AEROPLANE HEAVEN

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A6M-2 Zero

COCKPIT AND FLYING GUIDE

Mitsubishi A6M-2 Zero

The Mitsubishi zero was, at start of World War 2 one of the most capable carrier based aircraft to exist. It had excellent acrobatic skills and a very long fuel range (further helped with the addition of external fuel tanks). The Mitsubishi Zero was first used in China in the latter stages of 1940. They were able to gain an impressive kill ratio of 12: 1 due to a number of innovations including how light the plane was. This allowed for maneuvers that were more vigorous than most.

The Mitsubishi zero (or Reisen as it was referred to by its Japanese pilots) came to the attention of the US during the surprise attack on Pearl harbour in 7th December 1941 which had the devastating effect of crippling (for a short time) the American navy and killing and injuring many brave men and women of the US armed forces. The inevitable entrance of the US into world war 2 saw the fighters of the US come up against the Zero.

At first the F4F wild cat was well and truly out classed by the lighter,faster zero. But this advantage was also to be the undoing of the Zero and air supremacy in the pacific. The Zero afforded little to no protection for the pilot and worse yet had no self sealing fuel tanks. This meant that experienced pilots which would have survived a dogfight in an allied aircraft (where the focus was more on pilot protection) would often not survive.

As more allied aircraft started to gain supremacy in the air due to this data and information gleaned from fighting the Zero, the zero was soon to become less of a formidable foe as it had been in the early years of the war.

As more experienced Japanese pilots were to lose their lives the Zero's prime role was changed to being a Kamikaze plane. Piloted by less experienced pilots they were used as human guided bombs towards the end of the war.

Dimensions:

Wing span	39 ft 4 in
Length	29 ft 9 in
Height	10 ft 0 in
Wing area	241.5 sq ft
Empty weight	3,704 lb
Max weight	6,164 lb

Performance :

Max speed	331 mph (288 kn)
Service ceiling	33,000 ft (10,000 m)
Max range	1,160 mi (1,010 nmi)

Powerplant :

1 × Nakajima NK1C Sakae-12 air-cooled radial piston engine, 700 (940 hp)

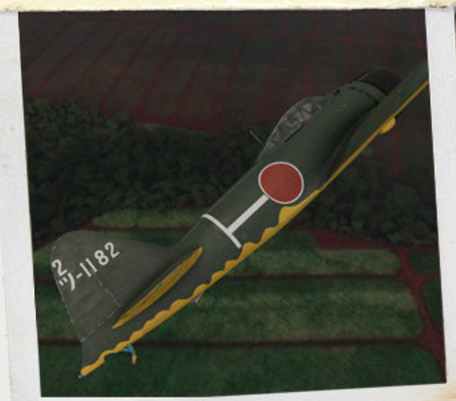
Armament :
Guns:
2 x 0.303 type 97 aircraft MG (cowling)
2 x 0.787 type 99-1 Mk.3 cannon (wings)

Bombs:
2 x 130 lb bombs or
1 x fixed 550lb bomb

USE THIS MENU TO NAVIGATE THE MANUAL

Liveries

Liveries




COCKPIT
FAMILIARISATION GUIDE
Duxford

Cockpit - main instruments

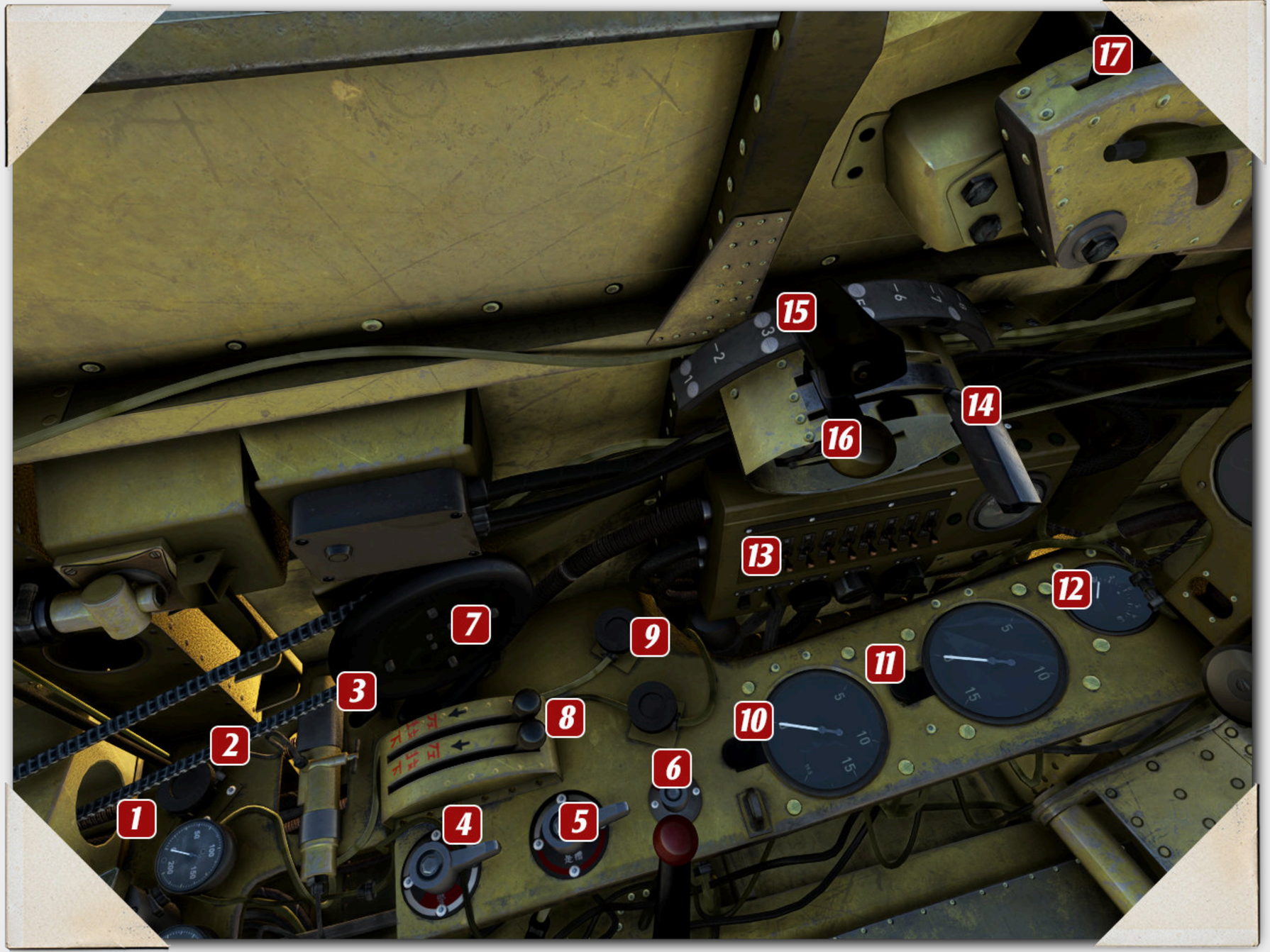
1. Air fuel mixture gauge (game)
2. Nav CDI gauge
3. Clock
4. Magnetos
5. Electrical fuel pump
6. Airspeed gauge
7. Altitude gauge
8. Stand by compass with desired heading.
9. AHI
10. Turn and slip indicator.
11. Pitch indicator
12. Oxygen gauge
13. Vertical speed gauge.
14. Cylinder head temperature gauge
15. Oil pressure (left) fuel pressure (right)
16. Oil temperature gauge
17. Starter switch
18. RPM gauge
19. Manifold/boost gauge
20. Oil cooler lever

Brake pedal is parking brake

Cockpit - left side

This area can be found immediately to the left forward as you are sitting in the cockpit.

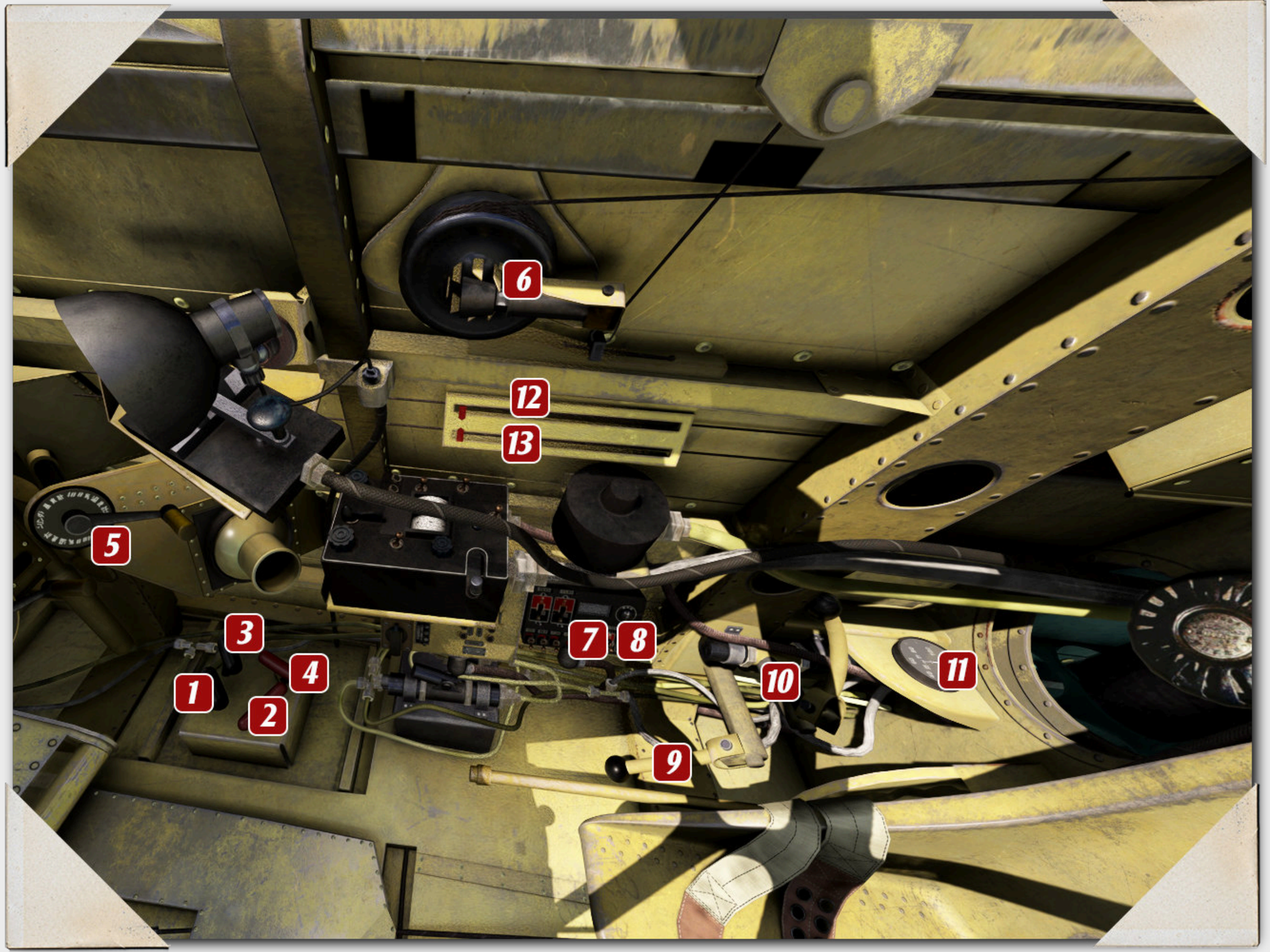
1. 20 mm gun compressor control
2. Gun compressor valve control.
3. Pilot Removal
4. Main tank valve (see fuel section)
5. Wing tank valve (see fuel section)
6. Main fuel selector (see fuel section
7. Elevator trim wheel
8. Tail wheel lock
9. Left and right gun loading mechanism
10. Wing tank gauge selector
11. Main tank gauge selector
12. Outside air temperature gauge
13. Electrical/fuse box (see section)
14. Prop pitch lever
15. Best fuel mixture lever
16. Throttle lever
17. Mixture over-ride lever.



Cockpit - right side

This area can be found immediately to the right as you are sitting in the cockpit.

1. Wing tank fuel cooler (inop)
2. Manual release of left gear
3. Cockpit vent control
4. Manual release of right gear
5. Cowl flap lever
6. Tail hook release
7. Crash reset (PC only see features section for more information)
8. Gun sight reticle toggle (See features section for more information)
9. Landing gear lever
10. Flaps lever
11. Hydraulic pressure gauge
12. Arrestor hook indicator
13. Flaps indicator



Cockpit -Front canopy

1. Canopy lock (when locked canopy is ... locked !)
2. Gun-sight range - moves the gun-sight forward and rearward
3. Canopy handle. This requires the lock to be unlocked and then you DRAG it back. On PC you can also roll the mouse wheel to achieve this.
4. Left Gun (inop in game)
5. Right Gun (inop in game)

Cockpit - Electrical/ Fuse box

1. Toggle radios
2. Navigation lights
3. Recognition lights
4. Flood light
5. Instrument panel lighting
6. Battery switch
7. Alternator switch
8. Avionics switch
9. Pitot heat switch

Radio options

The radios on Mitsubishi radio are usually found on the right side. And whilst modelled are not operable. Use the switch on the fuse/electrical box to toggle the AHI/Turn gauge area with simple radios

These radios (AS92 based) are a simple COM and NAV unit. Set the frequency that you wish with the right knob and use the swap middle button to swap into the active frequency.

Once you set the radio you can hide them. This does not turn off the radios or the settings. Useful for navigating within the game.

Cockpit - lighting - main

The cockpit consists of 2 flood light utility lights. The switches can be found on the electrical fuse panel.

The floodlight switch is outlined to the left

Cockpit - Instrument Lighting

The panel lighting sets the right lighting to on. There is no potentiometer or dimmer. There is no uv lighting either.

In case you are wondering where the landing light switch... There isn't one.

Please note your Bloom settings will have an effect on these lights as well.

Ok with all of that out of the way lets get her started and moving shall we !

STARTING

STEP-BY-STEP GUIDE

Starting a Mitsubishi Zero A6M 2

STEP 1.

As with all aircraft ensure that you have enough fuel in the main tanks. See features section on the fuel system. .

Set the Parking brake to on. (Or use the brakes but it is easier to use the parking brake). You can do this by clicking the brake pedals.

STEP 2.

Set the battery to on. Please note this will eventually drain to nothing. (It will take time) so be sure to read the full steps before attempting a start. Power should now be available to all the systems (well ... Available to systems in a 40's warbird that is no SIDS/STARS here.)

STEP 3.

On the fuse panel beside the battery switch is the Alternator switch. We recommend you turn it on now so you don't need to do it later. IF following the games checklist we ask you to check the fuel. Best bet is to switch this Alternator on right now. Whilst there you could also switch on the pitot heat should that be required.

Starting a Mitsubishi Zero A6M 2

STEP 4.

Set the main fuel valve to front selected. On the zero there is a valve between the front and rear tanks (and with wings between the left and right).

The actual selector is detailed in step 5.

See features section for more information on the fuel system.

STEP 5.

Set the main fuel selector to main tanks. This selector allows you to Pre-select the tanks use before switching. We are using the new fuelsystem in game. You have time if you make a mistake as there is a little bit of fuel in the lines. But dont tarry or you will shut the engine down.

You can start on wing tanks but that wouldn't be standard procedure... so up to you !

STEP 6.

Push the fuel pump lever in for the electrical pump. Once the engine is started this lever can be pulled back out.

Starting a Mitsubishi Zero A6M 2

STEP 7.

Set the magnetos to both. This control sites above the fuel pump and above the fuel gauges. Good time to check that you have fuel.

Again for more information on the fuel system read the features section.

Crack the throttle a smidgeon. Smidgeon is a different amount depending on where you are in the world. Here it's about 5- 10 %.

STEP 8.

Set the auto mixture to best.. This lever in real life is more like a selector rather than a best mixture set lever. however this functionality does not exist in game.

You will notice that the override mixture lever will move to the best mixture setting for the altitude you are at. This lever is stock to allow for people with peripherals.

STEP 9.

Hold the starter switch till the engine starts. The engine takes some time to catch so keep an ear out for the idle to settle down. The zero Likes a little bit of throttle. Please ensure that you have that throttle open a smidgeon.

Since you are here you can open the cowl flaps should you require it.

Starting a Mitsubishi Zero A6M 2

STEP 10.

Check all the gauges for the engine. Most if not all are found in the one area of the panel making this step rather easy (though hard to illustrate - editor) Check all temperatures and pressures for the engine and ensure that the RPMs arent searching around. If they are this is usually a sign of an incorrectly adjusted air fuel mixture.

STEP 11.

Ensuring the throttle is cracked you can now turn off the fuel pump lever by pulling it out. A double (actually triple by now) check of the fuel gauges is always a good idea here.

Keep an eye on the fuel pressure (right needle of the double gauge on the left side of the front panel) . It will drop with less RPM.

STEP 12.

Switch the magneto to either Right magneto or left to check for magneto drop. It should drop by around 100 rpm . This will of course be down to your position of the throttle.

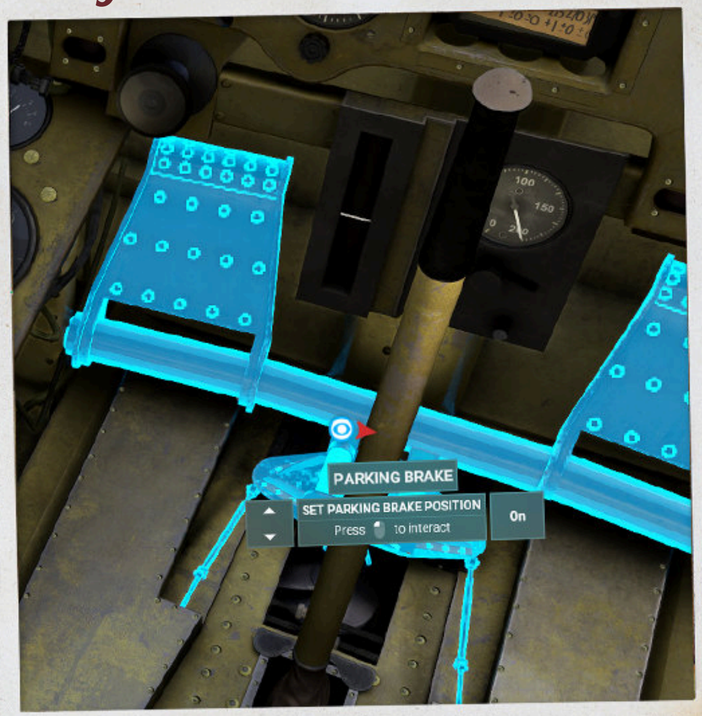
You should be aiming for 1000 rpm before the magneto test. Switch the magnetos back to both.

Lets get the bird into the air where she belongs!

TAXI & TAKEOFF

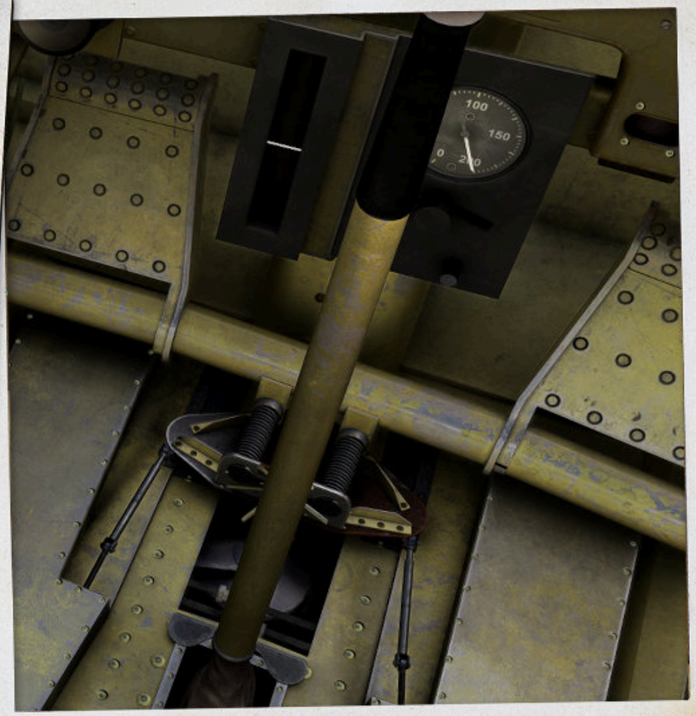
STEP-BY-STEP GUIDE

Taxiing



STEP 1.

STEP 2.



STEP 3.

Before you release the park brake ensure your throttle is around 10 percent. Any less and you may shut the engine down.

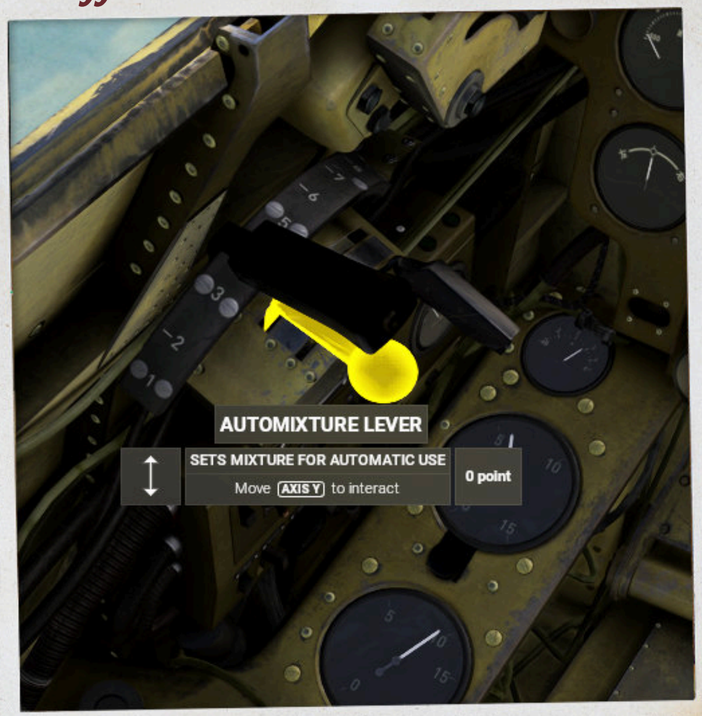
If you have your game set to turn off park brake with a tap of the brakes then do this other wise use the keys or pedals .
Apply brakes

As you taxi you will need to ensure this lever is in the steer position. Utilising the S turn method as she's quite a big plane to look over the cowl

Once you have reached the point at which you want to take off what we like to do is to put the tail-wheel lock on and the parking brake to on as well. We now need to set the trim controls and then await clearance to launch into the skies.

To counter the torque effect from the engine you'll need a little amount of rudder. Its a very small amount required so make sure your sensitivity settings are set correct. Or use the auto rudder functionality of the game.

Xbox users we have found that the triggers are pretty good at this you might not need as much help here.



STEP 4.

Once you are lined up on the runway (you have ensured that ATC has been notified right ?) then just ensure the best mixture lever is used to give the AFR the best settings for take off.

STEP 5.

Increase the throttle to achieve 2550 Rpm. If you have the tail-wheel lock on then small (or perhaps not even needed) corrections are used. Wait for the rear of the aircraft come up.

STEP 6.

As the rear tail comes up you need very little and precise movements on the rudder at this point. We recommend that you check your sensitivity settings in game .

Once speed reaches around 100 mph push forward slightly on the stick and then rotate.

Raise the gear and enjoy the flight.

Flying tips

This elev trim setting for no stores

Depending on what your settings are in the assistance preferences you may need to set the elevator trim to between 0.5 and 0.7.
If you use the mouse wheel that takes its increments from your mouse settings in windows. So the best way is to hit active pause and drag to the right till you get the desired trim.

You will also need to change the trim levels should you have the external tank or bomb load added to your load-out.

If you are using the medium or lower preset the computer AI will handle all of this for you.

Computers are great!

Level at 8900 ft

LANDING

STEP-BY-STEP GUIDE

Landing

STEP 1.

So now that you have completed your flight and mission you now need to get the plane into landing configuration.

First put the fuel selector onto the tank that has the most fuel in the tank. In this case the right wing fuel tank. Not ideal but we can make it work!

STEP 2.

Push the fuel pump in. As the RPM of the engine drops so does the fuel pressure going into the engine. Having the electrical fuel pump on means you are guaranteed a good fuel flow to the engine.

That is if you have done the previous step correctly of course.

STEP 3.

Lower the gear and the flaps to full. The flap lever is aft of the landing gear. Pay attention to your speed here. Be careful with full flaps , speed bleeds off super quickly.

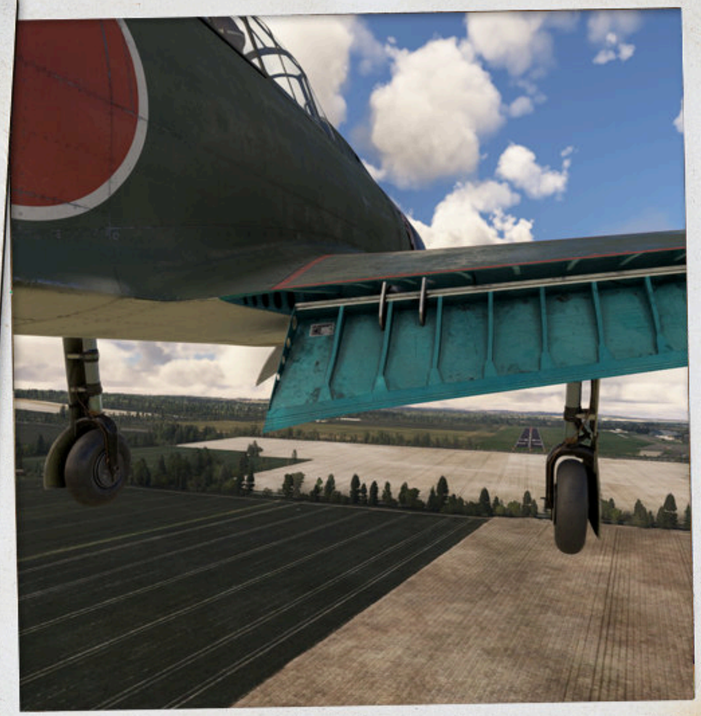
Anything under 90 knots and you are going to have a lot of trouble.

STEP 4.

Close the cowl flaps. Whilst your attention is in this part of the cockpit ensure all gauges are in the correct areas. Of concern at this point is the fuel pressure.

STEP 5.

In game you can use the landing view to line up with the airfield.



STEP 6.

Speed should be around 100 knots. Keep just enough power on to maintain this speed. It is possible to do a power approach in the zero but it is rather tricky and usually ends up in a crashed plane. We don't want this so until you are fully rated on the landing of the zero we shall leave that for this manual.

Landing

The Zero can be a little tricky at slower speeds. It is a bit more twitchy as compared to other planes at this speed so smaller and more incremental movements.

In the shot above we were slightly off horizontal. We decided to land at the grass airfield at duxford.

(actually we didn't read the manual and it turned out to be that runway !)

You can very easily get into trouble if you let your airspeed below 100 knots. The trick here is to approach the landing zone in a 3 point position. Essentially placing the plane on the ground rather than forcing it.

This is where most pilots will have the most problems. Its tricky to master but when you do... It feels great!

With luck and skill on your side you should now be down on the ground. The brakes can easily tip you over some bucket loads of back pressure on the stick will help you plant the plane. As soon as you slow down to a manageable taxi get off the airfield as quickly as you can, there are other fliers wanting to land !

(btw if you were at duxford during May 2025 ... we are so sorry !)


FEATURES & OPTIONS
FAMILIARISATION GUIDE

Features : Toggle gunsight

The switch found on the radio panel on the left hand side of the cockpit lower will toggle the reticle.

The reticle requires the battery to be on as well as this switch to be off (default) once you have the battery on and find the reticle annoying you can use the switch to remove it and the glass.

This can help in flying and also with frame rates on slower computers. We are using an emissive decal for the reticle here.

This section has got a developer commentary YouTube video made should you want a little more in depth on how the features work.

Features :Crash reset (pc only)

This switch allows you to “reset “ the plane without having to reset the flight should you belly up. If you land on your belly and you have not shut the main valve you will have fire. Should you shut it then only a small amount of smoke appears. If you want to reset push this switch.

What is happening is we are turning off all the effects and engine fail and putting you back on the gear using the slew function of the game. This is disabled in Xbox as there isn't a slew function in the game for that console.

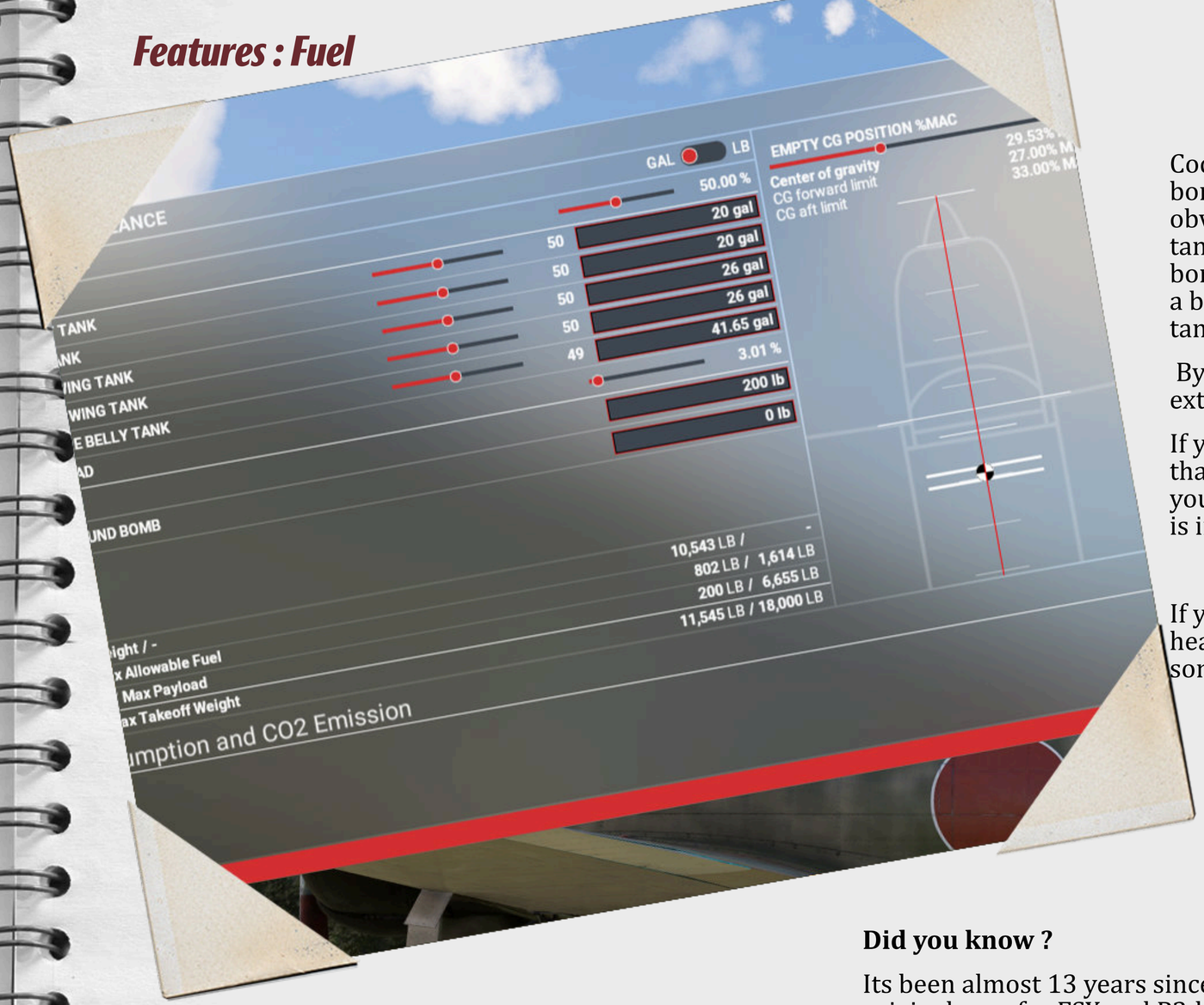
Ask us what happens if you try to slew on xbox!

Once used the plane will be back on the ground and ready for you to get back into the plane (via the switch or weight settings) and then close the canopy.

reset switch (pc only)

Features

Features : Fuel



Code logic dictates that if there is a bomb on the centre pylon you obviously cant add the external fuel tank to that pylon. So remove the bomb first then add the fuel. Adding a bomb will always empty the fuel tank.

By default there is fuel in the external fuel tank.

If you enter any other value other than 250 pounds in the bomb area you will not see the bomb. The clue is in the name of the station.

If you try anything else you might hear some ground crew laughing somewhere.

Bomb loaded.

External fuel tank

Did you know ?

Its been almost 13 years since we made the original zero for FSX and P3d ? Time is flying by. Take this as a sign to buy that motorbike/car that you always wanted. Thank us later.

Features

Features : Fuel management

Main tank - AFT

The Zero has multiple valves that work like mini selectors. From rear to front they are the main fuel tanks (found in the centre) and the wing tanks (left and right) above both these similar valves is the main fuel selector.

Think of it as the main fuel valve . The others feed this selector.

Main selector - main

The main fuel selector allows you to set the engine valve to off, main fuel tanks (the choice of which is set by the lower valves) , wing tanks (again choice via the lower valve) and the external tank.

The process is to select which tank you wish to use and then once that is locked in use the main valve to then “send” the fuel from that tank to the engine.

External tank selected

The last setting on the main fuel selector is the external tank. Should you set this selector to the external fuel tank and you not have fuel in that tank then you will essentially have shut fuel off to the engine. There will be some fuel in the lines but eventually the fuel will run out.

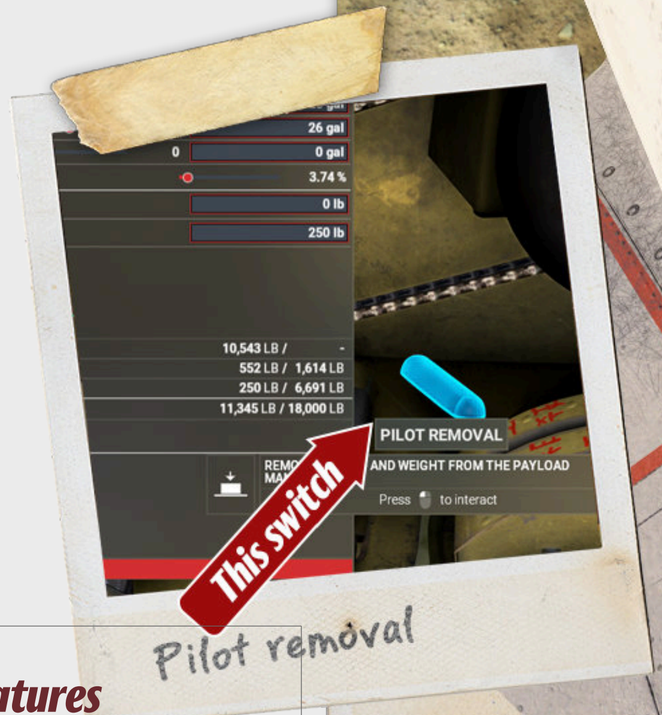
Always ensure that you have fuel in all the tanks that you switch to.

Features

Features : Pilot removal

Setting the weight of the pilot in the weight screen of the game will remove the pilot Also the pilot removal switch under the elevator trim wheel area will do the same thing without needing to open the weight menu

We highly recommend that you put a pilot into the aircraft if you intend to fly the aircraft. It just makes sense



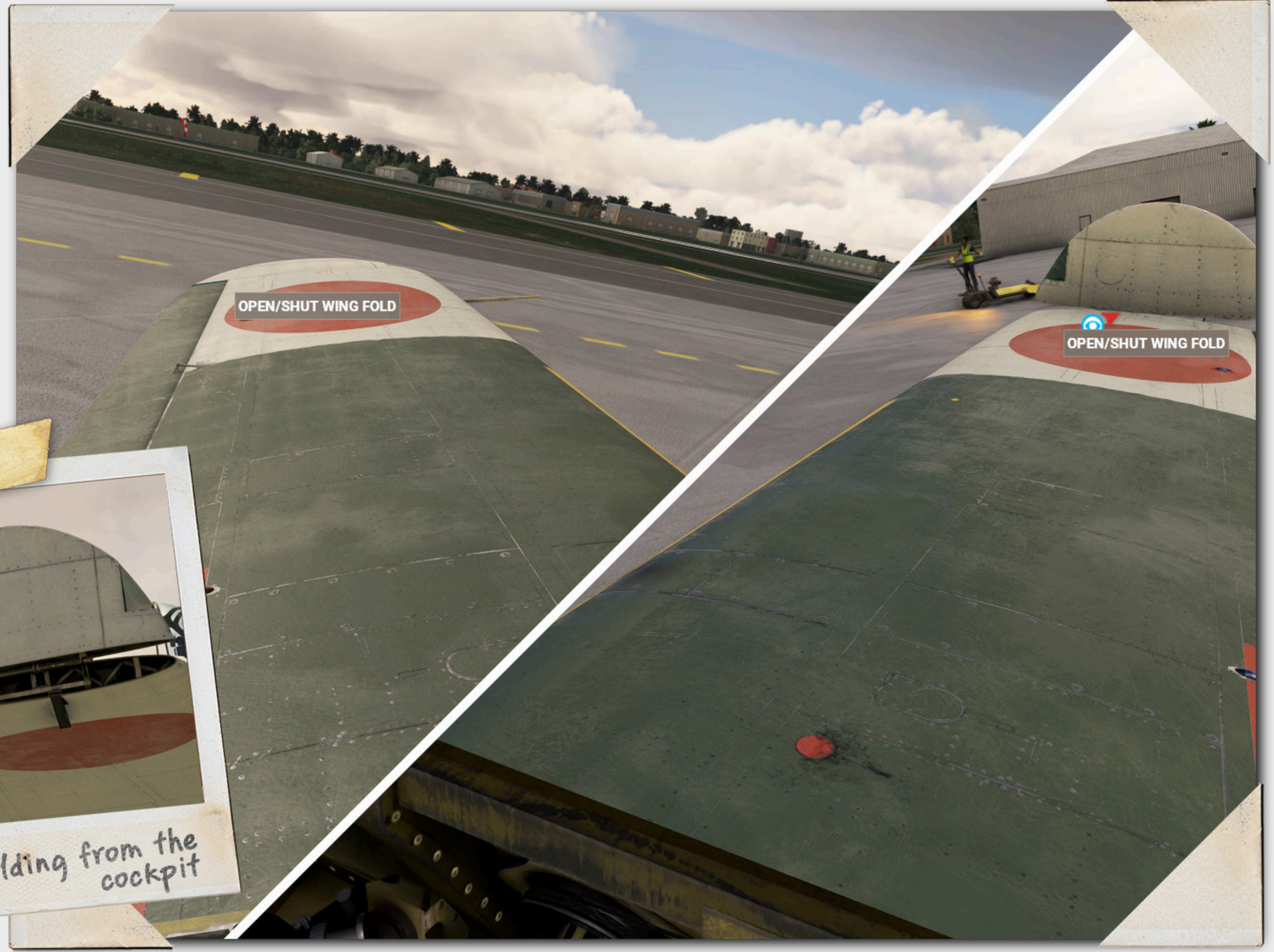
Features

Features : Wing fold

Wing folding was usually done by the ground crew and as such there isn't a lever in the cockpit (the lever is actually outside). So to toggle the wingfold you can just 'push' the wingfold either side down.

Should you forget but use ctrl+e to start the engine this will be done for you. Here at AH we like you.

Should you forget entirely the plane will try to get up in the air but it wont. And the internet will laugh at your forgetfulness.



Features

Addendum - Limitations - tips - contact

FS24 - Issues

Please note this is an FS20 plane first and foremost.

As you would have read on the website there are a number of issues that might be present in fs24. These are not limited to the following.

1. Glass reticle and sight are barely see through we recommend hiding them until the game can render fs20 glass correctly.

2. Crash fire effect is upside down - this is rumoured to be fixed in SU3 beta but at present is not in the official version of the game.

3. Sounds are very muffled.

Along with the usual FS20 plane compatibility issues that all planes have when running Fs20 planes in Fs24.

Other tips.

1. You don't need a wee bit of power to take off.

2. Remember a smidgeon of rudder to counter the torque.

3. If belly landing turn off the main fuel valve.

4. Read this manual... Oh wait ;)

5. Have fun, it's what it's all about.

Limitations - Information.

1. The autofuel ratio lever is an approximation of the real thing. The gauge is an approximation. We all failed maths in school and the formula for working out AFR's looks like heresy to us.

2. Whilst some of the liveries are for the slightly later variants (model 22c in particular) we have not modelled the supercharger. This aircraft is indicative of an early zero.

3. The sounds have been made to our expectations. They are loud. These planes are loud. You might want to drop the engine sounds.

4. Not sure why the game doesn't stop you from flying with the wings folded. Just use some common sense. We thought to code something but it was found to be more annoying and slightly buggy with slew usage.

5. Yes the pilots for the captured planes are the correct pilots for that country. You have seen them before in the spitfire and the P51/P47.

Contact

Support : help@aeroplaneheaven.com

Website : www.aeroplaneheaven.com

Facebook : www.facebook.com/Aeroplaneheaven

Flight model : Wells Sullivan (thanks mate!)