

Concorde FXP



by **COLIMATA**

10 Essentials

Thank you.

With the purchase of **Concorde FXP** you support this project and enable us to improve it even further. More than two years ago I started this project with the aim to do justice to the real Concorde and its creators, in the digital world of X-Plane. I had done two supersonic digital fighter jets (FA-18F and MiG-29) for X-Plane, so I started this gigantic endeavour.

As many of us, I'm Concorde fan since my childhood. I remember searching for every book and info I could find in libraries and magazines, back in the old days of the 'no internet' world. Furthermore, this unique and stunning flight simulation named 'X-Plane' deserves a payware quality Concorde.

Thanks and Respect to the 'Laminar' team!

My small team and I worked as hard as we could in the last years to come out with the best result possible with the available resources. The overall conception, the details, the many features, the quality, the manuals, the 'extra- mile' content, the hidden surprises and much, more will make you have many great hours with Concorde FXP. This add-on can be used on different knowledge levels depending on your time and interest. For us this was not only a business. We feel privileged to enable Concorde to continue to fly in the digital skys. It is therefore important that Concorde FXP excites you too. I'm confident it will.

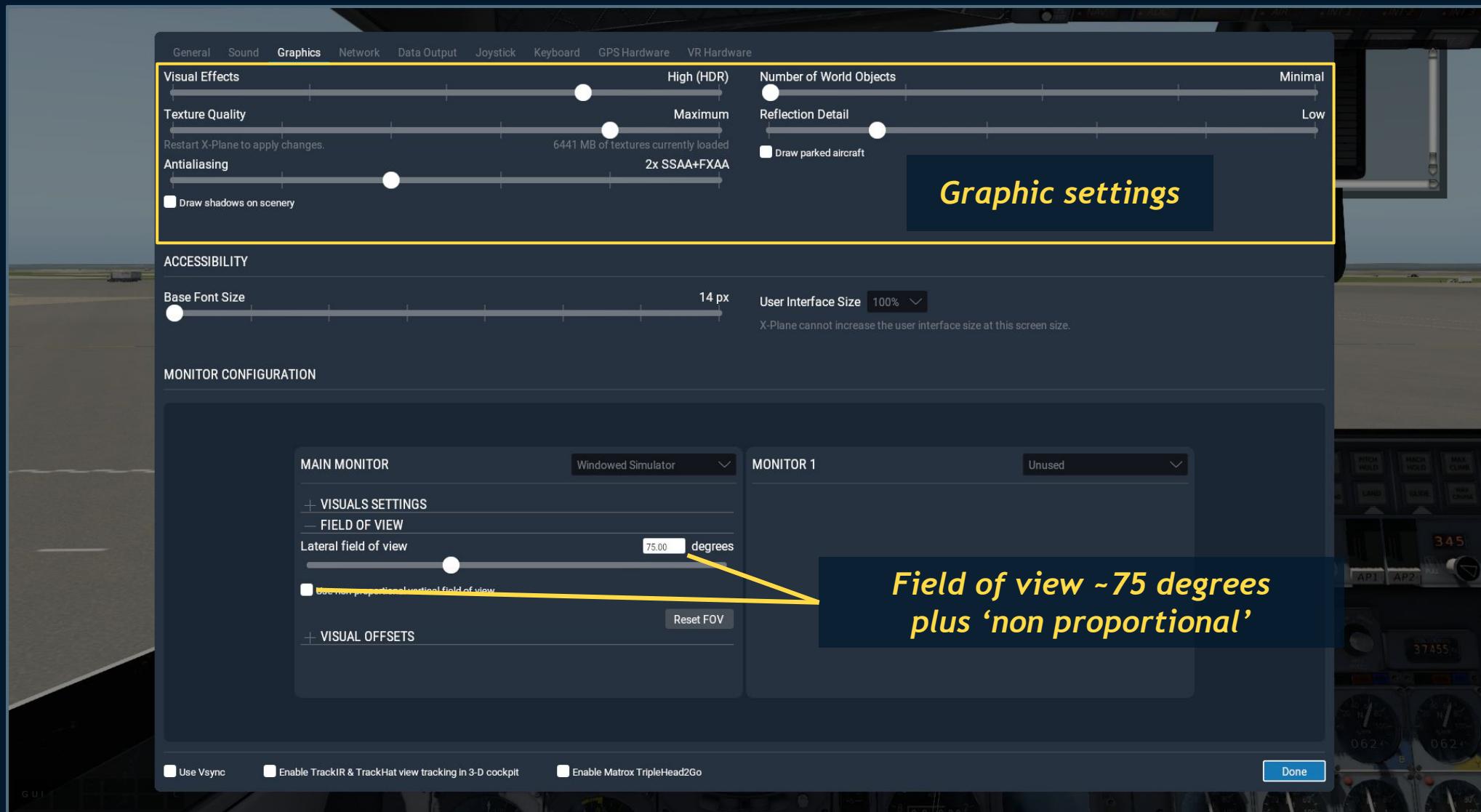
Best regards
Florian Müller

Lead developer
COLIMATA
May 2019



FIELD OF VIEW:

For a large cockpit like Concordes it can be helpful to use a wider field of view.

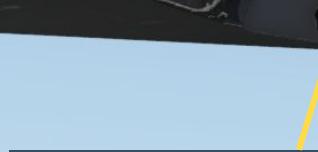


Welcome on board!



FIRST CONTACT

(X-Plane - Graphics settings - Visual effects 'HDR' must be ON)

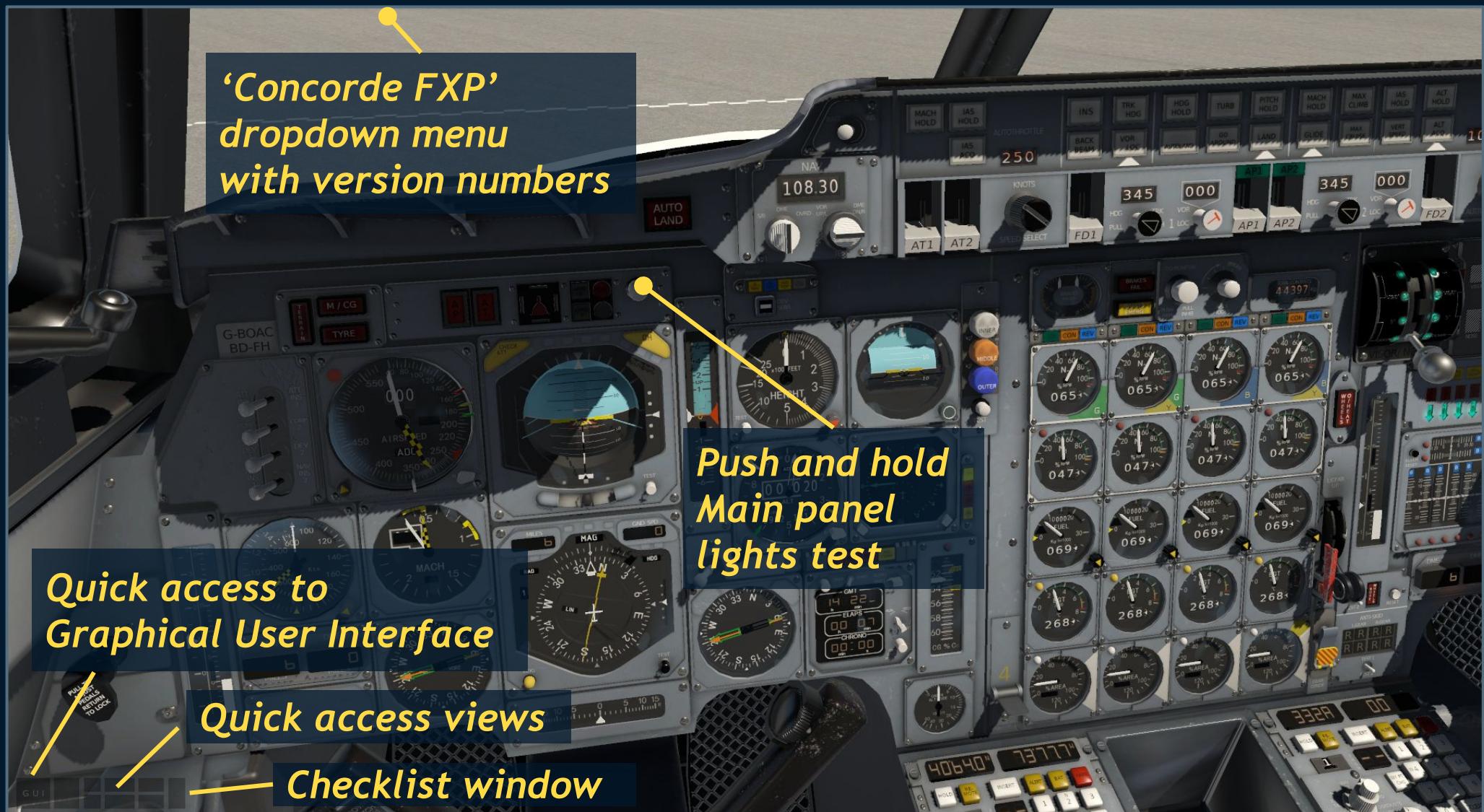


**Push and hold
Masterwarning
lights and audio test**



FIRST CONTACT

For more details see the 'Quick Start' or 'Full' manual.



Quick access menu can be hidden in the GUI settings

10 ESSENTIALS

This add-on can be flown on different knowledge levels.

1. *'Learn to stay ahead of the jet.'*
2. *'No flaps. But... two trim systems.'*
3. *'Use reheat with caution'*
4. *'For performance: Follow the envelope'*
5. *'Landing is... different.'*
 - +Setup & Interaction
 - +Good to know
 - +Autopilot more in depth
 - +The Inertial Navigation SYSTEM INS
6. *'No spoilers. But... thrust reversers.'*
7. *'Navigation Systems.'*
8. *'Autopilot.'*
9. *'Pilot & Copilot.'*
10. *'Virtual Flight Engineer.'*

1 'Learn to stay ahead of the jet.'

Concorde with his 4 mighty Rolls Royce / Snecma 'Olympus 593' engines and refined aerodynamics, has so much power, that the jet is FAST in every part of the flight envelope. Or in other words, 'things' happen really quickly.

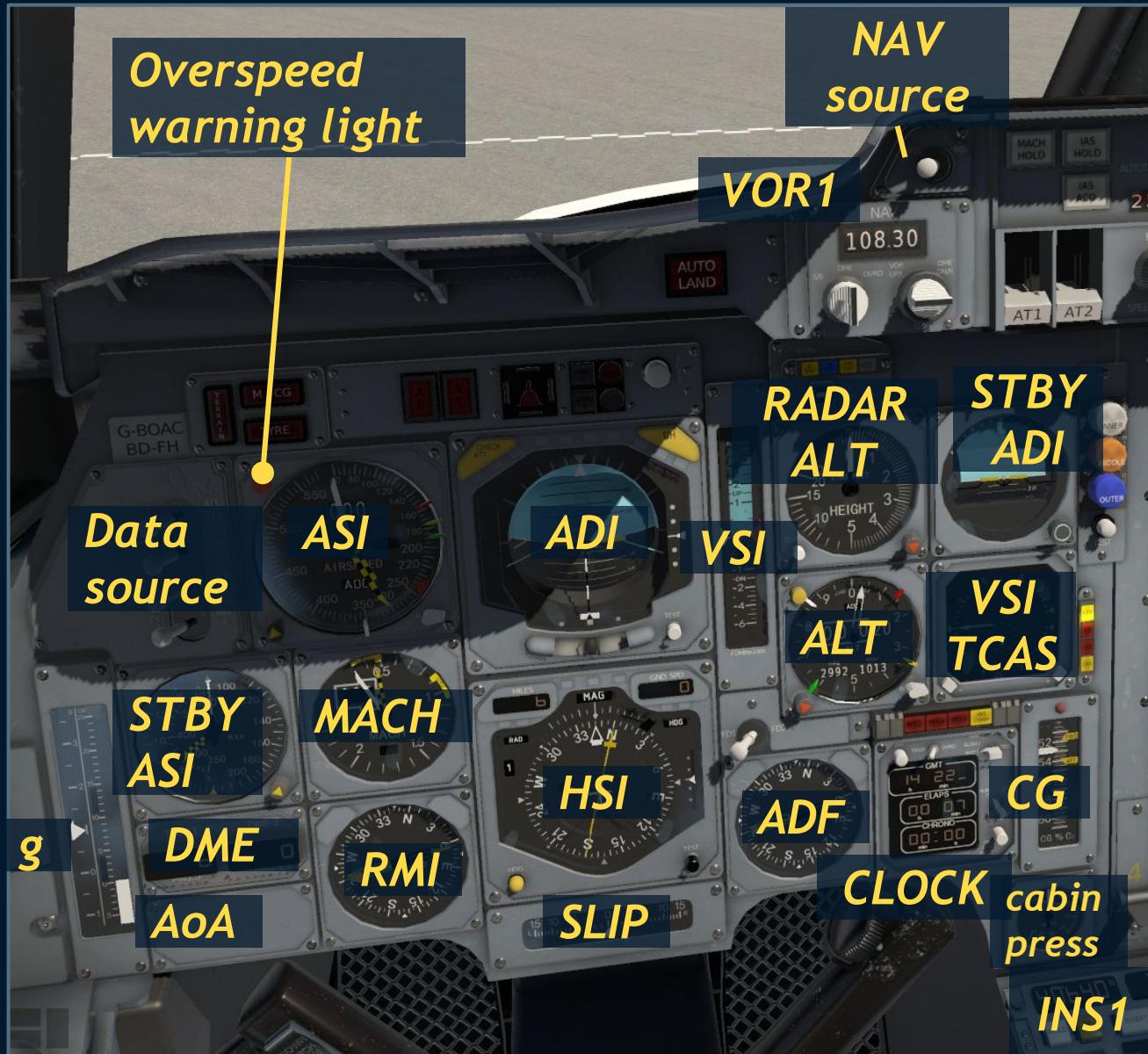
As with modern fighter jets, the pilot can not wait until the jet does something unexpected, have a calm coffee while thinking about the appropriate response, have a discussion with the other crew members and then react.

Forehand planning is key. Knowing what the jet will do next. Forehand emergency procedures clear up etc. But this needs experience.

When you are new to this jet, maybe used to fly propeller aircraft, you will run into trouble very quickly. Don't worry. Concorde has a large set of beautiful analogue instruments that will show what's wrong, the Copilot will help with audio warnings and suggestions, the graphical user interface shows a lot of info and, obviously, feel free to use the 'pause' key. Try to improve step by step and foremost,... have a good time flying Concorde!

A QUICK OVERVIEW - LEFT PANEL

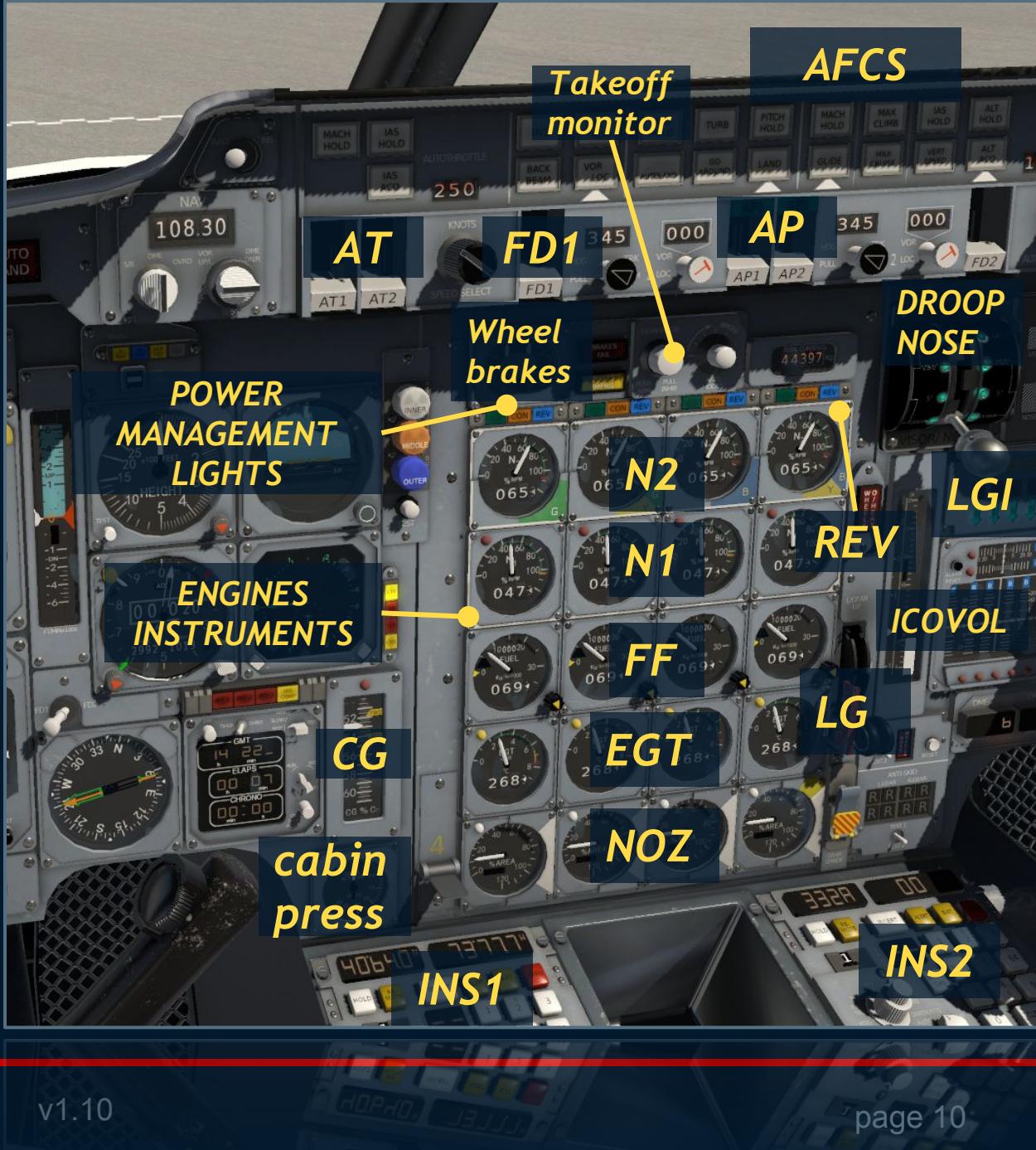
For more details see the 'Quick Start' or 'Full' manual.



- ADI** Attitude Director Indicator
- AoA** Angle of Attack indicator
- ASI** Airspeed Indicator
- CG** Center of Gravity
- CLOCK** GMT, Elapsed, Rheat
- g** G-force factor
- HSI** Horizontal Situation Indicator
- INS** Inertial Navigation System
- NAV** Navigation system
- RMI** Radio Magnetic Indicator
- SLIP** Sideslip indicator
- TCAS** Traffic collision and avoidance system
- VOR** high frequency radio beacon
- VSI** vertical speed

A QUICK OVERVIEW - CENTER PANEL

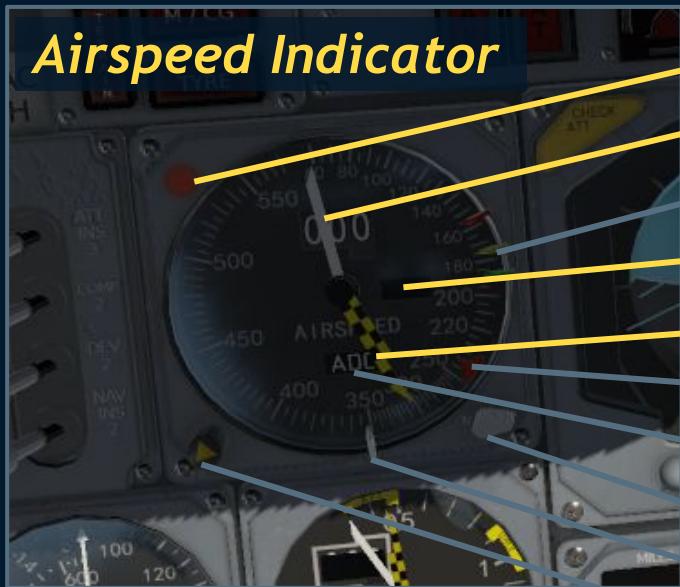
For more details see the 'Quick Start' or 'Full' manual.



AFCS	<i>Automatic Flight Control System</i>
AP	<i>Autopilot (1,2)</i>
AT	<i>Auto Throttle (1,2)</i>
CG	<i>Center of Gravity</i>
EGT	<i>Engine: Exhaust Gas Temperature</i>
FD	<i>Flight Director (1,2)</i>
FF	<i>Engine: Fuel Flow</i>
ICOVOL	<i>'Indicateur de commande de vol'</i> <i>Flight control surface pos. indicator</i>
INS	<i>Inertial Navigation system</i>
LG(I)	<i>Landing gear (Indicator)</i>
N1	<i>Engine: Low pressure stage RPM %</i>
N2	<i>Engine: HP Compressor RPM %</i>
NOZ	<i>Primary Nozzles Indicator</i>
REV	<i>Thrust Reverser status (Blue lights)</i>

Airspeed and Overspeed

For more details see the 'Quick Start' or 'Full' manual.



Overspeed warning light

Current airspeed

V bugs

V_{Mo} flag

Airspeed limit

Moveable reminder bug

Datasource indicator

Air Data Computer / Standby

Datasource selector

Moveable reminder bug

Set red reminder bug

Machmeter

Mach number

FWD CG limit

AFT CG limit

Mach needle

Mach limit needle

With so much power at disposal, it might not take all to long to an 'overspeed' warning.

As with the real machine, Concorde FXP uses the airspeed and Mach limits that change dynamically depending on the flight level.

For good performance, in many situations, it is allowed to stay near to the limits but not above them.

During overspeed:

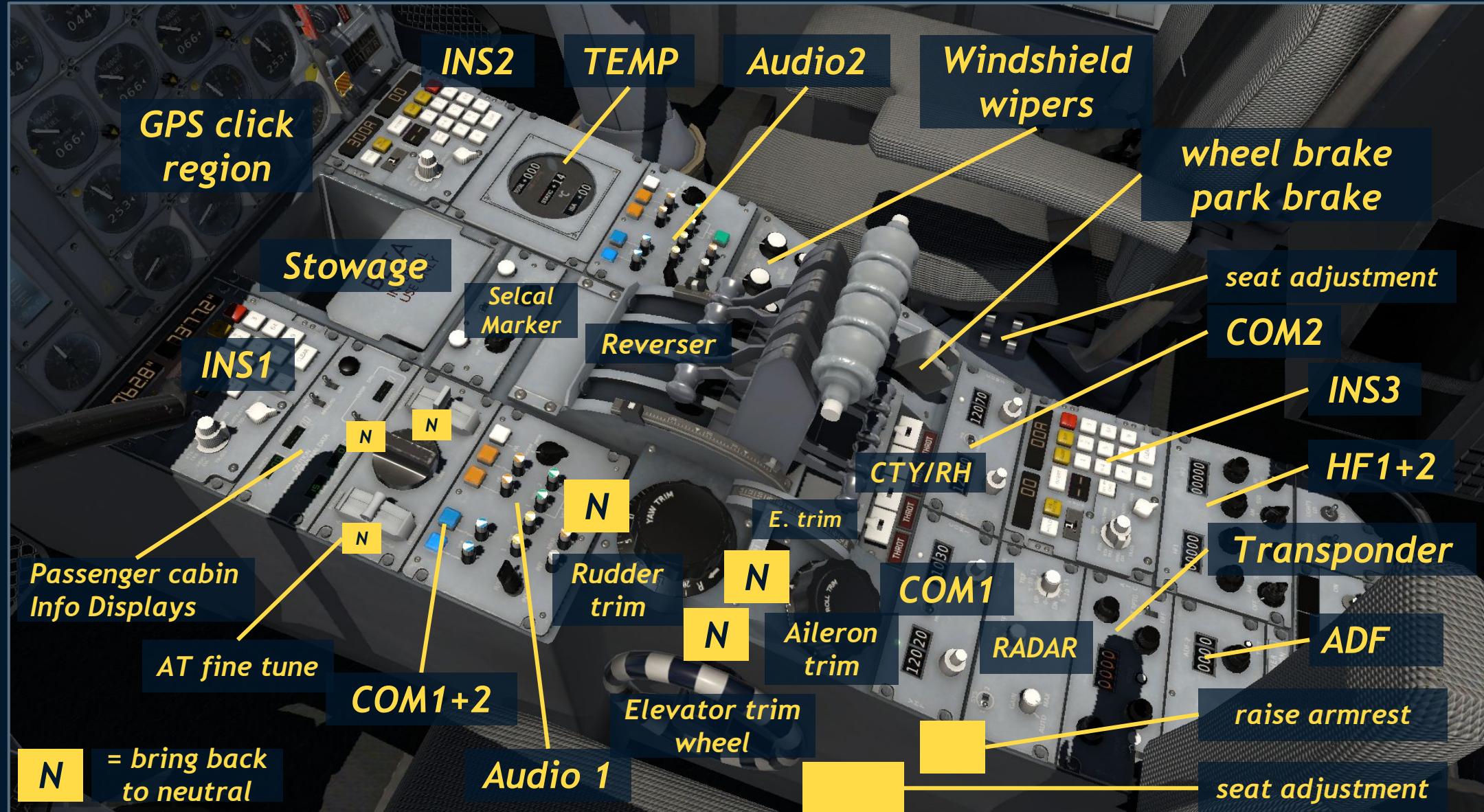
- 'overspeed warning lamp' will flash
- V_{Mo} flag will appear
- Copilot will advise you.

Often it is enough to simply increase the pitch angle. This will reduce airspeed and increase the airspeed limit value at the higher flight level.

Do not throttle back too fast during supersonic flight.

A QUICK OVERVIEW - CENTER CONSOLE

For more details see the 'Quick Start' or 'Full' manual.



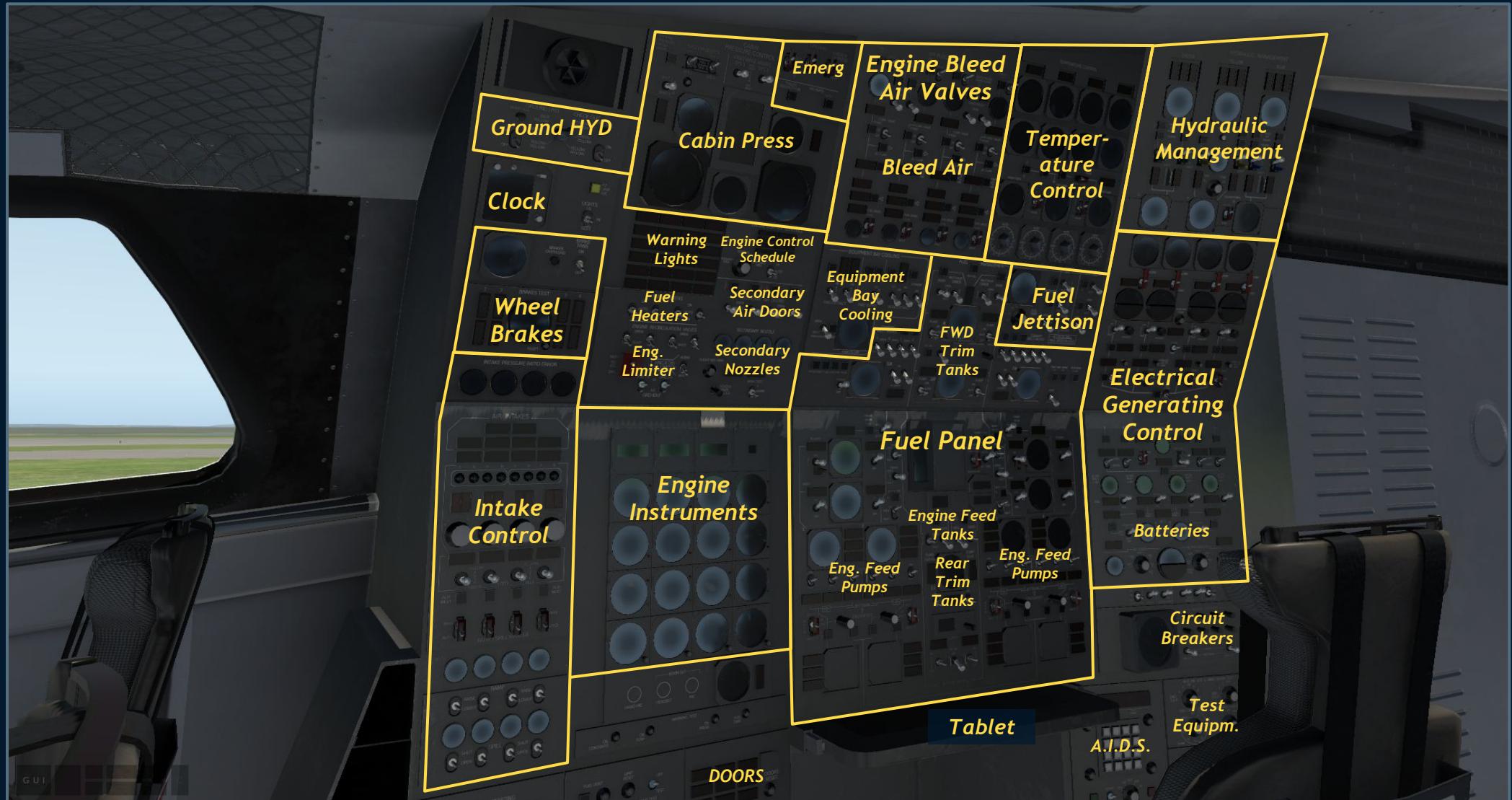
A QUICK OVERVIEW - ROOF PANEL

For more details please see the 'Quick Start' or 'Full' manual.



A QUICK OVERVIEW - **ENGINEERING**

Engineering has only basic functionality but nearly all switches are clickable.

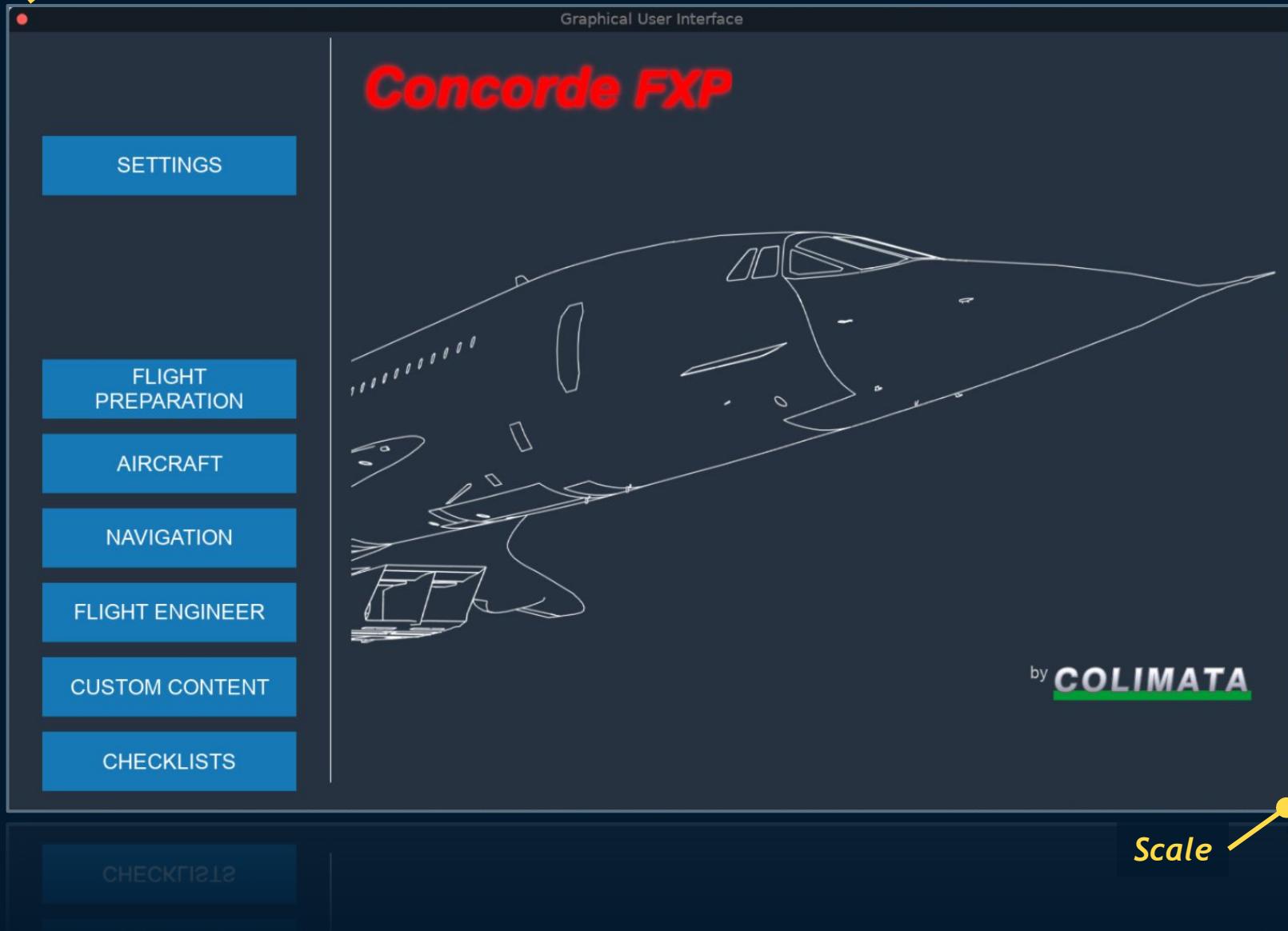


A QUICK OVERVIEW - *The GRAPHICAL USER INTERFACE*

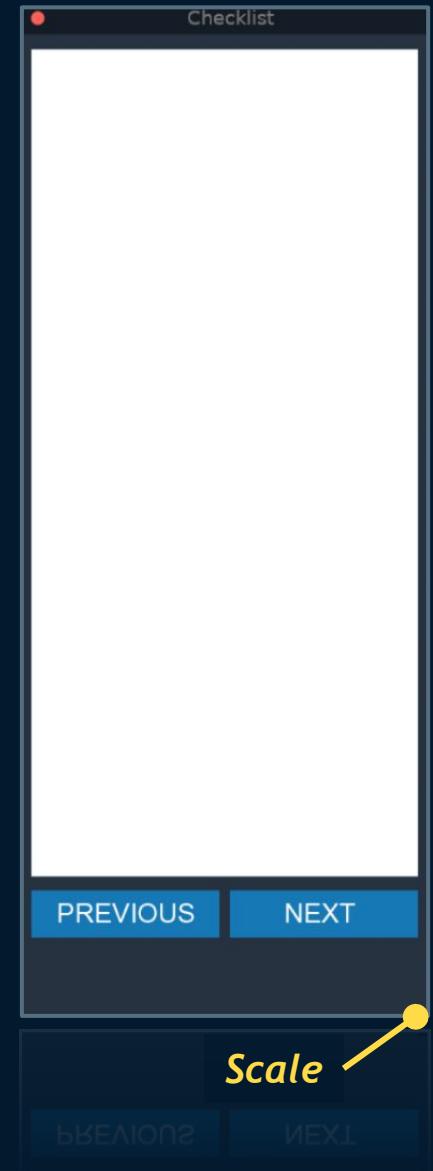
Open via Quick Access (lower left corner) or 'Concorde FXP' dropdown menu.

Close

GUI main window



Checklist window



2 'No flaps. But... two trim systems.'

Concorde's delta wing is a masterpiece of aerodynamics (more info in the full manual). Conventional flaps would not have solved the tremendous challenges the developers were in front. Efficient supersonic flight and safe landing are design goals nearly impossible to conciliate (see point 5 'Landing').

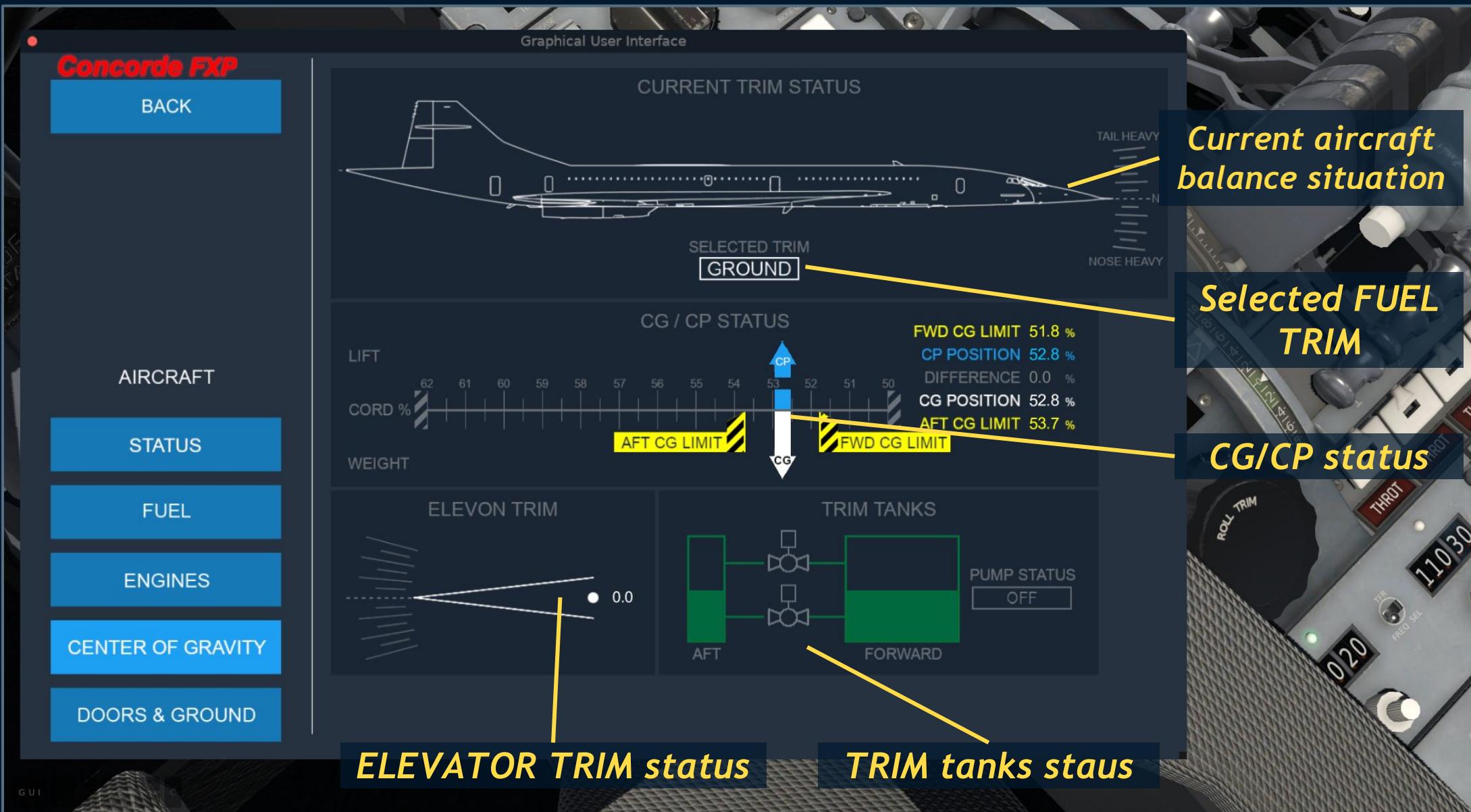
Concorde's few control surfaces have a control surface TRIM. You are probably already used to similar systems on other aircraft. You will hear a unique 'bicycle/ motor-scooter bell' sound when it's operating. When going faster and faster, the center of pressure (lift force location) over Concorde's wing moves more and more backwards. This would pull the 'tail up' and the 'nose down'. The required counter - control surface deflection would induce a huge amount of unwanted drag and, at a certain point, even harm the flight safety. That's why Concorde has a second FUEL TRIM system. This moves huge amounts of fuel (weight) back and forward between the aft and front trim fuel tanks. This keeps the jet in the desired equilibrium for the current flight phase. TRIM FUEL pumping is managed by the virtual Flight-Engineer following your commands. Please start to learn how the two trim system interact and try to handle and monitor this systems (for example via the graphical user interface).

If the 'PRO FEATURES' are ON you will feel the imbalance forces like when a wrong fuel trim setting is applied.

PRO FEATURES
 ON

TRIM SYSTEMS (GUI → Aircraft → Center of Gravity)

For more details see the 'Quick Start' or 'Full' manual.



3 'Use reheat with caution' (afterburners)

When I started this project, I have to confess that I thought that Concorde has flown most climb, and supersonic flight parts with reheat (afterburners) on. There is no way that the developers created a supercruising (supersonic without reheat) PASSENGER JET in the 1960's, right?

Wrong! They did. You are flying a 'F-22, F-35, Eurofighter, Rafale, Gripen, Su-57' style, super-cruising jet, capable to fly for hours (!) above Mach 2.0 WITHOUT reheat.

Reheat adds a huge amount of thrust pushing the jet through the sound barrier easily and it even increases safety, enabling Concorde to pull out of potentially dangerous situation very quickly. But, you guessed it, it comes to a price. Fuel consumption during takeoff is at around 22.500 kg/hour (49,600 lb/hour),... per engine! That's 90 t (198,400 lb) per hour for the aircraft, with fuel tanks containing a maximum of approx. 95 tonnes.

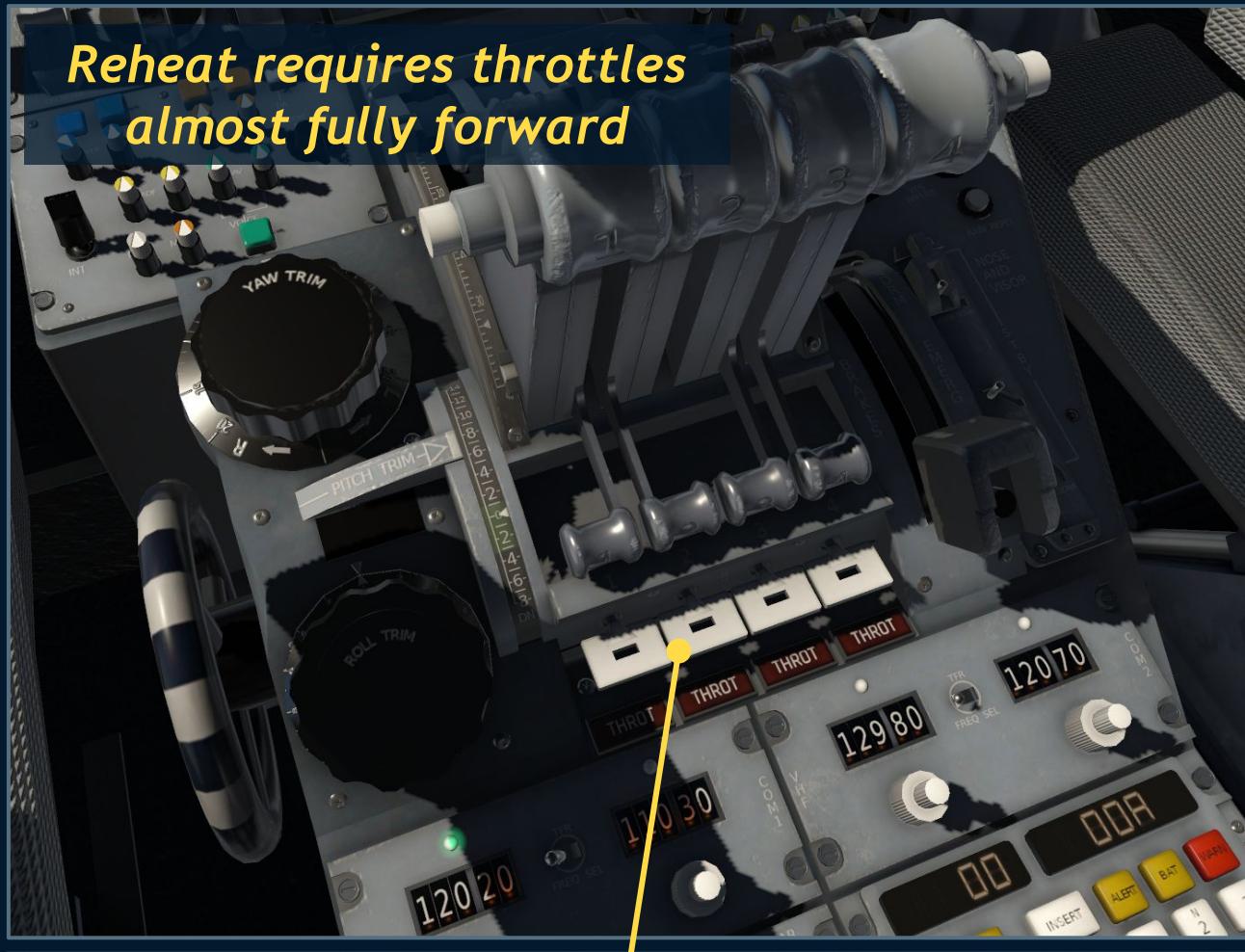
Switch reheat OFF after takeoff around 2 000 to 3 000 ft AGL and 250 kts passed.

Switch reheat OFF above Mach 1.7.

The reheat system is not designed to run for prolonged time.

The normal limit per flight is 15 minutes.

We programmed in a help for you. The lower value of the clock automatically counts for you. It shows how long the reheat has run during this flight. Furthermore the virtual Copilot will alert you and suggest procedures.



Reheat / CTY (contingency) mode switches

UP position = contingency mode

MIDDLE = normal mode (reheat available)

DOWN = reheat OFF

Reheat on/off toggle can be assigned to a joystick button in the X-Plane joystick setup menu. The command's name is:
'Colimata→Concorde FXP→Toggle reheat via CTY switches'

Concorde FXP



4 'For performance: *Follow the envelope'*

Concorde was designed with the highest efficiency goals. But its flight envelope is super large, from slow subsonic to extremely fast, super-sonic. Compromises needed to be taken.

The optimum efficiency values are achieved when Concorde flies faster than Mach 1.7, between 52 000 ft - 60 000 ft, reheat off.

At this speed the 'intake effect' starts to become more and more prominent, reheat can be switched off (above Mach 1.7) and Concorde flies in the environment she was designed for. So the efficiency goal for every Concorde Pilot is to get in this part of the flight profile as efficiently as possible and to stay there as long as possible.

Unfortunately there were many circumstances that hindered Concorde to achieve this. Not to talk about the many political issues, the sonic boom (above Mach 1.0) was allowed only over the oceans. This forced Concorde to fly not so efficiently during overland flight. For these strips:

Fly at 28 000 ft at around 350 - 400 kts, maximum Mach 0.95.

On the next page you find an overview of a default Concorde flight envelope.

Schematic flight envelope

Takeoff

- Reheat ON
- Reach 250 kts asap
- Keep accelerating
- Climb sharply
- Reach 2500 ft asap
- Stay below V-Limit
- Switch **Reheat OFF**
- Reduce pitch
- Keep climbing

Climb

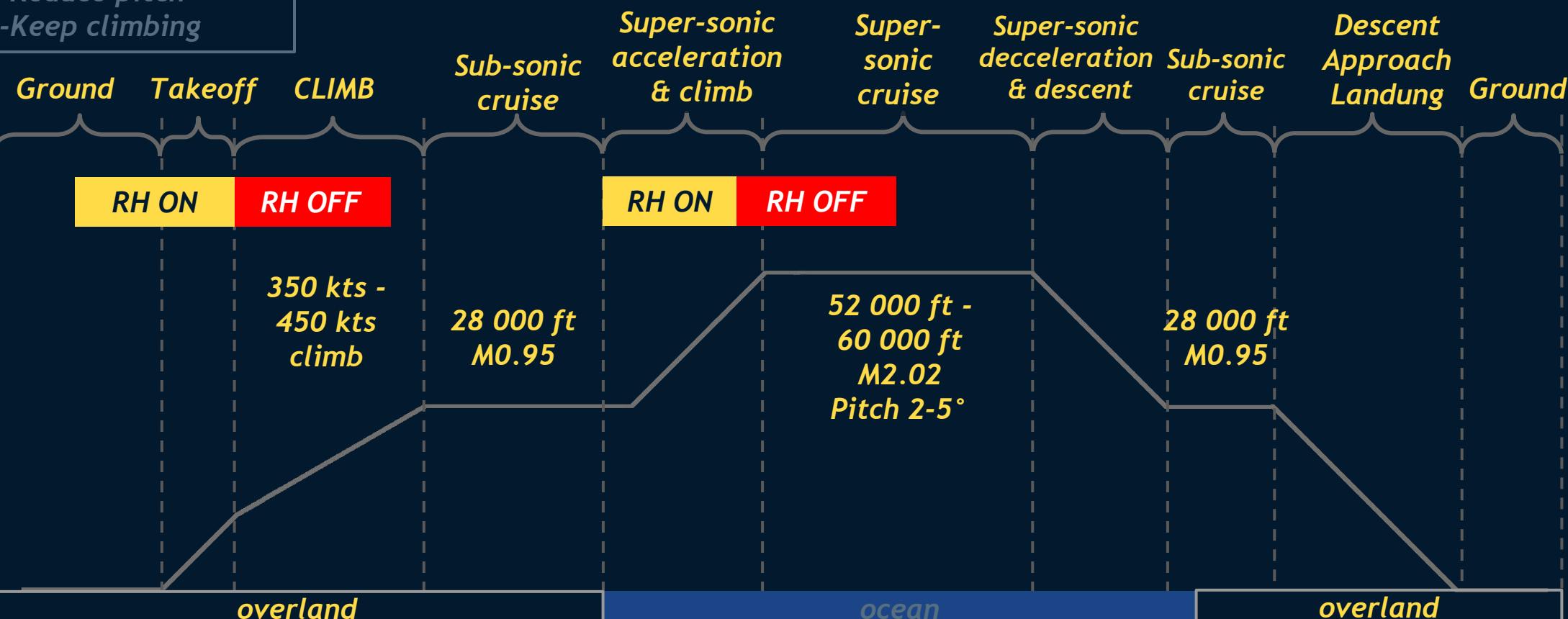
- Hold 350-450 kts
- Keep climbing
- Check Reheat OFF
- AP Pitch hold with pitch index can be used and kept for supersonic flight

- Super-sonic acceleration & climb**
- Reheat ON
- Pass Mach1.0
- At Mach1.7 **Reheat OFF**
- Keep climbing

- Super-sonic decel. & descent**
- Throttle back very slowly !
- At subsonic speeds thrust reversers can be used (ENG to idle)

Landing

- Gear down
- Nose down
- Approach ~200 kts
- ~10° pitch
- Landing ~12° pitch
- 60ft throttle IDLE
- flare out





5 'Landing is... different.'

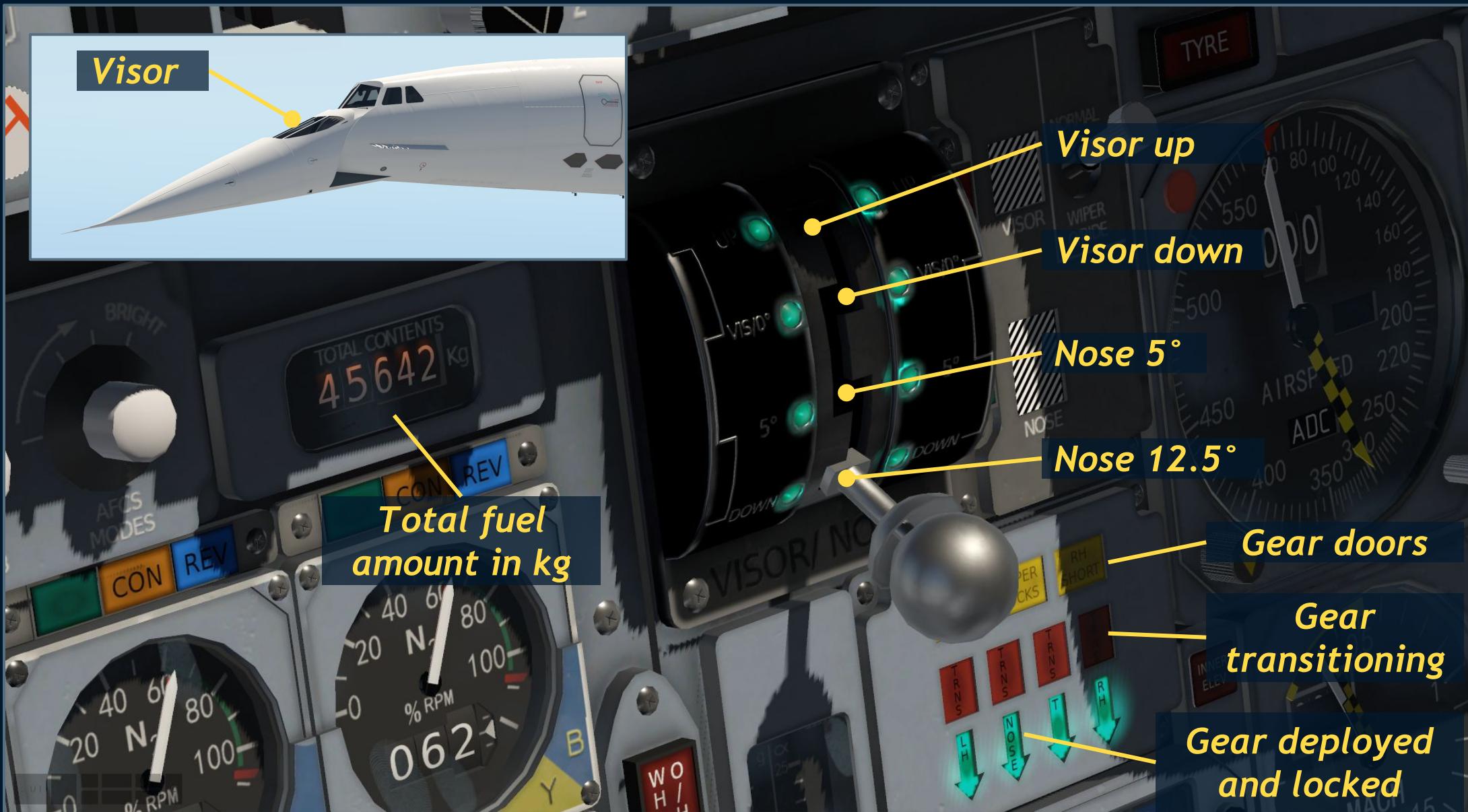
Impressive super-sonic speeds and slow, safe landing speeds are design goals nearly impossible to conciliate. One would need a thin highly swept wing for supersonic speeds and a thick low sweep wing for landing. The solution the Tupolew engineers implemented on the Tu-144, with sweepable canards is not a bad one, all the contrary. But Concorde engineers wanted an 'all in one', failsafe system and they were very successful with their solution. Plus it even looks very elegant. If it looks right

Delta wings are famous not only for the good supersonic characteristics, they also produce great amounts of additional lift at high angles of attack using the 'vortex lift generation' effect. With this effect the super powerful vortices and there pressure fields, divert even more airflow from the leading edge, even more downward and inward. There are strong forces acting here diverting massive flows downward. And according the to 'third law of motion' they induce equally strong counter force in the opposite direction, namely upward. We known these upward force better as: a great lot of additional LIFT.

Be aware that the delta wing has a stronger pitchup moment than other wings. But Concorde uses a wing profile with 'reflex' that helps to keep this at acceptable levels.

During landing you will feel vortex lift and ground effect forces that are added by our plugin.

A QUICK OVERVIEW - The droop nose lever
For more details see the 'Quick Start' or 'Full' manual.



Concorde FXP



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GUI C

LANDING - **QUICK FACTS**

For more details see the ‘Quick Start’ or ‘Full’ manual.

- + Approach and landing with Concorde requires **much higher pitch angles** than other aircraft so that the delta comes into the vortex lift range.
- + Lower the **droop-nose** to see the runway.
(Nose angle is 5° at half down and 12.5° full down)
- + Approach ~10° pitch ~170-190 kts (weight dependent)
- + Touchdown ~12-14° pitch (weight dependent)
- + Throttle **levers to idle** shortly before ground contact - **flare out**.
- + Apply **thrust reversers** as soon as main PLUS nose wheels have ground contact.
- + Do not use the wheel brakes too much - overheating danger.
- + Keep de-rotating by pushing the yoke forward during first reverser phase.

Concorde FXP



COLIMATA

6 'No spoilers. But... *thrust reversers.*'

A lighter aircraft requires less lift and ultimately generates less drag. So with the same energy (fuel amount) it has a better range. On Concorde the spoilers (air brakes) were left away also for that reason. Furthermore, if there is something a giant slender delta wing, at pitch angles, has more than enough of, than that's drag. So in most situations just reduce thrust and pull up the nose a little and the aircraft will slow down.

Be cautious when you do this at high supersonic speeds.

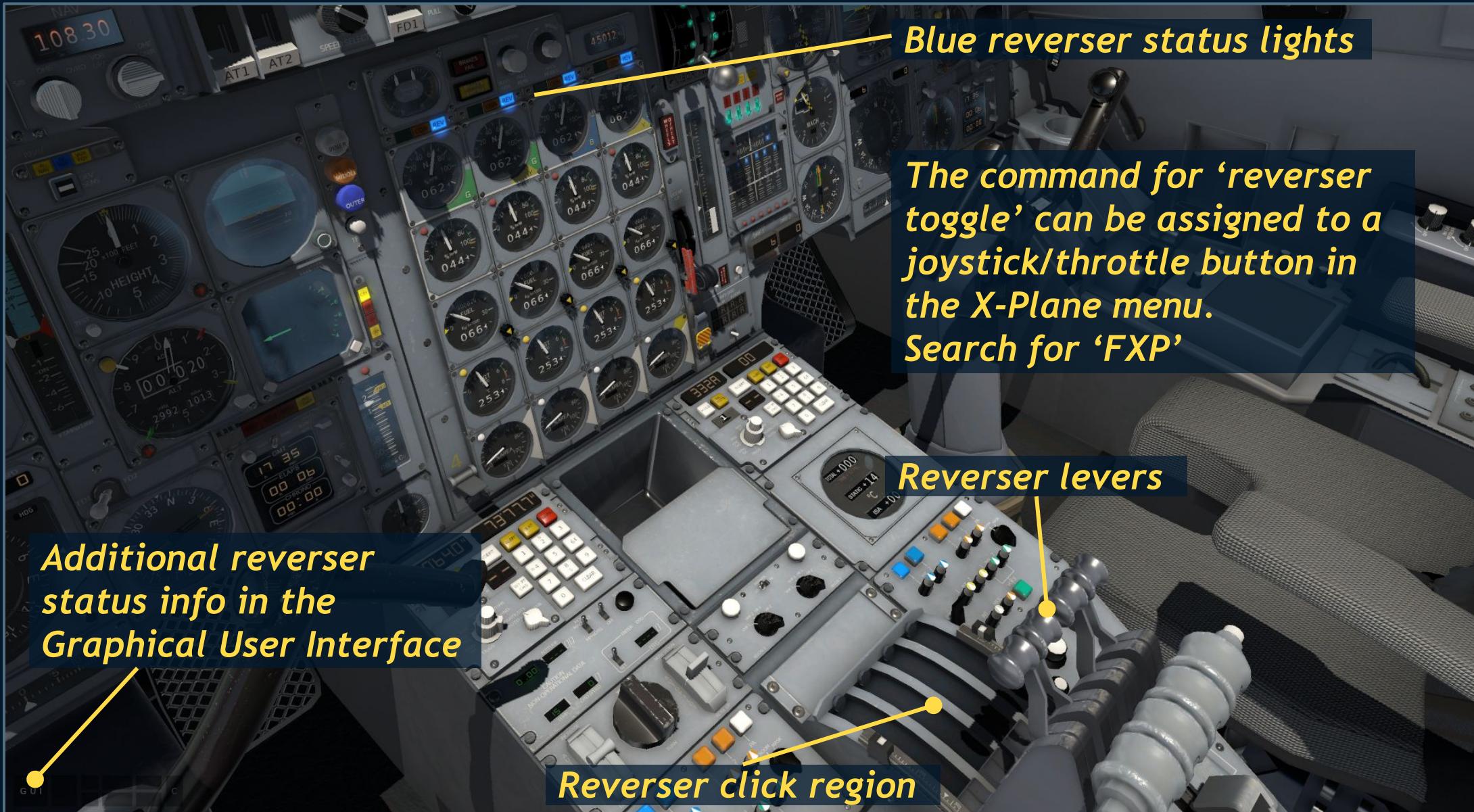
1. The wing does not allow very high positive or negative pitch angles (see ADI markings)
2. Throttling the engines back too fast might cause an engine 'surge'. That is an IGV (Intake Guide Vane) failure that can even lead to a compressor stall. So while before takeoff 'slamming' the throttle forward is good to no lose time and fuel (electronic eng. monitoring will do the rest), at high speed 'slamming' throttles back is **absolutely prohibited**.

If the air traffic controller asks you to do a pretty fast decent, with Concorde its possible to use thrust reversers in flight instead of spoilers.

- + Make sure engines and throttles are near to idle
- + Only two reversers are usable (we limited that to 2 reversers due to safety reasons)
- + **Don't forget to re-open the reverser afterwards!** (Check blue REV lights)

A QUICK OVERVIEW - *Thrust reversers*

For more details see the 'Quick Start' or 'Full' manual.



*A QUICK OVERVIEW - **Thrust reversers***
For more details see the 'Quick Start' or 'Full' manual.



*Open engine doors in
GUI → Aircraft → Doors & Ground*



Primary nozzles (inside)
*Secondary nozzles
thrust reversers*

7 'Navigation Systems.'

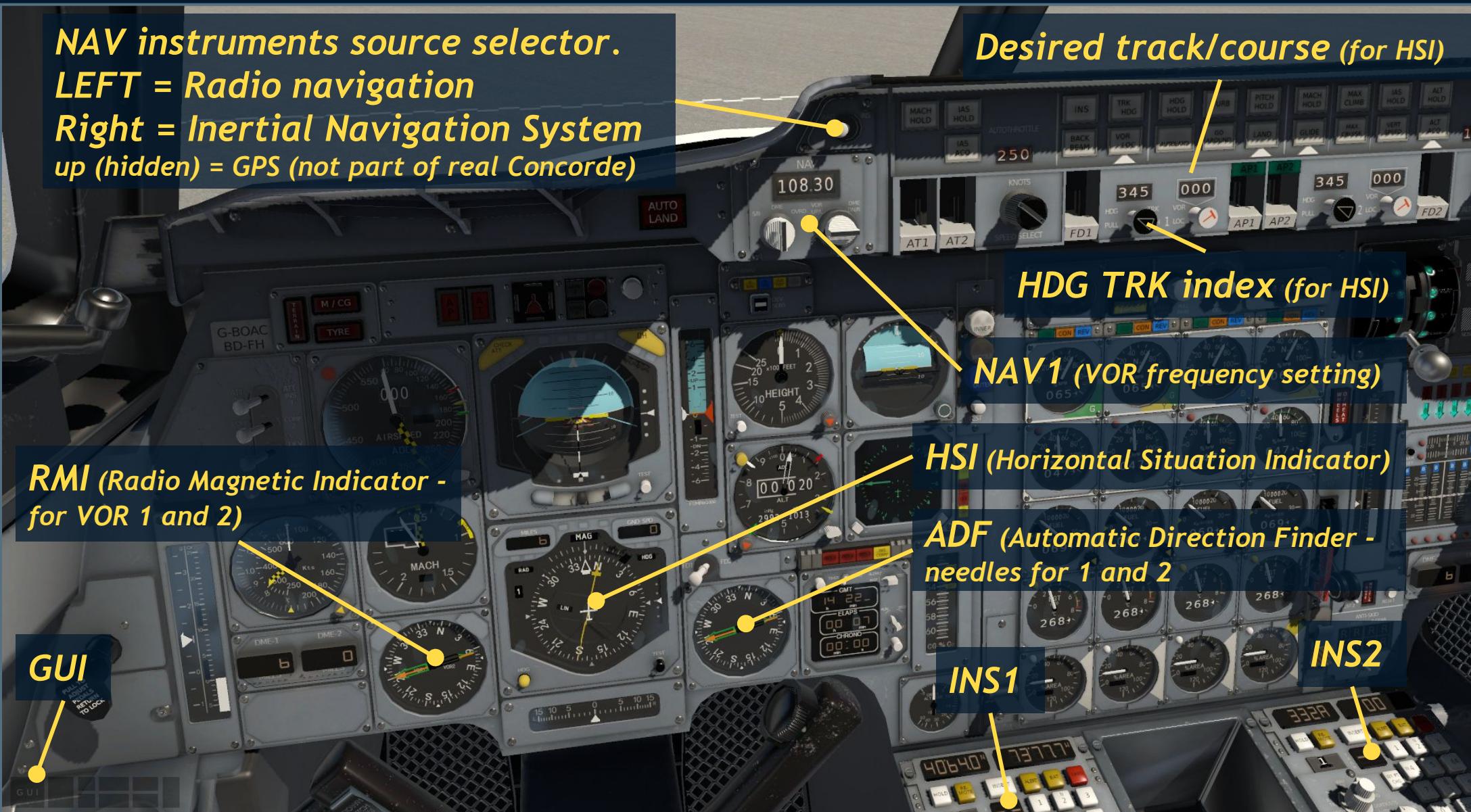
Concorde relied on two main navigation tools. A full set of radio navigation systems and inertial navigation systems, both very sophisticated, fully equipped and redundant. Especially on transatlantic flights the three INS (Inertial Navigation Systems) proved their reliability hundreds of times. An update of the INS position by radio navigation, most of the times showed that the INS was 'in place' with an incredible accuracy, even after such long distances and such high flights speeds.

Concorde FXP offers navigation system for all tastes.

- + Radio beacon navigation (using the cockpit instruments VOR 1+2, ADF1+2, ...)
- + Interactive on board CIVA - INS
- + Compatibility to Phillip's Pro CIVA
- + FMS via Graphical user interface
- + Hidden GPS to display / change / follow the route on two big modern GPS displays

A QUICK OVERVIEW - RADIO BEACON NAVIGATION

For more details see the 'Quick Start' or 'Full' manual.



A QUICK OVERVIEW - RADIO BEACON NAVIGATION

For more details see the 'Quick Start' or 'Full' manual.



A QUICK OVERVIEW - 3x INERTIAL NAVIGATION SYSTEM (ON BOARD)

For more details see the 'Quick Start' or 'Full' manual.

Data Displays

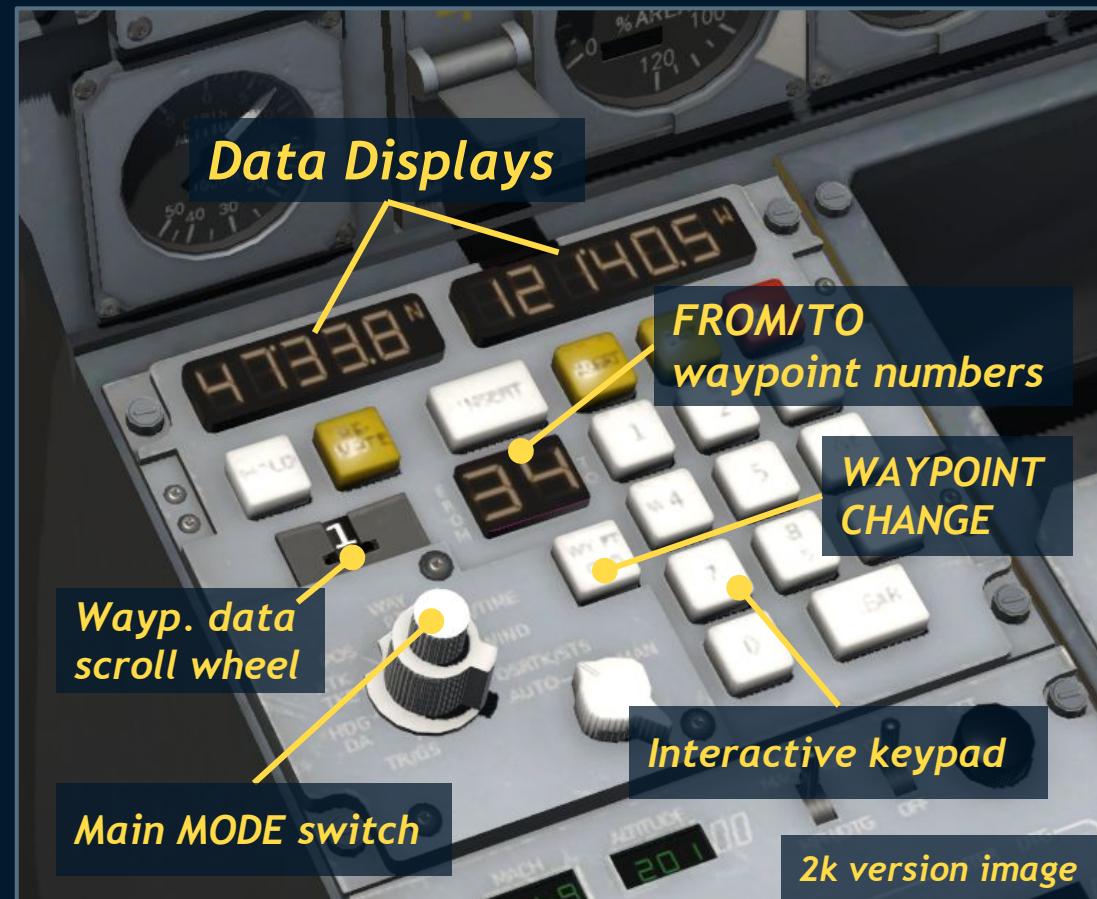
LAT/LON coordinates in Degrees / Minutes and fraction of minutes

Available modes

- +TR/GS Track° / Groundspeed
- +HDG DA Heading° / Drift Angle°
- +XTK/TKE Direction/Track angle to WP
- +POS Aircraft POSition LAT / LON
- +WAY PT Waypoint coordinates data
- +DIS/TIME Distance/Time to waypoint
- +WIND Wind Speed / Angle
- +DSRTK/ST System precision / Status

Interactive Waypoint change available:

On INS1 via the keypad every from/to waypoint number of a flightplan can be inserted. The Autopilot can fly a direct-to that waypoint and then switch back to leg mode automatically.



More info about the INS

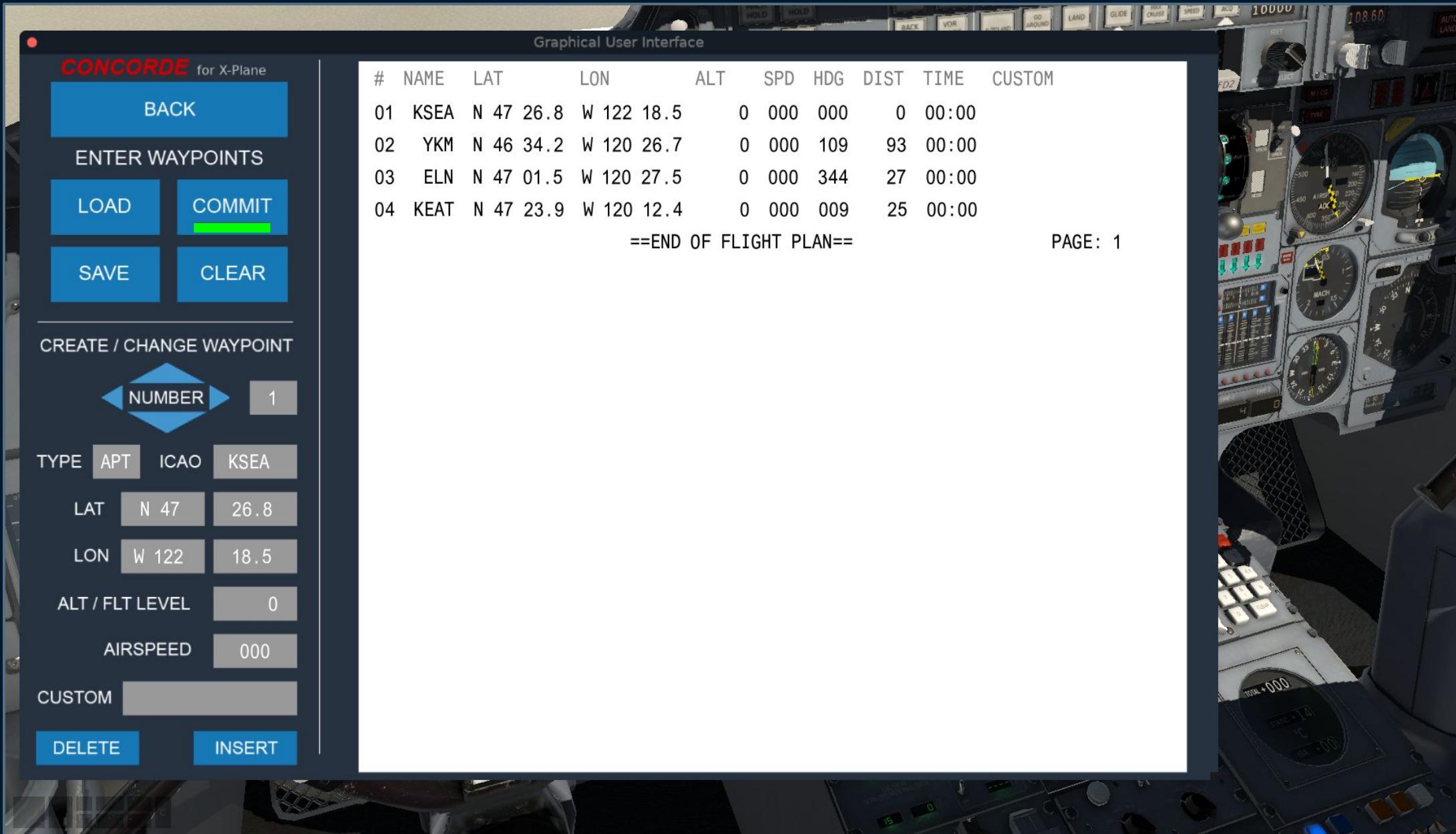
from page 71

or in the 'Quick Start' or 'Full' manual.

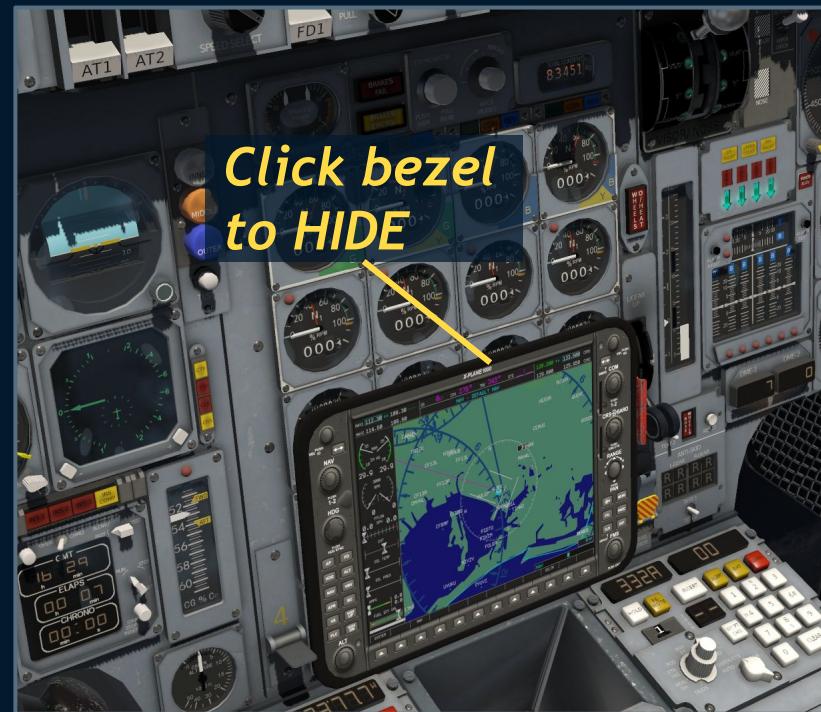


A QUICK OVERVIEW - FMS via GUI

LOAD, CREATE or SAVE flightplans and send them to the board systems via 'COMMIT'



A QUICK OVERVIEW - GPS (not part of real Concorde)
For more details see the 'Quick Start' or 'Full' manual.



8

’Autopilot.’

The real Concorde was equipped with an Autopilot that offered 20+ functions. It is impressive what was achieved with the possibilities of that time. One has always to remember that this jet can fly super- and sub-sonic, very high in cold, thin air, or very low in warm, thick air. Completely different circumstances for the Autopilot.

Concorde FXP since version 1.02 includes all primary Autopilot functions, most of them working like in the real aircraft. Be aware AP and Autothrottle are available only above 160 ft AGL. Above that level functions that are not available will flash rapidly when pressed.

During landing AP & AT will switch off automatically at 180 ft above the ground.

Two very handy functions of AP and AT are ‘PITCH HOLD’ and IAS ACQ.

1. Select the desired pitch angle on the ADI (Attitude Director Indicator) by setting the white ‘pitch index’ bar. Custom commands for this are available. They can be assigned to buttons.

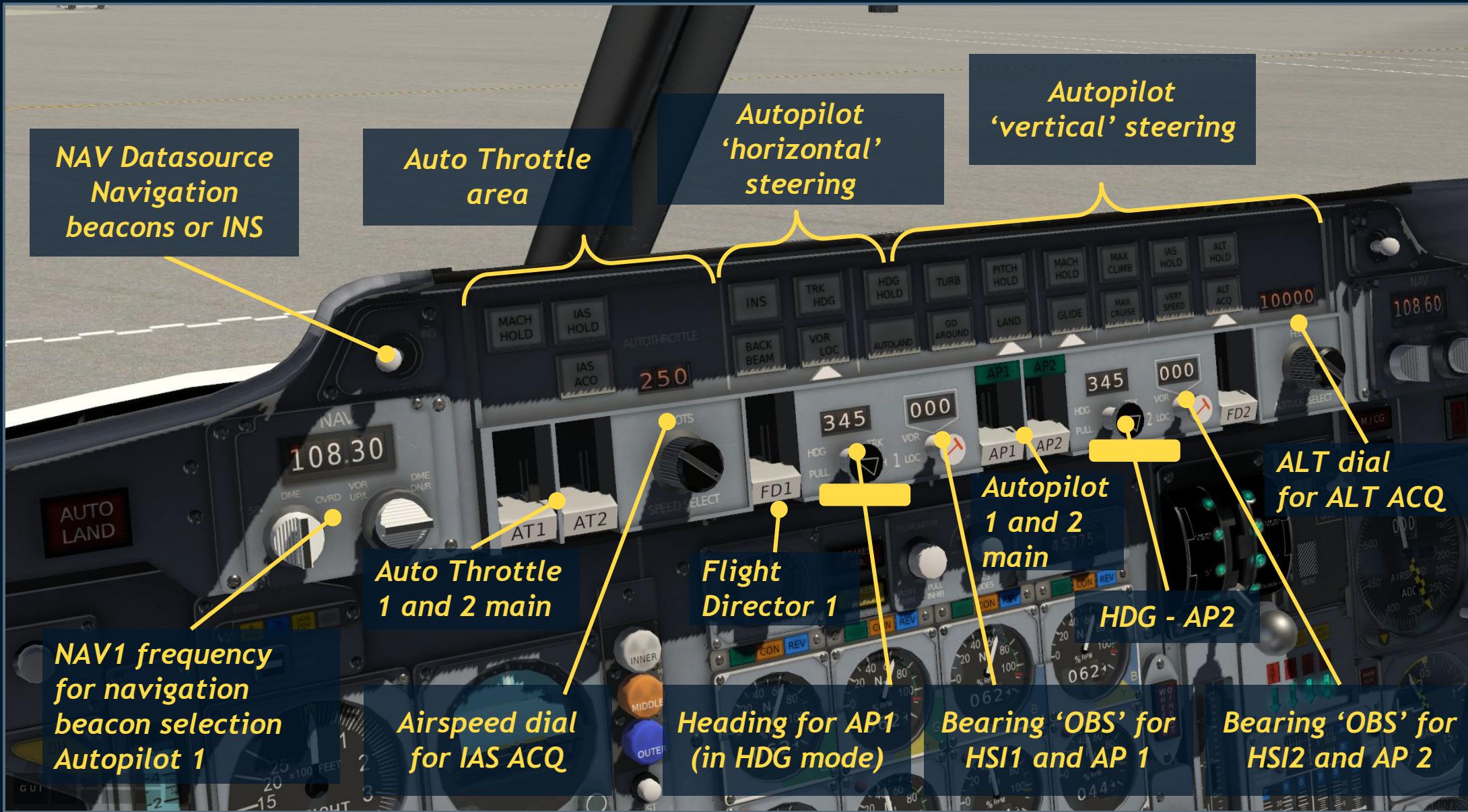
Concorde did not fly its supersonic tracks at 0° pitch. Maintain 2-4° pitch depending on the weight and let her oscillate between 52 000 to 60 000 ft.

2. IAS ACQ will bring the aircraft to the airspeed value set on the dial

3. Every AP function requires one of the AP main switches to be on.

Every Autothrottle function requires one of the AT main switches to be on.

Autopilot - OVERVIEW



Autothrottle:

- + **MACH HOLD** holds the current Mach number via throttle movement
- + **IAS HOLD** holds the current Indicated airspeed via throttle movement
- + **IAS ACQ** acquires airspeed set on the AFCS airspeed dial via automatic throttle movement.

AP horizontal steering:

- + **INS** Flies to one waypoint after the other in LEG mode if a flight plan is loaded (Can be loaded via the GUI -> Flight Prep. -> Waypoints -> Commit). Via the INS1 a 'Direct-To' any waypoint can be commanded (WPT CHG).

+ **TRK HDG**

- + Track mode: Flies straight to active navigation beacon (NAV1)
- + Heading mode: Turns the aircraft towards the heading set on the dial (black rotary). Afterwards holds that heading until a new value is set.

- + **VOR LOC** Turns the aircraft towards the VOR bearing of the set navigation station. Captures and holds that bearing (VOR radial) when reached. Works also with ILS.

- + **HDG HOLD** The aircraft holds the current heading.

AP vertical steering:

- + **PITCH HOLD** holds pitch angle set on the pitch indexer (ADI - white bar). Set pitch index up/down command can be assigned to buttons.

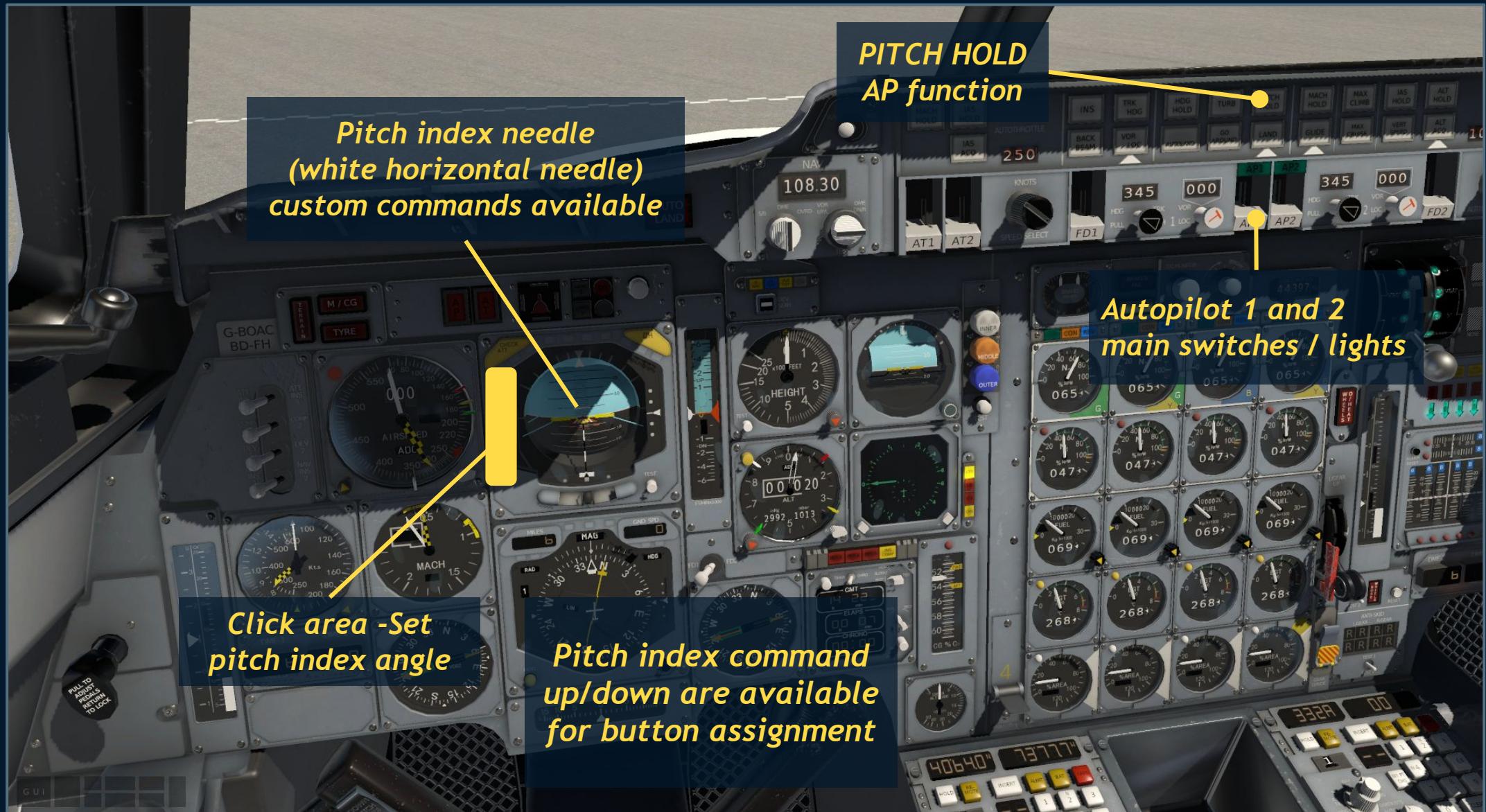
- + **ALT HOLD** holds the current altitude by changing the pitch of the aircraft if necessary. Takes new value if aircraft is manually forced to new altitude.

- + **ALT ACQ** altitude acquire holds the aircraft at the altitude value set on the altitude dial as soon as this altitude is reached. Pilot decides how to reach this ALT. When ALT HOLD was engaged before, the system switches to VERT SPEED automatically. Pilot needs to set climb speed.

- + **VERT SPEED** reaches and holds the vertical climb speed set on the vs-bug on the vertical speed indicator instrument. Custom commands available for vs-bug up/down.

Autopilot - *Pitch hold*

For more details see the 'Quick Start' or 'Full' manual.



AUTOTHROTTLE

For more details see the 'Quick Start' or 'Full' manual.



Acquire airspeed
set on dial

Acquire airspeed will
automatically switch to
IAS HOLD as soon as the
set speed is achieved.



MACH HOLD speed can be
increased or decreased
via the AT datum lever on
the center console.

All Autothrottle functions
will switch off automatically
below 180 ft AGL.

More info on AUTOPILOT FUNCTIONS from page 60
or in the ‘Quick Start’ or ‘Full’ manual.



9 'Pilot & Copilot.'

The workload with Concorde was exceptionally high for the crew especially during certain flight parts. A normal takeoff just happens super-quickly compared to others, not to mention a potential takeoff abort the crew must be always prepared for. Climbs, cruises, approaches, nearly all parts happened at significantly higher speeds then on other airliners and therefore in shorter time frames.

On Concorde FXP the inexperienced pilot will run into trouble almost certainly. Overspeeds, excessive climb and descend rates, tail-wheel-strikes, excessive reheat use, are just a few potential pitfalls a new Pilot might run into. Don't worry. As long as you act cautiously and treat her like a lady she will bring you home safely. The airframe is robust and the powerful 'Olympus' engines will get you out of nearly all harmful situations.

As on the real aircraft 'things' happen really quickly. So at the beginning when one gets a warning on the instruments or the Master Warning panel it might not be immediately clear what to do and how to proceed.

Here the virtual CoPilot and Flight Engineer come into play. They will advice you with audio messages. This will be a great help in very dynamic situations.

If they talk too loud or too much, mute them in the SETTINGS menu inside the GUI.



*To hear the:
'3,2,1, now!'
announcement:*

- 1. Switch on
'Takeoff monitoring'**
- 2. Open the brakes**

10 'Virtual Flight Engineer.'

The three man cockpit,... wait, there were also female Concorde pilots, so.... the three professionals cockpit, was not only chosen because it was standard at that time. Concorde was a very complex aircraft demanding more then others. It required a dedicated Engineer monitoring and managing all the complex systems during rapidly changing flight parts. A Concorde flight was really short compared to others, around 3,5 hours. The Engineer had not too much time to relax and enjoy the view and the good food.

On **Concorde FXP** the switches on the Engineering station are already all clickable and many of the instruments work. It is possible to do a full 'cold & dark' startup realistically. Checkout the 'cold & dark startup' manual in the package.

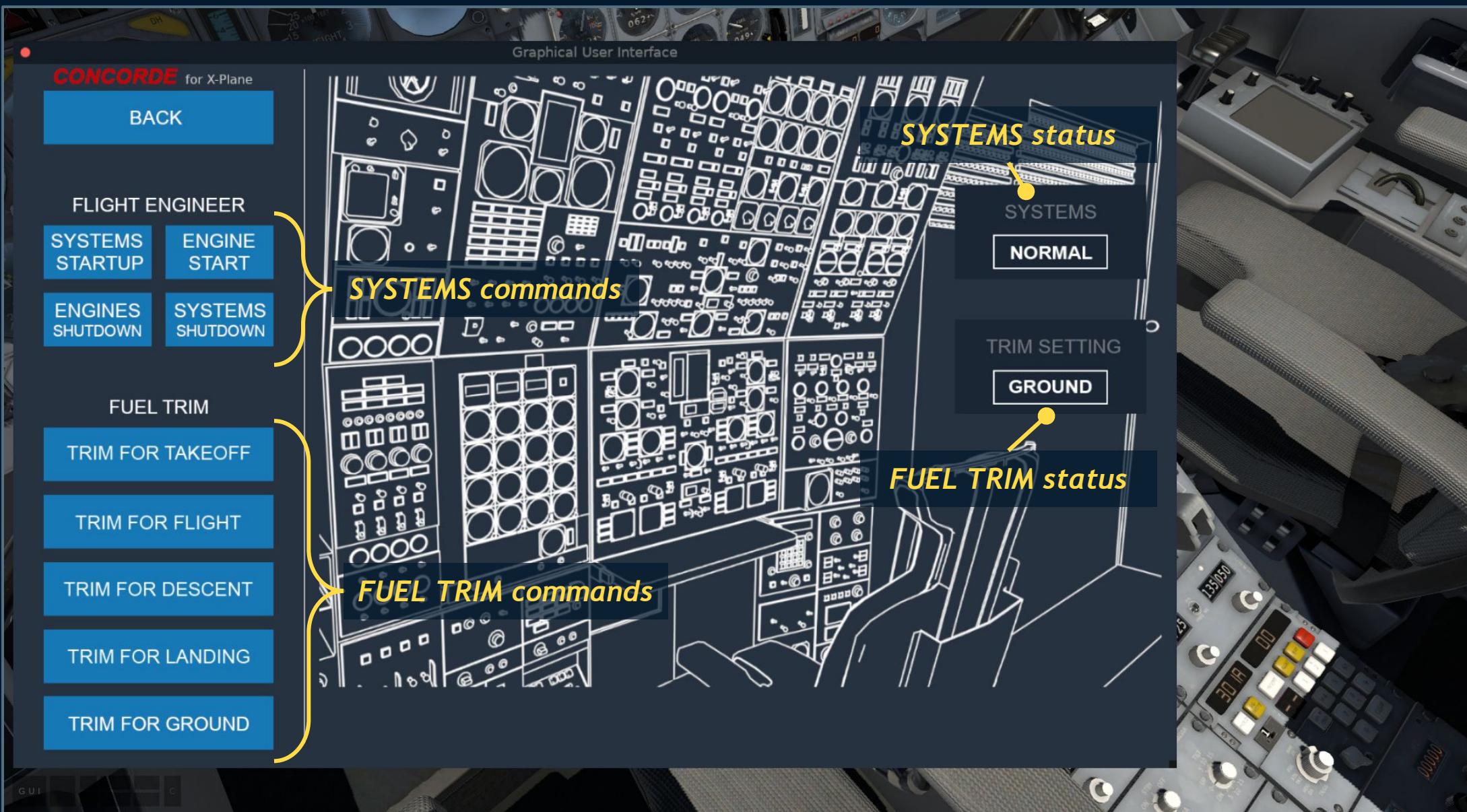
With enough support a later version 2.0 could offer even more functionality on this station. The 'virtual Flight Engineer' is also capable to start and shutdown the systems and engines. Furthermore 'he' pumps fuel around the main- and the TRIM tanks.

If the 'PRO FEATURES' are ON you will feel the imbalance forces like when a wrong fuel trim setting is applied.



A QUICK OVERVIEW - VIRTUAL FLIGHT ENGINEER

Alternative access via dropdown menu.



Setup & Interaction

For the installation process please, please refer to the 'Concorde_FXP_Installation.pdf'.

We invested great efforts in this aircraft not only to pack in as much as possible, but also to enable it to run on computers that do not use the very latest hardware. A version with reduced 2k textures is available to save VRAM. This add-on should therefore work on every computer that is able to run X-Plane and still has some resources left. **Since this pdf will be downloadable publicly: If you know that your computer already struggles to run basic X-Plane please consider buying this product only after the next hardware upgrade.**

One of the biggest impacts on performance are the **X-Plane graphic settings**. Lower graphic settings can lead to much, much higher frames per second (fps). If you run Concorde FXP and the fps are low, X-Plane graphic settings is the first place to check.

Concorde FXP in the 'all up' configuration (cabin, engine interior, etc) can take longer to load than other aircraft. For computers with less resources we included several alternative *.acf (aircraft) files. You find them in the folder 'CONCORDE_FXP->CUSTOMIZE->Alternative acf'. With these files you have exactly the same flightmodel, functionality, sound etc. there are just some objects of your choice that are not loaded, this saves computing resources.

Interaction:

Most switches are clickable at their bottom.

X-Plane can display the click regions (View -> Show Instrument Click Regions)



Interaction:

Most dials can be set by rotarys or directly on the single digits.

X-Plane can display the click regions (View -> Show Instrument Click Regions)

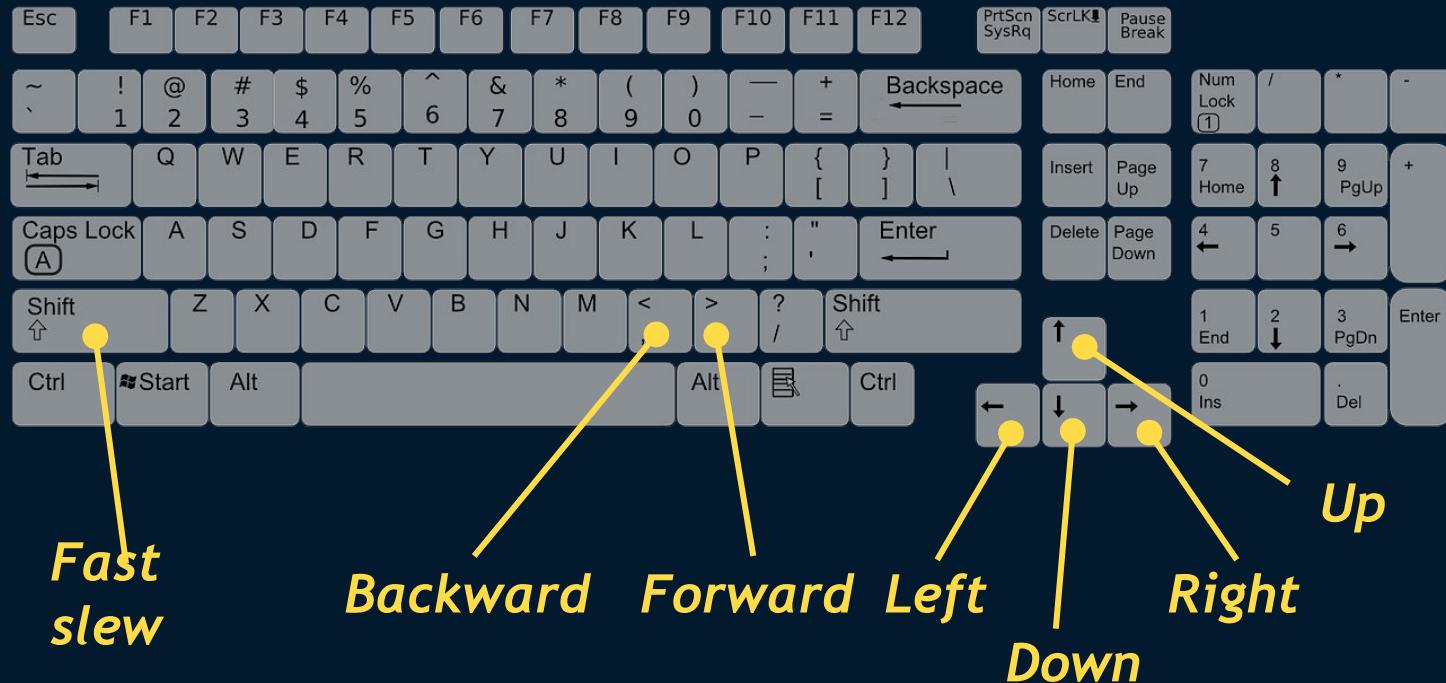


Many rotaries can also be set with the mouse wheel. Some not, to avoid influence with the 'view zoom' function that is also done with the mouse wheel.



Explore the jet:

The 3D cockpit is a good location to start. I wonder what's behind that cockpit door ;-)



‘Good to know’



Good to know - Utility Vehicles

GUI → Aircraft → DOORS & GROUND

CONCORDE for X-Plane

BACK

AIRCRAFT

STATUS

FUEL

ENGINES

CENTER OF GRAVITY

DOORS & GROUND

Graphical User Interface

ENG DOOR OPEN
ENG DOOR CLOSED
REPL ENGINE NOT REQ
FUEL TRUCK WORKING
FRIDGE WORKING
STAIRS READY
CATERING WORKING
DOOR CLOSED
CARGO DOOR
DOOR CLOSED
DOOR WORKING
DOOR WORKING
DOOR WORKING
ENG DOOR CLOSED
ENG DOOR CLOSED
AVAILABLE AIR COND.
GPU
WORKING CONVEYORS
WORKING SERVICE VAN
WORKING CATERING
WORKING FUEL TRUCK

SIDE PANELS
REFUEL OPEN
CARGO OPEN
CARGO CLOSED
SERVICE OPEN

PUSHBACK TRUCK
LEFT RIGHT
60 m 196 ft
- +
AIRCRAFT LENGTH 62m
ENGAGE NOT IN USE

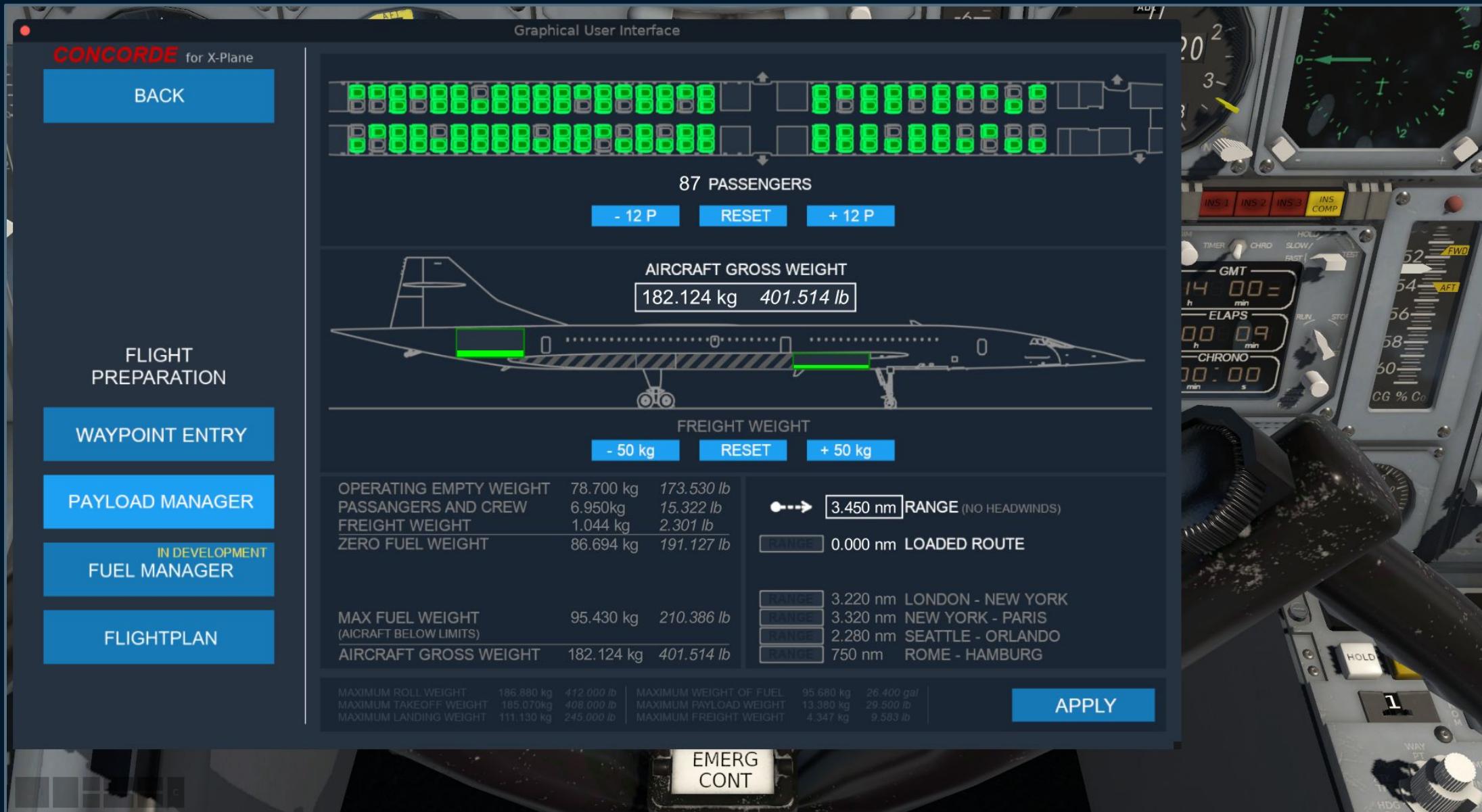
CLICK BUTTONS
OBJECT LOADING MIGHT TAKE A FEW SECONDS

Vehicle object loading can take a few seconds.

Integrated pushback truck

Good to know - AIRCRAFT LOADING

GUI → FLIGHT PREPARATION → PAYLOAD MANAGER



Good to know - AIRCRAFT LOADING

GUI → FLIGHT PREPARATION → FUEL MANAGER



Good to know - AIRCRAFT STATUS

GUI → AIRCRAFT → STATUS

CONCORDE for X-Plane

BACK

AIRCRAFT

STATUS

FUEL

ENGINES

CENTER OF GRAVITY

DOORS & GROUND

Graphical User Interface

CURRENT TRIM STATUS

TAIL HEAVY

NOSE HEAVY

SELECTED TRIM GROUND

ENGINES

CTY1 OFF 63 % SURGE FIRE

CTY2 OFF 63 % SURGE FIRE

CTY3 OFF 63 % SURGE FIRE

CTY4 OFF 63 % SURGE FIRE

FUEL

TOTAL FUEL REMAINING 85.1 t

RANGE ESTIMATE 3.176 nm

LANDING GEAR

DN DOWN DN DOWN

WEIGHT

MAX TAKEOFF WEIGHT 185.0 t

CURRENT GROSS WEIGHT 178.3 t

MAX LANDING WEIGHT 111.1 t

WEIGHT FOR ALT AND TEMP 0.0 t

90% WAT (1 ENGINE FAIL) 0.0 t

AIRCRAFT CURRENTLY TOO HEAVY FOR SAFE LANDING

AIRSPEDS

CURRENT	FLO	0 kts	M0.0
V1	154 kts		
Vr	172 kts		
V2	185 kts		
VNOISE	250 kts		
V/Mc	523 kts	M1.7	
V/Mmo	564 kts	M1.9	
Vdes	456 kts		
Vref	194 kts		

WIND

SPD 0 kts DIR 000

CTY Contingency switches
-OFF Reheat available
-ON Reheat NOT available

SURGE Engine compressor stall
HYD Oil pressure malfunction
WAT Weight ideal for ALT and Temp
90% WAT When only 3 ENG available

V1 Takeoff Decision Speed
Vr Rotation Airspeed
Vs Min Climbout Speed with 3ENG
Vnoise Hold during noise abatement

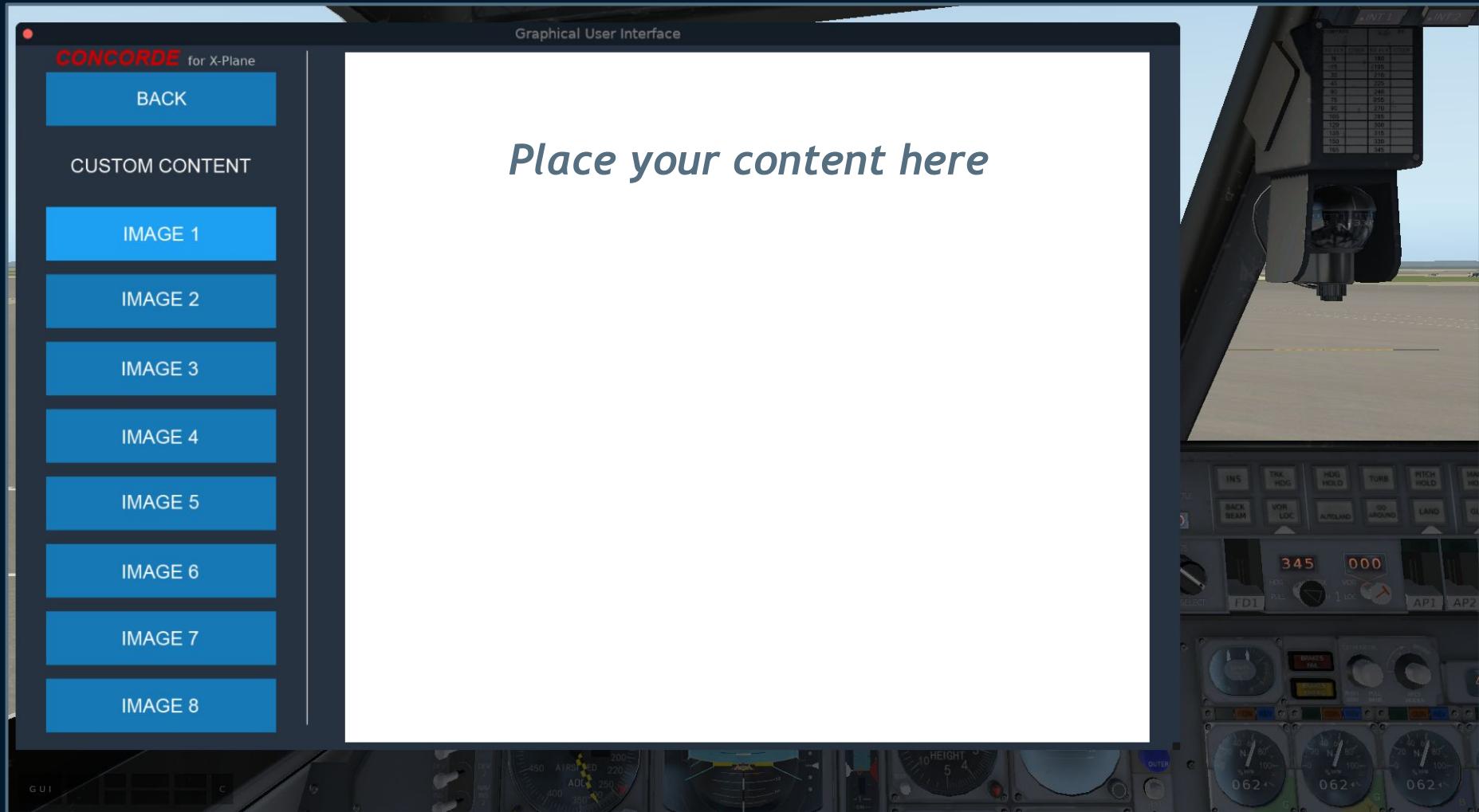
V/Mc Cruise Speed
V/Mmo Airspeed Limit
Vdes Descent Airspeed
Vref Final Approach Speed

Good to know - YOUR CONTENT IN THE COCKPIT
GUI → CUSTOM CONTENT

The Graphical User Interface can display images of your choice.

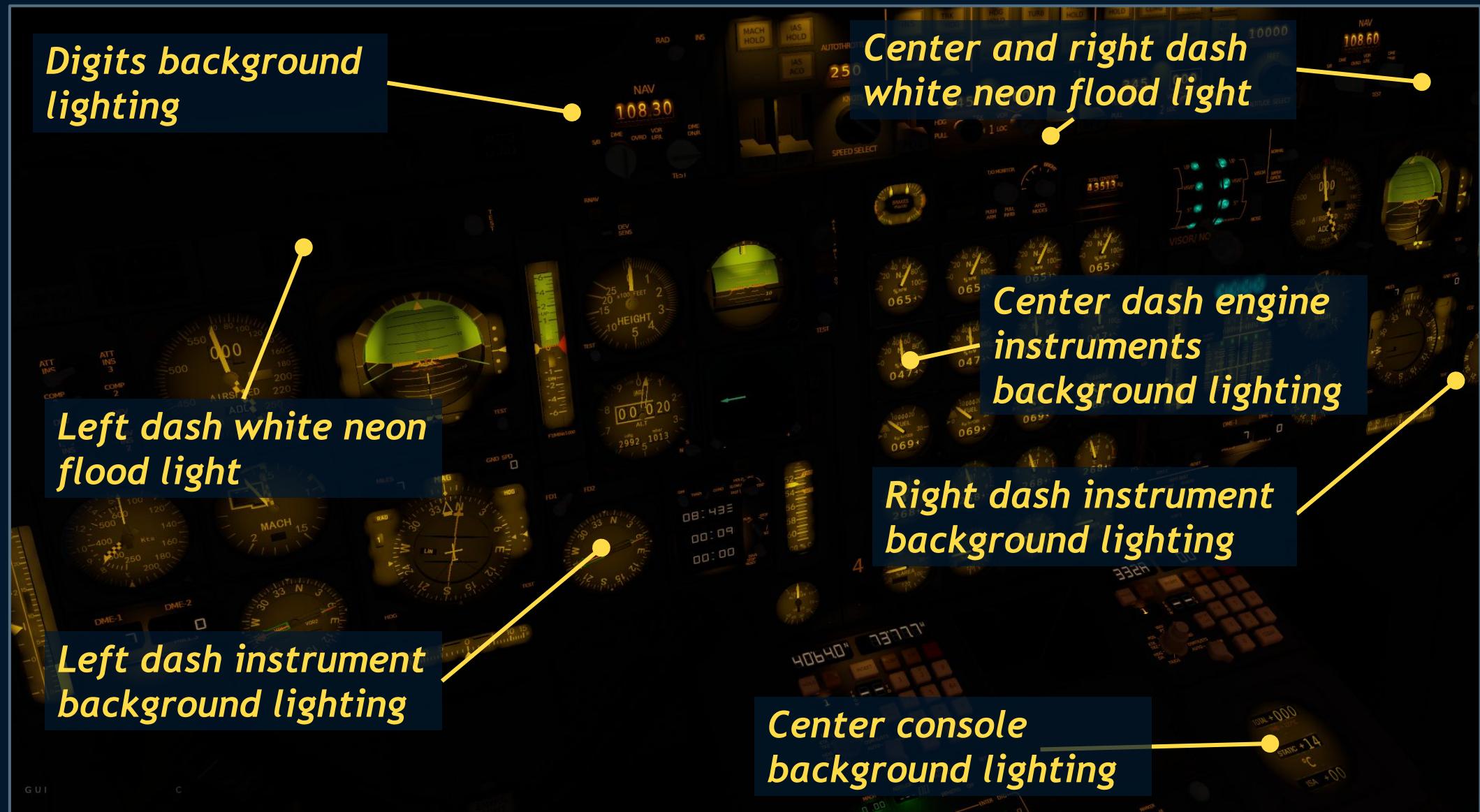
The images used are placed in the folder:

‘...\\X-Plane 11\\Aircraft\\CONCORDE_FXP\\con_data\\custom\\’



Night lighting quick access:

Night lighting of the single cockpit areas, can be dimmed via there cockpit switches or handy quick access areas. Here a few examples (more in the manuals).





AUTOPILOT *more in depth* - INS function

For more details see the 'Quick Start' or 'Full' manual.

The functions turns the aircraft automatically into the direction to the next waypoint leg (straight line between two waypoints). The function works on the roll axis. It does not compensate for parallel distance to the leg if present.

Use the INS 'Direct-To-waypoint' command (WPT CHG) to fly the direct track to a waypoint. After that waypoint is reached the system turns back to 'leg mode' automatically.

Active FROM/TO waypoint numbers are shown on the waypoint numbers display. INS scroll wheel waypoint numbers does NOT change FROM/TO waypoint numbers.

In WAY PT mode the coordinates of the first 9 waypoints are shown on the data displays. Use INS scroll wheel to cycle displayed waypoint numbers.

In order to work a flight plan must be loaded:
GUI -> Flight Preparation -> Waypoints -> Commit.
(Backup solution is flightplan loading via the G1000)

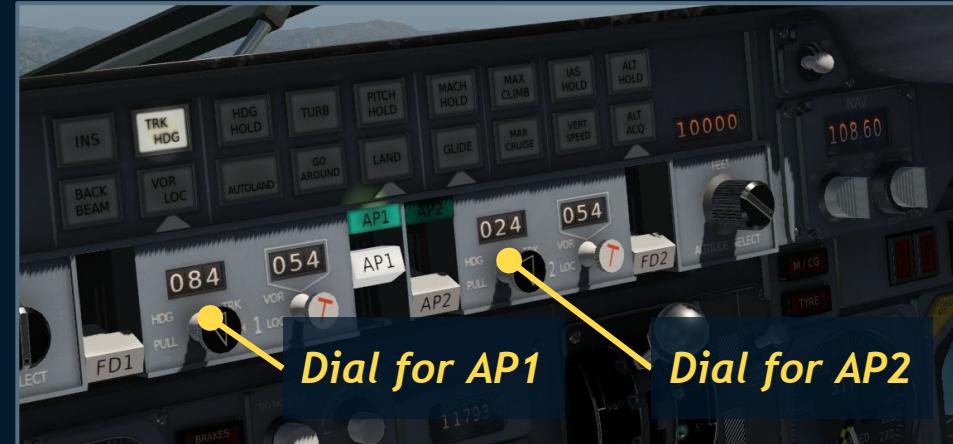


AUTOPILOT more in depth - TRK/HDG

For more details see the 'Quick Start' or 'Full' manual.

TRK = TRACK mode (black rotary pushed in)

Track mode turns the aircraft directly to the active navigation beacon and holds that track. (default mode)
If Autopilot 1 main switch is on, NAV1 beacon is used.
If AP1 is OFF and AP2 is ON, NAV 2 beacon is used.



HDG = HEADING mode (black rotary PULLED out)

Turns the aircraft towards the heading set on the dial (black rotary). Afterwards holds that heading until a new value is set.

If Autopilot 1 main switch is on, the left dial is used.
If AP1 is OFF and AP2 is ON the value of the right dial is used.

During the runtime of both functions Autopilot pitch angle is limited to $+15^{\circ}/-5^{\circ}$.



To change between the modes push/pull the black rotaries:

AUTOPILOT *more in depth* - HDG HOLD

For more details see the 'Quick Start' or 'Full' manual.



The aircraft holds the current heading. Operates on the roll axis of the aircraft. The function can be combined with other functions from the 'vertical modes'.

Autopilot pitch angle is limited to $+15^\circ$ / -5° during this function.

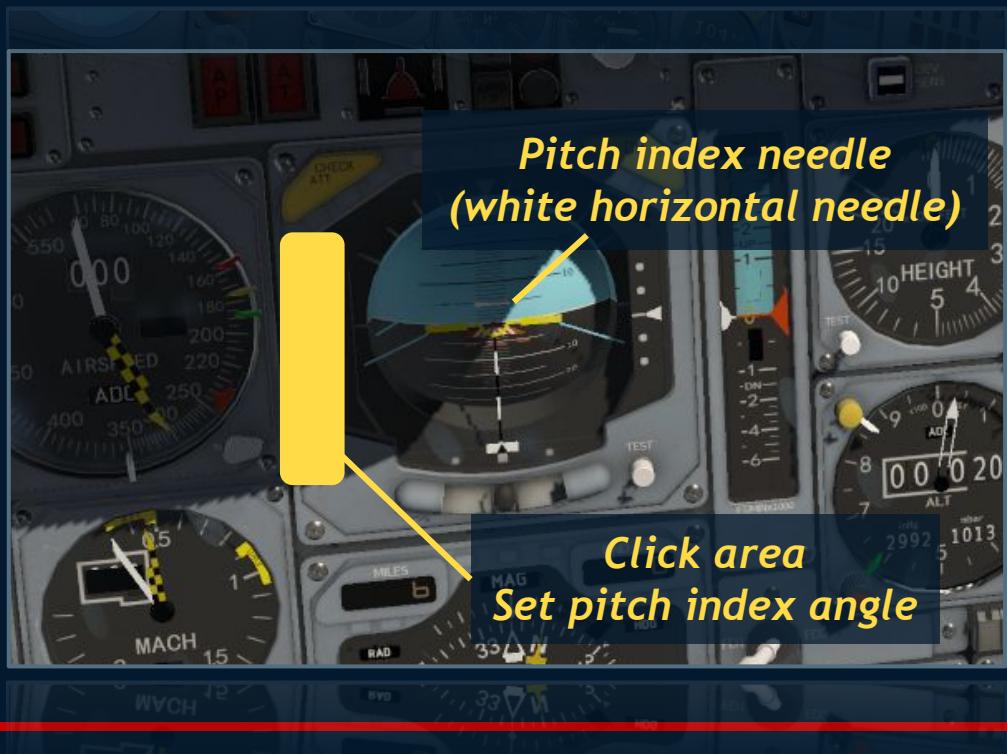
AUTOPILOT more in depth - PITCH HOLD

For more details see the 'Quick Start' or 'Full' manual.

Operates on the roll and pitch axis of the aircraft. Holds the aircraft, wings leveled (if no conflicting AP function is active), at the pitch angle set on the pitch indexer. The indexer can be set via click region or button assignment. The pitch indexer is limited to $+20^{\circ}/-5^{\circ}$.

The function can be combined with other AP functions from the 'horizontal modes'.

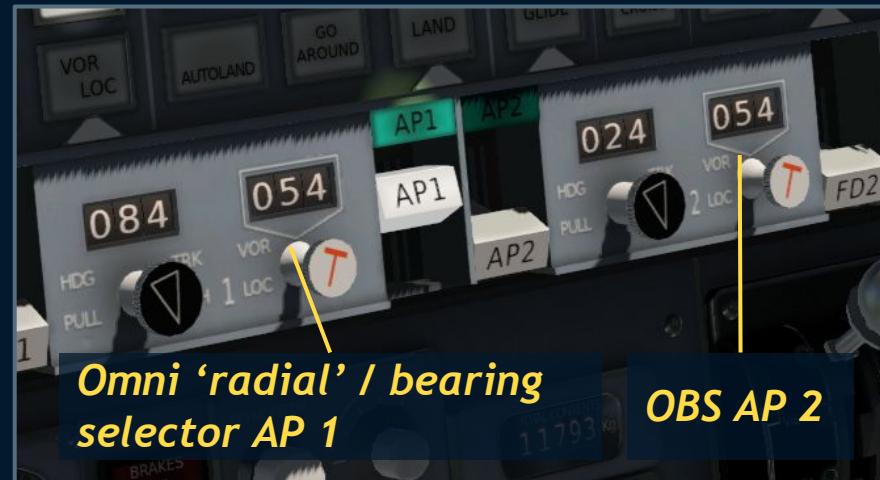
Concorde did not fly its supersonic tracks at 0° pitch. Maintain $2-4^{\circ}$ pitch depending on the weight and let her oscillate between 52 000 to 60 000 ft.



AUTOPILOT more in depth - VOR/LOC

For more details see the 'Quick Start' or 'Full' manual.

While the TRK mode of the TRK/HDG function flies the aircraft straight to a navigation beacon, VOR LOC can follow a radial of your choice from a beacon:



VOR LOC is also able to automatically compensate the lateral deviation during ILS approach.

When VOR LOC is engaged, normally the aircraft is not already flying the desired radial. That's why the button light will go off and the 'prime light' will light up (white triangle below button).

A steady prime light indicates that the selected VOR/ILS has been found but currently the deviation from the radial is very large.

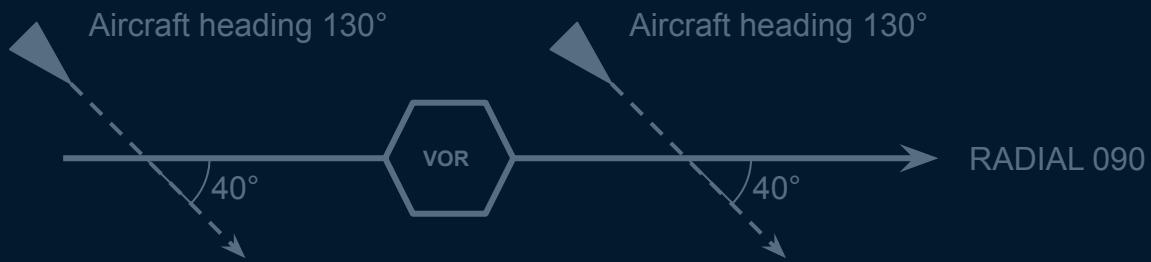
Only if the prime light flashes in pulses the VOR/ILS selected on the active NAV has not been found.

Assuming the VOR/ILS has been found, prime light on, the aircraft will turn choosing a heading that will lead it to intercept the radial.

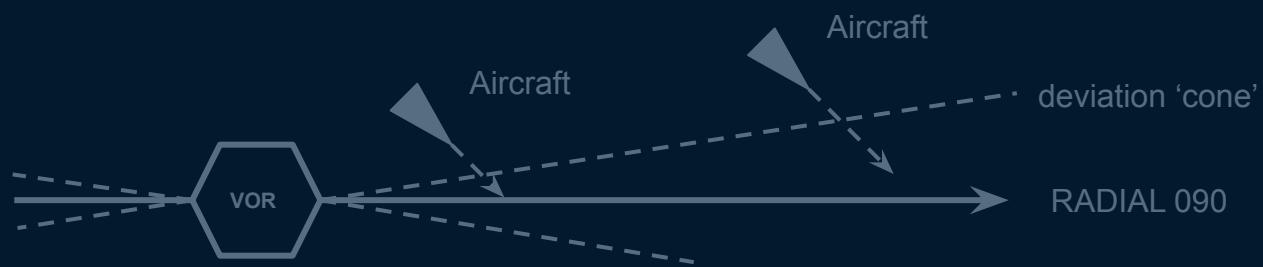
The intercept is normally done at a 40° angle:



AUTOPilot more in depth - VOR/LOC



The aircraft will fly this heading until it receives a deviation signal from the beacon. Depending on the distance to the beacon that deviation varies.



As soon as the aircraft senses a deviation signal (outer deviation cone) it will start a series of turns in various magnitudes to align itself with the radial without lateral deviation. During this process the 'prime light' goes off and the button light comes up. Depending on the position of the aircraft relative to the beacon, its heading and airspeed, it might take more or less turns until the aircraft flies on the radial without deviation. This works also with ILS.



AUTOPILOT more in depth - VOR/LOC

Be aware that not all ILS have the lateral information required by the VOR LOC function. Some send only vertical glideslope information.

Furthermore the range of the ILS signal can have significantly less range than a VOR signal. With no signal the 'prime light' will flash. ILS lateral deviation is shown on the ADI. To see the correct deviation also on the HSI set the matching OBS course. ILS glideslope info is available on the ADI and the HSI.

If Autopilot 1 main switch is on, NAV1 is chosen and the left dial is used. If AP1 is OFF and AP2 is ON, NAV2 is selected and the value of the right dial is used. This way preselection is possible.

Autopilot pitch angle is limited to $+15^\circ$ / -5° during this function.

VOR navigation is more ideal for subsonic speeds than for supersonic speeds. Use INS as alternative.



AUTOPILOT more in depth - ALT HOLD
For more details see the 'Quick Start' or 'Full' manual.



Operates on the pitch axis of the aircraft. Holds the current altitude. It takes new altitude values if aircraft is manually forced to new level. Can be combined with functions from the 'horizontal modes'.

Concorde during supersonic cruise was allowed to oscillate between 52.000 and 60.000 ft enabling her to always fly in the optimal performance zone. Using PITCH HOLD AP function might be more ideal for that goal.

AUTOPilot more in depth - ALT ACQ

For more details see the 'Quick Start' or 'Full' manual.

Altitude acquire holds the aircraft at the altitude value set on the altitude dial, as soon as this altitude is reached.

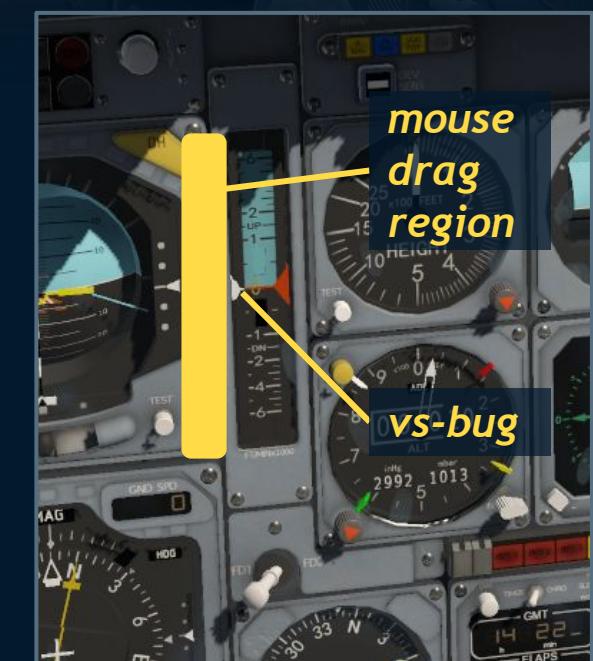
When ALT HOLD was not on before:

While ALT ACQ is on, the pilot is responsible to bring the aircraft near to the selected altitude. The function itself will not command vertical speeds until close to the chosen altitude.

When the aircraft is within 500 ft of the selected altitude, ALT ACQ will take over vertical speed, climb/descent at 800 ft/min and then level out at the selected altitude. (Near to ground descent rate is reduced to 500 ft/min).

When ALT HOLD WAS on before:

ALT ACQ behaves differently. In this case it will activate the VERT SPEED autopilot function automatically. VERT SPEED will command the aircraft to climb/descent at whatever rate is selected on the vs-bug on the VSI (command for button assignment available). It's however up to the pilot to select a adequate value. VERT SPEED will follow the vs-bug value until close to the selected altitude.



AUTOPilot more in depth - ALT ACQ



AUTOPILOT more in depth - VERT SPEED

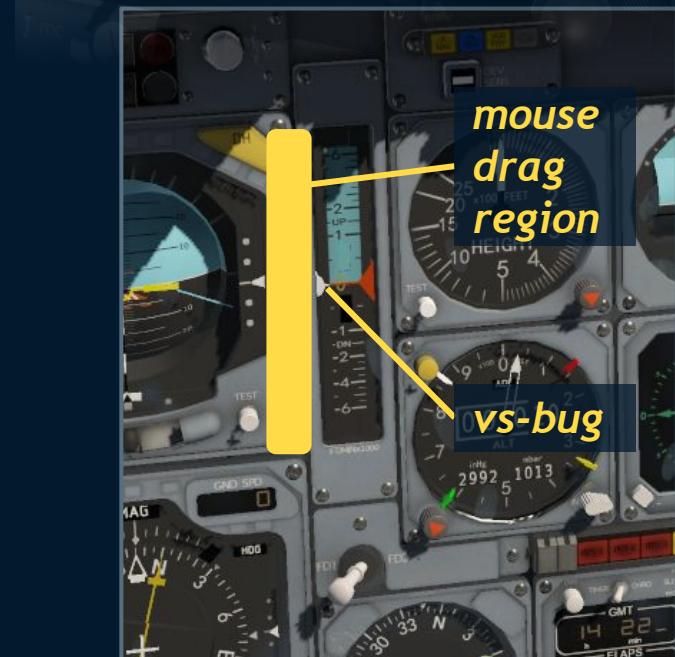
For more details see the 'Quick Start' or 'Full' manual.

VERTICAL SPEED reaches and holds the vertical climb or descent rate set on the vs-bug on the vertical speed indicator instrument.

It operates in the pitch axis of the aircraft and can be combined with other AP function from the 'horizontal modes'.

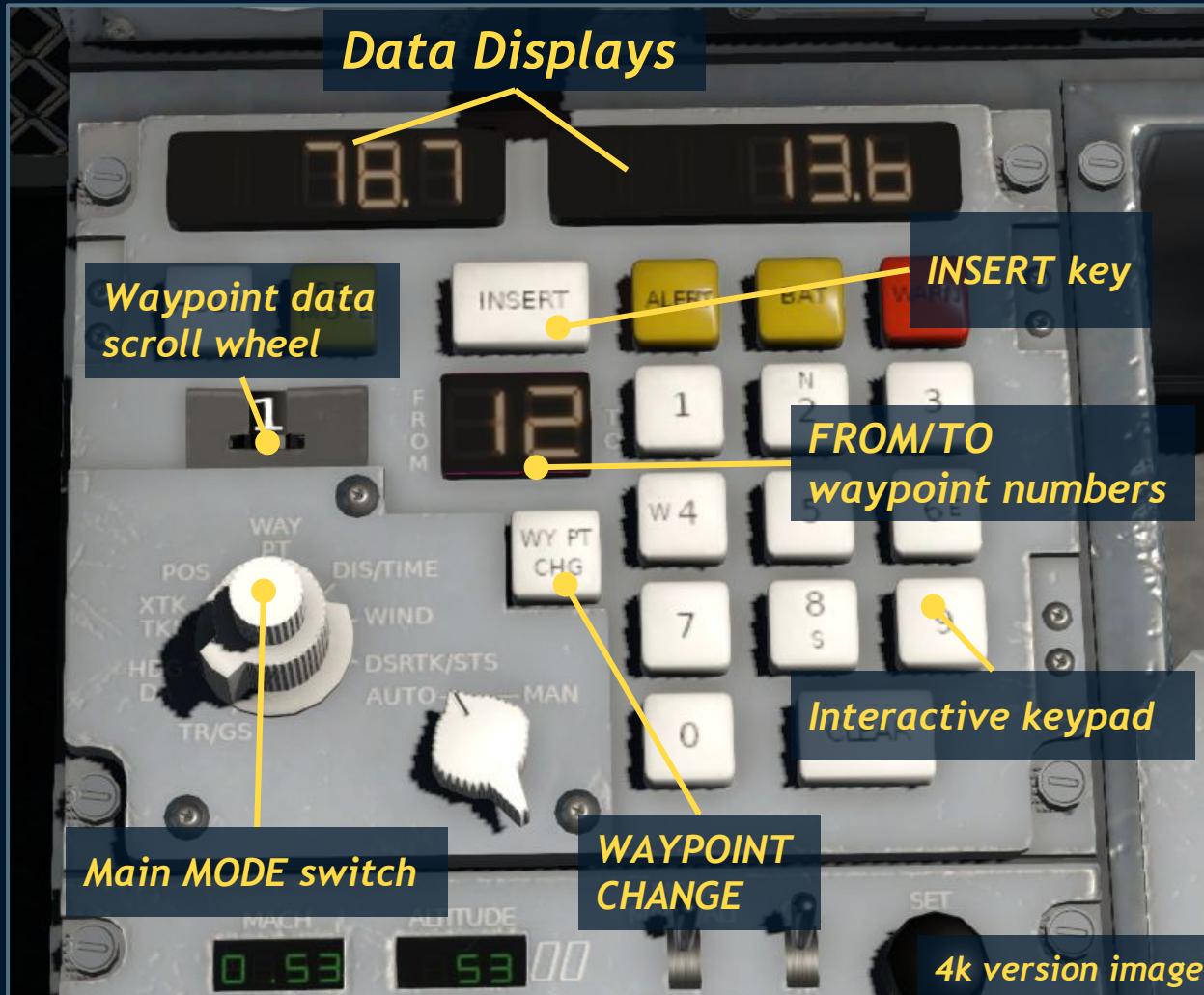
The limit values for this function are +6000 / -4000 ft/min.

Commands for button assignment are available.



The INERTIAL NAVIGATION SYSTEM - INS

For more details see the 'Quick Start' or 'Full' manual.



For full functionality a flight plan must be loaded. Via the GUI:
Flight Preparation -> Waypoints -> LOAD -> Select -> COMMIT
(Backup solution is flightplan loading via the G1000)

The INERTIAL NAVIGATION SYSTEM - TR/GS

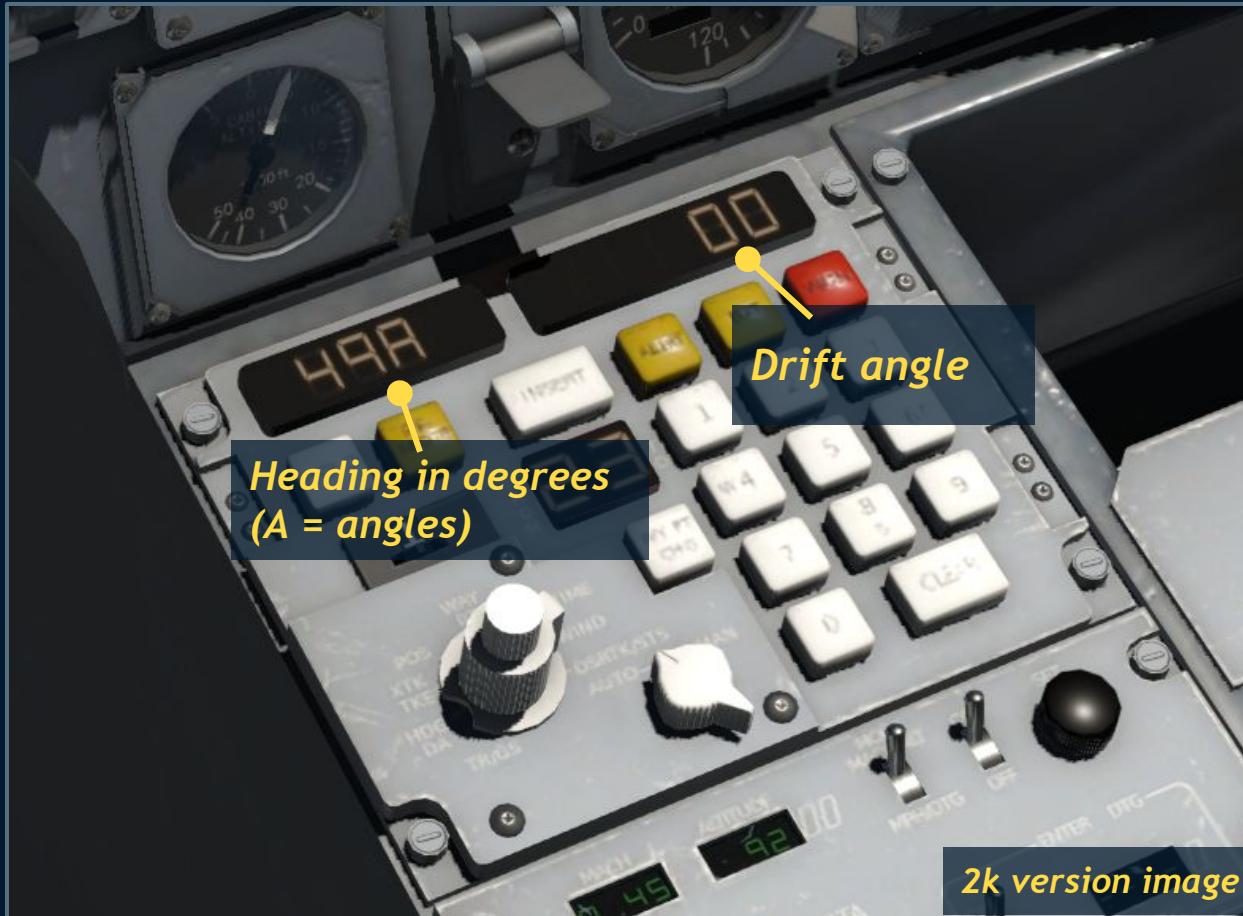
For more details see the 'Quick Start' or 'Full' manual.



TRACK / GROUNDSPEED mode shows the track in degrees from the geographic North (True heading) and the speed above the ground.

The INERTIAL NAVIGATION SYSTEM - HDG/DA

For more details see the 'Quick Start' or 'Full' manual.



HEADING / DRIFT ANGLE mode shows the aircraft magnetic heading in degrees and the drift angle (Also shown on the HSI).

The INERTIAL NAVIGATION SYSTEM - XTK TKE

For more details see the 'Quick Start' or 'Full' manual.



XTK TRK shows turn direction and track angle and to next waypoint. When the system is in (default) leg mode the displayed data has the format like in the image above. In 'direct-to' mode the format changes. See next site.

The INERTIAL NAVIGATION SYSTEM - XTK TKE

For more details see the 'Quick Start' or 'Full' manual.



XTK TRK in 'direct-to' mode uses the format shown in the upper image. 'Direct-to' signs are added to the values > and ->.

The INERTIAL NAVIGATION SYSTEM - POS

For more details see the 'Quick Start' or 'Full' manual.



POSITION mode shows current aircraft latitude and longitude position in the format: degrees, minutes, fraction of minutes.

The INERTIAL NAVIGATION SYSTEM - WAY PT

For more details see the 'Quick Start' or 'Full' manual.



When a flight plan is loaded, WAYPOINTS shows the latitude and longitude coordinates of the first 9 waypoints. This can be handy in the case of doubts about the waypoint numbering. Set the INS MODE switch to WAY PT and use the INS waypoint scroll wheel to cycle the waypoints. The selected waypoint on the scroll wheel is NOT automatically the target waypoint for the Autopilot INS function.

The INERTIAL NAVIGATION SYSTEM - DIS TIME

For more details see the 'Quick Start' or 'Full' manual.



DISTANCE TIME mode shows distance in nautical miles and time in minutes and fraction of minutes to the active TO waypoint on the FROM/TO display. The upper images shows the format of the default (leg) mode. Direct to mode uses other formatting. See next site.

The INERTIAL NAVIGATION SYSTEM - DIS TIME

For more details see the 'Quick Start' or 'Full' manual.



After a waypoint change was commanded by the pilot via (WY PT CHG) the DISTANCE TIME in 'direct to' mode uses the format shown in the image above. Distance in nautical miles and time in minutes are shown with 'direct-to' signs ->.

The INERTIAL NAVIGATION SYSTEM - WIND

For more details see the 'Quick Start' or 'Full' manual.



2k version image

WIND mode shows wind speed and heading.

The INERTIAL NAVIGATION SYSTEM - DSRTK/STS

For more details see the 'Quick Start' or 'Full' manual.



Desired Track Angle to the selected waypoint and system status/ precision. 14 stand for high accuracy.

INS - FROM/TO waypoint info

For more details see the 'Quick Start' or 'Full' manual.



Shows the FROM/TO waypoint numbers.

The real INS of Concorde was capable to store 9 waypoints. If you like to use more than 9 waypoints, the display will always show the last digit of the FROM/TO waypoints (Example: From=14, TO=15, Display=45).

INS - WAYPOINT CHANGE - DIRECT TO

For more details see the 'Quick Start' or 'Full' manual.



By default INS is in leg mode. When Autopilot INS function is on, the Autopilot flies the aircraft from one waypoint to the next. The INS FROM/TO display will update automatically.

Sometimes it can be handy to jump waypoints or fly directly to a certain waypoint. This is possible with the 'Waypoint change' function (WY PT CHG button) directly on the INS even when the Autopilot is active at that time and in INS.

INS - WAYPOINT CHANGE - DIRECT TO

For more details see the ‘Quick Start’ or ‘Full’ manual.

Procedure:

1. Click the ‘WY PT CHG’ button. The FROM/TO display starts flashing
2. Insert the FROM waypoint number (single digit or two digit) using the 3D keypad
3. Insert the TO waypoint number (single digit or two digit) using the 3D keypad
4. If a wrong number is inserted click the CLEAR key and start again from point 2
5. When both the FROM and TO waypoint numbers are inserted correctly click the INSERT key
As soon as the INSERT key is clicked the new waypoints are active. The INS is now in
‘Direct-To mode’ until the chosen TO waypoint is reached. After that, the INS switches back
to normal leg mode.
If the Autopilot INS function is on, as soon as the INSERT key is pressed the Autopilot will
divert the aircraft towards the new TO waypoint.
6. Now the process is complete. Click again the ‘WY PT CHG’ button to exit

INS - WAYPOINT CHANGE - DIRECT TO

For more details see the 'Quick Start' or 'Full' manual.

The real INS on Concorde was able to save 9 waypoints.

Since many people will need more waypoints, this INS is capable to work with more than just 9.

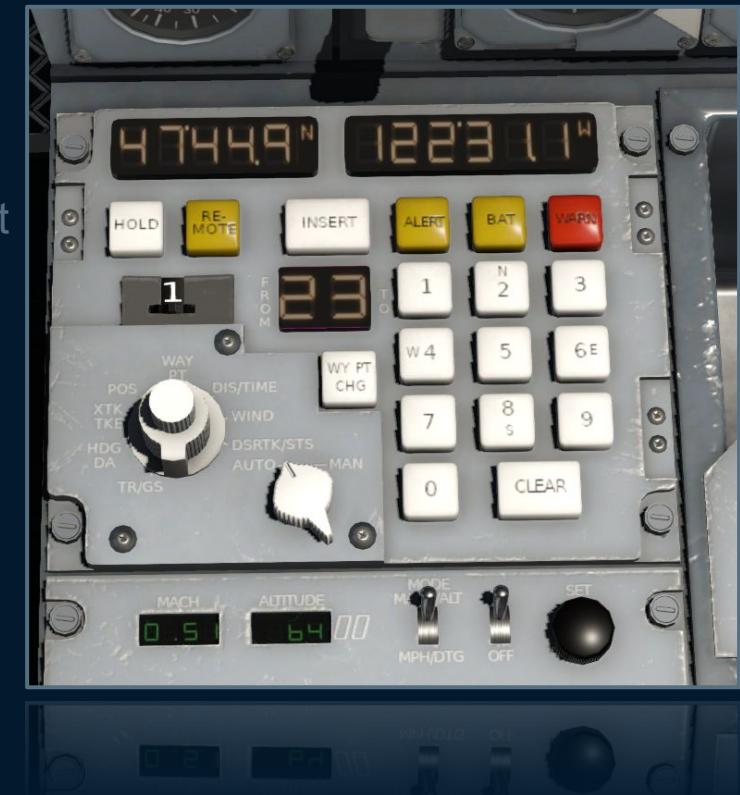
When you like to insert a double digit waypoint number in the change waypoint function you can do that if you like. This way flight plans with many waypoints can be flown without adding too much complexity

The input can be:

1. From waypoint X, then To waypoint X (example 56 = TO 6)
2. From waypoint X, then To waypoint XX (ex. 910 = TO 10)
3. From waypoint XX, then To waypoint XX (ex. 1415 = TO 15)
4. It's not possible from two digit to single digit waypoint like:

From waypoint XX, then To waypoint X (example:

input 146 ERROR - will use TO = 46)



With this handy function flight plans all around the world can be flown flexibly and dynamically.

To check if the system is in a 'direct-to' state switch the INS main mode to DIS TIME or XTK TKE and check the formatting of the displayed values.



STILL HUNGRY FOR JET POWER?

 **MiG-29**
for X-Plane



v2.0

XP11
XP10



by **COLIMATA**

[Link](#)

STILL HUNGRY FOR JET POWER?

F/A-18F

"SUPER HORNET"

COLIMATA



CARRIER
OPERATIONS



CUSTOM
3D SOUND



AIR TO AIR
REFUELING



REFINED
FLIGHTMODEL



3D HUD
COLLIMATED
FOCUS TO OO



FRONT AND
REAR COCKPIT

[Link](#)