



A320-X-SL / A321-X-SL

INTRODUCTION GUIDE ADDENDUM

3. A320-X CONFIGURATION

MCDU Option Pages

The Master Control Display Unit (MCDU) can be used to change various aircraft specific settings, to enable or arm system failures and to perform various tasks such as opening doors, fuelling or loading the aircraft.

To access the configuration option pages, use either the pop-up MCDU in the 2D panel or the MCDU within the virtual cockpit.

- If the display of the Captain’s MCDU is blank, press and hold the “BRT” button **(1)** to turn the unit on.
- On the MCDU **press the “MCDU MENU” button (2), then “OPTIONS >”** to get the options page:



Note:
Items listed below are exclusive to the Sharklet models.

MCDU Options Page 2 / 3		
Menu Title		Good to know
VARIOUS OPTIONS Page 2/2	<ul style="list-style-type: none"> • DDRMI – Install or remove the DDRMI stand-by instrument. * • SATELLITE DOME – Install or remove the SATCOM dome. * • COCKPIT STROBE BLOCKER – Install or remove a small component on each wingtip that blocks light emitted from the strobe lights. (A320 only) * 	<p>Changes to the DDRMI or SATCOM dome require the simulator to be restarted to be visible.</p> <p>A321 airframes do not require the cockpit strobe blocker due to their fuselage length.</p>

*** Airframe-specific options** Options that are defined per airframe and may come with each installed livery or airline pack.

5. USING THE A320-X

Electronic Flight Bag (EFB)

The Electronic Flight Bag (“EFB”) is a device that replaces the paper documents and books that used to be carried inside each pilot’s flight bag. EFBs bring flight preparation and documentation into the digital age. This not only saves weight but adds features that can help to improve flight efficiency and safety by providing additional information to pilots.

EFBs come in different form factors with various sets of features. Some are portable and only require a power connection while others are mounted permanently or are even fully integrated into the flight deck. Portable EFBs often use iPads or similar personal tablet hardware for their cost advantage. However, these types of EFBs are not as feature rich as the integrated ones as they are not connected with the aircraft’s avionics and thus lack access to information like weights, aircraft position or ACARS data.

In contrast, the integrated EFBs can provide much more data. They are capable of displaying aircraft position on charts and maps, pulling FMGC data for speed calculation and providing an easy communication terminal for ACARS messaging. Regardless of which type of EFB the pilots have at their disposal, they are a valuable tool in the daily work routine of any pilot.

INTRODUCTION

The EFB modelled for the A320-X Sharklet family is, in principle, based on the portable tablet-style EFBs. These are the most widely used and accessible type and are easily integrated into one’s flight deck workflow. To enhance the experience and provide you with even more useful tools, we’ve also incorporated features usually reserved for high-end EFB models. In addition, we’ve also added a few features to help you when you are using online ATC networks.

EFB ON TABLET / 2ND PC

The EFB can be displayed in a web browser on the same PC, a networked PC or a tablet using the web browser.

Use one of the following addresses to display the EFB:

- If the browser is located on the same computer as P3D, enter the following address:
localhost:23032
- 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

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

Recommended browsers

- iPad: Safari
- Android Tablet: Chrome
- Desktop PC: Any modern browser

NOTE: JavaScript must be enabled for the EFB to display in the browser.

FEATURES

Map

The EFB's world map can display the following data:

- Current Aircraft position anywhere in the world
- Detailed airports including runways, taxiways and parking stands
- The current flight route including any changes made during flight
- Active ATC sectors (VATSIM or IVAO)
- Aircraft around you (AI traffic or Online ATC traffic)
- Weather data uplink (SIGMET & Precipitation)

Take-Off / Landing Data Calculation

Calculation tool for take-off and landing data:

- All calculations take into account obstacles from terrain data
- System failure conditions are also considered for accurate landing data calculations

Loadsheet

An electronic version of the loadsheet is displayed and includes graphs for centre of gravity.

ACARS

ACARS communication and management with the capability to both receive and send such messages.

OFFP

Display of the entire package of an uplinked Online Flight Plan ("OFFP") (SimBrief or PFPX)

Checklist

Flight checklist, type and airline specific. Custom checklists can also be created and displayed.

Document Reader

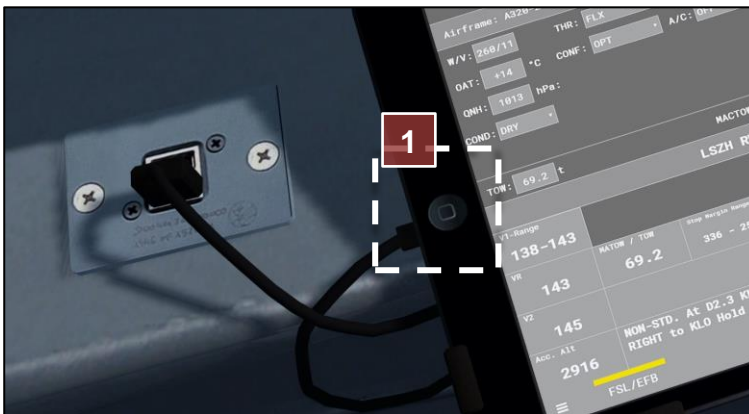
Display any PDF document within the EFB.

Web Interface

Can be used to display any web-based tool, including the ability to access charts by Navigraph or Aerosoft.

BASIC FUNCTIONS

Two EFBs are placed on the flight deck. One is on the Captain's side, the other on the First Officer's side and each has the capability to show pages independent from the other.



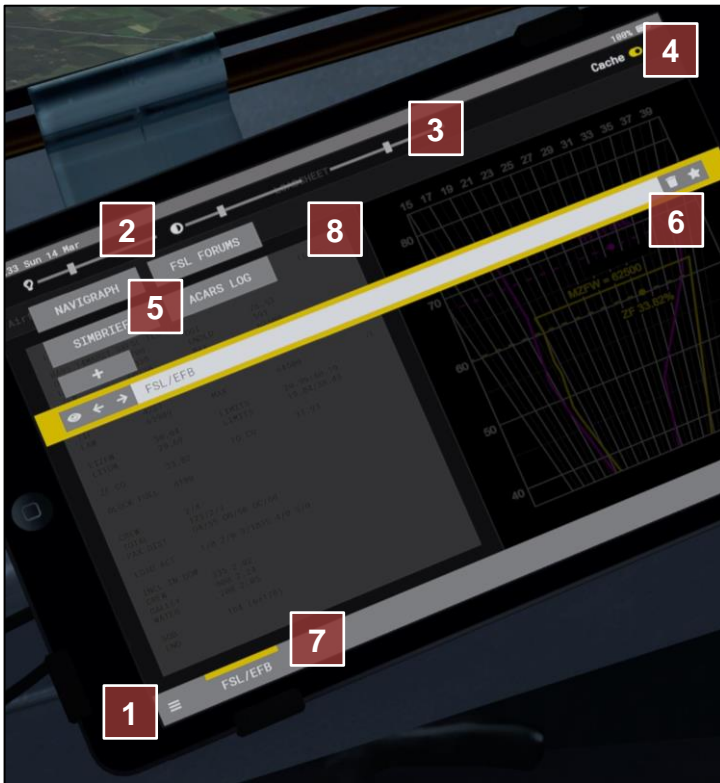
To turn on the EFB, make a **long right**-mouse-click on the tablet's home button **(1)**.

While the EFB is turned on, the same button can be pressed with a **left** click to return to the main screen.

The EFB offers the possibility to add tabs that can link to any desired web page. It also features settings for brightness and contrast.

Full keyboard- and mouse input is enabled as soon as a mouse cursor is clicked on the EFB in the Virtual Cockpit. This includes the ability to use the mouse wheel to scroll through documents and messages.

WEB INTERFACE / SETTINGS PAGE



To access the web interface as well as the settings page, click on the menu symbol at the lower left of the EFB screen (1).

The settings at the top of the screen allow you to:

- Adjust brightness and contrast (2)
- Adjust the browser's zoom level (3)
- Enable or disable browser caching for the EFB tabs (4).

Note: These settings are not available when the EFB is displayed on a real tablet or any external browser as this functionality is not needed outside of the Virtual Cockpit.

To add a new browser tab, select any of the bookmark buttons or define a new one using the + button (5).

Any new web address can be made a bookmark by hitting the star-button to the far right (6).

New browser tabs will be displayed at the bottom of the EFB (7).

Bookmarks will be added to the button area at the top (8). To delete a bookmark-button, right-click the button and select remove.

To close this settings page, press again the menu button (1).

The web interface functionality allows you to use any website inside the Virtual Cockpit. This includes the electronic Jeppesen charts provided by Navigraph as well as LIDO charts provided by Aerosoft. **Access to these charts services is not included with the EFB or Flight Sim Labs aircraft and must be purchased separately.**

Navigraph

Pressing the 'Navigraph' bookmark button opens a new tab to the Navigraph charts web service. Log in with your username and password. If the EFB's cache functionality is enabled, your account credentials are locally stored and retained between sessions.

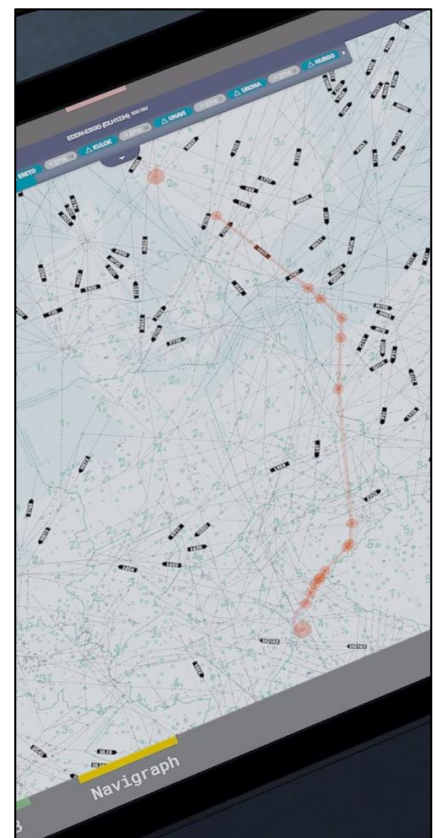
NOTE: The Virtual Cockpit's EFB does not support moving the chart left/right/up/down in airway chart mode.

Aerosoft

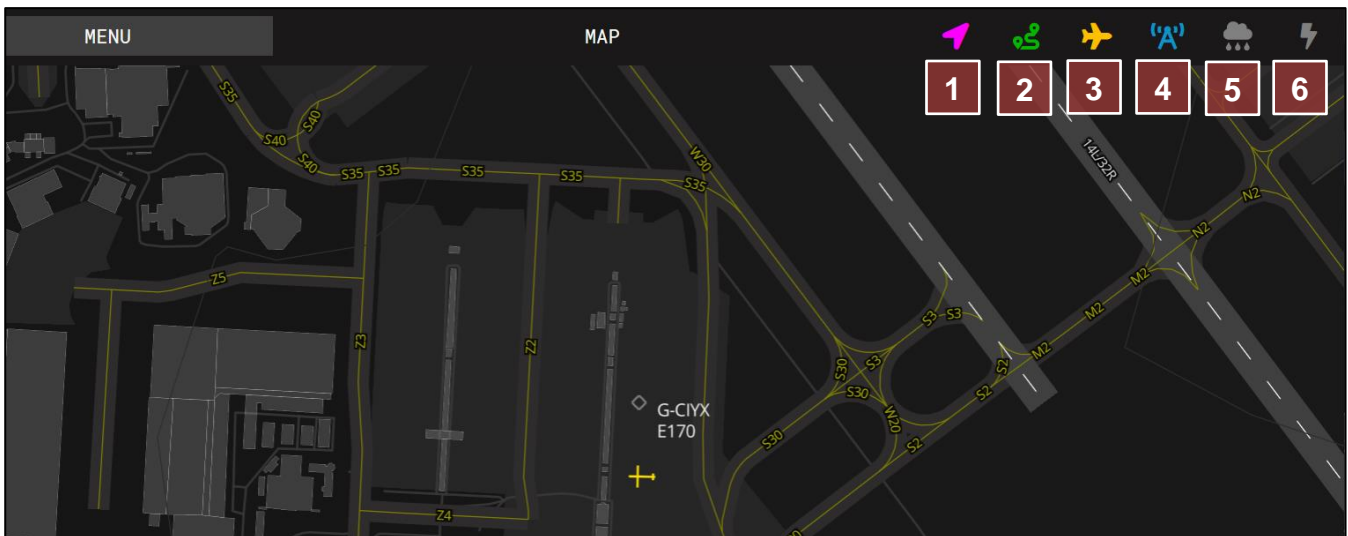
In order to add a similar bookmark for LIDO charts, you need to add a new tab as described above, and then type in the following address:

<https://navdatapro.aerosoft.com>

Then save the tab as a bookmark and you'll have immediate access to those charts on your next flight.



MAP



1. Centres map on your aircraft
2. Displays flight plan route
3. Displays surrounding aircraft
4. Displays active Online ATC sectors
5. Displays ground-based precipitation radar
6. Displays SIGMET info

Ground-based precipitation data

Global precipitation data displayed on the EFB map comes from a ground-based meteo provider which is downlinked to the aircraft via SATCOM internet.

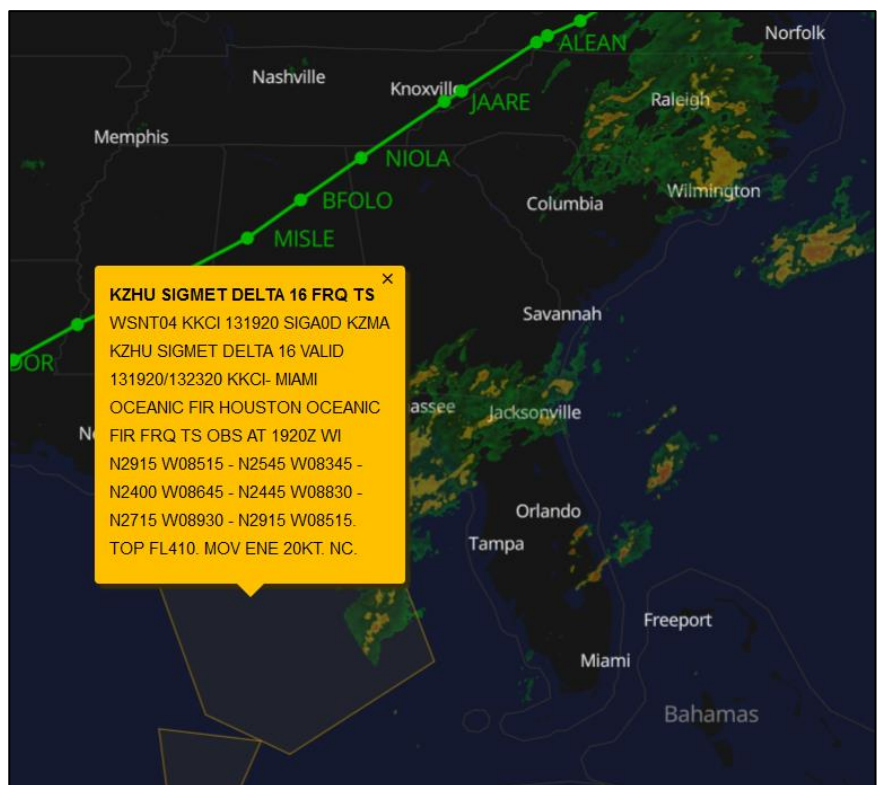
This data is NOT the same as precipitation data from the onboard weather radar and has much greater delay and is less accurate.

SIGMET

SIGMET messages provide global info on significant meteorological phenomena.

The messages usually contain location data which is displayed on the map as an amber polygon shape.

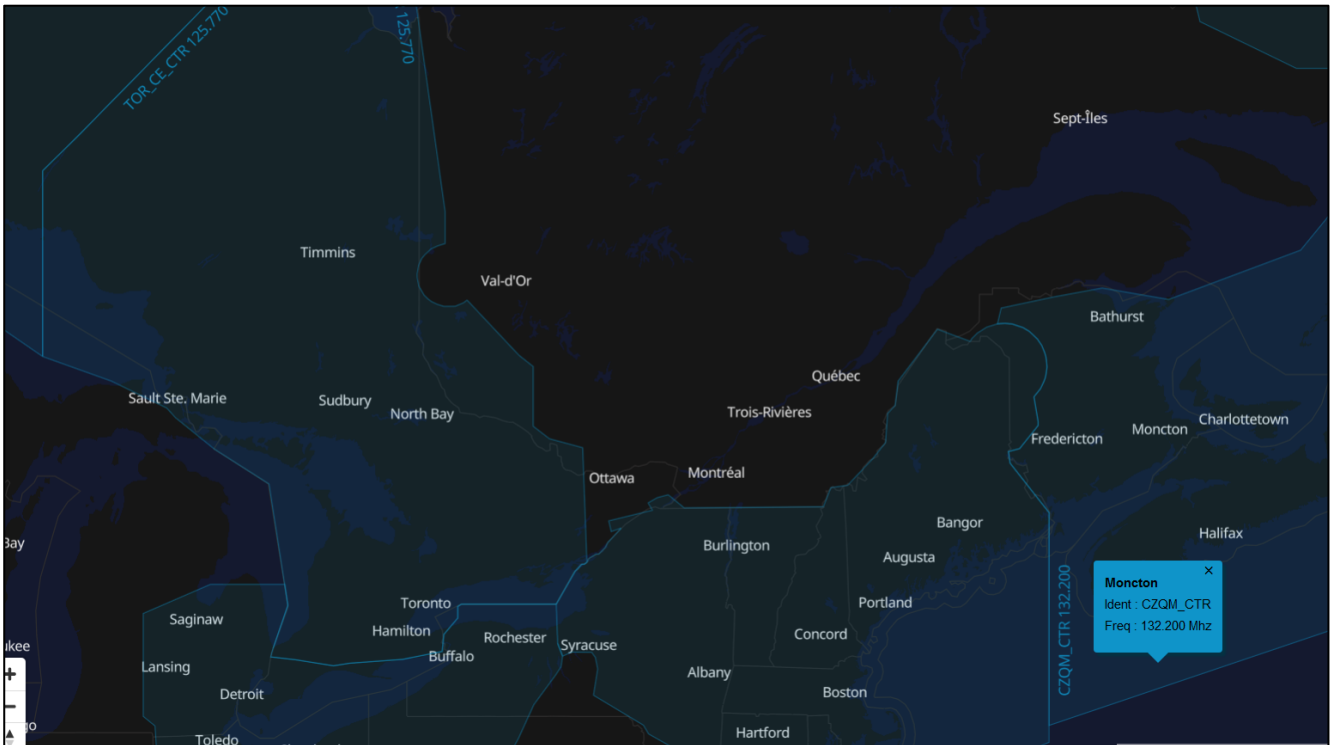
Clicking the polygon will display the SIGMET message.



Weather info and SIGMET messages will only work if the Prepar3D simulator time is set to within plus or minus 1 hour of actual time. The weather data is not visible when the map is zoomed in to airport level.

If you need help in decoding SIGMET messages, download the following quick reference card from ICAO:
www.icao.int/APAC/Documents/edocs/WS-SIGMET.pdf

Active Online ATC Sectors



The active Online ATC sectors map layer displays all sectors being manned in the online ATC network of your choice. Clicking on any sector will pop up its name as well as ident and frequency.

The data source for this layer is switched between VATSIM and IVAO depending on the ATIS server source selected within the ATSU options pages. For details on how to set this, see the ATSU / Datalink chapter in the A320-X Introduction Guide.

Surrounding Aircraft

Activating this map layer will display all traffic surrounding your aircraft. Both AI aircraft and aircraft flying on the same online ATC network you are connected to will be shown.

Note: This feature does not exist on real EFBs. It has been included here as a nice way of keeping track of your friends when flying online.



TAKE-OFF / LANDING DATA CALCULATION

Take-Off Data Calculation

The EFB take-off calculation tool allows for easy and convenient take-off performance calculation at any time before departure. Terrain is taken into account for all calculations. Keep in mind that terrain-influenced calculations can only be made if the aircraft is positioned at the desired airport.

MENU
TAKEOFF

Airframe: A320-232-SL Reg: SX-FSL
Airport: LFBO 1
PRINT 9 CALC

W/V: 0 2 THR: FLX 4 A/I: OFF 5

OAT: +15 °C CONF: OPT 3 A/C: OFF 5

QNH: 1013 hPa:

COND: DRY 3

TOW: 68.1 t 6 MACTOW: 31.93 % 7

BLAGNAC 499ft/AMSL

Rwy	Identifier	TORA	Slope	SWY	CWY
14R	M10	3003	+0.08	300	600
14R	S10	3003	+0.08	300	600
32L	F/L	3503	+0.00	300	600
32L	M4	2703	-0.08	300	600
32R	F/L	3025	+0.00	300	600

10 **LFBO RWY 32R F/L TORA 3025 TOW 68.1**

V1-Range	149	CONF	1+F	MTOW: 73.5	PLTOW: 87.4
VR	149	MATOW / TOW	0.7 DN	HWC: 0 kt	Field Length: 87.4
V2	150	Stop Margin Range	FLEX 70	CWC: 0 kt	Sec. Segment: 87.4
Acc. Alt	1997	Stab Trim	Thrust	V1MIN: 114	Obstacle: 87.4
		91		VRMIN: 118	
				V2MIN: 120 (VMU)	
				G DOT: 216	

STD. At 2000 turn RIGHT to TOE Hold

1. Airport ICAO identifier
2. Weather data for wind, temperature and QNH
3. Drop-down menu for runway condition
4. Drop-down menus for desired thrust setting and flaps configuration.
5. Drop-down menus for anti-ice and packs selection.
6. Take-off weight
7. Centre of gravity at take-off weight
8. Runway selection, including intersections
9. Buttons to calculate take-off data and print the data if a printer is set up.
10. Header for selected runway and weight. Take-off data appears below this header.

Landing Data Calculation

The EFB landing calculation tool allows for easy and convenient landing performance calculations at any time. This tool also takes into account all system failure conditions that could influence landing performance.

MENU
LANDING

Airframe: A320-232-SL Reg: SX-FSL
Airport: EGLL 1
10 CALCULATE

W/V: 250/16 CONF: CONF 3 3 A/I: OFF 4

OAT: +9 2 REV: NONE 3 A/C: ON 4

QNH: 1015 hPa:

HEATHROW 83ft/AMSL

Rwy	Identifier	LDA	Slope	G/S	M/A
09L		3593	+0.00	3.0	5.0
09R	7	3352	+0.00	3.0	5.0
27L		3660	+0.00	3.0	5.0
27R		3902	+0.00	3.0	5.0

System Failures SET 5 CLEAR

Act LAW: 64.4 6

RCAM: DRY 8 TYPE: NORMAL 9

11 **EGLL RWY 27L LDA 3660 LAW 64.4**

Act LAW / MALAW		VAPP		VLS: 138	
64.4		143			
G/A CLB Grad	Brake Setting	ILD	FLD	Exit	LDA
5.1 %	MANUAL	1241	1427	TWY S6	2246
	LOW	2211	2542	TWY N6	2327
	MED	1537	1767	TWY SB7	2854
LDG CLB Grad				TWY N7	2854
15.4 %				TWY N8	3353

MLAW: 64.5 **PLAW: 80.0**

Field Length: 90.0

G/A CLB: 80.0

LDG CLB: 90.0

Brake Energy: 90.0

Tire Speed: 90.0

HWC: 15 kt

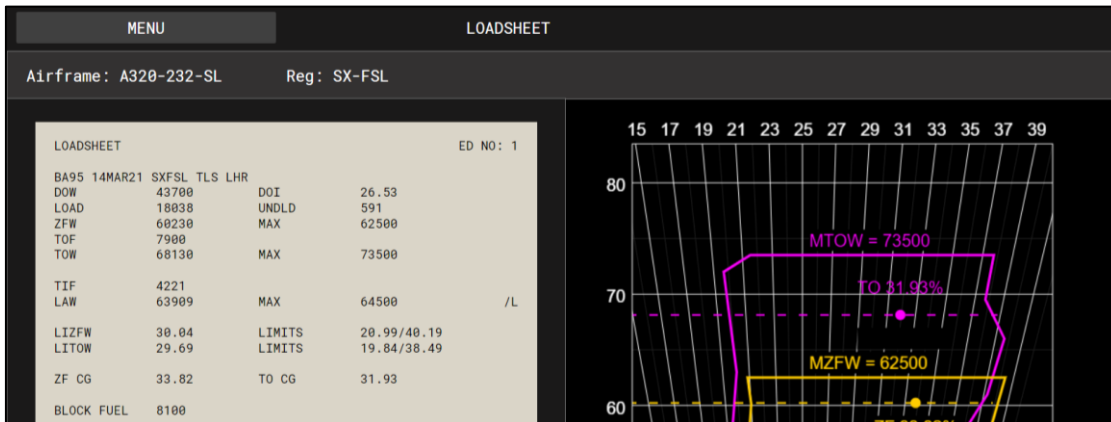
CWC: 5 kt

VMCL: 113 kt

1. Airport ICAO identifier
2. Weather data for wind, temperature and QNH
3. Drop-down menus for reverse thrust setting and flaps configuration.
4. Drop-down menus for anti-ice and packs selection.
5. Setting and clearing failure conditions. When set, the condition will display with red background.
6. Landing Weight
7. Runway selection
8. Drop-down menu to specify the amount of runway contamination.
9. Choose between manual landing and Autoland.
10. Button to calculate the landing data.
11. Header for selected runway and weight. Landing data appears below this header.

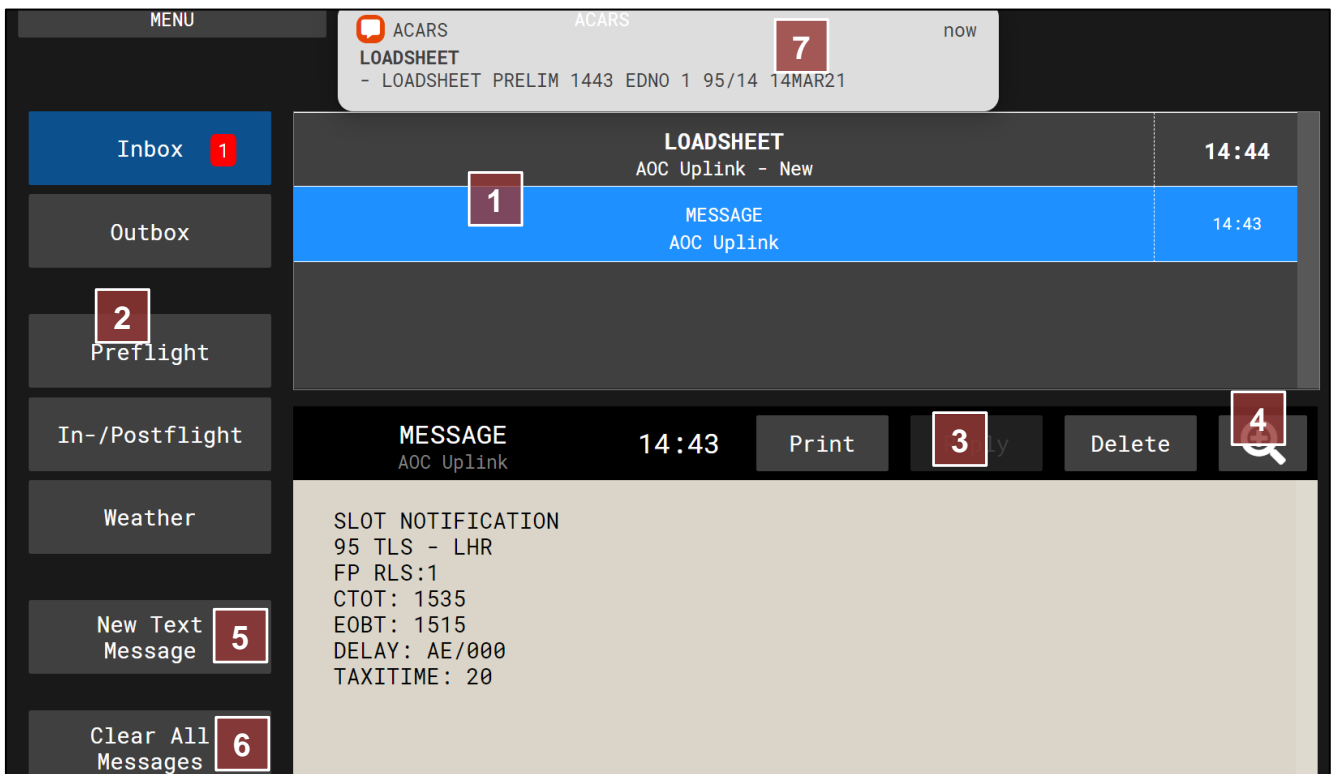
LOADSHEET

The loadsheet tab is populated as soon as the actual loadsheet has been delivered to the aircraft via ACARS. A graphical representation of the actual weights, centre of gravity and their limitations appears next to the loadsheet.



ACARS

The ACARS tab is the message centre for all ACARS messages. New messages are listed, titled and time stamped as they arrive. When a new message comes in, a notification bubble identifying the message will pop up at the top of the EFB screen. This bubble will display on every EFB page, alerting you to an incoming message. Unread messages have bold titles while read message titles are not bold. If ACARS messages are read in the MCDU, they are also marked as read in the EFB. When messages are clicked, they are displayed at the bottom of the window. Messages are also neatly sorted into categories on the left. Messages can be printed and even composed and sent from this tab.



- | | |
|---|---|
| 1. ACARS message list | 5. Compose new messages. |
| 2. Message categories. | 6. Clear all messages. This is useful when on turnaround between flights. |
| 3. Print, reply to and delete messages. | 7. Bubble for new ACARS messages. |
| 4. Enlarge message area | |

DOCUMENT READER

A PDF document reader is available within the EFB should you wish to consult manuals from within the Virtual Cockpit during flight. Dedicated buttons for Flight Sim Labs documents have been created by default.

In addition, custom PDF files can also be opened from within the document reader by clicking on the “+” button. In order to access custom PDF documents, these files need to be placed in the following location:

C:\Program Files\FlightSimLabs\A320X\IP3Dx64\Documentation

The screenshot shows a document reader interface with a menu on the left and a main document window. The menu includes 'Introduction', 'Normal Procedures', 'Basic Tutorial', and 'ATSU Tutorial'. A '+' button is labeled '1'. The main window displays a diagram titled 'Circling Approach Profile' with various flight parameters and a '2' button at the bottom left.

Diagram labels include: Turning base, Abeam threshold, Start time, ~25 SEC +/- WIND CORR, MIN - F SPEED, MIN CIRCLING APPROACH HEIGHT, Runway in sight, Level off, Proceed to downwind leg, Maintain visual contact with RWY, Initial config: Flaps 3, Gear down, "Landing check", V_{LOP}, "Flaps full", End of turn ~ 400ft AGL, Stabilised, NOTE: The geometry may be adapted according to situation and airport layout.

1. Open additional documents
2. Enlarge the document viewer

Jump Ahead Function

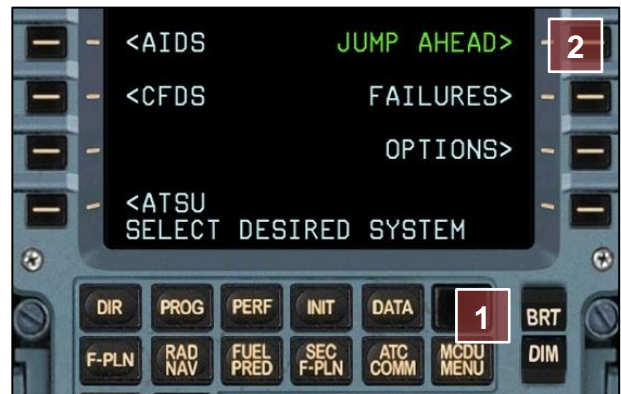
The “Jump Ahead” feature essentially allows you to skip parts of your flight by selecting an upcoming waypoint along your planned route and having the aircraft jump instantly to that selected waypoint. Fuel on board, altitude, speed, expected crossing time and elapsed time will automatically be adjusted to the amounts and values at the selected waypoint you would have had if you had flown the route in real time.

You can also adjust any of those values before making the jump. For example, if you want to skip ahead to the landing but would like to make the aircraft heavier to experience a maximum weight landing, simply adjust the remaining fuel on board to the desired amount and then execute the jump.

USING JUMP AHEAD

The Jump Ahead feature is accessed via the MCDU main menu:

- On the MCDU press the “MCDU MENU” button (1), then “JUMP AHEAD >” (2) to get the options page.



- Select any desired waypoint from the list (3). You may use the arrow keys to scroll through the flight plan to select any remaining waypoint along the route.



- Selecting a waypoint from the left column will fill in the right column with that waypoint’s FMGC altitude, speed, FOB and estimated time (4).
- You may **alter** any of these values before making the jump. To do that, simply enter the value into the scratchpad and overwrite using the desired numbers.
- Select ‘JUMP AHEAD’ to accept and/or insert the changes. ‘CONFIRM JUMP’ will appear. Press the same key again to confirm the jump.
- The simulator will now reload the scenario and place the aircraft at the selected waypoint, incorporating the calculated or desired values. It is advised to give the aircraft’s systems at least 10 seconds of time after the simulator has finished reloading the scenery to allow for adjustment to the new values before resuming your flight.



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