because they can’t escape after firing.



Jet fighters can attack many times per turn, or attack a few times and then land far away, making them very difficult to catch and kill (historically, most were destroyed while taking off, landing, or on the ground – also good ways to kill them in this scenario). Few aircraft can intercept jets, and radar cannot track these fast-moving aircraft.



Fighter-Bombers inhabit the low-level maps. They can load gunfire as a primary munition and powerful bombs as a secondary attack. These should be used to attack enemy flak installations that are protecting airbases, as their 1000lb bombs can do great damage to these targets.



Tactical bombers can operate at low altitude or high altitude, can drop their payload at both, and are faster than strategic bombers, but they have limited range and don’t have defensive fire. They will carry more bombs when healthy than when damaged (see: “Reduced Effectiveness” below).



Strategic bombers are used to attack the different target units scattered across the maps. These aircraft are slow but will react with defensive fire when attacked (see “defensive fire” below). They can drop several bombs per turn when healthy, but only from the high-altitude daylight map, or night map.



Jet bombers can attack many times per turn, or choose to attack a few times and then withdraw a great distance away, making them very difficult to catch and kill (historically, most were destroyed while taking off, landing, or on the ground – also good ways to kill them in this scenario).

Reduced Effectiveness

New to Civ2, some bomber units can drop more bombs when their hit points are full and less bombs when damaged. For example, a fully healthy B-17G will drop three 250lb bombs per turn, but the same B-17G will only drop one bomb at 1/3 strength. This adds an interesting strategic choice for the opposing player: when faced with overwhelming odds, should limited resources be committed to destroying all attacking bombers, or simply reducing their effectiveness by severely damaging them?

The Flying Fortress



The two variants of the B-17 “Flying Fortress” in this scenario are exceptionally difficult to kill, because destroying one replaces it with a “damaged bomber” unit in its place. This unit cannot attack but can limp home to be disbanded into a brand-new bomber the next turn. These units are so powerful because they are meant to make raids deep into German territory, often without escort.

Terrain Advantages and Disadvantages

As discussed previously, some terrain affects the defense states of units. Clouds provide a large defensive bonus while searchlights reduce defensiveness by half—worth remembering as you plot your course! Searchlights can be created by Construction Teams to force the enemy into a poor position around targets.

Slashing Attacks

Air combat has been revolutionized by the ranged-combat features available with lua. No longer must a range-2 air unit end its turn after attacking. This enables the tactical option of the slashing attack: Interceptors can attack up to three times per turn before they are reduced to one movement point. If no escorts are present, it may make sense to press home the attack against bombers to maximize the firepower you can bring against them. However, if you are in dangerous airspace, it may make more sense to attack once or twice with an interceptor and then use the remaining movement points to reposition elsewhere, as the escorts will then have to choose between chasing you down or staying with their charges.

Boom and Zoom

Aircraft that can travel between low altitude and high altitude would be well-served by considering moving between maps with their remaining movement point after attacking. This may confuse your opponent or allow you to reach better cover in the clouds. Then again, there might be a valid reason to stand your ground on the current map (such as an escort fighter drawing away attention from a weaker unit attempting to escape “on the deck”).

The Bounce

As mentioned earlier, aircraft on the higher map can intercept or “bounce” aircraft on the lower map. To set up a successful bounce, you’ll need some bait. Let’s say you have two units in an area: an Me109 on the low-altitude map, and a Fw190 directly above it on the high-altitude map. If an enemy Typhoon

comes along and attacks the Me109, the Fw190 will have a chance to “bounce” the Typhoon, causing massive damage. While this won’t prevent the Typhoon from attacking, it can destroy it as well.

High Cover

As discussed in the 8.E “Reactive Attacks” above, fighters stationed on the high-altitude map can dive down to attack aircraft on the low altitude map for a powerful attack bonus. It might be worth setting up some traps in this way.

10. Naval Combat

While *Over the Reich* predominantly focuses on the air war over Europe, there is an important naval component. Both players start with navies and it is important to realize how to use them effectively as they are critical to winning the game.



Convoy: The Allies will spawn a few convoys every 1-3 turns along the western edge of the map. They must bring these convoys successfully to a port city and press ‘k’ to unload their cargo. Convoys are not defenseless and can attack U-Boats, but risk damage doing so.



Task Group (A): This unit represents the main Allied battle fleet. They are the only units that can carry ground units to launch Operation Overlord, so they should be protected. More can be earned by accumulating many points quickly.



Task Group (G): This unit represents the main German battle fleet. They are the only units that can carry ground units to launch Operation Sea Lion, so they should be protected. More can be earned by accumulating many points quickly.



Wolf Pack: The Germans can build U-Boats designed to hunt down Allied shipping. These fire torpedo units and doing so will trigger the reactive attacks of any nearby Sunderland aircraft. When a Wolf Pack is destroyed, it will respawn in France or Germany.



Aircraft Carrier: These are meant to send out aircraft on search and destroy missions against other ships. Only Hurricanes, Spitfires, 109s and Ju87 Stukas can land on aircraft carriers. Aircraft will reload ordinance on aircraft carriers the following turn.

11. Land Combat

While *Over the Reich* is a scenario about the air war over Europe, aircraft do not seize territory: ground forces do.

Each side has the option of invading the other, and the Allies *must* eventually launch a successful invasion to win the game, as they start with a marginal defeat due to the prior loss of the continent.

While there are several flak batteries, trains, radar installations and such, the main ground forces of *Over the Reich* are comprised of two units per side: A unit that represents a full-strength battle group, and one that represents a depleted battle group. These units are immensely powerful and can easily defeat anything except other battle groups.

To keep the game balanced and prevent the Allies from launching their invasion too early, Germany starts with significantly more battle groups than the Allies. The Allies need to invest time in bombing Germany at a brisk pace to earn more battle groups that will help them successfully invade Europe.

An additional consideration made for balance is that air units cannot destroy a battle group, though they can significantly weaken them. We felt this was necessary to create the tactical choices we were striving for.

12. Strategy

THE GRAND ALLIANCE

The Allies have several advantages over the Germans:

1. They can choose when and where to attack, forcing Germany to spread out;
2. As Communism renamed, they needn't worry as much about unhappy citizens;
3. They can choose when and where to invade the continent;
4. They have significantly greater naval assets;
5. Their aircraft tend to cost less than German aircraft, and this disparity only increases as the game progresses; and
6. They can support significantly more aircraft per airfield than Germany and should eventually flood the skies with units.

Despite these advantages, the Allies still have their work cut out for them. The points system forces the Allies to attack, and attack often, to earn enough additional battle groups to successfully invade Europe and win. They can't afford to sit back for long and must constantly press the attack.

The Allies also start with relatively few fighter aircraft, and those that they possess have very limited range. It is impossible for early Spitfires to effectively escort bombers any further than coastal France, and the first P-47 isn't much better. Since most of the strategic targets are beyond this range, that means that the bomber formations will have to go it alone for the time being.

The Allies also must spend considerable resources protecting their supply chain. The supplies are badly needed to secure numerical superiority, and the Germans gain points by sinking freighters. Attacking Wolf Packs or their ports does nothing for Allied point progression towards D-Day but is a necessary diversion.

Finally, the Allied situation is convoluted a bit by the pure vastness of the Reich. It is the quintessential target-rich environment, and the Allies will have to construct a plan to destroy it piece by piece. This is easier said than done.

The following are a few suggestions for a new Allied player, but they are by no means the only way to play:

- Consider investing in your infrastructure early. If the Battle of the Atlantic goes well, the Allies can build up their factory and refinery base relatively quickly (generally, within the first 25-30 turns). This can allow for larger and larger forces as the scenario progresses and could be a worthy investment.
- Consider building up your western ports with urban areas so that they can accommodate more freighters each turn. Make sure these areas are defended.

- Try to use diversion strikes against multiple targets to hide your main attack. At the start of the scenario, the Luftwaffe is large. Allowing it to form up in force to meet you is a losing strategy that will cost many bombers.
- Don't forget the importance of railway choke points. Use your photo reconnaissance aircraft to identify patterns in enemy train movement and plan a few missions to shut down these routes. Also, bear in mind that one cannot strategically redeploy forces along a damaged rail line. There are a few stations that are more valuable than others in this respect.
- Don't feel as though you must maximize science – you could probably keep up with the Germans' technological pace if you wanted to, but it may make more sense to prioritize fuel after a certain point to deploy vast air fleets. While the Allies can build jets, it's questionable how useful they are to Allied strategy. You might target specific units for mass production and commit fully to that once you reach them rather than going further along.
- Remember that while bomber losses can be distressing, the only way to access your best escort fighters is to take significant losses over Germany. Thus, you're working towards aims with every long-range attack: (1) the destruction of German war industry; and (2) obtaining the P-51 Mustangs that will eventually drive the Luftwaffe from the skies.

THE GERMANS

There are several advantages that the German player can exploit:

1. The Germans choose which cities to develop further, and can prioritize their critical industries far from Allied bases;
2. Allied bombers only get to drop their payload once, but can be attacked numerous times by German fighters on the way to and from targets;
3. The Germans can transfer aircraft between night and day operations once *Wilde Sau* has been researched. This allows them greater flexibility as they can reinforce the various maps more easily than the Allies;
4. Only the Germans have access *Jagdfliegerschule* (Airports), so they can train veteran pilots (and fully repair damaged units). This is balanced in that these schools are prohibitively expensive, but one or two schools placed near a steady supply of freight trains can produce a formidable air force;
5. Jet fighters are infinitely more useful for the defender than the attacker, and these powerful units are quite capable of inflicting massive casualties on Allied bomber streams;
6. The German wolf packs can outnumber Allied convoys, if the Germans commit to this strategy;
7. Because they have the Republic form of government and more cities than the Allies, Germany can generally stay ahead technologically.

As the defenders, Germany need only maintain the status quo to succeed, but this is easier said than done. They face a critical fuel shortage early in the scenario and although this can be addressed in a few different ways, they're unlikely to ever have enough fuel available to do everything they want to do.

The biggest problem that Germany faces is concentrating its forces in the right place at the right time. When this is accomplished, the results can be incredible – the Luftwaffe is quite powerful at the start of the game and can remain so throughout it. Unfortunately, however, it is likely that the Allies will eventually have so many aircraft available that they can simply swamp the Germans, and it is also possible that successful diversion raids will draw defenders to pointless effect.

A few general hints and suggestions are as follows:

- You must alleviate the fuel crisis immediately. With a very small starting surplus, you can only afford to make six attacks per turn.
- Remember that aircraft in airfields are very susceptible to strafing attacks. You would be wise to employ a “hub and spoke” model for your airfields where the main hubs are heavily defended by flak artillery, and aircraft move from spoke to spoke frequently to prevent heavy losses.
- Anti-aircraft artillery can be a cost-effective means of defending your industry. Unlike aircraft, no fuel is expended when they attack. They are also very useful for defending your airfields, though they are not impervious to attack.
- Remember that interceptors can make reactive attacks. If you know a raid is coming towards a city, it may be advantageous to leave a few interceptors within a few tiles of the likely targets to surprise the first approaching bombers. Bouncing bombers in this manner has the added benefit of shielding your aircraft from the bombers’ defensive fire.
- Although it is tempting to focus exclusively on fighter aircraft, bombing key British cities, such as certain ports, can have a large influence on events.
- Consider a mobile reserve near likely Allied landing grounds to throw the invasion into the sea to win the war.

13. Credits and Acknowledgements

This scenario took several years and three incarnations to build and publish. It would not have been possible without the tireless efforts of several people over the years.

- First and foremost, this scenario is what it is because Prof. Garfield agreed to jump on the team. Several of the ideas in this scenario were his, and the overwhelming majority were brought to life by his tireless efforts. If it wasn’t for him, this scenario would be a mere shadow of itself.
- Several other amazing coders also contributed to this scenario. Knighttime graciously stepped up and agreed to develop the strategic bombing mechanism that is the very core of this scenario. It works flawlessly and turns what was once a clunky mechanism requiring multiple cigs into one that is easy and intuitive to play.
- Grishnach first developed the ranged attack or ‘k units’ in *Caesar’s Gallic Wars*, as well as some other concepts that have been implemented in this scenario as well.
- TheNamelessOne is owed a heap of thanks for developing the Test of Time Patch Project in the first place, and for having the considerable vision to include lua events. I will admit that I had my doubts with lua at first, but after having built a few scenarios with it I am blown away by its possibilities and saddened that it did not appear earlier when the community was larger. I hope the old guard will all take a stab at completing at least one scenario utilizing it.
- Much of the art in this scenario was made by Fairline, Tanelorn, Catfish, Captain Nemo, Curt Sibling, Insurgent, and others. Some units were drawn, or at least reskinned, specifically for this scenario. My hat is off to the artists – you have kept this game alive for much longer than it ever would have lasted without your amazing, beautiful creations inspiring designers to build new scenarios.
- The “neutral territory” unit art is from Tootall and Knighttime’s excellent *Napoléon 1805 – 1815* scenario.

- Unfortunately, city and improvement art doesn't include an author's signature so it is challenging to know who developed it, but I took all of it from other World War II scenarios out there such as the excellent *Fortress Europe* by McMonkey and *Operation Sea Lion* by Techumseh, to name a few.
- Many of the descriptions in the civilopedia came from Wikipedia.
- Credit for the style of this readme, and also the entire installation instructions (which I lifted word for word) belongs to Tootall.
- Thank you to Civinator for being this scenario's biggest fan for the better part of a decade. He consistently offered feedback, suggestions, and support, and I'm glad I was finally able to publish this for him.
- There were many scenarios that offered some inspiration, but the first was naturally Captain Nemo's unfinished *The Blitz*, which depicted the Battle of Britain. Someday, perhaps, I will take the lessons learned in *Over the Reich* and try to revisit the summer of 1940 as a tribute.
- I must also thank McMonkey, the poor soul who had to suffer through three versions' worth of playtests. He offered candid and needed feedback. Sometimes it was rough, but if he didn't do that, I would have published subpar work years ago. He deserves credit for being the best type of playtester: an honest one.
- Finally, thank you to everyone who downloads and plays his scenario, keeping Civ2 alive!

Appendix A: Fuel and Ammo Chart

| Unit | Role | MP / Range | Def | Primary ("K") | Cost | Secondary ("Backspace") | Cost |
|---------------------|-------------------|------------|-----|---------------|------|-------------------------|------|
| Fw200 | Convoy Attack | 60 / 4 | 6 | 1x 250lb | 20 | | |
| Me109G6 | Escort | 20 / 4 | 8 | 2x light | 5 | | |
| Me109G14 | Escort | 22 / 4 | 9 | 2x light | 5 | | |
| Me109K4 | Escort | 24 / 4 | 10 | 2x light | 5 | | |
| Fw190A5 | Interceptor | 30 / 4 | 6 | 3x med | 5 | | |
| Fw190A8 | Interceptor | 32 / 4 | 5 | 3x med | 5 | 1x A2A Rocket | |
| Fw190D9 | Interceptor | 34 / 4 | 7 | 3x med | 5 | | |
| Ta152 | Interceptor | 40 / 4 | 9 | 3x med | 5 | | |
| Me110 | Bomber Destroyer | 16 / 6 | 6 | 1x A2AR | 10 | | |
| Me410 | Bomber Destroyer | 18 / 6 | 7 | 1x A2AR | 10 | | |
| Ju88C | Night Fighter | 22 / 8 | 6 | 2x med | 10 | | |
| Ju88G | Night Fighter | 24 / 8 | 7 | 2x med | 10 | 4x Radar | 0 |
| He219 | Night Fighter | 28 / 8 | 8 | 2x med | 10 | 4x Radar | 0 |
| He162 | Jet Fighter | 50 / 2 | 2 | 10x heavy | 25 | | |
| Me163 | Rocket Fighter | 20 / 1 | 2 | 10x heavy | 40 | | |
| Me262 | Jet Fighter | 80 / 2 | 2 | 10x heavy | 50 | 1x A2A Rocket | |
| Ju87G | Close Air Support | 15 / 4 | 2 | 1x 1000lb | 5 | | |
| Fw190F | Close Air Support | 20 / 4 | 8 | 2x med | 5 | 1x 1000lb | 5 |
| Do335 | Close Air Support | 25 / 4 | 7 | 2x med | 5 | 2x 1000lb | 5 |
| He111 | Strategic Bomber | 18 / 10 | 6 | 2x250lb* | 10 | | |
| Do217 | Strategic Bomber | 20 / 12 | 7 | 2x250lb* | 10 | | |
| He277 | Strategic Bomber | 23 / 12 | 8 | 3x500lb* | 20 | | |
| Arado234 | Jet Bomber | 60 / 2 | 2 | 3x500lb | 50 | | |
| Go229 | Jet Bomber | 127 / 2 | 2 | 3x1000lb | 50 | | |
| Ju188 | Photo Recon | 80 / 4 | 5 | 2x camera | 10 | | |
| Spitfire IX | Escort | 20 / 4 | 7 | 2x hispano | 5 | | |
| Spitfire XII | Escort | 22 / 4 | 8 | 2x hispano | 5 | | |
| Spitfire XIV | Escort | 24 / 4 | 9 | 2x hispano | 5 | | |
| Hurricane IV | Close Air Support | 15 / 4 | 5 | 2xmed | 5 | 1x500lb | 5 |
| Typhoon | Close Air Support | 20 / 4 | 7 | 2x med | 5 | 1x 1000lb | 5 |
| Tempest | Close Air Support | 25 / 4 | 9 | 2x med | 5 | 2x 1000lb | 5 |
| Meteor | Jet Fighter | 80 / 2 | 2 | 10x heavy | 50 | | |
| Beaufighter | Night Fighter | 22 / 6 | 6 | 2x med | 10 | | |
| Mosquito NF Mk II | Night Fighter | 30 / 8 | 7 | 2x med | 10 | 4x Radar | 0 |
| Mosquito NF Mk XIII | Night Fighter | 36 / 8 | 8 | 2x med | 10 | 4x Radar | 0 |
| P-47D11 | Escort | 24 / 4 | 8 | 2x light | 5 | 1x250lb | 5 |
| P-47D25 | Fighter Bomber | 28 / 4 | 9 | 2x light | 5 | 1x 500lb | 5 |
| P-47D40 | Fighter Bomber | 30 / 4 | 10 | 2x light | 5 | 2x 500lb | 5 |
| P-38H | Interceptor | 30 / 4 | 6 | 3x med | 10 | | |
| P-38J | Interceptor | 34 / 4 | 7 | 3x med | 10 | | |
| P-38L | Interceptor | 38 / 4 | 8 | 3x med | 10 | | |
| P-51B | Escort | 40 / 6 | 11 | 2x light | 5 | | |
| P-51D | Escort | 40 / 8 | 12 | 2x light | 5 | | |
| P-80 | Jet Fighter | 80 / 2 | 2 | 10x heavy | 50 | | |
| Stirling | Strategic Bomber | 20 / 10 | 6 | 2x 250lb* | 20 | | |
| Halifax | Strategic Bomber | 22 / 12 | 7 | 3x 250lb* | 20 | | |
| Lancaster | Strategic Bomber | 25 / 12 | 8 | 3x 500lb* | 20 | | |
| Pathfinder | Diversion | 26 / 12 | 8 | 7x Chaff | 0 | | |

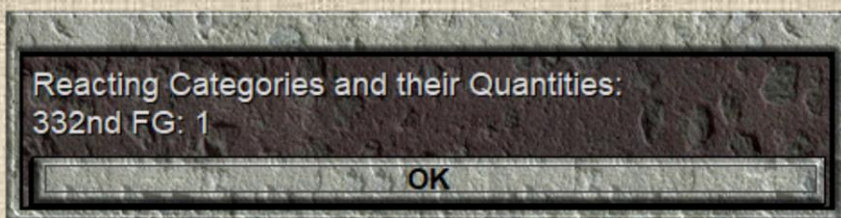
| | | | | | | | |
|-----------------------------|-------------------|---------|----|-----------|----|--|--|
| A-20 | Tactical Bomber | 35 / 2 | 5 | 2x 250lb* | 10 | | |
| B-26 | Tactical Bomber | 40 / 2 | 6 | 2x 250lb* | 10 | | |
| A-26 | Tactical Bomber | 45 / 2 | 7 | 3x 250lb* | 10 | | |
| B-17F | Strategic Bomber | 20 / 12 | 7 | 2x 250lb* | 20 | | |
| B-24J | Strategic Bomber | 24 / 12 | 6 | 2x 500lb* | 20 | | |
| B-17G | Strategic Bomber | 22 / 12 | 8 | 3x 250lb* | 20 | | |
| Sunderland | Anti-Shipping | 60 / 4 | 4 | 1x 250lb | 10 | | |
| 332 nd FG | Escort | 26 / 4 | 13 | 2x light | 5 | | |
| 15 th AF Bombers | Strategic Bomber | 24 / 6 | 5 | 3x 250lb* | 20 | | |
| Yak-3 | Escort | 16 / 4 | 9 | 2x med | 5 | | |
| Il-2 | Close Air Support | 16 / 4 | 8 | 2x1000lb | 5 | | |
| Mosquito (PR) | Photo Recon | 80 / 4 | 5 | 2x camera | 10 | | |

**When fully healthy. If damaged, less bombs will be dropped, but the unit can always drop at least 1.*

Appendix B: Reactive Attack Chart

| Unit | Max Attacks | Range | Notes |
|---------------|-------------|-------|---|
| Fw190A5 | 1 | 2 | Poor at high altitude. Better at intercepting bombers. |
| Fw190A8 | 2 | 1 | Poor at high altitude. Better at intercepting bombers. |
| Fw190D9 | 1 | 3 | Good at high altitude and low altitude. |
| Ta152 | 2 | 3 | Good at high altitude and low altitude. Can intercept jets. |
| Ju88C | 1 | 1 | Better at night. |
| Ju88G | 2 | 1 | Better at night. |
| He219 | 2 | 2 | Better at night. |
| Me109G6 | 2 | 1 | Better at intercepting fighters. |
| Me109G14 | 2 | 2 | Better at intercepting fighters. |
| Me109K4 | 2 | 3 | Better at intercepting fighters. |
| He162 | 1 | 4 | Can intercept jets. Very good bomber interceptor. |
| Me262 | 2 | 5 | Can intercept jets. Very good bomber interceptor. |
| He111 | 1 | 1 | |
| Do217 | 1 | 2 | |
| He277 | 2 | 2 | |
| Spitfire IX | 2 | 1 | Better at low altitude. |
| Spitfire XII | 2 | 2 | Better at low altitude. |
| Spitfire XIV | 2 | 3 | Improved high altitude performance. |
| Hurricane IV | 1 | 1 | |
| Typhoon | 1 | 2 | |
| Tempest | 1 | 3 | Can intercept jets. |
| Beaufighter | 1 | 1 | |
| Mosquito II | 2 | 1 | |
| Mosquito XIII | 2 | 2 | |
| P-47D11 | 2 | 1 | Better at high altitude. Strong diving attack. |
| P-47D25 | 2 | 2 | Better at high altitude. Strong diving attack. |
| P-47D40 | 2 | 3 | Better at high altitude. Strong diving attack. |

| | | | |
|---------------------------------|---|---|--|
| P-38H | 1 | 1 | Better at high altitude. Poor diving attack. |
| P-38J | 1 | 2 | Better at high altitude. Poor diving attack. |
| P38L | 1 | 3 | Better at high altitude. Improved diving attack. |
| P-51B | 2 | 3 | |
| P-51D | 2 | 4 | Can intercept jets. |
| 332 nd Fighter Group | 3 | 4 | Can intercept jets. Very good against bomber destroyers. |
| Yak-3 | 1 | 1 | |
| P-80 | 2 | 5 | Can intercept jets. |
| Meteor | 2 | 5 | Can intercept jets. |
| B-17F | 2 | 2 | Only returns fire at high altitude |
| B-17G | 2 | 3 | Only returns fire at high altitude |
| B-24J | 1 | 1 | Only returns fire at high altitude |
| Stirling | 1 | 1 | |
| Halifax | 1 | 2 | |
| Lancaster | 2 | 2 | |
| 88mm Flak Battery | 4 | 2 | |
| Allied Flak | 4 | 2 | |
| Flak Train | 2 | 2 | |
| Sdkfz 7/2 | 2 | 2 | Low map only |
| 3.7cm Flak | 1 | 2 | Low map and night map |
| 40mm Bofors | 1 | 2 | Low map and night map |
| Light Cruiser | 5 | 2 | Low map only |
| Schutzen | ∞ | 1 | Will only shoot at strategic bombers |
| Panzers | ∞ | 1 | Will only shoot at strategic bombers |
| Allied Infantry | ∞ | 1 | Will only shoot at strategic bombers |
| Allied Tanks | ∞ | 1 | Will only shoot at strategic bombers |
| Red Army | ∞ | 1 | Will only shoot at strategic bombers |



Screenshot showing the pop-up box for a reaction. Note, this does not necessarily mean that the reaction was successful, just that an aircraft attempted an interception.

Appendix C: Key Technologies

| Technology | Notes |
|---------------------------|---|
| Advanced Radar I | Increases effectiveness of radar. |
| Advanced Radar II | Increases effectiveness of radar. |
| Advanced Radar III | Increases likelihood of flak and night fighters reacting to targets in clouds |
| Night Fighters I | Increases effectiveness of radar. |
| Night Fighters II | Increases effectiveness of radar. |
| Night Fighters III | Increases effectiveness of radar. |
| Foggia Airfields | Opens Italian Theatre. Given when Allies accumulate 250 points. |
| Wilde Sau | Allows German players to transfer aircraft between day and night maps by pressing “u.” |
| Proximity Fuses | Eliminates 50% reduction in flak reactive attack percentage when target aircraft is flying in cloud cover. |
| Operation Overlord Prep. | Allows landing craft to be built. Given when Allies accumulate 1000 points. |
| Vistula-Oder Offensive | Opens the Russian Front. Given when Allies accumulate 1250 points. |
| Tactics I | Increases attack strength of fighter munitions by 1. Modifies reaction tables (if the defender has this and the attacker does not, it is less likely the defender will be intercepted). |
| Tactics II | Increases attack strength of fighter munitions by 1. Modifies reaction tables (if the defender has this and the attacker does not, it is less likely the defender will be intercepted). |
| Tactics III | Increases attack strength of fighter munitions by 1. |
| Long-Range Escorts Needed | Allows research path that leads to P-51 Mustangs. Given when Allies lose 60 bombers outside of escort range. |
| Political Support I | Awards 4000 fuel units. |
| Political Support II | Awards 4000 fuel units. |
| Political Support III | Awards 4000 fuel units. |
| Political Support IV | Awards 4000 fuel units. |

Appendix D: Historic Missions

| Mission | When | Target | Allied Reward | German Reward |
|-----------------------------|---|----------------------------|---|---|
| Operation Gomorrah | Random turn between 25 and 55. | Hamburg | Deletes all industry, fuel, and population improvements from Hamburg. Destroys surrounding tiles as well. | 10,000 fuel points. |
| Schweinfurt-Regensburg Raid | Random turn between 30 and 60. | Schweinfurt and Regensburg | Schweinfurt: Removes German industrial technologies. Regensburg: Removes the latest German interceptor technology. | Schweinfurt: 2,500 fuel points and 3x Fw190A8 fighters. Regensburg: 2,500 fuel points and 3x Me109K4 fighters. |
| Operation Hydra | Random turn between 30 and 60. | Peenemünde | Sets German research goal to “delays” and sets progress to 0 | Automatically gives Germans whatever technology they are researching. |
| Battle of Berlin | Random turn between 50 and 100* <i>*Note: This mission can be repeated as many times as the Allies like over a 50-turn span once it initiates.</i> | Berlin | 1 in 3 chance of German research goal being set to “delays” and setting progress to 0. 1 in 10 chance of greatly annoying German player by resetting what their workers are doing (it is possible German player will not notice this). 1 in 25 chance of Albert Speer dying in the air raid, making his reforms obsolete. | Germany does not get a reward because this is a recurring mission. |
| Operation Jericho | Random turn between 75 and 100. | Amiens Prison | Removes railyard improvement from Paris, Lille, Calais | 6x freight trains. |

| | | | | |
|--------------------|----------------------------------|----------------------------|--|--------------------|
| | | | and Rouen due to increased resistance activity. | |
| Operation Carthage | Random turn between 100 and 125. | Gestapo H.Q. in Copenhagen | Removes railyard improvement from Aarhus, Kiel, Hamurg, and Lubeck due to increased local resistance activity. | 6x freight trains. |

Appendix E: Version History

1.0 – Initial version created for playtest with McMonkey in 2011. Not released to the public.

2.0 – Second version created for playtest with McMonkey in 2017. Not released to the public.

3.0 – “Third time’s the charm...” First public release on 12/20/18. Shipped without historic missions.

3.2 – Released: