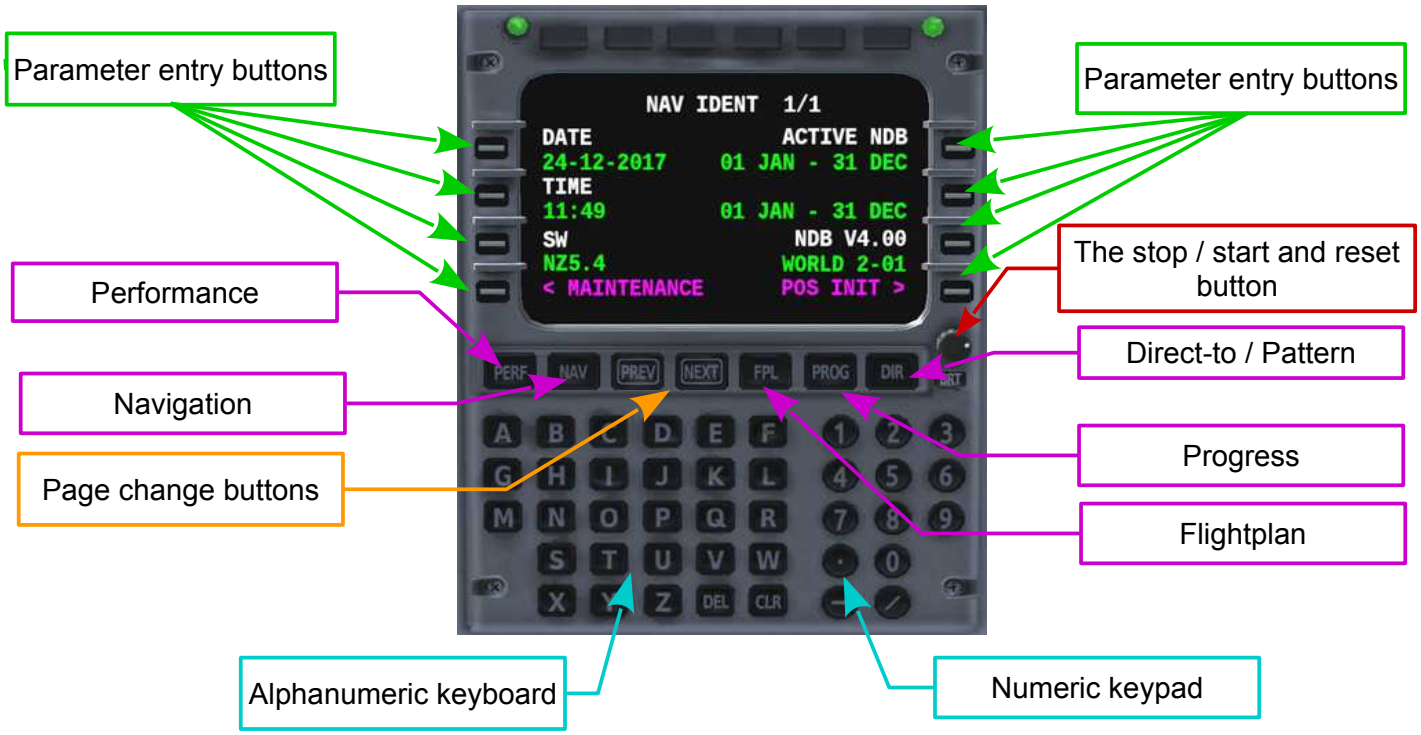
CITATION X

The CDU

The CDU (Control Display Unit) is the input module used by the FMS (Flight Management System) to manage a flight plan and provide pilots with the necessary data (piloting, fuel, estimated consumption, etc.).

It looks like this:



The screen shown below is displayed when the device is powered on.
To fully understand the CDU configuration logic, we are going to program a flight from LFOH (Le Havre) to LFRK (Caen) by making a vertical beacon from DVL (Deauville).

POSITIONING lights up for 10 sec before allowing access to the CDU functions

The plane's GPS coordinates are displayed.

Pressing any of these 3 buttons loads the positioning data and allows access to the flight plan

The first flight plan data entry page was displayed. Not having a flight plan already recorded, we are going to set one up:

The airport and the runway we are on are displayed automatically

We will enter the destination airport by typing on the alphanumeric keypad LFRK

As we type LFRK it is shown on the last line (scratchpad)

To validate LFRK, press the button corresponding to our destination

A new page has just been displayed allowing you to enter Waypoints (Wp).

LFRK is accepted as the destination airport

You must also enter the arrival runway.

To do this, press the button in front of ARRIVAL

Let's press the button in front of RUNWAY

LFRK's available runways is displayed

We choose runway 31 which is lucky enough to have an ILS, by clicking on the corresponding button

Runway 31 is loaded succesfully

Let's go back to our previous page

At this stage we could configure the approach Wp …but we will do it later!

Let's go back to our flight plan

Runway 31 appears here

Now let's take care of the departure by clicking on this button

LFOH's runways are here. As we are already on track 22, no need to select it again

We will configure the SIDs (Standard Instruments Departure)

Only the SIDs generated by FG (DEFAULT) are accessible. We choose them.

SIDs are loaded

SIDs are loaded

As well as their altitudes (defined by FG) ...

On the next page, by pressing the NEXT button:

To delete an entry, press DEL.

DELETE is shown in the scratchpad

We have deleted waypoint 22-6 by clicking on the corresponding button

Page 2 being filled with SIDs, let's go to page 3 by pressing the NEXT button

Here we have entries available to set up our personal waypoints.

Enter our DVL waypoint using the alphanumeric keypad. It is shown in the scratchpad.

We enter it at the first available place.

DVL is loaded

We can also enter an altitude in the form "feet" or FL and a speed in the form kt or mach (here 330 kt)

We are now going to worry about the arrival at destination.
So let's click on ARRIVAL

We select APPROACH

Then DEFAULT
(waypoints calculated by FG)

Back to our ARRIVAL page

DEFAULT is loaded

We are done with our approach Wp.
Back to our flight plan
(Note: STARs are not provided by FG)

Here we are back to the first page of our flight plan.
To go to the next page, click on NEXT

The approach waypoints are well recorded.

With their altitudes (ft) generated by FG

With another click on NEXT we will display the following page

This is the last approach waypoint. It bears the GS mark (GlideSlope)

WARNING: If modifications or additions of Wp are necessary, it must be done before closing the flight plan.

Now we will close our flight plan. To do this, we click on the button in front of the arrival airport.

LFRK is shown in the scratchpad.

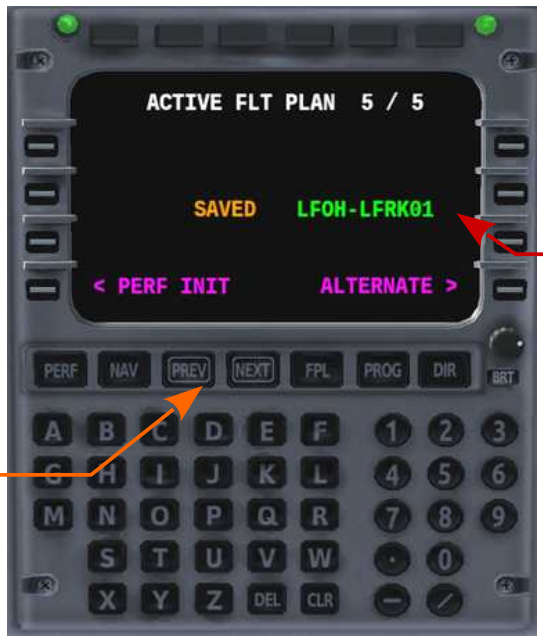
We will transfer it to the free space by pressing the corresponding button.

Entering the destination airport on one of the left lines closes (activates) the flight plan

This is the last page of our flight plan. Now we have the option to save it.

The title of our flight plan being pre-defined, all that remains is to add a number from 00 to 99

Let's click on this button to save our plan.



Our plan is saved in / sim / fg-home:
"/ Aircraft-data / FlightPlans»

Several clicks on PREV or just one on FPL will take you back to the first page of our flight plan.

Note:
It is not mandatory to save the flight plan.

Back to the first page. The arrow indicates the position of the aircraft which is currently at the end of the runway, ready to take off

This flight plan is closed because the destination airport is the last waypoint

To deactivate the plan, press the DEL key

DELETE is shown in the scratchpad

By pressing the button in front of LFRK 31, it disappears and… deactivates the flight plan.

Then all you have to do is enter the new Waypoints without forgetting to reactivate the flight plan as we did previously.

Programming a diversion

The diversion is programmed from the save flight plan page, by pressing the "ALTERNATE" button

The departure remains unchanged and is displayed automatically

Choose LFRN (Rennes) as the diversion airport

The diversion airport is validated by pressing this button.

Access the list of runways via this button.

Let's choose runway 28

Access to the waypoints entry page using this button.

Confirmation of the runway selection

This page allows the entry of waypoints with their altitude and speed, as on the main flight plan.

There is no access to the "Star" and "Approach" list as on the main flight plan. A default approach will be automatically generated if the diversion is chosen in flight.

We choose the LGL beacon in the event of a diversion

LGL entered here.

We can also choose an altitude to overfly the beacon

The altitude is entered on the line corresponding to the waypoint. It is automatically converted to the correct format.

We close the diversion flight plan by clicking on this button ...

... Then by pressing the button for a free slot.

Return to the main flight plan using this button.

PERF (Performance)

By pressing the PERF button, we enter the PERFORMANCE pages of the CDU

The second page is accessible by the NEXT or NEXT PAGE buttons

This is where the various speed limits are programmed. Those that are listed are the default ones. They can be modified by entering a value in kt or mach and clicking on the corresponding button

Next page

Programming the cruising altitude

The descent slope can be programmed between 3° and 5°.

On this page the departure and arrival zones (CTR) are programmed with their restrictions indicated on the aeronautical charts.
Here, the take-off speed is limited to 200 kt in a cylinder 2,500 ft high and with a radius of 4.0 nm around the airport.

Next page

On this page the approach speeds can be set according to the flaps setting.
The default values are those recommended in the aircraft manual.

Last page of the PERFORMANCE module.

The empty weight of the aircraft (lbs)

Fuel weight (lbs)

Cargo weight (lbs)

Previous page

The number of passengers (8 max), the 2 pilots and the weight calculation reference.
The number of passengers can be modified using the corresponding button

The total weight of passengers + pilots calculated by the CDU (lbs)
(unchangeable)

The total weight of the aircraft calculated by the CDU (lbs).
(unchangeable)

Back to the first page of the PERFORMANCE module

NAV (Navigation)

The NAV pages are accessible by the NAV button.

Selecting FPL LIST displays saved flight plans.

The flight plans already recorded are displayed on the corresponding pages

The NEXT button shows us the next page

Let's choose this flight plan

The selected plan is entered in the scratchpad

The original aerodrome

The destination

Pressing this button gives access to the details of this flight plan

Access to the activation page without going through the flight plan detail page

The detail page of the selected flight plan

The distance to travel

Le temps estimé pour parcourir cette distance à la vitesse de 330 kt (ici 23 mn)

Return to the list of saved flight plans

Access to the activation page

Activation of this flight plan

This message indicates that a flight plan is already activated and asks for confirmation of the replacement of the current flight plan by this one

Pressing this button replaces the old flight plan with this one

Deactivation of this flight plan if it was active

Confirmation of the deactivation of the flight plan

This message appears if this is not the active plan

Access to the PERF (Performance) module

See the PERF module described above

PROG (Progress)

The Progress module is accessible by the PROG button

In FMS mode, this line shows the next waypoint, its distance from the plane, the estimated time in minutes and seconds if it does not exceed one hour, otherwise in hours and minutes then the fuel consumption necessary to reach it (in lbs)

Ditto for reaching the destination (in hours, minutes

The FMS active if the FMS button is pressed

The frequency indicated on the NAV window of the RMU2

The frequency indicated on the NAV window of the RMU1

In NAV mode, the radio beacon (VOR or ILS) selected on the RMU1, its distance from the aircraft, the estimated time and the fuel consumption required to reach it are shown.

The radio beacon activates if the NAV button is pressed

Access to the NAV1 page

Access to the NAV2 page

On the NAV1 page the 6 ILS closest to the position of the aircraft are displayed, from the closest to the most distant

The choice of this frequency will be transferred to the RMU1

Ditto for the NAV2 page which reports the selected frequency on the RMU2

DIR (Direct to / Pattern)

See the CDU DIR module tutorial.

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English translation by Stefan Frank – June 2021