Airbus Series Evolution

Wilco Publishing – feelThere.com

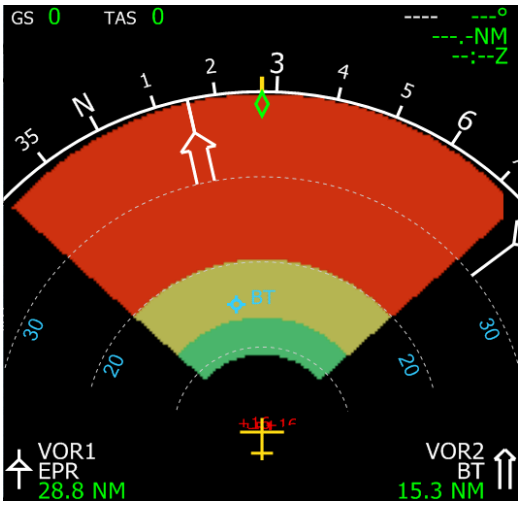
NEW FEATURES

1. RealityXP Weather Radar

A new weather radar developed by RealityXP is available in your Airbus aircrafts. Thanks to a partnership with RealityXP, this radar is fully integrated into the Navigation Display (ND) and follows the ND range/mode and brightness settings. The route and the moving map are still visible as they are displayed on top of the weather radar display.
To activate the radar, a new switch is available on the pedestal console. When the radar is switched on, it first enters in test mode for some seconds and then displays the weather as it is in Flight Simulator.

Note: The radar switch is in the 2D cockpit only, it can not be manipulated from the virtual cockpit.

VERY IMPORTANT : the Weather Radar range must be set between 20 and 80 Nm. If you select 10 Nm range, the radar won't be active.



2. Head-Up Display (HUD)

Based on specifications from the real manufacturer, a head-up display has been developed and integrated in the Airbus cockpits. This HUD was first developed for the Airbus A380 and A400M, it is proposed on all the Airbus aircrafts.

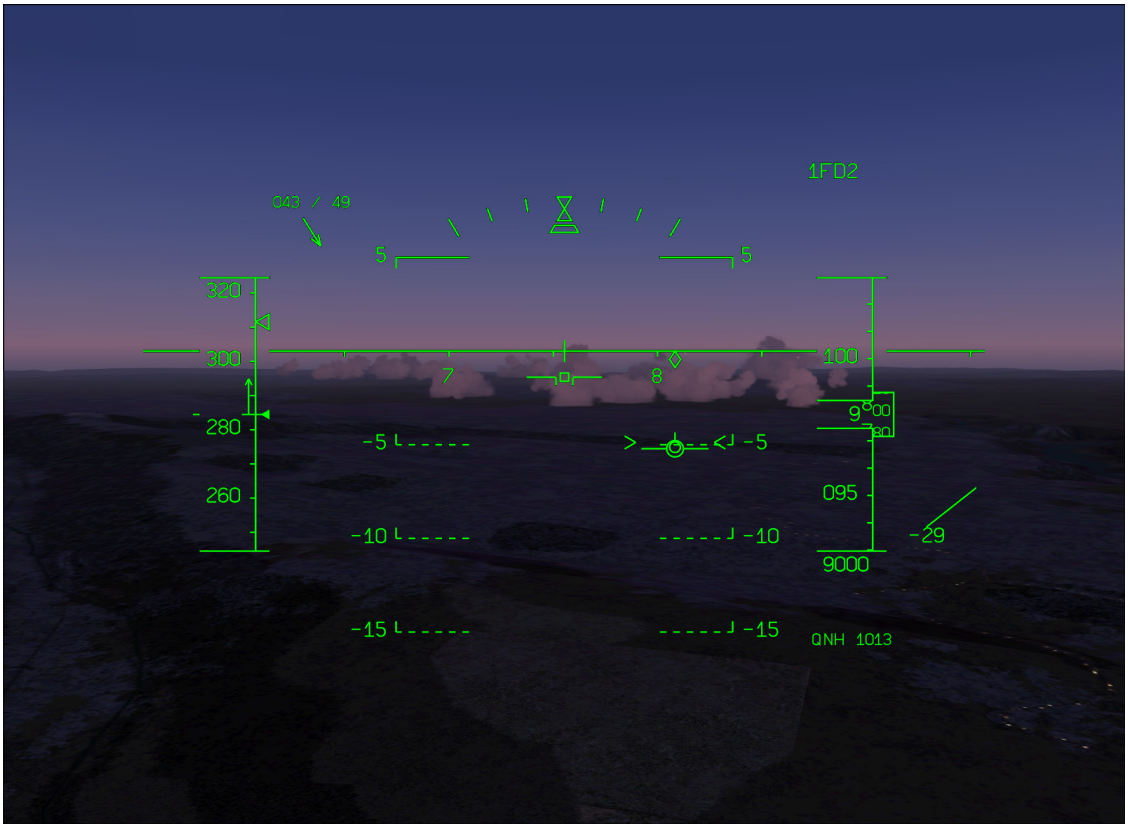
The HUD can be displayed in the 2D cockpit but it is not the best way to use it. The HUD is designed to be used in full-screen mode, accessible by pressing the W key. Pressing W once switches the full-screen HUD, pressing W a second time switches to full screen mode without HUD, and pressing W a third time switches back to the standard 2D panel view.

All the necessary flight information is displayed on the HUD so that no other instrument is needed. You can look through the window while flying the aircraft on the right trajectory. The HUD is especially useful to fly the low-visibility approaches manually. It even allows the lower the minimal visibility distance; the aircraft can land in any visibility conditions, whatever the weather.

HUD Control buttons

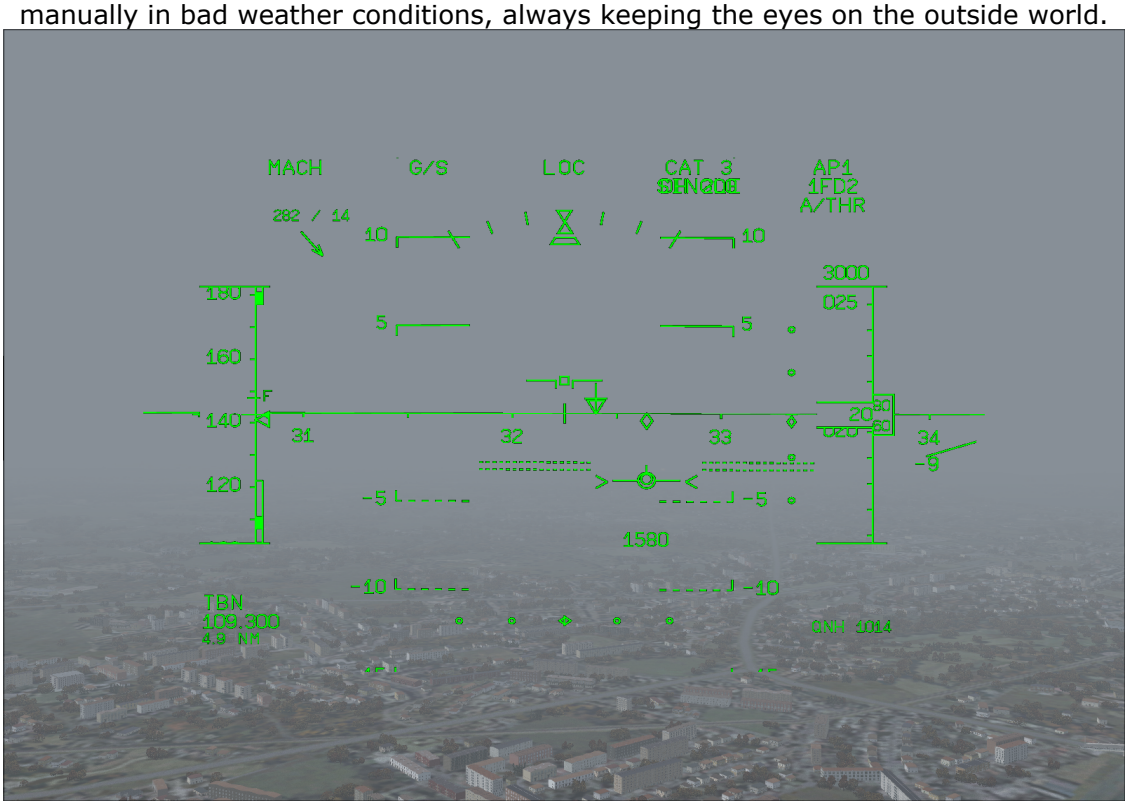
Note: The Head-Up Display cannot be used in the virtual cockpit.

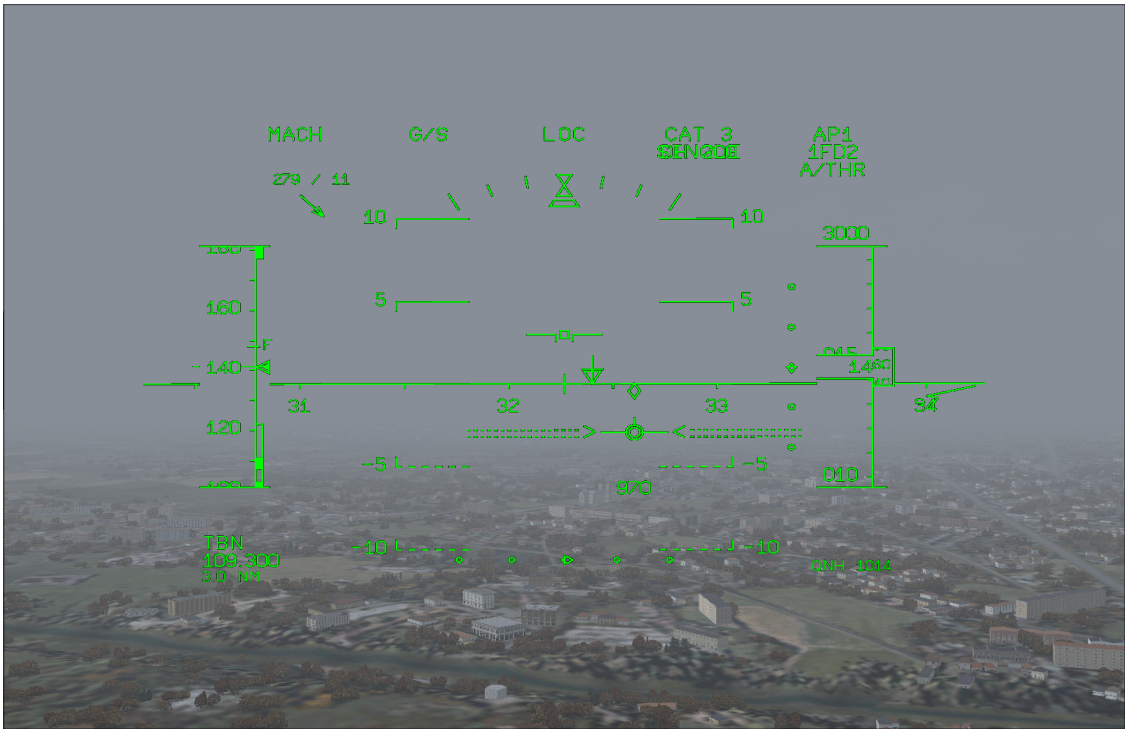
Even if the HUD can appear in the 2D cockpit, it is not the best way to use it.

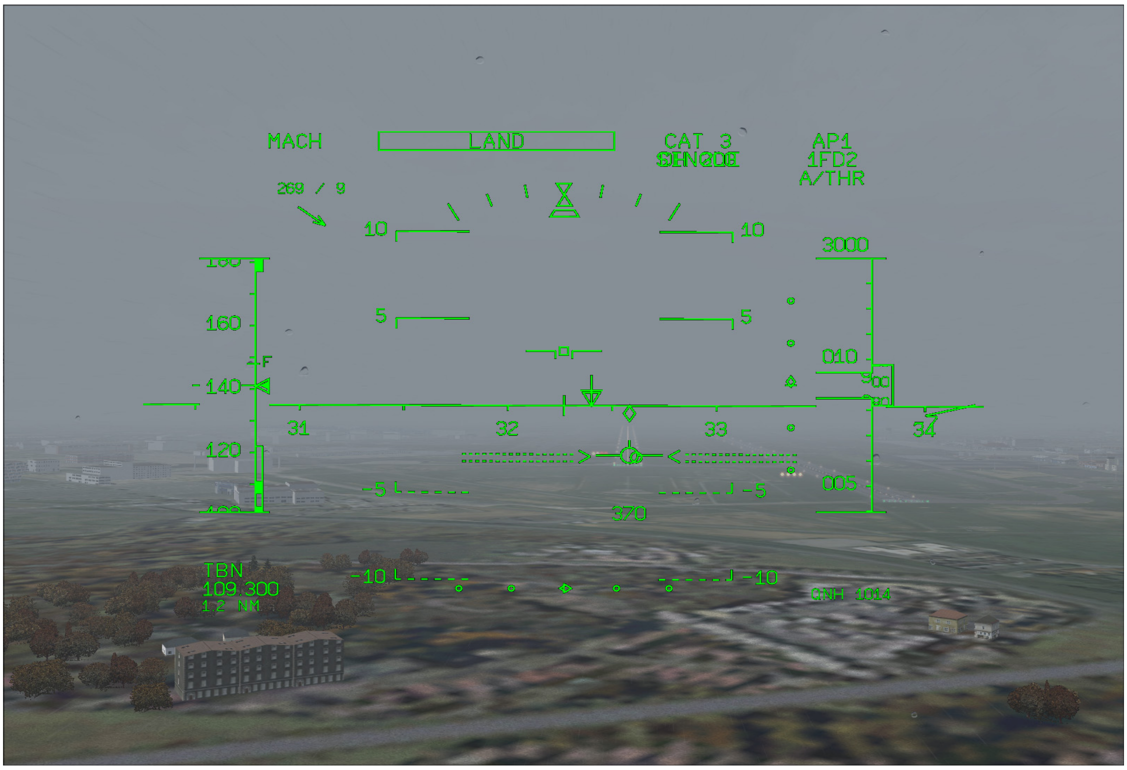


Full-screen mode is the best way to fly with the HUD.

This images sequence below shows how the HUD can be used to fly the aircraft manually in bad weather conditions, always keeping the eyes on the outside world.



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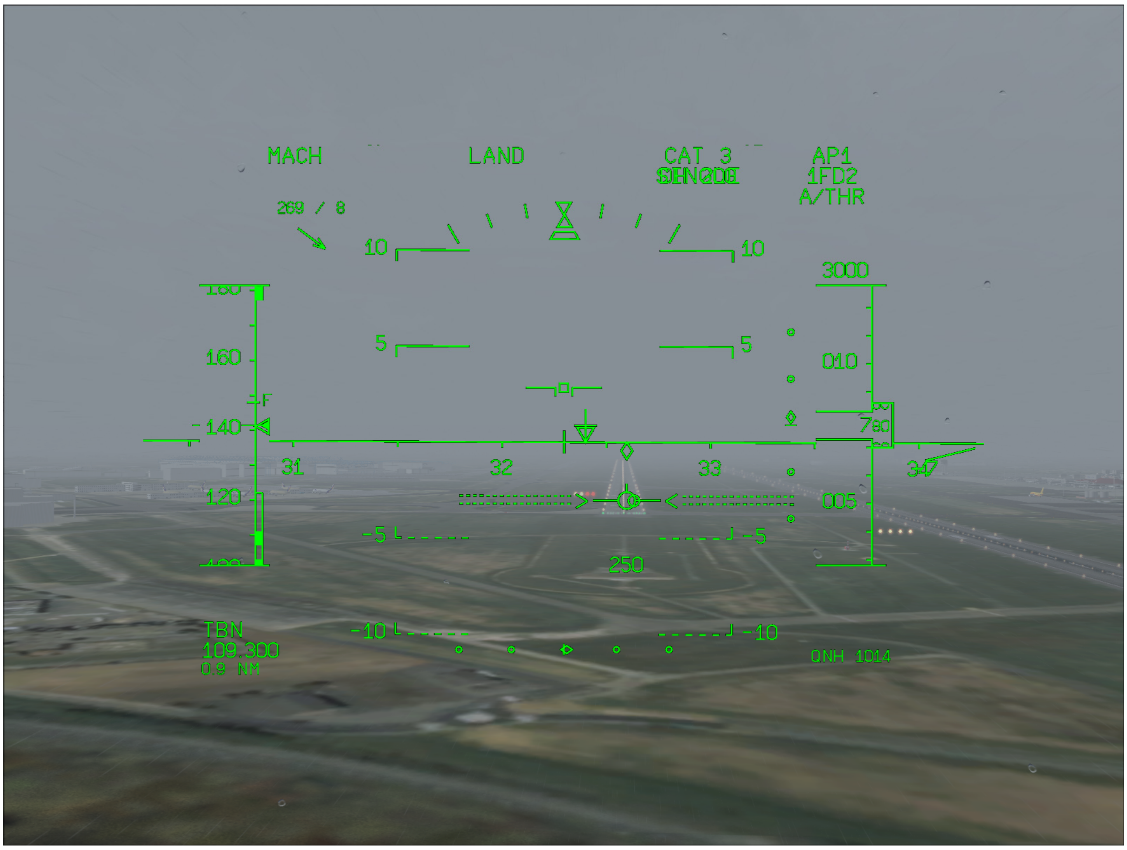
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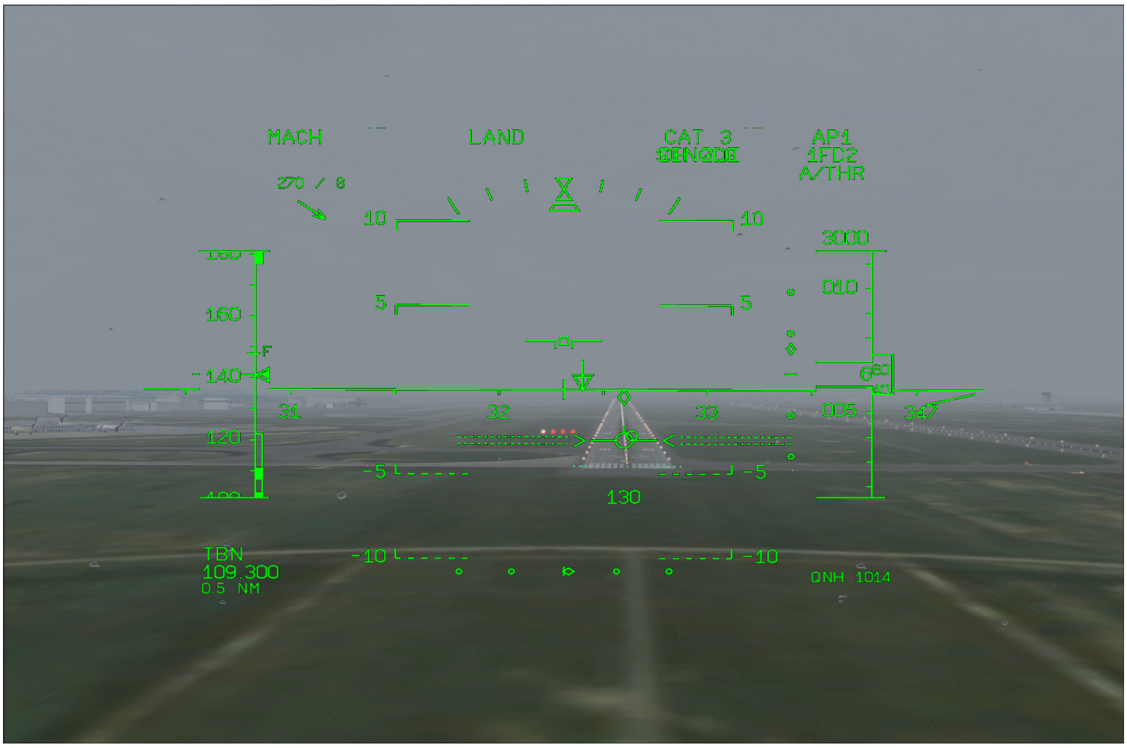
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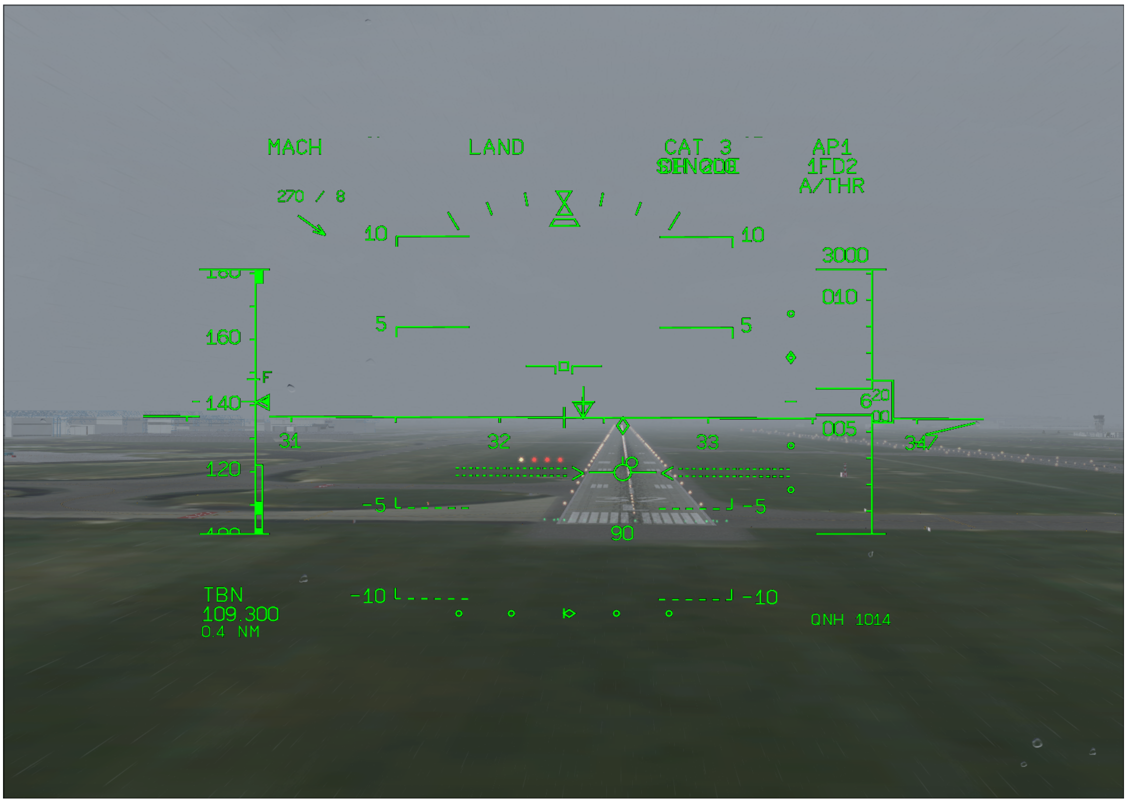
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NAVIGATION

3. SID/STAR Management

The most important part of this upgrade is in the management of the SID/STAR procedures. These procedures are described in the navigation database. The management of the information contained in the database has been improved so that all the waypoints that describe a SID or STAR procedure are no taken into account, whatever their type. This is especially visible for waypoints that describe a turn to a waypoint or a radial interception because a nice curved route is then drawn on the navigation display (ND).

Important Note:
In order to take advantage of these improvements, getting a recent version (AIRAC) of the navigation database is strongly recommended. The navigation database provided by Airbus Series Evolution is the AIRAC1012 (December 2010). You can get a more recent database at www.navigraph.com. This company provides the FeelThere database that is used with the Wilco Airbus Series for a low price, and you can get constant updates if you wish (a new AIRAC is released every month).

Some examples of the management of all the waypoint types are shown on these images:

Toulouse-Blagnac LFBO – SID LACOU5A (Runway 14R)
Picture taken with AIRAC0813

Brest LFRB – SID DIN4X (Runway 25L)
Picture taken with AIRAC0813

4. DIR operation

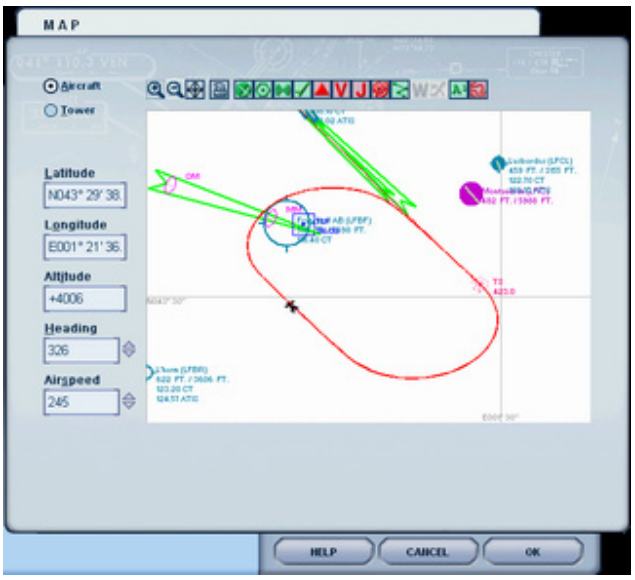
The DIR operation used to proceed direct to a route waypoint has been improved. A temporary flight plan is created (like for any flight plan modification) and requires a validation. In addition, the trajectory is drawn as the aircraft will fly, with a curved route when appropriate.

The trajectory after the turning point (T-P) is properly drawn on the ND.

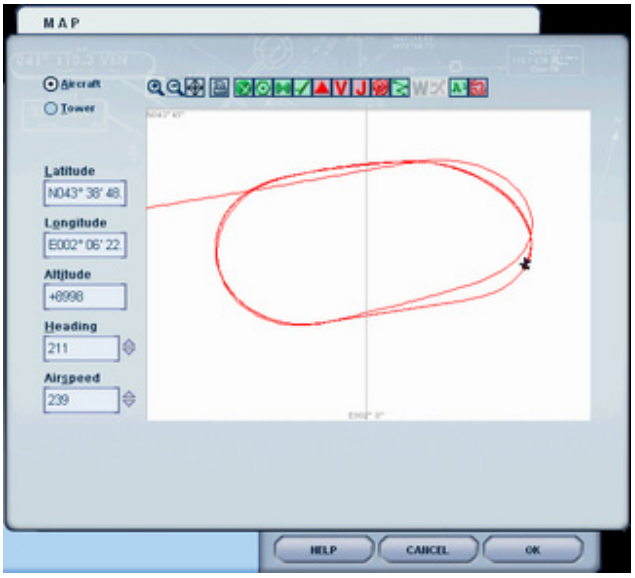
5. Holding Patterns

The management of holding patterns has been improved. The aircraft flies the pattern trajectory almost perfectly, as shown on the pictures below (made with the FS2004 track recorder). Some tests have been conducted with cross wind.

Holding pattern without wind, some turns have been made...



...without wind, more turns. The trajectory is still good.



With variable winds, the trajectory is not perfect, but still good.

6. Target Altitude

The target climb or descent altitude is shown on the route with a blue arrow and its position is updated in real time. These arrows are sometimes called "hockey sticks".

The target altitude of 8000 ft will be reached at the blue arrow position.

7. TOC Real-Time Update

The position of the top-of-climb (TOC) point is computed in real time. It is very important if the ATC asks for a level during the climb. If it happens, the TOC point is moved accordingly instead of being wrongly positioned.

Note:
To avoid a hit on performance and to make it more realistic, the position of the target altitude points and the TOC points are computed at a low frequency.

8. Second ADF

A second ADF receiver has been added, it is fully functional. On the navigation display, 2 different green needles can show the 2 ADF signals.

9. SID/STAR filtering

When a departure or arrival runway is selected, only the SID/STAR procedures that apply for the selected runway are displayed. Hiding the useless procedures reduces the list of the displayed SID/STAR, making the selection easier.

10.Flight Plan Edition

When a new waypoint is inserted on the F-PLN page (immediate waypoint insertion) at the place of a discontinuity, the discontinuity is shifted down and no discontinuity is added.

There is a flight plan discontinuity between TOP and CAS.

The VOG waypoint is added at line 3, the discontinuity is shifted down, between VOG and CAS

11.Flight Plan Display

As the aircraft flies toward the next waypoint, the displayed distance to the next waypoint is updated in real time.

12.Approach Speed

The managed speed on approach depends on the flap handle position instead of depending on the flaps position, like in the real aircraft. This makes the approach the approach smoother with less variation of engine power.

SYSTEMS

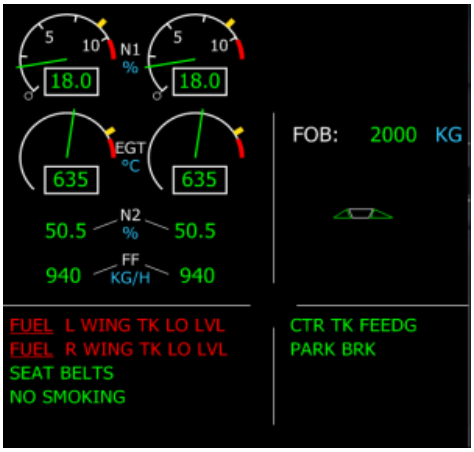
13.Electricity

All the electric devices, such as lights (landing, taxi, beacon, strobes) and the 6 EFIS screens (PFD, ND, E/WD and SD) are properly managed and can be switched on only if the appropriate electric source is available, APU, GPU or engine generator.

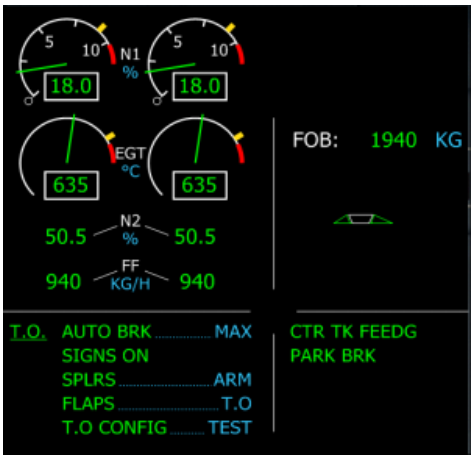
Note:
If you fly in 3D cockpit (Virtual Cockpit), you may be surprised by the landing light switch. This is not a bug. Because of the new management of the electric system, the lights can be turned on only if the appropriate electric source is available. As the 3D model and the virtual cockpit can not be changed, the only way to model this is to force the light switch off when the appropriate source is not available. If you look in the 2D panel, it works perfect, but it looks strange in the virtual cockpit.

14.Alert Clear and Recall

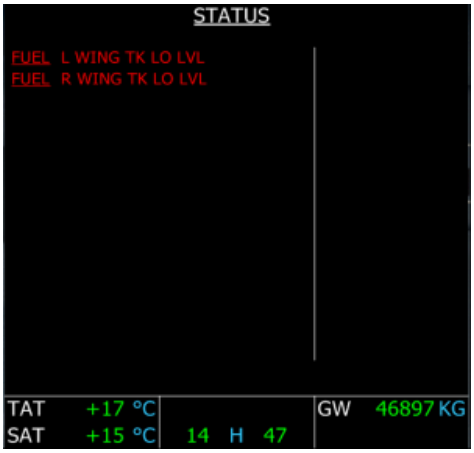
The alerts displayed on the E/WD can be cleared and recalled if necessary. This is especially important when a master caution alert (displayed in red) is shown because it blocks the display of the take off/landing memo.
The displayed alerts can be cleared by pressing the CLR button on the ECAM Control Panel. When cleared, any alert can still be seen on the STATUS page that can be displayed by pressing the STS button. Pressing the recall (RCL) button brings the alerts back on the E/WD.



Low fuel alerts are displayed on the E/WD. With these alerts, the takeoff or landing memo will never be displayed.



Clearing the alerts makes them disappear and the takeoff memo can be displayed.



The alerts are still there, they can be seen on the SD STATUS page.

15.Fly-by-Wire (auto-coordination)

The fly-by-wire system provides auto-coordination. The rudder pedals are active even if auto-coordination is active. This allows you to "kick" the aircraft, very important with crosswind, like in the real aircraft.

16.Computed Speeds

The FACs (Flight Augmentation Computers) are in charge of computing the Green Dot, F and S speeds. Consequently, these speeds are not displayed on the PFD speed tape if both FACs are off.

17.Fuel Tank Management

The center tank fuel feeding is active only when the slats/flaps are not extended. During take off and landing, each engine must be fed by its own tank. In case of a problem in the fuel, both engines would not stop at the same time.

18.Metric Altitude

The metric altitude is implemented: the FCU selected altitude is displayed on the bottom part of the SD.

19.Speed Brake Alert

A new alert has been implemented to display a warning if the speed brakes are deployed while the engines are providing thrust.

20.FADEC

Improved multi-throttle devices to control each thrust lever independently.

21.Engine and Door Selection

The Engine selection works fine using the FS standard keys E-1, 2, 3, 4. This allows separate engine control with a single throttle lever.
It is the same for the doors: Shift-E-1 and 2 open/close the aircraft doors.

22.Radio

The radio master switch located on the Radio Management Panel is efficient and the radio stops when the switch is off. In addition, this switch is turned off when cold & dark option is selected.

Note:
Because of the way avionics are modeled in FS2004/FSX, the only way to turn the radio off is to turn the avionics off, which shuts down other systems. Consequently, the AP and the FD will not work if the radio is turned off. Don't forget to turn it on when starting the aircraft.

23.Hydraulics - Yellow Electric Pump

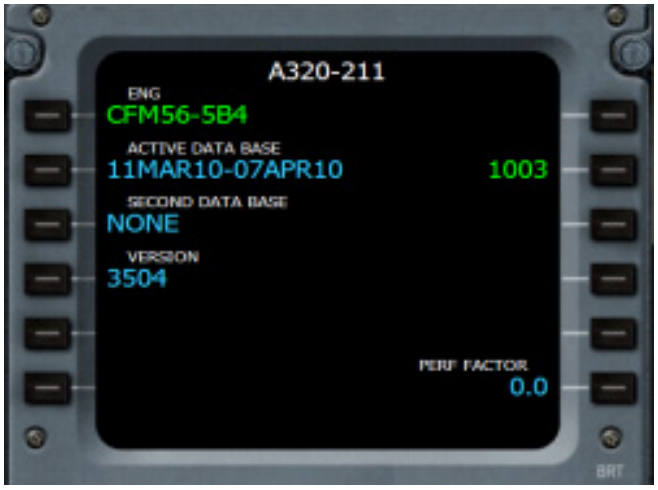
The yellow electric pump has its own sound, familiar to all A320 passengers.

24.Landing Lights

On the A320 series (Volume 1) specific sound is heard when the landing lights are deployed. This is because the landing lights on these aircrafts are deployed below the wings when they are turned on.

25.MCDU AIRAC Cycle and Version

The AIRAC cycle is displayed on the MCDU A/C STATUS Page.
The current version of the Wilco Airbus systems has been added on this same page, at the VERSION line.



26.SD DOOR Page

The door status page shows the right door selections.

27.Network Flying

The TCAS mode is compliant with the IVAO/SquawkBox TCAS specifications, very useful for network flights. The AUTO mode is implemented so that the TCAS is automatically set to C-mode when the aircraft leaves the ground, and set back to standby mode when the wheels touch the ground upon landing.

28.32-bits rendering

The EFIS screens (PFD, ND, E/WD and SD) are rendered in 32-bits instead of the standard 8-bits mode used by FS. Rendering is improved without any impact on the refresh rate.

FSX Specific

29.Push-back steering

FSX users will be happy to see the aircraft can be steered during pushback with PPU in FSX. This feature used to work in FS2004 only.

30.Cold & Dark

FSX users had some trouble using the cold & dark feature because the aircraft configuration menu is not present in FSX (it is in FS2004 only). In order to make their life easier, the cold & dark feature can be activated through a key press. The key can be defined in the key configurator.

Others

31.Multiple Monitor Display

Improved multi-monitors management for pedestal and overhead consoles. Some people who have several monitors can easily manage pedestal and overhead views on multiple monitors.

32.Expert Mode

The Expert mode is fully implemented : no MCDU assistance is available when this mode is selected.

33.Improved compatibility

Improved compatibility with FSX SP2, Acceleration Pack and DX10 (e.g. dark windows,...).