

AEROPLANE HEAVEN



Globe Swift GC-1A

OPERATIONS & FLIGHT MANUAL
FOR FLIGHT SIMULATOR USE ONLY

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Welcome to the Aeroplaneheaven Operations and flight manual.

Some features of this simulation :

1. Your choice of four pilots
2. Eleven liveries
3. Custom sounds
4. Innovative animations and visible conditions.
5. Separate gauge lighting.
6. Avionics package that is easy to use and easy to learn.
7. Autopilot for those long flights.
8. In game tutorial mode.
9. High resolution textures.
10. Two very different models with paintkits.



INTRODUCTION

The Globe swift designed in 1940 by R.S. "Pop" Johnson (designer of the later "Johnson Rocket" and "Texas bullet" aircraft) in Texas, United States. It was said that he based the general dimensions on the Culver Cadet. Whether this is true or not the design of the Globe was financed by John Kennedy (not that one) of Globe Aircraft Company. John Kennedy an astute business man who had been successful during the war years was looking to ensure post-war success and as such a deal was made to build R.S Johnson's swift.

The initial prototypes were of all wood or wood/metal construction (a recreation is presented here on the production all-metal Globe swift) however once the war was over the GC-1A was redesigned by a Globe aircraft engineer named KH"Bud"Knox. This redesign was in all metal which lead to the advertising of the day championing this fact. The Original GC-1A was released with a "low-performance" 85 hp engine. Realising that this was of too low performance the company uprated the engine to 125 hp.

The Globe Swift (GC-1A) was warmly received to the point that the Globe Aircraft company had problems filling the orders. They turned to TEMCO to help with production. This partnership allowed for TEMCO to build the Swift as well as the Globe aircraft corporation concurrently. This also meant that the version was increased to the B version (not modelled in this simulation). Between the 2 companies they produced 833 Airframes. Clearing the backed up orders but also introducing a glut on the market.

John Kennedy closed the Globe manufacturing doors in 1947 with TEMCO acquiring the rights to build the Swift. Production continued till August 1951.

Presented here as a GC-1A the Globe Swift has over time , been modified updated and upgraded. As such the layout and features are what is considered a general look and feel commensurate with the time. We hope you enjoy the "All Metal Swift " .



LEADING PARTICULARS AND SPECIFICATIONS:

Powerplant Continental C-85-12 or C-85-12F, 85 hp @ 2,575 rpm (GC-1A)
Continental C-125-1 or C-125-2, 125 hp @ 2,550 rpm (GC-1B)

Length	20 ft 11 in
Height	6 ft 1 in
Wingspan	29 ft 4 in
Wing area	131 sq ft
Seats	2
Cabin width	3 ft 4 in
Cabin height	3 ft 10 in
Maximum gross weight	1,570 lb (GC-1A)
Fuel capacity, std	27.8 gal, 167 lb
Oil capacity	4.5 qt (GC-1A)

Limiting and Recommended Airspeeds

Maximum level speed	140 mph
V FE (max flap extended)	90 mph
V LO (max gear operating)	100 mph
V NE (never exceed)	185 mph

Cockpit guide



Pilot's side cockpit guide

Pilot's yoke hidden for the purpose of this guide.



1. Altitude gauge
2. Warning lights. Large is fire warning. Smaller from left to right. gear up indicator , hydraulic pump warning, and gear down.
3. Airspeed
4. AH1
5. NAV 1 and ADF gauge.
6. Compass (1 of 2)
7. Vertical speed indicator gauge
8. Yoke toggle. Click this bakerlite surround to show and hide the pilots yoke.
9. Manifold pressure gauge
10. Turn and slip indicator
11. Cowl flaps. (each side controls 50 % of full cooling)
12. Gear lever/switch
13. Flaps lever
14. Cabin heat lever
15. Carburettor heat lever
16. OAT gauge.
17. Ignition switch (magnetos)
18. Master battery switch
19. Clock with settable needles.
20. Throttle Lever.

Addendum : Beside the cowl flaps(11) is the audio ("morse-code") switch

Co-pilot's side cockpit guide

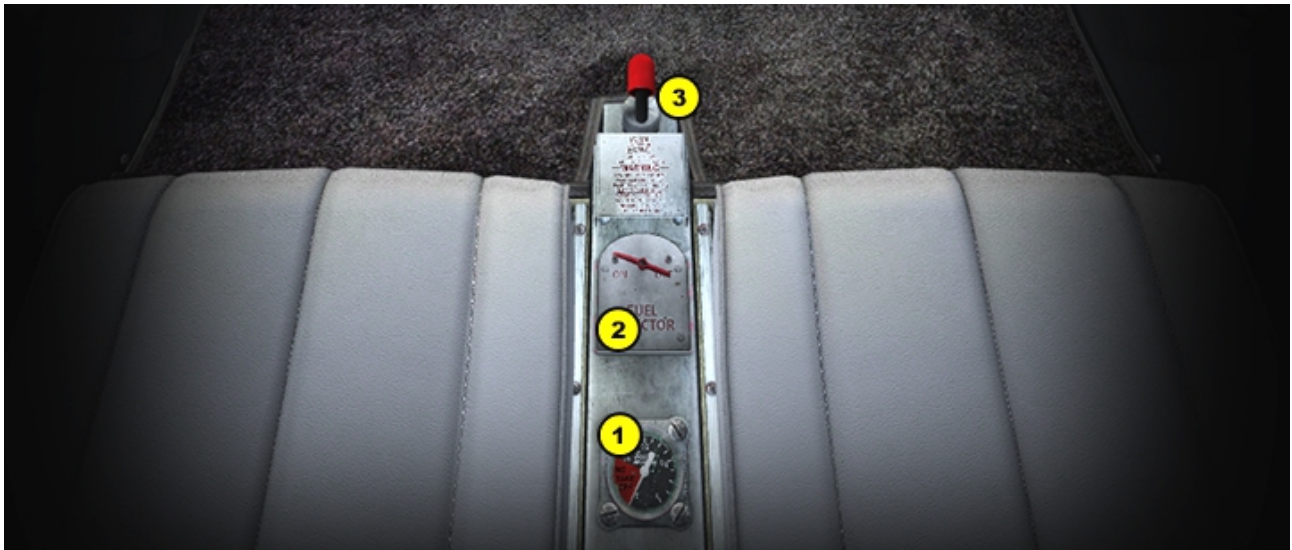
Co-pilot's yoke hidden for the purpose of this guide.



1. Compass (1 of 2)
2. ILS gauge
3. AHI
4. Airspeed
5. Oil temperature and oil pressure gauge
6. Turn and slip indicator
7. Rpm gauge with engine hours
8. Yoke toggle. Click this bakerlite surround to show and hide the co-pilots yoke.
9. Altitude gauge
10. Vertical speed indicator
11. Throttle lever
12. Clock with settable needles
13. Flaps lever
14. Mixture lever. (Pull to lean/cut push to richen)
15. Parking brake
16. Starter lever (Beware this starter does not automatically turn off you must return it to its off position once the engine has started)
17. Misc. Switches. Left to right. Pitot heat , Strobe light, NAV lights , Gauge lighting.
18. Hydraulic pump switch (required for gear)
19. Panel Lights.
20. Switch turns on the autopilot. FSX use only.

Fuel panel.

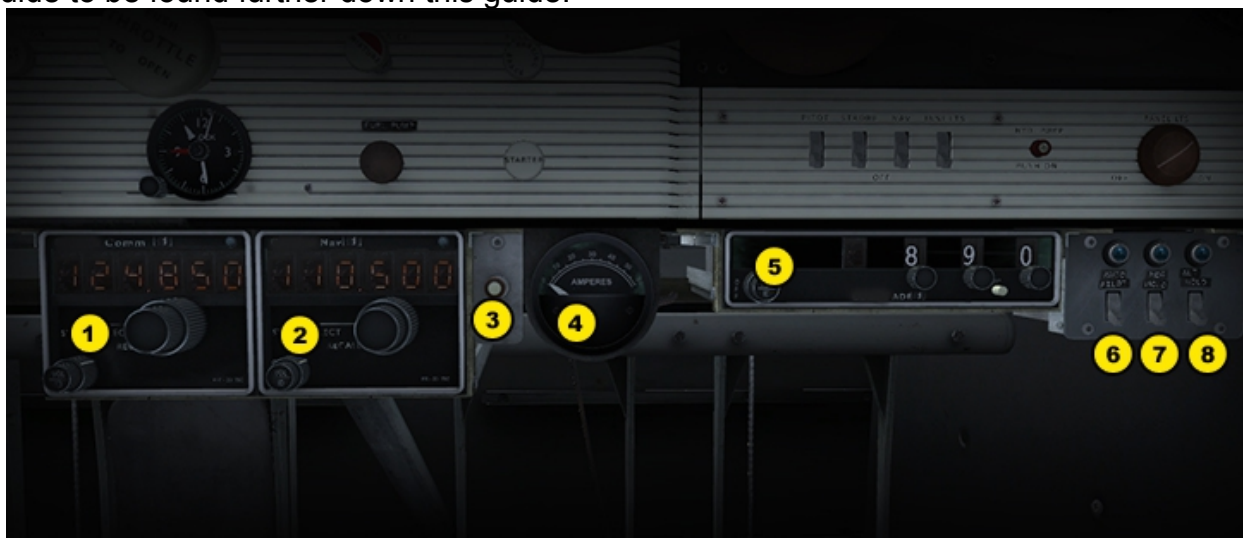
Pretty basic here. You have a fuel gauge that shows the total capacity remaining and a fuel cock that will shut off the fuel flow to the engines immediately.



1. Fuel gauge
2. Fuel selector (cut – off switch)
3. Emergency gear lever (not simulated in this add – on)

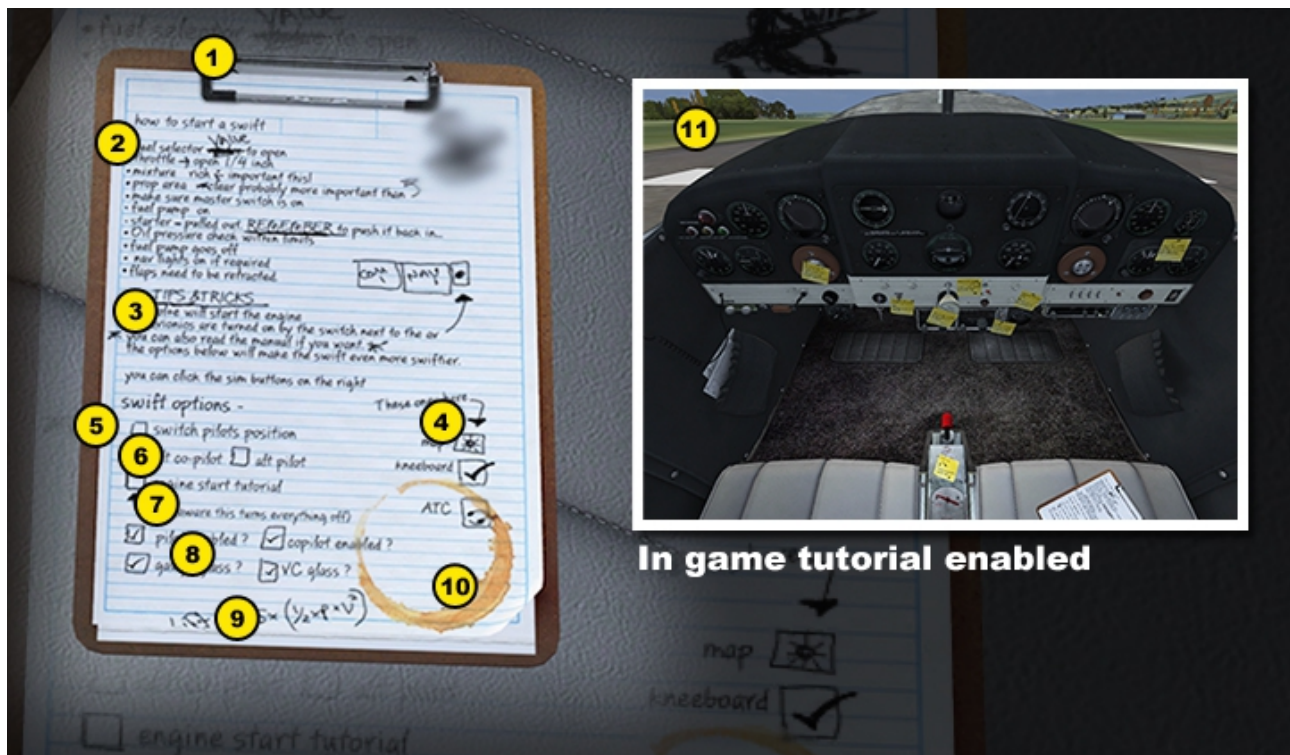
Avionics area.

For a more detailed description and guide to using the avionics please refer to the avionics guide to be found further down this guide.



1. Comm1 With standby functionality
2. NAV 1 with standby functionality.
3. Avionics switch.
4. Amp gauge
5. ADF1
6. Autopilot master switch
7. Heading hold (will hold your current heading when turned on)
8. Altitude hold (will hold your current altitude when turned on)

Options and tutorial.



1. Clicking this area shows and stows the clipboard in game options.
2. A mini startup tutorial. Reading this will get your aeroplane started. Of course we would prefer you to read the manual...
3. Tips and tricks for quick access.
4. Useful sim-icons for use with the Swift. No there isnt a GPS.
5. Switch pilot's position will swap who ever is sitting in the pilot's side with the copilot's side.
6. Alternate pilots. Choice of 4 pilots. 3 blokes and 1 bloke-ette.
7. Tutorial mode. This turns off everything (cold start) and sticks yellow pieces of paper on the various parts of the plane that you need to interact with to start the Swift.
8. Visibility options. Pilot and copilot enabled will hide (from the exterior) whoever happens to be sitting in that position. VC glass and gauge glass will allow you to turn off the reflections in the glass and gauges.
9. This is a basic equation for lift. If you didnt know, now you do.
10. Authentic coffee stain.
11. Tutorial mode. Can be toggled on and off with the option on the clipboard. Individual pieces of paper can be hidden by clicking on the yellow piece of paper that you are wishing to interact with.

Avionics package

Image is of the full avionics package. For the purposes of this guide the radios are combined in this image. They do not appear in this configuration in the simulator.



ALL RADIOS REQUIRE THE AVIONICS SWITCH AND BATTERY SWITCH ON.

1. Outer knob > Power to the COMM unit.
2. Inner knob > Swap Frequencies between active and standby.
3. Display
4. Outer knob > Increments/decrements one MHZ increments
5. Inner knob > Increments/decrements 25 KHZ increments
6. Outer knob > Power to the NAV unit.
7. Inner knob > Swap frequencies between active and standby.
8. Display.
9. Outer knob > Increments/decrements one MHZ increments
10. Inner knob > Increments/decrements 25 KHZ increments
11. Power to the ADF unit
12. Display
13. Increments/decrements ADF by 100KHZ increments.
14. Increments/decrements ADF by 10KHZ increments.
15. Increments/decrements ADF by 1KHZ increments.

To tune COM/NAV:

Use the tuning knobs to set the desired frequency. Use the swap function to swap in the second frequency. Set the desired frequency. Use the swap function to swap between frequencies.

Quick start guide to starting the Globe Swift in the simulator.

Whilst this is actually written on the options pad in game perhaps it might pay to repeat the process here as well as the manual as well as the checklist. That way there are 4 different offline areas that you can refer to.

The swift can be started using the CTRL+E method however if you are feeling adventurous or in fact are not in too much hurry to get off the ground then you can follow the following steps. The following assumes that this is a pure cold start (which can be achieved by using the tutorial mode in the in game options). If you already have some of the steps completed then please ignore that step. (All Keyboard shortcuts are default)

Step 1.



Whilst there isn't a right or wrong way to start the Swift without the Master battery the gauges do not indicate their respective information. If we wish to check the fuel amount we must turn the battery to on.

Turn on battery

Step 2.



Now that the battery is on we can check that we have enough fuel for the trip. The Globe Swift has 2 wing fuel tanks of 25 US gallons each for a total fuel amount of 50 gallons. We also need to switch the Fuel cock open.

Check Fuel amount

Turn on Fuel cock to open

Step 3.



Not strictly necessary to start the Swift it is a good idea to turn on the radios and spend some time setting your frequencies.

Turn Avionics switch on

Tune your radios to your desired frequencies.

Step 4.



Switch the fuel pump on (remember that we can and should turn this off once the aeroplane is started) and increase (richen) the mixture to around 50%. If the outside air temperature is particularly cold a larger percentage would be of some benefit. If you use CTRL+E to start you might notice that the simulator sets this to full mixture. Which will look like the image opposite.

Switch the fuel pump on

Increase the mixture to around 50 %

Step 5.



Switch the ignition key to both. This charges the magnetos in this case.

Switch the ignition to both.

Step 6.



Crack the throttle open around a smidgeon. This technical term can be equated to around 25% or for those with rulers near their computer screens about $\frac{1}{4}$ of an inch.

Crack the throttle open to around 25%

Step 7.



We are now ready to start the aeroplane. Pull out the starter to full out to start the aeroplane. Remember once combustion has been achieved you must push this starter back into its pushed in position. You can also take the time to turn off the fuel pump if you so wish.

Pull out starter lever.

Once engine running :

Push the starter back in.

Push the fuel pump back in.

Check the oil temperatures and pressures.

Congratulations!

You have started the Swift. You should always pay attention to the oil temperature and pressure during your flight. Please refer to the checklist for these instructions (summarised) and take-off procedures.

TAKEOFF

Step 1.



So you are now ready to fly the swift and enjoy the experience of flying a real classic. First make sure that the flaps are at 0 degrees.

Ensure that the Flaps lever is up (F7 or F6)

Step 2.



Time for the mixture. If you are using the Simulator on easy mode then mixture will be set to auto and you can skip this step. Also CTRL +E will automatically set all mixtures to rich.

Mixture to rich (CTRL+SHIFT+3 or CTRL+SHIFT+2)

Once you reach altitudes above 3000 ft you will need to lean off the mixture to gain maximum RPM

Step 3.



Ensure your RPM is around 1000 RPM. Set the parking brake off.

RPM 1000 RPM

Step 4.



It's all about power. In this case the little swift needs every little ounce it can muster so push the throttle all the way in.

Throttle to fully in. (F3)

Elevator PULL UP AT 63-64 MPH
Climb speed 80-90 MPH

Take off.



CLIMB AND CRUISE

Whilst climbing and in cruise try to keep the RPM within the limits 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.

Trimming the flight control surfaces.

Rudder trim.



Click and drag the rudder trim as desired to control the yaw of the Swift in flight. This wheel can be found between the 2 pilot seats.

Elevator trim.



Click and drag the elevator trim as desired to control the pitch of the Swift in flight. This control can be found behind the pilots seats on the cross brace.

Descent



Check the fuel selector is on and that the mixture is back to rich. You may need to get out of trouble quickly and you don't want the engine to stall. Make sure that the landing gear is down (green light on the glare shield). Bring your speed down to 55 – 65 mph and lower the flaps to full extended.

To land the Swift the method is to 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.

Once you are down taxi to your designated parking area and then begin the shutdown sequence. You can then open the canopy and bask in the knowledge of another swift landing. Yes we said that.



So you want to repaint the Globe swift from Aeroplaneheaven? Here are a few interesting time saving tricks that we can impart to help you on your way.

Dependent on the texture that you are painting you will need to choose either the chrome model or the painted model. The bump maps are different. If you were to rename the painted bump maps and used the chrome bump maps instead you might get some interesting other options. We couldn't possibly comment.

The mapping was done cylindrically and then flattened. At all times consideration for vertical and horizontal lines/rivets was given you should be able to use a grid and it render correctly in the sim.

We have included registration marks in the paint kit to allow for a full-side texture technique. This technique has been discussed on a number of sites and is the technique that we use to texture our raw files.

The alpha channel in the chrome version controls the amount of colour that is shown. An off white alpha channel of the swift logo for an example allows the colour to "bleed" through. Remember to output the dds with the alpha channel enabled and the parts that you want to bleed through in off white.

We haven't made the chrome super chrome. There is room for more bling. Darkening the alpha channel is the best way.

There are 2 environments and fresnel ramps. (check the sdk's as to what they do) One is a blueish set and the other is a desaturated set. The desaturated set is used on the chrome paints. If you wish to switch the names to try out some other effects you should. Remember that the names must be the same.

We are using the same side spec and bump map on both sides. So you will only find left shader textures in the shared texture folder. This was done to reduce calls. Plus it is nice to only have to worry about one texture.

- The Aeroplaneheaven Team



CREDITS

Flight Files : Wayne Tudor

Everything else : The Aeroplaneheaven Team

The Swift Museum, Inc. : swiftmuseumfoundation.org

Interesting facts :

- The names of the pilots are Taylor, Dan, Fabian and Jarvis.
- We'd tell you more but we want to retain some mystery in the relationship!

Contact

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