TotalSims (tm)

http://www.totalsims.com

http://www.ient.com

==========

Version 4.32 R5 FL2061 09/21/2018

==========

Ability to issue negative formation lengths to wingmen restored.

---== UPDATE FL2061: ZERSTÖRERS ==---

By: Robert, Grumpy and Bollok

All made possible by: Bcamel (creator of the program used to model the airplanes), and Idunno (who has shared a vast amount of aerodynamical knowledge)

You can find detailed performance graphs at:

http://bhlanding.ient.com/warbirdsforum/viewtopic.php?f=8&t=362

--= Messerschmitt Bf 110 Zerstörer series =--

Full rehaul of the Bf 110C-4 and Bf 110G-2. See further down for details.

--= Bf 109K-4's =--

The MW50 WEP has been reduced from 1.98 ata to 1.80 ata. This since the absolute majority of Bf 109K-4's used B4 fuel and not C3 fuel during their service. As such both Bf 109K-4's have had their engine setup rebuilt from the DB 605DC to the DB 605DB engine. This results in ~10 mph loss at Bst2, but the K-4's gain ~5 mph at lower altiudes, at Bst1, due to better low alt power output when using manifold pressures at 1.45 ata and lower with the DB 605DB engine.

--= Lavochkin series =--

* Liftco increased for a lower stall speed for all La5's and La7's. From 102 to 95 mph IAS at 7015 lb.

* Wing efficiency somewhat reduced to better simulate the effects of leading edge slats.

* Flaps liftco adjusted, slightly lowered at smaller angles.

* Small dragco increase for the La7's. From 413 to 411 mph top speed at 20 000 ft.

* Stall behaviour slightly harsher than before. All in all though the Lavochkins will turn a bit better now.

--= Hitmap fixes =--

Reworked hitmaps for the Focke Wulfs, Mustangs, Zeros, Hawks, Macchis, Lavochkins, Wildcats and Hellcat.

--= P-40F =--

Cockpit fix, the cockpit of the P-40F should be rendered at it's correct location with this update.

---== THE BF 110 ZERSTÖRER SERIES FULL REHAUL ==---

The Messerschmitt Bf 110 was designed as a twin engine long range fighter for escort missions, and as a fighter-bomber. In the invasions of Poland and France this Messerschmitt saw good success, but did not fare as well in it's fighter role in the Battle of Britain. The British fighters were simply faster and more agile. This plane can be very effective as a bomber-killer or fighter-bomber though, packing a heavy punch and able to carry payloads of 2x1000 kg bombs. Against Bf 110's, a bomber is in big trouble without escort. It is quite hard to dogfight nimbler opponents 1v1 with the Zerstörers, but they are not terrible at turning and if working in wingpairs the Bf 110's can actually be lethal by using Thach weave tactics, letting their big guns speak. Smart Bf 110 pilots would do well to enter the combat area at a higher altitude than their opponents, allowing them to pounce on bombers or avoid bad match-ups. If left unmolested, the Zerstörers can also be very effective at dive bombing and strafing fields.

--= Bf 110C-4 =--

The Bf 110C-4 is equipped with two Daimler-Benz DB 601B engines, which are the similar to the engines used by the Bf 109E-3, but with a different propgear ratio. It is armed with four 7.92 mm MG's and two 20 mm cannons. The Bf 110C-4 is not as nimble as the majority of early era fighters but is decently fast unless matched against Bf 109's or Spitfires. This Messerschmitt is best used as a bomber-killer or for jabo missions, but can be effective if boom n zooming through fürballs or going head on. The single rear-facing 7.92 mm MG can bring down an enemy if lucky, but shouldn't be counted on as an adequate defence.

--= Bf 110G-2 =--

The Bf 110G-2 packs a very heavy punch with two 30 mm cannons and two 20 mm cannons, and can be even better armed with two extra 20 mm cannons in a gunpod, air-to-air rockets or even a devastating 3.7 cm BK cannon. The engines are of the DB 605B model, with the same power output as the DB 605A engine used by the Bf 109G-6. The Bf 110G-2 is best used for killing bombers and for jabo missions, but enemy fighters need to beware as this Zerstörer will often kill with a single burst. It has a somewhat upgraded defensive armament with a double barreled 7.92 mm MG, the MG 81Z, but still shouldn't rely on this gun for defence. Contemporary fighters will usually have a higher top speed than this Messerchmitt so always keep a good situational awareness, and while smaller fighters will out turn the Bf 110G-2, it can actually turn inside many of the heavier late war fighters.

==========

FL2060 08/21/2018

==========

---== UPDATE FL2060: ADLERTAG ==---

By: Robert & Grumpy

All made possible by: Bcamel (creator of the program used to model the airplanes), and Idunno (who has shared a vast amount of aerodynamical knowledge)

--= Bf 109 series =--

After months of remodeling and getting this series as close to historical performance as possible, we are happy to finally announce the full rehaul of the whole Messerchmitt series. See further down for details.

--= Yakovlevs =--

Slight roll rate improvement for the Yak-9D, Yak-3 and Yak-9U.

--= Lavochkins =--

Slight wing efficiency reduction fix due to data found that leading edge slats increases induced drag when extended. This fix affects all the La5's and La7's.

--= Focke Wulfs =--

The Fw 190A-8, F-8 and D-9 have had their Bst2 renamed from "MW50 injection" to "MW50 injektion" with correct German spelling.

--= Macchis =--

The C.202's and C.205 have had minor fixes in dragco and engine setup from better data found while remodeling the Bf 109 series.

--== THE BF 109 MESSERSCHMITT SERIES FULL REHAUL ==--

There were no other aces in ww2 with as many kills as the German Bf 109 pilots. The Messerschmitts were used at all fronts by the Germans and even scored a very impressive tally in Finnish hands against the Russians. There has been a lot of propaganda after the war where Allied countries claimed their fighters were far superior to their German adversaries, but make no mistake, the Bf 109 is a very potent fighter that has several outstanding traits, while also having some apparent drawbacks. The Messerschmitt is a small lightweight fighter and can definitely give a Spitfire a good run for the money in a slow speed turnfight and is very maneuverable below 300 mph. Especially the F's and K's hold a great sustained turn rate due to their high power/weight ratio, but even E's and G's are quite decent. The small wing area is fairly well counteracted by the leading edge slats, allowing this fighter a high max AoA and surprisingly low stall speed for it's wingloading. While the normal Bf 109's are a bit lightly armed, the G-6/RVI and K-4/RIV versions pack a heavy punch with their added gondola cannons in exchange for a decrease in speed, climb-, turn- and roll rate. The Messerscmitts have a major Akilles heel in that their elevator, rudder and aileron controls quickly become heavier with increasing airspeed. As such a Bf 109 can turn with a Spitfire below 250 mph IAS but is fairly equal to a P-51D above 300 mph IAS, and above 400 mph IAS a P-51D can easily get on the Bf 109's six. There are several accounts of German Bf 109 pilots crashing when trying to follow a British fighter in a low altitude dive due to inability of pulling out of the dive, and a known tactic used by British pilots was to roll over, dive and then pull out in order to evade a Bf 109 on their six. A Bf 109 pilot in Warbirds will do well to be ready with the elevator trim to get out of a dive or to tighten the turn in high speed dogfights. Heavier fighters will do well to keep their speed high when fighting a 'Schmitt. A Warbirds player probably needs a bit of a learning curve to get skilled in this German fighter, but the Messerschmitts are definitiely very competitive fighters that have the ability to bring down any opposition, especially with an Experten in the cockpit who knows how to manage his Bf 109's strengths and weaknesses.

--= Bf 109E-1 =--

The E-1 is lightly armed with 4x 7.92 mm MG's and has a max output of 1134 hp at 4100 ft with it's DB 601 engine. The 1.40 ata boost can be used for 1 min stints with a 2 min cooldown, while 1.30 ata can be used for 5 minutes.

--= Bf 109E-3 =--

The E-3 has an improved DB 601 engine with a better high altitude performance, and replaces the wing 7.92 mm MG's with 20 mm MG/FF cannons.

--= Bf 109E-4 =--

This version is very similar to the Bf 109E-3, but has slightly better MG/FF/M cannons instead of the MG/FF cannons of the E-3.

--= Bf 109E-4 Aa =--

The best known Bf 109E version, the E-4 Aa has the DB 601Aa engine which can produce 1212 hp at 4000 ft for 1 minute stints. There are several 1939-1940 era fighters that can turn tighter than the 109E's, but the 'Schmitts can usually outrun these opponents. Still, if on the six of a Spitfire, the Bf 109E's can keep inside it's turn for several laps. The Hurricane outturns the Bf 109E's though.

--= Bf 109F-1 =--

The F's might be the pinnacle of the Messerchmitt series and sees the wing cannons removed for a single nose cannon. The Bf 109F's and future 109's have redesigned wings with a better wing efficiency and lower drag than the E's, and can also bring a droptank. The F-1 benefits from a good power/weight ratio with the DB 601N engine capable of producing 1243 hp at 6900 ft for 5 minute stints.

--= Bf 109F-2 =--

Very similar to the F-1, but with the 20 mm cannon replaced with a 15 mm MG/151/15 cannon and 200 rounds instead of 60 rounds.

--= Bf 109F-4 =--

The best F version equipped with the even further improved DB 601E engine. It also has a 20 mm MG/151/20 cannon with 200 rounds instead of the 15 mm cannon of the F-2. The F-4 has great top speed for it's time and can turn with most 1941 era fighters at low speeds.

--= Bf 109G-2 =--

The G-2 fields the DB 605A-1 engine which has a better high alt performance than the DB 601 engine. Problems with engine reliability resulted in the G-2 being restricted to 1.30 ata though. As such it's has a better top speed above 20000 ft than the F-4, but is generally a bit more cumbersome at lower alts than the F's.

--= Bf 109G-6 =--

The G-6 has the DB 605A-1 engine like the G-2, but is cleared for use of 1.42 ata with a max output of 1529 hp at 6800 ft at 1 minute stints. It has improved armament with 2x 13 mm MG's replacing the 7.92 MG's and packs a better punch. It's a bit heavier than the F's though and slightly worse in turn fight at low alts, but is a good high alt performer.

--= Bf 109G-6/RVI =--

This is a G-6 with added gondola cannons in the wings, packing a heavy punch and is a great tool against bombers. This added firepower comes at the expense of a ~5 mph slower top speed and decreased climb-, turn- and roll rate due to the added 474 lb weight of the wing cannons.

--= Bf 109G-14 ASM =--

An improvement to the G-series, the G-14 ASM has an engine tooled for high alt performance, and more importantly can use the MW50 methanol/water injection. This allows a markedly increase in max power output and it can keep it's WEP for 10 minutes before the engine starts to overheat (total MW50 capacity is 20 minutes). This Bf 109 version is a serious threat to any opposing fighter of it's era.

--= Bf 109K-4 =--

This is the ultimate version of the Bf 109 series. An added feature is the choice of using the heavy 30 mm MK/108 cannon instead of the standard 20 mm cannon. The DB 605DC engine can produce 1988 hp at 1400 ft with MW50 injection and C3 fuel, which gives the K-4 a power/weight ratio even greater than the Spitfire XIV, and can definitely match the Spit XIV in a sustained low n' slow turn fight. The top speed matches any late war fighter below 20000 ft and if the German pilots of ww2 hadn't been constantly outnumbered 1v5 or even 1v10 in the era of the K-4, this version would probably have made a much better tally for itself. The Akilles heel of the Messerchmitts is the heavy high speed handling though, and in the 1944-1945 era where speeds are much higher than in the earlier years of ww2, this is an even more significant drawback for the K-4 pilot that often will need to try to lure the often heavier enemy fighters into a slow speed dogfight.

--= Bf 109K-4/RIV =--

Like the G-6/RVI, The K-4/RIV has added firepower from it's gondola wing cannons at the expense of top speed and agility.

==========

Changes in version 4.32 R4 FL2058 06/11/2018

==========

---== UPDATE FL2058: NAVY BLUE ==---

By: Robert, Grumpy and Bollok

All made possible by: Bcamel (creator of the program used to model the airplanes), and Idunno (who has shared a vast amount of aerodynamical knowledge).

--= F4U Corsair series =--

The whole F4U series has been fully remodeled. See further below for details.

--= Propdrag change =--

The amount of drag generated by the airscrew when at idle throttle or engine off has been lowered globally for all remodeled fighters. This means that the braking effect is somewhat reduced when chopping the throttle mid-air, but more importantly the fighters can glide for a longer distance (a bit closer to real life numbers) when the engine is dead.

--= Macchi C.202's and C.205 =--

The C.202 Fulgores and the C.205 Veltro have had their engines and dragcos corrected. They are all now ~8 mph slower than previously, this according to better speed data found. Also the C.205 now only has 1 minute of WEP instead of 5 min, as per Daimler-Benz 605A engine data (The C.205 used a license built DB 605 engine). Both the C.202's and the C.205 have had their climb rate slightly improved to match historical data though.

--= Fw 190 series =--

The whole Fw 190 series has now a somewhat harsher stall behavior. In real life the Fw 190's had no washout for the wings and the stall when maneuvering was very sudden and violent with nearly zero warning.

--= F6F-5 Hellcat =--

The F6F-5 has gotten a complete engine rehaul and dragco retweak. This since better engine and speed data was found when remodeling the F4U's, and the Hellcat used a near identical engine as the F4U-1D. The F6F-5 was actually just as fast as a F4U, and it's a misconception that the F6F-5 was slower. This was discovered in ww2 when Vaught lent Grumman a F4U-1 to help find out why the F6F was underperforming in speed tests, and in the trials it was found that the Hellcat could pretty much fly side by side with the Corsair at full throttle. It was simply an instruments error that had the F6F's gauges show a lower velocity than it really had. The Hellcat is now generally 5-6 mph faster than before and ~15 mph faster at WEP at low altitude. This also improves the F6F-5's sustained turning performance at the

deck when using WEP, due to it's now better power/weight ratio and less drag. The 60" Water injection WEP has a total tank capacity for 14 minutes use, at 5 minutes stints.

--= The left engines are the right engines =--

A coding error has been found that affects all FM's with multiple engines. Previous programmers, far far back in time, seems to have mistakenly reversed the engine hardpoints, so if you hit the ground with the left wing, the right wing engines will take damage instead. This only affects damage from hitting the ground though and not bullet damage, which uses hitboxes to calculate damage. As this coding error does not have much impact on the game it will be fixed for each multi-engine plane one at a time when it's time for said plane to get a full rehaul of it's flightmodel. For now the P-38's have had their hardpoints corrected.

--== THE F4U CORSAIR SERIES FULL REHAUL ==--

The F4U Corsairs are known for their impressive records in the Pacific theather but also made a good account of themselves over Europe. They were used by several countries even after the war. The F4U's are designed for carrier operation and are heavy birds with powerful radial engines. The stall speed is fairly high at 97 mph at 12000 lb, and the roll rate is similar to a P-51 although somewhat worse at high speeds. The Corsairs are primarily boom n zoom fighters, with 6x .50 cal machine guns, but they can turn quite sharply for a few laps at speed thanks to their thick wings and good max AoA. The controls get sluggish at very high speeds though. The F4U's have an excellent wing efficiency and retain their energy well, and the -1D and -4 can even hold a sustained turn quite fine with their good power/weight ratios. Going into low n' slow maneuvering vs nimbler opponents can be dangerous as the Corsair flightmodels now have a more realistic, and notably higher, stall speed than before. All in all the Corsairs are very potent fighters and should excel when their pilots keep the speed high and work with wingmen for boom n zoom tactics.

--= F4U-1 =--

The F4U-1 fields the Pratt & Whitney R-2800-8 engine with a power output of 2000 hp at 1750 ft. The -1 has fuel to spare and is quite heavy at 12738 lb. Against opponents of the same era this fighter is fast and does best at boom n zooming wingman tactics. The power/weight ratio is not superb so sustained turn fighting is inadvisable unless matched against the Fw 190 or P-47.

--= F4U-1A =--

The F4U-1A is 75 lb heavier than the -1, but has the R-2800-8W engine which can use water injection at 60" Hg WEP (5 min stints, 9 min total tank capacity). The max power output is as such improved to 2250 hp at 900 ft and the -1A has a 15-20 mph faster top speed than it's predecessor. The -1A can also carry a drop tank for long range operations.

--= F4U-1D =--

The F4U-1D also fields the R-2800-8W engine but carries notably less fuel and weighs in at 12086 lb, which is 726 lb lighter than the -1A. This results in a better climb rate and sustained turning ability, being fairly on par with a P-38L in a turnfight. For long range operations the -1D can carry two droptanks and also has a good variety of ground attack ordnance with rockets and heavy bombs.

--= F4U-4 =--

The F4U-4 didn't see duty until the very end of the war but was a great improvement to the Corsair series. It had full metal alloy wings to save some weight, and was equipped with the new P&W R-2800-18W engine with a four blade propeller. This beast of an engine could produce 2450 hp with water injection (5 min stints, ~11 min tank capacity). While being 337 lb heavier than the -1D, the -4 still has a better power/weight ratio at WEP and can almost challenge a C.205 Veltro in a sustained turn. The F4U-4 is ~18 mph faster than the -1D at the deck and ~60 mph faster at 26000 ft, since the -1D has a lower FTH (Full Throttle Height). The -4 can carry the same ordnance as the -1D.