

Airbus

A320 Family



AFS-design

Andreas Meyer

The Airbus A320 family is a family of short- to medium-range, narrow body, commercial passenger jet airliners manufactured by Airbus. The family includes the A318, A319, A320, and A321.

The first member of the A320 family, the A320, was launched in March 1984, first flew on 22 February 1987, and was first delivered in 1988. The family was soon extended to include the A321 (first delivered 1994), the A319 (1996), and the A318 (2003). The A320 family pioneered the use of digital fly-by-wire flight control systems in commercial aircraft. Although there has been a continuous improvement process since introduction, currently the A320 Enhanced programme includes greater improvements. The Airbus A320 family has over 4,300 aircraft built and an additional 2,300 aircraft on order as of March 2010. According to Airbus, it ranked as the world's fastest-selling jet airliner family according to records from 2005 to 2007, and as the best-selling single generation aircraft programme.



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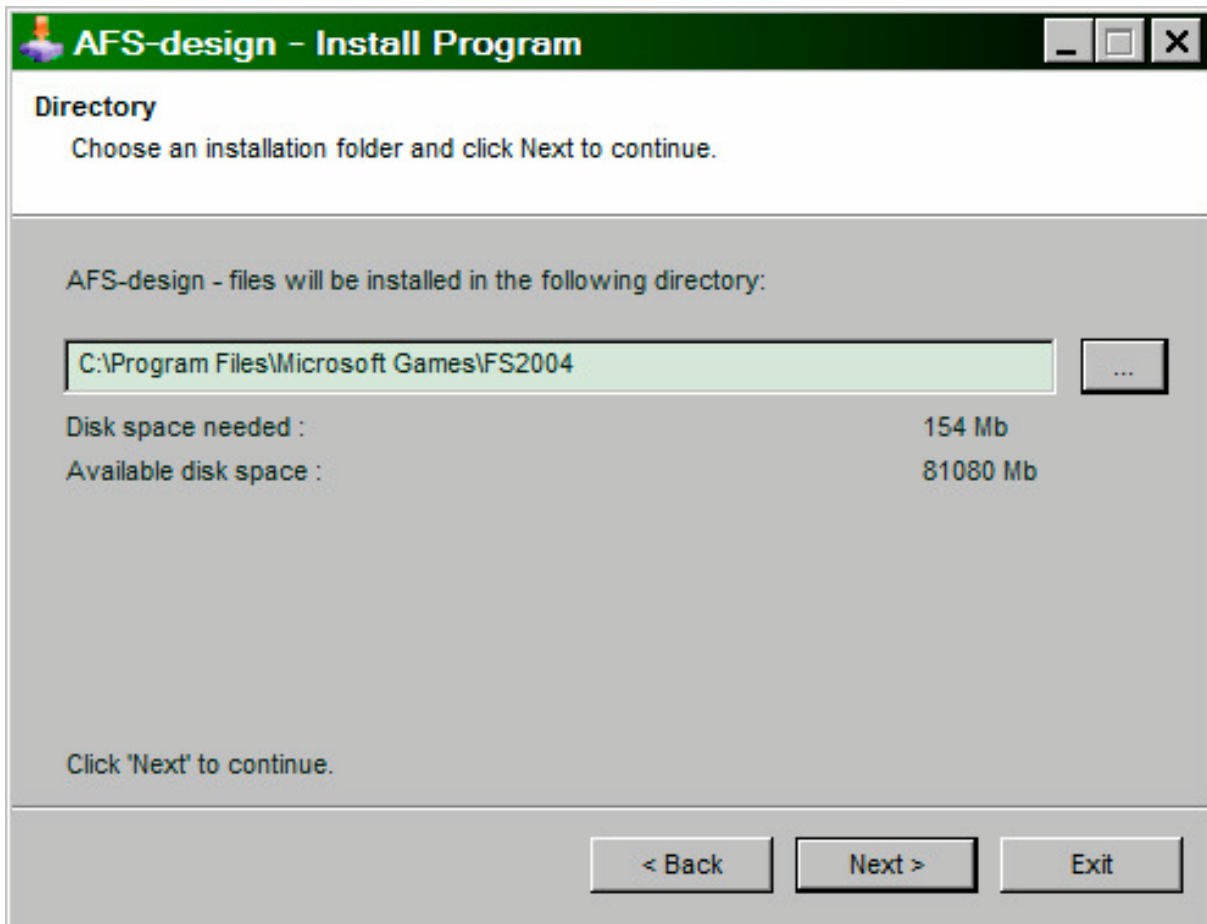
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System

System:	Windows 98 SE / Me / 2000 / XP or Vista
FS VERSION:	FSX (assisted SP1, SP2, Acceleration Pack) and FS2004
Filesize:	38 MB
Filesize hard drive:	3,2 GB
INSTALLATION:	EXE. file
PUBLISHER:	AFS-design
Homepage:	http://www.afs-design.de
SUPPORT mailto:	info@afs-design.de

Installation for FS2004

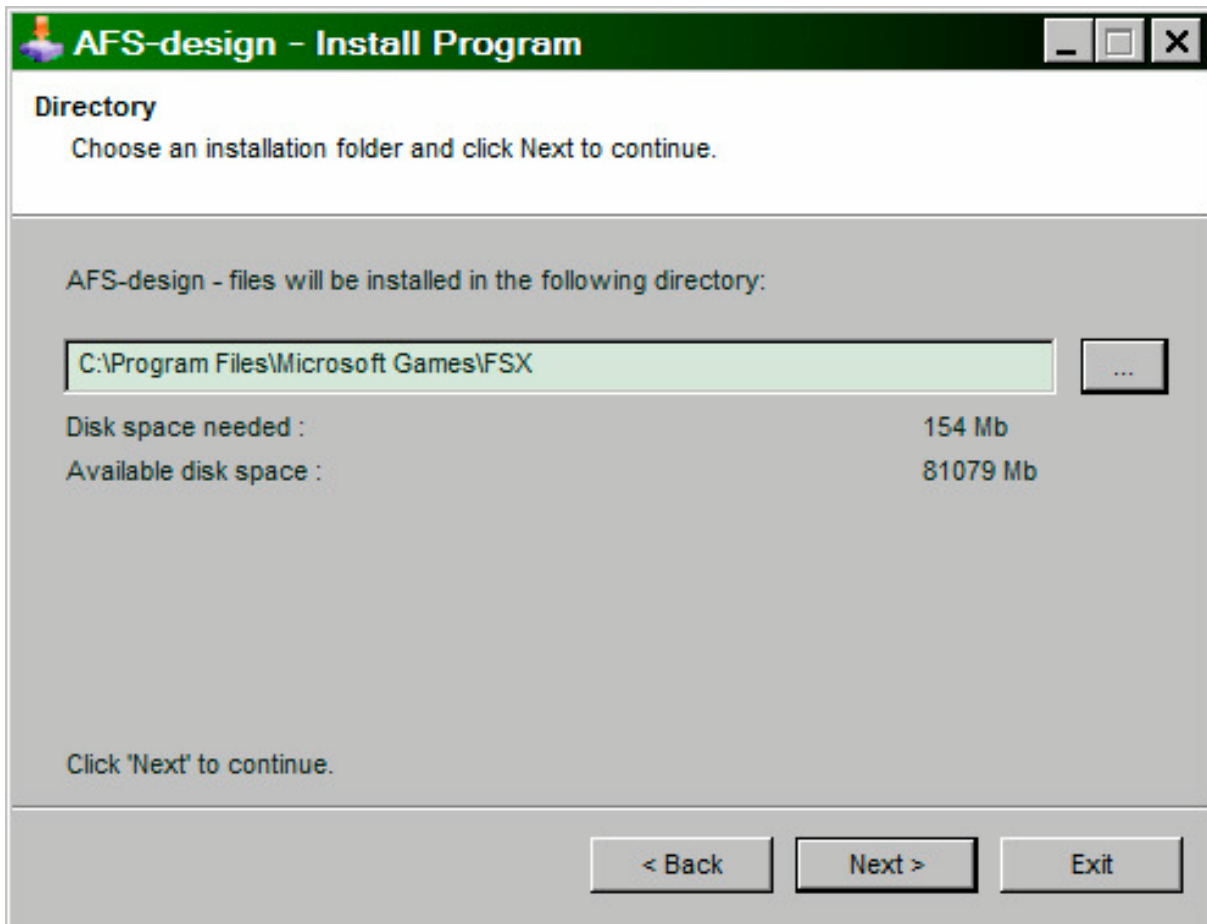
1. For FS2004 download the „AFS-____-FS9.exe“ to a temporary directory of your choice.
2. Please start the „AFS-____-FS9.exe“ and install.



3. Set in ... the main directory from FS2004, when not automatic choice.
4. Than start the Flight Simulator with the new sceneries.

Installation for FSX

1. For FSX download the „AFS-____-FSX.exe“ to a temporary directory of your choice.
2. Please start the „AFS-____-FSX.exe“ and install.

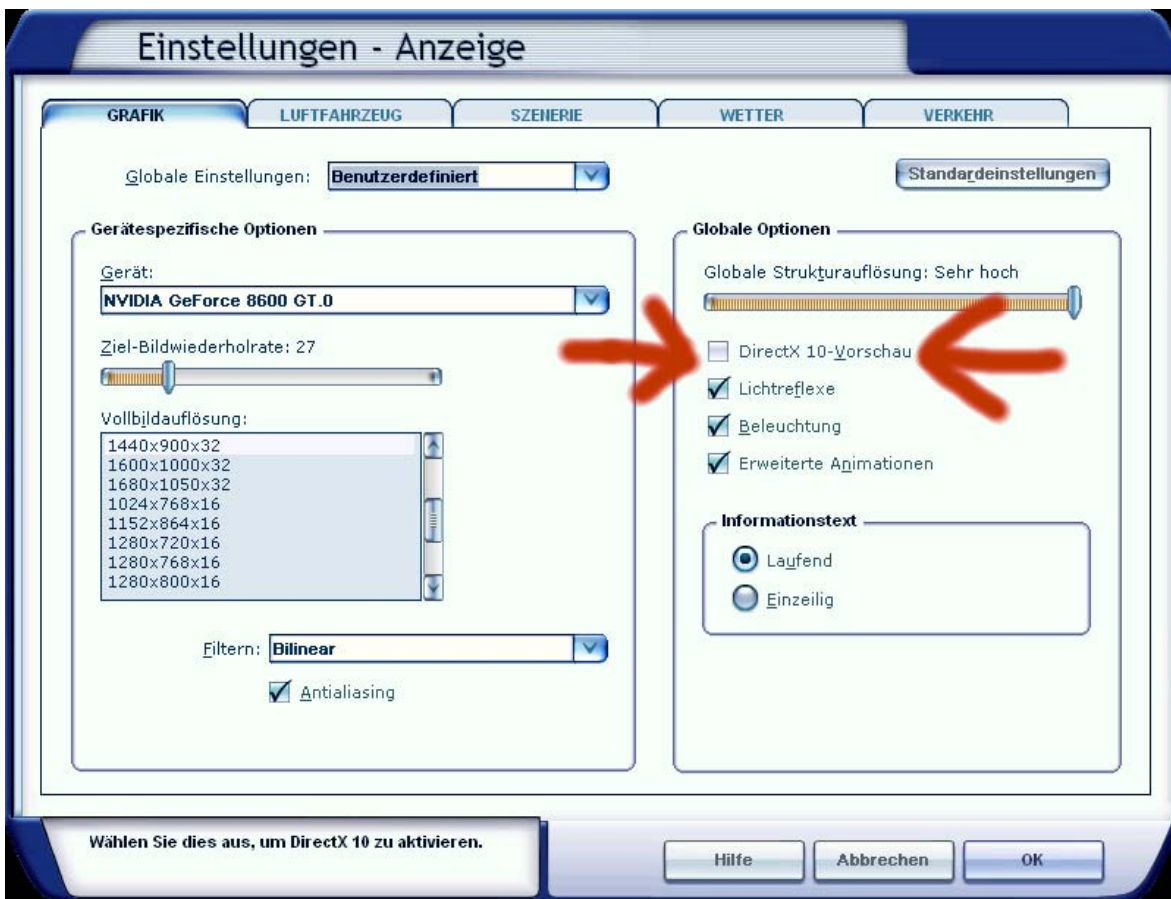


3. Set in ... the main directory from FSX, when not automatic choice.
4. Than start the Flight Simulator

Problem with DirectX

This program use DirectX9 only. Please switch out DirectX 10 trailer !

1. Install this add-on
2. Start the Microsoft FSX
3. Choose a plane your choice
4. Start the simualotion (click start)
5. In the simulation switch button "ALT"
6. Choose options / adjustment / display (graphic settings)
7. In the graphic settings windows choose graphic
8. deactivate "DirectX 10 trailer" in small box (without camisole)
9. Exit the FSX, and start the FSX new !



Aircraft selection

After you have started the Microsoft Flight Simulator, you can in Selectname: „Airbus“ select a Airbus A320 Family model.

The following models are available:

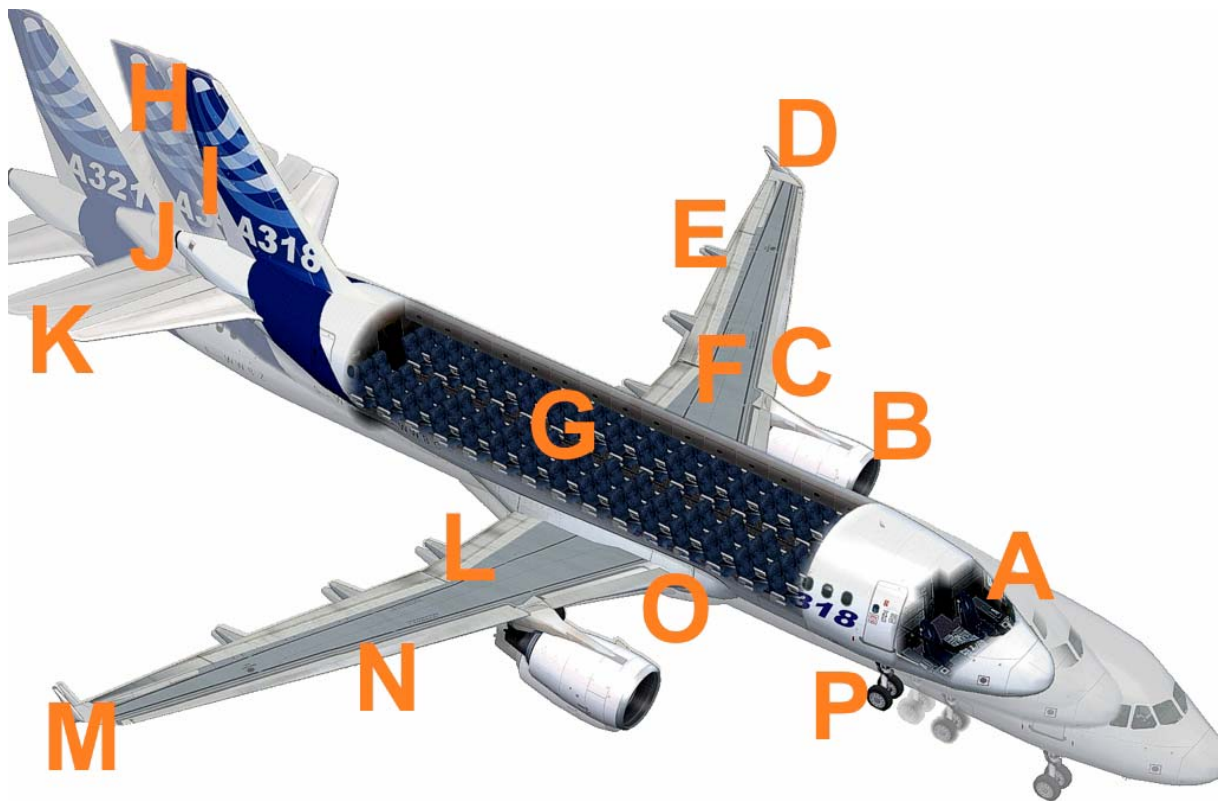
- AIRBUS A318
- AIRBUS A319
- AIRBUS A320 with Cabin interior model
- AIRBUS A321

These are equipped with a variety of liveries:

- Industrie House - A318, A319, A320, A321
- AIR BERLIN - A319, A320
- Germanwings - A319
- Lufthansa - A318, A319, A320, A321
- SWISS - A318, A319, A320, A321
- Air France - A318, A319, A320, A321
- easyJet - A319
- Grundlack - A318, A319, A320, A321
- LAN Airlines - A318, A319, A320
- United Airlines - A319, A320
- US Airways - A319, A320, A321
- China Airlines - A319, A320, A321
- British Airways - A318, A319, A320, A321
- Qatar Airways - A319, A320, A321
- Repaint Texture - A318, A319, A320, A321

To use the Flight Management Computer (FMC), it is important to create a flight plan. Please use the Flight Planner in the Microsoft Flight Simulator.

The models of the Airbus A320 family



- A - Cockpit (view change interior exterior model "S")
- B - Engines with reverse thrust (thrust "F3" and reverse thrust "F2")
- C - Slat left
- D - Red position light on the left with strobes
- E - Outer flaps left
- F - Air brakes left
- G - Cabin Interior - the model A320
- H - Various lengths of the A320 family (A318, A319, A320, A321)
- I - Rudder
- J - White on back position lights with strobes
- K - Elevator
- L - Internal flaps right
- M - Green position light on the left with strobes
- N - Slats right
- O - Landing lights under the fuselage
- P - Chassis ("G")

The virtual cockpit with the friendly co - pilot



Zoom in virtual cockpit by pressing the "+" or "-"

- A - Friendly co-pilot
- B - Right stick to vertical and Aileron control
- C - Pedall for rudder control
- D - Primärflightdisplay and multifunction display - pilot
- E - Autopilot control unit
- F - Center console
- G - Lower console
- H - Upper console
- I - Primärflightdisplay and multifunction display - Co-pilot

Autopilot



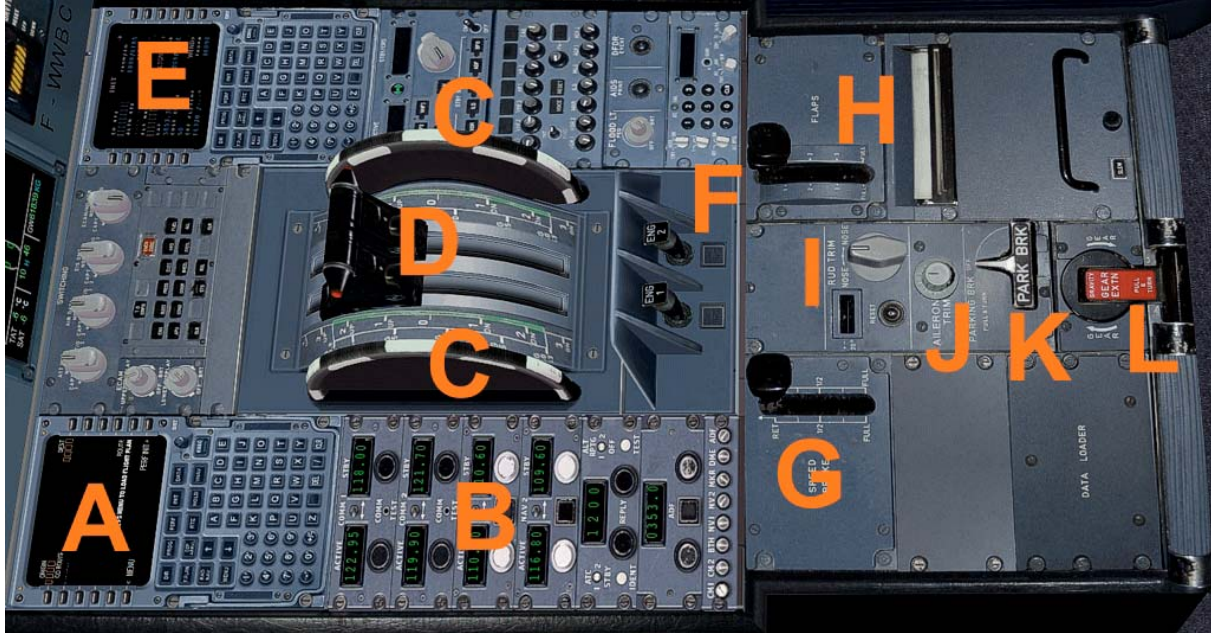
- A - ATC and GPS call in extra window
- B - Kneeboard with detailed checklists of the A320 family
- C - QNH input to the altimeter calibration
- D - Flight Director On / Off and ILS On / Off
- E - NAV and Mach switch
- F - Activation speed and vertical speed
- G - Speed in knots and heading data
- H - Required height and vertical speed
- I - Autopilot master switch
- J - Required height and vertical speed

Center console



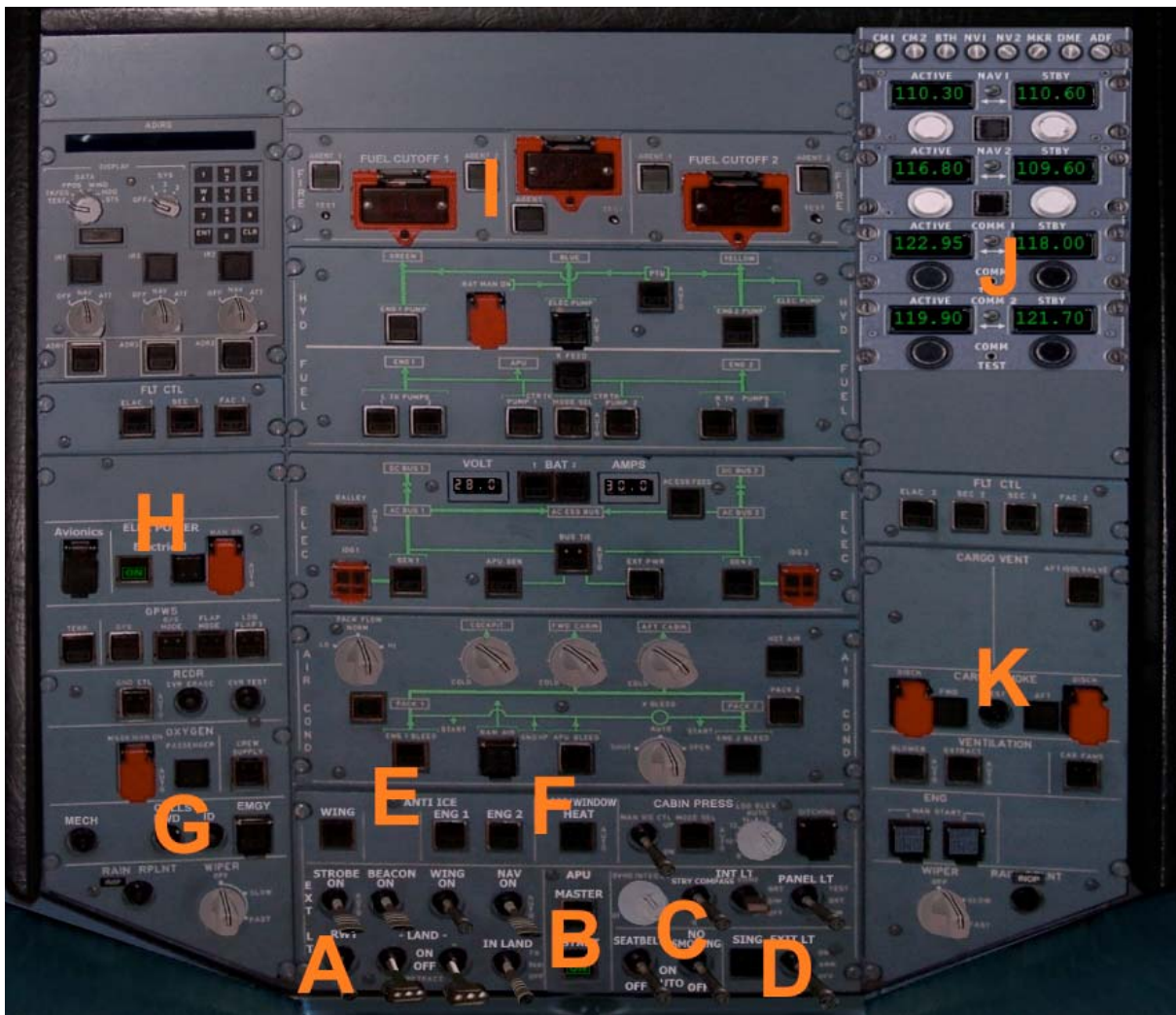
- A - Primärflighdisplay 2
- B - Mode switches for multi-function display
- C - Navigation button Nav / GPS
- D - ECAM display a change
- E - ECAM display two alternate
- F - Radio compass with two needles (RMI half and DME 1 / 2)
- G - Clock UTC / Local Time / Stopwatch
- H - ECAM display a
- I - ECAM display 2
- J - Status Display of the main landing gear
- K - Auto Brake Switch
- L - Main gear lever
- M - Brake force display
- N – Emergency gear down
- O - ATC - ID code (also to see on the exterior model)

Lower console



- A - Flight Management Computer (FMC) Pilot
- B - Navsettings (RAD 1 / 2, VOR 1 / 2, DME, Transponder, Identifies)
- C - Trimwheel elevator
- D - Thrust levers left / right to use (please right joystick)
- E - Flight Management Computer (FMC) Co-pilot
- F - Starter switch left / right engine
- G - Spoiler retract /
- H - Retract flaps from Sufenweise /
- I - Aileron trim
- J - Rudder
- K - Parking Brake
- L - Manual gear down

Upper console

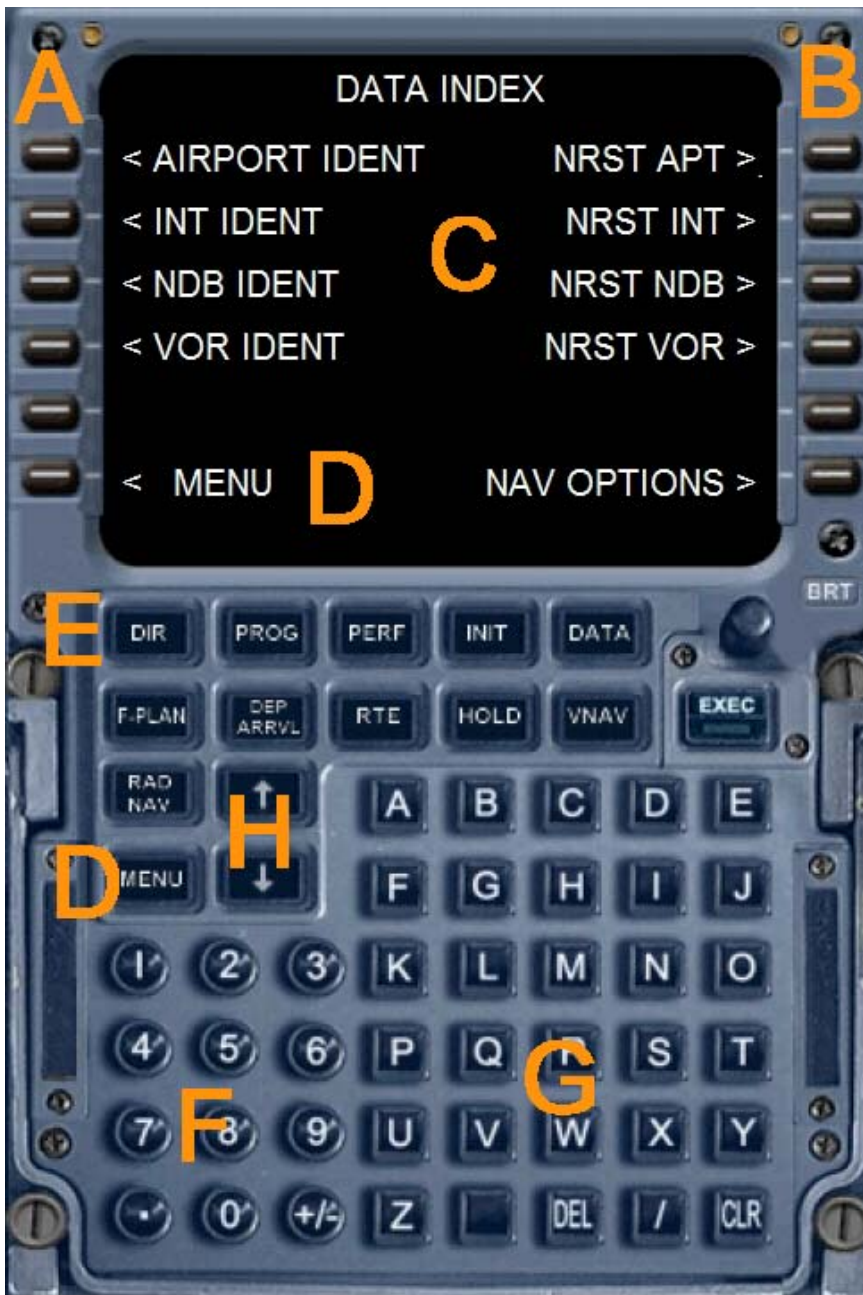


- A - Switch for Beacon-, Strobes-, Nav-, Landing- and Taxi- lights
- B - Master master switch with indicator light
- C - Higher: Switch for internal illumination, Panel lights
- C - Below: "Seatbelt" and "No Smoking" switch
- D - Exit switch
- E – Anti ice switch
- F – Pitoheat switch
- G - Call signs like transponder ID and emergency code
- H - Elektrik - main switch
- I - Cut Off the engines
- J - Upper Navsetting
- K - Open cargo doors / close

Flight Management Computer (FMC)

A Flight Management Computer (FMC) is a fundamental part of a modern aircraft's avionics. A FMC is a specialized computer system that automates a wide variety of in-flight tasks, reducing the workload on the flight crew to the point that modern aircraft no longer carry flight engineers or navigators. A primary function is in-flight management of the flight plan. Using various sensors (such as GPS and INS) to determine the aircraft's position, the FMC can guide the aircraft's autopilot along the flight plan. From the cockpit, the FMC is normally controlled through a Control Display Unit (CDU) which incorporates a small screen and keyboard. The FMC sends the flight plan for display on the ECAM, autopilot or Multi Function Display.





- A - Left selection keys L1 to L6
- B - Right selection keys R1 to R6
- C - Data output display of the Flight Management Computers
- D - Menu button or menu L6
- E - Direct various function pages
- F - Number pad (Alternatively, use the keyboard)
- G - Keypad (Alternatively, use the keyboard)
- H - Arrow keys to scroll function within a page

The following feature pages can either be selected through the direct selection (E) or be accessed through the menu.

<p>INIT REF <i>INIT REF-key</i></p>	<p>You can change the ALT CRZ (cruise altitude) to tender to carry out an automatic radio navigation VNAV calculation. Use the keypad to enter data and R1. To calculate VNAV press R6 (CALC VNAV), and then EXEC. You get a precise VNAV calculation to arrive at your destination airport. Also here is a perfect cruising altitude is displayed, and suggested a better altitude. Also displays information about weight and balance of the aircraft.</p>
<p>FMC – ROUTE <i>Flight Planner</i> <i>RTE -Key</i> <i>Arrow keys</i></p>	<p>To create a flight plan, please use the Microsoft Flight Simulator. Press "ALT". This appears above the menu bar. Click on "Flights" and choose the "flight planner" and create a flight plan. When you press the RTE button then in the FMC, your main route, as specified in the flight plan are displayed. You can use the arrow keys up / down access to other information sites.</p>
<p>DEPARTURE / ARRIVAL <i>DEP/ARR -Key</i></p>	<p>Here you have options for the destination airport. Click on R2, then you can select the desired number. Confirm with L4 or L5 and the press EXEC button to complete the selection. The aircraft will fly with the autopilot the desired WPT.</p>
<p>ATC <i>ATC- Key</i></p>	<p>It displays the current frequency in COM1, 2, Nav 1 and 2, and the current transponder code.</p>
<p>Vnav <i>VNAV - Key</i></p>	<p>Press the VNAV button to go to this site. Use the number keys to IAS and altitude data for any Wegpoint (WPT) Enter. IAS and ALT can also be automatically calculated by the FMC. When you press the EXEC button or R6, VNAV is activated. The data is then transmitted to the autopilot and adjusted the flight path to schedule, including the vertical navigation with the desired heights and speeds. With R6 VNAV can be deactivated again. The data in VNAV can change at any time easily.</p>
<p>FIX <i>Fix Key</i></p>	<p>If you click on Fix button, you can select all waypoints and fly it directly.</p>
<p>LEGS <i>LEGS - Key</i></p>	<p>Here, all waypoints (WPTS be), courses, distances and IAS / height of your flight plan or displayed on the VNAV page</p>
<p>Hold</p>	<p>To circumvent individual waypoints from the flight plan</p>
<p>Comm <i>COMM- Key</i></p>	<p>Here are screen idents, frequencies, and radials, and indicated distances for the two closest VORs and identified, and determines the nearest NDB. By the L1 - L5 and R1 - R5, you can send radio frequencies to NAV1, NAV2 and ADF.</p>

Progress <i>PROG- Key</i>	Here are the waypoints WPT value name, height, Time and fuel charge. It is further estimated the fuel to the next WPT WPT based on wind data, length and height variances true airspeed, SAT, and the remaining fuel.
IDENT	It shows some data about the aircraft
POSITION <i>MENU, L1</i> <i>Arrow keys</i>	Use the arrow keys to scroll through the page. The POS INIT page shows different positions. If you load a flight plan, the reference airport and the nearest airport in width, length, and GPS-POS is displayed. POS REF page displays your current position and speed over ground.
APPROACH <i>MENU L5</i>	Weight, wind data, Flapsposition and speeds are considered for the approach
NAV DATA <i>MENU, R1</i>	From this page, airports and Navaids, data and access to airports, intersections, and NDBs VORs are displayed.
AIRPORT IDENT <i>MENU L1</i> <i>Arrow keys</i>	To scroll through the Airport ID page, please use the arrow keys. Use the alphanumeric buttons to enter the ICAO airport and press L1. Now you can select with the arrow keys to various parameters. You can select the appropriate frequency, with appropriate radio equipment R1 - R6. The procedures are similar for INT, or VORs NDBs. On another page, you can set the navigation aid.
NEAREST	Display the next five airports, intersections, VORs or NDBs



The Airbus A318

The Airbus A318 is the smallest Airbus, who has flown to this day. It is designed specifically as a short-range airliner. The A318-100 takes in a typical two-class configuration (2-2 seating in business and 3-3 seating in economy class) 107 passengers. High-density configuration with a single class have 117 passengers. An Airbus A318 will cost about 44.9 million U.S. dollars, the development cost 300-350 million U.S. dollars, it was financed by Airbus and various industrial partners.



Technical data Airbus A318 –100:

Length	31,45 m
Span	34,1 m
Cabin width	3,96 m
Height	12,56 m
Wing area	122,6 m ²
Maximum take-off weight MTOW	68.000 kg
Take off run at MTOW	1.355 m
Cruising speed	840 km/h
Passengers	107 bis 133
Maximum range	2.700 bis 5.950 km
Fuel capacity	23.860 l
Doors	4
Emergency exits	2
Service ceiling	12.130 m
Fuel consumption	2.400 l
Engines	2 CFM56-5A each 104,5 kN

The Airbus A319

In a typical 2-2 seating in business class and 3-3 seating in Economy Class summarizes the A319 cabin 124 passengers. In densest seating 142 passengers can travel with. Since a large order of the airline Easyjet, which demanded a higher number of seats, the A319 will also be built with four emergency exits over the wing, so that is possible in a single-class configuration up to 156 seats. The A319 program was launched in 1993, the first flight took place on 25 August 1995 from Hamburg-Finkenwerder instead. A new Airbus A319-100 will cost approximately officially 52.4 million U.S. dollars, to raise about 275 million U.S. dollars had to Airbus for development.



Technical data Airbus A319 –100

Length	33,84 m
Span	34,1 m
Cabin width	3,96 m
Height	11,76 m
Wing area	122,6 m ²
Maximum take-off weight MTOW	75.500 kg
Take off run at MTOW	1.950 m
Cruising speed	840 km/h
Passengers	124 bis 159
Maximum range	3.350 until 6.800 km
Fuel capacity	23.860 l
Doors	4
Emergency exits	normal 2, optional 4
Service ceiling	12.130 m
Fuel consumption	2.600 l
Engines	2 CFM56-5A each 104,5 kN

The Airbus A320

In the base model A320 can accommodate 180 maximum passengers. In a typical two-class configuration (2-2 seating in business class and 3-3 seating in Economy Class) will fit 150 passengers in the cabin. The A320 program was launched in 1982, the first flight took place on 22 February 1987 instead. The following year, the aircraft and its approval in March 1988, the first A320 delivered to the French airline Air France.



Technical data Airbus A320 –200

Length	37,57 m
Span	34,1 m
Cabin width	3,96 m
Height	11,76 m
Wing area	122,6 m ²
Maximum take-off weight MTOW	77.000 kg
Take off run at MTOW	2.090 m
Cruising speed	840 km/h
Passengers	150 bis 180
Maximum range	5.700 km
Fuel capacity	29.840 l
Doors	4
Emergency exits	4
Service ceiling	12.130 m
Fuel consumption	2. 700 l
Engines	2 CFM56-5A each 118 kN

Der Airbus A321

In a typical two-class configuration (2-2 seating in business and 3-3 seating in Economy Class) cabin offers the 186 passengers. Using a narrower single-class seating (continuous 3-3 seating) the aircraft for up to 220 passengers is suitable. So that the A321 is in competition with the larger models of the Boeing-737 airplane family. End of February 2009 Airbus delivered the 500th Machine to Air France. The A321 program was launched in 1989 and the first flight took place in March 1993. In December of that year, the aircraft's registration in Europe.



Technical data Airbus A321 –200:

Length	44,51 m
Span	34,1 m
Cabin width	3,96 m
Height	11,76 m
Wing area	122,6 m ²
Maximum take-off weight MTOW	93.500 kg
Take off run at MTOW	2.180 m
Cruising speed	840 km/h
Passengers	185 bis 220
Maximum range	5.700 km
Fuel capacity	29.680 l
Doors	4
Emergency exits	4
Service ceiling	12.130 m
Fuel consumption	2. 900 l
Engines	2 CFM56-5A each 118 kN

Right

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This product is a Add-On for the Microsoft Flight Simulator. It is build with FSDesign Studio 3, PHP and XML. Please use a licenceversion of the Flight Simulator only.

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