FLY TRAINING

For X-Plane Flight Simulator only

Copy the file LFCR-LFML.fms included with the plane, into X-Plane 11/Output / FMS plans folder

Set up the Falcon 7X in LFCR airport Runway 13
Use Operations & Warnings option in order to have de 7x line up on RW 13 ready to take off with engines running

We are going to perform à training fly from LFCR to LFML
Use option « pause » during the fly if you want to take the time to read instruction.

- If daylight set landing lights pulse
- If Night time set landing lights ON
- Taxi lights ON
- Flap SF2 (position 2)
- clic A/B Auto EXT ON if necessary (see overhead panel)

- Enter 150 NM and clic Compute
- Clic RESET FU in Fuel page
- Note value Init Crz Alt 37000ft, as it is very short trip, computer set FL 370

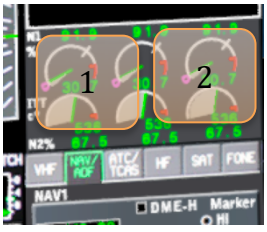
Set ASEL FL370

NOTE : For flight between 400NM and 4500NM recommended altitude will be 47 000ft

- Clic here to FMS Window
- Load FMS plan LFCR-LFML.fms

- 7X computer has now calculated take off speed
- Clic page SID and note VFR speed (around 147)
- Adjust on Guidance Panel (GP), Speed VFR (147)
- Clic here to send Value on ADI

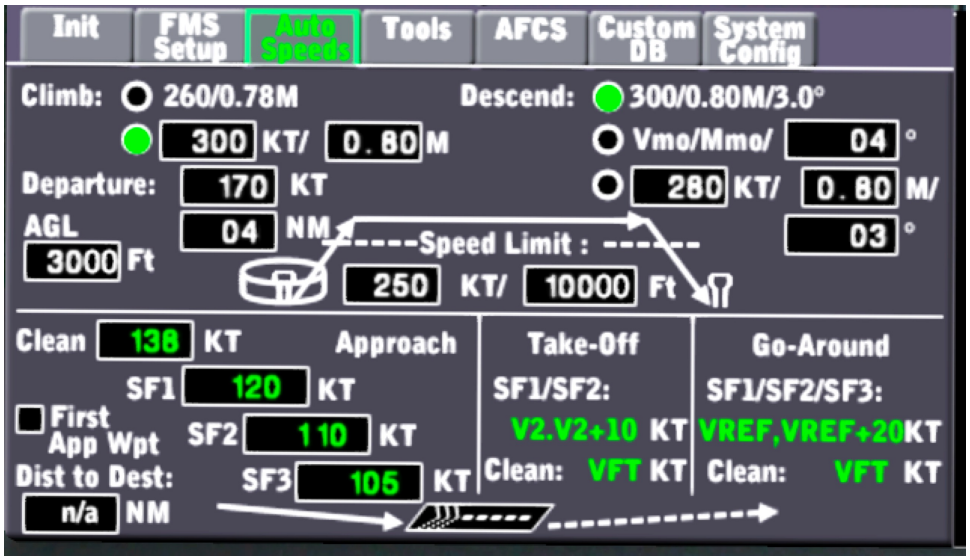
- Clic 2 time on FD/TD button on GP
- Clic PUSH SYNC button on HDG/TRK
- Note calculated Path Att value (15°)
- Adjust on GP (Guidance Panel) 15° PATH (see value on FMA)



As selection of Button is not so easy on pedestral , I created 2 area where you can Clic to have different page

Area 1 to select page Radio / Trim& fuel/ TCAS(n/a)
Area 2 to select Avionic or Synoptic pages

- Select Auto Speeds page
  We are going to enter different value for training purpose
  All value in white inside Black window can be change within the limit set by the constructor



For Climb, we set 300 KT and .80M

- Set Departure 170KT (used in case of airport restriction like noise abattement)
- Set AGL 3000ft (use in case of airport restriction like noise abattement)
  AGL = Above Ground Level
- Set speed Limit 250kt and 10000 ft (airport restriction function country , usualy is 250kt/10000ft)

Note : After the take off and when CLB button on GP is selected, the 7X will follow the programmed instructions above

- Adjust QNH (Button BARO see GP)
- Select FMS1
  - Clic here to change NAV source

TAKE OFF

- Set full power
- Release brake
- At VR Rotation

- Follow FD (Fly directory) in ADI Window
- Maintain pitch in order to get the green bug(you actual PATH) alligned with the majenta bug (15° programmed PATH)
  You will need some practice

- Landing gear UP
- Above 400 ft radar altitude
- In Guidance Panel (GP), Clic button AT (Auto-Throttle) ON
  (but better to set button on your joystick)
- Clic button AP (Auto pilot) ON (need 2 clic some time)
- Set button LNAV ON (Plane will follow FMS instruction)

- Set Flap SF0 (set button on your joystick) but is possible to active Flap on pedestral (not so easy)
- Set button CLB ON (engage Auto Speeds program)
  The 7x will accélérate to programmed speed (bellow 10000ft and above 10000ft)
- Cockpit should look like that

You can clic here to get other display

The Falcon 7X follow the Auto Speeds Program and FMS LNAV

- Taxi light OFF
- Landing lights OFF
- Baro set to(PUSH STD) STD
- Clic the CDI button to get FMS direction arrow

Clic area to change Diplay in HSI

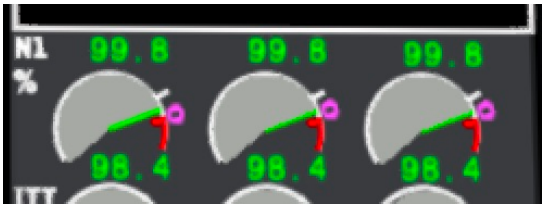
Clic for VOR1 ADF1 OFF

Clic area

Clic for VOR2 ADF2 OFF

When you are in CLB mode, 7X computer will adjust the engine power to Climb power mark

Take off power

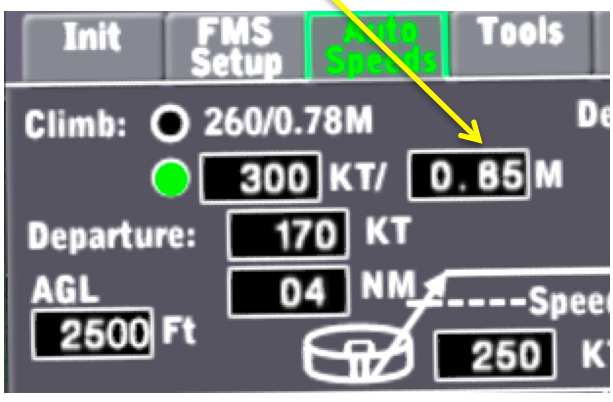


Climb power

Climb power mark

You are now in mode Climb 300/0.80M

During the flight, using CLB mode, you can change speed value in Auto Speeds page
Just Clic here to set .85M
You can also reduce speed with your Joystik Throttle control (don't do it)



The 7X will fly at 300KT
As soon as the speed reach 0.85M , the AT (Auto Throttle) will automaticaly switch to 0.85M

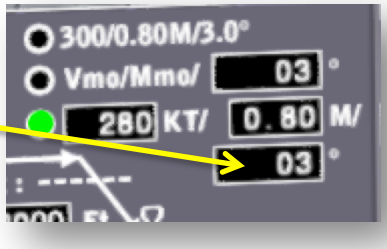
When you are at FL370 the mode CLB is automaticaly disabled . You have now the possibility to change the speed on GP, note that it was not possible during CLB mode, unless you do it in Auto Speed page or using your Joystik Throttle control

- Adjust the speed to .82M on GP (Guidance Pane)

Prepare 7X for descend
On Auto Speeds page , in descend area clic to select and adjust KT or M or °,
- choose 280kt / 0.80 M and 4° slope
- On GP , Adjust ASL to 7000

At 20NM from FJR
Clic to deselect ALT and clic to select CLB
The plane will follow new instructions
Note that you cannot change Speed on GP now, but you can still change the speeds or the PATH in Auto Speeds page

Bellow FL200
reduce in Auto Speeds page the PATH to 3°



NOTE : THIS FMS WILL NOT FOLLOW ALTITUDE PROGRAMMED IN THE FLY PLAN
THIS BUG CAME FROM THE NONE COMPATIBILTY WITH THE MAP OF G1000

Bellow 18000ft

- Set Altimeter QNH
- Set Landing lights (all2) PULSE

You can also adjust new parameter for speed limit on arrival
On page Auto Speeds
- adjust Speed limit to 240kt & 12000ft if you want (if you want)

Plane will follow instructions
Note that as you are still in CLB mode you can change the slop using Auto Speed page

On the way to BORGO the 7X will stabilise at 7000 ft

Prepare for landing

Clic
To switch

- Set in NAV1 110.30 we are going to land in RW 13L using ILS
- Select VOR1 on HSI (Left screen)

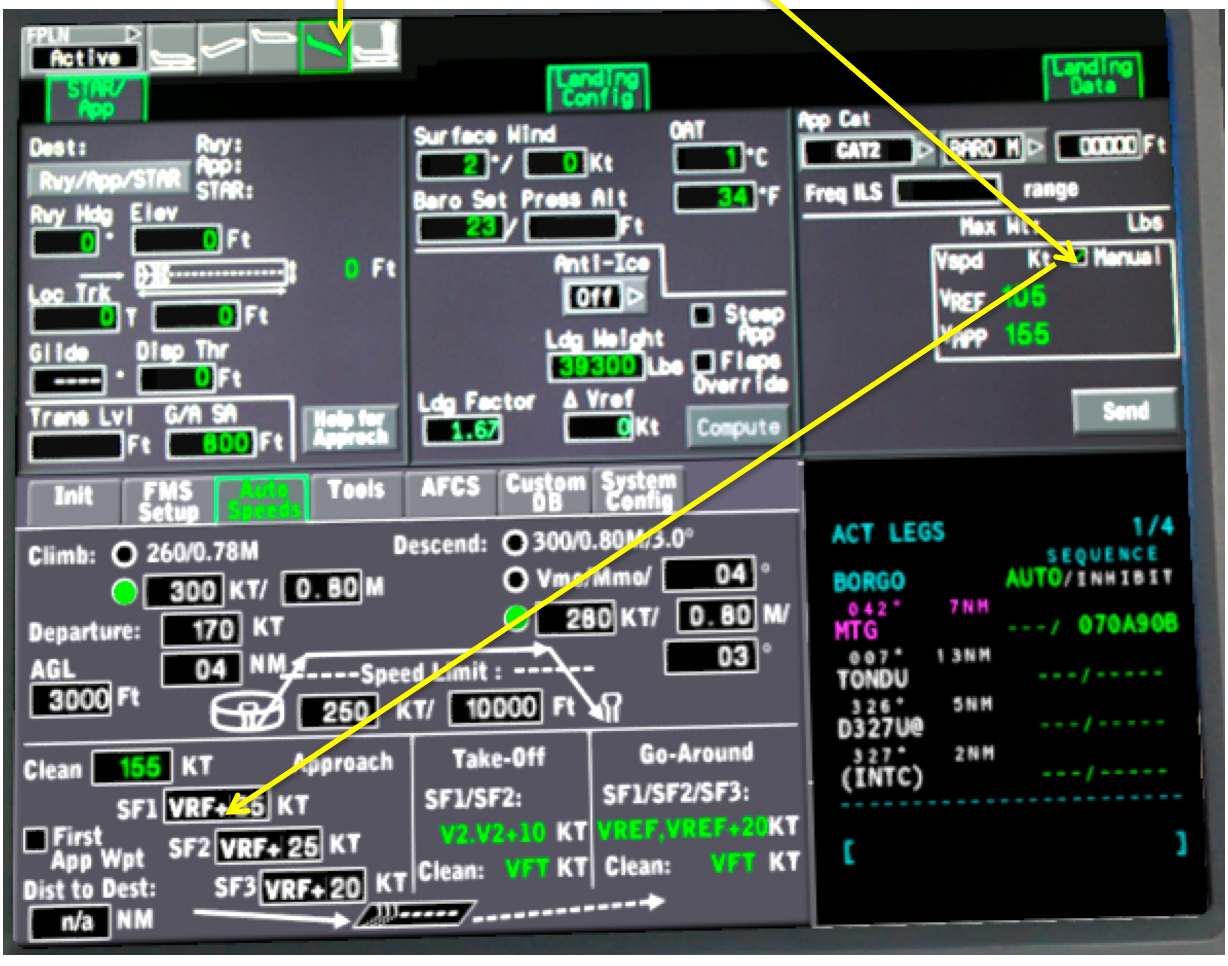
As soon as you reach 7000ft you note that CLB mode is disabled again
You are not any more in Auto Speeds program , you can now change speed or PATH or VS on AP

- Reduce speed to 200 kt on GP

We are not going to use CLB mode at this stage in order to control manualy our speed.

- Select page STAR/App
  Note VREF and VAPP speed , clic on Send button, this info will be display on ADI

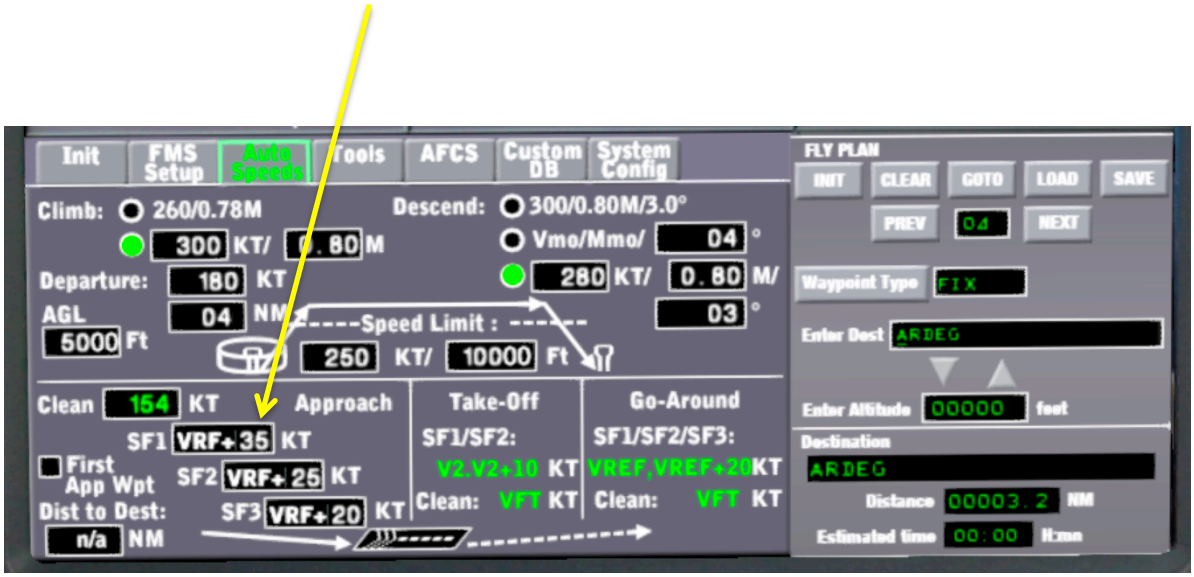
As we still need to maneuvering the 7X
- Clic option Manual, that will change the speeds value for Approach in Auto Speeds page



Typical flight profiles have been defined for both training and operations phases.
In the following flight profiles, maneuvering speeds for the different slats/flaps configurations have been defined. They ensure during maneuvers (such as circling), additional margins vs stall speed.

	APPROACH SPEEDS	MANEUVERING SPEEDS
SF 0	VREF +33 KT	VREF +50 KT
SF 1	VREF +15 KT	VREF +35 KT
SF 2	VREF +5 KT	VREF +25 KT
SF 3	VREF	VREF +20 KT

All indicated speed for Approach are now for Approach maneuvering speeds , you can adjust those speed for the different SF value



After FIX BORGO

- We note that at FIX D322W we should be at 5000ft
- Set 5000 ft on ASEL then clic button ALT, then clic VS and select -2000
  (Just to show you that you can use VS or PATH to go down)
- Set speed on GP at VAPP speed (should be around 154kt)

After FIX D322W set ASEL 4000 ft and clic button ALT and set PATH -3°

- Set Landing lights (all2) ON if night light or pulse during day
- Set Taxi lights ON
- Set flap SF1 and adjust Speed on GP to the value SF1 VREF +35 (or what ever you choice)
  ex : if VREF = 104 , VAPP=104+35 = 139 kt

After FIX ZEBRA

- select NAV1 then select APP on GP (Guidance Panel)

Note : When NAV1 or 2 is selected and VOR is catch, you can change Crs by clic in Crs value
This is good if you want to fly using VOR

When the falcon 7x is line up with the LFML 13L Runway , (no more maneuvering)

If you are in relative good weather , otherwise you can still follow maneuvering speed.

- déselect Manual approach speed
- Note the new approche speed

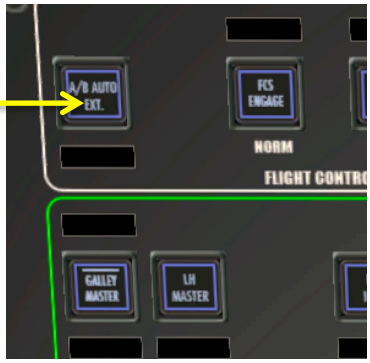
You now have the minimum final approch speed for the different FLAP configuration

- reduce speed to new SF1 approach value (around 119 kts)
- ILS should be locked
- Set FASTEN BELTS and NO SMOKING ON

When ILS is active, (ILS Bug change color from blue to Majenta and GS from blue to Green)

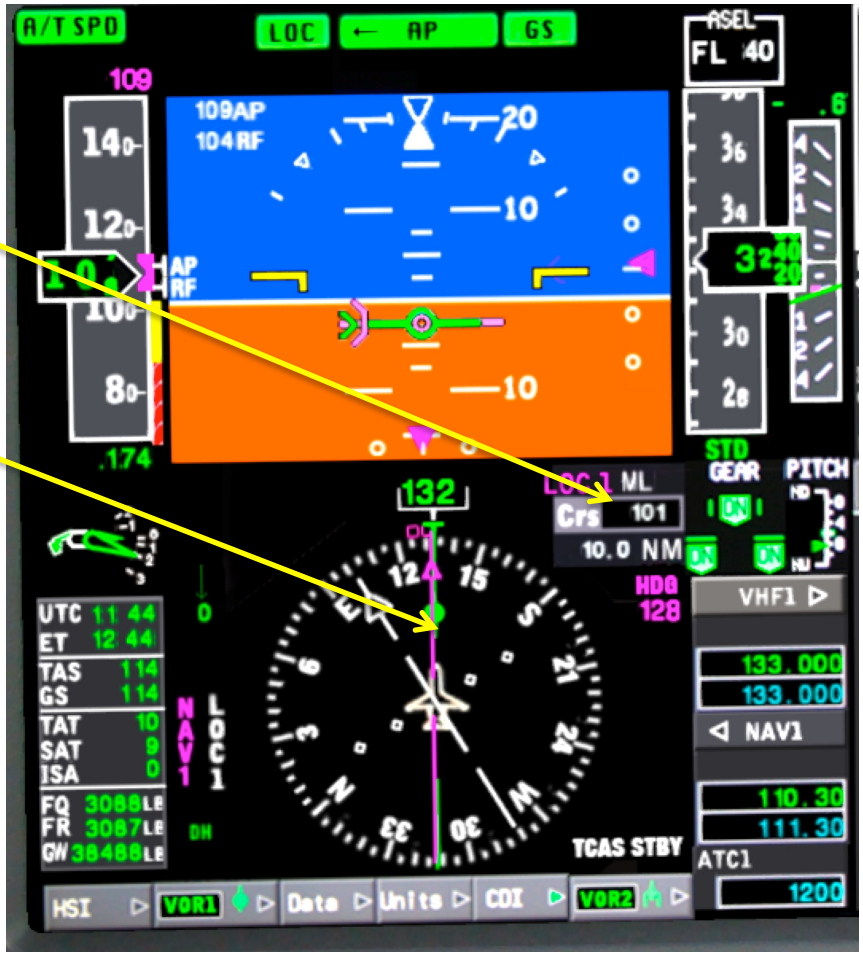
- Reduce to SF2 speed value and flap to SF2 (around 109 kts)
- Set Gear Landing down

- Set ASEL to 3000 (go around altitude in case off)
- On overhead panel check Air Break



Note also that when in NAV mode, you can change Crs If you clic here

You can also change display If you clic here



Around 1500 ft, set Flap to SF3 and Set speed to VREF

Note : Speed bug in ADI are AP for VAPP and RF for VREF

When you hear alarm « auto pilot « disconnect the autopilot
When you hear alarm « auto throttle « disconnect auto throttle and manually adjust it

Perform Landing

Engines idle
Thrust reverser as required
Airbrakes AB2 will deploy automaticaly
Brakes Applied

After Landing do-list

- Taxi to the ramp
- Set flap SF0
- Airbrakes AB0
- BUS TIE TIED
- APU ON
- ANTICOL RED
- Landing lights OFF
- ATC/TCAS ST-BY

AT RAMP do-list

- Power levers (All3)	Idle
- Park brake	ON
- Engines (all3)	Cut-off
- Taxi light	OFF
- HYD : Backup Pump	OFF
- BOOST Fuel pump 1 & 3	OFF
- Anti Ice (all) if required	OFF
- ANTICOL	OFF
- FASTEN BELTS	OFF
- APU	OFF
- BOOST Fuel pump 2	OFF
- EMERG lights	OFF
- BAT switches (all2)	OFF

Note : Some switch of the overhead panel stay light on even
with all battery, APU, Engines OFF
This is the mystery of X-Plane

Other exercice :

You can also try the Flight Plan LFMN-GCXO (FMS plan included)
LFMN (NICE COTE D'AZUR) to GCXO (TENERIFE NORTE) 1481 Nautic Miles

LFMN SID TURIL UL127 PADKO UM984 DIVKO UN975 BGR UQ47 ASTRO UQ45 KORNO UN857 TERTO STAR GCXO

Note :

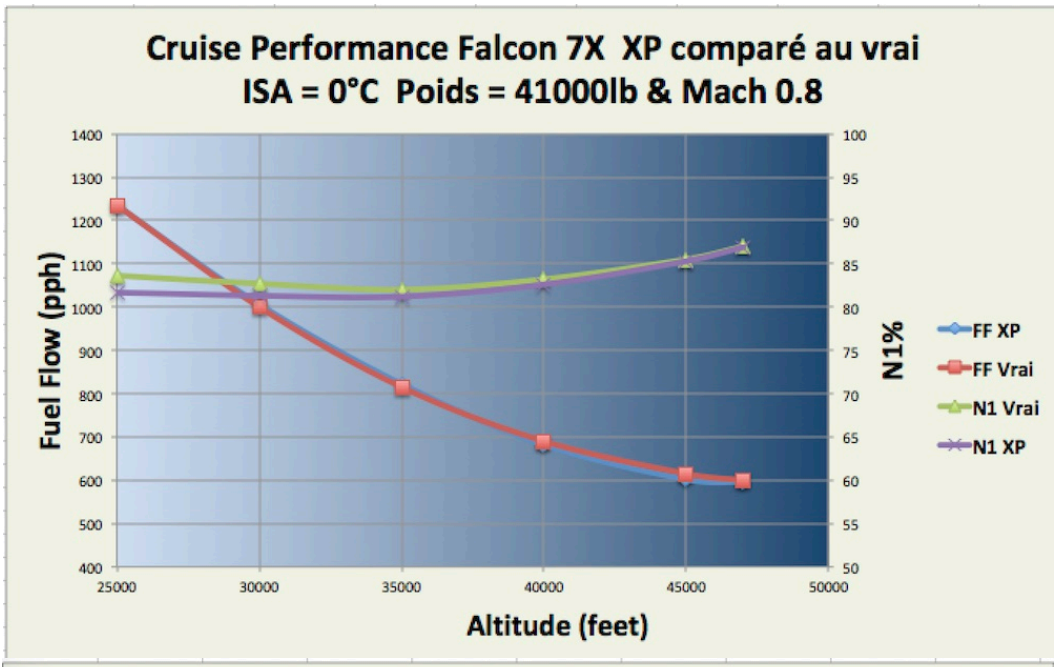
Init Crz Alt = Optimum altitude, will dépend of GW(Gross weight) and Crz Spd (Cruise Speed)
During the flight, check Init Crz Alt for any variation of altitude and change flight level if necessary to optimise fuel consumption.

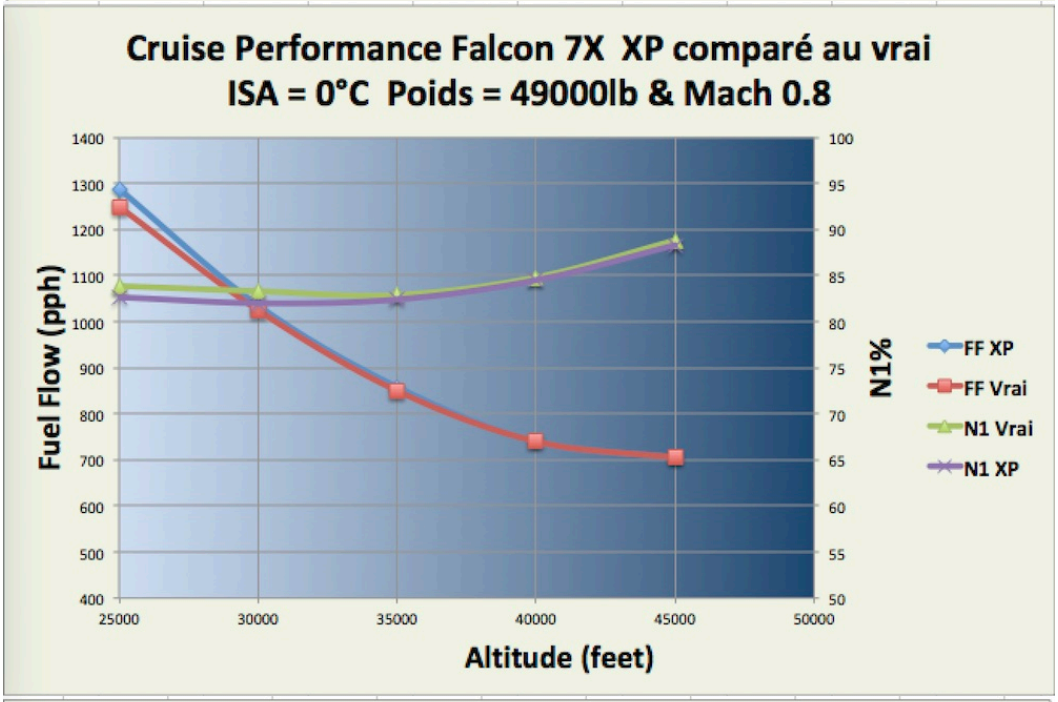
Some datas and performance charts To compare with the real Falcon 7X performance

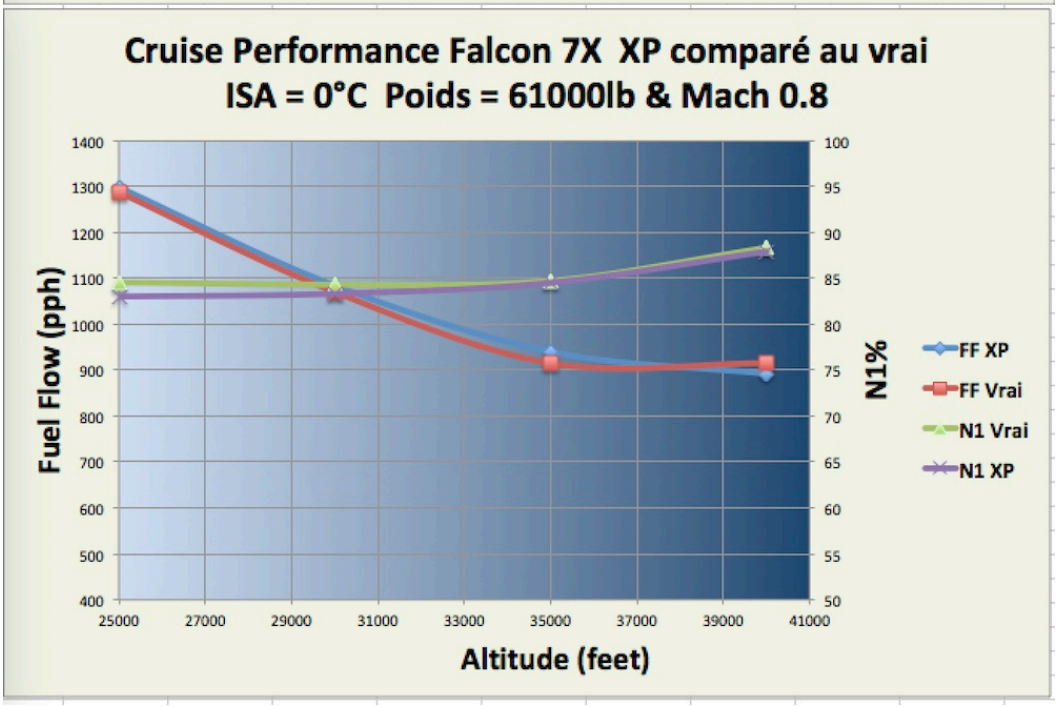
Tested using X-Plane 11.25r1
As Laminar often change fly parameter without notice to designer , I cannot warranty those performances for future X-Plane version.

Climb to Altitude mode at 300KT / 0,80M (normal Take off at VFT and max 250kt bellow 10000 ft)
Weight 50000lb , Climb from 1500 ft to 41000 ft at ISA 0° (no wind)

From 1500 ft to 15000 ft Time and fuel used 7X real 3mn /439lb 7X XP 3mn/460lb
From 1500 ft to 25000 ft Time and fuel used 7X real 6mn /728lb 7X XP 5mn51s/745lb
From 1500 ft to 35000 ft Time and fuel used 7X real 10mn /1057lb 7X XP 10mn05s/1080lb
From 1500 ft to 41000 ft Time and fuel used 7X real 14mn /1275lb 7X XP 13mn58s/1289lb







You will never imagine the time it took for me to adjust in order to arrive to this result ☺
Enjoy this simulation. (vrai = real Falcon 7x)