

767™
200/300 SERIES
CREW OPERATIONS MANUAL

Expansion for Flight Simulator X: Steam Edition



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INTRODUCTION

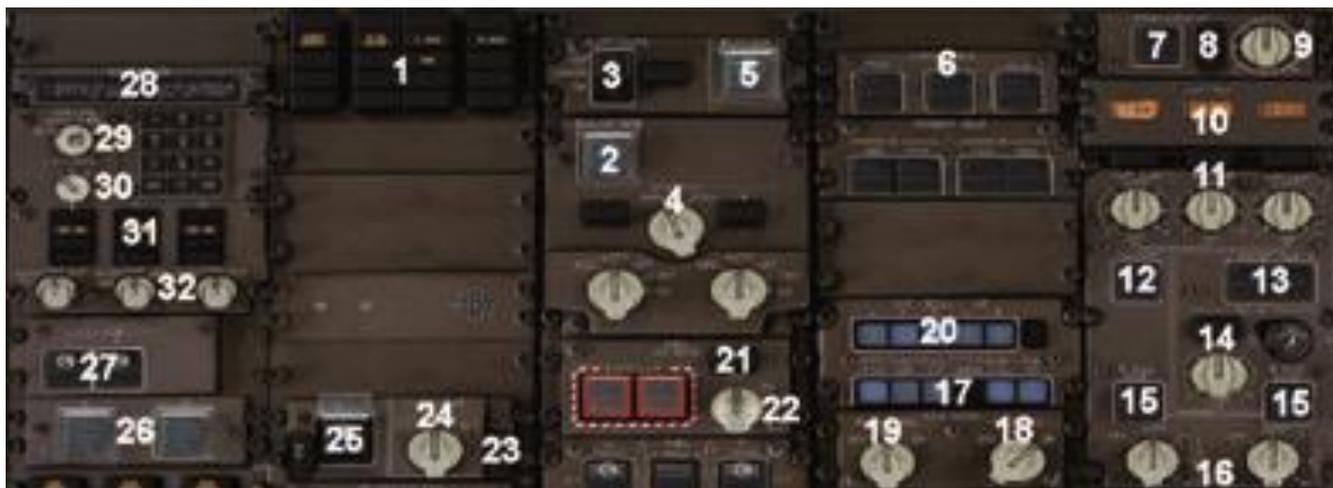
Welcome to our 767-200/300 Series package. This title is part of the F-Lite range - designed to provide aircraft that are not only extremely high in detail and visually impressive but also less demanding to fly than complex procedural simulators. If you Just need Flight you just need F-Lite!

The 767 is a medium sized, twin engine widebody airliner that has been in production since 1981. The aircraft is known for its unique seating arrangement (seven-abreast in Economy class) and is operated mainly on medium to long-haul intercontinental routes and is commonly seen plying its trade over the Atlantic.

Typical seating (two classes) is for 216 passengers and range is around 6000 nautical miles.

The 767-300 is a lengthened version of the -200 and typically takes 269 passengers (two classes) over 5800 nautical miles.





PANELS AND KEY COMMANDS

OVERHEAD PANEL OVERVIEW (UPPER PART)

- 1 Annunciator panel
- 2 RAM AIR TURBINE extend button
- 3 EMERGENCY light switch
- 4 L/R ENG START ignition selector
- 5 Manual PAX OXY(gen) control
- 6 CARGO HEAT ON/OFF sel. switches
- 7 FWD cargo HEAT switch
- 8 HEAT fault legend
- 9 FWD CARGO temperature selector
- 10 Digital cargo temperature indicator
- 11 CABIN temperature selectors
- 12 AIR CON trim air control ON/OFF
- 13 CABIN RECIRC(ulation) fans ON/OFF

- 14 Flight Deck temperature selector
- 15 R AIR COND PACK caution light and reset switch
- 16 L/R AIR COND PACK selectors
- 17 Interphone and PA selectors
- 18 SEAT BELTS selector OFF-AUTO-ON
- 19 NO SMOKING selector OFF-AUTO-ON
- 20 VHF-SELCAL-HF selectors
- 21 FUEL JETTISON fault annunciator
- 22 FUEL JETTISON selector
- 23 ELEC STBY PWR OFF legend
- 24 STBY PWR selector switch
- 25 BATTERY switch ON/OFF
- 26 ENG GEN(erator) control switches
- 27 L/R YAW DAMPER switches ON/OFF
- 28 ISDU (Inertial System Display Unit) L/R indication windows
- 29 ISDU mode selector switch



- 30 L/C/R IRU (Unit) selector switch
- 31 IRU fault legends
- 32 IRU selector switches

OVERHEAD PANEL OVERVIEW (MIDDLE PART)

- 1 UTIL BUS selectors and fault legends
- 2 L AC (alternate current) BUS TIE switch 3 APU GEN/EXT PWR switches
- 4 R AC (alternate current) BUS TIE switch
- 5 CTR FUEL tank switches
- 6 L AFT/FWD FUEL pump switches
- 7 FUEL X-FEED switches
- 8 R AFT/FWD FUEL pump switches
- 9 CABIN pressurization module
- 10 VS cabin rate selector
- 11 L BLEED ISOLATION switch
- 12 R BLEED ISOLATION switch
- 13 BLEED fault legends
- 14 R ENG BLEED switch
- 15 APU BLEED switch
- 16 L ENG BLEED switch
- 17 EQUIPMENT cooling switch
- 18 HI CABIN ALT warning
- 19 L/R windshield wiper control

- 20 L/R EAI (Engine Anti Ice) control
- 21 WAI (Wing Anti Ice) control
- 22 Digital fuel quantity indicator
- 23 APU START selector switch
- 24 APU fault legend
- 25 L/C/R HYD fault legends
- 26 HYD AIR driven pump switch ON/OFF
- 27 HYD ELEC driven pump control
- 28 L HYD EDP (Engine Driven Pump) control switch OFF-AUTO-ON
- 29 C and R HYD EDP selectors

OVERHEAD PANEL OVERVIEW (LOWER PART)



- 1 RED anti-collision light control
- 2 WHITE anti-collision light control
- 3 WING light switch
- 4 CKT BKR panel backlight control
- 5 OVHD PANEL backlight control
- 6 Flight Deck DOME light control
- 7 Flight Deck DOOR LOCK control
- 8 Annunciator light TEST switch
- 9 Annunciator light BRT/DIM control
- 10 LOGO light control switch
- 11 NOSE LDG GEAR light control
- 12 LANDING lights control
- 13 NAVIGATION position lights
- 14 TAXI/RUNWAY TURNOFF control
- 15 GLARESHIELD backlight control

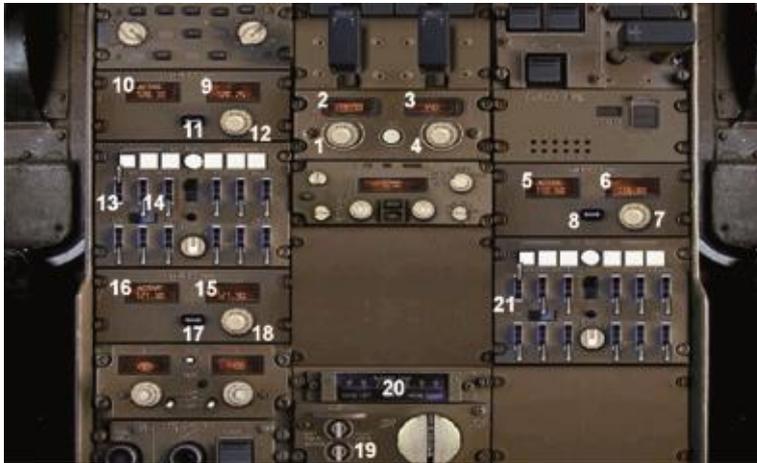
PEDESTAL (THROTTLE QUADRANT PANEL)



- 1 SPEEDBRAKE control level
- 2 ADI brightness knob
- 3 DH REF (Decision Height) value
- 4 Selector knob DH
- 5 HSI brightness knob
- 6 HSI range knob

- 7 HSI indication (VOR-APP-MAP-PLN)
- 8 STAB TRIM control switches
- 9 L ENG fuel control switch
- 10 R ENG fuel control switch
- 11 Throttle RH ENG
- 12 Throttle LH ENG
- 13 LH ENG Thrust Reverser
- 14 RH ENG Thrust Reverser
- 15 FLAP (and leading edge flaps) handle
- 16 LOWER EICAS ENG or STS pages select buttons
- 17 EICAS display brightness control
- 18 Amber PARKING BRAKES SET legend
- 19 PARKING BRAKE handle. Pull to SET
- 20 CDU

PEDESTAL (RADIO PANEL)



- 1 ILS frequency selector
- 2 frequency indicator
- 3 ILS course indicator
- 4 ILS course selector
- 5 R Active VHF COMM indicator
- 6 R Standby VHF COMM indicator
- 7 R VHF COMM selector knob
- 8 R TRANSFER switch
- 9 L Standby VHF COMM indicator
- 10 L Active VHF COMM indicator
- 11 L TRANSFER switch
- 12 L VHF COMM selector knob
- 13 VHF L audio selector
- 14 VHF R audio selector
- 15 C VHF COMM standby indicator
- 16 C VHF COMM active indicator
- 17 C TRANSFER switch
- 18 C VHF COMM selector knob
- 19 AILERON TRIM switch
- 20 RUDDER TRIM indicator
- 21 VHF-L and VHF-R white microphone selector button with receiver control lever.

AUTOFLIGHT AND NAVIGATION SYSTEMS - MODE CONTROL PANEL (MCP)



- | | |
|---|---|
| 1 AT (Auto Throttle) ARM switch | 11 VERT SPD indicator |
| 2 IAS/MACH speed window | 12 V/S activation knob |
| 3 LNAV selector knob | 13 ALT indicator window |
| 4 HDG window | 14 ALT HOLD switch |
| 5 L F/D (Flight Director) ON-OFF switch | 15 LOC (ILS localizer) select switch |
| 6 THR mode switch | 16 APP (approach) select switch |
| 7 SPD mode select switch | 17 AP (Auto Pilot) engage switches L-C-
R AP C CMD disengages/engages
disengage switch R. |
| 8 Change selector switch MACH/SPD | 18 AP disengage switch. Only to
disengage the AP's |
| 9 VNAV selector knob | 19 R F/D (Flight Director) ON-OFF switch |
| 10 HDG HOLD switch | |

AUTOFLIGHT AND NAVIGATION SYSTEMS - VHF NAV CONTROL PANEL – MC/MW

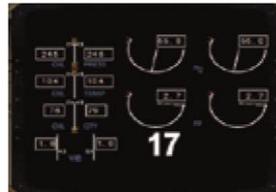
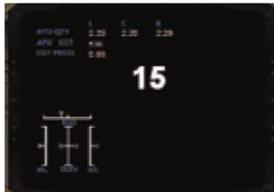


- 1 MASTER CAUTION light
- 2 MASTER WARNING light
- 3 VOR/DME active frequency indicator
- 4 AUTO/MAN VOR station tuning (not modeled)
- 5 VOR/DME course selector

AUTOFLIGHT AND NAVIGATION SYSTEMS - STANDBY INSTRUMENTS AND EICAS

- 1 Standby instruments
- 2 Standby Attitude Indicator
- 3 HDG failure flag
- 4 Standby IAS indicator
- 5 BARO ALT indicator failure flag
- 6 Annunciator Light Test switch
- 7 Annunciator light panel
- 8 L ENG OIL PRESS legend
- 9 BARO set knob
- 10 Standby Altimeter indicator
- 11 AUTO BRAKES fault legend
- 12 AUTO BRAKE selector knob
- 13 R ENG OIL PRESS legend
- 14 UPPER EICAS DU (Display Unit)
- 15 LOWER EICAS DU (Display Unit)
- 16 Additional UPPER EICAS engine indicators
- 17 Additional LOWER EICAS engine indicators





AUTOFLIGHT AND NAVIGATION SYSTEMS – IAS - EADI - ALTIMETER



- 1 IAS indicator
- 2 SPEED malfunction flag
- 3 Barber pole needle
- 4 EADI (Electronic ADI)
- 5 Standby altimeter
- 6 STBY ALT OFF flag
- 7 DH setting knob
- 8 SPD bug
- 9 SPD needle
- 10 Mach digital indication
- 11 FMA (Flight Mode Annunciations)
- 12 Slip indicator
- 13 Aircraft symbol with FD needles
- 14 Barometric setting knob
- 15 Light sensor
- 16 GS (Ground Speed) indication
- 17 Fault indications
- 18 DH (Decision Height) set
- 19 Actual DH
- 20 Actual GS position indicator
- 21 ILS GS (Glide Slope) scale
- 22 ILS LOC (Localizer) scale
- 23 Actual LOC position indicator
- 24 Speed deviation pointer
- 25 Speed deviation scale

AUTOFLIGHT AND NAVIGATION SYSTEMS RMI – EHSI – IVSI - CLOCK



- 1 DME L actual slant distance
- 2 RMI (Radio Magnetic Indicator)
- 3 DME R actual slant distance
- 4 Tuned VOR station
- 5 DME distance for this VOR station
- 6 Actual course
- 7 VOR tuned
- 8 Set CRS value
- 9 VSI (Vertical Speed Indicator)
- 10 VOR/ADF L selector (single pointer)
- 11 VOR/ADF R selector (double pointer)
- 12 HSI (Horizontal Situation Indicator)
- 13 Double RMI pointer
- 14 Single RMI pointer
- 15 Windspeed and if applicable, direction
- 16 EHSI Electronic Horizontal Situation Indicator
- 17 Course Deviation pointer
- 18 Glide Slope pointer
- 19 VOR/DME TO/FROM indication
- 20 Glide Slope scale
- 21 CHR (chronograph) pushbutton
- 22 ET (Elapse Time) selector
- 23 ET/CHR indicator window
- 24 SET UTC (GMT) time
- 25 UTC (GMT) indicator window
- 26 Switch UTC window with DATA info

AIRCRAFT SYSTEMS - FLAPS AND GEAR HANDLE

- 1 WHEEL WELL FIRE warning light
- 2 BRAKE TEMP too high
- 3 Landing gear DOOR caution light
- 4 TAIL SKID caution light
- 5 GEAR caution light (unsafe)
- 6 GEAR handle DOWN-OFF-UP
- 7 FLAP system caution lights
- 8 FLAPS indicator
- 9 ALT FLAP selector knob
- 10 LE (Leading Edge) FLAP engage switch
- 11 TE (Trailing Edge) FLAP engage switch
- 12 GND PROX FLAP override switch
- 13 GND PROX GEAR override switch 14 GPS/NAV selector switch ON/OFF Note: Items 9-13 are not modeled.



AIRCRAFT SYSTEMS - WARNING AND CAUTION ANNUNCIATION

- 1 CAUTION EICAS messages
- 2 Warning panel legends
- 3 WINDSHEAR warning legend
- 4 WARNING EICAS messages
- 5 SPEEDBRAKES unsafe legend
- 6 Caution panel legends



AIRCRAFT SYSTEMS - FMC CDU

- 1 Alphanumeric keypad
- 2 Line select keys (LSKs)
- 3 Menu selection keys 4 CDU screen

The FMC (Flight Management Computer) in this F-Lite aircraft utilises the internal flight planner in Flight Simulator and so there is no lengthy procedure needed to input a flight plan into the FMC. Once you have established a flight plan within the default flight planner it is immediately accessible in the FMC. The aircraft autopilot can be slaved to follow the route and the pilot can view enroute waypoints and other flight critical information through the FMC pages.

There are essentially two different means of selecting the different pages in the FMC; one is by using the line select keys which are to the left and right of the display screen on the Main Menu. For the purposes of this discussion we will use the following convention when discussing line select keys. Each key will be referenced by L or R, denoting left or right of the CDU display. The prefix number denotes the position of the key within the column. For example, 1L refers to the first key on the leftmost column whilst 2R refers to the second button down on the right hand side of the display.

Alternatively pages can be selected from the Main Menu by selecting the 'Menu' button on the far right on the second row of buttons under the display screen.





For example, to view the Status page, you can press the line select key 2L and then the following screen will be displayed.

To return to the Main Menu, press the 'Menu' button on the second row below the screen.

The two rows of buttons under the display screen can also be used to select different pages. Let us say you want to display the page to set the radios. Simply press the 'RAD/NAV' button and then the following page will be displayed.



When inputting data into the FMC that has decimal places (like radio frequencies), ensure that you enter the decimal point and both digits after the point. To change the Com 1 frequency, for example, to 121.80, enter the digits with the numerical keypad, making sure you enter the eight and the following zero.

To input the value into Com 1 press the line select key 2L.



To use the 'Direct To' feature select the 'DirTo' button on the first row under the display screen.

For example, to fly direct to 'SITET', skipping the waypoints 'SFD', 'BENBO' and 'DRAKE', first press the line select key 5L; this loads the waypoint 'SITET' into the buffer at the upper left.

Now press the line select key 1L to finish the command. Now your flight plan will fly directly to 'SITET' skipping over the other waypoints when the autopilot is slaved to the FMC



Another feature in the FMC is the ability to calculate and display the V speeds and approach speeds for the aircraft at its current weight. By pressing the 'TOFF/APR' button you will see this page.

Pressing the line select key 1L will calculate your V speeds using your current weight and air density.

Pressing the line select key 6R will take you to the approach speed page where you can calculate those speeds also.



When viewing the 'FLT PLAN' pages you will note the arrow pointing to the right, by utilising the Page Right key above the numerical keypad you can go to the second page of data for the flight plan waypoints. On the first page for the 'FLT PLAN' you can press the line select key to the left of the waypoint and additional data on that waypoint will be offered.

For example, if we want to see the data for 'BENBO', we would press the line select key 3L.

The data for 'BENBO' is then displayed. To return to the previous flight plan page press the line select key 6R.



The 'Prog' page is where you input another set of data that the FMC uses.

Here you can input your reference speeds and altitudes along with MDA (Minimum Decision Altitude) which will set the bug on your radar altimeter. Pressing the line select key 6R will take you to the fuel prediction page.



This page will show you the estimated fuel on board at the next waypoint and your destination. You can change the display values for the GW to lbs or Kgs by pressing the 'P' key for pounds or the 'K' key for kilograms. You can set the FOB for lbs, Kgs, litres or gallons, by pressing 'P', 'K', 'L' or 'G'.

There are other pages such as 'Init' which give you info like the carrier and flight number. In 'Data' you will find wind speeds and vectors, current temps and so on.

COCKPIT SIM ICONS

- 1A -- Overhead panel
- 1B -- Throttle Quadrant panel
- 2A -- Radio panel
- 2B -- FMS panel
- 3A -- Enlarged ADI
- 3B -- Enlarged HSI
- 4A -- Enlarged upper EICAS
- 4B -- Enlarged lower EICAS
- 5A -- Toggle stair truck
- 5B -- Toggle pushback truck
- 6A -- GPS panel
- 6B -- Kneeboard
- 7A -- ATC/Radio menu
- 7B -- Map
- 8A -- Toggle virtual cockpit
- 8B -- Toggle wing view



KEY COMMANDS PASSENGER DOOR COMMANDS

The main passenger door can be opened by pressing **Shift+E**

The rear passenger door can be opened by pressing **Shift+E + 2**

Note: When the main/rear passenger doors open, the stair trucks will automatically appear. Disabling the stair trucks is done via the stair truck sim icon

CARGO DOOR COMMANDS

The cargo doors can be opened by pressing the key assigned to the tail hook function. You can assign a key to the tail hook function using the Flight Simulator control assignments menu.

PUSHBACK TRUCK COMMAND

The simulated pushback truck is tied-up to the default pushback command (**Ctrl+P**) and can be hidden by the pushback truck simicon.

FLYING THE BOEING 767

To help you get to grips with flying the Boeing 767 we've included an excellent tutorial that covers the key aspects of aircraft operation.

Hello, and welcome to the 767-200/300 Series tutorial flight. For today's flight we will be departing from London's Gatwick airport, just south of the city of London. We will be heading to the sunnier skies of Italy and to the city of Rome, a journey of approximately 776 nautical miles. This is a popular route and is ideal for learning about the various systems onboard the Boeing 767. The aircraft we will be using today is the 767300ER, the extended range and larger of the two models included in this product.

Here are the details for today's flight:

Flight Plan

EGKK – MTD – KOPOR – UTELA – CLM – BRY – LAULY – TUNOR – DJL – TUROM – GALBI – MOLUS – ORSUD - AOSTA – PIMOT – TONDA – GEN – LUKIM – IDONA - SPEZI – BELEL – NORNI – ELB – GILIO – MEDAL – OST - LIRF



Estimated time en-route: **1 hour 42 minutes** (subject to weather conditions and ATC clearances)

Estimated fuel burn: **2945.8 gal / 19737.0 lb**

Route distance: **776.8 nautical miles**

Okay, now that we are prepared for the flight we can proceed to cockpit to begin our pre-flight checks. To load up the 767 tutorial flight, please follow these steps:

If you are using FS2004

1. Start Flight Simulator 2004
2. Select the **Select a Flight** menu
3. Select **767-200/300 Series Tutorials** from the list of categories
4. Choose **767 tutorial flight**
5. Click on **Ok**

If you are using FSX

1. Start Flight Simulator X
2. Select the **Free Flight** menu
3. Choose **Load** from the row of buttons just above the aircraft preview window
4. Select **767 tutorial flight** from the list of saved flights
5. Click on **Fly Now!**

You should now find yourself sitting in the cockpit of a 767-300ER, located at gate 13 of London Gatwick airport. The cockpit is currently in a 'cold and dark' state. This term is used to describe a cockpit that has all of its systems switched off, as you would find it prior to the first flight of the day. Unfortunately this means you will need to invest some additional time setting up the cockpit, but doing so with the assistance of this tutorial will allow you to learn a considerable amount about the features and functions onboard this mighty aircraft.

The first thing we need to do is get the aircraft ready for passenger boarding. Switch to the external 'spot' view and press **Ctrl+J** to request for the jetway to be attached to the aircraft. The jetway is only available in FSX, so if you are using FS2004, press **Shift+E** to attach airstairs to the front



- Switch on the yaw dampers by clicking on the L or R yaw damper switches. The yaw dampers provide stability in flight.



- Turn all three IRU selector switches to the **NAV** position. The IRU units provide an accurate aircrafts location to the flight management and navigation systems.



- Click on both of the **BUS TIE**, **UTILITY BUS** and **GEN CONT** switches. These systems provide the electrical power to the various aircraft systems.



- Switch on the left and right engine anti-ice systems. This will prevent any ice building up on or around the engines. We will be experiencing very cold temperatures whilst cruising at higher levels.
- Switch on the **POSITION**, **RED ANTI-COLLISION** and **WING** lights. These lights will alert other aircraft and ground-crew to our position and intentions.



- Switch on all of the fuel pumps and check that the fuel quantity displays show similar values to those shown in this image



- Click on the **WINDOW HEAT** switches. Heating the windows will prevent any obstructions to our field of vision.



- For now, we can turn off the seatbelt signs. Smoking is now prohibited on all flights, so leave the **NO SMOKING** knob in the **AUTO** position.



- Switch on the **APU engine bleed** system. This will allow the APU to provide 'bleed air', giving us the ability to start the engines without any ground equipment.



11. Turn the left and right **Pack** knobs to the **AUTO** position.
12. Switch on the left and right **RECIRC FANS**
13. Click on the **TRIM AIR** switch and turn the three **CABIN AIR CONDITIONING** knobs to the **AUTO** position.



We have completed the configuration of the overhead panel for now. Close the overhead panel view and return to the main cockpit panel by clicking on the O icon found in the top right of the screen.

We will now move onto the FMS, also known as a CDU or FMC. In the real aircraft, this piece of equipment is quite complex and programming it can be a challenge. As this product is part of the F-Lite range, the FMS included in 767-200/300 Series is limited in functionality. This means our workload is reduced considerably.

Open the FMS by clicking on the **FMS** icon, located on the icons panel.

The FMS will appear and you will be presented with the FMS' main menu. From this menu you can select the various 'pages' that make up the FMS unit. To return to this menu at any point, simply click on the **MENU** button.



Running down the right and left-hand side of the FMS screen are a row of buttons. These are called line select keys (LSKs). The top LSK on the left hand-side is referred to as LSK 1L (line select key, 1 left). The bottom LSK on the right hand-side of FMS is referred to as LSK 6L. Each button matches up with the option parallel to it. For example, clicking on LSK 2L will take you to the **STATUS** page. Clicking on LSK 3R will take you to the **FLT PLAN** page.



1. Click on LSK 3L to open the **INIT** page.
2. The **INIT** page contains several lines of information, automatically collected from your flight plan. These include:

In the bottom right hand corner (LSK 6R) is an option called **ALIGN IRS**. Clicking on LSK 6R will align the inertial reference system. Click on LSK 6R and then return to the CDU main menu by pressing **MENU**.

- Carrier – The airline to which this aircraft belongs
- Flight number
- From/To – The departure and destination airports
- Cruise altitude – The altitude at which we told the flight planner we intended to cruise
- Lat and Long – Our current latitude and longitude

In the bottom right hand corner (LSK 6R) is an option called **ALIGN IRS**. Clicking on LSK 6R will align the inertial reference system. Click on LSK 6R and then return to the CDU main menu by pressing **MENU**.



3. Next we want to check that the flight plan has been correctly imported into the CDU. Click on the FLT PLAN button to bring up the flight plan screen.

A list of waypoints will appear. As this flight plan contains a considerable number of waypoints, they cannot all be displayed on the screen at once. To scroll through the list, use the UP and DOWN buttons. The first waypoint on the list should be our departure point, Gatwick (EGKK), and the final waypoint should be our destination, Rome Fiumicino (LIRF).



4. Now that we have checked our flight plan is correct, we can proceed to the PROG page. On the PROGRAM page we will enter in various details regarding our flight:

- CRZ ALT = Our cruise altitude should already be present, FL340 (34,000ft)
- CRZ SPEED = The cruise speed that we will be using. Enter 300 (knots) into the keypad and select LSK 2R to input the data
- TRANS ALT = Enter 18000 (feet) into the keypad and select LSK 3R to input the data
- CLB SPD = Here we enter the speed that we will hold during the climb phase of the flight. Enter 158 (knots) into the keypad and select LSK 4R to input the data
- COST INDX = The cost index is a value used by airlines to determine what speeds will be used during the flight, based on factors such as fuel burn/economy. Enter 100 into the keypad and select LSK 5R to input the data
- DEPT ALT = The height of the departure airport above sea-level. Enter 100 into the keypad and select LSK 1L to input the data
- DEPT TEMP = The current air temperature at the departure airport. Enter 15 (degrees Celsius) into the keypad and select LSK 2L to input the data
- DEST ALT = The height of the destination airport above sea-level. Enter 100 into the keypad and select LSK 3L to input the data
- MDA = MDA stands for minimum decision altitude. If, on approach to the destination airport, we do not make visual contact with the runway after reaching this height, we will commence a go-around. Enter 500 (feet) into the keypad and select LSK 4L to input the data



5. The final action to be taken on the CDU prior to take-off involves the **DEP/ARR** page. This is the page which you will use to calculate the appropriate take-off speeds, taking into consideration the aircraft's weight. Fortunately we do not need to refer to speed tables in this aircraft; simply click on LSK 1R and the CDU will calculate the take-off speeds for you!



The speed which interests us most is **VR**. This is the speed at which we will pull back on the yoke to become airborne. For this flight Vr is 151 knots.

Ok, we are finished with the CDU for now, so close it and return to the main cockpit view. We need to set the autopilot for our take-off and initial climb. We control the autopilot using the mode control panel (MCP). This can be found on the glare shield, below the overhead panel and in-between the two pilots.



1. Set the **IAS** (indicated airspeed) to 220 knots
2. Set the **HDG** (heading) to 079 degrees
3. Set the **VERT SPD** (vertical speed) to 2500 feet per minute
4. Set the **ALT** (altitude) to 10000 feet

The pre-flight preparations are now complete and we are ready to depart. Tell the jetway to retract by pressing **Ctrl+J** and close the rear doors using **Shift+E+2**. Briefly open the overhead panel and switch the seatbelt signs to **ON**.

Once the jetway is clear of the aircraft, release the brakes (**Ctrl+.**) and commence pushback by pressing **Shift+P**.

Switch to one of the external views to get a better vantage point during pushback. When you have moved backwards a sufficient distance, press **Shift+P** to stop pushback and apply the parking brakes.



We can now start the engines ready for taxiing. Return to the cockpit and open up the overhead panel. Rotate the left engine start knob to the **GND** position.

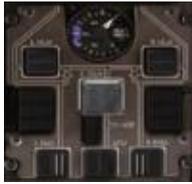


Open up the pedestal panel (**Shift+2**) and move the left **FUEL CONTROL** switch to the **RUN** position.



The left engine will spool up and then return to idle power. You can monitor this on the upper and lower EICAS screens. Once the left engine is stabilised, carry out the same procedure for the right engine.

Now switch back to the overhead panel. Turn off the **APU** bleed air and turn on the **L** and **R ENG** bleed air switches.

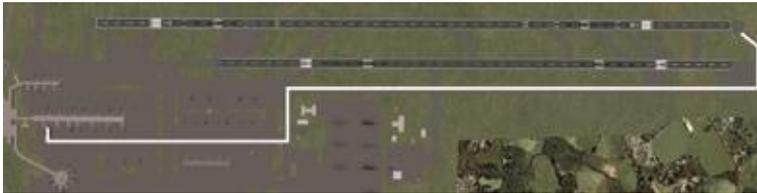


The aircraft's systems are now being powered by the engines, so go ahead and shut down the APU. The **RUN** light will turn off to confirm the APU has shut down.



You are now ready for taxi. Close the overhead panel, release the parking brakes and apply a small amount of power to start rolling forward. Due to the weight of the aircraft, very little power is required once it's rolling. Inertia will do most of the work for you!

Today we will be using runway 08R. The taxi from the gate to the active runway is quite long, so a map showing the route has been provided.



As you taxi past the start of runway 08L on your way to 08R, notify the cabin crew that we are shortly due to take-off. You can do this by moving the **NO SMOKING** knob from the **AUTO** to **ON** position briefly, before bringing the knob back to the **AUTO** position. This will sound a single chime.

Hold short of runway 08R and carry out the following actions:

1. Switch on the landing lights (overhead panel)
2. Turn on the strobe lights (overhead panel)
3. Lower the flaps to **15** degrees (pedestal panel)



4. Move the auto-brake knob to the **RTO** position



5. Move the **Nav1/GPS** selector switch to **GPS**



6. Turn on the **FD (flight director)** and **A/T arm (auto-throttle)** systems



Ok, you are ready to commence take-off. Taxi onto runway 08R, lining up with the runway centre-line. Bring the throttle levers forward to around 25%, check that the engines are stable using the EICAS displays and advance the throttles to the fully forward position. As the aircraft starts to gather speed, keep it running down the centre-line with small rudder inputs. As you approach 151 knots (Vr), start to raise the nose of the aircraft. Slowly bring the nose up to approximately 17 degrees.

The aircraft will begin to climb away from the runway and you should be well clear of the ground by the time you reach 180 knots. Raise the undercarriage using the G key. Hold the aircraft in a steady climb, maintaining the runway heading of 079 degrees.

Once you have reached 2000 feet, you can let the autopilot take over. Starting at the right side of the MCP, carry out the following actions:

1. Engage the **centre** autopilot

2. Engage **altitude hold** mode. **Vertical speed hold** should engage automatically
3. Engage **heading hold** mode
4. Engage **speed hold** mode.



Monitor your airspeed indicator and when you have reached 190 knots, start to retract the flaps, one stage at a time, using the **F5** key. Move the auto-brake knob and landing gear lever to the **OFF** position.

When you reach 7000 feet, you can begin to turn south to join the filled route to Rome. Turn right onto a heading of **180 degrees**.

You should quickly reach 10000 feet. Once you have passed 10000 feet, switch off the landing lights and increase the speed shown on the MCP to **290 knots**. Increase the altitude hold from 10000 feet to our cruise level of **34000** feet and select a vertical speed of **2000 feet per minute**.

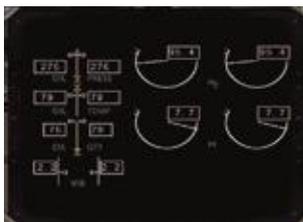


Open the GPS window by pressing **Shift+6**. Monitor your progress towards the route line, and when you are nearing the track, click on the **LNAV** button. The autopilot will start banking the aircraft to the left to bring it onto the correct heading. The autopilot will now guide us all of the way to Rome!

As you head over the South coast of England, heading towards France, you should pass through 18000 feet. Reduce the vertical speed to **1500 feet per minute** and switch off the seat belt signs so that the passengers can stretch their legs.



Ok, the hard work is over for now, sit back and enjoy the spectacular views as you continue the climb over the English Channel. Don't get too relaxed though; always keep an eye on the various systems to make sure everything is functioning correctly. The upper and lower EICAS screens can be scanned quickly to give you a good idea of how the aircraft is performing. In the climb, they should look similar to this:



Another handy source of information during the flight is the CDU, and in particular the **DATA** page. On the **DATA** page of the CDU, you can find:

- **BARO** = The current barometric pressure setting (in Inches of Mercury and Millibars)
- **OAT** = The outside air temperature (in degrees Fahrenheit and Celsius)
- **WIND VEL** = The wind speed
- **WIND DIR** = The wind direction
- **GSPD** = Your current groundspeed
- **LOCAL TIME** = The current local time
- **ZULU TIME GMT** = The universal time used in aviation, more commonly known as GMT
- **TAS** = Your current true airspeed



Once you are within 150 miles of Rome Fiumicino (LIRF), preparations for descent will need to commence:

- Reduce the airspeed hold to **240 knots**
- Lower the altitude hold to **12000 feet**
- Change the vertical speed hold to **-1500 feet per minute**



When you reach 25000 feet, turn on the seat belt signs. This will give the cabin crew plenty of time to prepare the cabin for landing.

You should reach 12000 feet shortly before the waypoint called 'Medal'. The aircraft will enter altitude hold mode and the airspeed should hold steady at 240 knots. The rest of the steps, between this point and touchdown, can seem a little overwhelming at first. Feel free to pause Flight Simulator at each step. This will allow you to make all of the necessary changes, without feeling rushed.

As you approach the waypoint 'Medal', set a heading of **090 degrees** and engage heading hold mode. The aircraft will bank to the left onto a heading of 090 degrees, taking you towards the Italian coastline.

Immediately begin a descent to **5000 feet**, at a vertical speed of **-1500 feet** and a speed of **220 knots**.



As we are no longer using the GPS, switch the NAV/GPS mode selector back to the **NAV** position.



As you pass 10000 feet, turn on the landing lights.

We will be making an approach using the ILS for runway 16L. Whilst the aircraft descends to 5000 feet, you can tune in the ILS. The details for runway 16L are:

Frequency: 108.10 MHz

Heading: 162 degrees

Open the CDU and select the **RAD NAV** page.

Enter the ILS frequency (108.10) into the keypad and select LSK 4L to replace the current NAV1 frequency.



Close the CDU and turn your attention to the **VHF NAV** control panel situated to the left of the MCP. You should see the ILS frequency, 108.10, already tuned into the **FREQ** window. Use the **CRS (course)** selector knob to select an ILS course of **162 degrees**.



The magenta ILS indicators will appear on the EADI, confirming that the ILS signal is being picked up by the aircraft.



Bring up the CDU and select **DEP ARR**. Click on LSK 6R to open the **APPROACH** page. Amongst other things, this page gives us our final approach speed, based on our chosen flap setting. For this landing we will be using 30 degrees of flap.

Click on LSK 1L to calculate the approach speeds. Under the heading of VF30, you should be given a speed of approximately **148 knots**. We will use this speed as our final approach speed.



As you cross over the Italian coast, reduce your speed to **180 knots**. You should pass **8000 feet** shortly before or after passing the over the coast.

As you pass **7000 feet**, lower the flaps to **5 degrees**. Arm the spoilers by pressing Shift + / and rotate the auto-brake knob to the 2 position.

As you approach **5000 feet**, lower the undercarriage by pressing **G** and lower the flaps to **15 degrees**. Select **148 knots** in the airspeed hold window. Decrease the altitude hold value from 5000 feet to **2500 feet**. As your airspeed decreases, start to deploy more flap until you reach the maximum flap setting of **30 degrees**.

When you reach **3500 feet**, start a turn to the right onto a heading of **130 degrees**.

Shortly after levelling out at 2500 feet, the magenta ILS indicator running along the bottom of the EADI should start moving. The magenta 'bug' should starting moving from the left, towards the centre of the ILS indicator. When this happens, engage the **NAV** hold mode by clicking on either **LNAV** or **VNAV**. The aircraft will start a turn to the right to intercept the localiser and runway heading.



The magenta bug should now remain above the centre marker, indicating that the aircraft is correctly positioned on the localiser.

The magenta bug running vertically down the right hand side of the EADI should now 'come alive' and start moving down the ILS indicator. This is indicating that the aircraft will shortly be entering the 'glide slope'. As the magenta bug approaches the second white circle, click on the **APP** button, found on the MCP.



As the magenta indicator reaches the middle mark, the aircraft will pitch down, beginning the final descent into the airport. If the aircraft is stable, and the conditions favourable, you should be maintaining a descent rate of approximately -700 feet per minute.

When the aircraft reaches 200 feet, disengage the autopilot and auto-throttle. Start to bring the aircraft into a flare, gently raising the nose just above the horizon. Reduce the throttles to idle and the aircraft should touchdown smoothly.

Hold down the **F2** key to engage reverse thrust. The spoilers should rise automatically and the auto-brakes should commence braking. As the aircraft slows through 80 knots, take over the braking by moving the auto-brake switch into the **OFF** positions. Bring the throttles back into the idle position.

Once the aircraft has slowed to 25 knots, release the brakes and turn off on the first taxiway to the right. When you are safely off the runway, raise the flaps and switch off the strobe and landing lights.

To prepare the aircraft for the shutting down of the engines, start the APU and switch on the APU bleed air.

You can now taxi over to the terminal area, located to the south-west of your current position. Once you are parked at a gate of your choice, you can begin shutting down the aircraft:

1. Open up the pedestal panel (**Shift+2**) and move the left and right **FUEL CONTROL** switches to the **CUT OFF** position
2. Switch off the seat belt sign by turning the seatbelts knob to the **OFF** position
3. Turn off the wing, position and red anti-collision lights
4. Switch off the window heaters
5. Turn off the fuel pumps
6. Turn off the yaw dampers
7. Rotate the three hydraulics knobs to the **OFF** position

Now that the aircraft is safely shut down, we can open the doors to allow the passengers to de-board. Press **Ctrl+J** to request the jet way and **Shift+E** followed by **2**, to open the rear door. If you are using FS2004, or you are parked at a gate without a jetway, press **Shift+E** to attach the airstairs to the front door.

Congratulations, you have successfully completed a flight in the 767-300!



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