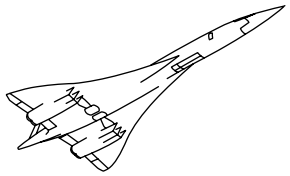
PRODUCT BASICS



Concorde

Introduction Manual

- FEATURES
- GETTING STARTED
- HARDWARE SETUP
- FLYING CONCORDE

FOR SIMULATION
USE ONLY

LOCKHEED MARTIN **PREPAR3D**

flightsimlabs

FOR FLIGHT SIMULATION USE ONLY

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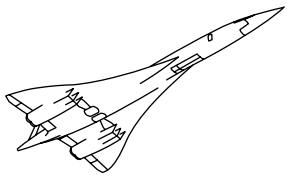
Introducing

Flight Sim Labs Concorde

Step into the cockpit of history with our latest groundbreaking software title, Concorde. Immerse yourself in the golden era of aviation, where the allure of flying was matched only by the intricate skills of the crew who made it all possible. Flight Sim Labs Concorde is not just a simulation; it's an invitation to relive the magic of the 70's, 80's and 90's in aviation, where traditional methods and paper-based information guided pilots through the skies.

At the heart of this simulation lies our revolutionary Virtual Crew System (VCS), an innovation that meticulously recreates the roles of the First Officer and Flight Engineer. The VCS breathes life into the cockpit with an authenticity that's second to none. Each virtual crew member performs exact cockpit flows and checklist items, placing you (the Captain!) in the heart of a dynamic three-person crew. Drawing from the experiences of both British Airways and Air France crews, you'll feel like an integral part of Concorde's legendary legacy.

Flight Sim Labs Concorde features brand new visual models, utilising cutting-edge PBR texturing and graphics technology to meticulously render the aircraft's every detail. Every switch, lever and dial has been faithfully modelled based on 3D scans captured from the real aircraft cockpit. Step into the aircraft cabin and take your seat in front of Concorde's captivating flight information displays. Witness the mesmerising sight of the miles rapidly ticking away as you soar through the skies at an astonishing speed of over 20 miles per minute.



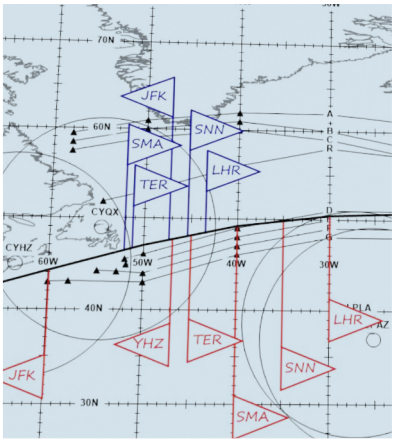
The Flight Sim Labs Concorde experience isn't just visual. Our brand-new Concorde sound set captures the unique nuances of the four Olympus 593 MKII engines, incorporating authentic recordings from the aircraft's final year of service. The symphony of sounds, from gyroscopes spinning up on the flight deck to the roar of the many supply and extract equipment cooling fans, creates an immersive auditory experience that transports the user to the heart of an authentically bustling and confined cockpit environment.

The speed at which Concorde flew meant that a great deal of planning and preparation was required before every flight. With over 100 individually crafted Concorde routes to choose from, each based on real-world data, you can embark on a journey that's both thrilling and educational. Load any flight plan into our planning system to generate a comprehensive flight briefing. The generated briefing includes essential paperwork that all flight crews' took onboard with them, from loadsheets to navigation logs, tactical planning materials to refuelling sheets, and everything in between. Experience the thrill of navigating without electronic aids, and marvel at how pilots conquered the skies in a time before digital advancements.

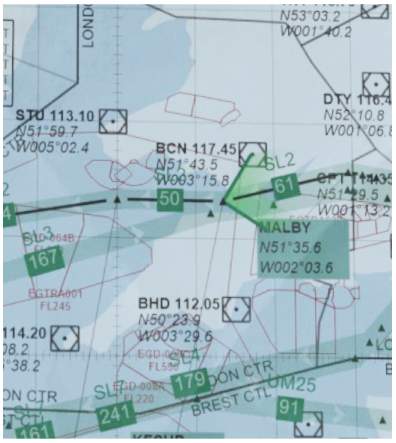
Flight Sim Labs Concorde isn't just a simulation; this is a living embodiment of the Concorde legacy, meticulously crafted to surpass anything that has come before. Every rivet, every control surface, every nuance of flight behaviour has been scrutinised and fine-tuned to mirror Concorde's essence with unmatched precision.

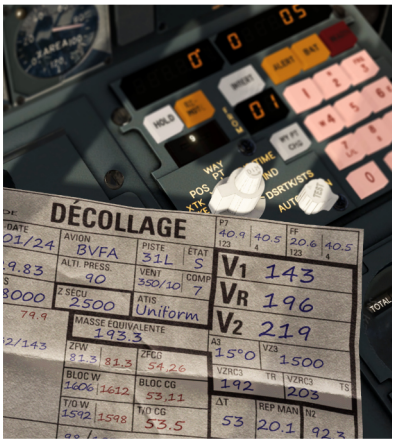
Welcome aboard to the most authentic Concorde simulation experience ever conceived.

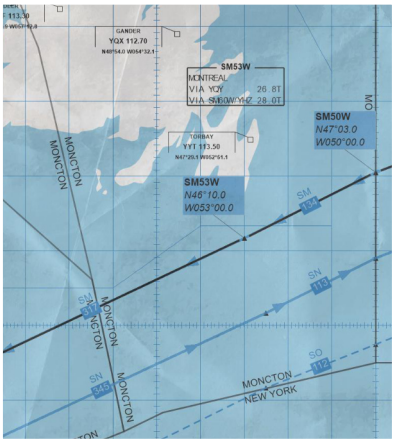
Feel the difference between a fast Concorde acting like a rocket, and a slow Concorde that needs delicate manoeuvring around the airport in order to stay within the envelope.



PRODUCT FEATURES

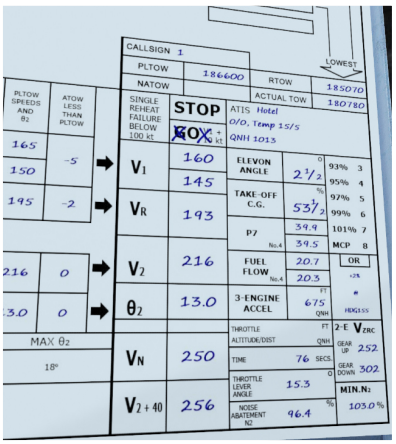






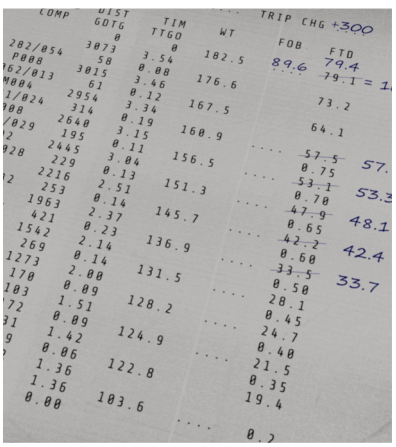
Effortless automated process to produce realistic and thorough flight planning documents for supersonic flight.

Choose historically accurate scheduled routes or create your own.



Faithful recreation of the reliance on paper-based materials.

Authentic depiction of the resources and tools available to Concorde pilots during that era.



The Flight Sim Labs Concorde comes with a multitude of ground-breaking features intended to deliver a full simulation of Concorde. A challenge to operate, yet easy to fly thanks to a virtual crew being on board with you.

A complete set of tools, instruments, documents and charts all help you to find your way, mimicking all that real Concorde crews had available on board the aircraft.

This software stands for a maximum of realism while still being manageable by a single person, all while being beautiful to look at for a complete immersion into Concorde operations.

Accurate Flight Model / Flight Control System

Enhanced flight control system, featuring an early fly-by-wire model.

Auto-Stabilisation computers offer assistance when flying complicated procedures, making it possible to fly down to half a degree of pitch when required.

The aircraft's performance accurately matches real numbers in all phases of flight and atmospheric conditions.

All Production Airframes included

All 14 production aircraft are included with all their liveries they have ever worn, including various hybrid liveries.
Each airframe has been configured with its retrospective weight and balance properties; resulting in unique handling characteristics.

Repaints will automatically inherit British or French configurations depending on its MSN.

GSX Integration

The popular Ground Services X tool for ground support simulation is seamlessly integrated into operating Concorde.

Operate the aircraft according to the real procedures and GSX will play along automatically.

Full INS Simulation

Three independent INS unites working together to provide a complete INS simulation experience.

Supports wide arc turns during supersonic flight as well as guidance for RNAV approach procedures.

Consequences

Actions have consequences and errors in aircraft operation can lead to failures.

There is also consequences built in for environmental influences. Paint the aircraft in a dark livery (Pepsi, anyone?) and watch temperatures reaching limits much more quickly.

Sounds

Faithful recreation of Concorde sounds both internally and outside.
This includes authentic crew communication sounds, system and aerodynamic sounds as well engine noise and sonic booms.

Systems Accuracy

Full systems simulation with the possibility to operate them just like on the real aircraft.

Weather radar that is capable of ground mapping.

Tablet Hardware Support

Operate the INS units or the Palmtop PC on an external hardware tablet.

Display all flight documents on the tablet or any browser-capable device.

Pocket PC Calculations

Simulation of a Palmtop PC used for various calculations inflight.

Additionally acts as an interface to the Concorde simulation.

Flight Documents & Charts

The flight planning tool will create all necessary paper charts and forms required for the mission, such as:

- Global Enroute Charts
  (BA & AF, various time periods)
- EROPS chart and diversion calculations
- Upper Level Winds
- SIGWX
- Loadsheet
- NAVLOG
- Take-Off & Landing Data

Virtual Crew

Offers a simulation of all crew members working with you as the Captain using interactions according to the real Concorde procedures.

The very extensive pre-flight checks can be left to the Flight Engineer, and the First Officer will be a valuable PNF (Pilot Non-Flying) including all necessary callouts.
British as well as French crews available depending on the airline flown.

Immersive Visual Effects

Numerous special effects aimed at creating an immersive visual experience, such as the reheats which are completely dynamic, reacting to ambient lighting conditions to vary their appearance.

Also available are effects for engine smoke that also varies with atmospheric conditions and engine power, as well as extensive dynamic external aircraft lights visualisations.

VOLMET

Realistic simulation of VHF and HF VOLMET services for weather reports enroute.

Performance Calculation Tools

Includes all tools for performance calculation and payload / fuel management.

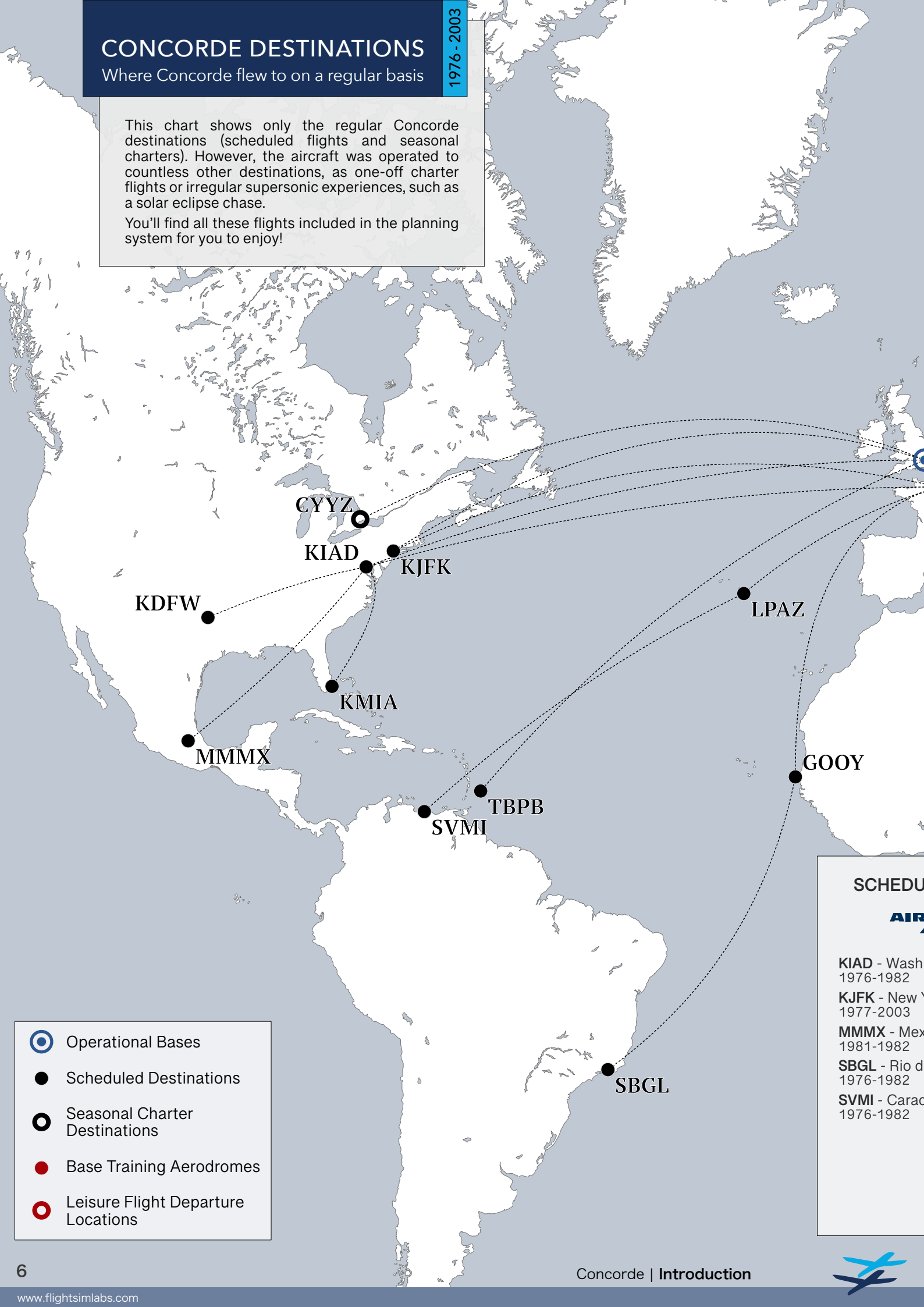
CONCORDE DESTINATIONS

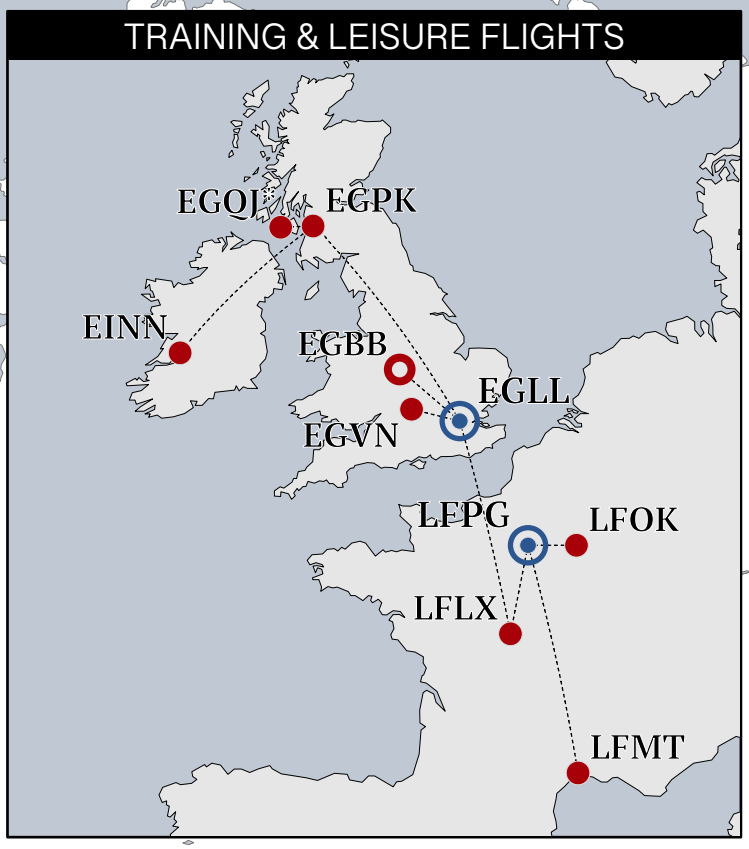
Where Concorde flew to on a regular basis

1976 - 2003

This chart shows only the regular Concorde destinations (scheduled flights and seasonal charters). However, the aircraft was operated to countless other destinations, as one-off charter flights or irregular supersonic experiences, such as a solar eclipse chase.

You'll find all these flights included in the planning system for you to enjoy!





EFRO

EGLL

LFPG

OBBI

WSSS

ULED AND SEASONAL CHARTER DESTINATIONS

R FRANCE

ington Dulles

York John F. Kennedy

xico City

e Janeiro

cas

BRITISH AIRWAYS

CYYZ - Toronto Pearson
1979-2003

EFRO - Rovaniemi
1984-1999

KDFW - Dallas Fort Worth
1979-1980

KMIA - Miami
1984-1991

KIAD - Washington Dulles
1976-1994

KJFK - New York John F. Kennedy
1977-2003

TBPB - Barbados
1977-2003

WSSS - Singapore
1977-1980

BASE TRAINING & OTHERS

EGBB - Birmingham
EGPK - Glasgow Prestwick
EGQJ - RAF Machrihanish
EGVN - RAF Brize Norton
EINN - Shannon
LFLX - Châteauroux
LFMT - Montpellier
LFOK - Vatry Air Base
LPAZ - Santa Maria (Refuelling)
OBBI - Bahrain (Refuelling)
GOOY - Dakar (Refuelling)

A Word about Documentation

It is no secret that Concorde is a rather complex aircraft to understand and fly, and fly it well. And while Flight Sim Labs has coded a vast amount of helping hands into the product, some of which not only help to make things easier, but also increase realism, reading (some) documents cannot be avoided to use this simulation to its full potential.
Find below a few words on how to work with this document, and also a list of other documents available.

GETTING STARTED WITH THE INTRODUCTION MANUAL

The previous pages helped you to get an overview of what the Flight Sim Labs Concorde is all about. The following chapters will help you setting up the aircraft and to learn a few important but simple steps required to get the maximum out of the product:

HARDWARE SETUP

This section should be read first and offers some crucial info on flight controls setup, key and button bindings as well as using an external browser or tablet to operate some aircraft devices.

PALMTOP PC

Then read more on the Palmtop PC implementation not only offering performance calculations, but also acts as an interface to the aircraft, offering various tools and settings.

FLYING CONCORDE

And finally read important information on how to use Concorde's features properly during a flight. There's details about setting up a new scenario and interacting with the virtual crew as well as the ground crew.

Also find advice on how to use the flight planning system, the contents of the flight plan package

Continue with details on how to use the INS or VOLMET, and lastly read more about the consequences coded into the Concorde simulation, so that you know what to look for to safely operate the aircraft.

Available Documents

Tutorial Flight

Step-by-step tutorial flight to guide you on a scheduled sortie from London Heathrow to New York Kennedy Airport.

Normal Procedures

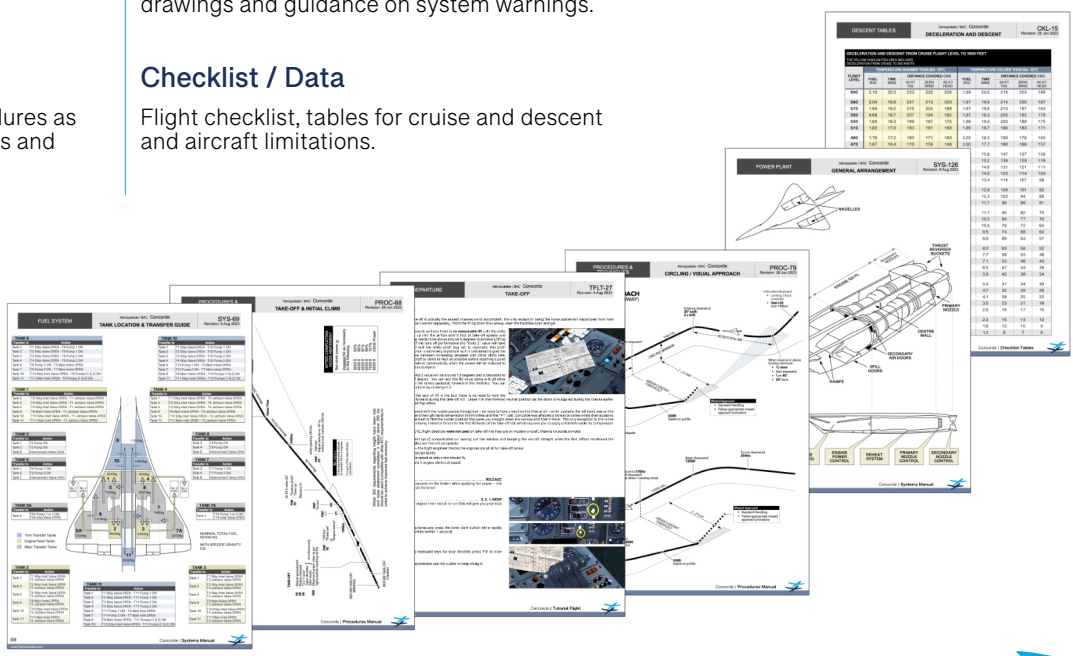
Detailed normal operating procedures as well as extensive flying techniques and system-specific procedures.

Systems Manual

Detailing the various systems of Concorde including system descriptions, technical drawings and guidance on system warnings.

Checklist / Data

Flight checklist, tables for cruise and descent and aircraft limitations.



Flight Controls

To get the flight control response to resemble the real aircraft as close as possible, use these recommended settings either in P3D or within FSUIPC. The null zones are of special importance, because the flight control system needs an uninterrupted “neutral” setting of the flight stick to perform its magic flawlessly.
The most important aspect is that the null zones are always large enough to accommodate any possible spikes coming from old or cheap quality sensors. If sensor input spikes are registered in the simulator, these can interfere with our simulated flight control system.

P3D SETTINGS

Use these P3D **sensitivity** and **null zone** settings if you are using the P3D internal settings menu to set up your stick, rudder and throttle:

Yoke
Elevator and Aileron axis

Thrust Levers
Throttle (1/2/3/4) axis

Rudder Pedals
Rudder and brake axis

Steering Tiller
Steering Set axis

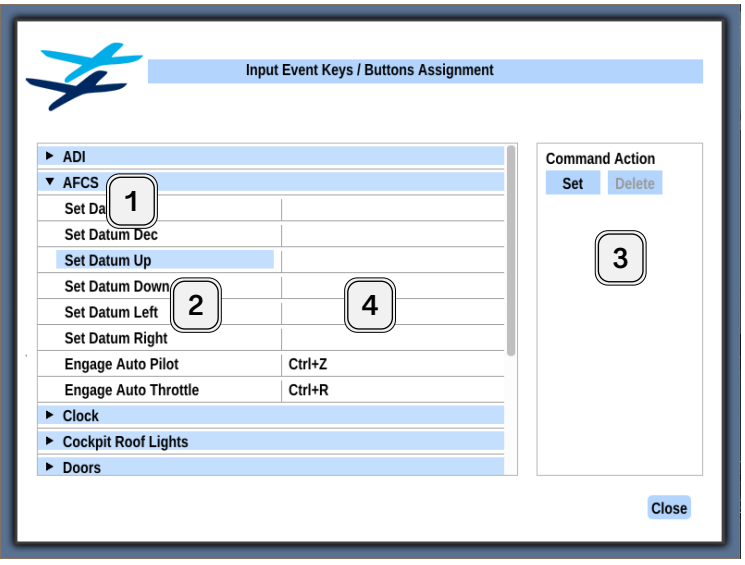
▶ **Maximum sensitivity**
Null zone: As low as your hardware allows

FSUIPC SETTINGS

When configuring your hardware through FSUIPC, just make sure that the null zones are wide enough, so as to not interfere with Concorde’s stability augmentation systems or autothrottle.
This is easily achieved by not only assigning axes in FSUIPC, but also setting the calibration after the axis assignment.

Button / Key Assignments

With the Flight Sim Labs Input Commands menu there’s an additional settings menu available, which allows for setting up key-bindings useful in certain advanced use cases.
The FSL Input Commands menu is accessed via the Prepar3D **“Add-Ons”** tab on the menu bar, then choose **“FSLabs”** > **“ *Input Commands”**



FUNCTIONALITY OVERVIEW

In each category various button commands can be selected (**1**).
Select a functionality for which you want to do a hardware assignment (**2**), then click ‘Set’ to assign or ‘Delete’ to remove an assignment (**3**).

The right column displays key- and button assignments (**4**).

Some useful default key-bindings are listed in the table below, you may switch those functions to a hardware button binding instead if you prefer. It’s recommended to go through the list inside the tool to find other commands you might find useful to have a key- or button binding for.

Engage Autopilot • CTRL+Z	Set Throttles to TLA • CTRL+F5
Engage Autothrottle • CTRL+R	Toggle Engine Rating • CTRL+F6
Cabin- and Cargo-Doors • Shift+Tab+1 to 8	INS Auto Align • CTRL+I

It is strongly recommended to assign the AFCS pitch adjustment switch to hardware controller buttons if available, as this switch is extremely useful to fly precise pitch values required by various procedures while on autopilot:

- Set Datum Up
- Set Datum Down

NOTE

Button assignments in this menu are optional. If you have assigned your hardware controllers through P3D or FSUIPC, you do not need to assign them again.

Any game controller button assigned in this menu will overrule assignments and settings for the same button done in P3D’s hardware controls menu or FSUIPC, while flying FSLabs aircraft.

Remote Devices and Documents

The FSLabs Concorde offers you the ability to run the INS CDU unit and the Palmtop PC remotely as well. They are accessible through a web browser that can be on the same computer as P3D or on a networked PC, tablet or other device.

Furthermore, documents produced by the Concorde flight planning tool, like paper charts, NAVLOGs and performance calculation papers can also be displayed the same way, so as to facilitate printing if desired, or reading the documents on a separate device while flying.

INS CDU

Displays the Captain's CDU for the Inertial Navigation System.

- **http://localhost:23032/Panels/INS/INS.html**

HP200LX PALMTOP PC

Displays the PalmtopPC used for Flight Plan loading, Calculations and more.

- **http://localhost:23032/Panels/200LX/200LX.html**

Example for displaying the INS CDU

If the browser is located on the **same computer** as P3D, enter the following address:
localhost:23032/Panels/INS/INS.html

If the browser is located on a **remote PC** or other device which is on the same network as the computer running P3D, enter the following address:
192.168.1.1:23032/Panels/INS/INS.html

Note: You must replace the IP address in bold print with your P3D computer's IP address.

Palmtop PC Simulation / Aircraft Interface

Concorde flight crew operating with British Airways were given Palmtop PCs manufactured by Hewlett Packard, representing a kind of a first iteration of Electronic Flight Bag (EFB) devices found on today's aircraft.
Although the device did not feature any maps and navigational aids, it did however come with several tools to help crews for calculations onboard the aircraft, if for example short-notice planning or payload changes necessitated re-doing certain performance calculations.

Replicating some of these, Flight Sim Labs provides the following calculation tools:

- Take-Off Performance
- Acceleration Data
- Optimum Cruise Level
- Deceleration & Descent Data
- Landing Data

All accessible via
menu item number 4:

PERFORMANCE CALCULATIONS

OPEN THE PALMTOP PC

The device is either displayed by clicking on the registration plate located next to the airspeed indicator...

...or by using a link within your web browser (see previous chapter).

We have taken the device a bit further and are using it as an interface to the aircraft simulation within Prepar3D, allowing for additional features:

FLIGHT PLANNING TOOL

A fully automated flight planning tool using either historic or custom routes.
It calculates all necessary performance figures, produces flight documents and simulates data cards used for INS waypoint loading.

Is accessed via the the following 2 menu items:

LOAD ROUTE

REVIEW ROUTE

LOAD & BALANCE

Displays the payload distribution throughout the aircraft.

FUEL LOAD

Allows to load any desired fuel quantity, or the fuel for the active flight plan, instantaneously.

Note that this is optional, since fuel will be added automatically during normal crew workflows when the refuelling process is started.

CONTROLS FOR THE VIRTUAL CREW SIMULATION

Gives the options to execute any checklist flow for the virtual crew if the automatic triggers are not sufficient.

Is accessed via the **CHECKLISTS** menu item.

AIRCRAFT OPTIONS

The following aircraft options are available by choosing **OPTIONS** on the main screen:

- **Set Panel State**
  Choose from the following pre-configured cockpit states:

  Cold & Dark - All systems turned off
  Ground Power - Powered on and INS aligned
  Engines running - Ready for taxi

- **Intercom Sound Device**
  Allows you to have the crew intercom audio on a separate sound device, for example if you want to experience it using headphones.

- **Virtual Crew System**
  Several options are available for virtual crew duties:
  - Disable the virtual crew **[not available temporarily]**
    This means you can and have to operate all the systems yourself
  - Disable the first officer automatically for
    - loading navigation waypoints as the flight progresses
    - loading DME waypoints into the INS that can be used for accuracy updates

- **NAVLOG Options**
  Choose whether you wish to see the waypoints of an approach procedure to be part of the NAVLOG.

Flying Concorde in Prepar3D has been made as effortless as the flight planning that preceded boarding the aircraft. The aircraft is set up in a realistic configuration automatically, the virtual crew performs the flows of the First Officer and Flight Engineer as per the real aircraft, and the ground crew is integrated seamlessly into the procedures as well, making even ground operations immersive and realistic.

Scenario Setup

When loading Concorde from the P3D Scenario Setup screen, the software then has 3 distinct setups it can load, depending on the aircraft's location:

- Load on any parking stand of an airport where Concorde made scheduled services from, the scenario will load Concorde powered up with the INS already aligned by ground support engineers.
  - (Valid for the following airports: BAH, BGI, CCS, CDG, CYZ, DKR, IAD, JFK, LHR, MAN, MEX, RIO, SIN, SMA)
- Load Concorde on a parking stand of a non-scheduled airport, it will be configured in a cold & dark state, since there were no ground technicians capable of handling Concorde on these charter destination airports.
- Load in on any runway, Concorde will be configured ready for departure but with no flight plan data loaded in the INS.

Virtual Crew System

Concorde's Virtual Crew System is not only designed to take the flight engineers duties away from you, but is really a complete simulation of the flight deck- and also the ground crew.

The system puts you into the position of the Captain and the flying pilot, while it simulates all procedures being done by the non-flying pilot and the flight engineer. This includes them following all the proper procedures and flows as laid out in the books, including all crew communications and the necessary callouts.
You'll get a British crew when flying British Airways aircraft, and a French crew when flying Air France.

Some of the flows the crew will do without your interaction, while others are interactive and the crew will respond to your actions. The Virtual Crew System enables you to fly a 3-person flight crew jet without being overwhelmed, while following the real Concorde procedures for the entire flight.

The Virtual Crew System uses various automatic trigger points during the flight, so that you won't have to operate any menu interface at all. Simply operate the aircraft as the Captain would have.

Automatic triggers for crew actions

The VCS works by using the following automatic triggers:

1. **Taxi checklist** - Ground speed > 5kts with visor/nose down to 5 degrees
2. **Takeoff checklist** - By selecting or toggling the main landing lights
3. **After takeoff checklist** - By reheats turning off
4. **Climb checklist** - When reaching Mach 0.7
5. **Transonic checklist** - By lighting the reheats again with speed > Mach 0.90
6. **Descent checklist** - Either when approaching the deceleration point or manually activated via HP200LX
7. **Approach checklist** - When descending through FL150
8. **Landing checklist** - On gear down
9. **After landing checklist** - Ground speed < 15kts with nose at 5 degrees
10. **Parking checklist** - Nose and visor up with parking brakes on.

The Virtual Crew System may be turned off within the options pages of the HP200LX device.

Ground Crew Services

Flight Sim Labs Concorde comes with a sophisticated ground services simulation that can be enhanced by using GSX, a popular add-on to provide its own ground crew simulation. Flight Sim Labs' distinct feature to automate and integrate GSX into the workflow is also part of the Concorde simulation.
Ground services are simulated even without using GSX, but ground crew and vehicles won't be visible.

The ground crew actions are triggered as follows:

1. **Ground equipment (GSX only) and power** - Left clicking the ground call button will trigger the jetway or stairs and GPU power.
2. **Loading the aircraft** - Right clicking ground call button will call into refuelling and catering first, then once catering is complete it will call into boarding.
3. **Preflight checks and engine start** - Once refuelling is complete, the engineer will run through the rest of the preflight checks and the last item in his flow is the seat belt sign.
   Once this is on, you can trigger the engine start procedure by setting the captain's RAD/INT switch on the ACP to INT.
4. **Pushback** - The above will call into GSX for pushback. Its important to note that all GSX sounds are muted with Concorde. FSLabs includes its own voice sets matching Concorde operations.
   If no GSX is installed, users will have to use default P3D shortcuts for pushback as soon as the ground crew asks to release the parking brake.
5. **After landing** - When parking, raising the nose and visor with the parking brake on will trigger the engineer parking checklist, and as part of this the engineer will call for de-boarding.

Handling of the GSX software is fully incorporated within Concorde, doing away with the need of manually opening GSX menus. GSX will instead be triggered by doing the standard operating flows during flight preparations.

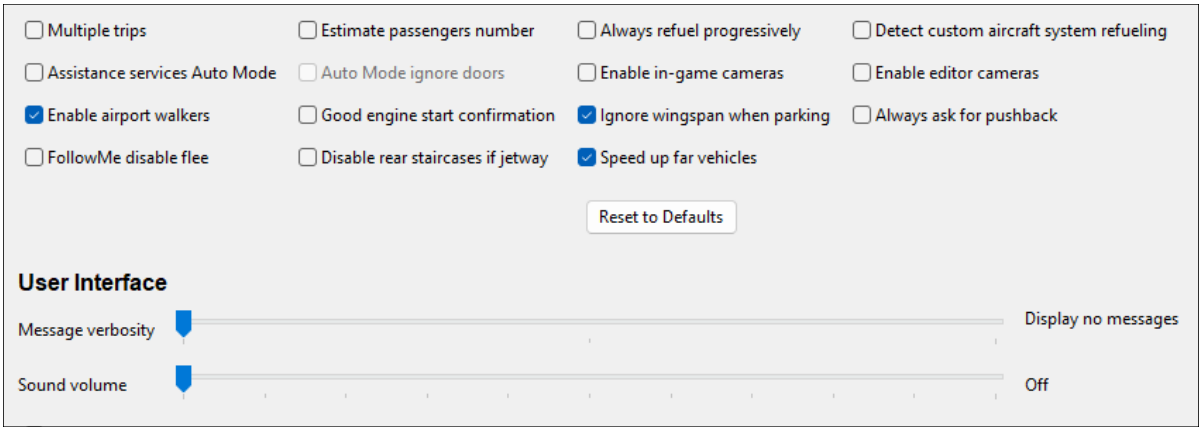
GSX will only require 3 menu inputs for a flight which FSLabs can't automate:

- Choose an airport services operator if GSX offers a selection
- Select desired push-back route
- Choose the arrival gate after landing

Recommended GSX Settings

To ensure a trouble-free experience for GSX users, the following settings within the GSX software are recommended.

Note that these are recommendations only, you may enable most options if desired. However, it is important to disable the "Good engine start confirmation" checkbox, as it will interfere with the built-in ground crew communication.



Flight Planning Tool

Concorde requires some advanced planning to operate it to its full capabilities. Getting it to fly Mach 2 without treating the population to sonic booms and at the same time maximise its range and payload can be a delicate matter for any dispatcher.

Flight Sim Labs therefore added a sophisticated Concorde Flight Planning tool, capable of producing a full flight plan package with all contents the real crews had, and doing this completely automated.

The flight planning tool will also produce data cards that were used to provide flight plan data for the Inertial Navigation System. These were called Flight Plan Segments and DME Catalogues.

To make things easy for the user, there is a vast number of historical routes to choose from. All scheduled routes as well as major charter flight routes are available to be planned by simply selecting them from the list and then letting the tool do the work. Also part of the route selections are various engineering flights that were done regularly for maintenance testing or crew training.

Custom routes can be imported as well, all that is required is a flight plan file in the P3D standard .pln format. The Concorde Flight Planning tool will use it for waypoints only and do its own performance- and fuel calculations.

NOTE ABOUT WEATHER

For the flight planning tool to work properly, **ActiveSky** is required to get accurate weather data for its calculations.

The tool does work without ActiveSky, however it will not read the sim weather but plan for ISA conditions instead.

The Concorde Flight Planning tool will produce all that was done for a real Concorde flight; It will plan and calculate a flight plan, do the fuel planning and the load sheet, and will distribute all that data to the appropriate people.

You as the pilot will get the Flight Plan Package, the refuelling company will get the fuel uplift request, a flight plan can be filed with ATC and the ground crew will get all the information about passenger load and cargo. Everything will bet set in motion as soon as you give the go-ahead to start loading and refuelling.

Follow these steps to have a flight plan package created for you using one of the many historical flight plan routes:

LOAD SCENARIO & WEATHER

1. **Load** a P3D **scenario** using the desired Concorde airframe at a parking stand of your choice
2. If **ActiveSky** is installed, make sure it is running and connected to P3D

PALMTOP PC FLIGHT PLANNING FLOW

3. **Open** the HP200LX **Palmtop PC** as described in the previous chapter
4. **Select LOAD ROUTE** by pressing „0“
5. **Select** whether you wish to fly a **scheduled, charter or engineering flight** by pressing the appropriate number key
6. **Select** the desired **city pair** from the flight plan list. Use the PG DN and PG UP keys to scroll through the list
7. Depending on the route chosen, this next step might ask you to **choose between various arrival routes**. If only one option is available, this step will be skipped automatically
8. **Select** either minimum **payload**, maximum or random payload. Choose SET PAYLOAD if you wish to specify the payload weight.
9. **Confirm taxi fuel** or adjust to your liking. Pressing ENTER will start the flight planning process.
10. When the calculation is done, a **flight plan overview** will be displayed. Scroll down using the PG DN key

PRODUCE FLIGHT DOCUMENTS & TAKE-OFF DATA

11. At the bottom of the route overview you will see 4 options:
    - Press “0” to **print the flight plan**. This will produce the paper document package to be displayed in the VC or as a PDF in the browser window
    - Press “3” to **compute take-off data**
12. Review the data, then press any key. This will display **Take-Off Performance options**
13. Press “2” to **set the airspeed bugs on the ASI** according to the calculated take-off speeds.
14. In the Virtual Cockpit, **click** on the **chart holder** beneath the side window to unfold it and have the paper displayed. **Scroll** through the **pages** using the mouse wheel.
15. Find the **take-off data form** placed on the centre pedestal.

CUSTOM FLIGHT PLAN ROUTE

To fly a flightplan you have created yourself, the process to get this into the Concorde Flight Planning System is almost identical the one described on the previous page.

1. First, **plan your flight** with any planning software that can produce the **P3D default flightplan file format** .pln
2. Then **save the .pln-file** in the following folder:

   `Users\Public\Documents\FSLabs Data\Concorde`

Now follow the same flight planning process as described on the previous page, with a few steps being different but also straight forward:

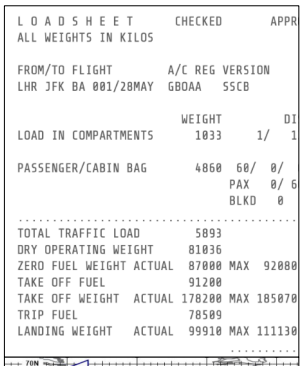
3. At step 5 instead of choosing between the various types of historic schedules, **select IMPORT** by pressing “3”
4. Then **specify** whether this is going to be a **supersonic or subsonic** flight
5. And lastly it will ask to **specify the file name** of the desired flight plan file

After selecting the flight plan file, the process for flight planning will continue at step 8.

Concorde Flight Plan Package

Each time you plan a flight using Flight Sim Labs' own Concorde planning tool, a complete Flight Plan Package will be generated for your briefing as well as for use during the flight.

Find below some key points for the content of this briefing, from top to bottom.



L O A D S H E E T CHECKED APPR
ALL WEIGHTS IN KILOS

FROM/TO FLIGHT A/C REG VERSION
LHR JFK BA 001/28MAY GBOAA SSCB

WEIGHT DI
LOAD IN COMPARTMENTS 1033 1/ 1

PASSENGER/CABIN BAG 4860 60/ 0/
PAX 0/ 6
BLKD 0

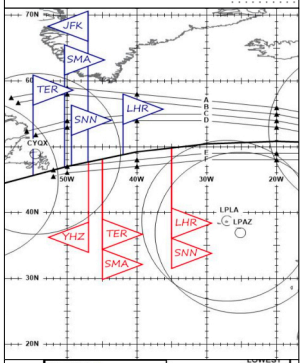
TOTAL TRAFFIC LOAD 5893
DRY OPERATING WEIGHT 81036
ZERO FUEL WEIGHT ACTUAL 87000 MAX 92080
TAKE OFF FUEL 91200
TAKE OFF WEIGHT ACTUAL 178200 MAX 185070
TRIP FUEL 78509
LANDING WEIGHT ACTUAL 99910 MAX 111130

Loadsheet

Contains information and data on the aircraft's fuel and passenger load-out, along with waypoints with their associated weight predictions.

Additional content:

- ATC Flightplan
- Engine Out Diversion Data



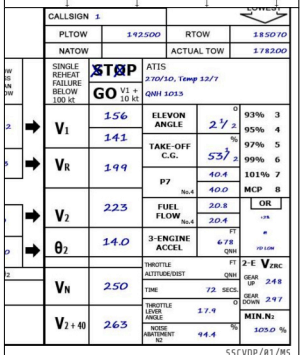
EROPS Chart

A tactical chart indicating where to divert to in case of engine failure based on flight progress.

Diversion data takes into account wind and predicted remaining fuel on board.

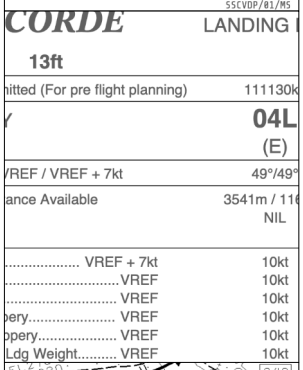
The chart also indicates all enroute diversion airports.

Use the INS position readout to determine present position.



Departure / Arrival Data

Forms for take-off data for the selected runway, as well as arrival information for both destination and alternate.

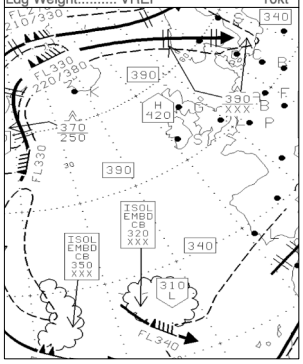


Landing Data

Calculated landing data for all runways available at the destination and alternate airports.

NOTE

Contains waypoint co-ordinates for respective final approach fixes (FAF) as well as touchdown points, to be loaded into the INS.

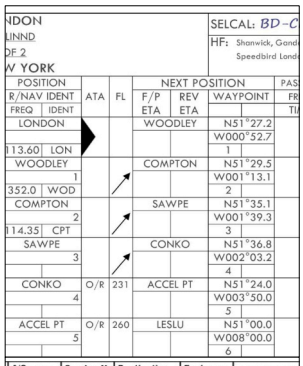


SIGWX Chart

Overview of significant weather phenomena.

Includes:

- Thunderstorm Activity
- Moderate or Severe Turbulence
- Icing

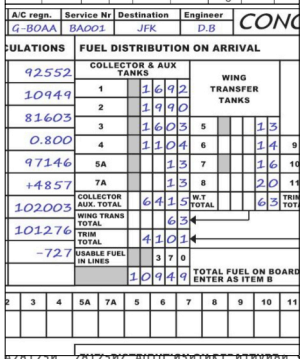


NAVLOG

The mission flight plan containing all waypoints, distances and fuel data as well as INS data card information.

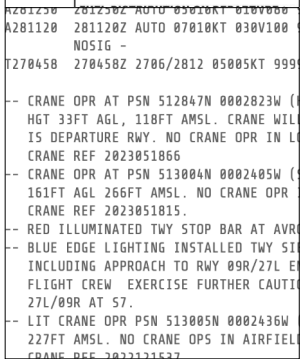
NOTE

The right-most column includes additional remarks, and most importantly which waypoint and DME catalogues to load.



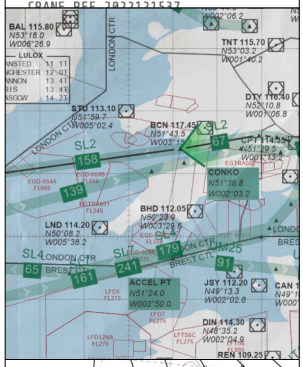
Refuelling Sheet

Contains detailed fuel data for total uplift, departure and arrival fuel.



NOTAMs / Weather Reports

Contains weather data as well as NOTAMs for departure and arrival aerodromes, as well as landing alternate and enroute weather.

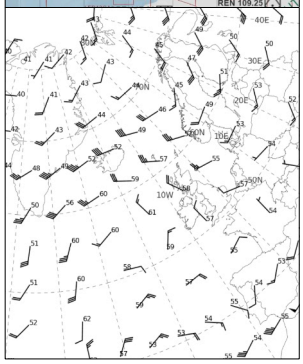


Enroute Chart

Navigational chart covering the entire flight plan route. Available in both BA and AF formats.

Also includes:

- Acceleration- and deceleration waypoint
- VOLMET station information
- VOR/DME station data
- Warning Areas



Cruise Wind Chart

Wind direction and speed at upper flight levels.

NOTE

Wind speed decreases considerably above FL500 and is therefore much less relevant in normal cruise for Concorde, due to its high supersonic speed.

Inertial Navigation System (INS)

Concorde is equipped with an Inertial Navigation System in a triple redundant configuration, capable of providing precise RNAV capability for navigating over remote regions as well was doing RNAV approach procedures.

People often think that INS means endless typing of co-ordinates along the route flown, and surely doing this at Mach 2 means there won't be time to use the bathroom ever during cruise, right?
Fortunately the Flight Sim Labs Concorde features all that was available on the real aircraft: A crew sharing jobs as well as data card functionality. The latter being portable memory units containing waypoints that were filled with data during flight planning, and then loaded into the aircraft's INS according to information contained in the NAVLOG.
So instead of typing in all waypoints manually, the NAVLOG will indicate when to load which flight plan segment (FPS).

Creating the data cards is part of the automated flight planning process detailed in the previous chapter.

LEARNING THE INS

Recommended steps to get a grasp on the INS:

1. Get familiar with INS CDU, which button is doing what, by reading about it in the Systems Manual.
2. Use the Procedures Manual's "Inertial Navigation System" chapter to learn more about how the INS is operated.
3. Fly the tutorial flight from London to New York to learn how the INS is used during a flight.

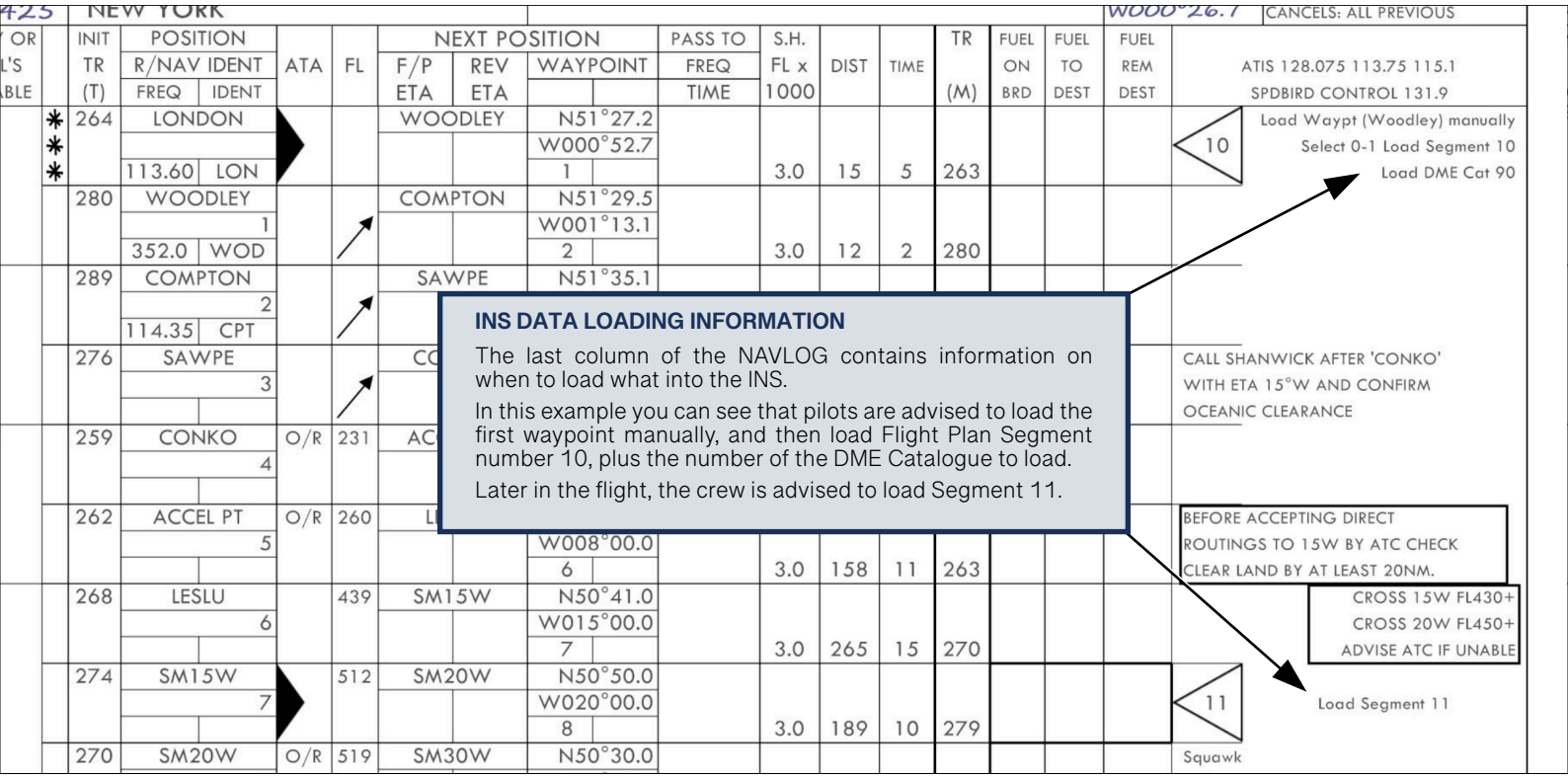
You may also simply start by flying the tutorial flight, while having the other two manuals at hand if any in-depth information is required during the flight.

SIMULATION SHORTCUTS

There are 2 shortcuts used that help you using the INS in a PC-based simulation environment:

- Whenever the manual says to **press two** of the **number keys simultaneously**, then **right-click** them in sequence to achieve the same. (A necessary work-around since we don't have two mouse pointers available)
- To allow **feeding the same data into all 3 INS units simultaneously** using any of the 3 CDUs, the REMOTE button is pressed on each CDU. Whenever this button is lit up, the 3 INS are combined for data entry. After data entry is done, the same REMOTE button needs to pressed again on all 3 units.

  To ease this step on the PC, **right-click REMOTE** on the CDU you wish to use for data entry to have it pressed on all 3 units.



VOLMET

For aircraft types lacking any datalink functionality, VOLMET is a convenient way of receiving weather reports.

Flight Sim Labs has modelled the global VOLMET network of ground stations, and is using ActiveSky as data source to be broadcast over HF and VHF frequencies.

WHAT IS VOLMET

VOLMET is a radio broadcast service of meteorological information such as TAF, SIGMET and METAR reports. These reports are transmitted over HF and VHF ground radio stations spread around the globe.

For operational purposes it is important to know that most VOLMET reports are scheduled and are therefore not broadcast continuously.

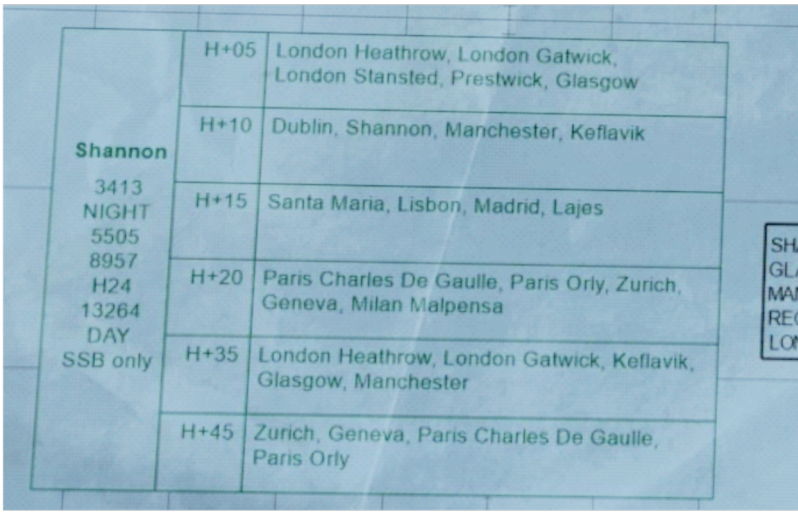
For more information on VOLMET and aviation weather, follow the link below to SKYbrary, Eurocontrol's aviation knowledge portal:

- https://skybrary.aero/articles/volmet

HOW TO USE VOLMET WITH CONCORDE

FSLabs delivers all the tools required to have a realistic VOLMET simulation usable during your flights, down to atmospheric disturbance effects. Listening to VOLMET is a simple task:

1. Find the radio frequency of the desired station on the Enroute Chart.
2. Dial that frequency into the COMM system either using the VHF or HF frequency selectors on the centre pedestal, depending on the station chosen.
3. Make sure that the audio panel is set to put the transmission on the speakers/headphones.
4. If the aircraft is in range of the radio station, and the time matches the published broadcast schedule, you'll hear the weather reports.



Green boxes on the Enroute Chart show you available VOLMET stations, frequencies and like in the case of Shannon a schedule for the different MET reports.
If we wanted to get weather information on Heathrow Airport, it would be transmitted at 5 minutes past the hour.

HF-1 audio is activated and its volume turned all the way up to try and listen to Shannon VOLMET reports.

HF-1 radio is set to 3413 kHz for the Shannon radio station.

Add-On Software Recommendations

ACTIVESKY P3D

This software is not only about providing (historical) real weather, but even more about providing P3D with accurate weather.

Our Concorde flight planning system needs ActiveSky to provide weather data, and it is the only way to get returns on the weather radar.

Flight planning will work without ActiveSky, however it will only be able to calculate for ISA conditions with no wind.

- https://hifisimtech.com/asp3d/

CHASE PLANE

This tool adds a lot of options for camera controls inside and outside of the aircraft, while at the same time simplifying the usage of all the different camera views.

It is especially useful for Virtual Cockpit navigation, and it adds head movement effects simulating changes in g-loads during manoeuvring and atmospheric influences.

- https://parallel42.com/products/chaseplane

GSX

Although our Concorde simulation includes ground crew communications, the procedures will be enriched considerably when doing them with GSX integrated into the flows.

You will see vehicles, support equipment, boarding passengers and members of the ground crew.

- https://fsdreamteam.com/products_gsx.html
- https://fsdreamteam.com/products_gsx_level2.html

Credits

The following individuals have all contributed to Concorde and helped making it reality:

DEVELOPMENT

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Margarita Fiotaki
Markus Burkhard

VOICE ACTING

Adrian Thompson
Pete Cockman

TESTING TEAM

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Joe Park
Johnny Vaughan
Kian Andrews
Martin Tornberg
Norman Blackburn
Pete Cockman
Riyad McCollin