AEROPLANE HEAVEN

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ELECTRA 10A

COCKPIT AND FLYING GUIDE

Electra 10 A

This Electra 10 A Cockpit and Flying guide has been produced to make getting acquainted with your new aeroplane, both simpler and more fun. To this end, this is not an “official” pilot’s manual and should not be considered such.

This twin engined American classic was Lockheed’s first twin engined all metal design (Interestingly designed by Lloyd Stearman - also the designer of the PT stearman.) . We hope that you will take some time familiarise yourself with some of the options and also some of the few limitations.

Your new Electra also comes witha modern avionics packaged should you with to use this. The utiilisation of which is detailedfurther in this guide.

We won’t be teaching you how to fly, that is not the purpose of this guide. We are going to assume that you have a good working knowlege of flight simulators and flying in them.

All the controls on the Electra are relatively simple to get to and are laid out in a sensible and pilot friendly manner. As much as possible we have adhered to the stock naming conventions and stock animations and code.

We thank you for purchasing the Electra and hope that you enjoy flying the aeroplane as much as we enjoyed making it.

Fly it again Sam...

Dimensions:

Wing span	9.61 m (458 ft)
Length	11.8 m (38 ft 7 in)
Height	3.1 m (10 ft 1 in)
Wing area	42.6 m 2 (458 sq ft)
Empty weight	2930 kg (6454 lbs)
Loaded weight	4760Kg (10,500 lbs)

Performance :

Max speed	325 km/h (175 kt)
Cruise speed	283 km/h (153 kt)
Stall speed	120 km/h (65 kt)
Landing speed	105 km/h (57 kt)
Service ceiling	21,250 ft.
Max range	1305 km (705 nm).

Powerplant :

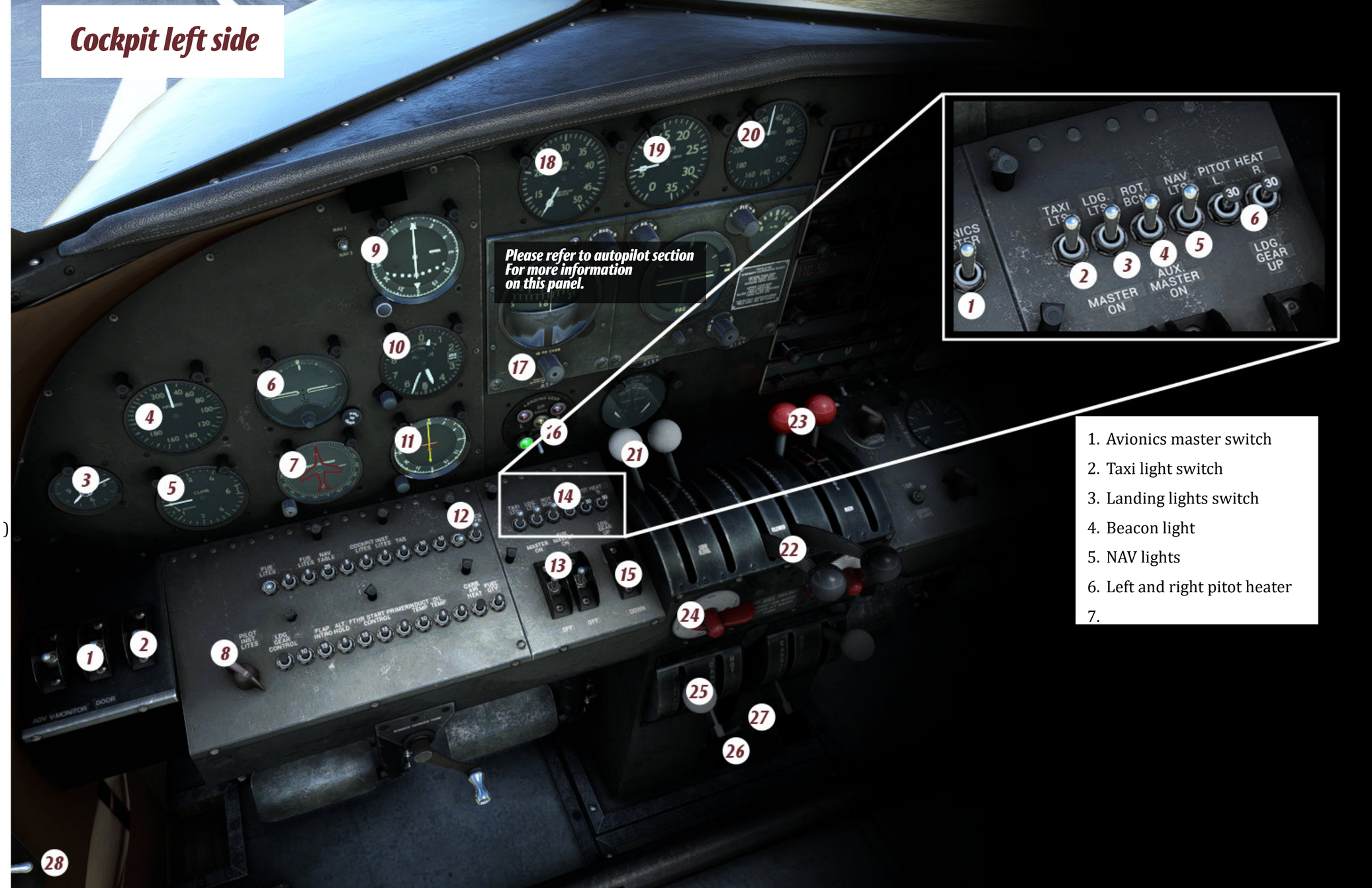
2 x Pratt & Whitney R-985 Wasp Junior SB, 450hp (340 Kw) each

Important note:

Once the electra is installed into your game, you will find the aeroplane under the Aeroplaneheaven manufacturer.

Cockpit left side

1. Rear door
2. Modern avionics toggle switch
3. Clock (repeated on copilots side)
4. Airspeed in MPH
5. Vertical speed indicator
6. AHI
7. RMI (since replaced with turn and slip)
8. Pilot lighting (See section on lighting)
9. Localiser and VOR switcher
10. Altitude gauge
11. ADF gauge (ADF 1 only)
12. Panel Lighting and Avionics switch.
13. Battery switch and external power.
14. Exterior lighting switches (box)
15. Gear switch
16. Gear indicator and pump.
17. Sperry avionics. (See autopilot section)
18. Manifold pressure gauge
19. RPM gauge
20. Secondary Airspeed indicator
21. Prop pitch (both engines)
22. Throttle (both engines)
23. Mixture lever (both engines)
24. Left engine fuel selector
25. Left engine fuel valve
26. Left engine anti ice
27. Parking brake.
28. Cold dark start switch.



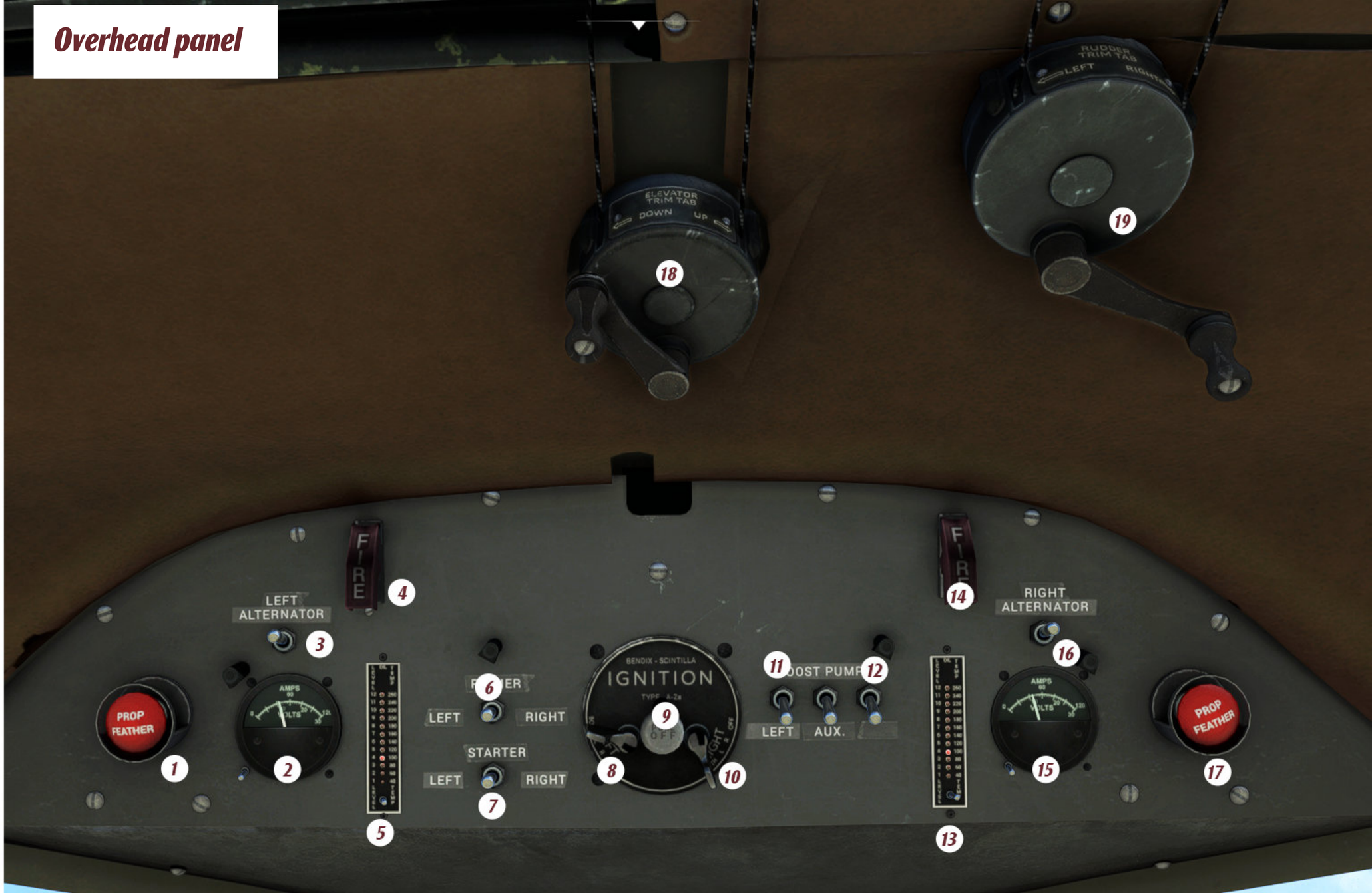
1. Avionics master switch
2. Taxi light switch
3. Landing lights switch
4. Beacon light
5. NAV lights
6. Left and right pitot heater
7.

Cockpit right side

1. Right engine anti ice
2. Right engine fuel valve
3. Right engine fuel selector
4. Flap lever
5. Avionics/gauges dimmer (see lighting)
6. Radio (see radio section)
7. Left engine fuel/oil pressure & oil temp
8. Right engine fuel/oil pressure & oil temp
9. Radio compass
10. DME (inop at this stage)
11. Fuel gauge showing 3 tanks
12. Flood lighting dimmer (see lighting)
13. Tailwheel lock (inop as of SU5)
14. Suction gauge
15. AHI
16. Vertical speed indicator
17. Right engine hours (left is on breaker panel next to cold dark start switch)
18. Fuel flow gauge
19. Glare shield dimmer (see lighting)
20. Altitude gauge
21. Turn slip coordinator
22. Clock
23. Modern gauge having been ripped out
24. Outside air indicator.

Overhead panel

1. Left emergency prop feather.
2. Left engine amps and voltmeter
3. Left engine alternator switch
4. Left engine fire switch (inop)
5. Oil temperature/pressure indicator
6. Engine primers
7. Engine starters
8. Left engine magneto
9. Master ignition switch
10. Right engine magneto
11. Left engine fuel pump
12. Right engine fuel pump
13. Right engine oil temperature/pressure indicator
14. Right engine fire switch (inop)
15. Right engine amps and voltmeter
16. Right engine alternator
17. Right emergency prop feather.
18. Elevator trim control
19. Rudder trim control



Radios & misc switches

1. Audio panel
2. COM 1 volume
3. COM 1 swap frequency
4. COM 1 frequency change (MHZ)
5. COM 1 frequency change (KHZ)
6. COM 2 (functions same as COM 1)
7. NAV 1 Volume
8. NAV 1 swap frequency
9. NAV 1 frequency change (MHZ)
10. NAV 1 frequency change (KHZ)
11. NAV 2 (functions same as NAV 2)
12. ADF receiver volume
13. ADF mode selector
14. ADF frequency change knobs.
15. Transponder mode selector.
16. Transponder code knobs

Extra switches

17. Quick start switch. This switch sets up the Electra for a fast start either using CTRL+E or using the start switches on the over head panel.

18. Toggle the captains yoke. Quite useful if flying by yourself

19. Toggle the copilot's yoke. Not super necessary.

Sperry Autopilot

1. Power indicator light

2. Rudder knob. In the real Sperry Gyropilot this allows the pilot/copilot to control the heading of the aeroplane via the rudder control surfaces. In this simulation it is setting the desired heading and the autopilot heading lock direction.

3. Heading indicator. The top scale indicates your desired heading (set using the rudder knob) and the bottom scale indicates your current heading.

4. Cage gyro heading. Push to cage

5. Gyro heading adjustment knob

6. Aileron Knob. In the real Sperry Gyropilot this allows the pilot/copilot to control the bank of the aeroplane via the aileron control surfaces. Not simulated (this may change at a later date).

7. Artificial horizon and wing leveller

8. Cage Sperry AHI.

9. Gyro-pilot power. (Also is power for the modern autopilot).

10. Elevator knob. In the real Sperry Gyropilot this allows the pilot/copilot to control the pitch of the aeroplane via the elevator control surfaces. In this simulation works as an altitude hold. It will also set the hold of the Modern autopilot system.

11. Suction pressure gauge. The gyro instruments require a good suction pressure to be maintained.

Modern Autopilot and avionics

We understand that some people like and/or require a more modern interface to use the autopilot to that end we have made a modern autopilot based on the stock AS3X.

Please note this is entirely optional and you do not need to use it if you dont wish to. It works exactly the same as the stock Touch AS3X. It is expected that you understand how to use such a unit

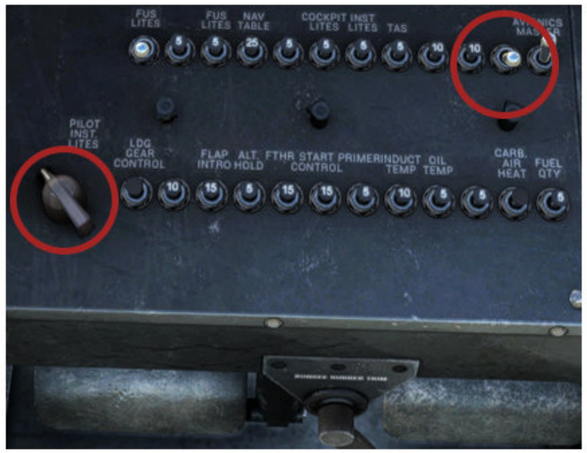
LIGHTING - main panel option

When you use the L key this is the default lighting solution that you are presented with. It is the most useful to gauge what is going on with the ... Gauges. Tunrning it on manually requires you to switch on the power which is controlled by the switch ringed in the box below found next to the avionics switch and the dimmer ringed below handles the dimming aspect of the downward facing lights.

In real life this type of lighting did not exist however from a game point of view it is a lot more easier to use.

This lighting is the first of 3 different lighting solutions and also all 3 can be combined.

To dim the avionics (radios and modern radio that is currently hidden in the screenshot to the left) you would use the avionics dimmer knob found on the ledge on the co-pilots side.



LIGHTING - flood light option

Here we have the flood only option. When you add the other lighting in at the same time you actually can get a rather fetching pink. . The red circled dimmer switch outlined below controls bth floodlights at the same time. This may change in a further iteration.. In the picture to the left we have set the lighting to around 30 % brightness. So as you can see you can really make it look as bright or as dim as you want. When it is at full it is very red almost to the point of not making things readable. This is of course also determined by your computers monitor.

We highly recommend that you keep the dimmer control to a lower setting than full.

LIGHTING - Glareshield option

Here we have the glare shield only option. Like all lighting you can mix and match your settings should you so wish. The red circled dimmer switch outlined below controls the individual lighting of each gauge. In the picture to the left we have set the lighting to around 50 % brightness. So as you can see you can really make it look as bright or as dim as you want.

We would council against putting all the lights on at the same time. It looks a little like a scene from the close encounters of the third kind!

How to start the Electra safely.

Quick start guide

The Electra is a remarkably simple aircraft to start, taxy and to fly. Landing is also rather easy which is a good thing.

The Electra can be started using the CTRL+E method however if you are feeling adventurous or in fact are not in too much of a hurry to get off the ground then you can follow the following few steps.

The following steps assume a cold start. If you have left the aircraft in an almost ready situation or used the quick start switch then you can safely skip some of these steps.

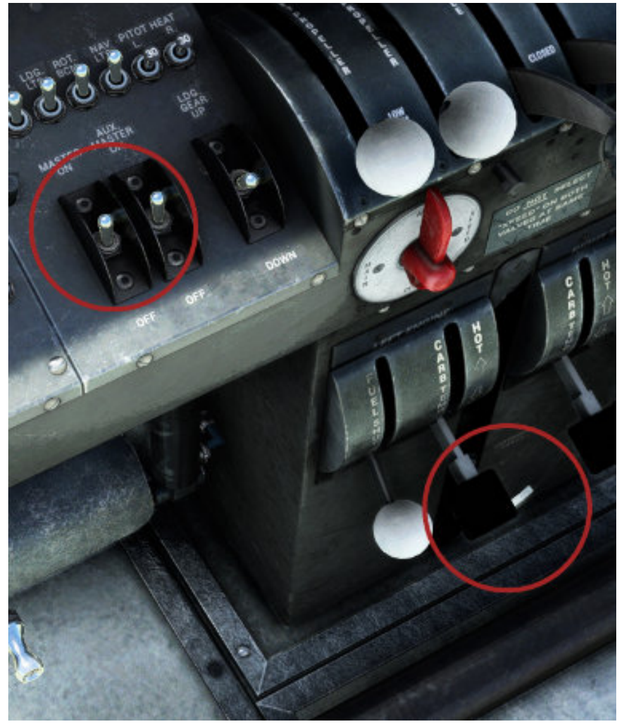
This guide is meant for flightsimulator use only. If you are a real world Electra pilot chances are you probably have a better set of instructions than this.

Quick switches

Please note we provide a set of quick switches that will allow you to be in complete cold dark start mode (found on the breaker panel to the left of the pilot) and a quickstart switch found under the radio stack on the front panel which allows for an almost ready to go start. (Step 6 onwards)

Step 1.

This is the step where you do all the things that you would do if this was real. Now we arent saying that you shouldnt strap yourself in, clean your windows etc. But to be honest you might be taking immersion a little too far.



Step 2.

Whilst there isn't a right or wrong way to start a Electra, it is good practice to start with the brakes first. Then ensure that the battery is on and that you have power to the gauges.

Step 3.

Depending on your choice of radios modern or classic then please take the time to tune the radios to the required frequency. Both versions are interchangeable. The classic version will set the modern version and vice-versa.

Step 4.

We shall start the left engine. First we set the fuel valve to open and the fuel selector for the left engine to main. We also crack the throttle open a smidge and also ensure the props are in high RPM and ensure the mixture is set to rich (full).

Step 5.

Next we turn our attention to the overhead panel where we turn on the fuel pump, the left magneto to both and the master ignition to on. We also can turn on the alternator but being engine driven this will not run till the engine is started.

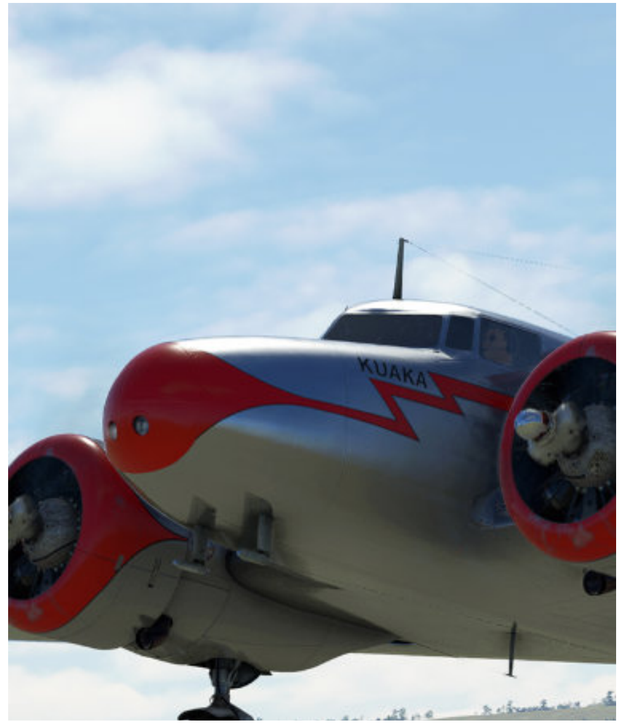
How to start the Electra safely.

Step 6.

Set the primer to the left engine by clicking the left hand side of the switch. Do the same for the starter. Both will return to the centre once the engine is started. Wait for the engine to fire.

Step 7.

Check oil pressure and fuel pressure. Please refer to checklist for actual amounts. If within limits turn off the fuel pump.



Step 8.

Lastly check that the ignition is correctly working and is dropping the correct amount by switching the magnetos to either the left or right. Ensure you dont switch them off. Repeat the process for the other engine.

How to start the Electra safely.

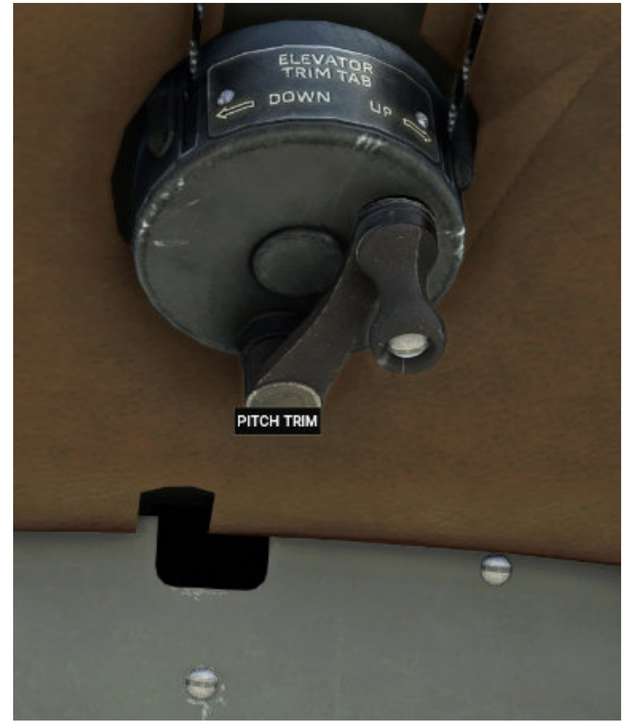
Congratulations! Now let's get into the air!

Step 1.

Release the parking brake and test the toe brakes for pressure. Move your lever back to test elevator movement.

Step 2.

Make sure that the mixture levers are fully in. Check the fuel tank level and pressure . This is your last chance to make sure you have enough fuel for your trip.



Step 3.

Ensure that your flaps are set to what you require. On a smaller airfield you may need to the first notch on the l. To help you can also set the elevator trim tab to slight nose up.

Step 4.

Ensure your RPM is around 1300 RPM, She's a heavy (though beautiful ... Lets not forget that) plane and needs alittle to get starting. Maintain your brakes and push back on the yoke a little.

Step 5.

It's all about power. So push the throttles all the way to 100 % and mixtures to full.

Elevator pull up at 60 - 80 knots and your climb speed should be between 80 - 90 knots

Step 6.

Well you are now in the air. Congratulations. If you have had to use flaps now is the time to retract them and ensure that your carburettor , cylinder temperatures are within specification. We trust you with our aeroplane.

How to take-off , fly and land the Electra

Congratulations you are now in the air!

Cruising

Whilst climbing and in cruise try to keep the RPM within the limts of 2000- 2500 RPM. This can be achieved by careful throttle control and/or mixture control. To achieve full RPM above 3000 ft you will need to lean out the mixture a little.

Remember to keep checking all the vital instruments. In particular the oil temperature and the pressure. The indicators on the overhead panel that can be switched between the 2 measures with the switch can be of use here.

How to take-off , fly and land the Electra.

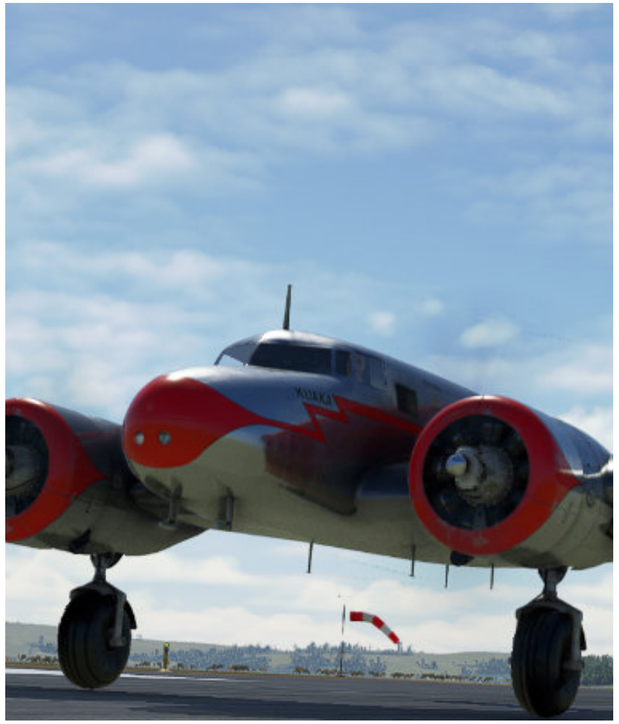
So now that you have arrived at your destination it is now time to land the aircraft. Before landing check the following:
- Mixture control to full rich
- Switch the fuel pump on
- Engine RPM should be around 2000 RPM

Once you are on what you consider a good angle and lined up for the correct runway (please note AH is not liable for any infractions you may incur by landing “willy-nilly”) then start the procedure to land.

Cruising tips & getting ready to land

Step 1.

Check the fuel selectors are on and that the mixtures are back to rich. You may need to get out of trouble quickly and you dont want the engine to stall. Make sure that the landing gear is down (green lights on the indicators). Bring your speed down to 75 – 85 knots and lower the flaps to full extended.



Step 2.

To land you must lightly touch the front wheels down on the runway and then by using a little back pressure on the stick get the tail down. Whilst applying a minimum of braking. This can be a little tricky. We found coming in a little faster than 85 knots helped with stability. You didnt read that here though.

Step 3.

Once you are down taxi to your designated parking area and begine the shutdown sequence. You can then let the passengers out (not yet simulated ?) And shut down the relevant systems. Or you could play it again... Sam.

Landing the Electra with style and safety

Congratulations! Enjoy that cold beverage!

Limitations and tips.

Limitations

We have purposely left the drone collision boxes OFF. This is a deliberate decision to allow you to fly the drone inside the passenger cabin and also to have and enjoy full access to the aircraft.

1. Prop feather switches will feather but only by setting the pitch not feather. Should a change occur to the main game then this may change..

2. Engine fire bottles are fake. Possible change if support for engine fire is added in game.

3. Tailwheel lock is INOP. Should full support for tailwheel lock be added to the game then this will change

4. Sperry autopilot will work differently as techniques evolve.

Painters tips

Each metallic livery has a slightly different metal/rough layer and so you could if you were super keen mix and match.

We are now utilising a right side normal metallic roughness work flow as well as the usual left side.

Previously we used just the one side for those specific textures to keep drawcalls down but this is now less necessary in the new game.

Credits:

FDE : Aeroplaneheaven
Sound: Aeroplaneheaven
3d development: Aeroplaneheaven
Textures : Aeroplaneheaven
Tea making : Aeroplaneheaven
HobNob eviscerating : Aeroplaneheaven

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