

**CITATION X**

## THE CDU - DIR (Direct to / Pattern) module

**Warning :**  
The DIR module can only be used with the FMS activated



The DIR button shows the indication "DIRECT" on the first line and "PATTERN" on the 4th line

## The *DIRECT TO* function

The DIRECT (DIRECT TO) function allows waypoint skipping and diversion.

Let's start with the waypoint jump:

On the MFD is shown a flight from LFOH to LFRK via the DVL beacon.

We will avoid the DVL beacon to go directly (Direct to) to the first APP-4 approach point



The next waypoint is DVL

We want to go directly to APP-4 without going through DVL.

Note:

As the TOD is a virtual waypoint, it cannot be selected.

The DIR button displays the indication "DIRECT" on the first line



Pressing the button corresponding to APP-4 selects this destination which changes color



The flight plan has been modified to go directly to APP-4 without going through the DVL beacon



A new trajectory has been calculated



The plane has returned to its new trajectory



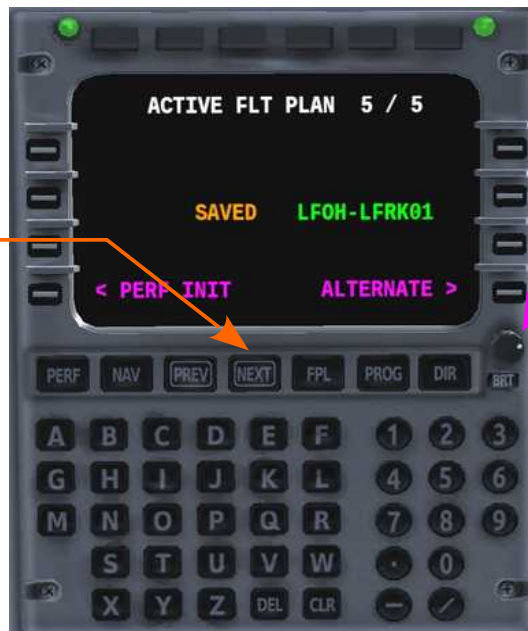
## THE DIVERSION

Now let's see how to perform a diversion:

We are on our way to LFRK via the DVL beacon and we wish to divert to LFRN via the LGL beacon



Let's go to the last page of the flight plan by successively pressing the NEXT button



Pressing the button in front of ALTERNATE positions us on the previously recorded diversion flight plan



Pressing the DIR button initiates the diversion



As we want to go through the LGL beacon before landing at LFRN, we press the button corresponding to LGL



The diversion plan has become the active flight plan and we are heading towards the LGL beacon. Note that a new TOD has been created as well as approach waypoints (generated automatically)



The plane lined up on the new trajectory



## PATTERNS function

After pressing the DIR button, the PATTERNS functions are accessible by this button



HOLD is used to determine a holding pattern around a waypoint

FLYOVER forces the plane to fly over a waypoint instead of anticipating it

REVIEW allows modification of the HOLD circuit after programming



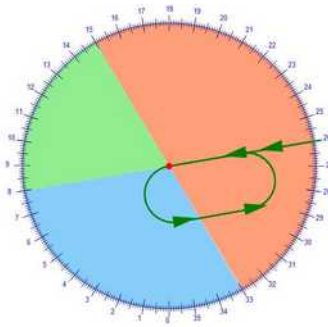
PCDR TURN (Procedure Turn) allows the programming of a landing with arrival at counter-ILS

## HOLDING PATTERNS

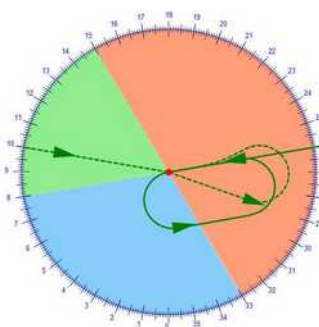
"Holding patterns" or "holding circuits" or "racetracks" make it possible to make an aircraft wait at the request of air traffic control, generally when there is a traffic jam on landing. The entry point can be a "FIX", a "VOR" or an "NDB".

There are three ways to enter a "holding pattern":

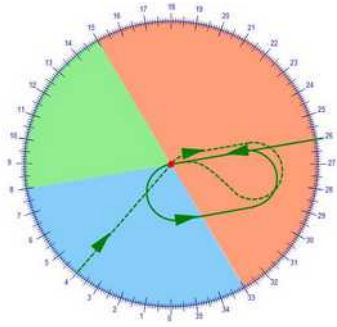
DIRECT :



TEARDROP



PARALLEL



On the Citation X, they are managed by the FMZ 2000, ie by the CDU, and the flight plan and FMS must be activated. It is therefore not possible to program them in NAV mode.

Example with a flight from LFOH - 22 to LFRK - 31.

After pressing the "HOLD" key:



The view returned to the flight plan but the yellow "\*" HOLD \*" indication appeared at the bottom of the screen (the "scratchpad").

You must now choose the waypoint on which the holding circuit will be made by pressing the corresponding key. (the NEXT and PREV buttons allow you to move around on the flight plan). We choose, for example, waypoint 31-12.

A settings window then appears.



The following entries are editable:

- **INBD** = Inbound. This is the orientation of the first leg of the circuit. It is indicated on the IFR approach charts. This orientation automatically determines the values of the QUAD ENTRY line. QUAD for QUADRANT (cardinal points) and ENTRY which is either DIRECT, TEARDROP or PARALLEL.

- **CRS/DIR** = Course/Direction. This is the direction of rotation of the circuit relative to the entry point. It can only be R for Right or L for Left. This is shown on the approach charts. R is the default.

Entering these values is done as follows:

- 260 for only the INBD value
- 260/L for INBD CRS/DIR values
- L for the DIR value only

- **MAX END SPD** = Max End Speed. This is the maximum value of the speed that the plane must have at the entrance to the circuit. This speed is shown on the approach charts.

- **LEG TIME** : The Time to fly the straight leg of the holding circuit. Usually 1 minute but depends on the flight category of the aircraft (cat A B C D) and it is indicated on the approach charts. Entering a value for LEG TIME determines the LEG DIST (Leg Distance) based on the speed indicated on the MAX END SPD line. Only a numeric value can be entered. MIN is added automatically.

- **LEG DIST** = Leg Distance. Allows you to enter a distance value for the straight leg of the circuit. This value is used to calculate the LEG TIME according to MAX END SPD. The LEG DIST value is generally not shown on approach charts. Rather, the LEG TIME value is used. Only a numeric value can be entered. NM is added automatically.



The button in front of "CLEAR" cancels the configuration of the hold circuit. We then obtain the following screen:



The "FPL" key allows you to return to the flight plan.

The button in front of "ACTIVATE" activates the entry into the hold circuit. It is to be used before arrival at the fixed point selected as the input of the holding circuit.

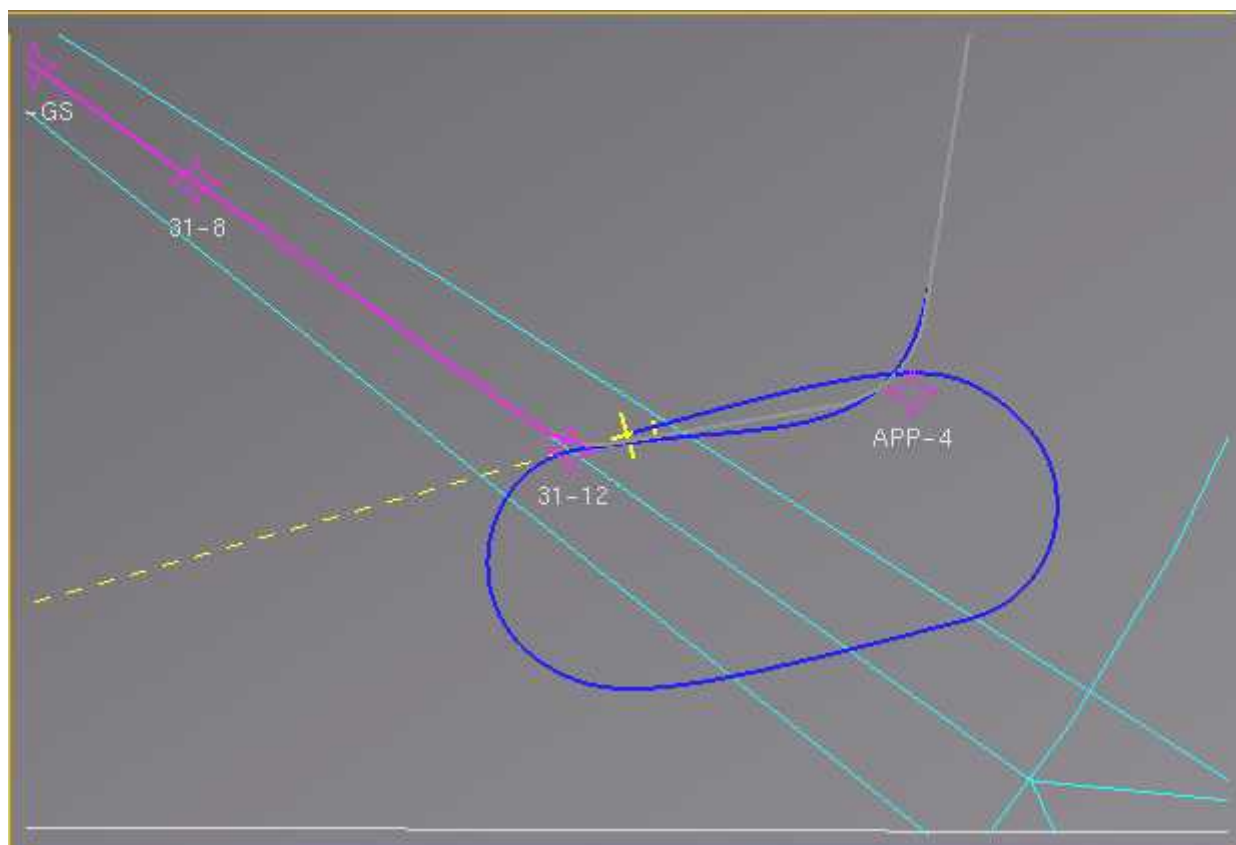


Activation of the hold circuit returns the CDU to the flight plan screen. The chosen fixed point then appears in orange followed by the letter H (hold).

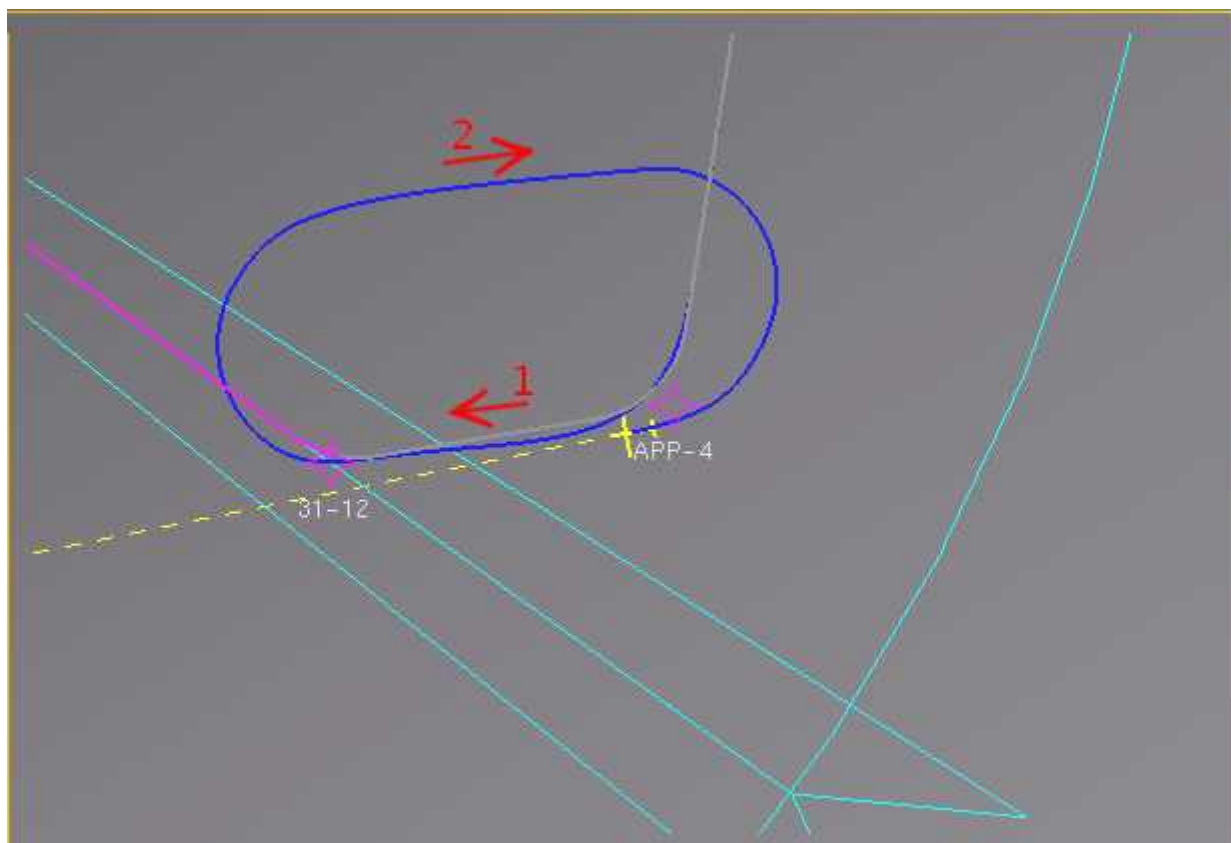


When the aircraft is near the hold circuit, "EXIT" is displayed at the bottom left of the CDU screen. Pressing this key exits the holding circuit and continues the initial flight plan.

The "DIRECT" hold circuit at point 31-12 with a left turn (TURN L).



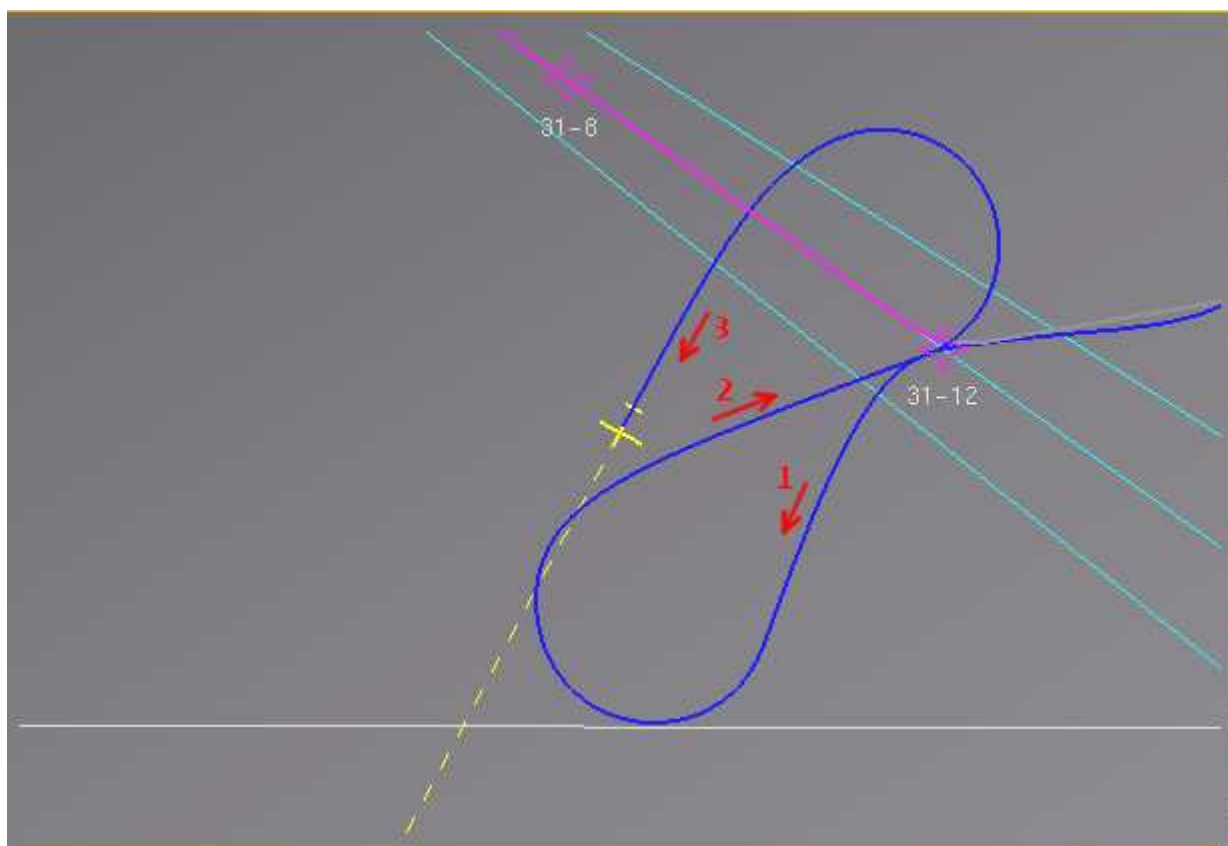
The "DIRECT" hold circuit at point 31-12 with a right turn (TURN R).



The "TEARDROP" holding circuit with right turn (TURN R).



The "PARALLEL" holding circuit with left turn (TURN L).



## FLYOVER



In normal flight, the FMS will initiate a turn, if necessary, before reaching a waypoint. In certain cases, specified on the aeronautical charts, the overflight of the waypoint is imposed. This is the role of the "FLYOVER" function.

There is no configuration page dedicated to this function.

After pressing the corresponding button, "FLYOVER" appears in yellow in the scratchpad.

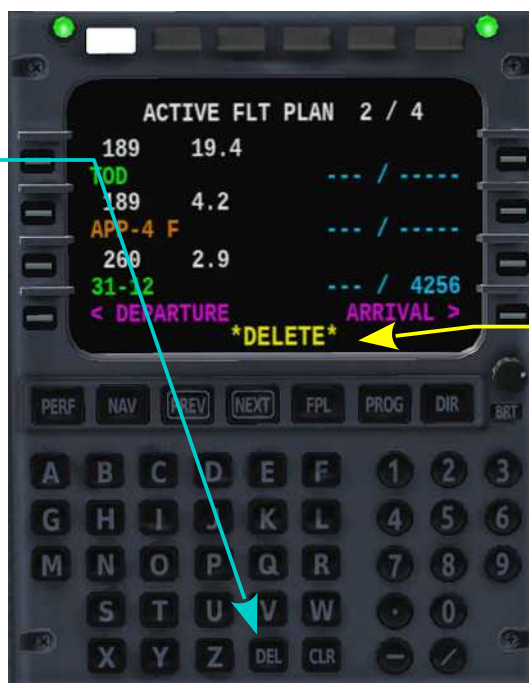




After pressing the button corresponding to the waypoint to fly, it turns orange with an F for Flyover



To delete the Flyover from a waypoint, press the DEL button

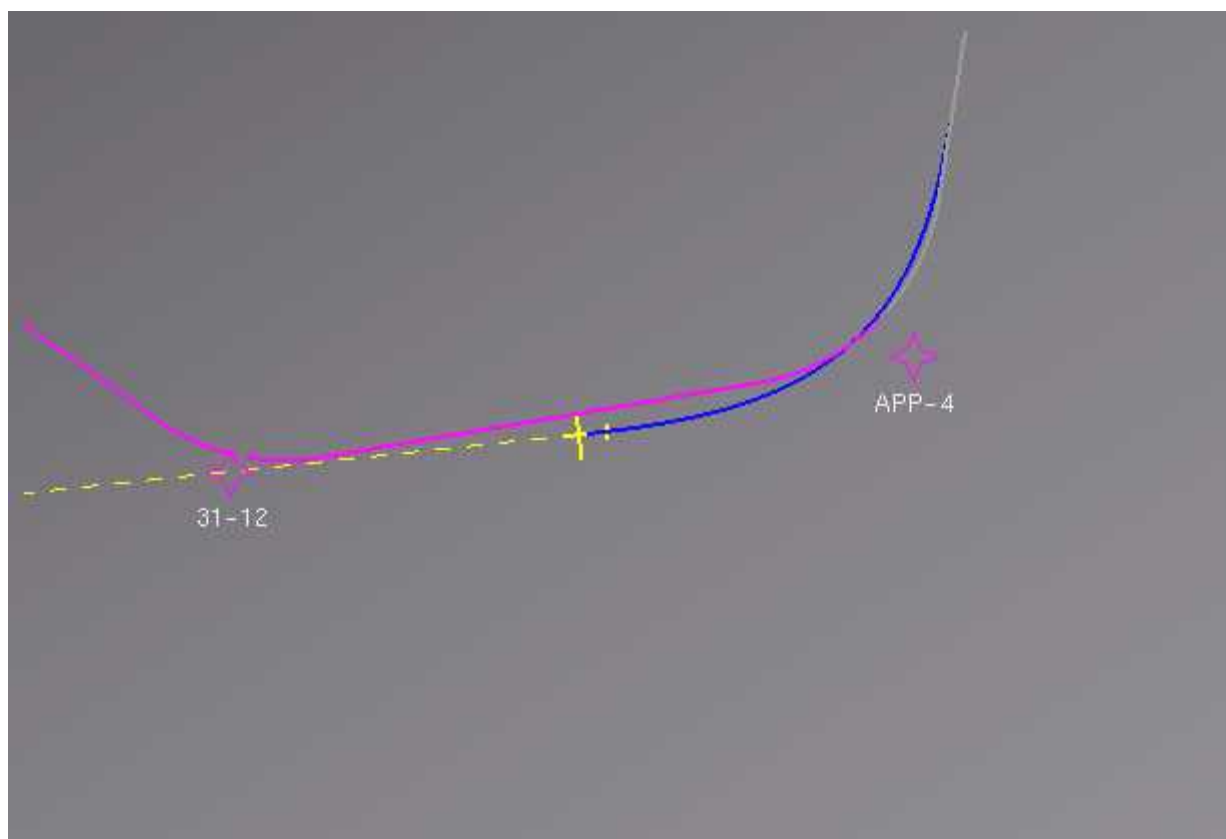


DELETE appears in the scratchpad

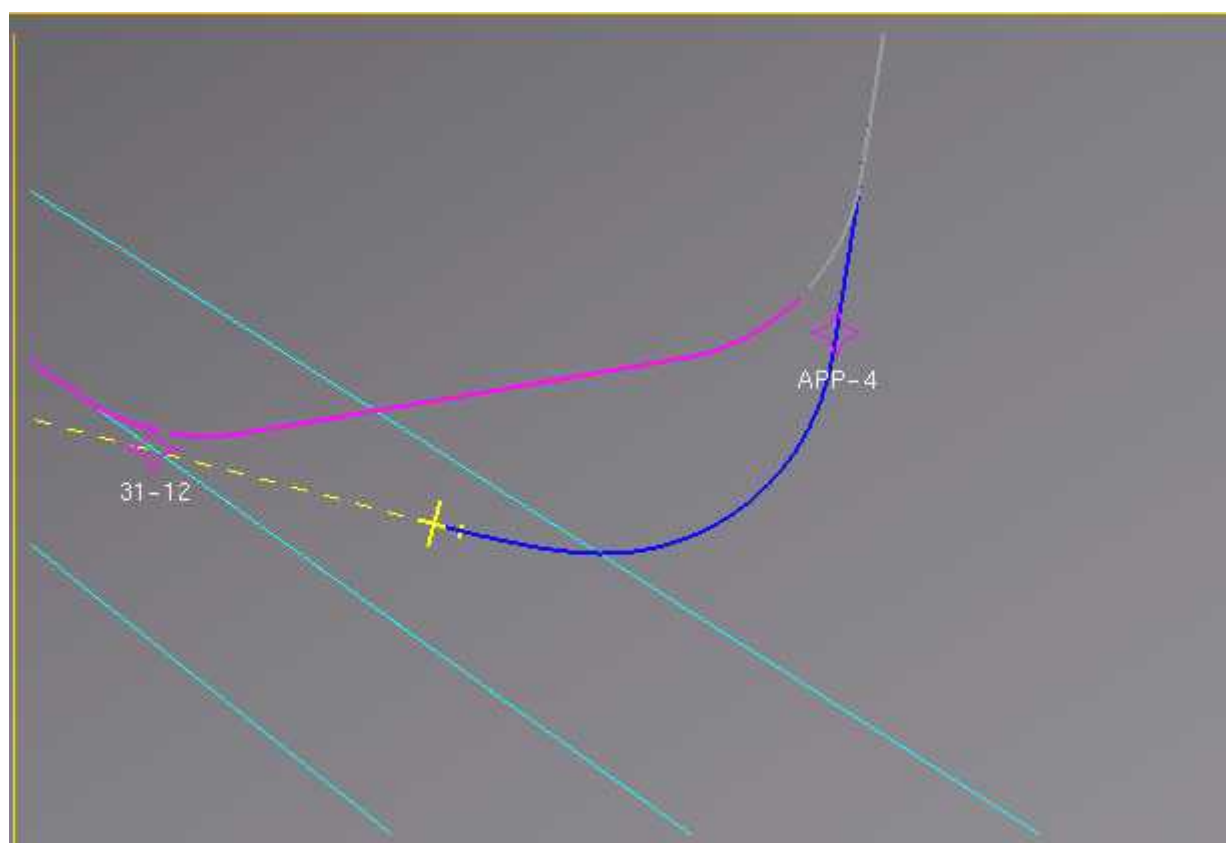


Pressing the button corresponding to the selected waypoint deletes the Flyover and returns the waypoint to green

Normal flight to waypoint 31-12 with anticipation of the passage to APP-4.



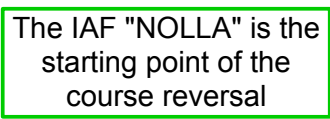
Flight to waypoint 31-12 with FLYOVER on point APP-4.



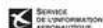
## PROCEDURE TURN



Example on Seattle (USA).



The starting point of the procedure will be the CAN beacon.



After pressing the PCDR  
TURN button, the  
indication "PCDR  
TURN" is entered in the  
scratchpad





Pressing the button corresponding to CAN (starting point of the procedure) opens a selection page



Only the direction of the procedure turn can be modified: L or R



Outbound Time or Outbound Dist can be modified but it is advisable not to change these values

Pressing the ACTIVATE button initiates the procedure. Activation can be done before takeoff or en route

After activation, the CAN beacon turns orange with the indication P (Procedure) after





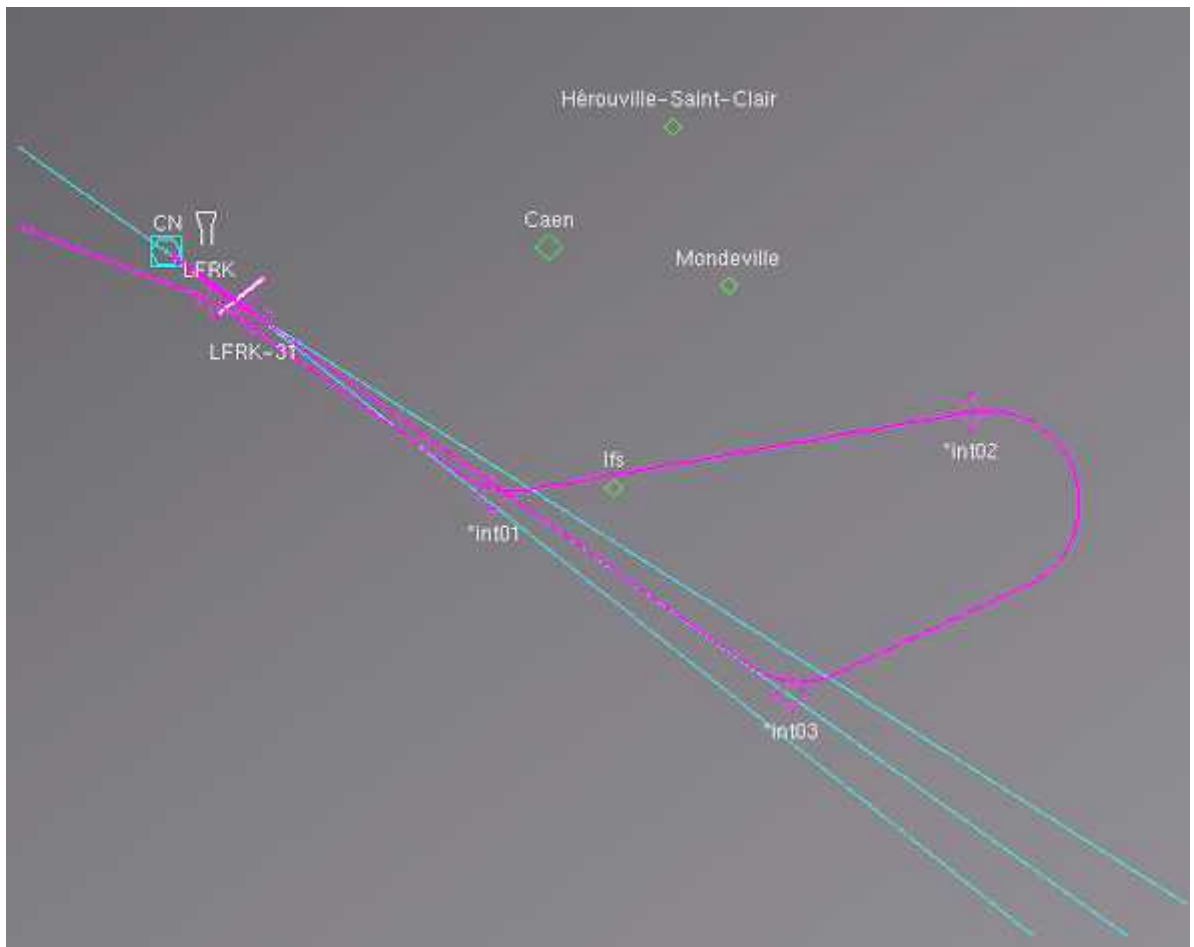
3 new waypoints, \*int01, \*int02 and \*int03 have been created in the flight plan



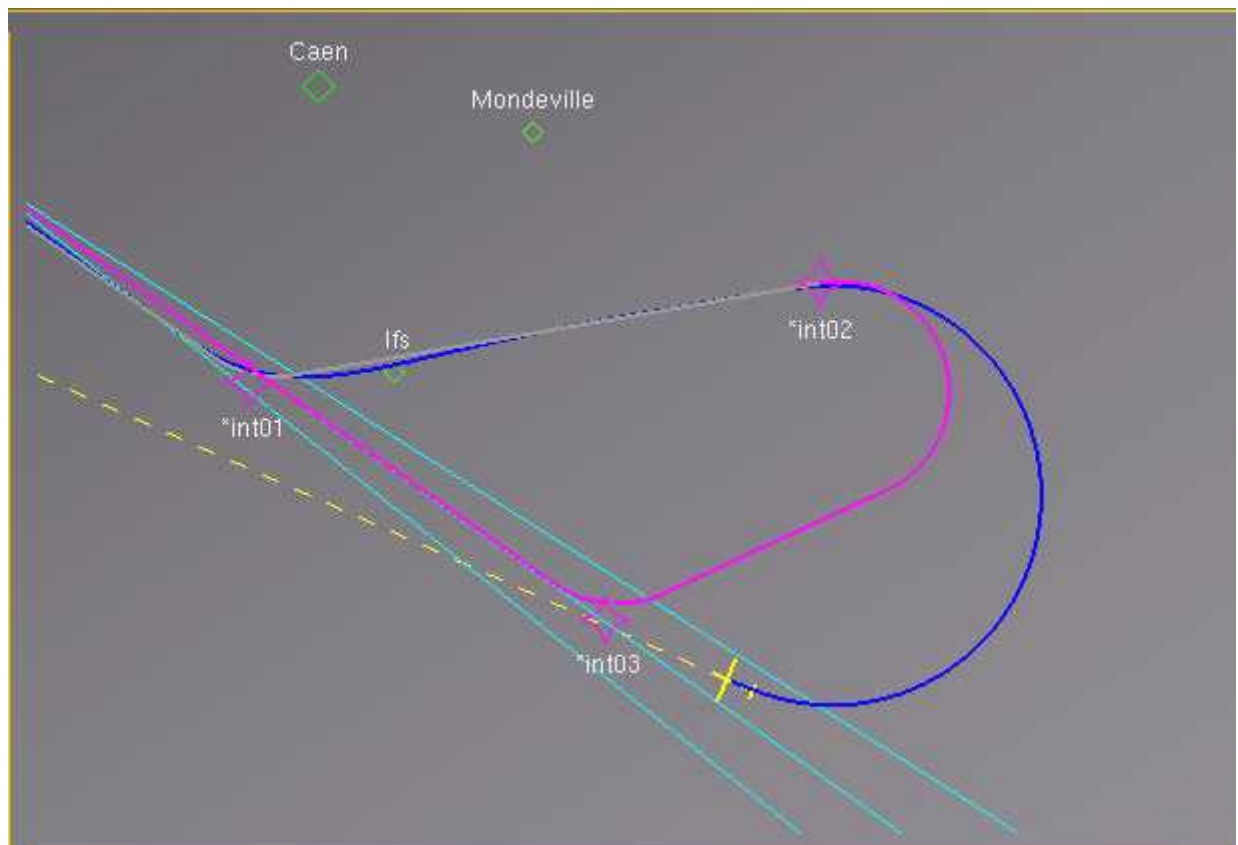
The flight plan before activating the PROCEDURE TURN:



The flight plan after activating the PROCEDURE TURN with the \* int01, \* int02 and \* int03 waypoints. The procedural turn here is to the left (L).



The actual trajectory of the plane:





It is normal for this light to be on during the last turn, the inclination of the aircraft being reduced to 20 ° instead of the usual 35 °

The procedural turn is complete, the ILS of runway 31 kicks in and descends.

