

PSS Airbus A319/320 Flight Tutorial (with graphical presentation)

Only for MS Flight Simulator



PSS Airbus A320 Flight Tutorial.

This tutorial will show You how to prepare aircraft for flight. Our a/c is PSS a320c (CFM engines)

We will make short flight from LDZA RWY23 to LDPL RWY27.

This will be configuration of our A320: ZFW=60000kg, Fuel:6200kg (50% 0% 50%)

First part must be done in Phoenix Payload Editor. Save the setting. Second part will be done in FS2004 (Fuel setting)

Phoenix Payload Editor - Airbus A320 (Scheduled)

File Aircraft

ZFW: 60042
Max Fuel: 13915

2860 (Cargo)
9398 (Passengers)

2924 (Fuel)
2252 (Fuel)

All values shown in Kilos (Kg)

Passengers		Total Passengers
First Class	35	
Coach Class	115	

Payload		Total Payload
Cargo (Kg)	2252	
Bagage (Kg)	2924	

FUEL SETTINGS

Airbus A320c

Display fuel quantity as weight

Tank	%	Kilograms	Capacity
Left	50.0	3130	6260
Center	0.0	0	6607
Right	50.0	3130	6260

Total fuel: 32.7 6260 19128
Fuel weight Kg/L: 0.8

HELP CANCEL OK

Our Flight plan: MABA2S.MABAN GISER CRE.CRE3A (enter in MCDU)

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We will start with cold and dark cockpit (you can define this through AirbusPanelConfig.exe)



1. press BAT1&2 p/b (OFF goes off)



2. Press in all 6 p/b of Fuel Pumps (OFF goes off).
APU can run without Engine driven pumps (EDP). APU is equipped with APU Fuel pump which will run automatically if fuel feed pressure is low. In real life left wing pumps are started, because fuel for APU is supplied from left side.

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3. Now we can start APU by pressing APU Master Sw P/B
4. After few seconds (on lower ECAM FLAP OPEN appears and green AVAIL on P/B) we can press Start (blue ON appears)
5. APU ECAM page appears. After 99% N, we can start APU Bleed which is necessary for engine start



6. Open MCDU (shift+3)



7. Enter LDZA/LDPL and press RSK1



You will see that screen. Next step is entering of cruise FL, which will be in our case FL160. Enter FL160 and press LSK6

8. Now we are ready to enter our Flight plan ☺. Press F-PLAN on our MCDU



Now press LSK1. LAT REV FROM LDZA page appears. Select DEPARTURE (LSK1). Now we are choosing SID (Standard Instrument Departure which will be MABA2S. You can scroll with arrows (up,down). Scroll until you see MABA2S, and then press key next to it (in our case LSK5), and then INSERT (RSK6). See picture below. After MABAN enter GISER and press LSK5L. Final step is choosing LDPL -> ARRIVE -> 27-> CRE3A -> INSERT (this is the STAR-Standard Arrival Procedure for Rwy 27). If you have F-PLN DISCONTINUITY press CLR and LSK3 (see picture below)



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9. Next step is to enter ZFW and Fuel quantity through MCDU INIT Page. Press INIT and then ALIGN IRS (RSK3) and NEXT PAGE. Second step is to enter ZFW 60 (that means 60000kg) and press RSK1 and BLOCK Fuel 6.2 (that means 6200kg) and press RSK2 (see pict below). Final step is to press PERF and with right mouse click on V1,V2,VR initialize speeds. (You can also enter manually if you have charts ☺)



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10. Turn on Beacon lights and prepare for engine start. Open central pedestal (shift+4)



7. Select Mode selector to IGN Start
8. Put Engine 2 Master SW to ON (on upper ECAM Engine page appears)
9. Put Engine 1 Master SW to ON
10. After Engines start return Mode selector to NORM



11. The ECAM should be as picture below. Enter initial altitude given by ATC (let say 4000ft)



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Note that FCU is centrally located on the glareshield. It provides control of autopilots and flight directors, control of airspeed, horizontal modes, climb/descent modes and vertical speed. Each knob can be rotated, pushed and pulled. If knob is pulled, the pilots takes direct control of this function. This is called Selected mode. If knob is pushed, the control is given to FMS (FMGC) which guides the a/c acc to entered route. This is Managed mode (in managed mode window is dashed with white dot). It is up to you to decide which mode to use. I was present few times in real A319/320 in the cockpit as observer and selected mode was used.

Example:



Prepare for taxiing to Rwy23. To move the airplane normally idle thrust is sufficient. If needed, additional thrust (max 40% N1) should be used. The normal maximum taxi speed should be 30kt in a straight line and 10kt for a tight turn. Monitor ground speed on ND. 2min after second engine start TO Memo appears on upper ECAM.



12. Press AUTOBRAKE MAX p/b
13. Set Flaps lever to take-off flap setting (1+F)
14. Press T.O.Config after performing all actions.
15. T.O CONFIG NORMAL should appear
16. Turn on TAXY/TO LT



Position	SLATS	FLAPS	Indications on ECAM		
0	0	0		TAKEOFF	CRUISE
1	18	0	1		HOLD
2	22	15	2	LDG	APPR
3	22	20	3		
FULL	27	40	FULL		

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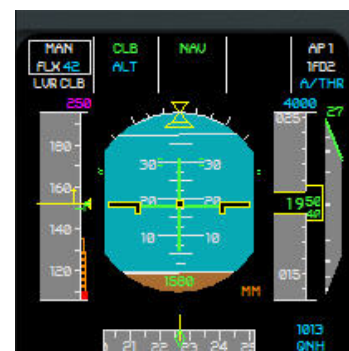
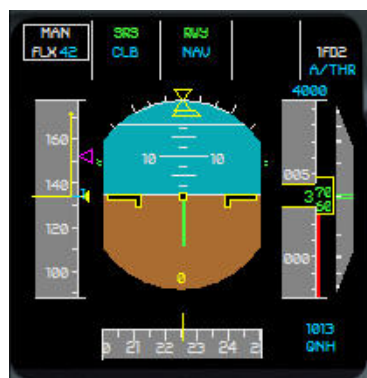
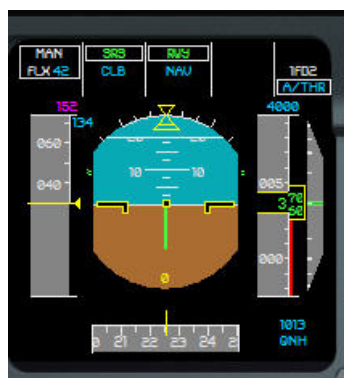
At RWY23 holding point, turn on Landing LT (should be on until 10000ft)+Strobe LT.



Line up and progressively adjust engines power in two steps:

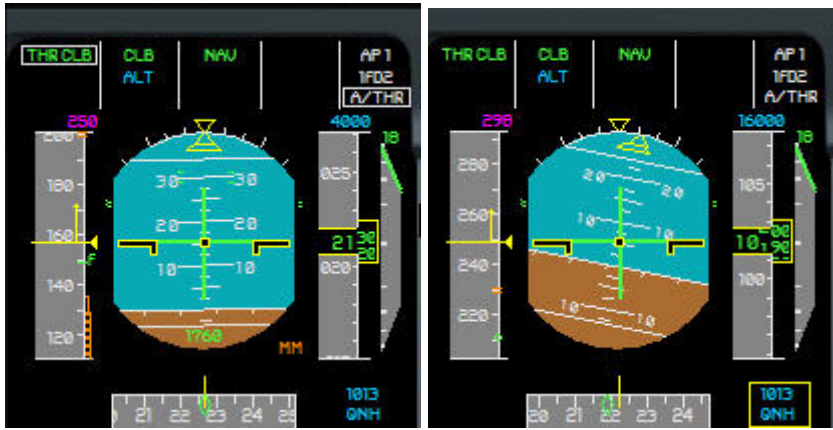
- first step from idle to about 50%N1
- second step (when about 50%N1 is reached on both engines) to FLX/MCT or TOGA detent (press ++ on Num keyboard)

PFD should look like on pictures below



First PFD presents the moment, when A/THR is armed (Thrust lever to FLX/MCT detent)
Second PFD presents the moment when we are approaching to speed (magenta) of a/c rotation
Third PFD presents the moment when a/c is climbing and LVR CLB flashes (thrust reduction altitude), when Thrust lever must be set to CL (Climb) detent. A/THR becomes active (white A/THR on PFD). Retract Flaps close to 200 kt (they will retract automatically at 210kt). When reaching 4000ft, select 16000ft on FCU (put on managed mode-press button)

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At transition altitude we must set altimeter to STD (flashes when altimeter is QNH and a/c is above transition level)
Push baro control (STD app)



We are leaving LDZA finally ☺



Our ND looks like on picture below:



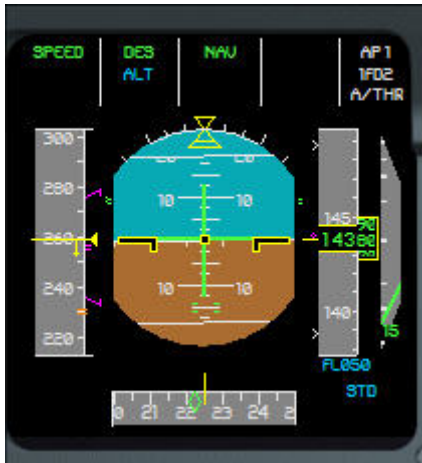
- Top of descent. A point where descent should start from cruise alt.
- Top of climb. A point where climb altitude will be reached
- Speed change
- Range of displayed nav plan can be changed

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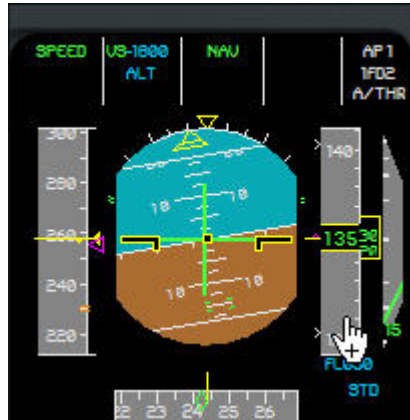
Close to TOD (Top of descent) ,set 5000ft on FCU (given by ATC) and when DEACCELERATE appears, press in altitude selector (managed mode acc FMS), or if you like you can pull out altitude knob and go to OP DES mode (It controls a/c pitch to maintain target speed and commands idle thrust). Third mode available will be V/S (Vertical speed) mode. The V/S mode can be engaged in two ways. Pulling the V/S knob will engage V/S mode and will open V/S window to the existing vertical speed. Pushing this knob will engage V/S mode and open the window with zero vertical speed. It is up to you to decide which mode will you use. MORE DRAG means that you are to quick. Apply Speed brake until speed dropped to calculated speed. In managed descent, target speed triangle is replaced by mark and two brackets indicate allowable airspeed range. Again when transition level is reached during descent pull out QNH knob, turn on LAND LT and SEATBELTS ON



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PFD Managed descent



PFD V/S mode descent

Arrange V/S to cross CRE NDB at 4000ft. In our case I set V/S to 1800ft/min and again to 4000ft in managed mode. Again you can use any mode (managed, OP DES, or V/S mode)



Now we are close to LDPL. See pictures below



DECEL point is automatically inserted before approach segment. Overflying this point will engage Approach Flight stage

ILS frequency is tuned automatically or manually (enter ILS freq. and course in RAD NAV page through MCDU) via FMGC (Flight Management and Guidance Computer). Manually enter 111.50 and press LSK3. Enter course 267 and press LSK4. ILS is tuned manually. If we didn't enter ILS freq and course, FMGC will automatically tune freq. and course.



Don't forget to set AUTOBRAKE to MED or LOW (rain), and ARMED GROUND SPOILERS.



Because we are close to calculated Deceleration point, we will engage manually Approach stage by pressing PERF key and then ACTIVATE APPR PHASE (LSK6) and CONFIRM :



Pressing NEXT PHASE (RSK6), APPR page appears. On that page we are entering DH (Decision Height), and LDG CONF (Flaps FULL in our case)

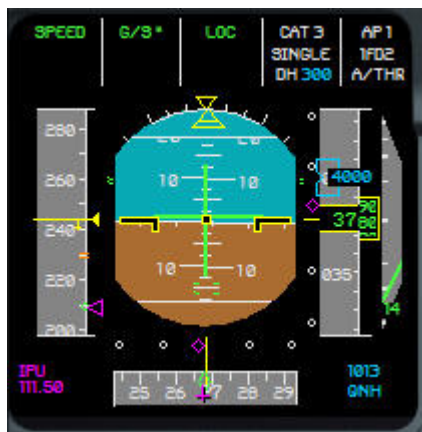


- I now recommend to pilots that they enter the Approach Phase data (QNH, temp, winds etc) earlier in the descent to reduce workload later. They do not activate the approach phase at this point, just enter the data by pressing next phase on the PERF page until the Approach page comes up then go back to the F-Plan page for example and activate the approach as usual.
- Suggested by Rob Elliott Airbus Fleet Training Captain

We are ready for landing. Press ILS on FCU and put ND Mode selector to ILS:



Press LOC on FCU and when GS deviation diamond appears press APPR on FCU and set FLAPS to 1+F (speed must be around 210 kt)



G/S*-Glide slope capture -will become G/S
 LOC- LOC track mode (localizer captured-active)

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As you approaching LDPL lower the speed by setting FLAPS 2.

When the plane begins to descend on glideslope, deploy the flaps FULL.

When you descend trough 2000ft lower the gear. Also LANDING MEMO appears on upper ECAM (below 2000ft if L/G down or below 800ft if L/G not down)

Now you can disengage AP and A/THR (or left engaged) or land with AP1&2 engaged (CAT3 DUAL).

Note: For Manual landing:

- Use CONF 3 for approach and landing
- The recommendation to use managed speed remains valid
- Minimum VAPP is VLS (CONF3)+10kt

Note: For automatic landing:

- Use CONF 3 for approach and landing
- The recommendation to use managed speed remains valid
- Minimum VAPP is VLS+5kt

VLS- Minimum selectable speed



At verbal «RETARD, RETARD», press – on keypad for THRUST IDLE. Start flare at about 20ft. Make a gentle progressive flare and allow the airplane to touch down. Lower the nose wheel without delay and return sidestick to pitch neutral position.

Select REV immediately after touchdown of main landing gear.

Maximum reverse thrust is allowed down to 70kt.

Before reaching 20kt disengage AUTOBRK.

After leaving landing runway set STROBE LT to OFF

Welcome to PULA ☺

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