

SR71 BLACKBIRD MANUAL FOR FSX

Updated analogue panel for SR71 '61-7955'

by Ross McLennan March 2012



The SR71 61-9755 Alphasim Freeware textures and model (FS2000) for 61-7955 which includes the RSO's Cockpit are again supplied but with a built up analogue pilots panel based on Kazunori Ito's Lockheed A-12 Blackbird bitmap from FS2000/FS2002. The gauges have been replaced with a mixture of items previously used in FS2002/FS9 and modern FSX units. The Flight Dynamics in FS9, originally by Bob Chilico, have been updated for FSX.

This aircraft in FS9 would auto **cruise** at M3+ above 80000ft and when manually flown could achieve no wind ground speeds between mach 3.2 (1852 kts 2132 mph) and mach 3.60 (2084kts 2400mph). In FSX that top speed is not achieved being only mach 3.4 (1968 kts 2267mph). The FSX aircraft is more stable in a 2G turn at high altitude and 3G at low altitude and will replicate the speeds mentioned in an email from a retired pilot with about 500 hours in the cockpit of the SR-71 ([see page 6 of this document](#)).

This manual shows and describes how to setup and how to fly this FSX sim version of the SR71A. It requires precision flying just like the real aircraft. It has no virtual cockpit. . [This document replaces the kneeboard notes in the aircraft.](#)

In summary, to fly this aircraft supersonically in a saved flight at high altitude it is recommended you use autopilot with the altitude selected and rate of climb from 40000 ft set at 3000 or 4000 fpm. Speed hold set to mach 3.00. At 55000 feet deactivate speed hold and push the throttle to 100%. You will, in this process, consistently read the GPS data and spend time changing the aircraft heading so as not to be far from the required coarse heading. For this reason a fully visible miniature AP is provided and the GPS becomes the center of flying. The flight, whilst under autopilot control, can be flown at a sim speed of 4x. This aircraft is therefore a "FLYER'S" version of the SR71 so as to achieve the outcomes of the saved flights.

#1 PANEL SET UP

- Left click the digital ground speed (GS) gauge to increase its brilliance.
- Click the normal sim GPS icon or use [shift 9]. Set the display up in the way you want to fly.
- Click the extreme right icon to enter the RSO's cockpit. In this cockpit, the lower left icon just right of center, will give access to the RSO GPS (the central one). Change it to suit your requirements and then return to the RSO cockpit with the provided icon.
- set/check the radio frequencies for your flight.
- Use the extreme right icon to return to the Pilots cockpit.

(2)

- (f) If flying from takeoff, appropriate details should be entered into the autopilot, eg altitude 40000, default vertical climb is 1000 ft/min when hold altitude is activated. You can set this manually to 4000 or even 6000fpm when high altitude is involved. Mach speed hold 0.98 max over populated areas. Initially set 0.97 and your heading as appropriate.
- (g) Set lighting switches to up. The landing lights will not work in this model so no switches are provided.
- (h) Check position of canopy. They should be open for taxi (indication lights ON) closed for takeoff and the flight. Use key [shift E] to toggle the hoods.

#2 THE GPS:

- (a) activate the GPS using the standard sim icon provided.



- (b) The GPS has a hotspot in its upper left corner and if moused will close the main GPS OR use the GPS Icon above it to close. The extra tools can be activated with [shift +8]. See #6 Taking a photo using the cameras.

- (c) an icon on the right edge of the **autopilot panel** will close the GPS (if open) and introduce an enlarged view of the GPS left side. It also opens a window showing the distance to the next waypoint.



- (d) Close the enlarged GPS data view with the hotspot in its top left corner.

The three autopilot heading buttons/window shown above are not provided in this version.

#3 COLD START:

- (a) With brakes applied [shift + colon] or mouse the gauge at bottom of 2D panel.
- (b) Engine start switches are just below the throttle levers. Push each start switch in turn to the up position. You should remember this aircraft had a long start sequence using the cart with two Buick V8 engines. When one SR71 engine was started the cart was moved to the other engine. Wait till #1 engine is running before starting engine #2.
- (c) on some systems you may find the engines will ONLY START using [Ctrl+E]
- (d) Check synchronization on turbine rpm gauge by pushing throttle to approx half open and back to fully closed.

#4 ROLLING FOR TAXI:

- (a) Make sure the canopies are open [shift E].
- (b) Brakes applied, set throttle for 5100 rpm. Release brakes.
- (c) Aircraft can be steered with the rudder. Keep ground speed at 10kts or below.
- (d) At runway, with ATC takeoff approval, close the canopies [shift E].

#5 TAKE OFF, CLIMB, CRUISE SUBSONIC:

- (a) Check mach hold and your altitude values are entered but not activated.
- (b) Open the throttle slowly to 6500RPM **DO NOT USE AFTERBURN**. Control any torque effect with the rudder. Rotate at about 140-150 kts, climb at 1000 - 6000 feet/minute to suit your flight.
- (c) When positive lift is achieved, Gear up.
- (d) IF DOING A CIRCUIT: do not exceed 320 KIAS and reduce this to 220 once in a level circuit.
- (e) If flying over populated areas or to a mission plan that requires high altitude, use auto pilot speed hold to maintain a maximum of mach 0.98 at the required altitude.

#6 CLIMB TO SUPERSONIC HIGH ALTITUDE **(IMPORTANT NOTES)**:

- (a) Over populated areas always fly level at Mach 0.98 max and 40000 ft until it is necessary to climb.
- (b) **GOING SUPERSONIC FROM 40000 FT AND MACH 0.98**: In the autopilot panel, (i) increase mach number to 3.00, (ii) increase altitude to 81000 or 84000ft then (iii) VSI to 3000 or 4000ft/min. These settings will auto activate after burn. (iv) at 55000 feet de activate autopilot speed control and push the throttle fully forward. Be sure to watch your heading and adjust as necessary.

In the Mission to Libya once you cross the coast make your approach at a sim speed of 1x flying manually on altitude hold to the Beni Walid Airfield using the GPS map as a guide. Make sure you pass the airfield flying straight and level at no more than a 4Nm offset. Take your picture as described below. Fly the turn and cross the Coast following the plan. Reduce throttle setting just before the turn towards Gibraltar (ABDAB) and then decide when to descend to 34000ft and Mach 0.81 (471 kts).

TAKING THE PHOTO USING THE CAMERAS: With the aircraft on Autopilot enter the RSO's cockpit. Mouse the left or right window view area, not the cockpit panel, and from the Outside Views menu select one of the CAMERA down views. This will provide a full screen coverage as you fly. Use [shift 9] to provide the GPS and [shift 8] to add the simple auto pilot heading controls. Key [to provide a forward view and for better effect change the view to "spot". You will be flying to capture an oblique image with the aircraft positioned nearer the edge of the frame.

If to the right of track use the PORT side camera, if left, the RIGHT side camera.

At a suitable distance, after the heading is achieved, level the aircraft as the photo must be taken flying level. As the "photo target" comes into view make a screen grab. The jobs done.

You can of course (and are advised to) use pause to have a look first and then grab the full screen image for your sim picture library. The view can be adjusted laterally with the TOP HAT, UP OR DOWN. **DO NOT ROTATE the image with the TOP HAT LEFT OR RIGHT.** Close the added view with **]**. Close the GPS with [shift 9] and [Shift 8]. Select the RSO's cockpit with F10 and then back to the Pilots cockpit using the provided icon.

#7 TURNING THE AIRCRAFT:

- (a) Use the auto pilot heading control to provide a safe turn (sim speed 4x can be used). or fly manually at 1x as noted in (c)
- (b) At supersonic speed the rate of turn is low and the turning radius is large. It is a total new ball game to follow any saved flight route.
- (c) MANUAL TURN: Deselect the autopilot heading or level button and you can turn the aircraft manually to adjust your course or to fly a tighter circle. BANKING BEYOND 60 DEGREES WILL BE RISKY at high altitude and the real pilots were instructed to **never pull more than 3G**. Stalling the aircraft is a lot easier in a high rate turn at high altitudes.
- (d) If you do stall, turn off the autopilot immediately and recover by getting the aircraft into a reduced angle of attack, nose down. Trim the aircraft. You will loose altitude quickly at supersonic speeds. Once stability is restored re activate autopilot and recover the lost altitude and correct your course **OR BALE OUT**. **You will not regain your previous speed at high altitude.**

#8 REFUELING THE AIRCRAFT:

- (a) The analogue gauges provide a visual indication of content.
- (b) The in flight refueling altitude is assumed to be 34000 feet at 0.81 mach. Turn off afterburn, set mach hold to 0.81, vertical descent speed 4000 fpm and descend. Check the ground speed to ensure your not increasing speed. Change VSI as necessary.
- (c) Refuel the aircraft using [alt A F] and change fuel load to 100%.
- (d) return to the cruising altitude as previously described in #6.

#9 DESCENT FOR LANDING, LANDING:

- (a) NOTE: there are no spoilers or flaps to help you reduce speed. Descend to an altitude of 6000ft and 0.95 mach.
- (b) When appropriate descend to circuit height (perhaps +3200 ft) so as to be at 320kts 15 miles out from the airfield. Lower undercarriage when speed is under 350 knots.
- (c) Circuit speed is 220 kts. The aircraft is fitted with ILS instruments.
- (d) If making an ILS landing, turn onto the appropriate heading and carry out the standard approach. Allow more than usual distance for the ILS to get the aircraft onto the approach heading.
- (e) Switch off autopilot at the appropriate time. Fly the aircraft manually for the landing.
- (f) Over the runway you should be at or below 160 kts and after touched down, use the spoiler key [**/**] to activate the 'chute.
- (g) Apply the brakes carefully and at 50 kts GS, drop the 'chutes with [**/**].
- (h) Once clear of the runway, open canopy [shift E] and taxi to the instructions from ATC, park, shutdown the aircraft, close the canopy [shift E], Press pause and YOUR DONE!

NOTE: In all high altitude flights using the autopilot speed hold facility, make sure you use the MACH BUTTON and its associated window for the settings. It is not the default setting when you activate it and you will need to change. The IAS reading will not always be correct for other altitudes. You should use the IAS window at low altitude and subsonic speeds such as when preparing to land or flying at circuit height and when taking off for a short low flight.

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These instructions are based on flying the sim aircraft and are not associate in anyway with the real aircraft. Print these instructions for use as a reference guide.



This FSX aircraft has been tested and flown in Windows 7 64 bit. **It is not intended for use in FS9.**



Above image: SR71 on approach to RAF Mildenhall - outside views, Landing Gear.

HERE IS THE EMAIL CONTENT ON WHICH THE PERFORMANCE OF THIS AIRCRAFT IS BASED:

We trained for a year, flying out of Beale AFB in California , Kadena Airbase in Okinawa , and RAF Mildenhall in England . On a typical training mission, we would take off near Sacramento , refuel over Nevada, accelerate into Montana , obtain high Mach over Colorado , turn right over New Mexico , speed across the Los Angeles Basin , run up the West Coast, turn right at Seattle , then return to Beale. Total flight time: two hours and 40 minutes.

One day, high above Arizona , we were monitoring the radio traffic of all the mortal airplanes below us. First, a Cessna pilot asked the air traffic controllers to check his ground speed. 'Ninety knots,' ATC replied. A Bonanza soon made the same request. 'One-twenty on the ground,' was the reply. To our surprise, a navy F-18 came over the radio for a ground speed check. I knew exactly what he was doing. Of course, he had a ground speed indicator in his cockpit, but he wanted to let all the bug-smashers in the valley know what real speed was 'Dusty 52, we show you at 620 on the ground,' ATC responded.

The situation was too ripe. I heard the click of the RSO's mike button in the rear seat. In his most innocent voice he startled the controller by asking for a ground speed check from 81,000 feet, clearly above controlled airspace. In a cool, professional voice, the controller replied, 'Aspen xx, I show you at 1,982 knots (2282 mph sim M3.45) on the ground'. We did not hear another transmission on that frequency all the way to the coast.

AND;

In April 1986, following an attack on American soldiers in a Berlin disco, President Reagan ordered the bombing of Muammar Qaddafi's terrorist camps in Libya . My duty was to fly over Libya and take photos recording the damage our F-111's had inflicted.. Qaddafi had established a 'line of death,' a territorial marking across the Gulf of Sidra , swearing to shoot down any intruder that crossed the boundary. On the morning of April 15, 1986 I rocketed past the line at 2,125 mph (1845kts M3.21).

I was piloting the SR-71 spy plane, the world's fastest jet, with a Marine Major as the reconnaissance systems officer (RSO). We had crossed into Libya and were approaching our final turn over the bleak desert landscape when the RSO informed me that he was receiving missile launch signals. I quickly increased our speed, calculating the time it would take for the weapons, most likely SA-2 and SA-4 surface-to-air missiles capable of Mach 5, to reach our altitude. I estimated that we could beat the rocket-powered missiles to the turn and stayed our course, betting our lives on the plane's performance.

After several agonizingly long seconds, we made the turn and blasted toward the Mediterranean. 'You might want to pull it back,' the RSO suggested. It was then that I noticed I still had the throttles full forward. The plane was flying a mile every 1.6 seconds (2250mph, 1953 knots M3.40), well above our Mach 3.2 limit (1837 kts). It was the fastest we would ever fly in a mission. I pulled the throttles to idle just south of Sicily, but we still overran the refueling tanker awaiting us over Gibraltar.....

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SR71 BLACKBIRD FLIGHT NOTES – FSX by Ross McLennan January 2010:



USEFUL FLIGHT INFORMATION :

BEALE AFB (KBAB): Runway 12009 ft, Height 113 ft
ILS (15) 109.50 >145 – DME 108.6 NDB none
ILS (33) 109.50 >325<p>

VOR2 beacons may only be DME active and will not provide direction on the VOR2 direction indicator gauge in these flights. Indeed you may not even get a DME distance at 81000 feet.

Have you read the Checklist Notes?

FLIGHT PLAN 71X_01 – TRAINING MISSION FROM BEALE AFB (KBAB) IN CALIFORNIA.

Before this training mission you may like to do a touch and go first so as to familiarize yourself with the aircraft at low speeds. You will need to reset the autopilot if you choose to do a AP assisted turn after take off. Altitude 3000feet, hold airspeed 320kts, heading 285, fuel 30% in each tank. Request from ground control “remain in pattern”. Takeoff, turn 180 degrees to 3000 feet and 320 kts, reduce speed to 220 kts, turn 180 degrees reduce speed to 170 kts and land. Raise the hoods when clear of the runway [shift+E] and taxi to parking. Please note the warning above and Runway 33 has no ILS. Shut down and close the hoods.

Full details for the training flight are:

- (a) The first leg of this mission is to be flown at 40000 ft and at subsonic speeds. Start engines, check panel settings and ensure 40000 feet with 3000 ft/m vertical speed is set in the autopilot. Speed hold setting is mach 0.98. You should not use afterburn for the climb.

The panel is fitted with digital GMT time and you may find it an advantage to note the time for any long flights that involve flying over time zones.

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(b) The aircraft should be refueled just prior to the ASIPY intersection using [alt A F]. The intersection is near Las Vegas.

(c) At the intersection make the turn to HDG 68, activate afterburn, increase speed hold to mach 3.0 81000 feet and VSI 3000fpm. This will activate afterburn. The aircraft will take some distance to achieve that speed.

(d) Once at 81000 feet release auto speed hold and increase speed to a GS of 1845 kts for cruising.

(e) Once you arrive at UT09 you will be required to do a supersonic 180 degree turn. The flight plan is designed to do this under autopilot control. Set a heading of 215 and follow the aircraft's progress. She should bank to a max of 35 degrees. Remember you must pass close to all intersections so as to activate the next part of the flight plan route or the mission is a failure.

(f) You may have to correct the path taken to the UNLAP intersection. Deselect the AP hold heading setting and fly the aircraft using a manual turn. IT IS RISKY TO BANK THE AIRCRAFT MORE THAN 60 DEGREES.

(g) Re-align the aircraft direction as you travel towards Buckeye BXK in Arizona. Increase your ground speed to 1980 kts for this leg. Then on to the Pacific coast at VBG reducing your speed back to 1825 kts. Make the supersonic turn northwards.

(h) You have an option at VBG: continue northwards missing any landfall and at the appropriate time descend to 40000 feet at mach 0.98 max for the turn via HQM (VOR2 117.70) towards Seattle. Follow the route back to the Beale AFB and land.

(j) OR if you miss the waypoint VBG or wish to accept a challenge, make a landing at the Vandenberg AFB (EVBG). We will assume they have a Buick Cart for a restart. You will need to reduce speed and altitude in a turn over the Pacific Ocean. Follow ATC instructions and try for a full ILS landing but do not expect much help from local navigation beacons. You may need to use the standard sim GPS. Airfield details below:

VANDENBERG AFB EVBG: Runway 15005ft, Ht 367ft
ILS (30) 110.10 >303 - DME 112.25 - No NDB
ILS (12) 110.10 >123 (from the sea approach)



**FLIGHT PLAN 71_04 - SR71 FAMILIARISATION
RAF MILDENHALL (EGUN) IN THE UK.
A SR71 Blackbird flight in 61-7955**

Airfield details:

RAF MILDENHALL EGUN: Runway 9227ft, Ht 33ft

ILS (29) 110.15 >286 - DME 115.90 - No NDB

ILS (11) 110.15 >106

In this flight you can do a "touch and go" so as to familiarize yourself with the aircraft at low speeds. Request from ground control "remain in pattern" has been made and approved. Takeoff, turn 180 degrees to 2400 feet and 320 kts, reduce speed to 220 kts, turn 180 degrees reduce speed to 170 kts and land. Use ILS for the landing.

Once onto the taxi way raise the hoods [shift+E] and taxi. Park the aircraft. Shut down and close the hoods [shift E].

**FLIGHT PLAN 71_05 - RECON MISSION - LIBYA
FROM RAF MILDENHALL (EGUN) IN THE UK.
A SR71 Blackbird flight in 61-7955**

Airfield details:

RAF MILDENHALL EGUN: Runway 9227ft, Ht 33ft

ILS (29) 110.15 >286 - DME 115.90 - No NDB

ILS (11) 110.15 >106

Full details for the flight are: the mission begins in the air at 40000ft near Genoa in Northern Italy on the Mediterranean Coast. Your task is to photograph the Beni Walid Airfield 68 Nm south of Tripoli. The photo shoot part of the flight is to be flown at 84000 feet cruising at GS 1850 kts (M3.2) as you pass over the Libyan coast. The route is part of the saved flight. You will have to navigate to the airfield using the GPS as a guide.

BENI WALID AIRFIELD (HL54)
Nearby VOR 115.90, NDB 265

NOTE: IN FSX IF YOUR GPS FREEZES AND STOPS UPDATING YOU WILL GET INCORRECT INFORMATION AND MAY NOT END UP WHERE IT SHOWS. IF IN DOUBT RE-ACTIVATE THE GPS BY CHANGING GPS VIEWS TO REINSTATE THE CORRECT INFORMATION.

Fly the aircraft manually at 1x sim speed from the FARWA intersection and take your photograph of the airfield. You must also pass through the SAMAK intersection on the way out. Fly at maximum speed until you are about to reach the turn point (ABDAB). Pull back throttles to idle and make the turn for Gibraltar south/west of Sicily.

You are to refuel [alt A F] near Gibraltar at 34000 feet and mach 0.81 before flying back to RAF Mildenhall. You will have to judge when to begin your descent so as not to over run the tanker. As a guide: rate of descent 3000 fpm starting at 500 Nm from Gibraltar. Settings for refueling: Mach 0.81, 289 IAS, 471 Kts ground speed.

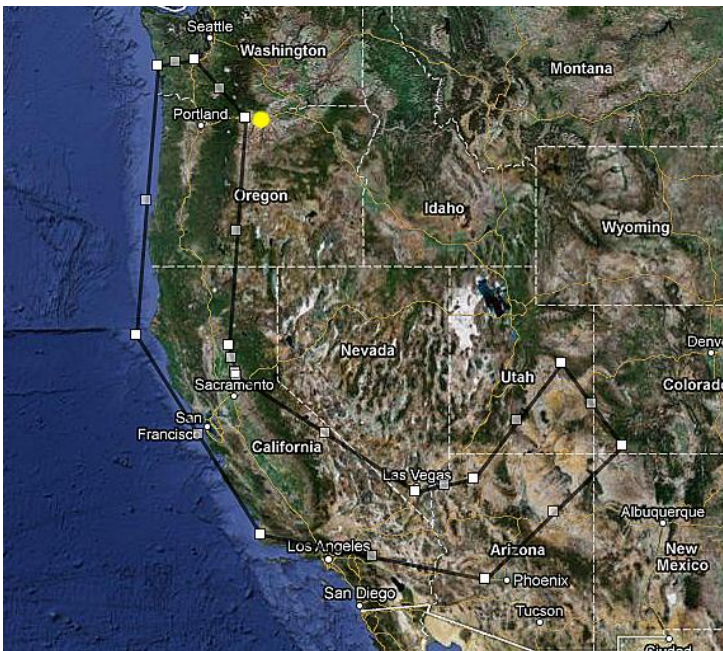
You should remember the longer you spend at low altitude (34000 feet) the more fuel you burn.

Make the fill to 90% just before the BRAVO intersection. Climb back to 80000 feet and cruise at Mach 3.00 until it is time to descend a about 100 Nm before LASNO, arriving at LYD23 in the English Channel at 6000 feet and Mach 0.80. Prepare for your landing at EGUN. Good luck!

OR maybe the tanker is not in view so you can test your skills by landing on a very short runway at Gibraltar. Unless you get the descent right you may be close to running out of fuel. You must also get your approach and landing speed correct or you will end up in the "drink". ATC will make it difficult for you by not allowing the direct flight in on R27. Alternatively, jump straight to a ILS landing a MildenHall. In both cases you will find the ground radar gauge very handy in the final approach.



You can of course save these flights at any convenient point for your own use.



KNOWN ISSUES:

(a) There is NO VIRTUAL COCKPIT: the aircraft must be flown from one of the 2D cockpits.

(b) **THIS FSX AIRCRAFT IS NOT INTENDED FOR FS9** - Fuel gauges will be missing, the autopilot speed hold works differently and after burn needs manual selection. As with the FS9 release in Sept 2009 turbine over run occurs and requires skill so as not to lock out a mach 4.6.

(c) Manually flying and turning in the simulator at high altitude AND at mach numbers over 3 is not easy. You are advised to follow the instructions in this document and fly using the auto pilot until you are back at low altitude and subsonic.

(d) The SR71 was not a fighter and should not be flown like one in the simulator. It was not a bomber either. It was designed for high altitude photography at very high speed and was capable of out running any surface to air missiles fired at it. It was very slippery indeed. A very different aircraft in the real world and it should be so in the simulator.

(e) In FSX, make sure you click the digital ground speed indicator (to increase its brightness) with the mouse symbol and NOT THE ARROW. The arrow may shift it from its position and it will be difficult to return it to its correct position.

(f) In FSX, unlike FS9, at high speed and altitude the GPS visual display may freeze and no longer give accurate coarse information. If this does occur re-activate it by closing and re-opening the GPS. Changing the zoom ratio of the GPS (top right buttons) may also restore correct details.

(g) In FSX, unlike FS9, if you use the [key to provide an outside view it will be underneath the cockpit surround. Using the] key to close it MAY CHANGE THE 2D PANEL EYELINE and you will no longer be able to see forward as you did earlier in the flight. If this occurs you may consider not using the added view of the aircraft.

This project was not uploaded until late 2012 because at the time of completion there was a great number of SR71 updates flooding the FSX sim world and another was not considered desirable at that time.

Concept by Ross McLennan, Adelaide South Australia

FS2004 August 2009, FSX January 2010 and March 2012.

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SR71 BLACKBIRD MANUAL - FSX
Update Panel for SR71 'Rapid Rabbit'
by Ross McLennan January 2010:



This FSX version of my SR71 Project is an update of that uploaded for FS2004 in Sept 2009 (a total of 26000+ downloads in three years). The updated panel is based on modern FSX gauges. The FS2000 "Rapid Rabbit" model would not initialize in FSX and is therefore not included..

#1 PANEL SET UP:

- (a) Left click the ground speed gauge (just above the total fuel gauge) to increase its brilliance.
- (b) The icon alongside the HSI gauge will provide an overlay with analogue VOR & ADF pointers.
- (c) Click the normal sim GPS icon. Set it up in the way you want to fly.
- (d) If flying from takeoff, appropriate details should be entered into the autopilot, eg altitude 40000, default vertical climb is 1000 ft/min when hold altitude is activated. Mach speed hold 0.98 max over populated areas. Initially set 0.97. Heading and ADF as appropriate to suit your course.
- (e) Set radio frequencies to suit the flight, Nav1 and ADF.
- (f) Set lighting switches to up, throttle to fully closed. There are no landing light switches as they do not work in this model.
- (g) Check position of canopy (lights). They should be open for taxi, closed for takeoff and the flight. Key [shift E].

#2 COLD START:

- (a) With brakes applied [shift + colon].
- (b) Engine start switches are just below the throttle levers. Push each start switch in turn to the up position. This may not work on some systems. Use auto start. You should remember this aircraft had a long start sequence using the cart with two Buick V8 engines. When one engine was started the cart was moved to the other engine. Wait till #1 engine is running before starting engine #2.
- (c) Check synchronization on the turbine rpm gauges by pushing throttle to approx half open and back to fully closed.

#3 ROLLING FOR TAXI:

- (a) Make sure the canopies are open.
- (b) Brakes applied, set throttle for 5100 rpm. Release brakes.
- (c) Aircraft can be steered with the rudder. Keep ground speed at 10kts or below.

(d) At runway hold close canopy [shift E].

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#4 TAKE OFF, CLIMB, CRUISE SUBSONIC:

- (a) Check mach hold and your altitude values are entered but not activated.
- (b) Open the throttle slowly to 6500RPM **DO NOT USE AFTERBURN**. Control any torque effect with the rudder. Rotate at about 140-150 kts, climb at 1000 - 6000 feet/minute to suit your flight.
- (c) When positive lift is achieved, Gear up.
- (d) IF DOING A CIRCUIT: do not exceed 320 KIAS and reduce this to 220 once in a level circuit.
- (e) If flying over populated areas or to a mission plan that requires high altitude, use auto pilot speed hold to maintain a maximum of mach 0.98 at the required altitude.

#6 CLIMB TO SUPERSONIC HIGH ALTITUDE **(IMPORTANT NOTES)**:

- (a) Over populated areas fly level at Mach 0.98 max and 40000 ft until it is necessary to climb.
- (b) **GOING SUPERSONIC FROM 40000 FT AND MACH 0.98**: In the autopilot panel, (i) increase mach number to 3.00, (ii) increase altitude to 81000 or 84000ft then (iii) VSI to 3000 or 4000ft/min. These settings will auto activate after burn. (iv) at 55000 feet deactivate autopilot speed control and push the throttle fully forward. Be sure to watch your heading and adjust as necessary.

In the Mission to Libya once you cross the coast make your approach at a sim speed of 1x flying manually on altitude hold to the Beni Walid Airfield using the GPS map as a guide. Make sure you pass the airfield flying straight and level at no more than a 4Nm offset. Take your picture as described below. Fly the turn and cross the Coast following the plan. Reduce throttle setting just before the turn towards Gibraltar (ABDAB) and then decide when to descend to 34000ft and Mach 0.81 (471 kts).

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If to the right of track use the PORT side camera, if left, the RIGHT side camera.

At a suitable distance, after the heading is achieved, level the aircraft as the photo must be taken flying level. As the "photo target" comes into view make a screen grab. The jobs done.

You can of course (and are advised to) use pause to have a look first and then grab the full screen image for your sim picture library. The view can be adjusted laterally with the TOP HAT, UP OR DOWN. **DO NOT ROTATE the image with the TOP HAT LEFT OR RIGHT**. Close the added view with]. Close the GPS with [shift 9] and [Shift 8]. Select the RSO's cockpit with F10 and then back to the Pilots cockpit using the provided icon.

#7 TURNING THE AIRCRAFT:

- (a) Use the auto pilot heading control to provide a safe turn.
- (b) At supersonic speed the turning radius is large and it is a total new ball game to follow any flight plan route.
- (c) Deselect the autopilot heading button and you can turn the aircraft manually to adjust your course or to fly a tighter circle. **BANKING BEYOND 60 DEGREES MAYBE RISKY** and the real pilots were instructed to **never pull more than 3G**. The aircraft will stall a lot easier in the turn at high altitudes.
- (d) If you do stall, turn off the autopilot immediately and recover by getting the aircraft into a reduced angle of attack, nose down. Trim the aircraft. You will lose altitude quickly at supersonic

speeds. Once stability is restored re activate autopilot and recover the lost altitude and correct your course OR **BALE OUT**. You will not regain your previous speed at high altitude.

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#8 REFUELING THE AIRCRAFT:

- (a) The fuel gauge reads in kgs, 37100 kg is full 7400 kg is 20%
- (b) The in flight refueling altitude is assumed to be 34000 feet at 0.81 mach. Turn off afterburn, set mach hold to 0.81, vertical descent speed 4000 fpm and descend. Check the ground speed to ensure your not increasing speed. Change VSI as necessary.
- (c) Refuel the aircraft using [alt A F] and change fuel load to 100%.
- (d) return to the cruising altitude as previously described in #6.

#9 DESCENT FOR LANDING, LANDING:

- (a) NOTE: there are no spoilers to help you reduce speed.
- (b) Descend to an altitude of 6000 ft AG and mach 0.95.
- (c) When appropriate descend to circuit height (perhaps +3200 ft) so as to be at 320kts 15 miles out from the airfield.
- (d) Circuit speed is 220 kts. The aircraft is fitted with ILS instruments.
- (e) If making an ILS landing, turn onto the appropriate heading and carry out the standard approach.
- (f) Switch off autopilot, cancel speed hold at the appropriate time. Fly the aircraft manually from here on for the landing.
- (g) Over the runway you should be at or below 160 kts and after touched down, use the spoiler key [/] to activate the 'chute.
- (h) Apply the brakes carefully and at 50 Kts GS, drop the 'chutes with [/].
- (j) Once clear of the runway, open canopy [shift E] and taxi to the instructions from ATC, park, shutdown the aircraft, close the canopy [shift E], Press pause and YOUR DONE!

These instructions based on flying the sim aircraft and are not associate in anyway with the real aircraft.<p>

NO VIRTUAL COCKPIT: the aircraft must be flown from the 2D cockpit.

NO RSO's COCKPIT, images taken from the pilots cockpit

You can substitute this RR panel by using notepad in the Aircraft.cfg file to swap the panel= items over.

A new aircraft using the Rapid Rabbit style panel is not provided because the aircraft would have to be named differently and the provided flights would then no longer work without all being modified.

This FSX aircraft has been tested and flown in Windows 7 64 bit. **It is not intended for FS9.**

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