AIRBUS FOR DUMMIES

The fun and easy way to operate your BlackBox Airbus

Gate to Gate Tutorial flight

Start up procedure
Program the Flightplan
Using the Autopilot
Sids and Stars
+MORE

BLACK BOX SIMULATION
Airbus A319 tutorial flight

LMML (Malta) – LFKJ (Campo Dell’Orro)

(PREPARATION)

We have assumed you calibrated your throttle levers via the MCDU MENU when you first installed Airbus Prologue its time to go, Otherwise you MUST DO THIS NOW!

Open FSX as you would normally and then select END FLIGHT from the menu.

Create a flight in FSX by selecting "BlackBox Airbus Air Malta A319 CFM"

Position yourself at LMML (chose any medium gate)

Turn off engines (Pedestal switches A & B)

Turn off Batteries 1 and 2 (Overhead C & D)

This should shutdown the aircraft and systems so we are ready to go.

(Note) If your MFD screens do not close down, simply click on the PFD to make it pop up then click it again to close. The MFD’s should now be unpowered and blacked out.

Save this flight as so you can reset if things go wrong.

That’s it, we’re ready.
Airbus A319 tutorial flight

LMML (Malta) – LFKJ (Campo Dell’Orro)

(Start the systems)  Check 1st that you’re parking brake is set

Now we must re-connect our batteries.

Open the OVERHEAD panel and press Bat 1 and Bat 2 (Overhead C & D) to turn them on. This will power the systems so we can start up the Aircraft properly.

So, with battery power now being supplied we can start the APU (Auxiliary power unit)

We will use External Power for this as it saves battery life. (We could start the APU with our batteries alone but it’s more normal to start the APU with Ground Power)

If your parking brake is on at the gate, you should see the green external power lamp (Overhead Lamp E) “avail” means we can connect to a ground power unit.

Press the EXT PWR button “E”

Now open BIG LOWER ECAM Panel and press APU button (illuminated green below)

This shows you the current state of the APU and as you can see, it is not running yet.
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At the bottom centre of the Overhead panel you will find two buttons labelled APU Master SW and START (Overhead F and G)

First we need to press the MASTER SW “F” to initialize the APU, look again at the lower ECAM screen. Your APU is now initialized and ready to start. (You should now have Generator, Bleed air and Flap open indications)

Now press START on the APU Panel (Overhead G) to start-up the APU motor

. Your ECAM should now look like this, with Generator voltage and bleed air pressure.

As the aircraft is now powered you should switch on the BEACON LIGHTS on the Overhead lighting panel
Airbus A319 tutorial flight

LMML (Malta) – LFKJ (Campo Dell’Orro)

(Setting up the Airbus for flight)

Open the MCDU from the views menu or “click spot icon”. It should look like this.

![MCDU Screen](image)

We now need to initialise the MCDU and enter our Flight plan.

We will need to enter many things into the MCDU such as our weight, Fuel on board, Cruise altitude. As well as the flight plan itself, so firstly let’s get used to the terminology.

Most buttons are clearly labelled FLT PLAN, PERF, and NAV RAD for example, so we will assume you understand these. Down each side of the screen however there are 6 buttons. These are known as LSK’s (LINE SELECT KEYS) these will be mentioned a LOT during the next stages so to help you understand which is which …. 

If we refer to LSKL2 for example, this means LINE SELECT KEY LEFT 2 or the second button down the left side “FLT NBR”. Respectively LSK4R would refer to the 4th button down the Right side “LONG”.

It will become clearer as we enter the data.
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LMML (Malta) – LFKJ (Campo Dell’Orro)

(Programming the MCDU) “Mode Control Display Unit”

Before entering the flight plan we need some information about the Aircraft weight and fuel so first look at the supplied flight plan so we can set our fuel for the trip.

<table>
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<tr>
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<th>Name</th>
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<tr>
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<td>Ratok (UM732 200-460)</td>
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<td>01:04</td>
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</table>

Here we can see a flight of approx 450 Miles so first we need to work out the fuel required.

I use this good online system but you will need an internet connection of course.
http://fuel.aerotexas.com/

I will use the US SYSTEM (Gallons/Miles/Lbs) for this tutorial but you can just as easily use the Metric system.

NOTE For metric readouts in FSX you need to change the FSX GENERAL System settings to Metric. The BB Airbus panel will pick this up and change various displays to Kilogramme.
Airbus A319 tutorial flight

LMML (Malta) – LFKJ (Campo Dell’Orro)

(Fuel Planning)

In the Aerotexas fuel planner (whatever you chose to use) enter the details –

- **Departure** LPMA
- **Arrival** LFKJ
- **Airbus A319**

Set the rest of the options from the drop down menus **Standard fuel plan, F.A.R Domestic**, and **POUNDS** (or Kilogram’s if you prefer) and then press **CALCULATE** to get your Fuel Plan,

As you can now see, we will need a total of 13,676 Lbs including all reserves.

---

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<td>15676</td>
<td>FOB</td>
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</table>

**Rule:** FAR Domestic | Basis: time | Load Factor: 86.6160
Airbus A319 tutorial flight

LMML (Malta) – LFKJ (Campo Dell’Orro)

(Fuelling up)

From the FSX Fuel and Payload screen again, click on Change Fuel

Check “display fuel quantity as weight” and enter the following fuel levels. To a total of 13.700 Pounds (approx) it is always better to round UP where fuel is concerned!

That’s it. We fuelled the airbus.

**NOTE:** your payload is limited by the amount of fuel required for the flight.

**NEVER USE FULL PAYLOAD + FULL FUEL!!**

**THE AIRBUS WILL BE DANGEROUSLY OVERWEIGHT AND NOT FLY CORRECTLY!**
Now go back to MCDU and press the INIT BUTTON and NEXT PAGE BUTTON

You should now see the INIT PAGE 2 and you will have some orange boxes for ZFW at the top right on LSKR1.

This is your ZERO FUEL WEIGHT and must be entered either by calculating the figure from your Fuel and Payload screen (ZFW = EMPTY WEIGHT + PAYLOAD) or you can simply Right click LSKR1 and the MCDU Will calculate this for you. With the ZFW Entered you now have a new set of orange boxes beneath it on LSKR2, “BLOCK” This means BLOCK FUEL and is in decimal Lbs for our example. I.e. 13,700 LBS = 17.3 BLOCK, so again enter this manually via the MCDU scratchpad, or again Right click LSKR2 and the MCDU Will calculate it for you.

**NOTE:** Sometimes messages will be displayed in the scratchpad area from time to time.

You must CLEAR them before entering new data. To do this simply Press CLR button at the lower right side of the keypad before entering new data.
Now press MCDU “PERF” button to go to performance pages

Now, by RIGHT CLICKING on LSKL1, 2 and 3 you can automatically set your V Speeds for takeoff, you can of course use the charts and tables to enter these manually as you did above with the ZFW and BLOCK FUEL.

The V speeds will now appear on your PFD “Primary Flight Display” V1 in Blue and V2+10 in Magenta. These will be your target speeds for Takeoff and Initial Climb.
Airbus A319 tutorial flight

LMML (Malta) – LFKJ (Campo Dell’Orro)

The Flight Plan

Now Press the **MCDU INIT Button**, this will bring up a new screen where you can FINALLY start entering the ACTUAL flight plan.

First we need to enter our departure and arrival airports. We know these are **LMML** (MALTA) and **LFKJ** (Campo Dell’orro) we type these into the scratchpad area as **LMML/LFKJ** as you see above, enter this new ROUTE data by LEFT CLICKING **LSKR1**.

This changes the page and gives you more data boxes to complete as you can see above.
Airbus A319 tutorial flight

LMML (Malta) – LFKJ (Campo Dell’Orro)

Enter a Flight Number the same way you did the other data via the scratchpad...

As we are using an Air Malta model, we will enter “KM4109” and Left click LSKL3.

The **Cost index** is a way of economically flying a route, it is Airline based and can be any number between 0 and 100. We use an **average CI** and enter **55**, by now you should know how this is done...

The next entry is **CRZ FL/TEMP**. Simply enter the expected cruise Altitude and the temperature part will automatically display. So enter **350** and LSK the data into the MCDU.

Finally **Line select “Align IRS”** and this takes care of the accuracy of your flight by aligning the computers to your current location. Clear the message “**NAV ACCUR UPGRADE**” by pressing CLR button.

You can now press the **F-PLN Button** and your **MCDU** should look like this.

![MCDU Screen](image)

You can use the **UP and DOWN Arrow Buttons** to scroll through the flight plan but as you will see, there not much in there right now. Just your Departure, LMML, a standard constraint of 250 Kts below 10000 feet, Your **TOC (Top of climb)** your **TOD (Top of descent)** and finally, your Destination, LFKJ. Also there is a “**F-PLN DISCONTINUITY**” but for the moment you can ignore this. It simply means the flight plan is not yet complete.

So let’s move on and create our departure or **SID**............
Airbus A319 tutorial flight

LMML (Malta) – LFKJ (Campo Dell’Orro)

SIDS AND STARS (Your departure procedure)

Press **LSKL1** alongside your departure airport **LMML**. This will take you to the next screen.

LATERAL REVISION: press **LSKL1** “Departure” again and go to the next screen

RUNWAY: Press **LSKL1** again to select Runway 31 (This would depend on the active runway due to wind and weather of course but for now we will stick to RWY 31)
Airbus A319 tutorial flight
LMML (Malta) – LFKJ (Campo Dell’Orro)

DEPARTURES: This is where we chose our departure procedure or SID

If we look back at our flight plan we can see the first real Waypoint is GZO or Gozo VOR so we will pick a SID that takes there pretty directly. GZO3D, there are many SIDS, these are usually set up for a departure in a particular location, or to avoid overflying towns or high obstructions. When you LSK alongside the SID “GZO3D” it will turn yellow and be temporarily applied to your Flight Plan. Press “INSERT” LSKR6 to confirm this selection and enter it into the Flight Plan.

The MCDU will now switch back to the main Flight plan page and look like this with all your new Waypoints entered for the GOZO3D SID Departure.

And if you look at the ND (Nav Display) you will see the SID is now in place.
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LMML (Malta) – LFKJ (Campo Dell’Orro)

AIRWAYS (the rest of the flight plan)

The main flight plan contains many waypoints, You don’t have to enter each one manually as we fly via Airways. Here is how we enter a quite complex flight plan in a few easy steps

```
LMML GZO3D UM732 RATOJ M732 ROBIM UM732 SENTI M732 ALG ALG2A LFKJ
```

If we look at this simplified plan, we should be able to see our Departure airport LMML followed by the SID we just entered GZO3D. We will now add the rest of the plan using Airways

Firstly, use the UP/DOWN Keys on the MCDU to scroll the flight plan so that you can see the line F-PLAN DISCONTINUITY again with GZO just above it.

Now we can see UM732 is next in our list but this is not a waypoint or an airport so how do we enter this?

**REMEMBER THIS PROCEDURE - BECAUSE YOU WILL BE REPEATING IT A FEW TIMES!**

First we LSK Adjacent to GZO waypoint to bring up the LAT REV PAGE
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LMML (Malta) – LFKJ (Campo Dell’Orro)

This bring up the LATE REV PAGE from the GZO WP. Look at the top Right section where it says VIA/GO TO

An explanation of this is VIA “AIRWAY” / GO TO “WAYPOINT” So we need to enter the AIRWAY TO FLY ALONG and the WP where this part of the flight plan stops

We can see this section highlighted in red so we enter UM732/RATOK INTO THE SCRATCHPAD and insert it into the flight plan with the LSKR2
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LMML (Malta) – LFKJ (Campo Dell’Orro)

Your MCDU Screen will now change to the **Temporary Flight Plan** Page so you can review the changes. As you can see (below) **All REQUIRED WP’s** along the airway **UM732** Have been added to the temporary flight plan. You can scroll up and down to see them all. To insert them into the active flight plan you press the **LSKR6** key to “**INSERT**” this section.

![Temporary Flight Plan](image)

This will take us back to the main flightplan again with all your new WP’s inserted in green.

![Main Flightplan](image)

Use the arrow buttons to scroll the flightplan to the last WP you entered **RATOK** and so the F-PLN DISCONTINUITY is just below it.

Now we go back to the previous page in the tutorial and repeat the process By entering the remaining **THREE sections** exactly as you have just done for the first one

```
LMML GZ03D UM732 RATOK M732 ROBIM UM732 SENTI M732 ALG ALG2A LFKJ
```

**M732/ROBIM** - **UM732/SENTI** – **M732/ALG**

When you have entered the last WP in this list **ALG** we then need to enter our arrival or **STAR**
Airbus A319 tutorial flight

LMML (Malta) – LFKJ (Campo Dell’Orro)

SIDS AND STARS (Your arrival procedure)

Using the same process we did for entering the SID, Bring up the STARS for Rwy 02 at our destination LFKJ. Press LSKL6 for the LAT REV PAGE, Press LSKR1 for the ARRIVAL PAGE, Press LSKL3 for RWY ILS02, Finally press LSKL3 again to select the ALG2A STAR and Insert with LSKR6. If all went well you should now see the ALG2A STAR in your Flight plan by scrolling up the list until you see F PLN DISCONTINUITY Again

This is your almost Completed Flight Plan, but with a F-PLN Discontinuity still there. We must remove the discontinuity before using the flight plan and it is done simply by first pressing the CLR BUTTON (This places a “Clear” Command in the scratchpad) and then Activate the clear by pressing the LSK Adjacent to the Discontinuity, in the case below, this will be LSKL2. You will also notice that the WP ALG Appears twice. This is because the LAST WP of our flightplan is also the FIRST WP of our STAR, we don’t need them both so the TOP one may be deteted by pressing the CLR BUTTON and then LSK Adjacent to the first ALG WP to delete it from the flightplan - LSKL1.

And That is your flight plan completed. You might want to save all your hard work now so go to the MCDU DATA Button and press SAVE ROUTE on LSKR1. Type in TUTORIAL-1 to the scratchpad and enterit into CO RTE on LSKL1 You may now reload the route at Any time.
Ok Page 18, it's Finally Time for Pushback and Engine Start!

Ok you may like to check what we did earlier. If you check the Overhead Panel OH from bottom to top, You should have APU Running and the button illuminated in green “AVAIL”

Above this on the AIR COND Panel, an amber “FAULT” Lamp on PACK 2, further up on the ELEC Panel, you should have Amber fault lamps on GEN1 and GEN2 and finally your EXT PWR button should show “ON” There should be no other lamps illuminated.

IF THIS IS NOT THE CASE, PLEASE GO BACK TO PAGE 2 AND (START THE SYSTEMS) AGAIN

PUSHBACK (we will ignore ATC and clearances for the benefit of this tutorial)

Before moving we must disconnect EXTERNAL POWER just press the EXT PWR Button it should now show “AVAIL” while the Parking brake is on

Depending on the gate you chose, you may need a push back to clear the buildings in order for you to start taxiing. So release the Parking brake and press SHIFT+P, the Pushback tug will move your Airbus back into clear space. press Shift + P again to release the tug and reapply your park brake. If you don’t need a pushback just continue from here.

ENGINE START

We will start Engine #2 First as this is normal procedure as Engine 2 pressurises the yellow system, but also, the ground air coupling for external air engine start is located within the danger area of engine #1, and engineers don’t like being sucked into a running engine!

First open the OH Panel / and turn on APU BLEED, then set BLEED VALVE to OPEN

Now Close the OH panel and open the CENTRE PEDESTAL
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LMML (Malta) – LFKJ (Campo Dell’Orro)

Just below the Thrust Levers you will find the ENGINE START PANEL. Turn the MODE KNOB to IGN START and set the ENGINE # 2 START SWITCH to ON, then close the pedestal so you can see the Upper ECAM and the engine start process begin.

![Mode and Engine 2 Switch](image)

Engine #2 is now running smoothly

![Engine #2 Running](image)

**Engine #1** is a similar process, simply set the Engine #1 switch on the pedestal to start and once **Engine #1** is running you can reset the MODE KNOB to MODE NORM.

Finally we can now turn off APU Bleed Air (**Press APU BLEED Button**) And Switch OFF the APU (**press Master Sw**) Finally switch on **NAV and TAXI Lights** from the OH Panel
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LMML (Malta) – LFKJ (Campo Dell’Orro)

We are now ready for Taxi.

We will now taxi to RWY 31 so push the Thrust levers forward slightly, JUST Enough to get our aircraft moving. Be careful not to overspeed when taxiing, Usually 10 – 20 Kts is good.

From the aerodrome chart below we can follow taxiways DELTA, CHARLIE, RWY 13, BRAVO and ALPHA. Onto the end of RWY 31 for takeoff, So Just follow the arrows and line up on the Piano keys just before the RWY 31 Numbers
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LMML (Malta) – LFKJ (Campo Dell’Orro)

Pre Takeoff we must Set our flaps for position 1 (press F7 once)

Set our Cruise Altitude in the FCU “Flight Controller Unit” Window

**TAKEOFF** - Push the thrust levers all the way forward to TOGA “Take Off Go Around” and guide the Airbus down the centreline, You will notice the PFD Has changed and some new indications appeared.
Keep an eye on the V-speeds.

de these will tell you when to takeoff at your current weight, When your speed matches VR. (Rotate) Pull pack on the stick until your pitch is between 15 and 18 degrees. The green FLIGHT DIRECTOR BARS Will tell you where to point the nose.

When you have stabilised and have a positive rate of climb Raise the gear press “G” Key You can now Engage the Auto Pilot by Pressing AP1 button. Your Airbus is now under Automatic control and the PFD indications will change again.

LVR CLB you must reduce thrust by setting CL Detent you can do this by pressing PGDN Twice, or by carefully adjusting your throttle levers. Notice the Magenta 5000 on the Alt tape, this signifies a constraint of 5000 ft and the AP will level off here to comply. It will automatically climb again when the constraint is passed.

A/THR Will turn white and you will be completeley automatic, with your speed, alt and heading all taken care of. Watch for F and S incidations on the speed tape as these tell you when the flaps and slats must be retracted.
Airbus A319 tutorial flight

LMML (Malta) – LFKJ (Campo Dell’Orro)

While you are climbing the barometric pressure indication will flash with a yellow border. This is telling you to switch from Airport pressure to Standard Pressure, You do this by right clicking on the BARO knob.

Now it's all up to the flight plan and autopilot so let's check the ND (Nav Display). Set the range on the ND to 160 Miles.

Here we can see our flight path, with the various waypoints. The Blue “hockey stick” indicates the TOC or Top Of Climb. This is where you will reach your cruising altitude of 35,000 ft. At the top right you can see the NEXT WP – UPLIT with 40.7 NM to go and you will reach the WP in 9 minutes 34 seconds. Top left is your GS or Ground Speed (261) and your TAS or True Airspeed (261).

So now just sit back and enjoy the flight, there's nothing much to do until we reach cruise altitude.
Airbus A319 tutorial flight
LMML (Malta) – LFKJ (Campo Dell’Orro)

As you near SENTI WP the Autopilot will level off for cruise and the AutoThrust will reduce power to maintain cruise speed. As we set CI (cost index) of 55 before takeoff, this cruise speed will be Mach 0.80 for FL350. You may increase or decrease your speed by RIGHT CLICKING the SPD KNOB and setting your new speed in the FCU Window, changing CI in flight has no effect in Prologue. Left clicking the SPD KNOB Sets you back in Managed Mode where the speed is computed via the flight plan and performance settings.

After a gentle cruise, we see a new symbol on the ND. A White Hockey Stick. This is the point where we must start our descent from cruise altitude ready for our landing at LFKJ.

In the FCU ALTITUDE Window, we need to set 4000 ft and be ready to change AP mode.

DO NOT PUSH ALT KNOB YET!
Airbus A319 tutorial flight

LMML (Malta) – LFKJ (Campo Dell’Orro)

Set **ND range** for **10 Miles** and watch as you pass **WP TEKSA** and approach **TOD**

When you reach this point approx **2 miles** from **TOD** you can **PUSH “LEFT CLICK” the ALT KNOB** to enter **DEC mode**. You will see the **PFD Anunnciators** change to **THR IDLE** and **DES** and your descent guide appears in magenta.

Just monitor the descent for now, soon we will be turning right onto our selected STAR **ALG2A** as we descend towards the airport.
Airbus A319 tutorial flight

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You can also check the progress of your descent via the MCDU PROG Button

This page shows us that our VDEV (Vertical Deviation) is -4, that means we are just 4 feet under our expected altitude for this part of the descent.

Watch for the Yellow BARO display again in the PFD and reset this to QNH when it flashes

And now we enter the last few turns on our STAR Approach to LFKJ.
We now need to start reducing our speed for the approach. So PULL “Right click” Speed Knob and then set 200 Kts in speed window.

As your speed decreases towards 200 Kts you can deploy the **SLATS (FLAP 1)** and as you settle at **200 Kts deploy Flaps 2**. This should be around the point the aircraft turns towards **HORRO**, your approach point.

At approx **2 miles** from **HORRO** open the **MCDU** and press the **PERF Button**. Here you will see “**APPROACH MODE**” IN BLUE. **LSKL6** here and again to confirm approach mode.

Now **PUSH “left click” SPEED** button to re-enter **Managed mode** for approach and also the **ILS button** on the left side of the **FCU Panel**. The screens now show you new information for the approach and landing and your speed is controlled by the computers.
The MCDU APPROACH PAGE shows us the computed speeds for approach and landing at our current weight. It also shows the various Flap retraction speeds and the flap setting we have selected for this landing.

Intercepting the ILS

First use the ND ROSE knob to set ILS. The ND will change to ILS mode
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ROSE SET TO ILS

GLIDESLOPE

GLIDEPATH

COURSE
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As we can see the ILS Beams GLIDESLOPE AND GLIDEPATH both showing in the ND we can now set Appr Mode. So push the APPR button at the right side of the FCU

When your aircraft turns onto and is established on the LOCALIZER, deploy FLAPS 3 and then Lower the gear. If the Approach seems settled and stable Set flaps 4 at approx 6 Miles DME or 2000 Feet. Now ARM the speedbrakes (Press Shift and /) and set Autobrakes MED on the gear panel.

Keeps your hands off the Sidestick, this will be an Autoland!

Now listen for the Airbus GPWS .. you will hear 1000, 500, 400, 300, 200, 100, 50 and then RETARD! On the Retard command. Close the thrust levers to minimum and then deploy reverse thrust. (you may use your throttles or hit PgDn repeatedly to enter full reverse)

When your speed decays to 70 Kts, set idle thrust again and disconnect the Autopilot.

You have just experience an AIRBUS AUTOLAND.

Taxi to the Gate, retract the flaps and shut down as you did on page 1 of the tutorial.

We hope this short flight increases your enjoyment of the BlackBox Airbus Prologue and we hope you come back for the X’TREME Version when we will have all the systems fully working with failures, emergencies and lots more to keep you with us for years to come.

THANK YOU FOR FLYING AIR MALTA – THANK YOU FOR FLYING AIRBUS X’TREME PROLOGUE

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