

FLYSMART+ FOR iPAD*

MANAGER V5.6.3

USER GUIDE – Rev A

04 MAY 2026

Reference	UG-FSAIMGR20260504
Confidentiality	Flysmart+ Customers ONLY

RECORD OF REVISIONS

Revision	Date	Chapters	Description of Changes
RevA	04 MAY 2026	All	Initialization of the document for Flysmart+ Apps V5.6.3 delivery.

TABLE OF REFERENCES

N°	Title	Reference	Issue	Date
[REF 1]	Flysmart+ for iPad Apps V5.6.3 – Release Note	RN-FSAI20260504	RevA	04 MAY 2026
[REF 2]	Flysmart+ for iPad Gateway V5.6.1 – Release Note	RN-FSAGTW20250324	RevA	24 MAR 2025
[REF 3]	Flysmart+ for iPad Apps V5.6.3 – Installation Guide	IG-FSAI20250504	RevA	04 MAY 2026

LIST OF ACRONYMS

Acronym	Definition
eQRH	Electronic Quick Reference Handbook
FAQ	Frequently Asked Questions
iOS	Apple Portable Devices Operating System
IP	Internet Protocol
OLB	Ops Library Browser
PDF	Portable Document Format
QRH	Quick Reference Handbook
TLS	Transport Layer Security

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1 INTRODUCTION

This document is the User Guide of the Flysmart+ for iPad Manager App **V5.6.3 and all its subsequent minor versions**.

It aims at describing all the features of the FS+ Manager App and the update process of the Flysmart+ for iPad Apps.

Flysmart+ for iPad FS+ Manager is an application developed by SKYWISE enabling the synchronization and the installation of the Airline's data into the other available Flysmart+ for iPad Apps.

The operation of Flysmart+ on iPad devices implies the use of iPadOS Apps on the iPad device as well as the Flysmart+ Gateway software on the ground segment.

FS+ MANAGER APP PRESENTATION

CHAPTER 02

2 FS+ MANAGER APP PRESENTATION

2.1 Definition

The Flysmart+ for iPad Suite is composed of 7 Apps:

- Flysmart+ Manager
- Flysmart+ TakeOff
- Flysmart+ InFlight
- Flysmart+ Landing
- Flysmart+ Loadsheet
- Flysmart+ Ops Library Browser
- Flysmart+ eQRH

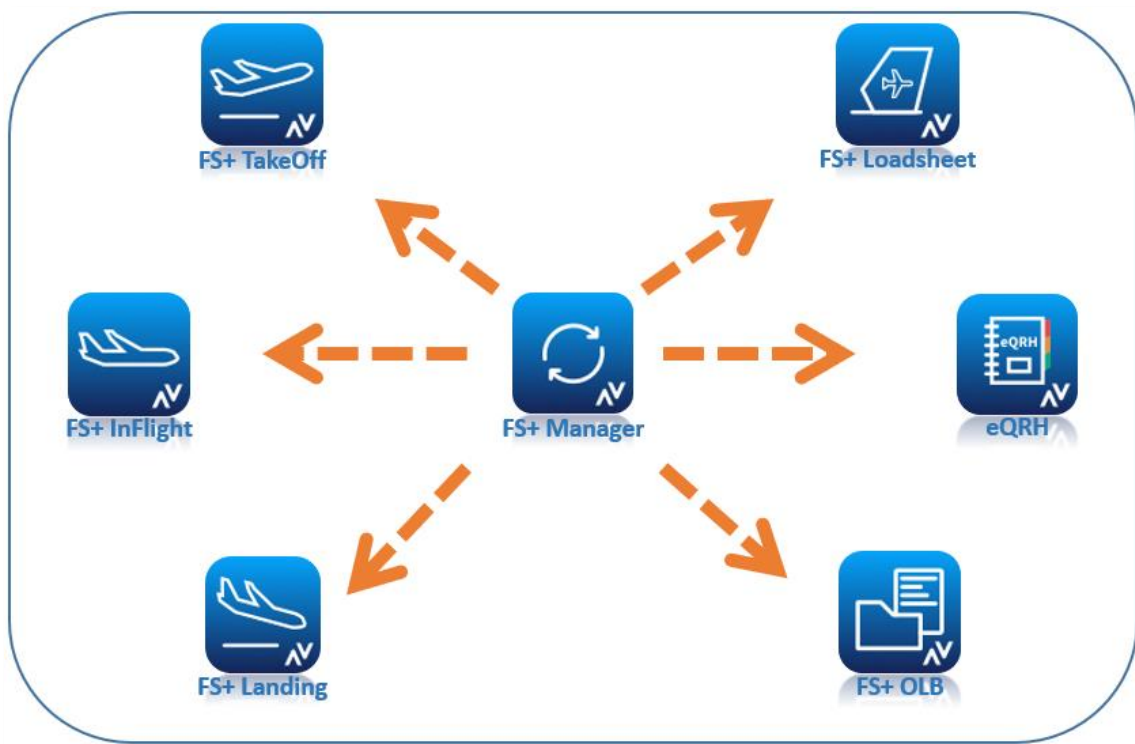


Figure 1: Flysmart+ for iPad Apps

The FS+ Manager App is the center of the Apps Suite.

It enables the connection with the Gateway and the dispatch of the data between all the installed Apps.

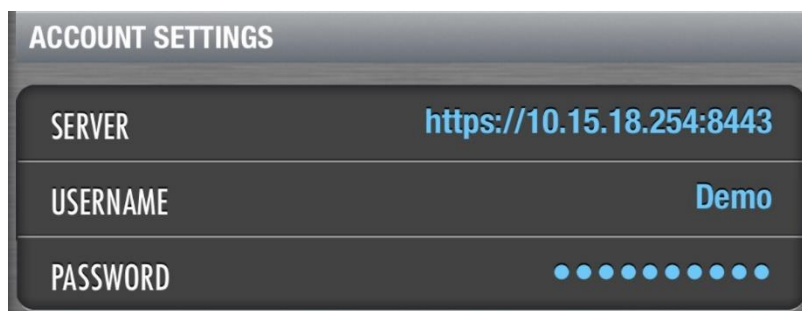
Its main functionalities are:

- Connect to the Gateway
- Check the credentials and the profile of the User
- Check the availability of new EFB data
- Update the data
- Report EFB version to the Gateway
- Send the computation reports of the Performance Apps to the Gateway.

2.2 FS+ Manager Features

2.2.1 Account settings

This section of the FS+ Manager is dedicated to the connection to the Gateway.



ACCOUNT SETTINGS	
SERVER	https://10.15.18.254:8443
USERNAME	Demo
PASSWORD	••••••••

Figure 2: Account settings

When a User needs to update the data of the Flysmart+ Apps, he/she needs to enter:

- **ADDRESS:** this is the server address used to connect to the Gateway. It is composed of the Server information: [https://\[Server-IP\]:\[Server-Port\]](https://[Server-IP]:[Server-Port])
Example: <https://10.15.18.254:8443>
- **USERNAME**
- **PASSWORD**

Note

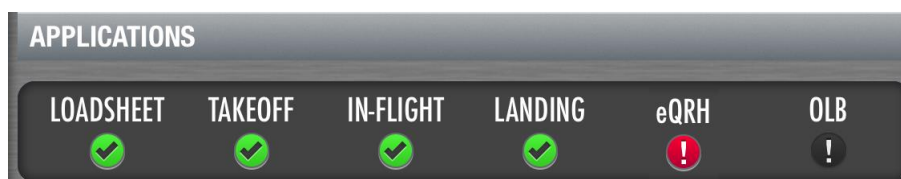
The Server, Username and Password information are provided by the **EFB Administrator**.

Note

The Password retention period is 8 hours after the last data synchronization. After that period, it is necessary to input the password again.

2.2.2 Apps status

This section of the FS+ Manager provides the User with information regarding the availability and installation status of the data for each installed application.



APPLICATIONS					
LOADSHEET	TAKEOFF	IN-FLIGHT	LANDING	eQRH	OLB
✓	✓	✓	✓	!	!

Figure 3: Flysmart+ Apps update status



The App is up to date in regards with the EFB Version and the User profile.



The App is not up to date in regards with the current EFB Version.



There is no data available in the current Release for the User.

Note

If an App is not installed on the iPad, it is greyed out in the Apps status bar with no status information.

2.2.3 EFB Version

This section of the FS+ Manager provides the User with the status of the EFB. It is linked to the status of the Apps described in chapter [2.2.2 Apps Status](#).

EFB Version: UNKNOWN	When the EFB Version displays UNKNOWN , it means that the update of at least one application was not successful.
EFB Version: DEMO AIRLINE JAN 2019	When the EFB Version is displayed in AMBER , it means that the data is not up to date, and a new Release is available for download or installation.
EFB Version: DEMO AIRLINE JAN 2019	When the EFB Version is displayed in GREEN , it means that all the data available in the Release for the User has been successfully installed in all the Apps installed on the device.

2.2.4 Read the User Guide / Read Release Note

By default, in the FS+ Manager, a **Read the User Guide** button at the bottom of the App is available to display the FS+ Manager User Guide.



Figure 4: Read the User Guide button

If, in the Release, a Release Note in PDF format is available, the button changes to display “*Read Release Note*”.

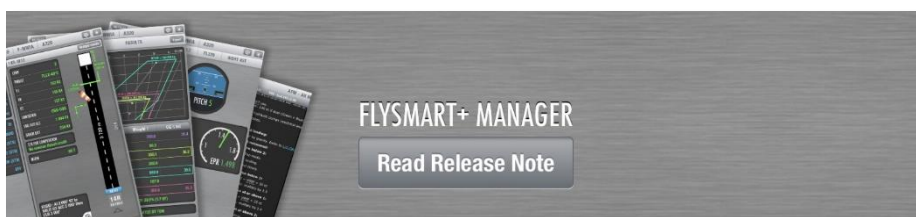


Figure 5: Read Release Note button



Figure 6: Release Note display

Once the Release Note is displayed, the User can browse the document.
When links inside the document are available, they are activated and can be selected.
A **Close** button is available on the top left-hand side of the App to go back to the FS+ Manager.

2.2.5 Switching bar

Located at the bottom of the FS+ Manager App, this switching bar provides access to each installed App.



Figure 7: Switching Bar with Flight+

The available Apps are:



The Flysmart+ eQRH

The Flysmart+ TakeOff Performance App

The Flysmart+ In-Flight Performance App

The Flysmart+ Landing Performance App

The Flysmart+ OLB App

The Flysmart+ Loadsheet Performance App

Mission+

Note

If an App is not installed on the iPad, it is not displayed in the switching bar.

APPS UPDATE PROCESS

CHAPTER 03

3 APPS UPDATE PROCESS

When opening the FS+ Manager, the User needs to enter:

- The SERVER address
- His/her USERNAME
- His/her PASSWORD

Then, the **Update all** button is enabled, and the User shall tap on it.

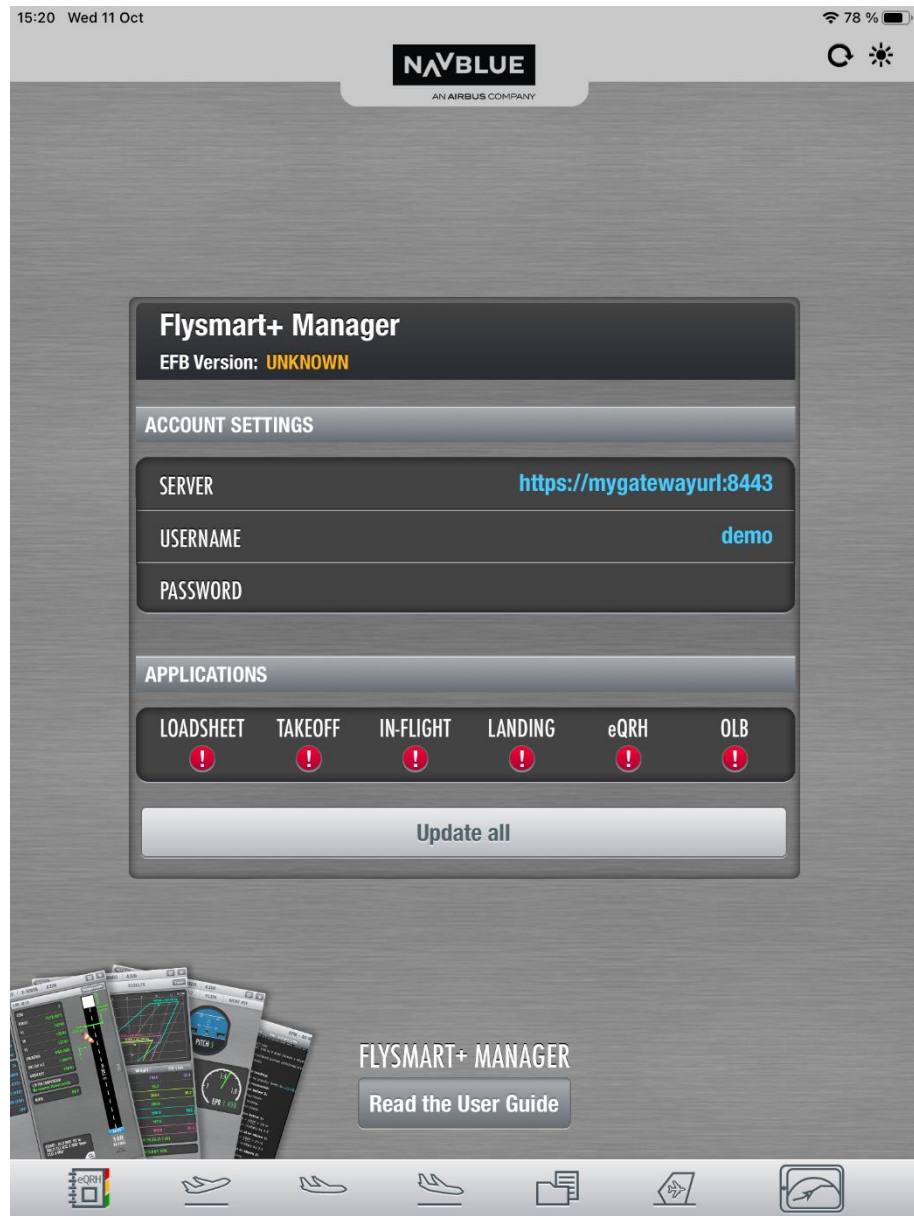


Figure 8: FS+ Manager before launching an Update

When the **Update all** button is selected, an amber exclamation mark is displayed on the button.

The update process begins with the check of the EFB Version available on the Gateway.

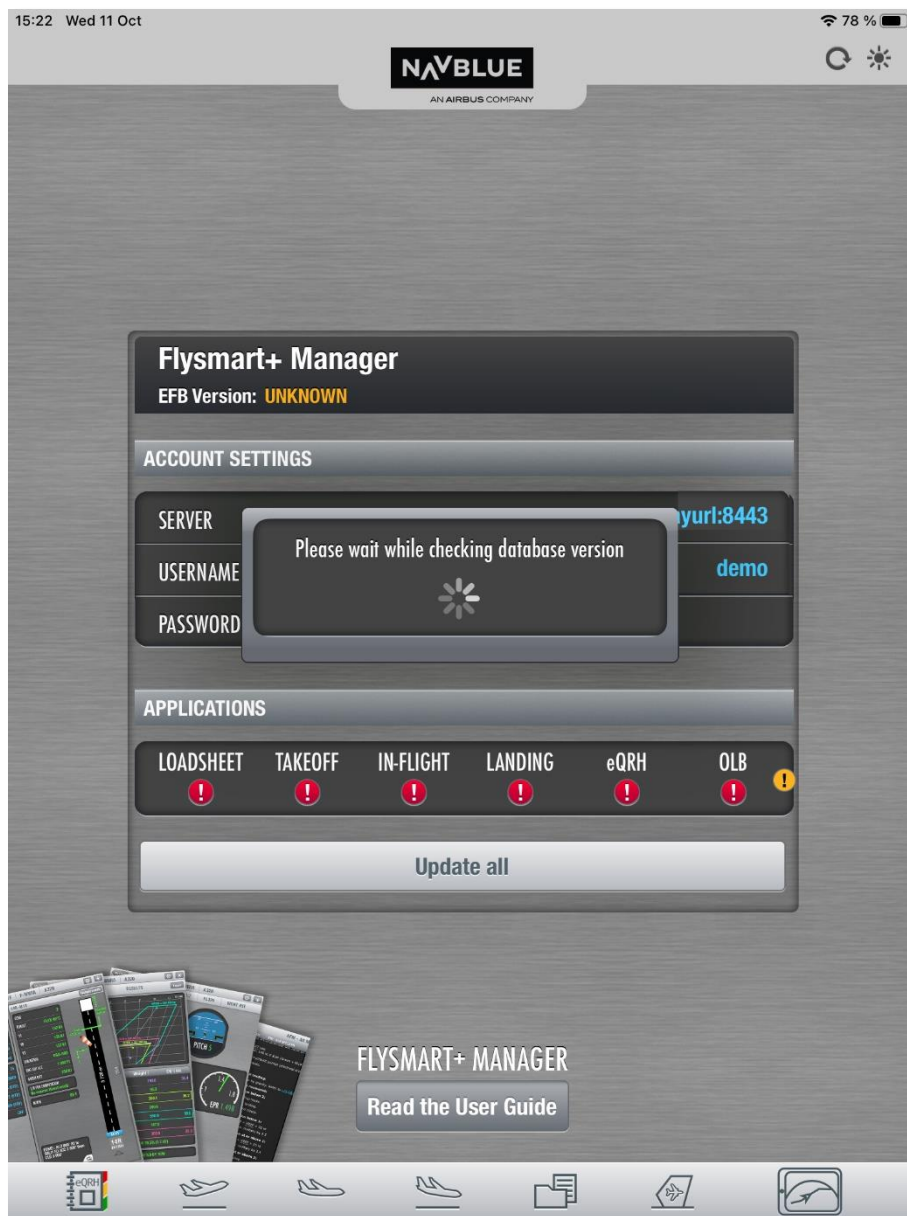


Figure 9: Checking database version

Note

When the option is set to *ON* in the Gateway *Preferences*, the computation reports of the Performance Apps are sent to the Gateway at this moment. Once the computation reports are sent to the Gateway, they are deleted from the device.

When the option is set to *OFF* in the Gateway *Preferences*, the computation reports are stored on the device for 91 days. They are deleted if they are sent via email. The computation reports older than 91 days are automatically deleted.

If a new Release is available, the '*Update confirmation*' pop-up is displayed.

The User can:

- **Cancel** the operation: The Update process is stopped. There is no change in the data already installed and in the EFB Version.
An amber exclamation mark is displayed on the **Update all** button to remind the User that a new Release is available for installation.
- **Download** the new Release.

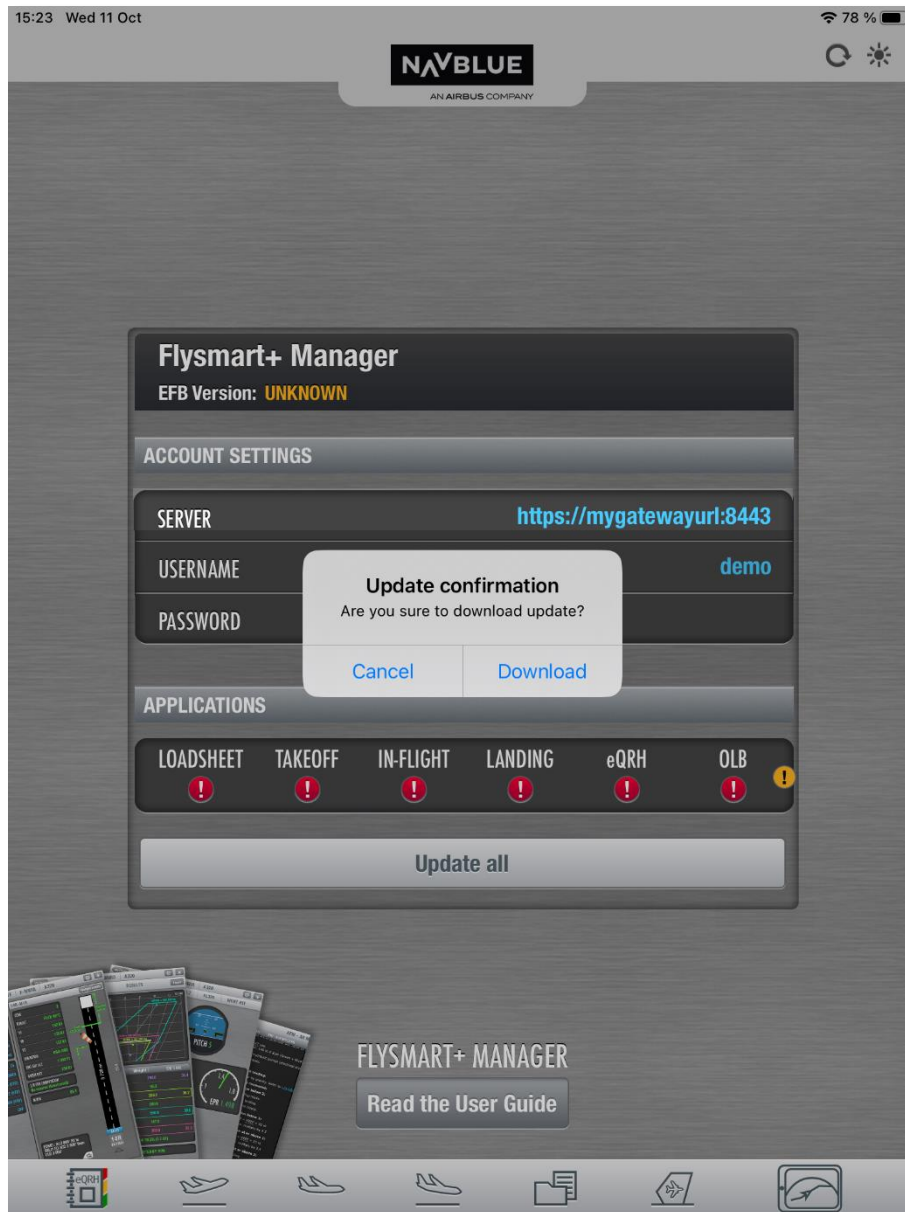


Figure 10: Download confirmation pop-up

When the User taps on **Download**, the FS+ Manager downloads all the data the User can access with his/her profile.

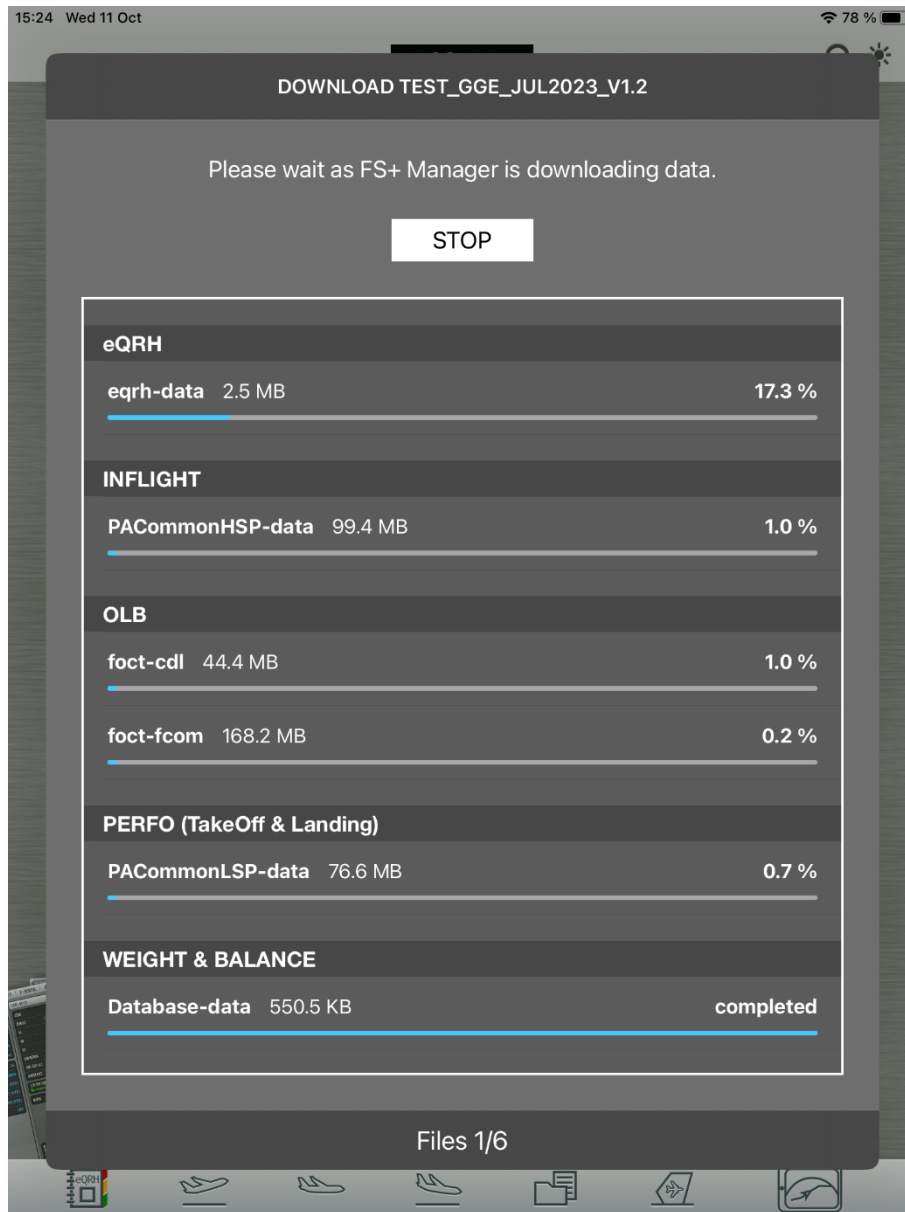


Figure 11: Download of new data

The User may stop the download of the data by selecting the **STOP** button.

The User may also put the FS+ Manager in background to resume other activities on other applications. The download continues in the background and the FS+ Manager sends a notification to alert the User that the download is completed, and the data are ready to install.

Note

The time to download the new Release depends on:

- the size of the data
- the network capabilities

Once the complete set of data is downloaded, the “*Update confirmation*” pop-up is displayed. The User can select:

- **Cancel** to stop the installation process.
The EFB Version keeps its current value, in amber.
An amber exclamation mark is displayed on the **Update all** button to remind the User that a new Release is available for installation.
- **Install All** to run the installation process for each App.

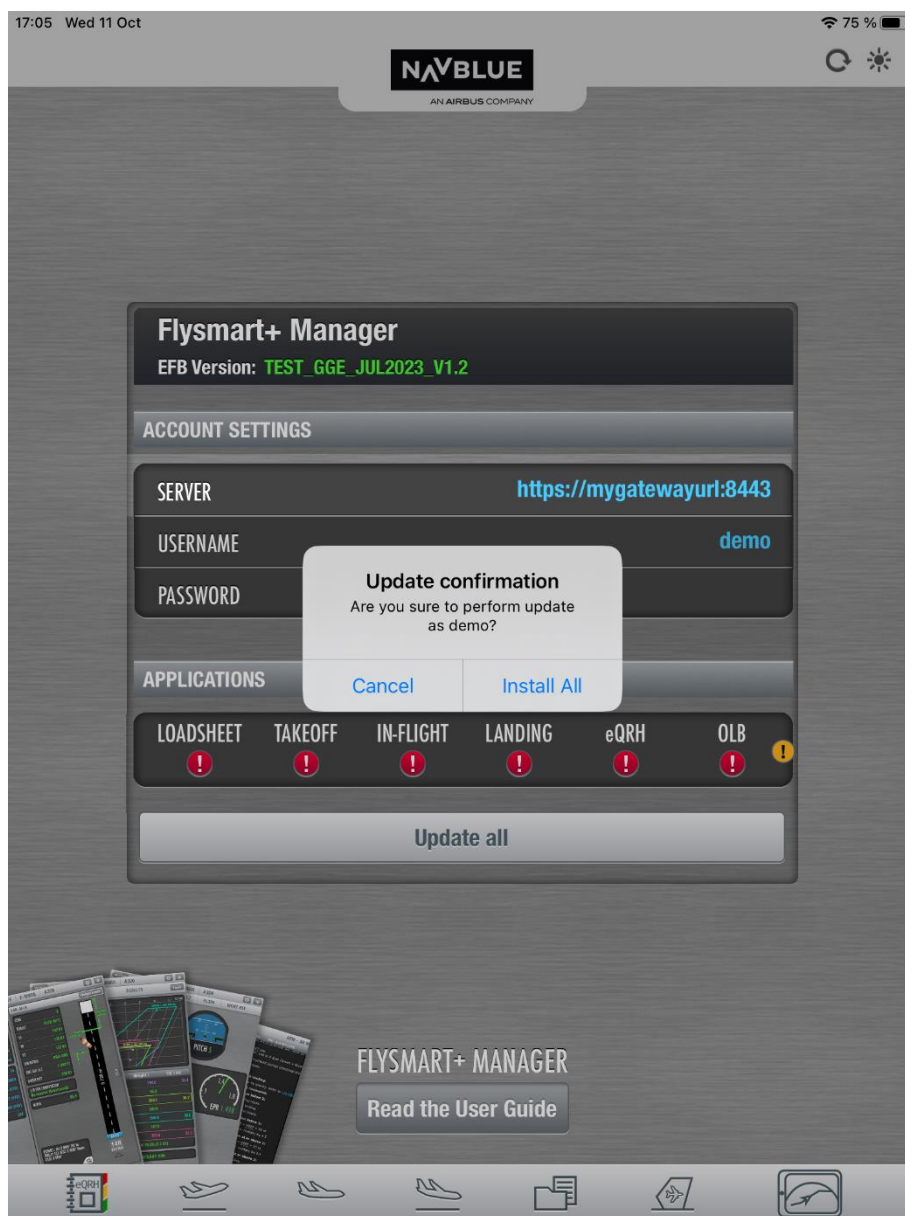


Figure 12: Installation confirmation pop-up



WARNING

Launching the installation process makes the EFB Version set to “**UNKNOWN**”.
As a result, cancelling the installation will make the EFB inoperative.

When the User selects **Install All**, the FS+ Manager runs the installation and automatically opens and closes each installed App.



Figure 13: Processing the data

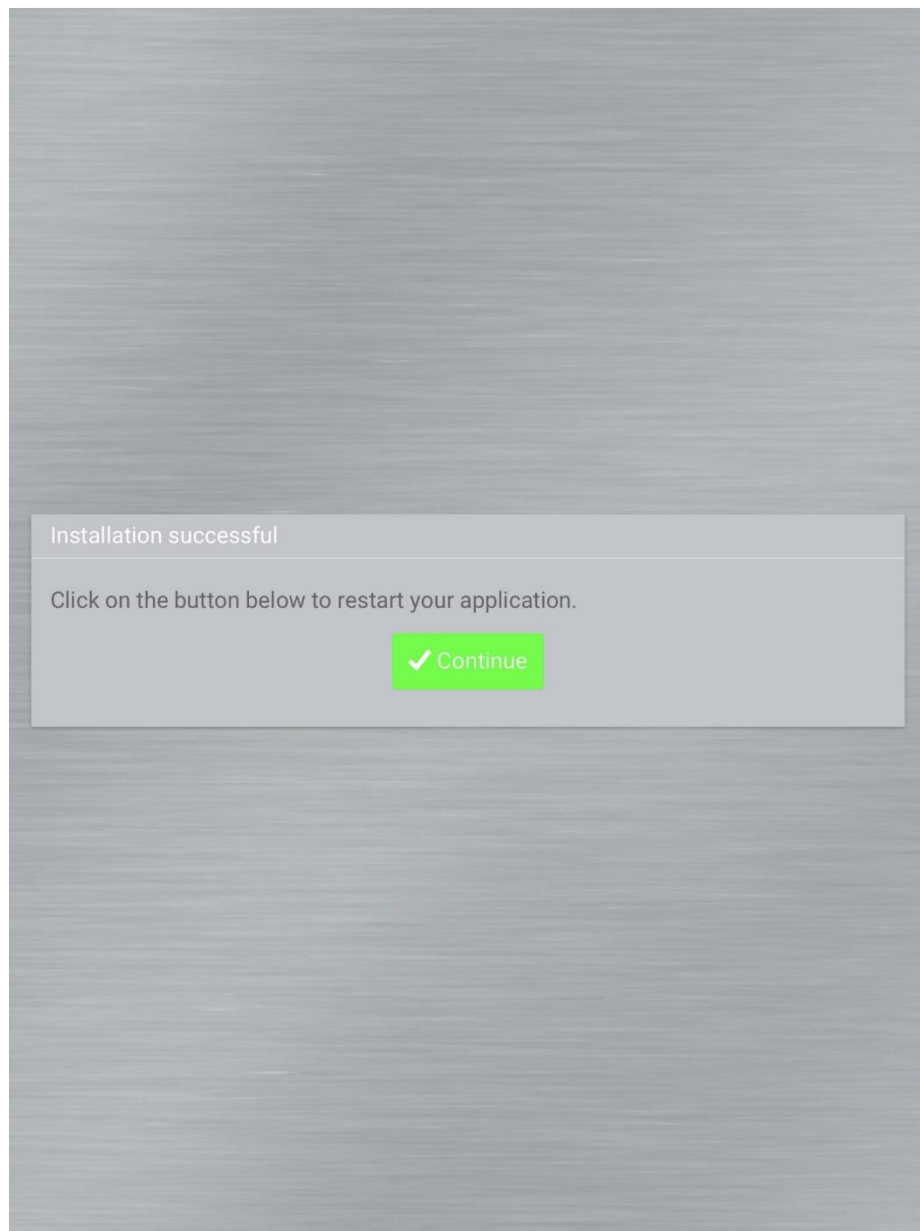


Figure 14: eQRH data successfully installed

Note

For the eQRH data installation, an action from the User is required at the end of the data installation to go back to the FS+ Manager.
This action is mandatory in order to proceed with the next App update.

Once the data installation is completed, the FS+ Manager is displayed with an '*Information*' pop-up providing the confirmation that the data is successfully installed.

The *EFB Version* is displayed GREEN.
The Apps status shows GREEN TICK.

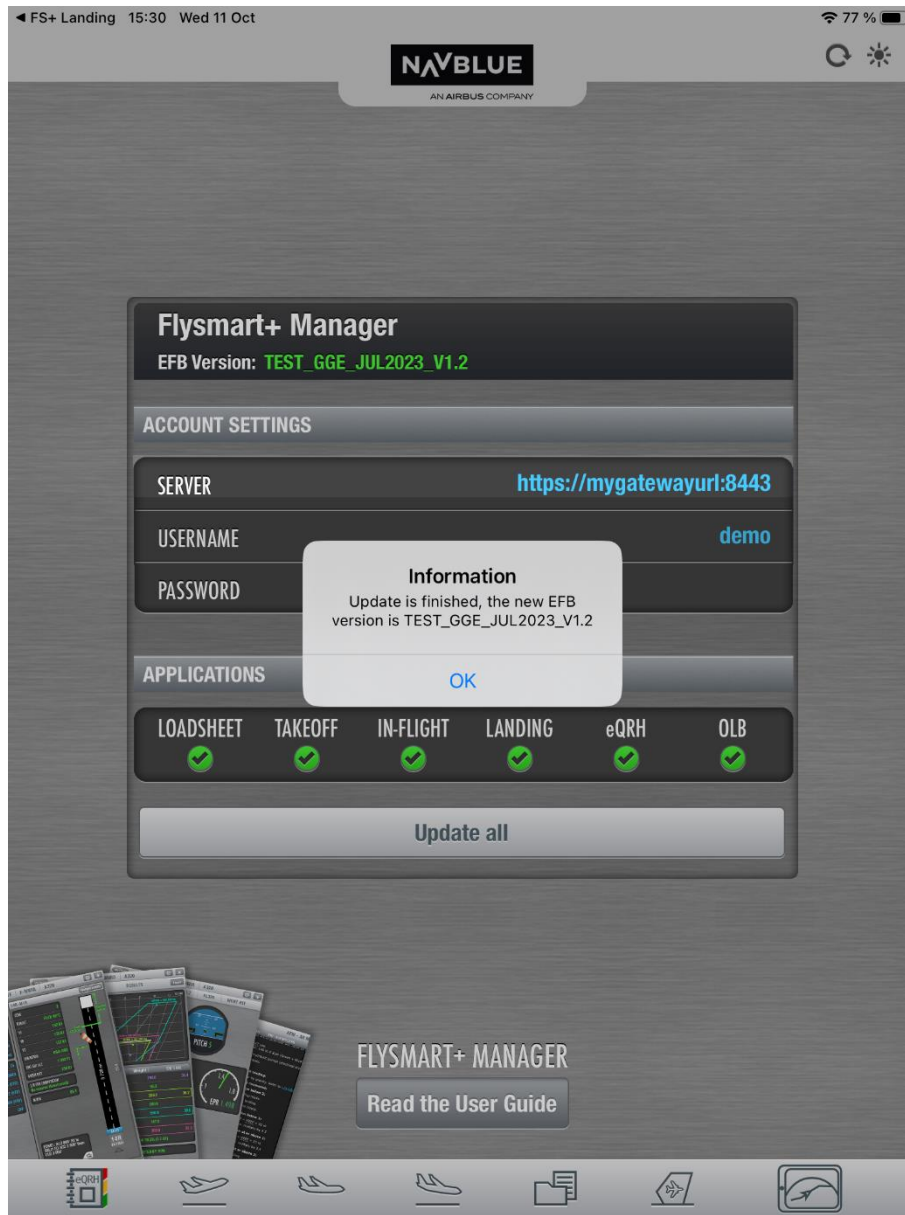


Figure 15: EFB Up to date

NEW RELEASE FOR DOWNLOAD

CHAPTER 04

4 NEW RELEASE FOR DOWNLOAD

When a new release is published on the Gateway, a notification is received on the iPad.

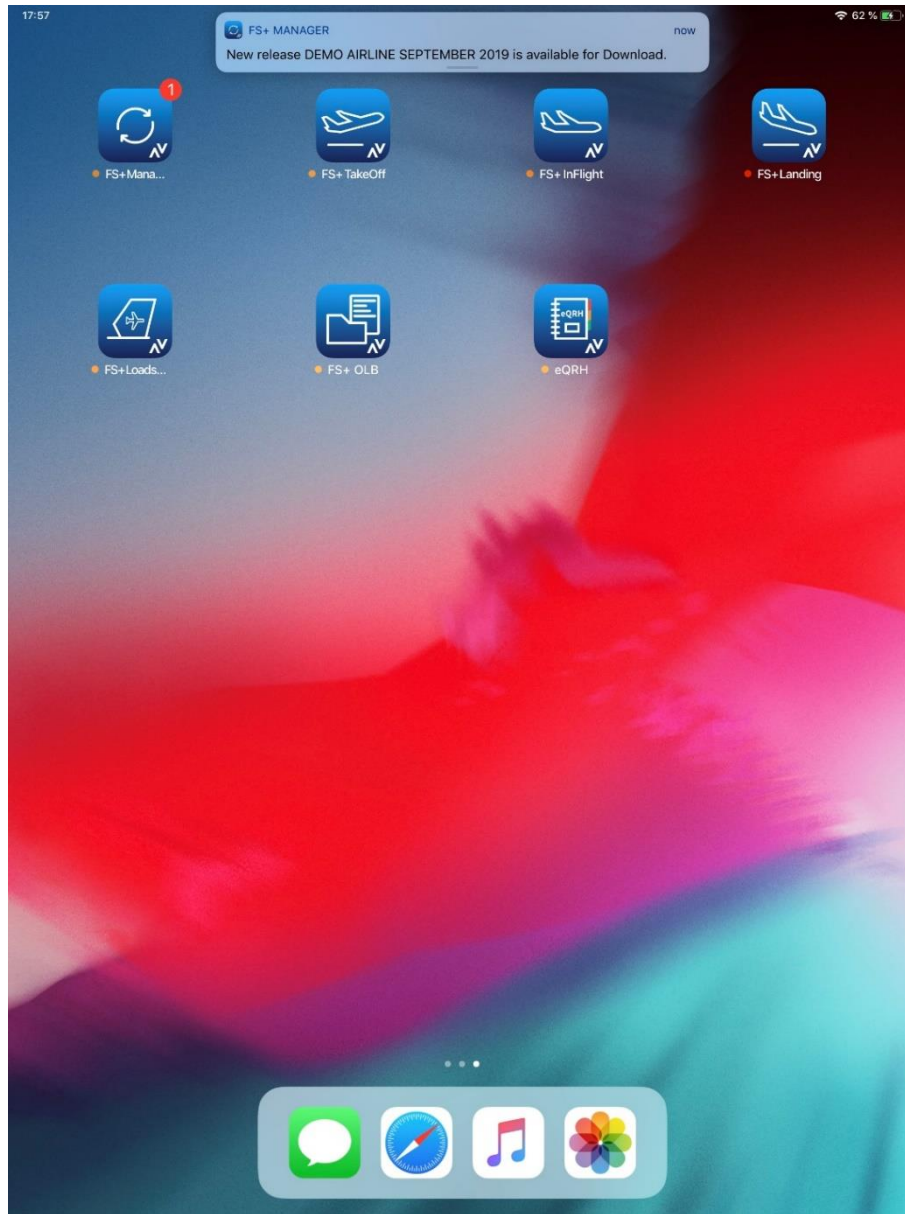


Figure 16: EFB Notification

In order to be able to receive the new release notifications, it is mandatory that:

1. The notification feature is enabled in the Gateway *Preferences*
2. The Operational User has synchronized at least once with the Gateway to install a published release
3. The FS+ Manager notification option is properly enabled in the iPad Setting:

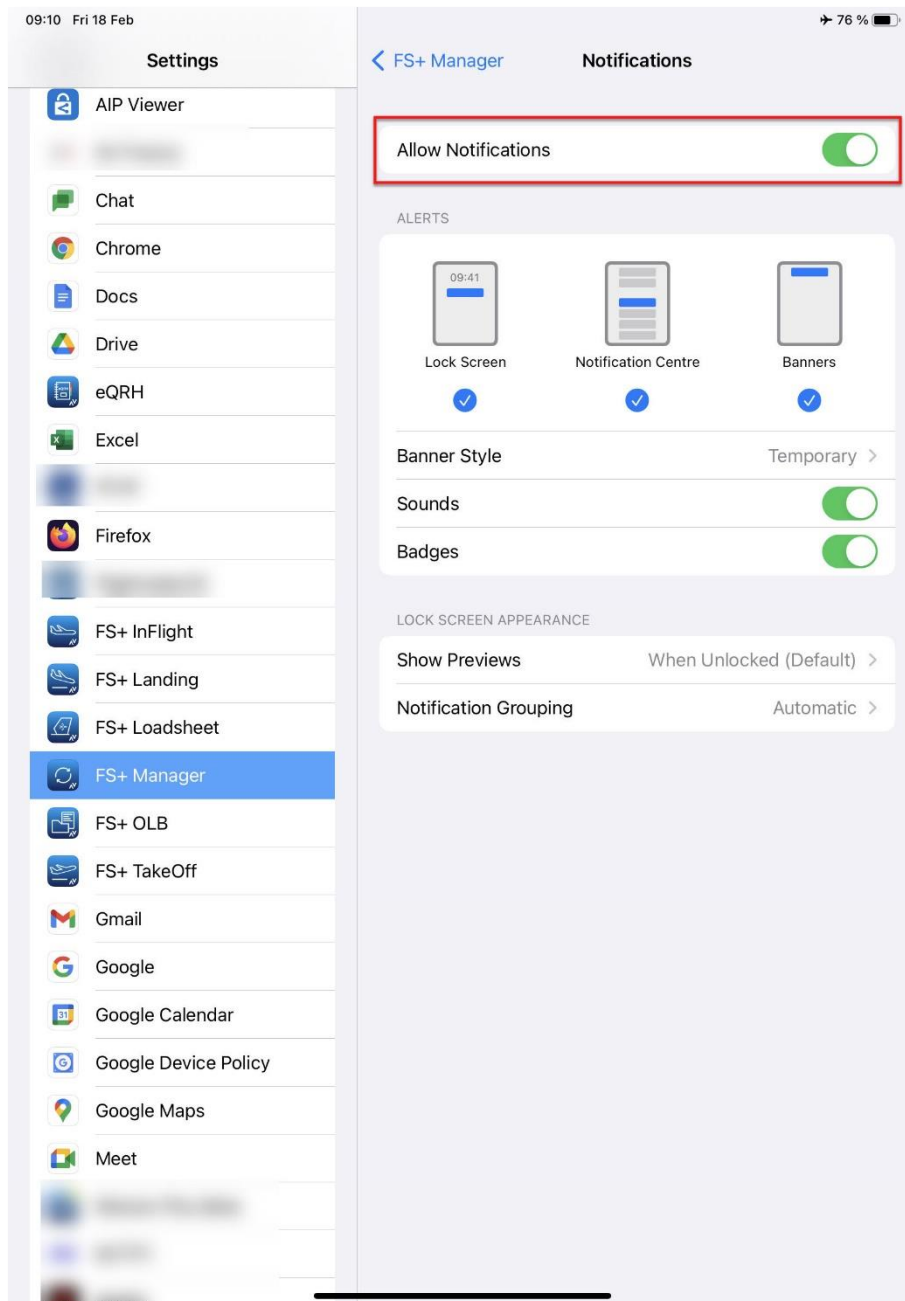


Figure 17: FS+ Manager Notification activated

When opening the FS+ Manager, fields *SERVER* address, *USERNAME* and *PASSWORD* are already filled.

EFB Version is written in amber, and an amber exclamation mark is displayed on the **Update all** button.

The **Update all** button is enabled, and the User shall tap on it to start the update process.

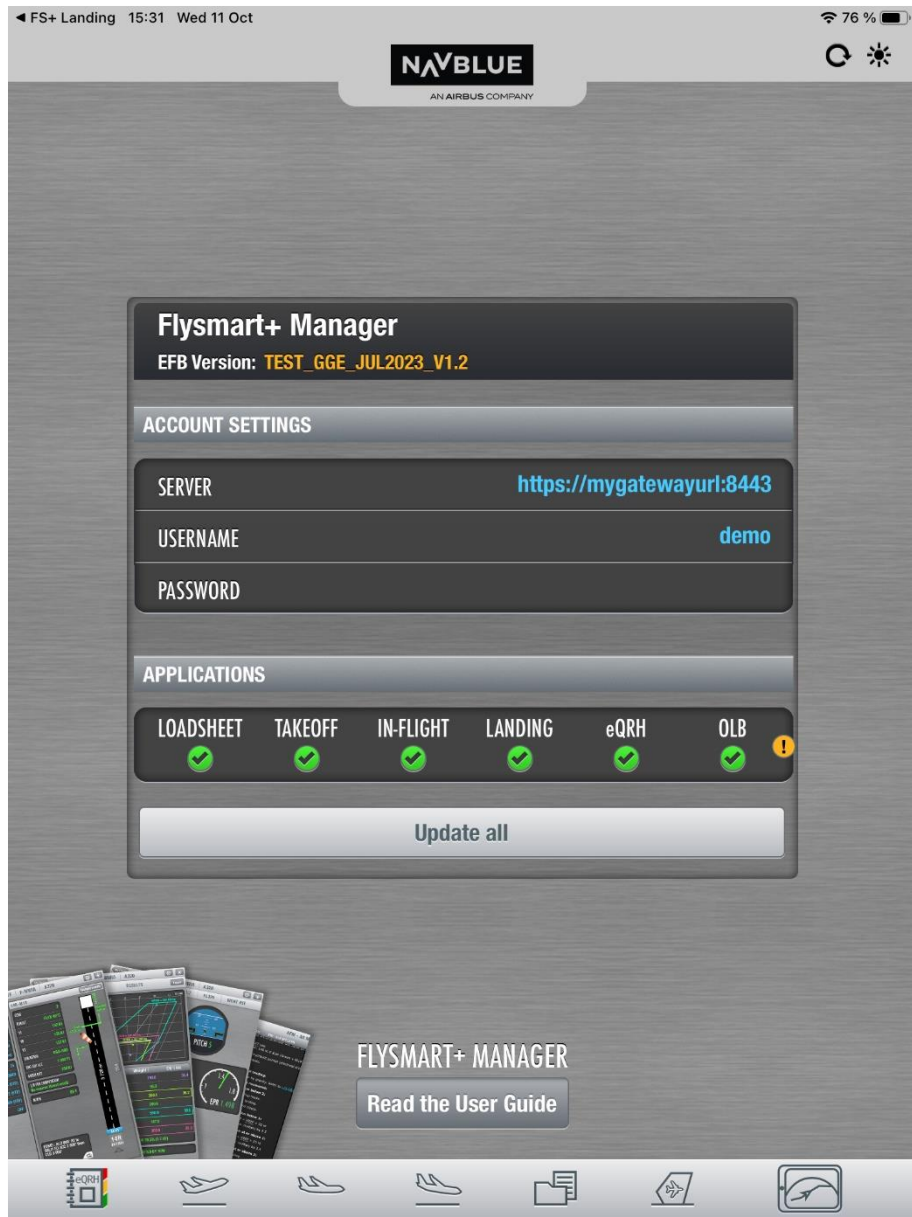


Figure 18: Notification - data not-up-to

Then, the Apps are updated as described in chapter 3. APPS UPDATE PROCESS.

CUSTOMER SUPPORT

CHAPTER 05

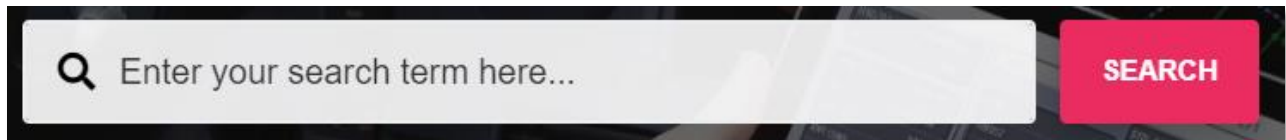
5 CUSTOMER SUPPORT

For any information about our Flysmart+ products, please consult our [Support Web Portal](https://www.skywise.com/support) (<https://www.skywise.com/support>) where you can find:

- The latest roadmaps
- The Operational Documentation
- The Announcements
- The FAQs.

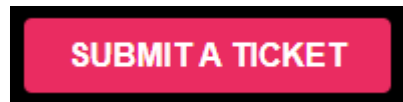
For any support, please feel free to:

- Use our search engine:



A search bar with a magnifying glass icon on the left and a pink button labeled "SEARCH" on the right. The text "Enter your search term here..." is inside the bar.

- Open a support ticket:



A pink button with the text "SUBMIT A TICKET" in white capital letters.

Note: You do not have a SKYWISE Support account?

[CLICK HERE and complete the form](#)

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MODULE PRESENTATION

The Takeoff module is an OCTOPUS program (except for A300-600 / A310 aircraft, for which TLC computation engine is also used).

Note:

- For A300-600 and A310 aircraft:
 - A300-600 / A310 TLC corresponds to A300-600 / A310 on Windows devices
 - A300-600 / A310 OCTOPUS corresponds to A300-600 / A310 on iPad devices

This module aims at computing the takeoff performance data (maximum takeoff weight, takeoff speeds, flexible temperature and the All Engine Climb Gradient (AECG) capability (except for Wide body aircraft for AECG)) according to the aircraft configuration and the external conditions (runway, surrounding obstacles, and weather).

The Takeoff module computes the takeoff performance for all Airbus aircraft

- A300-600
- A310
- A320 Family
- A330
- A340
- A350
- A380.

The general look and the content of the Takeoff module interface are the result of the preliminary customization done by the FlySmart+ Administrator. The Administrator has to actually define the Takeoff module environment with the airline's fleet data (aircraft main characteristics, units, takeoff options...). The Administrator also defines the general layout and operations of the User interface as this latter is very flexible and can be adapted to the airline's type of operations.

With the Takeoff module, the User chooses the departure airport, defines the aircraft conditions (bleeds, configuration, aircraft status), the outside conditions and then launches the calculation.

Throughout the data entry process, checks are performed to ensure data consistency.

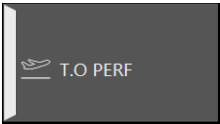
In addition, the Takeoff module can be used to determine takeoff performance with MEL and/or CDL items.

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APPLICATION START

Start the Airbus Takeoff application by tapping the AIB Takeoff icon in general menu.



Start the Airbus Takeoff application by tapping the AIB Takeoff icon in the “My flight” page.



The main interface of the Takeoff application is displayed:

LFBO/TLS	BLAGNAC	➔ Airport Data	➔ Results All fields must be completed to compute your takeoff performance data
RWY			
WIND	000°/0/G0 kt	➔ Conditions Data	
OAT	°C		
QNH	hPa		
RWY COND			
A-ICE			
TOW	66.0 T	➔ Aircraft Status Data	
T.O CG			
T.O. THRUST			
CLB THRUST	CL		
CONF	OPT CONF (STD) >		
AIR COND	Off (STD) >		
MEL 0 CDL 0			
CLEAR COMPUTE			

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The interface is composed of the following panels:

1. *Airport Data* panel: By default, the departure airport set in the Flight Ops status page is selected if applicable to the selected aircraft. The User may choose another airport and select one or several runways to perform a computation.

2. *Conditions Data* panel: Enables to define the runway conditions and the aircraft configuration.

Note that the Climb thrust field in the *Conditions Data* panel is only available when the administrator activates the all engine gradient function (except for Wide Body aircraft).

3. *Aircraft Status* panel: Displays MEL and CDL items. Tap on the *corresponding* button to select a MEL / CDL item.

4. *Results* panel: The computation results are displayed in this area.

Several action buttons are available at the bottom of the window:

- “*COMPUTE*”: Launches the computation
- “*CLEAR*”: Clears/resets data to the default values.

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INPUTS

1. AIRPORT PANEL: SINGLE RUNWAY COMPUTATION

1.1. Airport and Runway Selection

The departure airport is set by default to the value defined in the 'FROM' field of the STATUS PAGE.



If the airport selected in the status page is not applicable to the selected aircraft, TOPA displays the message 'NO AIRPORT FOR THIS AIRCRAFT'. It means that the administrator imported some multiple source airport data (see ADMIN PPM – CONVERT AIRPOT SECTION) and that the airport selected in the status page is applicable to another aircraft than the selected aircraft.

- It is possible to select another airport from the list as described in the document "Application management". However, this: Clears/resets all input data
- Disables the link with the LOADSHEET and the OPS LIBRARY BROWSER (OLB) applications.

Once the airport is selected, the list of available runways is proposed. Choose the runway from the list by tapping on the corresponding row. Once the runway is selected, the interface switches to display next computation parameter. A mark is displayed on the selected takeoff runway.

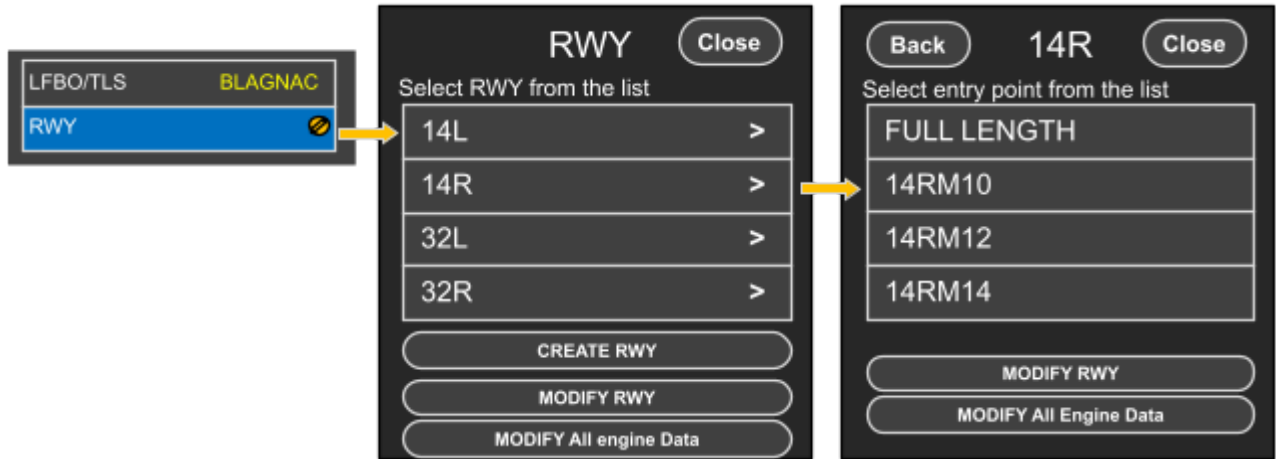


On Windows, if the administrator defined entry points for the runways, then the entry points are displayed in the runway list as follows:.

Runway	TORA	Status
14L	3500 m	✓
14R	3500 m	
14RM10	3000 m	
14RM12	2900 m	
14RM14	2300 m	
32L	3500 m	

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On iPad, the runways that have several entry points defined by the administrator can be selected after having selected the name of the parent runway first.



Note: the runway entry points can also be displayed and then selected by tapping on the current entry point rectangle on the runway drawing.

After the runway selection, the runway characteristics are displayed if the user taps on the runway drawing that is displayed on the right hand side of the screen. They consist in TORA / TODA / ASDA (or runway length / clearway (CWY) / stopway (SWY), depending on Administrator settings), runway elevation, slope, entry angle, number of obstacles, takeoff shift and number of all engine gradient constraints.

If TORA / TODA / ASDA is selected	If LGTH / CWY / SWY is selected																																				
14R Cancel <table> <tr><td>ELEVN</td><td>486 ft</td></tr> <tr><td>SLOPE</td><td>0.09 %</td></tr> <tr><td>TORA</td><td>3500 m</td></tr> <tr><td>TODA</td><td>3560 m</td></tr> <tr><td>ASDA</td><td>3560 m</td></tr> <tr><td>ENTRY ANGLE (°)</td><td>0 °</td></tr> <tr><td>OBSTACLES</td><td>6</td></tr> <tr><td>T.O SHIFT</td><td>0 m</td></tr> <tr><td>ALL ENGINE GRADIENT</td><td>0</td></tr> </table> Modify RWY View Obstacles Modify All Engine Data Done	ELEVN	486 ft	SLOPE	0.09 %	TORA	3500 m	TODA	3560 m	ASDA	3560 m	ENTRY ANGLE (°)	0 °	OBSTACLES	6	T.O SHIFT	0 m	ALL ENGINE GRADIENT	0	14R Cancel <table> <tr><td>ELEVN</td><td>486 ft</td></tr> <tr><td>SLOPE</td><td>0.09 %</td></tr> <tr><td>LENGTH</td><td>3500 m</td></tr> <tr><td>CWY</td><td>60 m</td></tr> <tr><td>SWY</td><td>60 m</td></tr> <tr><td>ENTRY ANGLE (°)</td><td>0 °</td></tr> <tr><td>OBSTACLES</td><td>6</td></tr> <tr><td>T.O SHIFT</td><td>0 m</td></tr> <tr><td>ALL ENGINE GRADIENT</td><td>0</td></tr> </table> Modify RWY View Obstacles Modify All Engine Data Done	ELEVN	486 ft	SLOPE	0.09 %	LENGTH	3500 m	CWY	60 m	SWY	60 m	ENTRY ANGLE (°)	0 °	OBSTACLES	6	T.O SHIFT	0 m	ALL ENGINE GRADIENT	0
ELEVN	486 ft																																				
SLOPE	0.09 %																																				
TORA	3500 m																																				
TODA	3560 m																																				
ASDA	3560 m																																				
ENTRY ANGLE (°)	0 °																																				
OBSTACLES	6																																				
T.O SHIFT	0 m																																				
ALL ENGINE GRADIENT	0																																				
ELEVN	486 ft																																				
SLOPE	0.09 %																																				
LENGTH	3500 m																																				
CWY	60 m																																				
SWY	60 m																																				
ENTRY ANGLE (°)	0 °																																				
OBSTACLES	6																																				
T.O SHIFT	0 m																																				
ALL ENGINE GRADIENT	0																																				

Note that the ALL ENGINE GRADIENT field and the Modify All Engine Data button are available for all Airbus aircraft (if enabled by the administrator) except Wide Body.

Note that a message RWY + SHOULDERS WIDTH < 58 m can be displayed for A380 aircraft

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1.1.1. Runway drawing

Once the user selects a runway, TOPA displays a drawing of the runway that contains the following information:

- The QFU name at the bottom
- A blue bullet that represents the threshold of the runway. It is positioned according the Takeoff Shift value of the selected runway. For a main runway, the blue bullet contains “Full”. If the user modifies the runway, in case of modification of the threshold position, the blue bullet contains “MOD” to indicate that the threshold is modified.
- For a runway entry, the blue bullet contains the name of the entry. If the user modifies the runway, in case of modification of the threshold position, the blue bullet contains the name of the runway with “MOD” to indicate that the threshold is modified. The entry angle

The TORA (or runway length) value

1.1.2. Commentary field

The takeoff comments, defined in the airport database for the chosen runway, are displayed on the left hand side of the runway drawing.

This field is also applicable to Multiple Runways computation, and also appears in the results HMI.

1.1.3. EOSID

If the Administrator has defined an EOSID picture for the current airport and runway displayed, it can be displayed by tapping on the icon at the bottom-right of the commentary field.

This field is also applicable to Multiple Runways computation, and also appears in the results HMI.



1.2. Obstacle Details

For detailed information about the obstacles, tap on the *View OBSTACLES* button in order to display the obstacles panel. The obstacles panel displays the obstacles information (distances and height) with reference to the threshold of the selected runway.

If a runway entry is selected, the distances and height are in reference to the runway entry threshold.

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OBSTACLES		
LFBO / TLS BLAGNAC 14R 12 obstacles from rwy start without considering runway reduction		
DIST 4545 m	L.DIST 0 m	HEIGHT 58 ft
DIST 4659 m	L.DIST 0 m	HEIGHT 68 ft
DIST 12541 m	L.DIST 0 m	HEIGHT 309 ft
DIST 13741 m	L.DIST 0 m	HEIGHT 313 ft
DIST 13962 m	L.DIST 0 m	HEIGHT 319 ft
DIST 14315 m	L.DIST 0 m	HEIGHT 326 ft
DIST 14331 m	L.DIST 0 m	HEIGHT 332 ft

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1.3. Runway Modification

The selected runway characteristics can be modified if allowed by the Administrator. Three modes are available for the runway modifications:

- None
- Reduced
- Full.

When “None” is selected by the Administrator, the *Modify RWY* option is deactivated in the Takeoff application.

When “Reduced” mode or “Full” mode is selected, the *MODIFY RWY* button enables to display the *Modification* panel. The runway modifications are not stored in the airport database, runways characteristics are restored when the user changes the airport, or at the application closure.

Note: In the case where a runway entry is selected, the modifications of the runway characteristics are always applied to the main runway. Depending on the parameters and values that the user modifies, it can or can not affect the selected runway entry.

The available options are listed below:

1.3.1. Reduced Mode

The User can reduce the runway length from the beginning and / or the end of the runway and change the runway width.

He can also add an obstacle or modify the entry angle. These modifications should be done in accordance with NOTAMs.

To modify a runway:

- Tap on *Modify RWY* button below the runway list
- In the runway list, tap on the *Modify RWY* button associated to the main runway to modify.

Runway	TORA	Action
14L	TORA	
14L	3000 m	MODIFY RWY
14R	TORA	
14R	3500 m	MODIFY RWY
14RM10	3000 m	
14RM12	2900 m	
14RM14	2300 m	
32L	TORA	
32L	3500 m	MODIFY RWY

Buttons at the bottom: CREATE RWY, MODIFY RWY, MODIFY ALL ENGINE DATA

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Note: The modifications entered at this level do not affect the airport database as created by the Administrator.



Note: The obstacle reference point is unique (distance defined from the runway start without considering any runway reduction), and so the user shall either choose the distance “from runway start” or “from runway end”. When an obstacle is added, the number of obstacles is updated.

The User can delete the obstacle by restoring the runway or deleting the obstacle distance.

Any runway modification is notified in the Airport/Runway panel with the message “modified” next to the runway identifier.

The modified values appear in blue color. Non-modified values remain in green color.

During Runway modification, user can tap the restore button in order to reset runway modified values to default values.

Note:

- When the runway is reduced from the runway end, the clearway and the stopway are not considered anymore. Therefore, in this case, $TORA = TODA = ASDA$ (i.e. Clearway = Stopway = 0)

Caution:

The previous note is also applicable for runways with negative stopways (i.e. $ASDA < TORA$). This means that, when the runway is reduced from the runway end, and the reduced TORA remains greater than original ASDA, ASDA is updated and becomes equal to the reduced TORA (i.e. greater than the original ASDA). In this case, the following options can be used as workaround:

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- *In reduced runway modification mode, to ensure that ASDA is not overestimated, reduce the runway length from end of runway to have the reduced TORA to be at least equal to the original ASDA*
- *In full runway modification mode, enter the updated TORA, TODA and ASDA values directly for computation.*

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1.3.2. Full Mode

The full mode enables the User to modify all the runway parameters.
All the modified parameters are displayed in blue color.



1.3.2.1. Add Obstacles

The User can add obstacles from the beginning of the main runway. He has to enter the obstacle distance and height. The added obstacles are displayed in blue color.
The User can delete an added obstacle by either restoring default values (restore button) or deleting the obstacle in the obstacle list.

1.3.2.2. T.O Shift

The User can define a takeoff shift in order to indicate that the aircraft will not use the full length of the runway (i.e. brake release will not occur at the runway start).

2 cases are possible:

- The runway was defined in the airport database without any declared takeoff shift. The field T.O Shift is then initialized with 0, the User has just to enter here the value of the unused runway length from runway start
- The runway was defined in the airport database with a declared takeoff shift (runway intersection for example). The field T.O Shift is then initialized with the value from airport database. The User can increase this value by adding the value of the unused runway length from the intersection.

Note 1: the takeoff shift modification has no impact on the obstacles distances as the runway start position is not modified.

Note 2: The TO Shift modification applies to the main runway. For a runway entry, if the new TO Shift value is lower than the T.O Shift of the runway entry, the runway entry will not be affected by the modification. On the contrary, if the new TO Shift value is higher than the T.O Shift of the runway entry, the runway entry will be affected

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1.3.2.3. TORA or Length (depends on the Administrator settings)

The User can reduce the TORA or the runway length in accordance with NOTAMs.

The reduction is applied at the end of the runway; the reference for runway start is not modified. To reduce the TORA from the start, use the field "T.O Shift".

1.3.2.4. TODA or Clearway (depends on the Administrator settings)

The User can reduce the TODA or the clearway length in accordance with NOTAMs.

The reduction is applied at the end of the TODA/Clearway, the reference for TODA/Clearway start is not modified. To reduce the TODA from the start, use the field "T.O Shift".

1.3.2.5. ASDA or Stopway (depends on the Administrator settings)

The User can reduce the ASDA or the stopway length in accordance with NOTAMs. The reduction is applied at the end of the ASDA/Stopway, the reference for ASDA/Stopway start is not modified. To reduce the ASDA from the start, use the field "T.O Shift".

1.3.2.6. Entry Angle

The User can modify the entry angle of each runway entry. As a consequence, the line-up distances are modified. User can choose between the following values:

- 0
- 90
- 180
- 180 PAD.

The runway modifications appear in blue color in the airport panel.

1.4. All Engine Data Modification

The all engine data can be modified for each main runway if the all engine gradient option is enabled by the Administrator.

To modify the All Engine data:

- Tap on the *Modify All Engine Data* button below the runway list, then tap on the *Modify All Engine Data* button associated to the runway to modify
- Tap on the runway, then tap on the *Modify All Engine Data* button below the list of the runway characteristics.

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Note: The modifications entered at this level do not affect the airport database as created by the Administrator.

1.4.1.1. THR RED HEIGHT / ACC HEIGHT

The User can modify the Thrust Reduction height or/and the Acceleration height.

1.4.1.2. CLB SPD LIM

The User can choose to enable or disable the climb speed limit. If the speed limit is enabled, the user can modify the altitude or the speed of the climb speed limit.

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1.4.1.3. FINAL CLB SPD

The User can modify the final climb speed.

1.4.1.4. ALL ENGINE GRADIENT

The User can add gradients by clicking on the cross. The number of constraints is limited to 10 by runway.

A gradient can be defined with:

- A gradient and a target altitude
- Only a target altitude and no gradient value. In this case, the gradient value is set to 3.3%.

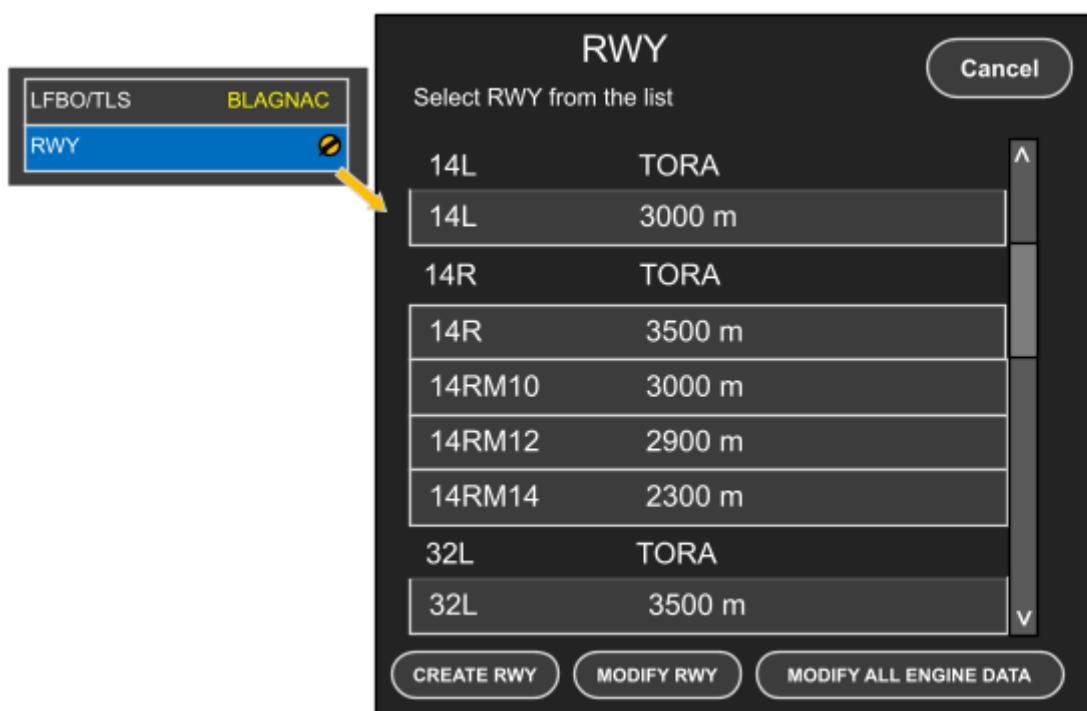
If the user taps on existing constraint, he has the possibility to modify this constraint.

Note: In both the FINAL CLB SPD > ALT field and ALL ENGINE GRADIENT > TARGET ALTITUDE, it is possible to input the altitude information in feet or meters. In any case, the target altitude should be addressed in its full format, e.g 2000 m, 9000 ft.

1.5. Runway Creation

The runway creation window is available only if the Administrator has set the modification runway mode to “full mode”.

The button *Create RWY* appears next to the *Modify RWY* button on the screen.



The User can only create a runway from an airport that belongs to the airport database. The created runway is not stored in the airport database and will be deleted when the user changes the airport, or at the application closure.

To create a runway:

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- Tap on *Create RWY*. A window appears in order to set runway characteristics. Some default values are displayed:

- Enter the runway characteristics and validate (*Done* button).

The User has to enter all the values to define the runway characteristics. All the required data can usually be found in the airports charts.

1.5.1. RWY

The User enters the name of the runway he wants to create.

Name format has to respect the format NNLL (NN is a number from 01 to 36 and LL are two optional letters).

1.5.2. Elevation

The User has to enter the elevation of the runway threshold.

1.5.3. TORA or Length (depending on the Administrator settings)

The User has to enter the runway length or TORA in accordance with NOTAMs.

1.5.4. TODA or Clearway (depending on the Administrator settings)

The User has to enter the clearway length or TODA in accordance with NOTAMs.

1.5.5. ASDA or Stopway (depending on the Administrator settings)

The User has to enter the stopway length or ASDA in accordance with NOTAMs.

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1.5.6. Slope

The User has to enter the runway slope. The runway slope can be positive or negative.

Note: The runway slope has to remain within the Flight Manual limitations.

1.5.7. Width

The User has to enter the value of the runway width.

1.5.8. Obstacles

The User can add obstacles from the beginning of the runway start. He has to enter the obstacle distance and height. The added obstacles are displayed in blue color.

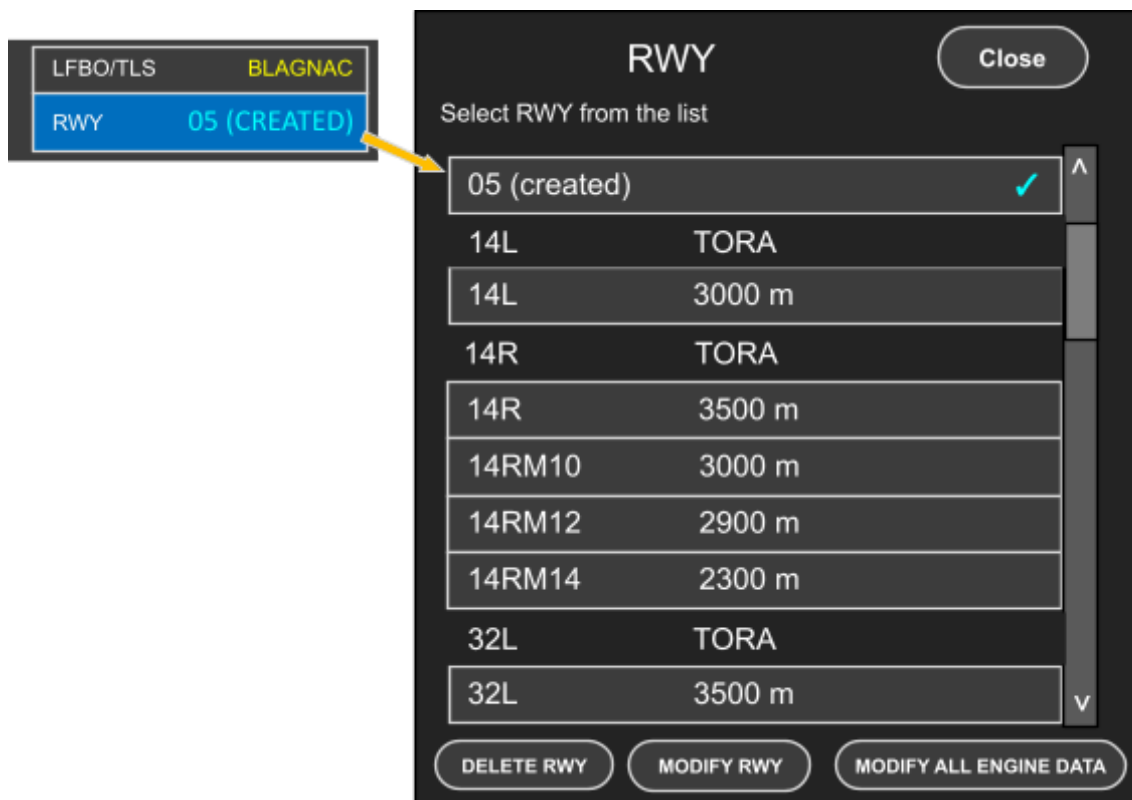
1.5.9. Entry Angle

The User has to select the runway entry angle between the following values:

- 0
- 90
- 180
- 180 PAD.

All the created runway values appear in blue color in the single runway computation panel.

Once created, the new runway appears on the RWY drop down list for the selected airport with the indication (created).



Note: The creations entered at this level do not affect the airport database as created by the Administrator.

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2. AIRPORT PANEL: MULTIPLE RUNWAYS COMPUTATION

To select the multiple runways mode, tap on *MULTIPLE* button

This mode enables to obtain takeoff performance data for several runways in a single computation.

The User selects an airport in the list of available airports. All the runways defined for this airport are then displayed. The User selects the desired runways by tapping the corresponding rows.

LFBO/TLS	BLAGNAC
RWY	

RWY

Single
MULTIPLE

Cancel

Select RWY from the list

Select RWY from the list

RWY	TORA
14L	3500
14R	3000 m
14RM10	2900 m
14RM12	2300 m
14RM12	2300 m
32L	3000 m

14L 3000 m

14R 3500 m

Next

Done

3. AIRPORT PANEL: EFFECTIVE DATE OF NOTAM

There is a way to inform the flight crew of the effective date of one NOTAM (NOTice to AirMen) that is associated with the takeoff.

The administrator shall set the airport database as follows:

In the Airport manager, in addition to the 3 characters that are used to define the runway (ex. 14R), the administrator can also use up to 10 additional characters (see box in blue on the figure below) to define the specificities of the runway.

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RWY ID Data

RWY ID :

Main	RWY entries	Obstacle	Takeoff	SID	Landing
Length display : TODA - ASDA					
Geometric elev. (ft) : 15					
TORA (m) : 3109.874					
☐ Takeoff Shift (m) :					
TODA (m) : 3300					
ASDA (m) : 3000					
LDA (m) : 3000					
Slope (%) : 0.07					
Entry angle (°) : 90					
Comments TakeOff : STD. At 2000 turn left to TOE HP. 415 TOE HO; Inbound 259°. LEFT turn. TEMP: ASDA reduced to 3000 until December, 30th 2020. Landing : TEMP: LDA reduced to 3000 until December, 30th 2020.					

For example, the administrator can enter “_A5_#DEC10” to inform the pilots that these runway data correspond to the A5 taxiway entrance and that the data are valid until December, 10, 2018. The way to define the specificities of the runway with these additional 10 characters depends on the airline policy. This airline policy shall be commonly shared between the administrators and the flight crew.

An additional way to inform the flight crew of the NOTAM validity date is to use the takeoff comment field (see the green box on the above figure). The comments will be displayed on the result panel after the selection of the runway.

After publishing new performance data for the EFB, both of these two elements are displayed to the flight crew in FlySmart+ after the selection of the runway (see boxes in blue and green on the figure below).

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14R_A5_#DEC10

Info

LFBO/TLS	BI AGNAC >
RWY	05L_E1_#DEC30 >
WIND	100°/15 HD 11 kt
OAT (ISA +1)	15 °C
QNH	1013 hPa
RWY COND	Dry >
A-ICE	Off >
TOW	63.0 T
T.O CG	CG > 27 % >
T.O. THRUST	TOGA / FLEX
CLB THRUST	CL
CONF	OPT CONF (STD) >
AIR COND	Off (STD) >

MEL 0

CDL 0

CLEAR

COMPUTE

STD. At 2000 turn LEFT to TOE
 HP. 415 TOE HO : Inbound
 259°. LEFT turn.
 TEMP : ASDA reduced to
 3000 till December; 30th 2020

In this way, the flight crew is aware of the validity of the NOTAM either with the name of the runway and/or when reading the comments.

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4. CONDITIONS PANEL

The *CONDITIONS* panel enables the User to define the outside conditions and the aircraft configuration data.

When starting the application, all the fields are empty except those for which the Administrator has defined default values.

The Administrator can define default values for the following fields:

- T.O CG
- T.O THRUST
- CONF
- AIR COND.

In that case, the default values (STD) are displayed when opening the Takeoff application.

LFBO/TLS	BLAGNAC
RWY	
WIND	000°/0 kt
OAT	°C
QNH	hPa
RWY COND	
A-ICE	
TOW	77.0 T
T.O CG	CG > 27 % (STD) >
T.O. THRUST TOGA/FLEX (STD)	>
CLB THRUST	CL
CONF	OPT CONF (STD) >
AIR COND	On (STD) >

Note that the Climb thrust field is only available when the administrator activates the all engine gradient function (except for Wide Body aircraft).

4.1. Outside Conditions Subpanel

The Outside Conditions subpanel enables to enter the following information:

WIND	(000/0) kt
OAT	°C
QNH	hPa
RWY COND	
A-ICE	

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4.1.1. Wind

As magnetic direction is the standard reference used in ATIS, FlySmart+ expects wind inputs to be in magnetic directions. If wind data is sourced from a METAR or TAF, the user must account for the magnetic variation.

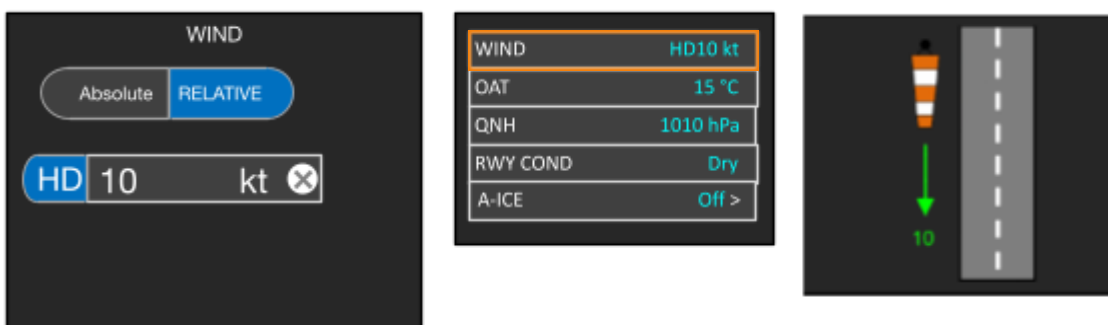
There are two ways of defining wind values:

4.1.1.1. Longitudinal Speed Component:

It is possible to directly enter a longitudinal wind component. The User has to:

- Tap on the button *Relative*
- Tap on the blue header to display either HD for Headwind or TL for Tailwind
- Enter the wind value in the field
- Tap on Done button on the virtual keypad.

A wind sock indicating wind direction is displayed next to the runway. An arrow and a numeric indication are also displayed, showing wind direction and wind speed.

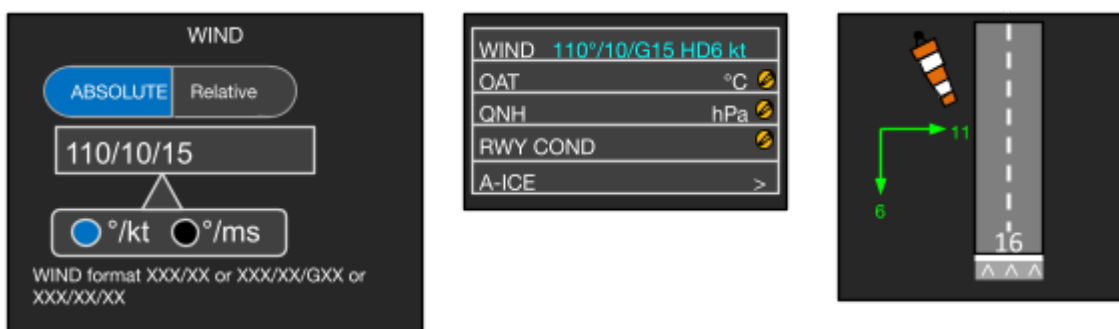


4.1.1.2. Direction/Speed (/ Gust)

The User can enter the wind speed and direction (and the gust). The user has to:

- Tap on the *Absolute* button
- Enter the values in the Three fields giving direction, wind speed and gust speed
- Tap on the *Done* button on the virtual keypad.

The entry is projected along the runway axis and perpendicularly to the runway axis, to respectively determine the headwind (or tailwind) component and the crosswind component.



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Note: The direction/speed combination is required in the case of a **MULTIPLE RUNWAYS COMPUTATION**.

If the Administrator has activated the “gust” option for crosswind limitation, the User has the possibility to enter the value of the gust when needed.

The User has the information that the gust can be entered when the format displayed in the status bar shows “XXX/XX/GXX”:

Gust component is only taken into account for the check of the maximum crosswind limitation. Others limitations such as takeoff distance, takeoff flight path (etc.) are based on the steady wind only.

Note: The gust may be considered for some runway states only, as defined by the Administrator.

Starting with L7.6.2 (Windows) and V5.6.3 (iPad), the new engine crosswind limitations have been introduced for A320Family neo, A330ceo, A330neo, A340-500/-600, and A350 aircraft. This is to comply with the engine crosswind limitation described in AFM / LIMITATIONS / 70. POWER PLANT / CROSSWIND chapter. If the input wind components exceed these specific engine limitations, a warning message "Combination of crosswind and tailwind out of the certified envelope" will be displayed to the user.

4.1.2. Temperature (OAT)

The User enters the Outside Air Temperature (OAT) for the departure airport. The deviation from the International Standard Atmosphere (ISA) is automatically computed and displayed next to the OAT field when the QNH is filled.



A screenshot of a software interface showing a dark grey rectangular box. Inside the box, on the left, is the text 'OAT (ISA +3)' in white. On the right, the value '15 °C' is displayed in a bright cyan color.

4.1.3. QNH

The User enters the QNH (mean sea level pressure) for the departure airport.

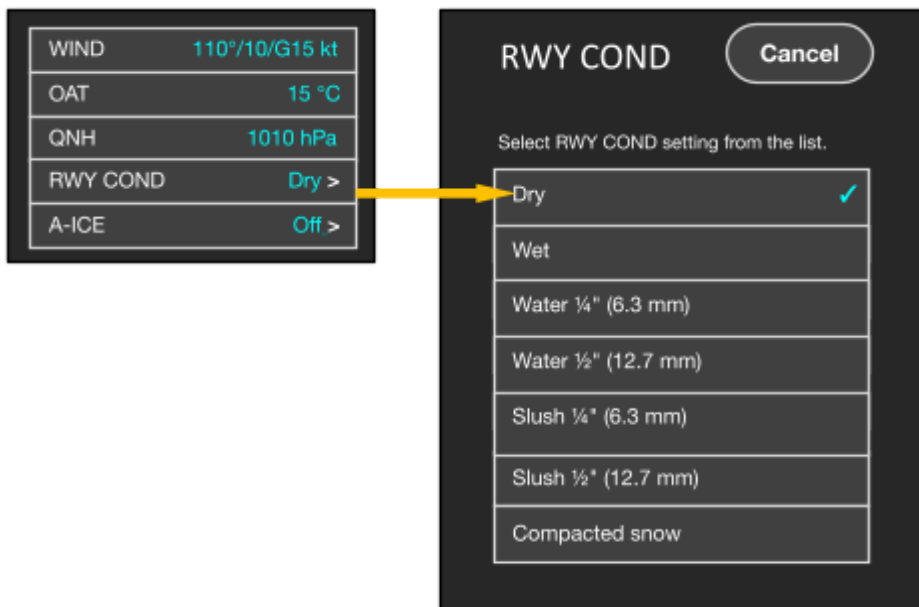


A screenshot of a software interface showing a dark grey rectangular box. Inside the box, on the left, is the text 'QNH' in white. On the right, the value '1010 hPa' is displayed in a bright cyan color.

4.1.4. Runway Conditions

The field **RWY COND** provides the different runway states for which computation is possible. Note that the selection of some runway conditions may affect the temperature range. The temperature value may then have to be changed to fit into the defined range.

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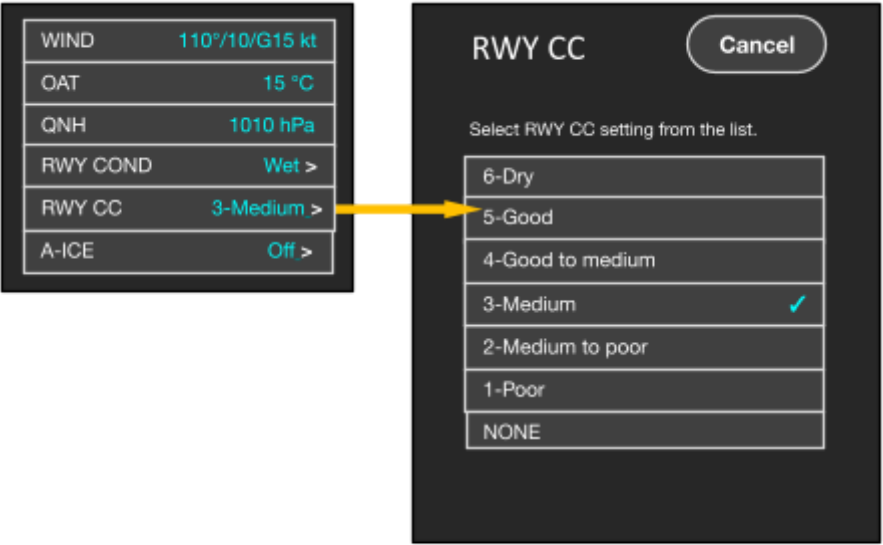
Notes:

- For numerical fields, the Administrator can authorize the use of alternate units. In this case, the User can enter a value with a unit different from the default one, provided that the right abbreviation is used (shown in the status bar if enabled).
- Since Octopus v30, the Dry Check function is automatically enabled in FlySmart+ in order to verify that the Maximum Takeoff Weight (MTOW) on Wet or contaminated runways is not higher than the MTOW on Dry runways with no reversers. It is not possible to disable this function in FlySmart+ or from the PAdmin tool.
- In fluid contaminated runway conditions (Dry Snow, Wet Snow, Standing Water and Slush), performance computations for depths above the real depth of contamination on the runway may provide results that are better than the real aircraft performance, because of the excess drag that improves the stopping distance. Airbus recommends to retain the takeoff speeds and thrust setting of the lower MTOW (perf) resulting from two computations: one with the depth above the reported depth and one with the depth below. The FlySmart+ Takeoff module automatically makes this double computation.

4.1.5. Runway Condition Codes (RWY CC)

When the Global Reporting Format (GRF) function is enabled in the PAdmin tool, the input field RWY CC is available. The list of runway condition codes is defined in the *Reported Braking Actions* list of the PAdmin > Aircraft > DEFINE LD RUNWAY CONDITIONS > In-Flight tab.

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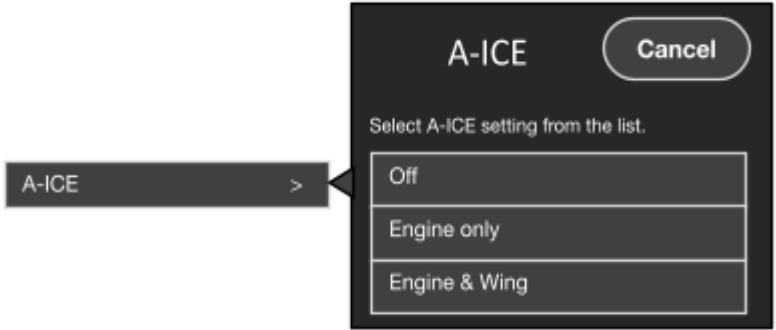
The GRF function for Takeoff (RWY COND / RWY CC dual input) shall only be used in case of a downgraded RWY CC.

For other cases, such as equivalent RWY COND and RWY CC, “NONE” should be selected as RWY CC input.

When the GRF function is enabled by the administrator, normal computation can still be performed by selecting “NONE” as RWY CC input. In this case, the computation only considers the RWY COND input.

4.1.6. A-ICE

The User selects the desired anti-ice setting:



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4.2. Aircraft Configuration Subpanel

TOW	77.0 T
T.O CG	CG > 27 % (STD) >
T.O. THRUST	TOGA /FLEX (STD)
CLB THRUST	CL
CONF	CONF 3 >
AIR COND	On (STD) >

4.2.1. TOW

The User enters here the takeoff weight used for the calculation. This can be either the actual takeoff weight of the aircraft or the structural MTOW if the User wants to calculate the maximum takeoff weight limited by performance.



Tip: Type “*” in the text box or use the “*” button to reset the TOW to the structural MTOW.

Note: It is possible to enter a weight higher than the structural MTOW, this triggers a warning in the interface and the User has to confirm his entry. The results are then calculated for the entered weight, regardless of the structural MTOW.

The TOW is automatically retrieved from the LOADSHEET module if a LOADSHEET calculation is performed.

If the TOW value entered by the user is lower than Structural MZFW, a popup is displayed:

T.O PERF

INFORMATION:

TOW is lower than Structural MZFW (62500 kg)

Keep TOW value?

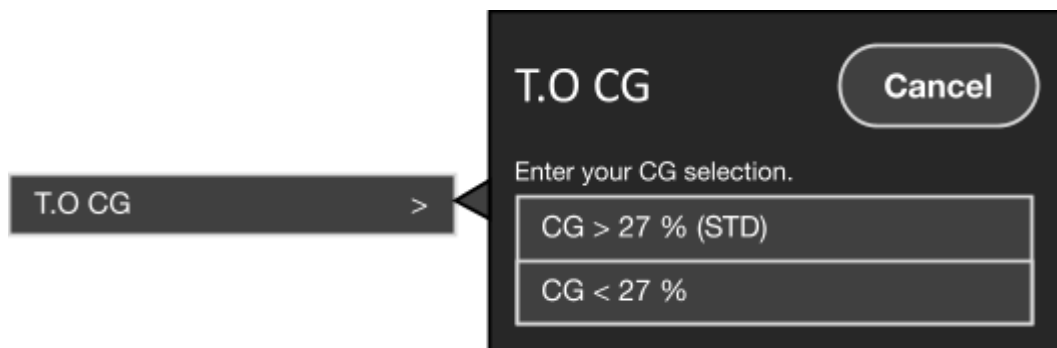
OK
CANCEL

4.2.2. T.O CG

The field Takeoff CG is given for some aircraft types that have two or more certified forward CG limits at takeoff. Set the value here according to the aircraft CG at takeoff.

The options correspond to the ones selected by the administrator (maximum three CGs). The Administrator can modify the options to be more explicit (e.g. CG > 27% instead of *Basic* and CG < 27% instead of *Extended forward for A320 aircraft*).

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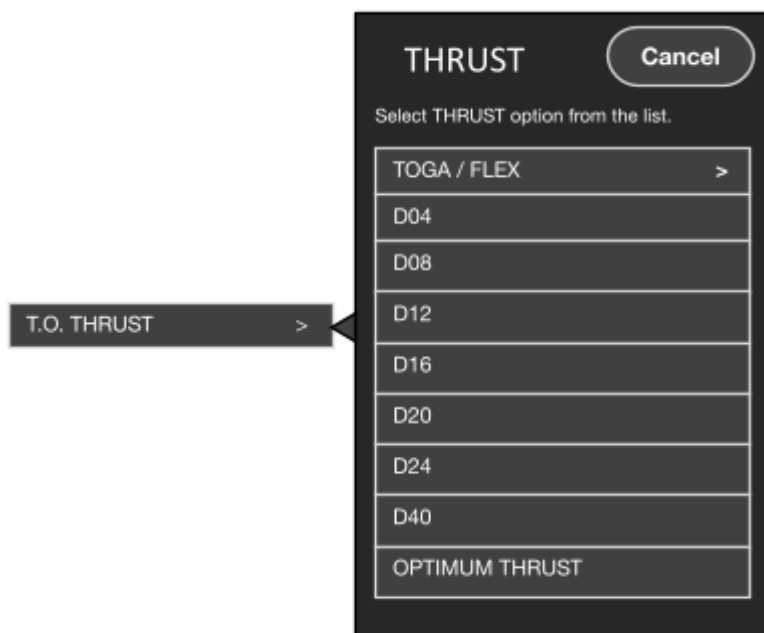


Note: If enabled by the administrator, the T.O CG field is automatically set in accordance with the T.O CG value from the LOADSHEET module if a LOADSHEET calculation is performed. In this case, it is displayed in yellow.

Note: The T.O CG default value is customizable by the user in Admin part (refer PPM Admin – TO STD Values).

4.2.3. TAKEOFF THRUST

The User has to select in the drop-down list the desired takeoff thrust.



The User can select the following thrust levels:

- “TOGA” if the administrator selects the “Single” results option or “Multiple” results with Flex entry disabled
- “TOGA / FLEX” if the administrator enables “Multiple” results option and Flex entry enabled: a “FLEX” panel enables the user to select a specific FLEX temperature
- “FLEX” if the administrator selects the “Single” results option:
 - Flex entry enabled: a “FLEX” panel enables the user to select a specific FLEX temperature. Note that the MAX flex value will also be calculated in this case

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- Flex entry disabled: Flex value is set to MAX
- Derated level (provided if the aircraft is fitted with derated thrust option and the Administrator has authorized the use of derated thrust for takeoff)
- “OPTIMUM THRUST” (provided if the aircraft is fitted with derated/bump thrust option and the Administrator has authorized the use of derated/bump thrust for takeoff)
- “BUMP” (provided if the aircraft is fitted with Bump option).

Note: The “OPTIMUM THRUST” algorithm takes into account the following different cases:

- Case 1: Takeoff is not limited by the Minimum Control speed on Ground (VMCG)

If the takeoff is not VMCG-limited, the Maximum Takeoff Weight (MTOW)(perfo) decreases when the level of derate increases. In this case, the optimum thrust is the highest possible derated level.

- Case 2: Takeoff is VMCG-limited

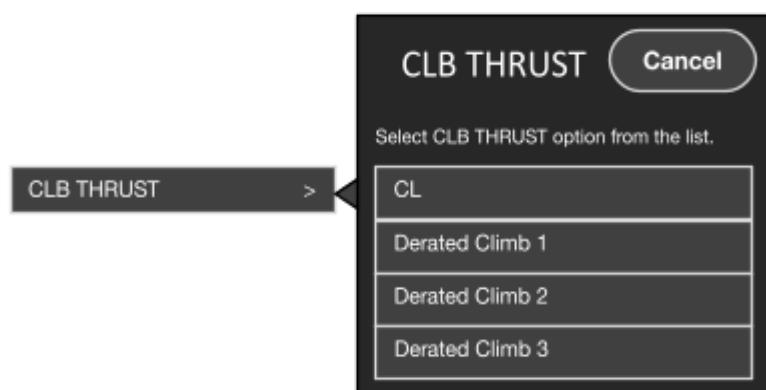
If the takeoff is VMCG-limited, the value of the MTOW(perfo) for the TOGA thrust may be below the MTOW(perfo) of the derated levels. The optimum thrust algorithm takes into account two cases. These cases depend on the relation between the Actual Takeoff Weight (ATOW) set by the operator and the MTOW(perfo) with TOGA thrust:

- o *ATOW < MTOW(perf) with TOGA. In this case, the aim of the optimum thrust algorithm is to reduce the thrust. As a result, the optimum thrust algorithm selects the highest possible derated level. The algorithm does not take into account the MTOW(perf) in this case*
- o *ATOW > MTOW(perf) with TOGA. In this case, the aircraft cannot takeoff with TOGA thrust. The aim of the optimum thrust algorithm is to optimize the performance, not the thrust reduction. In this case, the optimum thrust algorithm selects the derated thrust level that provides the highest MTOW(perf).*

4.2.4. CLIMB THRUST

The Climb thrust field in the *Conditions* Data panel is only available when the administrator activates the all engine gradient function (except for Wide Body aircraft).

If available for the aircraft, the User has to select in the drop-down list the desired climb thrust.



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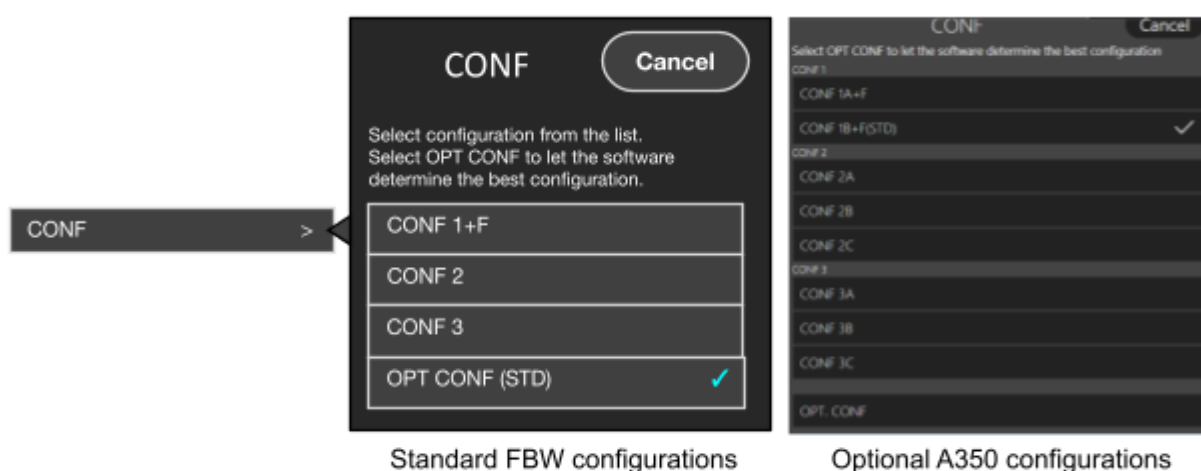
4.2.5. CONF

The User can select the takeoff configuration.

The possible takeoff configurations are:

- CONF 1+F, CONF 2, CONF 3 for Fly-By-Wire aircraft.
- S15° F00°, S15° F15° and S15° F20° for wide-body aircraft.

***Note:** There is an option that enables additional configurations on A321XLR, A330neo Step 4.1 and A350 aircraft. These additional configurations are available thanks to the Enhanced TakeOff Configurations (ETOC). The ETOC configurations are grouped together by lever positions.*

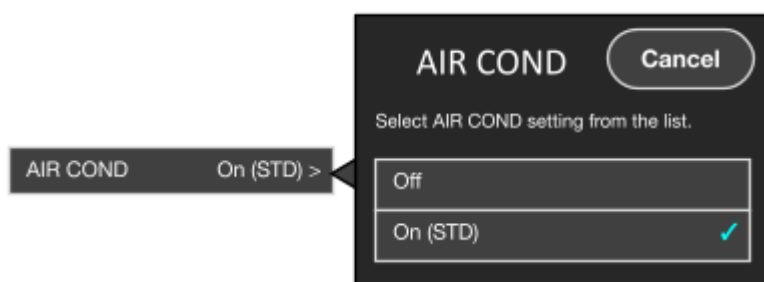


When **OPT CONF** is selected:

- If takeoff is limited by performance, the calculation returns automatically the configuration that maximizes the performance-limited MTOW
- If takeoff is not limited by performance and flexible takeoff is possible, the calculation returns the configuration that maximizes the flexible temperature (to reduce engine wear)
- If takeoff is not limited by performance and two different flap configurations provide the same maximum flexible temperature, the calculation returns the configuration that minimizes the V2/VS ratio.

4.2.6. AIR COND

The User has to enter the Air conditioning setting used for the takeoff.



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Note: AIR COND ON is not applicable if 3-engine Ferry Flight is selected in the Aircraft Status panel (A340 and A380 only), as per 3-engine Ferry Flight takeoff procedure.

4.3. Aircraft Status Panel

The area of the *AIRCRAFT STATUS* panel lists MEL and CDL items that have an impact on takeoff performance.

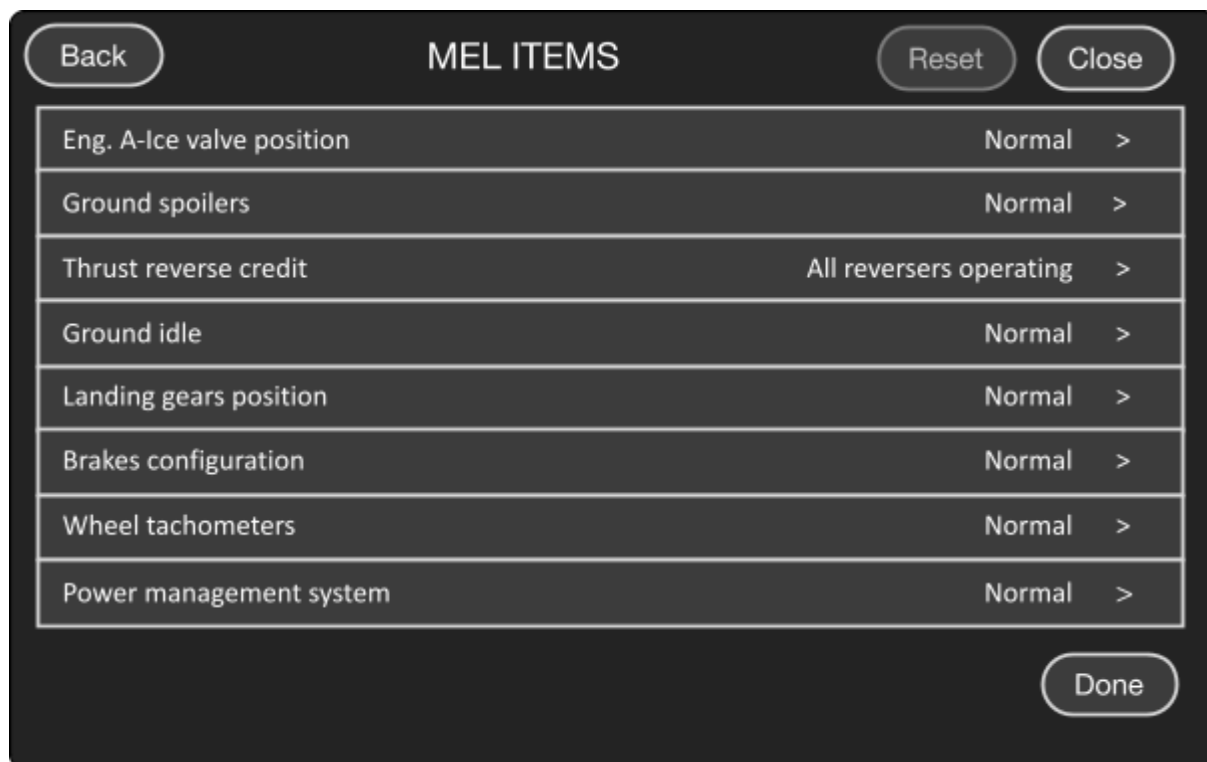
If the aircraft is dispatched without any MEL/CDL item that affects takeoff performance, "MEL 0" and "CDL 0" appears in the MEL/CDL buttons labels.



By tapping on MEL or CDL button, the User can select MEL and/or CDL items.

4.3.1. MEL Items

The MEL items panel displays the list of systems failures that have an impact on takeoff performance. The User selects the desired items in the following panel by clicking or tapping on the chosen row. A scroll bar on the right can be used to navigate in the list.



A panel in which the User can select the failure appears. Item selection can be done by clicking or tapping on the chosen row, then on the *Done* button.

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Back

Eng. A-Ice valve position

Close

Normal	
Stuck open	✓

Done



After one MEL item has been selected, the *Reset* button is activated in order to reset all MEL items to normal.

Back

MEL ITEMS

Reset

Close

Eng. A-Ice valve position	Stuck Open	>
Ground spoilers	Normal	>
Thrust reverse credit	All reversers operating	>
Ground idle	Normal	>
Landing gears position	Normal	>
Brakes configuration	Normal	>
Wheel tachometers	Normal	>
Power management system	Normal	>

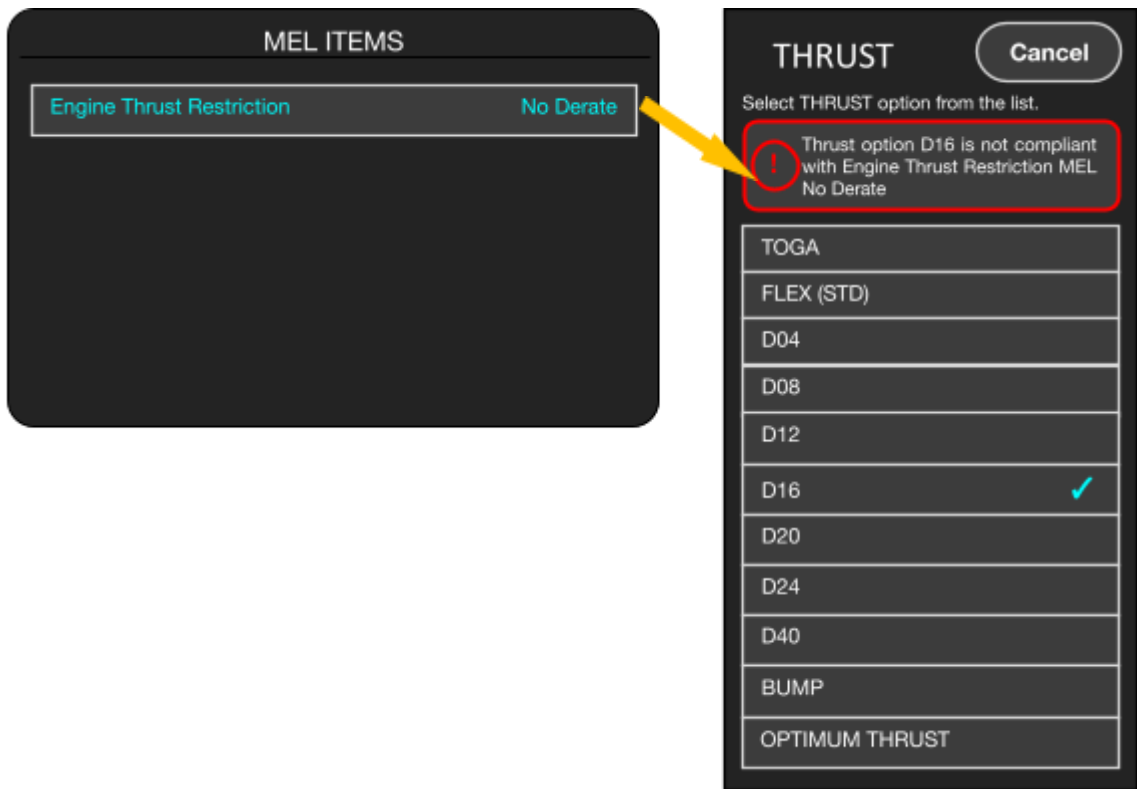
Done

Tap on the *Done* button of MEL items panel to validate the choices.

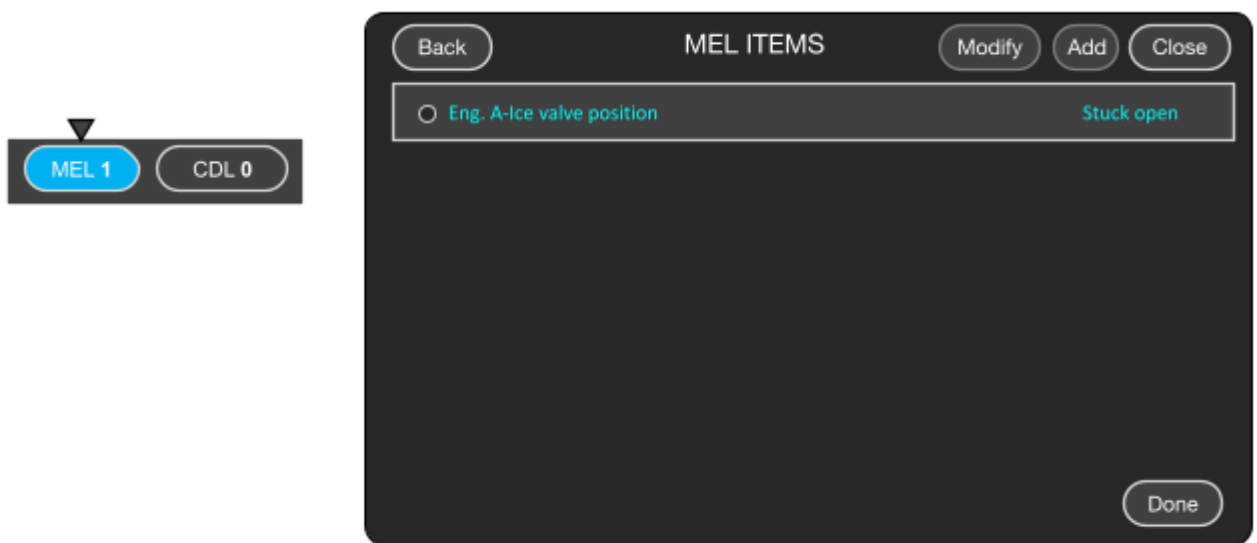
Note: A restriction on the takeoff thrust can be associated to some MEL items, mainly to prevent the use of reduced or derated thrust, or Bump thrust when applicable. Such a restriction is activated automatically in the aircraft status panel if the MEL item is selected through the MEL application. It is displayed under the name “Engine Thrust Restriction” with the possible values “No flex”, “No Derate”, “No Bump”, or all possible applicable combination. If the MEL is selected manually in the T.O Perf module and a restriction has to be applied as per MEL procedure, this restriction has to be manually selected through the Engine Thrust Restriction drop-down list in the MEL panel:

Hereafter, an example of possible Engine Thrust restriction with an aircraft without derated nor Bump thrust:

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The number of MEL items selected is updated on the MEL button. The user can display the selected MEL items by tapping on the MEL Button.

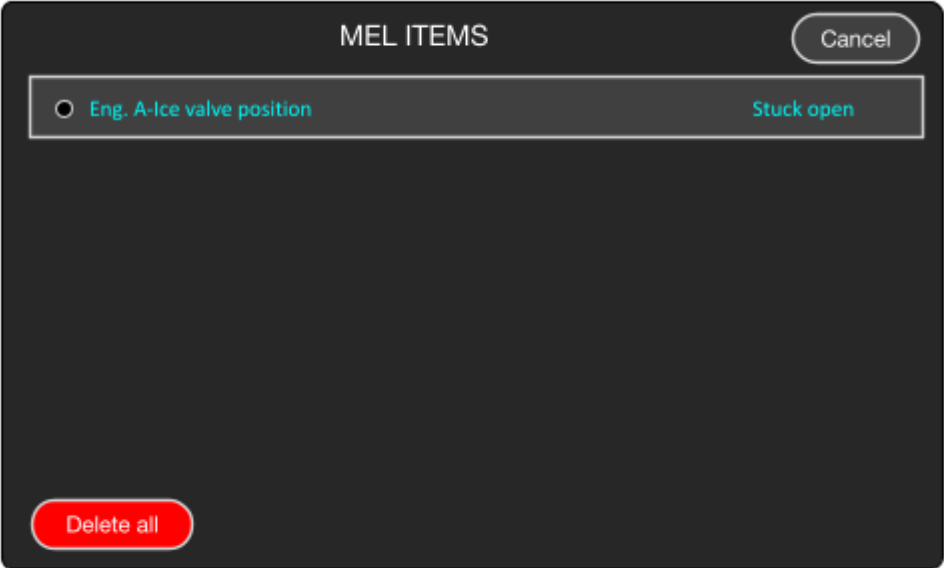


The User can add new MEL items by tapping on the *Add* button, and perform the same process as explained here above.

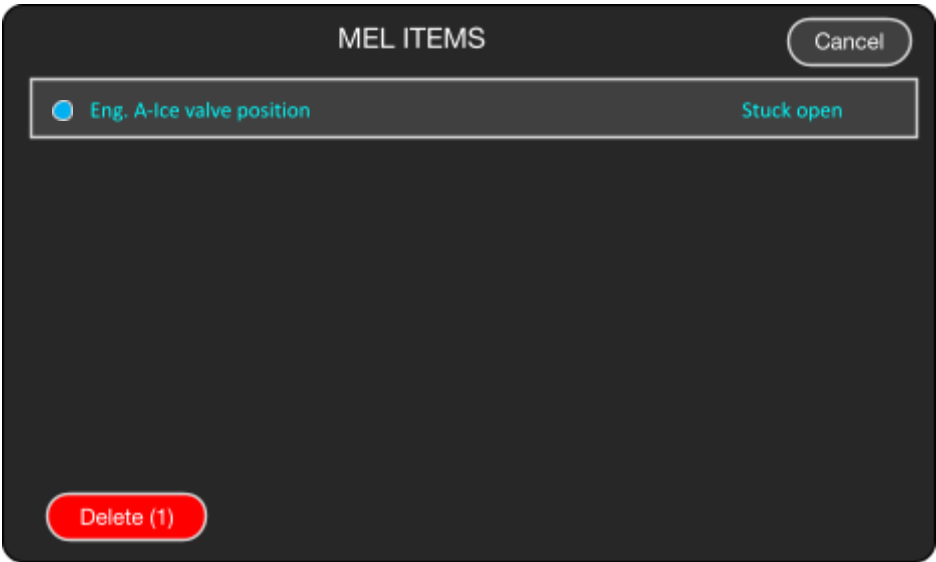
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The User can remove selected MEL items by tapping on *Modify* button.



The User can either tap on *Delete all* button to remove all selected MEL items, or tick the MEL items to remove and then tap on the *Delete* button.



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On Windows devices, the MEL item selection is the following:

MEL ITEMS

Cancel

Eng. A-Ice valve position	Normal	>
Ground spoilers	Normal	>
Thrust reverse credit	All reversers operating	>
Ground idle	Normal	>
Landing gears position	Normal	>
Brakes configuration	Normal	>
Wheel tachometers	Normal	>
Power management system	Normal	>

Done

On Windows devices, the User can modify the MEL items selection by tapping on the Modify button:

MEL 1

CDL 0

MEL ITEMS SUMMARY

Close

Eng. A-Ice valve position

Stuck open

Modify

MEL ITEMS

Cancel

Eng. A-Ice valve position	Stuck Open	>
Ground spoilers	Normal	>
Thrust reverse credit	All reversers operating	>
Ground idle	Normal	>
Landing gears position	Normal	>
Brakes configuration	Normal	>
Wheel tachometers	Normal	>
Power management system	Normal	>

Done

They can then select new MEL items or set one modified MEL item to another value.

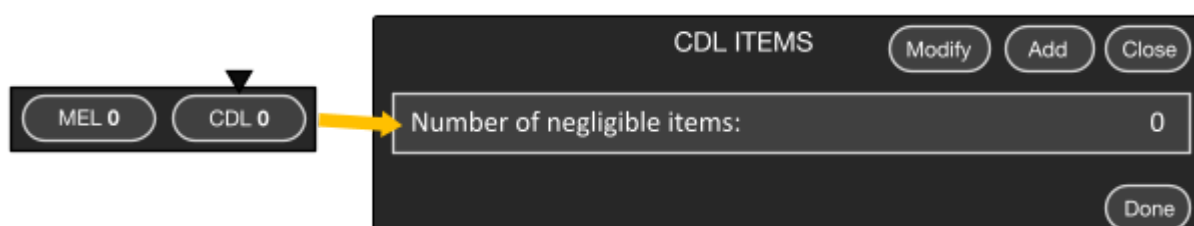
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4.3.2. CDL Items

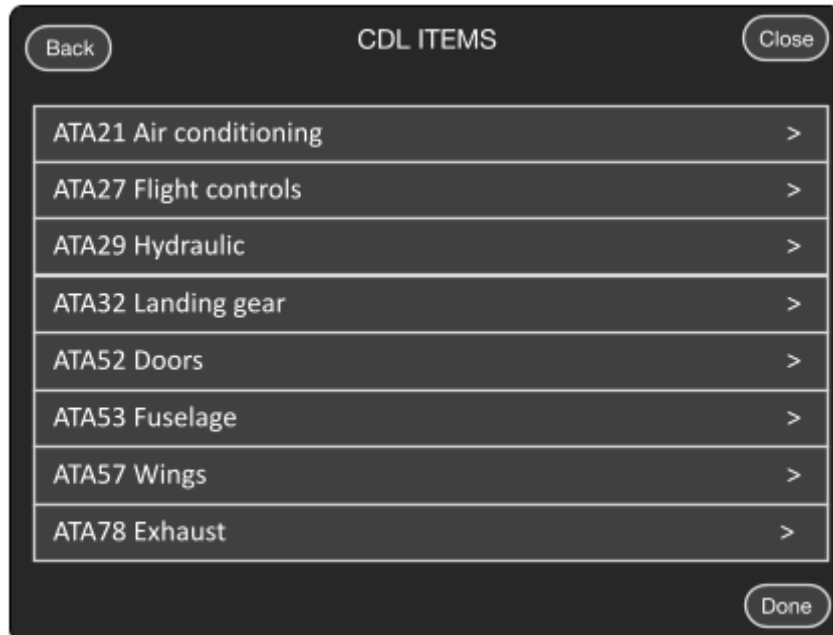
The List (CDL) subpanel displays the list of missing structural parts that affect takeoff performance. The User can select CDL items in:

- The Ops Library Browser (OLB) when consulting the CDL
- In the Takeoff application.

 In the Takeoff application, the User selects first the number of negligible items by tapping on the *CDL* button:

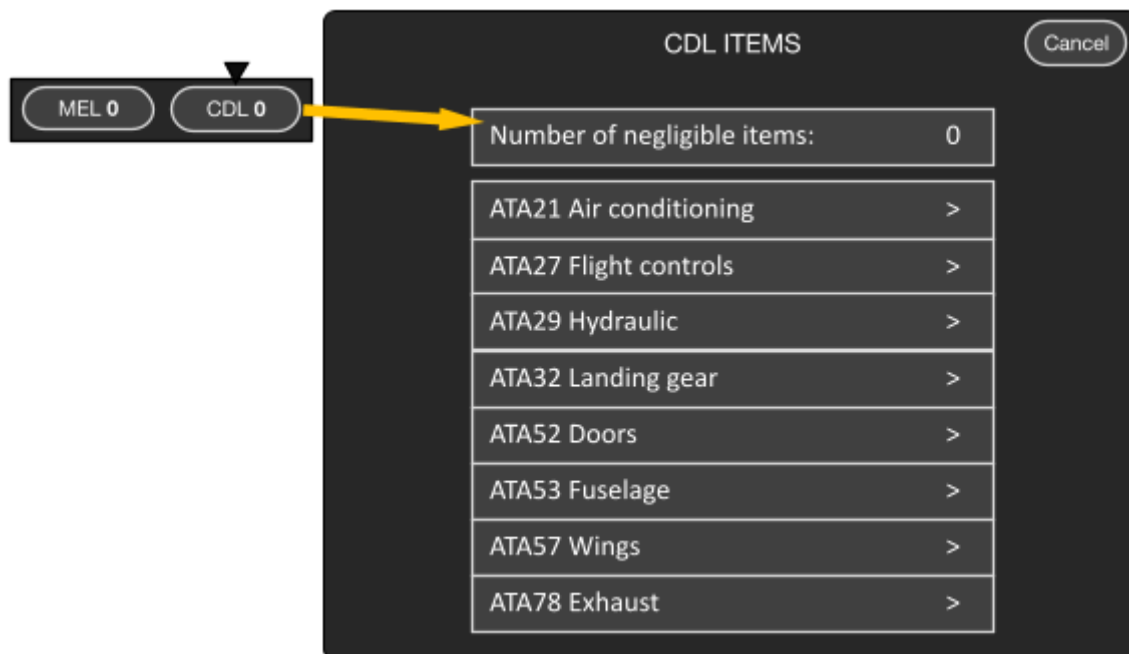


By tapping on the “ADD” button of the CDL subpanel, the User opens the CDL items panel. The CDL items panel displays the list of structural parts that can be missing, and for which performance penalties have to be considered for the calculation of the takeoff performance.

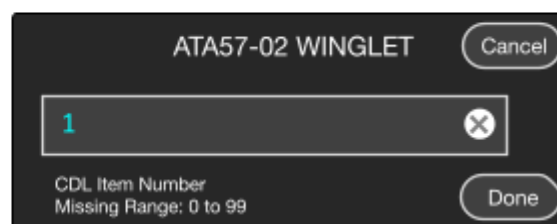
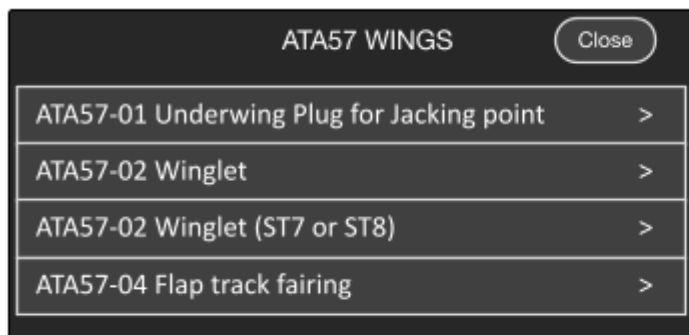


 On Windows devices, the CDL button directly opens the CDL items subpanel that enables the selection of the number of negligible items and the CDL items list for which performance penalties have to be considered for the calculation of the takeoff performance.

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The User enters a CDL item by first selecting the applicable area (air conditioning, doors ...), then by selecting the applicable item and the number missing.
The User validates the Item Number Missing by tapping on *Done* button in the virtual keypad, then on Done button.



The User can display CDL items by tapping on the CDL button.



The User can modify the CDL items list by tapping on the Modify button. They can then tap on one selected CDL items to remove it. They can also tap on a not selected CDL item to select it.

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CDL ITEMS

Cancel

Number of negligible items: 0

ATA21 Air conditioning >

ATA27 Flight controls >

ATA29 Hydraulic >

ATA32 Landing gear >

ATA52 Doors >

ATA53 Fuselage >

ATA57 Wings (1 MISSING) >

ATA78 Exhaust >



The User can delete CDL items by tapping on Modify.

CDL ITEMS

Modify

Add

Close

Number of negligible items: 0

ATA57-02 Winglet (1MISSING)

Done

The User can then remove all the CDL items by tapping on the Delete all button, or they can tick the CDL to remove and click on the Delete button.

CDL ITEMS

Cancel

Number of negligible items: 0

☐ ATA57-02 Winglet (1MISSING)

Delete all

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In order to add a new CDL item, the User must tap on the modify button in the CDL Items Summary subpanel.

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TAKEOFF RESULTS – OUTPUTS

1. GENERAL

When the runway selection and takeoff conditions are set, tap on “*COMPUTE*” to launch the computation.

The results panel is displayed when the computation is complete.

There are different possible types of output:

- Single results
- Multiple results.

The type of output is defined by the Administrator.

The takeoff results panel is divided in four sub-pages (see examples below):

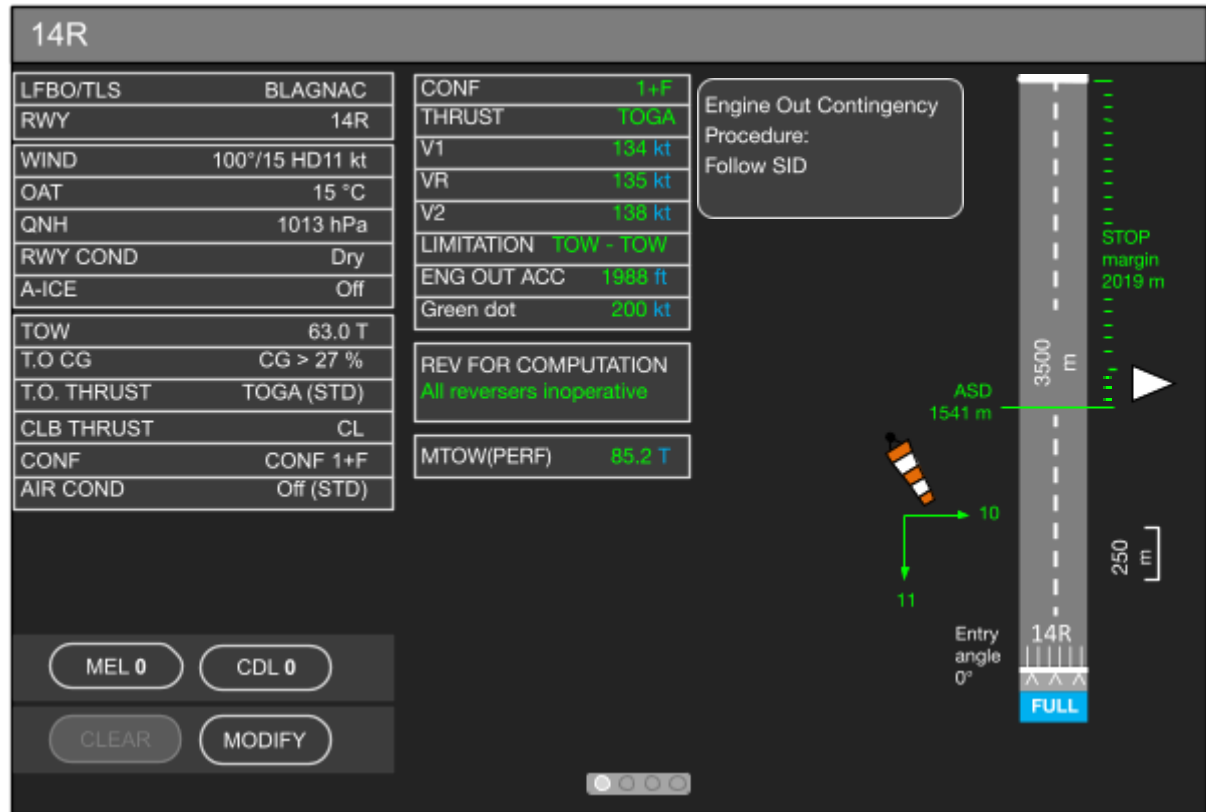
- A Main results page with runway drawing to improve the situation awareness
- A FMS-like display
- All engine gradient results (only available when the administrator activates the all engine gradient function (except for Wide Body aircraft))
- Additional results (if selected by the Administrator).

The user can flip (tablet mode) or tap on the arrow on the right-hand and left hand sides of the screen to navigate between the results pages.

***Note:** In multiple runways computation, before access to the individual runway results pages, an overview page appears with the different runways and their main results. The user must then select the individual runway of its choice to obtain the detailed results for this runway. Refer to the Multiple Runways Computation chapters for more details.*

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Example of main result page:

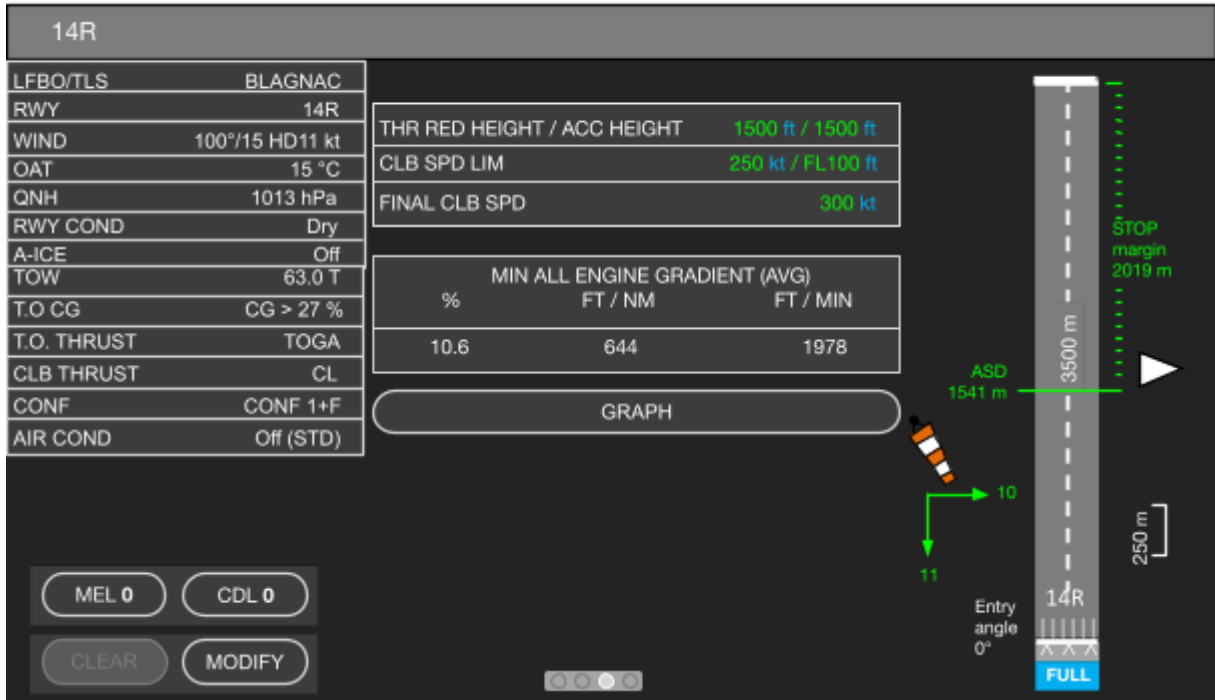


Example of FMD-like result page:



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Example of AECG result page:



Example of additional results page (the outputs that are displayed on this page are selected by the Administrator):



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2. SINGLE RESULTS – SINGLE RUNWAY COMPUTATION

Depending on the computation results, two cases are possible:

- Actual TOW above MTOW(PERF)
- Actual TOW equal to or below MTOW(PERF).

MTOW(PERF) is the highest TOW value for which takeoff is possible. As a result MTOW(PERF) can be higher than the weight variant MTOW.

2.1. Actual TOW above MTOW (PERF)

14L

LFBO/TLS	BLAGNAC	CONF	---
RWY	14L	THRUST	---
WIND	300°/15 TL14 kt	V1	--- kt
OAT	15 °C	VR	--- kt
QNH	1013 hPa	V2	--- kt
RWY COND	Dry	LIMITATION	OBS - BRK
A-ICE	Off	ENG OUT ACC	--- ft
TOW	77.0 T	REV FOR COMPUTATION	All reversers inoperative
T.O CG	CG > 27 %	MTOW(PERF)	75.4 T
T.O THRUST	TOGA (STD)		
CLB THRUST	CL		
CONF	CONF 1+F		
AIR COND	Off (STD)		

Engine Out Contingency Procedure: Follow SID

3000 m

250 m

Entry angle 0°

14L FULL

MEL 0 CDL 0

CLEAR MODIFY

When the calculated MTOW (perf) is below the TOW value (entered by the User), red dashes “---” are displayed in the results page.

The aircraft cannot be dispatched at this TOW on this runway. The takeoff weight has to be reduced to a value below the MTOW (perf) or a longer runway must be chosen, if any available on the considered airport.

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2.2. Actual TOW equal to or below MTOW (PERF)

The main result page gives the following data.

The screenshot displays the '14R' performance page. It features a table of flight conditions on the left, a central panel for configuration and engine-out contingency, and a graphical representation of the runway on the right.

14R	
LFBO/TLS	BLAGNAC
RWY	14R
WIND	100°/15 HD11 kt
OAT	15 °C
QNH	1013 hPa
RWY COND	Dry
A-ICE	Off
TOW	63.0 T
T.O CG	CG > 27 %
T.O. THRUST	TOGA (STD)
CLB THRUST	CL
CONF	CONF 1+F
AIR COND	Off (STD)

CONF	1+F
THRUST	TOGA
V1	134 kt
VR	135 kt
V2	138 kt
LIMITATION	TOW - TOW
ENG OUT ACC	1988 ft
Green dot	200 kt

Engine Out Contingency Procedure: Follow SID

REV FOR COMPUTATION
All reversers inoperative

MTOW(PERF) 85.2 T

ASD 1541 m

STOP margin 2019 m

3500 m

250 m

14R

Entry angle 0°

FULL

MEL 0 CDL 0

CLEAR MODIFY

2.2.1. CONF

The Aircraft Configuration corresponds to the Configuration used for the computation. It can be:

- The configuration entered by the user in the CONDITION panel, if the user had chosen CONF 1+F or CONF 2 or CONF 3
- The configuration that gives the best performance results if the user had chosen OPT CONF.

2.2.2. THRUST

The THRUST field displays the thrust setting used for the calculation.

- In case of takeoff at TOGA thrust, TOGA is displayed.
- In case of derated takeoff, it displays the derate level that can be either:
 - o The fixed derate level entered by the user in the THRUST field, or
 - o The optimum derate level if the user has selected the "OPTIMUM DERATE" option.
- In case of flexible takeoff, the value is
 - o The maximum flexible temperature displayed in green, determined according to the airline policy defined in the administrator module (if the user entered "MAX" as FLEX value or if "FLEX entry" is not enabled)
 - o The FLEX value entered by the user in the inputs if takeoff is possible at this FLEX temperature

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- o The maximum possible FLEX temperature displayed in red if the FLEX temperature entered by the user is above the maximum possible FLEX temperature (only if “FLEX entry” is enabled).
- o The TOGA result in case FLEX is not possible but TOGA is. In this case, a green frame contour is displayed around the TOGA output label in order to highlight the difference compare to the user’s initial selection.
- In case of takeoff at BUMP thrust (optional), the keyword “BUMP” is displayed.

2.2.3. V1

V1 is the Takeoff decision speed.

The following display modes are possible depending on the administrator setting:

SINGLE V1

Only one V1 value is displayed and corresponds either to V1min, V1max or V1mean.

V1 119 kt

V1 RANGE

Any V1 value within the [V1 min; V1 max] range can be selected.



2.2.4. VR

VR is the Rotation speed.

2.2.5. V2

V2 is the minimum climb speed that must be reached at a height of 35 ft above the runway surface, in case of an engine failure.

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2.2.6. Limitation code

Several regulatory requirements limit takeoff performance. They are called takeoff limitations. These takeoff limitations are identified in the computation results via limitation codes. The following table indicates the various codes that can appear:

TOW	Maximum computation weight, or maximum structural weight
RWY0	All-engine TakeOff Distance (TOD0), or All-engine TakeOff Run (TOR0), or All-engine Accelerate-Stop Distance (ASD0)
RWY1	One-engine inoperative TakeOff Distance (TOD1), or One-engine inoperative TakeOff Run (TOR1), or One-engine inoperative Accelerate-Stop Distance (ASD1)
VMCG	V1 limited by Minimum Control speed on Ground
TIRE	V _{LOF} limited by maximum TIRE speed (V _{LOF} is the speed at which the lift overcomes the weight)
BRK	V1 limited by maximum BRaKe energy
VMCA	V2 limited by Minimum Control speed in the Air
1SEG	1st SEGment climb gradient
2SEG	2nd SEGment climb gradient
3SEG	Acceleration (3 rd) segment
FTO	Final TakeOff climb gradient
OBS	OBStacle clearance
VMU	Minimum Unstick speed
10MN	Takeoff Thrust time limit (10 MiNutes with One-engine inoperative)

Note: The labels associated to the limitation codes cannot be customized at the administrator level.

2.2.7. ENG OUT ACC

The EO ACCEL field displays the suggested value of engine-out acceleration altitude. This value is a pressure altitude, temperature corrected.

FS+ computes a minimum and a maximum engine out acceleration altitude (MINALT and MAXALT):

- MINALT is the altitude corresponding to the highest of Minimum Regulatory height (400 ft) and Obstacle Clearance height,
- MAXALT is the altitude corresponding to the maximum height reachable before thrust reduction (as per the 10min-TOGA thrust limitation).

If the standard EO ACCEL (defined in PAdmin) is between MINALT and MAXALT, FS+ displays the standard EO ACCEL, otherwise it displays MINALT or MAXALT and a green frame around, in order to warn the user about this change.



On iPad devices (from V5.3 onwards), runway specific Min EO ACC Height can be imported from the Airport Manager or the airport database. In this case, this runway specific Min EO ACC Height value is used to determine MINALT. The logic to display the ENG OUT ACC in the result page remains unchanged.

2.2.8. Green Dot Speed

The Green Dot field displays the value of Green Dot Speed.

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2.2.9. REV for Computation

The field REV for Computation displays the number of reversers that are taken into account for the computation.

2.2.10. MTOW

The maximum performance limited takeoff weight (MTOW (perf)) for the calculated conditions.

CAUTION

Even if the MTOW (perf) may be above the structural MTOW, the aircraft must not be dispatched with a takeoff weight above the structural MTOW.

2.2.11. Commentary field and EOSID

Refer to the [INPUTS section](#).

2.2.12. Accelerate-Stop distance (ASD)

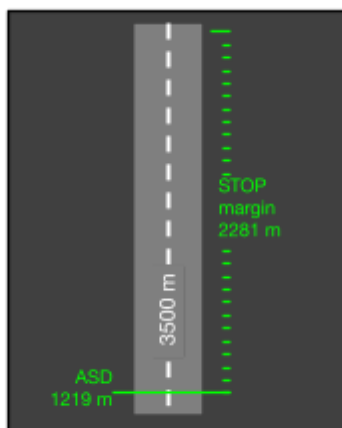
The ASD is displayed on the runway drawing. It corresponds to the distance necessary to perform a rejected takeoff.

2.2.13. Stop Margin

The stop margin is the difference between the ASD and the ASDA. It can be shown on the runway drawing, according to the administrator settings.

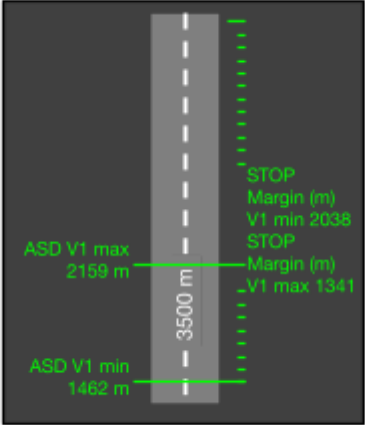
Only one stop margin is displayed if the V1 type is:

- V1 min, or
- V1 mean, or
- V1 max.



Two stop margins are displayed if the V1 type is a range of possible V1 between V1min and V1max:

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3. SINGLE RESULTS – MULTIPLE RUNWAYS COMPUTATION

When the calculation is completed, the results are prepared for each runway selected by user. A title bar above the results panel allows selection of results to be displayed. It contains:

- One cell named *Overview*: display a summary of the results for all the runways

LFBO/TLS	BLAGNAC	Overview	<	14R (85.2 T)	32L (82.4 T)	32LS3 (82.1 T)	14RM10 (81.5 T)	>
RWY	Multiple	Overview						
WIND	100°/15 kt							
OAT	15 °C							
QNH	1013 hPa							
RWY COND	Dry							
A-ICE	Off							
TOW	63.0 T							
T.O CG	CG > 27 %							
T.O THRUST	TOGA (STD)							
CLB THRUST	CL							
CONF	CONF 1+F							
AIR COND	Off (STD)							

RWY	MTOW (PERF)
14R	85.2
32L	82.4 T
32LS3	82.1 T
14RM10	81.5 T
14RM12	81.1 T

MEL 0

CDL 0

CLEAR

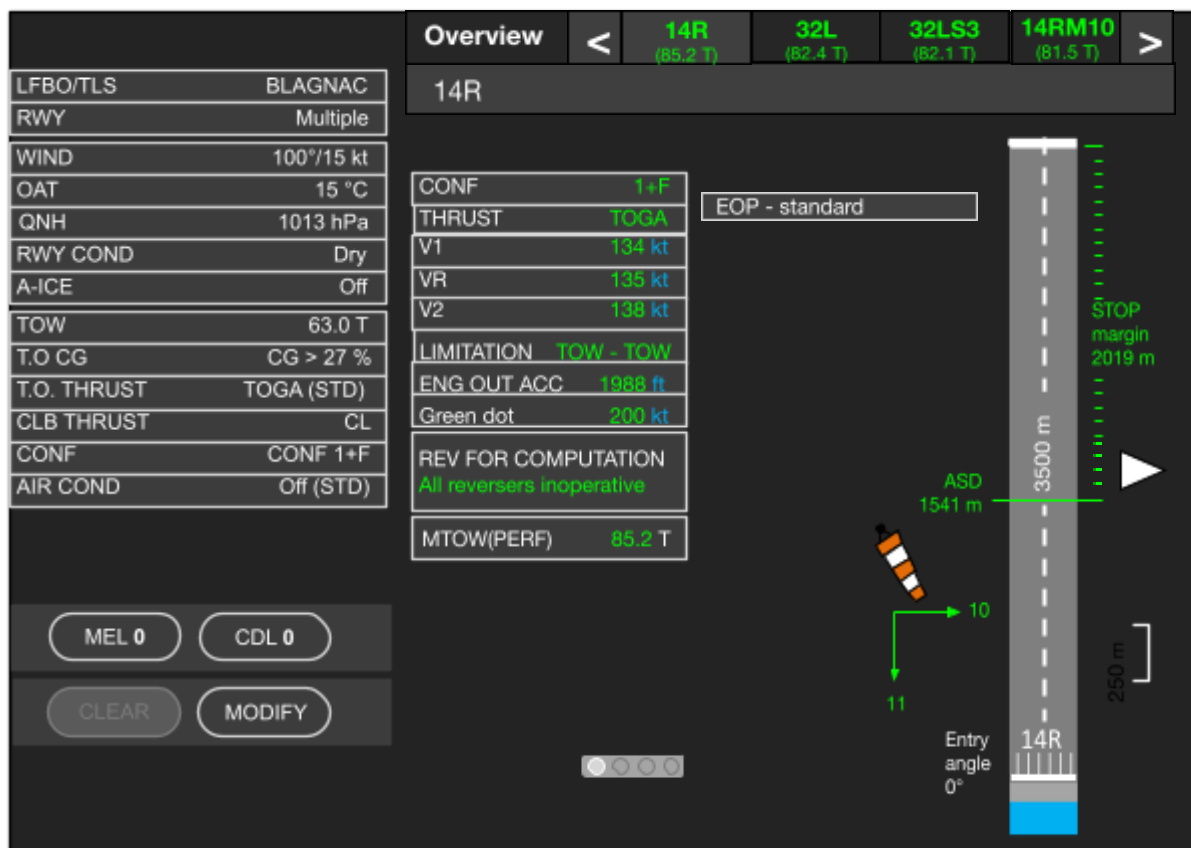
MODIFY

Note: In Multiple runways computation, the T.O PERF application uses the highest elevation of the selected runways to determine the Flat rating temperature (TRef).

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- One cell for each selected runway: display result for this specific runway.



Arrows can be used to navigate in this bar in order to display hidden runway identifiers.

Depending on the computation results, three cases are possible and associated with a color code:

- Green: takeoff is possible with the THRUST option set in the *CONDITIONS* panel (TOGA, FLEX or derate)
- Amber: takeoff is possible with TOGA thrust only
- Red: takeoff is not possible, TOW is above MTOW.

Note: If TOGA is selected in the CONDITIONS panel, the only possible colors for the results are green (takeoff possible) or red (takeoff impossible).

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4. MULTIPLE RESULTS – SINGLE RUNWAY COMPUTATION

The multiple results option is available at Administrator level. The main difference with the single results mode is that the computation returns the results calculated at TOGA thrust as well as one or several possible flexible temperatures (when possible).

Depending on the computation results, two cases are possible:

- o No takeoff possible

The screenshot displays the '14L' runway computation interface. It features several data tables and a graphical runway diagram.

LFBO/TLS	BLAGNAC
RWY	14L
WIND	300°/15 TL 14 kt
OAT	15 °C
QNH	1013 hPa
RWY COND	Dry
A-ICE	Off

TOW	77.0 T
T.O CG	CG > 27 %
T.O. THRUST	TOGA (STD)
CLB THRUST	CL
CONF	CONF 1+F
AIR COND	Off (STD)

CONF	---
THRUST	---
V1	--- kt
VR	--- kt
V2	--- kt
LIMITATION	OBS - BRK
ENG OUT ACC	--- ft

Engine Out Contingency Procedure: Follow SID

REV FOR COMPUTATION
All reversers inoperative

MTOW(PERF) 75.4 T

MEL 0 CDL 0

CLEAR MODIFY

The graphical runway diagram on the right shows runway 14L with a length of 3000 m and a width of 250 m. A diagram of the aircraft is shown at the start of the runway with an entry angle of 0°. The runway is labeled 'FULL' at the bottom.

When the calculated MTOW (perf) is below the TOW value (entered by the User), red dashes “---” are displayed in the results page.

- o The aircraft cannot be dispatched with these assumptions. A weight reduction can be considered in this case to be able to takeoff. The user may also consider changing runway for a longer one, if available on the current airport.

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- o Takeoff possible

When a flexible takeoff is possible, the multiple results panel displays the values of one or two flexible temperatures usable for the takeoff (depending on the Administrator settings (selection of “FLEX ENTRY”) and on the FLEX temperature entered by the user).

- If the administrator disables the “FLEX ENTRY” option:

FlySmart+ will provide the results for the maximum possible FLEX temperature (if possible) and for the TOGA thrust (if no FLEX is possible, FlySmart+ directly provides the TOGA results as in Single result mode):

14R					
CONF 3		MTOW (PERF) 83.1T		TOW 77.0 T	
THR	V1 (kt)	VR (kt)	V2 (kt)	STP MRG (m)	LIM CODE
TOGA	131	142	146	1628	TOW – 2SEG >
F51	153	155	158	464	TOW – OBS >

- If the administrator enables the “FLEX ENTRY” option:
 - o If the user enters MAX for the FLEX temperature in the T.O THRUST, or
If the user enters the FLEX temperature equal to the maximum FLEX temperature:

FlySmart+ will provide the results for the maximum possible FLEX temperature and for the TOGA thrust (if no FLEX is possible and the user entered MAX, FlySmart+ directly provides the TOGA results as in Single result mode):

14R					
CONF 3		MTOW (PERF) 83.1T		TOW 77.0 T	
THR	V1 (kt)	VR (kt)	V2 (kt)	STP MRG (m)	LIM CODE
TOGA	131	142	146	1628	TOW – 2SEG >
F51	153	155	158	464	TOW – OBS >

- o If the user enters a FLEX temperature below the maximum FLEX temperature for the current day conditions:

FlySmart+ will provide the results for the maximum possible FLEX temperature, for the FLEX temperature entered by the user (e.g. F47) and for the TOGA thrust:

- o If the user selects a FLEX temperature above the maximum FLEX temperature for the current day conditions:

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FlySmart+ will provide the results for the maximum possible FLEX temperature (if FLEX is possible), for the FLEX temperature entered by the user (e.g. F55) with red dashes “---” and for TOGA thrust.

14R					
CONF 3		MTOW (PERF) 83.1 T		TOW 77.0 T	
THR	V1 (kt)	VR (kt)	V2 (kt)	STP MRG (m)	LIM CODE
TOGA	131	142	146	1628	TOW – 2SEG >
F51	153	155	158	464	TOW – OBS >
F55	---	---	---	---	---

Note: When the user does not enter a FLEX temperature and only TOGA thrust is possible, the main results panel displays automatically the same type of information as for single results / single runway computation

14R

LFBO/TLS	BLAGNAC
RWY	14R
WIND	100°/15 kt
OAT	15 °C
QNH	1013 hPa
RWY COND	Dry
A-ICE	Off
TOW	77.0 T
T.O CG	CG > 27 %
T.O. THRUST	TOGA (STD)
CLB THRUST	CL
CONF	CONF 1+F
AIR COND	On (STD)

CONF	1+F
THRUST	TOGA
V1	159 kt
VR	159 kt
V2	161 kt
LIMITATION	TOW - TOW
ENG OUT ACC	1989 ft
Green dot	200 kt
REV FOR COMPUTATION	ALL REVERSERS INOPERATIVE
MTOW(PERF)	77.8 T

Engine Out
Contingency
Procedure:
Follow SID

ASD 2980 m
STOP Margin 20 m
3000 m
250 m
14L
FULL

10
11
Entry angle 0°

MEL 0
CDL 0
CLEAR
MODIFY

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5. MULTIPLE RESULTS – MULTIPLE RUNWAYS COMPUTATION

The User gets in a single calculation the maximum possible flexible/derated temperature for each runway.

A title bar above the results panel allows selection of results to be displayed. It contains:

- One cell named *Overview*: display a summary of the results for all the runways

LFBO/TLS	BLAGNAC	Overview < 32L 32R 14R 14L >				
RWY	Multiple	Overview				
WIND	280°/15 kt					
OAT	15 °C					
QNH	1013 hPa					
RWY COND	Dry					
A-ICE	Off					
TOW	77.0 T					
T.O CG	CG > 27 %					
T.O THRUST	OPTIMUM THRUST					
CLB THRUST	CL					
CONF	CONF 1+F					
AIR COND	On (STD)					

RWY	MTOW (PERF)
32L	82.0 T
32R	80.9 T
14R	77.1 T
14L	74.5 T

MEL 0

CDL 0

CLEAR

MODIFY

- One cell for each selected runway: display result for this specific runway

Arrows can be used to navigate in this bar in order to display hidden runway identifiers.

The following color codes are used.

- Green: Indicates that the results correspond to a flexible/derated Takeoff
- Amber: Indicates that the results correspond to a takeoff at TOGA thrust, for which MTOW (perf) is above or equal to TOW
- Red: Indicates that the results correspond to a takeoff at TOGA thrust, for which MTOW (perf) is below TOW.

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When the aircraft cannot take off at the actual takeoff weight for a given runway (MTOW (perf) below the TOW), red dashes “---” are displayed in the output panel.

LFBO/TLS	BLAGNAC
RWY	Multiple
WIND	280°/15 kt
OAT	15 °C
QNH	1013 hPa
RWY COND	Dry
A-ICE	Off
TOW	77.0 T
T.O CG	CG > 27 %
T.O. THRUST	OPTIMUM THRUST
CLB THRUST	CL
CONF	CONF 1+F
AIR COND	On (STD)

Overview

32L
(82.0 T)

32R
(80.9 T)

14R
(77.1 T)

14L
(74.5 T)

14L

CONF ---

THRUST ---

V1 --- kt

VR --- kt

V2 --- kt

LIMITATION OBS - BRK

ENG OUT ACC --- ft

Engine Out Contingency Procedure:
Follow SID

REV FOR COMPUTATION
All reversers inoperative

MTOW(PERF) 74.5 T

MEL 0

CDL 0

CLEAR

MODIFY

14

5

3000 m

250 m

Entry angle 0°

14L

FULL

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When a flexible/derated takeoff is possible, the user can choose between TOGA takeoff and flexible/derated takeoff.

LFBO/TLS	BLAGNAC	Overview < 32L (82.0 T) 32R (80.9 T) 14R (77.1 T) 14L (74.5 T) > 32R CONF 1+F MTOW 80.9T TOW 77.0 T <table border="1"> <thead> <tr> <th>THR</th><th>V1 (kt)</th><th>VR (kt)</th><th>V2 (kt)</th><th>STP MRG (m)</th><th>LIM CODE</th></tr> </thead> <tbody> <tr> <td>TOGA</td><td>140</td><td>150</td><td>152</td><td>938</td><td>TOW – VMU ></td></tr> <tr> <td>F46</td><td>149</td><td>150</td><td>152</td><td>464</td><td>TOW – VMU ></td></tr> </tbody> </table>	THR	V1 (kt)	VR (kt)	V2 (kt)	STP MRG (m)	LIM CODE	TOGA	140	150	152	938	TOW – VMU >	F46	149	150	152	464	TOW – VMU >
THR	V1 (kt)		VR (kt)	V2 (kt)	STP MRG (m)	LIM CODE														
TOGA	140		150	152	938	TOW – VMU >														
F46	149		150	152	464	TOW – VMU >														
RWY	Multiple																			
WIND	280°/15 kt																			
OAT	15 °C																			
QNH	1013 hPa																			
RWY COND	Dry																			
A-ICE	Off																			
TOW	77.0 T																			
T.O CG	CG > 27 %																			
T.O. THRUST	OPTIMUM THRUST																			
CLB THRUST	CL																			
CONF	CONF 1+F																			
AIR COND	On (STD)																			

MEL 0

CDL 0

CLEAR

MODIFY

The User can select a result line and have more information on these results by tapping on the row.

Then, the displayed window shows the same information as for single results / single runway computation.

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When a flexible/derated takeoff is not possible, the output panel displays results for the TOGA thrust only, same type of information as for single results computation.



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6. ALL ENGINE CLIMB GRADIENT (AECG) OUTPUTS

The third results page that is related to the all engine gradient results contains two parts:

- A reminder that displays the input value of the all engine gradient data
- A table with the all engine gradient results.

A “GRAPH” button is available in order to display the aircraft trajectory and/or to verify if the aircraft trajectory does not cross a published plan related to the constraint(s).

The horizontal axis is for the horizontal distance in nautical miles and the vertical axis is for the Altitude in feet.

We can differentiate two main cases, for which FlySmart+ does not display the same results

- First case is when there is no AECG constraint defined the runway
- And second case is when at least one AECG constraint is defined for the runway.

6.1. No AECG constraint

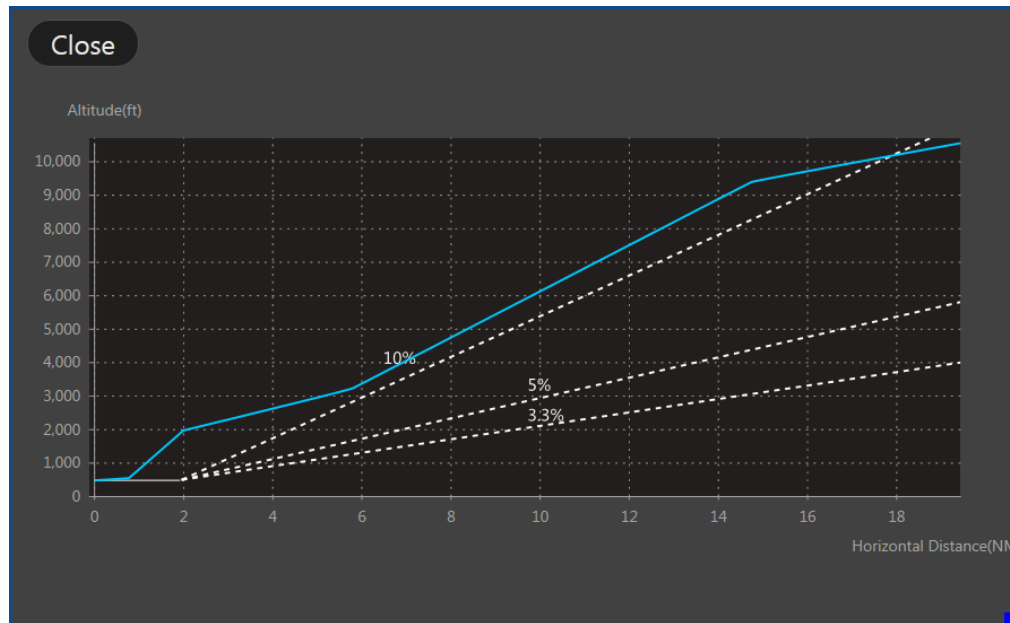
If no constraint is defined for the runway, FlySmart+ will provide the following information:

- The Minimum Average Climb Gradient (%), the Minimum Average Climb Gradient (ft/nm) and the Minimum Average Climb Speed (ft/min) are displayed in white color in the all engine gradient results page
- The trajectory of the aircraft in blue color in the graphical results
- Plans related to a gradient value of 3.3 %, 5% and 10% in the graph results in white dashes.



The graph with the aircraft trajectory is the following:

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6.2. With AECG constraints

If the aircraft trajectory does not cross the published plan related to the constraint(s) AND if an average gradient to target altitude is above the related gradient of the constraint(s) that is defined:

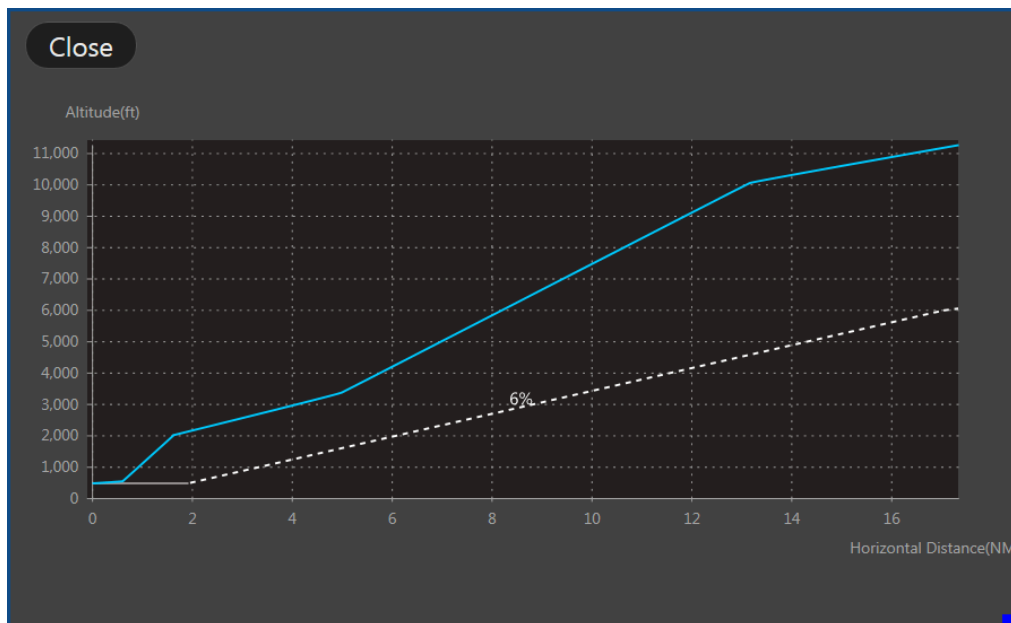
FlySmart+ will provide the following information:

- The average gradient to the defined target altitude (% or ft/nm), and the average climb speed to the defined target altitude (ft/min) are displayed in green color in the all engine gradient results page
- The trajectory of the aircraft in blue color in the graphical results
- Published plans in white dashed lines, and if needed, the published plans are completed with the minimum regulatory gradient (3.3%) from the target altitude.

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The graph with the aircraft trajectory is the following:

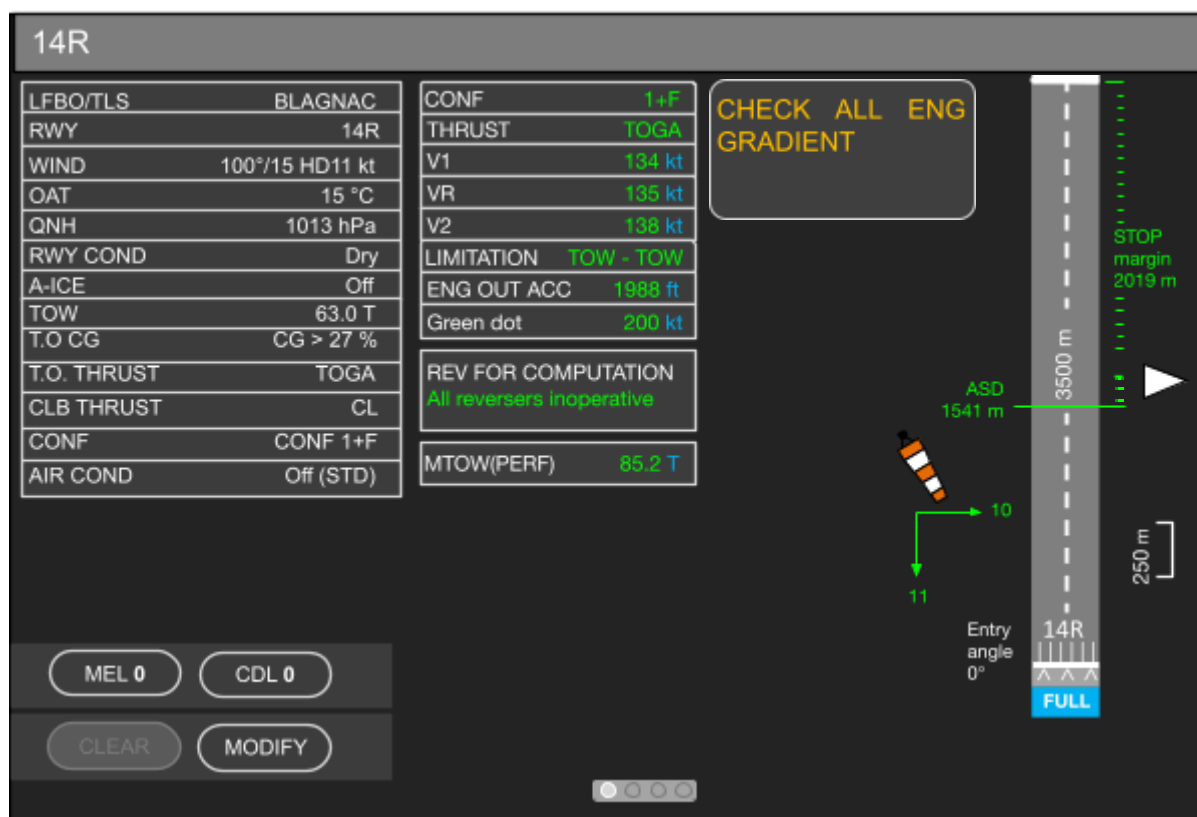


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If the aircraft trajectory crosses the published plan related to the constraint(s), OR
if an average gradient to target altitude is below the defined constraint gradient to the target altitude:

The following information is provided:

- A warning message “CHECK ALL ENG GRADIENT” that is displayed in amber and in capital letters on the first results page
- The outputs of AECG that lead to cross the published plan or the output gradient that is below to the defined constraint gradient are displayed in amber color in the all engine gradient results page
- The trajectory of the aircraft in blue color in the graphical results
- Published plans in white dashed lines, and if needed, the published plans are completed with the minimum regulation gradient (3.3%) from the target altitude.

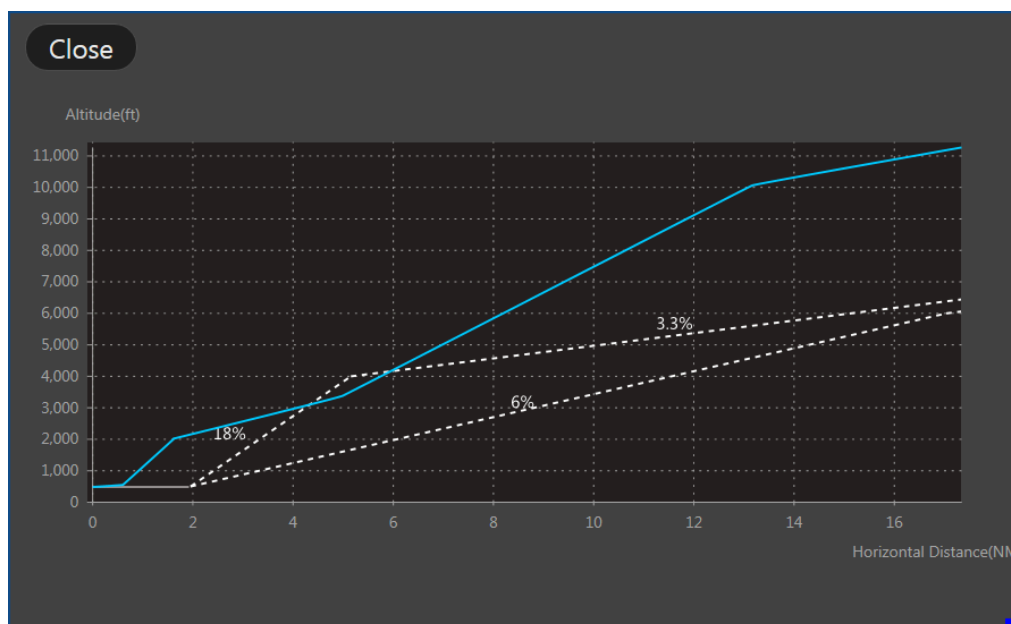


A warning message “FLIGHT PATH CROSSES PUBLISHED PLAN” that is displayed in amber in the all engine gradient results page only if the aircraft trajectory crosses the published plan related to one of the constraint(s).

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The graph with the aircraft trajectory is the following:



Note:

- On iPad device (from V4.0), with the option multiple results activated, the application displays green or amber circles in the multiple results page, in order to indicate if the aircraft clear all of the AECG constraint(s) with the associated T.O thrust, as displayed hereafter:

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14R						
CONF 3		MTOW (PERF) 83.1 T			TOW 77.0 T	
THR	V1 (kt)	VR (kt)	V2 (kt)	MRG (m)	LIM CODE	AECG
TOGA	131	142	146	1628	TOW – 2SEG >	●
F51	153	155	158	464	TOW – OBS >	●

- The AECG computations are based on QNH altitudes.
- A default transition altitude is defined as follows:

Transition altitude = RWY Elevation + 5 000 ft and rounded up to the nearest thousands feet.

For example, for a runway elevation of 600 ft:

The computed transition altitude is 6 000 ft (600 + 5 000 = 5 600 ft rounded up to 6 000 ft)

As a result, the computed AECG is based on:

- o QNH altitude for constraints at or below the transition altitude
- o Standard pressure altitude 1 013 hPa above the transition altitude.

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MODULE PRESENTATION

The IN-FLT PERF application is an interface designed for the pilot for use in the cockpit and for dispatch engineers for use on ground.

The aim of the IN-FLT PERF application is to compute the in-flight performance for all Airbus aircraft (concerned aircraft are A300-600/A310, A320 Family, A330, A340, A350 and A380). Based on the same philosophy as the other on board performance applications, the user accesses his in-flight interface for a precise aircraft tail number.

On iPad devices, the IN-FLT PERF application is available from version 4.0.

The IN-FLT PERF application is composed of 5 modules:

- Flight planning (PLAN)
- Climb (CLB)
- Cruise (CRZ)
- Descent One engine Inoperative (DES OEI)
- Holding (HLD)
- ATMO (speed conversion, ISA tables, pressure tables...).

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APPLICATION START



Start the Airbus In-flight application by clicking on the IN-FLT PERF icon in the general menu.

If the Flight status page has already been initialized on another application, the In-flight application retrieves the parameters already entered in the other Flight status Page.



Start the Airbus In-flight application by tapping the AIB In-Flight icon in the “My flight” page.



If the My-Flight page has already been initialized on another application, the In-flight application retrieves the parameters already entered in the other My Flight Page.

In flight application main interface will be displayed.

PLAN CLB CRZ DES OEI HLD ATMO

Outside Conditions

ENG OPERATIVE	2 (ALL)
Average WIND kt	HD0
TEMP ΔISAC	⊘
A-ICE	Off (STD)
AIR COND	NORM (STD)
INIT WEIGHT T	77.0
Average CG %	37.0

Flight Data

COMPUTATION TYPE	IN CRUISE (STD)>
DIST NM	⊘
OPT PROFILE	yes >
CRZ ALT ft	⊘
SPD TYPE	Econ (CI) (STD)
CI kg/min	40
FUEL FACTOR %	0.0

Aircraft Status Data

NON STD CONF 0 CDL 0

All fields must be completed to compute your in-flight performance data

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The interface is composed of the following elements:

1. Computation module buttons

These buttons enable the user to select the desired module.

2. Conditions Data

Computation input describing number of operative engines, Average CG, initial weight and outside conditions.

3. Flight Data

This panel permits to define the flight conditions.

4. Aircraft Status Panel

This panel allows the selection of non-standard configuration items of the aircraft and CDL items. Click on the corresponding button to select a non-standard configuration / CDL item.

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PLAN

1. INPUTS

1.1. CONDITIONS

ENG OPERATIVE	2 (ALL) >
Average WIND kt	HD0
TEMP ΔISAC	
A-ICE	Off (STD) >
AIR COND	OFF >
INIT WEIGHT T	77.0
Average CG %	37.0

The outside CONDITIONS subpanel enables to enter the following information:

1.1.1. Engines Operative (ENG OPERATIVE)

The number of engines operative determines the thrust available to perform each flight phase and therefore largely impacts the flight planning.

ENG OPERATIVE

2 (ALL) >

WIND kt HD0



ENG OPERATIVE

Select number of ENG OPERATIVE from the list

Cancel

2 (ALL)
✓

1

ENG OPERATIVE

4 (ALL) >

WIND kt HD0



ENG OPERATIVE

Select number of ENG OPERATIVE from the list

Cancel

4 (ALL)
✓

3

2

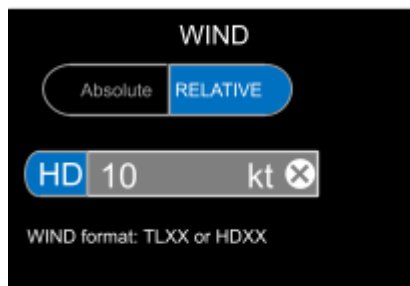
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1.1.2. Average Wind

For a PLAN computation, there is only one way of defining the wind values: the relative mode that defines the Longitudinal Speed Component. The absolute mode is not available.

The user directly enters a longitudinal wind component. The user has to:

- Click on the header button to display either HD for Headwind or TL for Tailwind
- Enter the wind value in the field

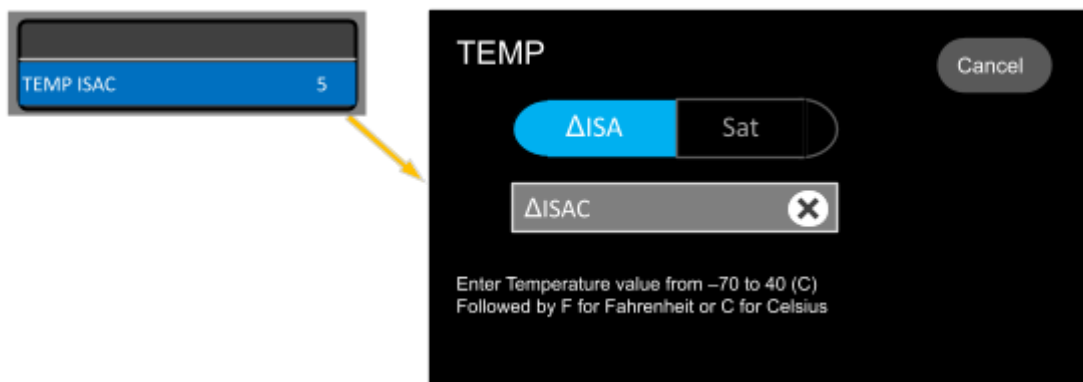


- Click on Done button on the virtual keypad.

The wind is limited to +/- 250kts.

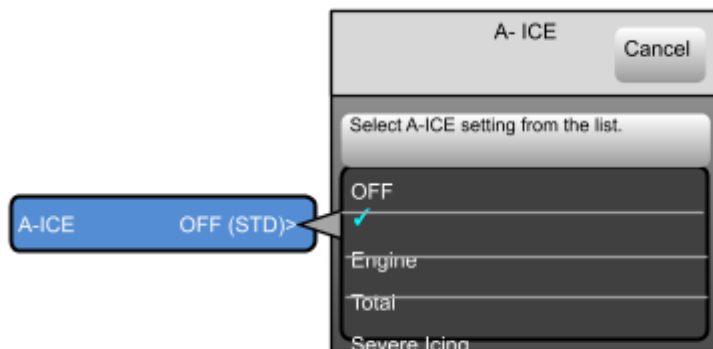
1.1.3. Temperature (TEMP)

The user enters the forecasted ISA deviation (Δ ISA) for the Plan phase. For a PLAN computation, the Static Air Temperature (SAT) mode is not available.



1.1.4. Anti-Ice (A-ICE)

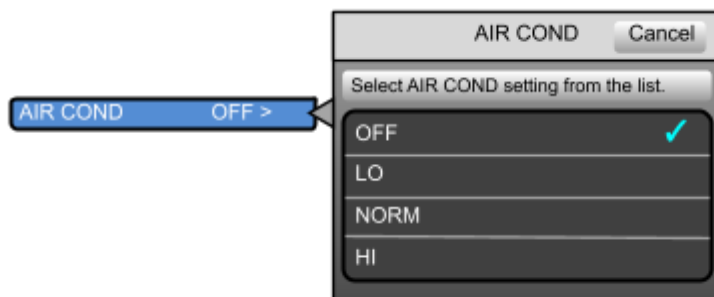
The user selects the desired anti-ice setting:



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1.1.5. Airflow (AIR COND)

The user has to enter the desired air conditioning setting. This setting depends on the aircraft.



1.1.6. Initial Weight (INIT WEIGHT)

The user enters the current aircraft weight at the beginning of the Plan phase.

1.1.7. Average Center of Gravity (Average CG)

The user enters the Center of Gravity position at the beginning of the Plan phase. The unit depends on the administrator settings.

1.2. FLIGHT DATA

COMPUTATION TYPE	IN CRUISE (STD)>
DIST NM	
OPT PROFILE	yes >
CRZ ALT ft	
SPD TYPE	ECON (CI) (STD) >
CI kg/min	40
FUEL FACTOR %	0.0

The FLIGHT DATA panel includes the following information:

1.2.1. Computation Type

The user enters the COMPUTATION TYPE drop-down list to define the desired flight planning type, whether they wish to obtain performance for a complete flight, or over the remaining distance.

The three possible choices for computation type (In Cruise, Flight Plan or Alternate) are detailed in the next paragraph “Distance (DIST)”.

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1.2.2. Distance (DIST)

If IN CRUISE computation type is selected, the user enters the remaining ground distance to:

- The destination airport, or
- A diversion airport, or
- The alternate airport.

If FLIGHT PLAN computation type is selected, the user enters the ground distance from the departure airport to the destination airport or a potential diversion airport.

If ALTERNATE computation type is selected, the user enters the ground distance from the destination airport to the alternate airport.

1.2.3. OPT Profile

If the user sets OPT PROFILE to yes, FlySmart+ will enable cruise altitude change (in accordance the ALT RULE selection) in order to optimize fuel consumption.

If the user sets OPT PROFILE to no, FlySmart+ will not enable cruise altitude change. The cruise will therefore be the one entered by the user in the field CRZ ALT

1.2.4. Cruise altitude

The user defines the aircraft cruise altitude. It corresponds to the initial altitude for computation in case of IN CRUISE computation type and to the targeted cruise altitude in case of FLIGHT PLAN or ALTERNATE computation types.

The user can enter cruise altitude in ft or in FL. If the user enters a value from 1 to 430, FlySmart+ considers it as a FL. Above 430 FlySmart+ considers it as a QNH altitude.

1.2.5. ALT RULE

On iPad devices, when OPT PROFILE is set to yes and when the user enters a CRZ ALT value, Flysmart+ displays the field ALT RULE that enables the user to select the rule for altitude selection for the step climbs.

When the user enters a CRZ ALT value, the ALT RULE field is automatically set to a value that corresponds to this CRZ ALT. Then the user can select among the other possible rules (if any other rule is applicable).

The following altitude rules are possible: ICAO (even and odd), RVSM (even and odd), Russia (360°-179 ° and 180°-359°) and China RVSM (360°-179 ° and 180°-359°).

1.2.6. Speed Type (SPD TYPE)

The user defines the speed plan type. The following speed plan types are available:

1.2.6.1. ECON (CI)

The user selects the *ECON (CI)* plan type (not available in ALTERNATE computation type) to obtain current and predicted plan performance data for a plan at ECON (CI).

When ECON (CI) is selected, the user has to select the Cost Index value used to manage the flight.

SPD TYPE	ECON (CI) (STD) >
CI kg/min	120

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1.2.6.2. Fixed Speed

The user selects the Fixed Speed plan type (not available in ALTERNATE computation type) to obtain current and predicted plan performance data for a plan in selected speed/Mach target, and at fixed Mach or a fixed Calibrated Air Speed (CAS). The speed is either a Mach or a CAS.

SPD TYPE	Fixed Speed >
MACH / SPD kt	0.8

1.2.6.3. LRC Speed

The user selects the Long Range Cruise (LRC) Speed plan type to obtain current and predicted plan performance data for a plan at LRC speed. The LRC speed is defined as the Mach value for which the Specific Range (SR) is equal to 99 % of the maximum SR.

SPD TYPE	LRC Speed >
----------	-------------

1.2.7. Fuel Factor

The Fuel Factor corresponds to the Monitored Fuel Factor set by the Administrator for each tail number.

The change of the Fuel Factor should be done by the flight crew only if the value is not up to date. The flight crew may only increase the Fuel Factor.

***Note:** The Fuel Factor is available only if the “PERF FACTOR ENTRY BY THE CREW” option is enabled in PA Admin > PREFERENCES > In Flight.*

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1.3. AIRCRAFT STATUS

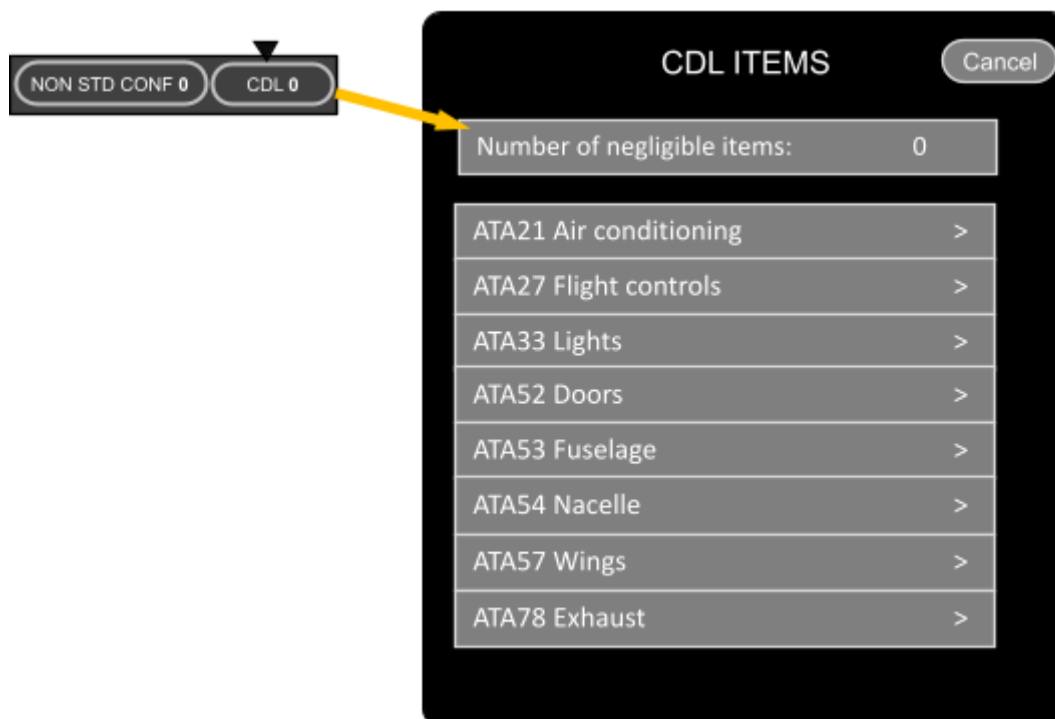
Two buttons can be used to set the AIRCRAFT STATUS:

- NON STD CONF Items
- CDL Items.

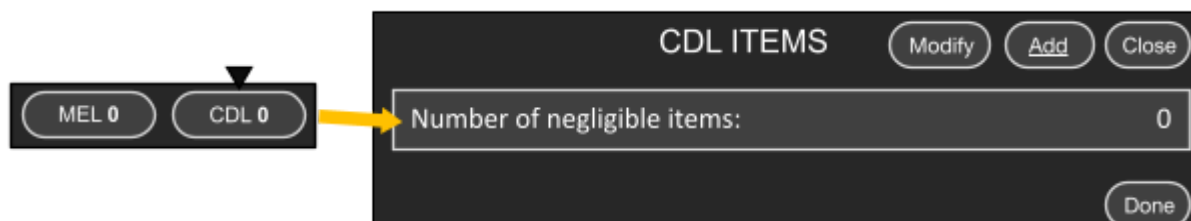
1.3.1. CDL Items

The CDL panel displays the list of missing structural parts that affect in-flight performance.

The CDL Items panel displays on the top the number of negligible items. Depending on this number, penalties may be applied for the in-flight computation.



In the In-Flight application, the User selects first the number of negligible items by tapping on the CDL button:



By tapping on the “ADD” button of the CDL subpanel, the User opens the CDL items panel.

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The CDL items panel displays the list of structural parts that can be missing, and for which performance penalties have to be considered for the calculation of the in-flight performance.

The user selects a CDL item by first selecting the applicable system, and then the corresponding failure case.

The User validates the Item Number Missing by tapping on Done button in the virtual keypad, then on Done button.

The first screenshot shows the 'CDL ITEMS' panel with a list of systems: ATA21 Air conditioning, ATA27 Flight controls, ATA33 Lights, ATA52 Doors, ATA53 Fuselage, and ATA54 Nacelle. The second screenshot shows the 'ATA21 Air Conditioning' panel with options for ATA21-01 Ram air inlet flap and ATA21-03 Ram air outlet flap. The third screenshot shows the 'ATA 21-01 Ram air inlet flap' panel with a text input field for the number of missing items (currently 1) and a range of 0 to 99.

The user can display the selected CDL items by tapping on the CDL button.

The screenshot shows the 'CDL ITEMS' panel with a 'Close' button. It displays 'Number of negligible items: 0' and 'ATA 21-01 Ram air inlet flap (1MISSING)'. There is a 'Modify' button at the bottom right.

The User can modify the CDL items list by tapping on the Modify button. They can then tap on one selected CDL items in order to remove it. They can also tap on a not selected CDL item to add it to the current selection.

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CDL ITEMS

Cancel

Number of negligible items: 0

ATA21 Air conditioning (1 MISSING) >

ATA27 Flight controls >

ATA29 Hydraulic >

ATA32 Landing gear >

ATA52 Doors >

ATA53 Fuselage >

ATA57 Wings >

ATA78 Exhaust >



The user can delete CDL items by tapping on Delete.

CDL ITEMS

Delete

Add

Close

Number of negligible items: 0

ATA21-01 Ram air inlet valve (1MISSING)

Done

The user can then remove all the CDL items by tapping on the Delete all button, or they can tick the CDL to remove and click on the Delete button.

CDL ITEMS

Cancel

Number of negligible items: 0

☐ ATA21-01 Ram air inlet valve (1MISSING)

Delete all

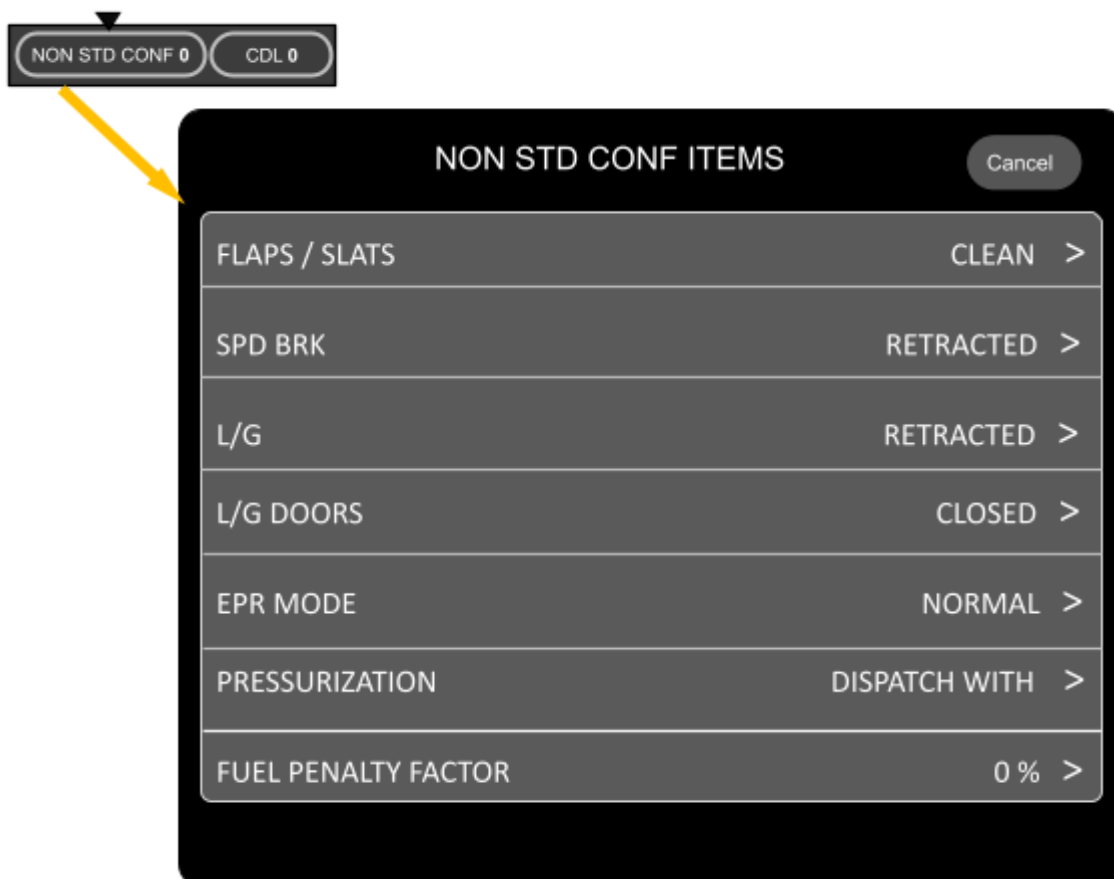
In order to add a new CDL item, the user must tap on the Add button in the CDL Items Summary subpanel.

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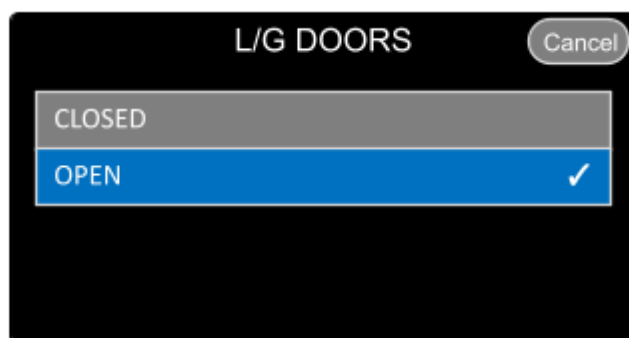
1.3.2. NON STD CONF Items

The NON STD CONF Items subpanel displays the non-standard configurations selected by the user. Click on the “NON STD CONF” button to open the NON STD CONF Items panel.

Note: The NON STD CONF list can vary accordingly with the aircraft type and model.



The user selects a NON STD CONF item by first selecting the applicable system, and then the corresponding failure case.



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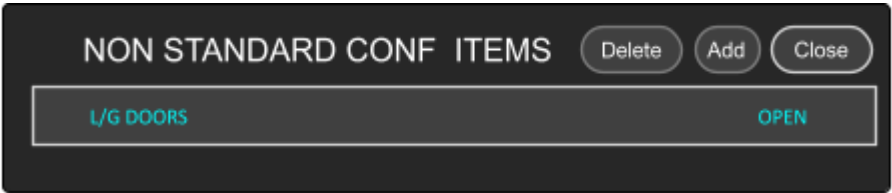
NON STD CONF ITEMS	
FLAPS / SLATS	CLEAN >
SPD BRK	RETRACTED >
L/G	RETRACTED >
L/G DOORS	OPEN >
EPR MODE	NORMAL >
PRESSURIZATION	DISPATCH WITH >
FUEL PENALTY FACTOR	0 % >

The user selects the desired item and clicks on “Done” to validate the choices.
The number of NSC items selected is updated on the NSC button. The user can display the selected NSC items by tapping on the NSC Button.

NON STD CONF ITEMS SUMMARY	
L/G DOORS	OPEN

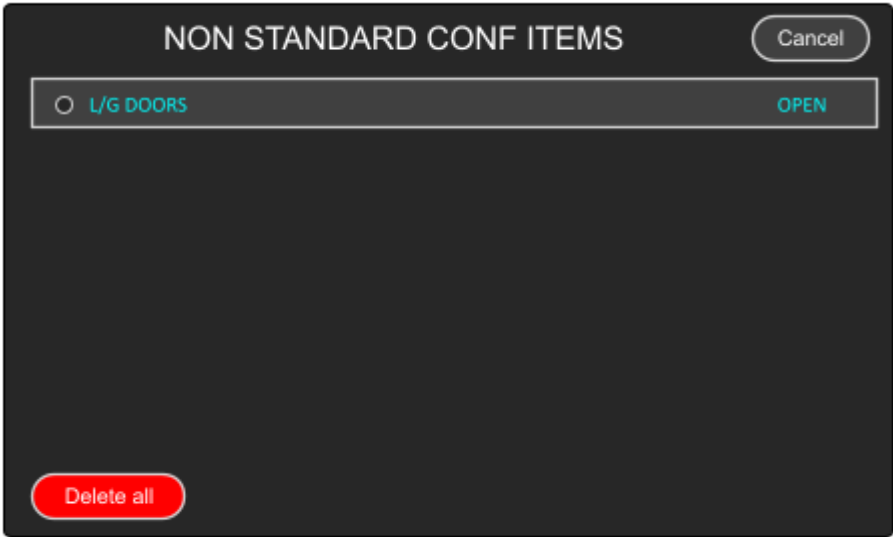
The user can add or remove NON STD CONF items by clicking on “Modify”, select or unselect the desired items as described previously, and then click on “Done” to validate the choices.

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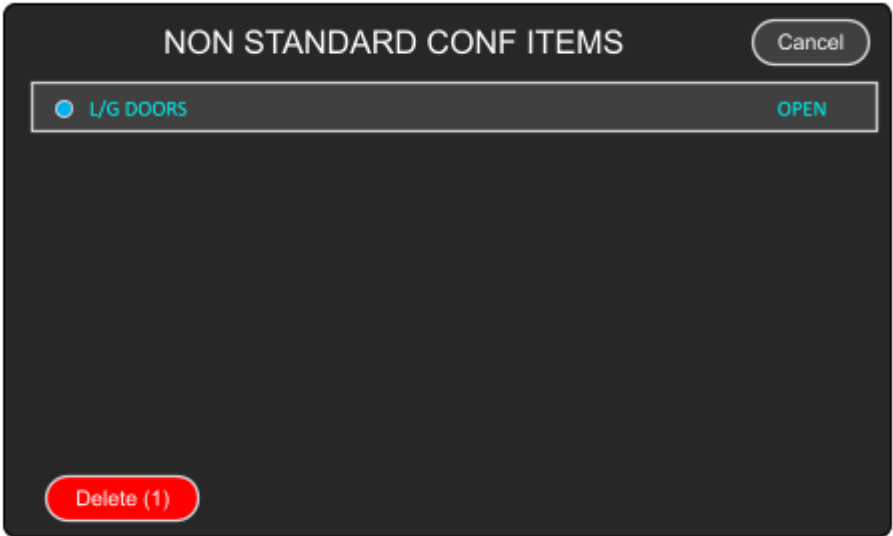


The user can add new NSC items by tapping on the Add button and perform the same process as explained here above.

The user can remove selected NSC items by tapping on Delete button.



The user can either tap on Delete all button to remove all selected NSC items, or tick the NSC items to remove and then tap on the Delete button.

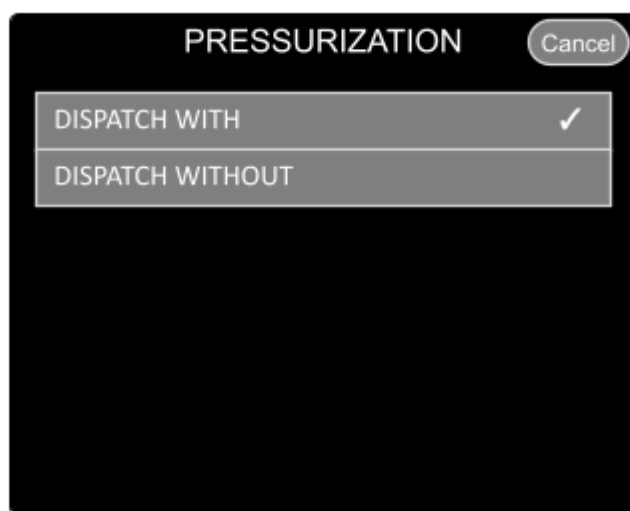


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When NON STD CONF items are selected by the User, the results are displayed in a specific manner, refer to the [NON STD CONF RESULTS](#) subchapter.

Note: A particular Non Standard Configuration item to consider is the “Pressurization”.

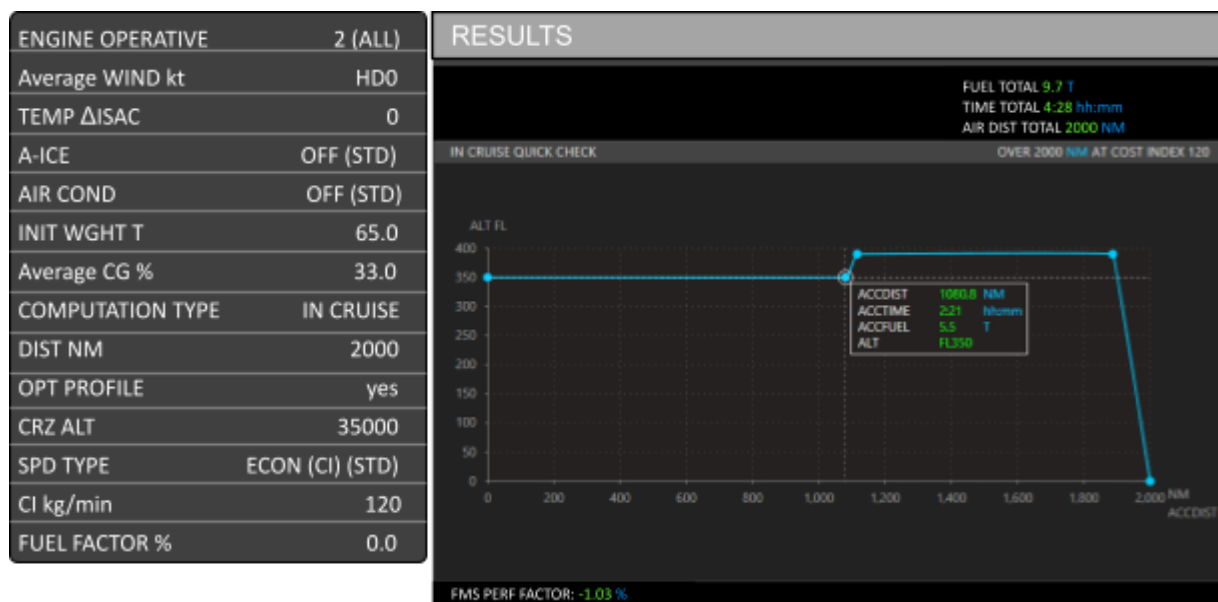
This item is available only if the “CABIN PRESSURIZATION > DISPATCH WITHOUT CAB PRESS” option is enabled in PA Admin > AIRCRAFT > A/C DETAILS > IN FLIGHT > NON-STANDARD CONFIGURATION.



- If “DISPATCH WITH” is selected (default value), all the In-Flight modules can be used normally
- If “DISPATCH WITHOUT” is selected, the cruise altitude “CRZ ALT” is limited to FL100, and the speed format needs to be entered in kt (no MACH number). In addition, CLB and DES OEI modules are greyed and cannot be used.

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2. RESULTS



The RESULTS panel provides the essential information for the flight planning.

Please note that the results take into account the fuel time and distance allowances for the taxi, takeoff, go around and landing phases.

The taxi and go around allowances shall be set in the Admin in accordance with the operational manuals.

The other allowances are automatically set in accordance with the inputs set by the user.

2.1. BASIC RESULTS

2.1.1. FUEL TOTAL

For IN CRUISE computation type, the FUEL field displays the fuel burnt from the start of the IN CRUISE calculation to:

- The destination airport, or
- A diversion airport, or
- The alternate airport (if the start of calculation is performed during the alternate cruise phase).

For FLIGHT PLAN computation type, the FUEL field displays the fuel burnt from the departure airport to the destination airport.

For ALTERNATE computation type, the FUEL field displays the fuel burnt from the destination airport to the alternate airport.

2.1.2. TIME TOTAL

For IN CRUISE computation type, the TIME field displays the time elapsed from the start of the IN CRUISE calculation to:

- The destination airport, or
- A diversion airport, or
- The alternate airport (if the start of calculation is performed during the alternate cruise phase).

For FLIGHT PLAN computation type, the TIME field displays the time elapsed from the departure airport to the destination airport.

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For ALTERNATE computation type, the TIME field displays the time elapsed from the destination airport to the alternate airport.

2.1.3. AIR DISTANCE TOTAL

For IN CRUISE computation type, the AIR DISTANCE field displays the air distance covered from the start of the IN CRUISE calculation to:

- The destination airport, or
- A diversion airport, or
- The alternate airport (if the start of calculation is performed during the alternate cruise phase).

For FLIGHT PLAN computation type, the AIR DISTANCE field displays the air distance covered from the departure airport to the destination airport.

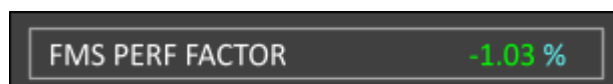
For ALTERNATE computation type, the AIR DISTANCE field displays the air distance covered from the destination airport to the alternate airport.

2.1.4. FMS PERF FACTOR

The FMS PERF FACTOR is computed as follow:

FMS PERF FACTOR = Monitored Fuel Factor + Basic Performance Factor - (AdminFLHV-18400)*100/18400.

AdminFLHV is the FLHV input of the Administrator from the PREFERENCES/In Flight panel.



2.1.5. NON STD CONF RESULTS

When some NON STD CONF items are selected (FLAPS/SLATS, L/G or EPR mode), the basic results displayed are different:

- FUEL WITH NON STD CONF (equivalent to *FUEL TOTAL* taking into account the Non Std Conf selected)
- TIME WITH NON STD CONF (equivalent to *TIME TOTAL* taking into account the Non Std Conf selected)
- AIR DIST WITH NON STD CONF (equivalent to *AIR DISTANCE TOTAL* taking into account the Non Std Conf selected)
- TIME WITHOUT NON STD CONF (equivalent to *TIME TOTAL* estimated without taking into account the Non Standard Conf selected)
- TOTAL FUEL PENALTY FACTOR (fuel penalty factor due to the Non Standard Conf selected).

The FMS PERF FACTOR remains the same.

In addition, a red message *NON STD CONF ELECTED* appears at the bottom of the results page when any of NON STD CONF item was selected..

2.2. GRAPH RESULTS

A graphic displaying flight plan (altitude vs. distance) is also plotted in the results panel.



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Tip: Specific values can be read from the graph by selecting the dots of the curve.

2.2.1. ACCDIST

This line displays the distance covered from the start of the flight planning to each point of the curve.

2.2.2. ACCTIME

This line displays the flight time elapsed from start of the flight planning to each point of the curve.

2.2.3. ACCFUEL

This line displays the fuel burnt from the initial pressure altitude to each intermediate pressure altitude.

2.2.4. ALT

This line displays the current altitude for each intermediate point.



Note: The application will not display any results if the computed landing weight exceeds the maximum structural landing weight.

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CLIMB

1. INPUTS

1.1. CONDITIONS

ENG OPERATIVE	2 (ALL) >
WIND kt	HD0
TEMP ISAC	
A-ICE	Off (STD) >
AIR COND	OFF >
INIT WEIGHT T	77.0
CG %	37.0

The outside CONDITIONS subpanel enables to enter the following information:

1.1.1. Engines Operative (ENG OPERATIVE)

The number of engines operative determines the thrust available to perform each flight phase and therefore largely impacts the flight planning.

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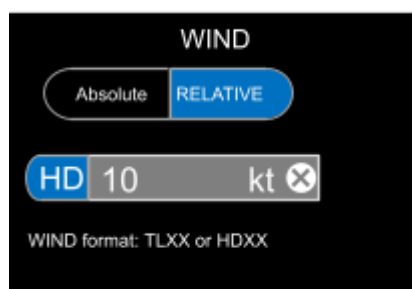
1.1.2. Wind

There are two ways of defining wind values:

1.1.2.1. Longitudinal Speed Component

It is possible to directly enter a longitudinal wind component. The User has to:

- Click on the Relative button
- Click on the header button to display either HD for Headwind or TL for Tailwind
- Enter the wind value in the field
- Click on Done button on the virtual keypad.



1.1.2.2. Direction/Speed Combination

The user can enter the wind speed and direction.

The user has to:

- Click on the Absolute button
- Enter the values in the field giving direction and wind speed
- Click on the Done button on the virtual keypad.

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WIND

ABSOLUTE

RELATIVE

110/10

X

WIND format: XXX/XX

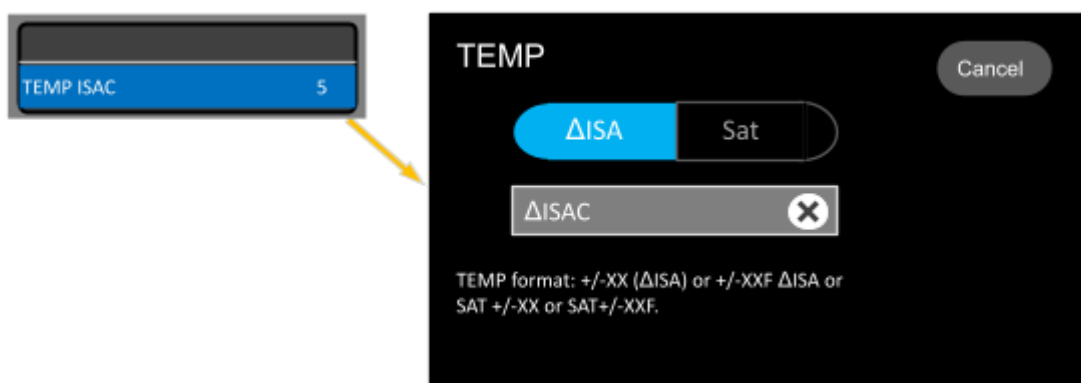
To calculate the longitudinal component, the user has to enter the aircraft heading.
The heading field (HDG) appears below the Wind field.

HDG °

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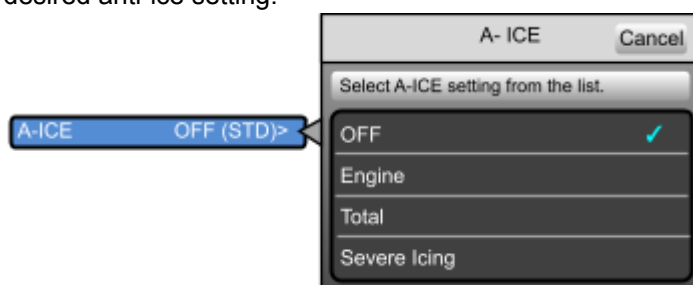
1.1.3. Temperature (TEMP)

The user enters the forecasted ISA deviation (Δ ISA) for the Plan phase. A button allows user to enter Static Air Temperature (SAT) instead.



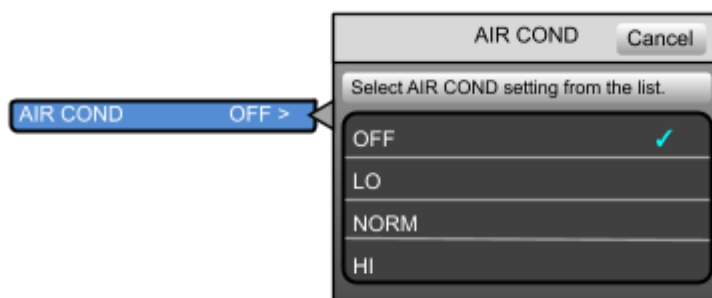
1.1.4. Anti-Ice (A-ICE)

The user selects the desired anti-ice setting:



1.1.5. Airflow (AIR COND)

The user has to enter the desired Air conditioning setting. This setting depends on the aircraft.



1.1.6. Initial Weight (INIT WEIGHT)

The user enters the current aircraft weight at the beginning of the Climb phase.

1.1.7. Center of Gravity (CG)

The user enters the Center of Gravity position at the beginning of the Climb phase. The unit depends on administrator settings.

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1.2. CLIMB DATA

INIT ALT ft	1500
TRGT ALT ft	
CLB TYPE	OPEN (CI) (STD) >
Cost Index	120
SPEED LIMITATION	250 kt/10000 ft
THRUST	CL
FUEL FACTOR %	0.0
BUFFET MARGIN g	1.3

The CLIMB DATA subpanel enables to enter the following information:

1.2.1. Initial Altitude (INIT ALT)

The initial altitude is the pressure altitude at which the computation of an initial climb or step climb begins. The user can enter initial altitude in ft or in FL. If the user enters a value from 1 to 430, FlySmart+ considers it as a FL. Above 430 FlySmart+ considers it as a QNH altitude.

1.2.2. Target Altitude (TRGT ALT)

The target altitude is the pressure altitude at which the computation should stop. If the target altitude is above the climb ceiling for the defined conditions, the computation stops at the climb ceiling.

The user can enter target altitude in ft or in FL. If the user enters a value from 1 to 430, FlySmart+ considers it as a FL. Above 430 FlySmart+ considers it as a QNH altitude.

1.2.3. Schedule

The CLIMB SCHEDULE includes the following information:

- Climb type
- Specific information on the climb speed schedule
- Thrust
- Fuel factor
- Buffet margin.

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The climb types are the following:

1.2.3.1. Open (CI)

Without constraint:

The user enters the Cost Index (CI) value used to manage the flight. The cost index value depends on the Airline policy.

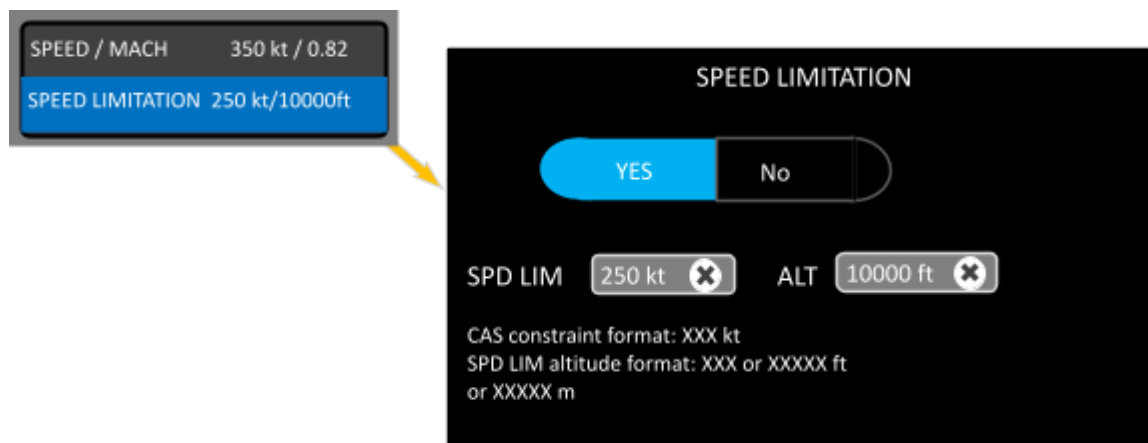
In the speed limitation section, the user clicks No.



With constraint:

The user enters the Cost Index (CI) value used to manage the flight. The cost index value depends on the Airline policy.

In the speed limitation section, the user clicks YES, then they enter a climb speed and a constraint altitude.

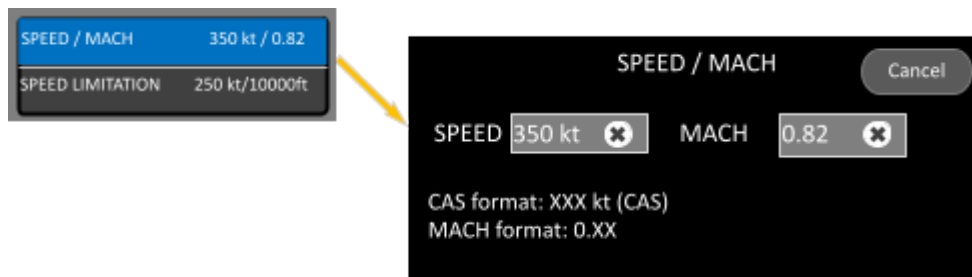


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1.2.3.2. Selected Speeds

The user selects the *Selected Speeds* climb type to calculate climb performance for a climb in selected speed/Mach target, with a given fixed speed schedule. A climb in selected speed/Mach target is generally operated using a speed profile divided into three phases (SPD1/SPD2/M1).

The user defines the speed profile in the Speed Profile subpanel:



1.2.3.3. Green Dot Speed

Climb is computed with green dot speed.

When at least one engine is inoperative, only Green Dot Speed is available for CLB TYPE and is automatically selected.

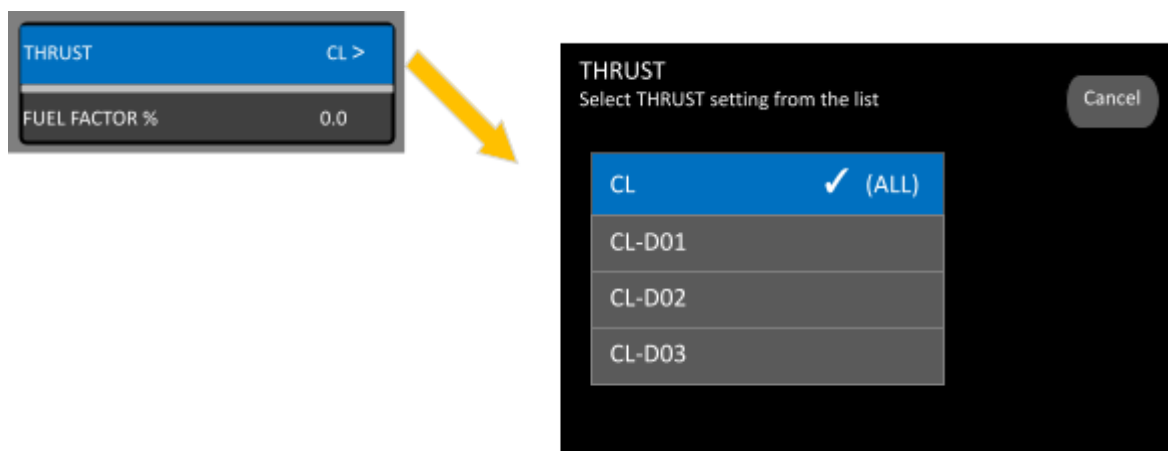
Note: Depending on the NSC and engine operative selection, some CLB TYPE are not available for selection any more

1.2.4. Thrust Lever Position (THRUST)

The user selects the thrust setting for the Climb phase: Max Climb (CL), Derate Climb (CL-D0x) and Max Continuous (MCT).

CL-D0x is only available if the aircraft is fitted with the Derated Climb option and provided the administrator has authorized the use of Derated Climb.

Auto-derate is only available if the aircraft is fitted with the Auto-derate Climb option.



Note: In the case of an engine failure, the rating "Maximum Continuous Thrust" is mandatory and is automatically selected. The user cannot select MCT with all engine operatives

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1.2.5. Fuel Factor (FUEL FACTOR)

The Fuel Factor corresponds to the Monitored Fuel Factor set by the Administrator for each tail number.

The change of the Fuel Factor should be done by the flight crew only if the value is not up to date. The flight crew may only increase the Fuel Factor.

1.2.6. Buffet Margin (BUFFET MARGIN)

The buffet margin is used to determine the buffet ceiling. The buffet margin is set by the Administrator for each tail number, and cannot be modified by the user.

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1.3. AIRCRAFT STATUS

Refer to chapter AIRCRAFT STATUS of the PLAN part.

Note: The “Pressurization” and “SPD BRK” Non Standard Configuration items are not available in the “Climb” module.

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2. RESULTS

Results are displayed on a graph. The user can plot climb parameters versus distance or time using the list button on the bottom right of the graphic.

Note: When ALT is plotted against DIST, three fixed gradients are displayed (3%, 5% and 7.5 %). These fixed gradients are also displayed when GRDT is plotted against any parameter.

Note: When ALT is plotted against TIME, three fixed ROCs (Rate Of Climb) are displayed (1000ft/min, 1500ft/min and 2000ft/min). These ROCs are also displayed when RATE is plotted against any parameter.

Examples of graphics plotted versus distance and time are given here after:

ENGINE OPERATIVE	4 (ALL)
WIND kt	HD10
TEMP ΔISAC	SAT16
A-ICE	OFF (STD)
AIR COND	NORM
INIT WGHT T	368.0
CG %	37.0
INIT ALT ft	1500
TRGT ALT ft	30000
CLB TYPE	OPEN (CI) (STD)
Cost Index kg/min	120
SPEED LIMITATION	250 kt / 10000ft
THRUST	CL (STD)
FUEL FACTOR %	0.0
BUFFET MARGIN g	1.3



Tip: Specific values can be read from the graph by selecting the dots of the curve.

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2.1.1. REC MAX ALTITUDE

Recommended Maximum Altitude is only computed for the Open (CI) climb type.



2.1.2. CLIMB CEILING

The Climb Ceiling is calculated for the following climb types:

- Selected speeds
- Green dot speed.

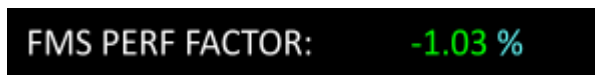


2.1.3. FMS PERF FACTOR

The FMS PERF FACTOR is computed as follows:

FMS PERF FACTOR = Monitored Fuel Factor + Basic Performance Factor - (AdminFLHV-18400)*100/18400.

AdminFLHV is the FLHV input of the Administrator from the PREFERENCES/In Flight panel.



2.1.4. FUEL

This line displays the fuel burnt from the initial pressure altitude to each intermediate pressure altitude.

2.1.5. ALTG

This line displays the altitude from the initial pressure altitude to the target pressure altitude (or the final pressure altitude limited by the minimum Rate of Climb (ROC) value) with a step of 5 000 ft.

2.1.6. CAS

This line displays the instantaneous Computed Air Speed (CAS) at each intermediate pressure altitude.

2.1.7. MACH

This line displays the instantaneous MACH number at each intermediate pressure altitude.

2.1.8. RATE

This line displays the instantaneous Rate of climb at each intermediate pressure altitude.

2.1.9. Engine Setting (N1 or EPR or THR. depending on the engine)

This line displays the engine setting during the Climb phase.

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CRUISE

3. INPUTS

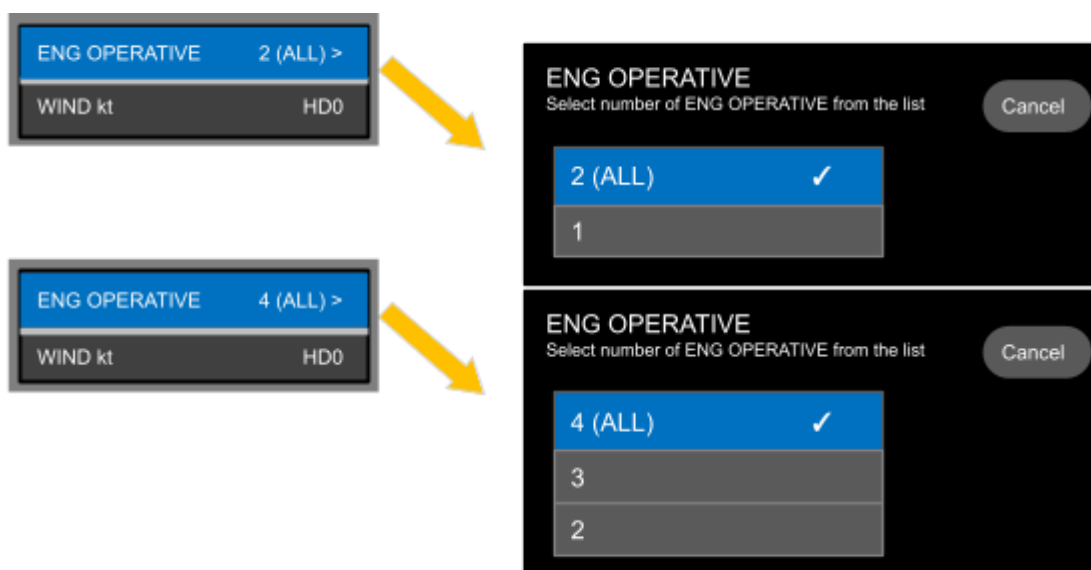
3.1. CONDITIONS

ENG OPERATIVE	2 (ALL) >
WIND kt	HD0
TEMP ΔISAC	
A-ICE	OFF (STD) >
AIR COND	OFF >
GROSS WEIGHT T	77.0
CG %	37.0

The outside *CONDITIONS* subpanel enables to enter the following information:

3.1.1. Engines Operative (ENG OPERATIVE)

The number of engines operative determines the thrust available to perform each flight phase and therefore largely impacts the flight planning.



ENG OPERATIVE 2 (ALL) >

WIND kt HD0

➔

ENG OPERATIVE

Select number of ENG OPERATIVE from the list

Cancel

2 (ALL) ✓

1

ENG OPERATIVE 4 (ALL) >

WIND kt HD0

➔

ENG OPERATIVE

Select number of ENG OPERATIVE from the list

Cancel

4 (ALL) ✓

3

2

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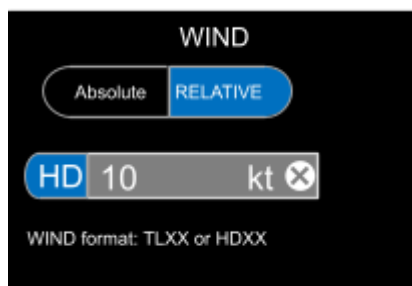
3.1.2. Wind

There are two ways of defining wind values:

3.1.2.1. Longitudinal Speed Component

It is possible to directly enter a longitudinal wind component. The user has to:

- Click on the *Relative* button
- Click on the blue header to display either HD for Headwind or TL for Tailwind
- Enter the wind value in the field
- Click on Done button on the virtual keypad.

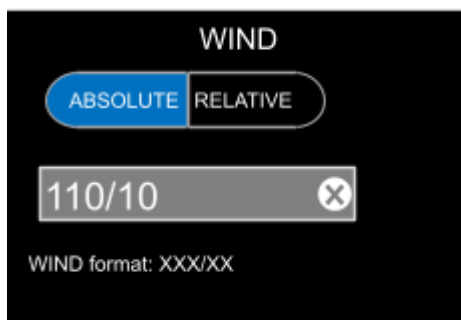


3.1.2.2. Direction/Speed Combination

The user can enter the wind speed and direction.

The user has to:

- Click on the *Absolute* button
- Enter the values in the two fields giving direction and wind speed
- Click on the Done button on the virtual keypad.



To calculate the longitudinal component, the user has to enter the aircraft heading.

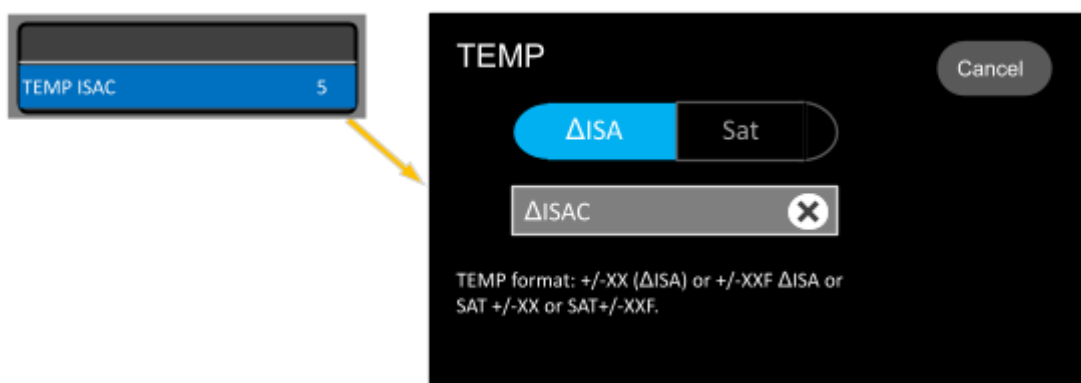
The field heading (HDG) appears below the Wind field.



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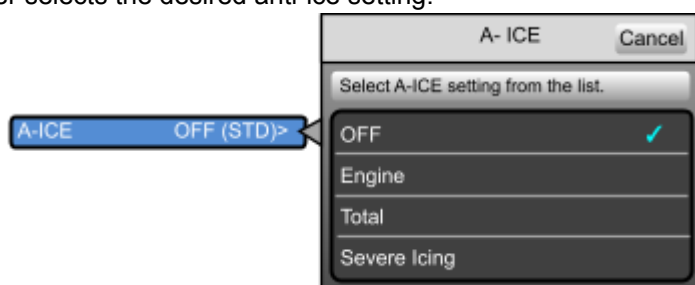
3.1.3. Temperature (TEMP)

The user enters the forecasted ISA deviation (Δ ISA) for the Plan phase. A button allows user to enter Static Air Temperature (SAT) instead.



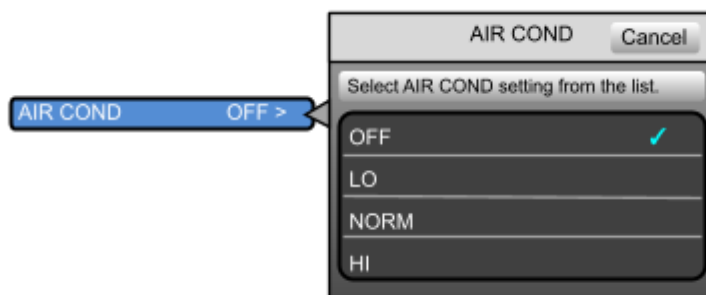
3.1.4. Anti-Ice (A-ICE)

The user selects the desired anti-ice setting:



3.1.5. Airflow (AIR COND)

The user has to enter the desired Air conditioning setting. This setting depends on the aircraft.



3.1.6. Gross Weight (GROSS WGHT)

The user enters the current aircraft weight at the beginning of the Cruise phase.

3.1.7. Center of Gravity (CG)

The user enters the Center of Gravity position at the beginning of the Cruise phase. The unit depends on the administrator settings.

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3.2. CRUISE DATA

CRZ ALT ft	30000
SPD TYPE	ECON (CI) (STD) >
CI kg/min	120
THRUST	CL (A/THR) (STD)
FUEL FACTOR %	0.0
BUFFET MARGIN g	1.3

The *CRUISE DATA* subpanel enables to enter the following information:

3.2.1. Cruise Altitude (CRZ ALT)

The user enters the cruise altitude. The user can enter cruise altitude in ft or in FL. If the user enters a value from 1 to 430, FlySmart+ considers it as a FL. Above 430 FlySmart+ considers it as a QNH altitude.

3.2.2. Speed Type (SPD TYPE)

The user defines the cruise type. The following cruise types are available:

3.2.2.1. ECON (CI)

The user selects the ECON (CI) cruise type (not available with OEI) to obtain current and predicted cruise performance data for a cruise at ECON (CI).

In the second field, the user enters the Cost Index (CI) value used to manage the flight. The cost index value depends on the Airline policy.

SPD TYPE	ECON (CI) (STD) >
CI kg/min	120

3.2.2.2. Fixed Speed

The user selects the Fixed Speed cruise type to obtain current and predicted cruise performance data for a cruise in selected speed/Mach target and at fixed Mach or a fixed Calibrated Air Speed (CAS).

In the second field, the user enters the speed. The speed is either a Mach or a CAS.

SPD TYPE	Fixed Speed >
MACH / SPD kt	0.8

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3.2.2.3. LRC Speed

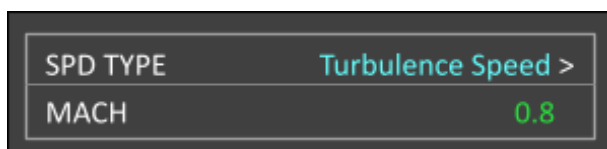
The user selects the Long Range Cruise (LRC) Speed cruise type to obtain current and predicted cruise performance data for a cruise at LRC speed. The LRC speed is defined as the Mach for which the Specific Range (SR) is equal 99 % of the maximum SR.



3.2.2.4. Turbulence Speed

The user selects the Turbulence Speed cruise type (not available with OEI) to obtain current and predicted cruise performance data for a cruise operated through turbulence areas. Turbulence speeds are recommended when the aircraft flies in a turbulent atmosphere. The Mach number and the Buffet margin are defined by the Administrator and cannot be changed.

Note that the turbulence speed cruise type shall only be used for the high altitude, meaning the altitude over the cross-over altitude.



3.2.3. Thrust Lever Position (THRUST)

The thrust available to perform the cruise depends on the selected cruise thrust. The thrust is automatically selected, depending on the number of engines operative:

- CL (A/THR), with AEO
- MCT (A/THR), with OEI or TEI.

***Note:** In the case of an engine failure, the thrust rating "Maximum Continuous Thrust" is mandatory.*

3.2.4. Fuel Factor (FUEL FACTOR)

The Fuel Factor corresponds to the Monitored Fuel Factor set by the Administrator for each tail number.

The change of the Fuel Factor should be done by the flight crew only if the value is not up to date. The flight crew may only increase the Fuel Factor.

3.2.5. Buffet Margin (BUFFET MARGIN)

The buffet margin is used to determine the buffet ceiling. The buffet margin is set by the Administrator for each tail number, and cannot be modified by the user.

3.3. AIRCRAFT STATUS

Refer to chapter AIRCRAFT STATUS of the PLAN part.

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4. RESULTS

4.1. BASIC RESULTS

The basic *RESULTS* panel provides the essential information for the cruise via three tabs.

4.1.1. FUEL

ENGINE OPERATIVE	4 (ALL)
WIND kt	(150/10) HD10
HDG °	SAT16
TEMP ΔISAC	10
A-ICE	Off (STD)
AIR COND	NORM
GROSS WGHT T	300.0
CG %	37.0
CRZ ALT ft	30000
SPD TYPE	ECON (CI) (STD)
CI kg/min	120
THRUST	CL (STD)
FUEL FACTOR %	0.0
BUFFET MARGIN g	1.3

ECON CRUISE: COST INDEX 120 FL 300

Fuel	
ALL ENG FF	9746 kg/HR
FF / ENG	2436 kg/hr/ENG
EPR	0.984
FMS PERF FACTOR	-1.03 %

Speed	
MACH	0.828
CAS	316 kt

Alt	
REC MAX ALT	FL 382 (M 0.823)
OPTIMUM ALT	FL 371 (M 0.824)

4.1.1.1. ALL ENG FF

The *FUEL* subpanel displays the total Fuel Flow (FF) in current conditions. The FF is defined as the fuel consumption per time unit.

4.1.1.2. FF / ENG

The *FUEL* subpanel displays the FF per engine in current conditions.

4.1.1.3. Engine Thrust (N1 or EPR or THR, depending on the engine)

The thrust subpanel displays the engine thrust parameter in current conditions.

4.1.1.4. FMS PERF FACTOR

The FMS PERF FACTOR is computed as follows:

FMS PERF FACTOR = Monitored Fuel Factor + Basic Performance Factor - (AdminFLHV-18400)*100/18400.

AdminFLHV is the FLHV input of the Administrator from the PREFERENCES/In Flight panel.

FMS PERF FACTOR	-1.03 %
-----------------	----------------

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4.1.2. Altitude (Alt)

4.1.2.1. Recommended Maximum Altitude (REC MAX ALT)



Recommended maximum altitude is only computed for the ECON (CI) cruise type.

4.1.2.2. Maximum Altitude (MAX ALT)



The Maximum Altitude (MAX ALT) definition depends on the cruise type.

For LRC SPEED and GREEN DOT SPEED types, MAX ALT is equal to MAX CRZ ALT.

4.1.2.3. Optimum Altitude (OPTIMUM ALT)

The optimum altitude definition depends on the cruise type.

For ECON (CI) type, the optimum altitude is defined as the altitude for which the cost function is minimum.

For FIXED SPEED, LRC SPEED and TURBULENCE SPEED types, the optimum altitude is defined as the altitude for which the specific range (SR) is maximum.

4.1.3. SPEED

4.1.3.1. MACH

The *SPEED* subpanel displays the Mach number for current conditions. The Mach number is defined as the ratio between TAS and the speed of sound.

4.1.3.2. CAS

The *SPEED* subpanel displays the Calibrated Air Speed (CAS) for current conditions. The CAS is the speed resulting from the difference between the measured pressures (total and static).

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4.2. GRAPH RESULTS

A graph displays the Ground Specific Range equivalence (when the speed type is set to *Fixed Speed*, *LRC Speed* or *Turbulence Speed*), or the Fuel Cost equivalence (when the speed type is set to *ECON (Cost Index)*), depending on:

- Flight Level
- Wind.

Example of Ground Specific Range equivalence:

ENGINE OPERATIVE	4 (ALL)
WIND kt	(150/10) HD10
HDG °	160
TEMP ΔISAC	10
A-ICE	Off (STD)
AIR COND	NORM
GROSS WGHT T	300.0
CG %	37.0
CRZ ALT ft	30000
SPD TYPE	Fixed Speed
MACH / SPD	0.83
THRUST	CL (A/THR) (STD)
FUEL FACTOR %	0.0
BUFFET MARGIN g	1.3



Example of Fuel Cost equivalence:

ENGINE OPERATIVE	4 (ALL)
WIND kt	(150/10) HD10
HDG °	160
TEMP ΔISAC	10
A-ICE	Off (STD)
AIR COND	NORM
GROSS WGHT T	300.0
CG %	37.0
CRZ ALT ft	30000
SPD TYPE	ECON (CI) (STD)
CI kg/min	120
THRUST	CL (A/THR) (STD)
FUEL FACTOR %	0.0
BUFFET MARGIN g	1.3



Tip: Specific values can be read from the graph by selecting the dots of the curve.

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4.2.1. ALT

This line displays the altitude of the current step.

4.2.2. WIND

This line displays the relative wind for the current step.

4.2.3. SR

This line displays the Specific Range of the current step (only for computation with Cost Index speed type).

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DESCENT ONE ENGINE INOPERATIVE

1. INPUTS

1.1. CONDITIONS

ENG OPERATIVE	2 (ALL) >
WIND kt	HD0
TEMP ΔISAC	
A-ICE	OFF (STD) >
AIR COND	OFF >
INIT WEIGHT T	77.0
CG %	37.0

The outside *CONDITIONS* subpanel enables to enter the following information:

1.1.1. Engines Operative (ENG OPERATIVE)

The number of engines operative determines the thrust available to perform each flight phase and therefore largely impacts the flight planning.

ENG OPERATIVE	1 >
WIND kt	HD0



ENG OPERATIVE

Select number of ENG OPERATIVE from the list

Cancel

1	✓
0	

At least one engine is considered inoperative for this computation.

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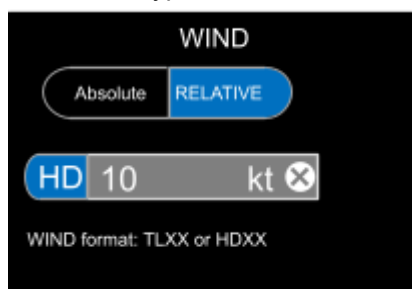
1.1.2. Wind

There are two ways of defining wind values:

1.1.2.1. Longitudinal Speed Component

It is possible to directly enter a longitudinal wind component. The user has to:

- Click on the *Relative* button
- Click on the blue header to display either HD for Headwind or TL for Tailwind
- Enter the wind value in the field
- Click on Done button on the virtual keypad.

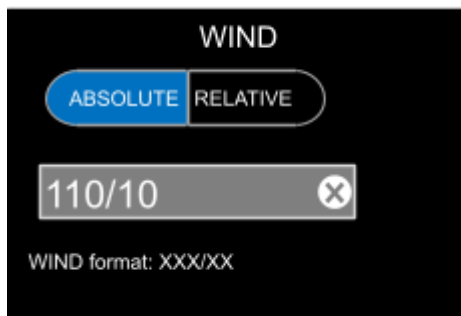


1.1.2.2. Direction/Speed Combination

The user can enter the wind speed and direction.

The user has to:

- Click on the *Absolute* button
- Enter the values in the two fields giving direction and wind speed
- Click on the Done button on the virtual keypad.



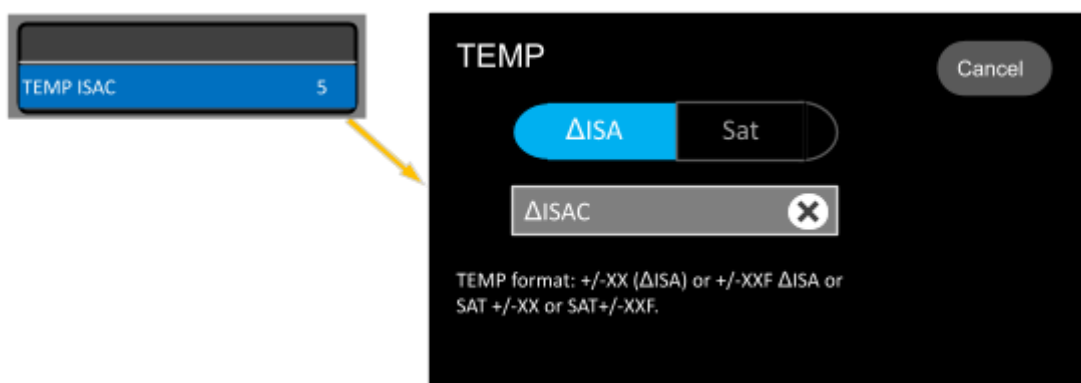
To calculate the longitudinal component, the user has to enter the aircraft heading. The field heading (HDG) appears below the Wind field.



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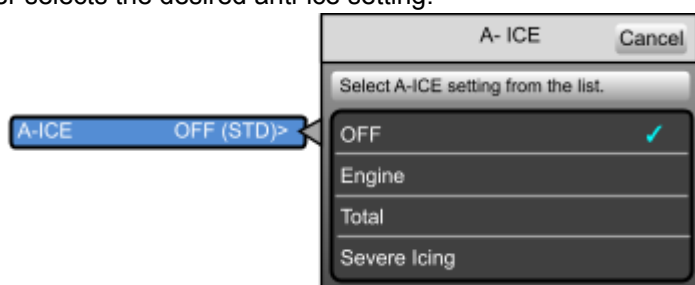
1.1.3. Temperature (TEMP)

The user enters the forecasted ISA deviation (Δ ISA) for the Plan phase. A button allows user to enter Static Air Temperature (SAT) instead.



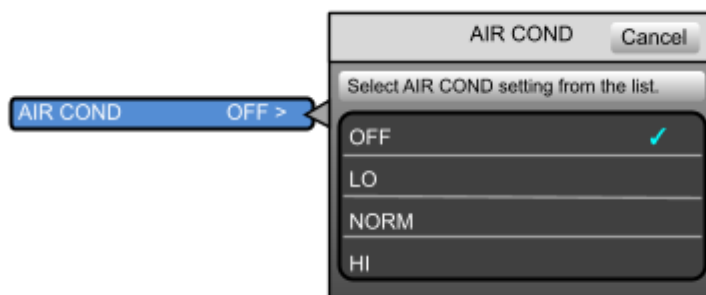
1.1.4. Anti-Ice (A-ICE)

The user selects the desired anti-ice setting:



1.1.5. Airflow (AIR COND)

The user has to enter the desired Air conditioning setting. This setting depends on the aircraft.



1.1.6. Initial Weight (INIT WEIGHT)

The user enters the current aircraft weight at the beginning of the Descent phase.

1.1.7. Center of Gravity (CG)

The user enters the Center of Gravity position at the beginning of the Descent phase. The unit depends on the administrator settings.

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1.2. DESCENT DATA

DES TYPE	OBSTACLE (STD) >
INIT ALT ft	35000
SPD TYPE	Green Dot >
SPD BRK	Retracted >
THRUST	MCT
FUEL FACTOR %	0.0

The *DESCENT DATA* panel includes the following information:

1.2.1. Descent Type Preset (DES TYPE)

With one or more engines inoperative, two descent types are available:

- OBSTACLE
- EO STANDARD.

1.2.2. Initial Altitude (INIT ALT)

The initial altitude is the pressure altitude at which the computation of the descent begins. The initial altitude must be in the flight envelope to run the calculation.

The user can enter initial altitude in ft or in FL. If the user enters a value from 1 to 430, FlySmart+ considers it as a FL. Above 430 FlySmart+ considers it as a QNH altitude.

1.2.3. Speed Type (SPD TYPE)

The user uses the speed type (*SPD TYPE*) drop-down list to define the speed profile type according to the selected descent type.

If the user selects *OBSTACLE* as descent type, the following speed types are available:

- Green Dot
- Fixed Speed.

If the user selects *EO STANDARD* as descent type, the speed type is automatically Fixed Speed.

1.2.4. Speed Brakes (SPD BRK)

The speed brakes may be used in order to increase the Rate of Descent (ROD). They are especially used in the case of an emergency descent.

The user uses the *SPD BRK* drop-down list to select the position of the speed brakes, which are:

- Retracted, or
- Extended.

By default, the speed brakes are “Retracted”. Speed brakes have to be set to “Extended” even for partial extension.

1.2.5. Thrust Lever Position (THRUST)

With at least one engine inoperative and whatever the number of remaining operative engines, thrust lever position is set to MCT.

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1.2.6. Fuel Factor (FUEL FACTOR)

The Fuel Factor corresponds to the Monitored Fuel Factor set by the Administrator for each tail number.

The change of the Fuel Factor should be done by the flight crew only if the value is not up to date. The flight crew may only increase the Fuel Factor.

1.3. AIRCRAFT STATUS

Refer to chapter AIRCRAFT STATUS of the PLAN part.

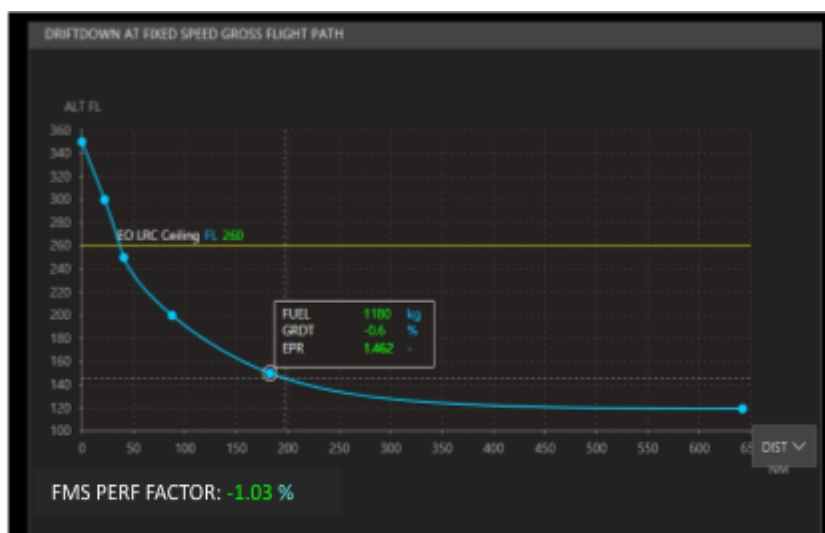
Note: The “Pressurization” and “FLAPS / SLATS” Non Standard Configuration items are not available in the “DES OEI” module. The “SPD BRK” item is part of the general input.

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2. RESULTS

The results are displayed on a graph. The user can plot descent parameters versus distance or time using the list button on the bottom right of the graphic.

ENGINE OPERATIVE	3
WIND kt	H00
TEMP ΔISAC	5
A-ICE	Off (STD)
AIR COND	OFF
INIT WGHT T	300.0
CG %	27.0
DES TYPE	OBSTACLE (STD)
INIT ALT ft	35000
SPD TYPE	Green Dot
SPD BRK	Extended
THRUST	MCT
FUEL FACTOR %	0.0



Tip: Specific values can be read from the graph by selecting the dots of the curve.

2.1.1. EO LRC Ceiling

The EO LRC Ceiling is the highest pressure altitude that can be flown in level flight with long range cruise speed and at least one engine inoperative. The EO LRC Ceiling is displayed on the results graphic.

2.1.2. FMS PERF FACTOR

The FMS PERF FACTOR is computed as follows:

FMS PERF FACTOR = Monitored Fuel Factor + Basic Performance Factor - (AdminFLHV-18400)*100/18400.

AdminFLHV is the FLHV input of the Administrator from the PREFERENCES/In Flight panel.

FMS PERF FACTOR	-1.03 %
-----------------	---------

2.1.3. FUEL

This line displays the fuel burnt from the initial pressure altitude to each intermediate pressure altitude.

2.1.4. GRADIENT (GRDT)

This line displays the instantaneous rate of descent at each intermediate pressure altitude.

2.1.5. Engine Power Ratio (EPR or N1 or THR, depending on the engine)

This line displays the instantaneous Engine Power Ratio at each intermediate pressure altitude.

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HOLDING

1. INPUTS

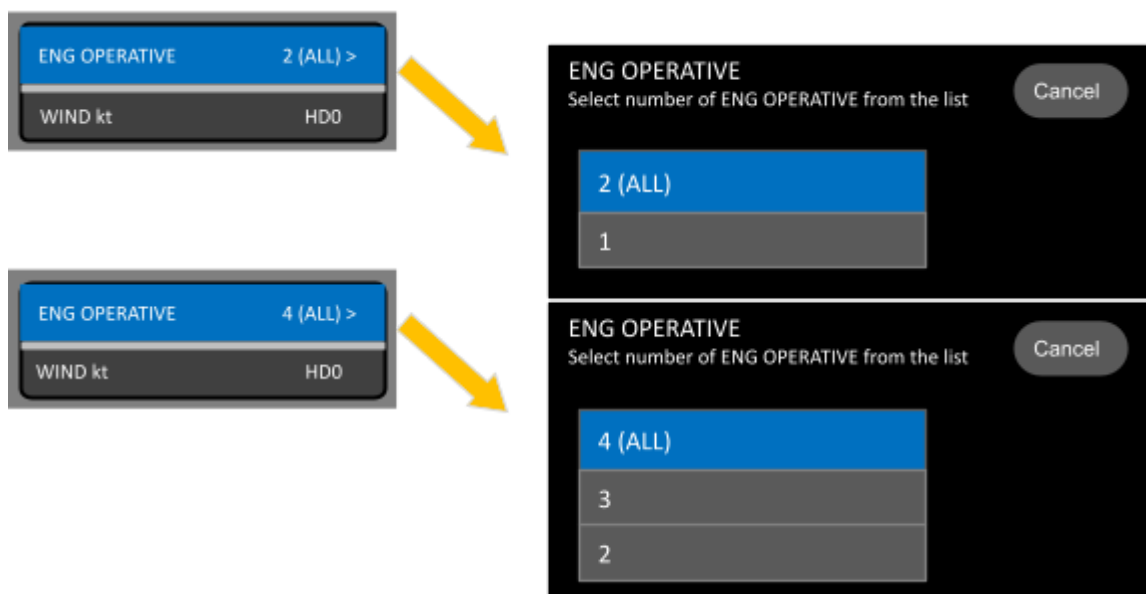
1.1. CONDITIONS

ENG OPERATIVE	2 (ALL) >
TEMP ΔISAC	
A-ICE	Off (STD) >
AIR COND	OFF >
GROSS WEIGHT T	77.0
CG %	37.0

The outside *CONDITIONS* subpanel enables to enter the following information:

1.1.1. Engines Operative (ENG OPERATIVE)

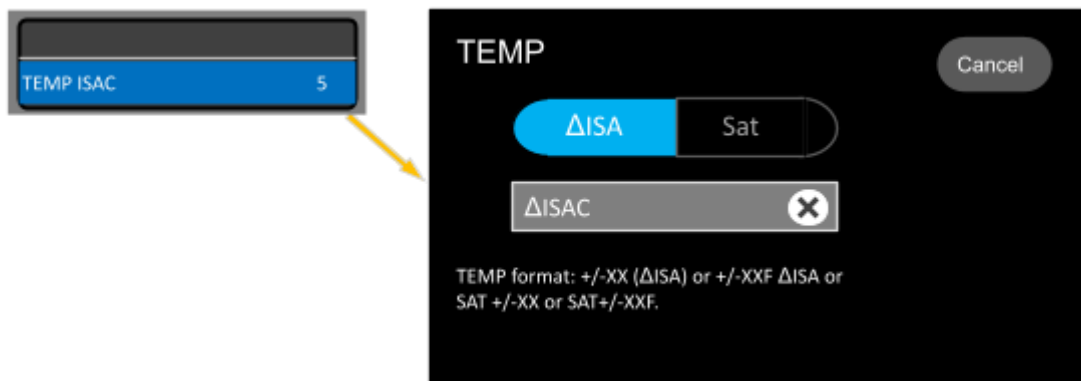
The number of engines operative determines the thrust available to perform each flight phase and therefore largely impacts the flight planning.



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		Windows L7.6 / iPad V5.6 – PPM Issue 1

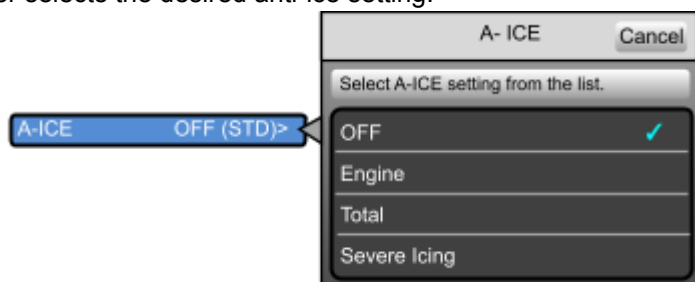
1.1.2. Temperature (TEMP)

The user enters the forecasted ISA deviation (Δ ISA) for the Holding phase. A button allows user to enter Static Air Temperature (SAT) instead.



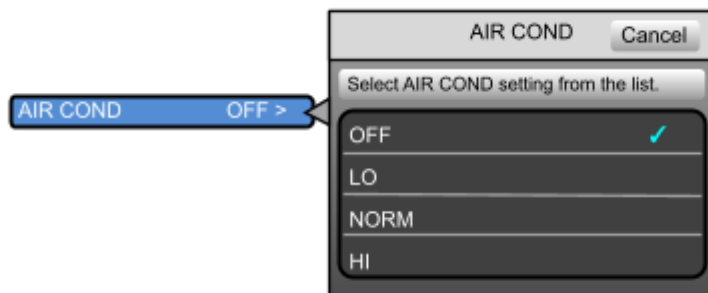
1.1.3. Anti-Ice (A-ICE)

The user selects the desired anti-ice setting:



1.1.4. Airflow (AIR COND)

The user has to enter the desired Air conditioning setting. This setting depends on the aircraft.



1.1.5. Gross Weight (GROSS WGHT)

The user enters the current aircraft weight at the beginning of the Holding phase.

1.1.6. Center of Gravity (CG)

The user enters the Center of Gravity position at the beginning of the Holding phase. The unit depends on the administrator settings.

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1.2. HOLDING DATA

ALT ft	1500
COMPUTATION TYPE	FUEL
HOLDING TIME min	
SPD TYPE	GD Speed (STD)

The *HOLDING DATA* subpanel enables to enter the following information:

1.2.1. Altitude (ALT)

The user enters the holding pressure altitude.

The user can enter holding altitude in ft or in FL. If the user enters a value from 1 to 430, FlySmart+ considers it as a FL. Above 430 FlySmart+ considers it as a QNH altitude.

1.2.2. COMPUTATION TYPE

Only *FUEL* computation is possible, to assess holding fuel for a given holding time.

1.2.3. HOLDING TIME

The user enters the holding duration.

1.2.4. Speed type (SPD TYPE)

The user can select the following speed types:

1.2.4.1. Green Dot Speed (GD Speed)

The user selects the *GD Speed* type to calculate holding performance in selected Speed/Mach target.

1.2.4.2. S Speed

The user selects the *S Speed* type to calculate holding performance for a holding, at *S Speed* and in CONF 1.

1.3. AIRCRAFT STATUS

Refer to chapter AIRCRAFT STATUS of the PLAN part.

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2. RESULTS

HOLDING TIME 20 min	
RACE TRACK AT GREEN DOT SPEED + 10.0 kt IN CONF CLEAN	
FUEL	WEIGHT
FUEL 890 kg	FINAL WEIGHT 76.11 T
AVERAGE FF 2680 kg/HR	
FF / ENG 1340 kg/HR/Engine	
EPR 1.036 -	
FMS PERF FACTOR 1.97 %	

2.1. HOLDING TIME

The *RESULTS* panel displays the holding time, that corresponds to the holding time entered by the user.

2.2. Holding speed

If the administrator adds a speed increment on Green Dot Speed for holding, this speed increment is indicated.

2.3. FUEL

The *RESULTS* panel displays the estimated fuel used, which corresponds to the fuel burnt during the given holding time.

2.4. Average Fuel Flow

The average Fuel Flow (FF) is defined as the fuel consumption per time unit.

The *RESULTS* panel displays:

- The average total FF during the holding phase (Average FF)
- The average FF per engine during the holding phase (FF / ENG).

2.5. Engine Setting (N1 or EPR or THR, depending on the engine)

The *RESULTS* panel displays the engine setting during the holding phase.

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2.6. FMS PERF FACTOR

The FMS PERF FACTOR is computed as follow:

$$\text{FMS PERF FACTOR} = \text{Monitored Fuel Factor} + \text{Basic Performance Factor} - (\text{AdminFLHV} - 18400) * 100 / 18400.$$

AdminFLHV is the FLHV input of the Administrator from the PREFERENCES/In Flight panel.

2.7. FINAL WGHT

The *RESULTS* panel displays the final gross weight at the end of the holding phase.

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ATMO

The ATMO module enables:

- To convert speeds (Mach, IAS, CI, LRC), altitudes (True ALT)
- To compute atmospheric data such as pressure, density ratio, speed of sound, SAT, TAT
- To compute low altitude temperature corrections.

1. INPUTS

1.1. CONDITIONS

WIND kt	(150/10) TL9
CRS °	0
TEMP ΔISAC	
INIT WEIGHT T	70.0

The CONDITIONS panel provides the following information:

1.1.1. Wind

Only for SPEED computation type

There are two ways of defining wind values:

1.1.1.1. Longitudinal Speed Component

It is possible to directly enter a longitudinal wind component. The User has to:

- Click on the *Relative* button,
- Click on the blue header to display either HD for Headwind or TL for Tailwind
- Enter the wind value in the field
- Click on Done button on the virtual keypad.

WIND

Absolute
RELATIVE

HD 10 kt

WIND format: TLXX or HDXX

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1.1.1.2. Direction/Speed Combination

The user can enter the wind speed and direction.

The user has to:

- Click on the *Absolute* button
- Enter the values in the two fields giving direction and wind speed
- Click on the Done button on the virtual keypad.

To calculate the longitudinal component, the user has to enter the aircraft heading. The field Cruise heading (CRS °) appears below the Wind field.

1.1.2. Temperature (TEMP)

The user enters the forecasted ISA deviation (Δ ISAC) for the Plan phase. A button allows user to enter Static Air Temperature (SAT) instead.

1.1.3. Initial weight (INIT WEIGHT)

Only for SPEED computation type.

The user enters the current aircraft weight.

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1.2. SPECIFIC DATA

COMPUTATION TYPE	SPEED >
SPD TYPE	MACH >
MACH	
INDICATED ALT ft	30000
ARPT ELEVN ft	497

The SPECIFIC DATA panel includes the following information:

1.2.1. Computation Type

The user uses *COMPUTATION TYPE* drop-down list to select:

- The option ALT, or
- The option SPEED.

1.2.2. Alt Type

If the user selected ALT for the cruise type, the following alt types are available:

1.2.2.1. True Altitude (TRUE ALT)

The computation is done with only altitude indication.

1.2.2.2. Low Altitude with Temperature Correction (LO ALT TEMP CORR)

The computation will be done with temperature correction. The user will have to indicate also:

- Height Above Airport Level (HGT AAL ft)
- Airport Elevation (ARPT ELEVN ft)
- Airport Temperature (ARPT Temp °C).

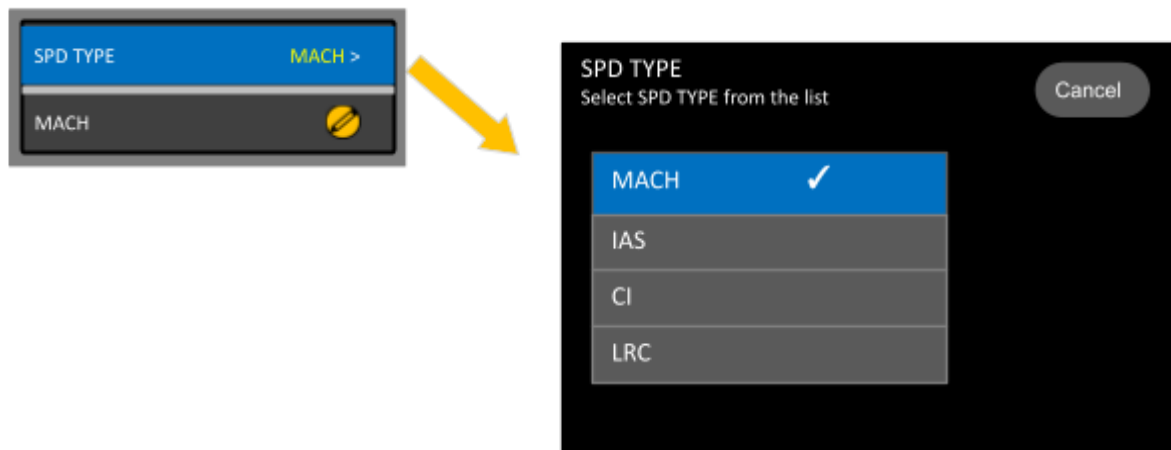
1.2.3. Speed Type (SPD TYPE)

If the user selected SPEED for the cruise type, the following speed types are available:

1.2.3.1. MACH

The user selects the *MACH* speed type to obtain current and predicted atmo performance data for an atmo at MACH.

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1.2.3.2. IAS

The user selects the Indicated Air Speed (IAS) speed type to obtain current and predicted atmo performance data for atmo at IAS.

1.2.3.3. Cost Index (CI)

The user selects the CI speed type to obtain current and predicted atmo performance data for atmo at CI.

1.2.3.4. LRC SPEED

The user selects the Long Range Cruise (LRC) speed type to obtain current and predicted atmo performance data for atmo at LRC speed.

1.2.4. Indicated Altitude (INDICATED ALT)

The user enters the pressure altitude.

Note: A value with less than 4 digits is systematically considered as a FL. Therefore, to enter an altitude below 1000ft, first convert it in FL or add " ft" after the value. As an example, to enter 30ft:

- Type "0.3", or
- Type "30 ft".

1.2.5. Airport Elevation (ARPT ELEVN)

The user enters the elevation of the departure airport.

Note: For high altitude operations, the user may enter 0.

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2. RESULTS

2.1. CONVERSIONS

WIND kt	(150/10) TL9
CRS °	0
TEMP ΔISAC	5
INIT WGHT T	70.0
COMPUTATION TYPE	SPEED
SPD TYPE	MACH
MACH	0.78
INDICATED ALT ft	30000
ARPT ELVN ft	497

ATMOSPHERE INFORMATION	
CONVERSIONS	
IAS	296 kt
MACH	0.78
TAS	465 kt
GS	473 kt
True ALT	FL 306
ISA INFORMATION	
Pressure	301 hPa
Density Ratio	0.3661
SPD of sound	596 kt
SAT	-39 C
TAT	-11 C
FMS PERF FACTOR	-1.03 %

The *CONVERSIONS* subpanel provides the essential information for the conversion of typical operating speeds and altitudes. The *CONVERSIONS* subpanel is available for SPEED computation type.

2.1.1. IAS

This value is the instantaneous Indicated Air Speed (IAS) for current conditions.

2.1.2. MACH

This value is the instantaneous Mach number for current conditions.

2.1.3. TAS

This value is the instantaneous True Air Speed (TAS) for current conditions.

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2.1.4. GS

This value is the instantaneous Ground Speed (GS) for current conditions.

2.1.5. TRUE ALT

This value is the true altitude of the airplane for current conditions.

2.2. **ISA INFORMATION**

The *ISA INFORMATION* subpanel provides the essential information on atmospheric data.

2.2.1. Pressure

This value is the standard pressure for current conditions.

2.2.2. Density Ratio

This value is the standard density ratio for current conditions.

2.2.3. SPD of sound

This value is the speed of sound for current conditions.

2.2.4. SAT

This value is the Static Air Temperature (SAT) for current conditions.

2.2.5. TAT

This value is the Total Air Temperature (TAT) for current conditions.

2.2.6. FMS PERF FACTOR

The FMS PERF FACTOR is computed as follow:

FMS PERF FACTOR = Monitored Fuel Factor + Basic Performance Factor -
(AdminFLHV-18400)*100/18400.

AdminFLHV is the FLHV input of the Administrator from the PREFERENCES/In Flight panel.

2.3. **Low Altitude Temperature Corrections**

The *Low Altitude Temperature Corrections* subpanel is available for altitude computation type with LO ALT TEMP CORR Altitude type selected.

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COMPUTATION TYPE	ALT
ALT TYPE	LO ALT TEMP CORR
HGT AAL ft	2000
ARPT ELEVN ft	497
ARPT TEMP °C	-2

ATMOSPHERE INFORMATION	
LOW ALTITUDE TEMPERATURE CORRECTION	
Correction	120 ft
Corrected Height Above Airport Level (AAL)	2120 ft

For cold weather conditions, the flight crew may correct the minimum promulgated Height / Altitudes.

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MODULE PRESENTATION

The LDG PERF application is an OCTOPUS program (except for A300-600 / A310 aircraft, for which TLC computation engine is also used).

Note:

- For A300-600 and A310 aircraft:
 - A300-600 / A310 TLC corresponds to A300-600 / A310 on Windows devices
 - A300-600 / A310 OCTOPUS corresponds to A300-600 / A310 on iPad devices

This module is an interface designed for the pilot for use in the cockpit, and for dispatch engineers for use on ground.

The aim of the LDG PERF application is to compute the Landing performance for all Airbus aircraft

- A300-600
- A310
- A320 Family
- A330
- A340
- A350
- A380.

Based on the same philosophy as the other on board performance applications, the User accesses the LDG PERF interface for a specific aircraft tail number.

LDG PERF application is used:

- During the flight preparation: To determine the Maximum Landing Weight at destination, according to the regulatory requirements
- During the flight: To determine the Landing Distance for an estimated Landing Weight.

The Landing module is divided in two parts:

- Dispatch Conditions:

It permits to check the dispatch conditions on Required Landing Distance and Go Around performance. The module checks the Required Landing Distance against the Available Landing Distance and the Approach Climb Gradient against the gradient defined by the User (not less than the minimum gradient required by the regulation).

- In-Flight Conditions:

It permits to obtain the In-Flight Landing Distance and Go Around performance for an estimated Landing Weight and a given configuration (autobrake setting, approach type...). The User can also check the overweight performance data and the landing performance following ECAM alerts.

In addition to this, LDG PERF can be used to determine landing performance with MEL and/or CDL items, and/or ECAM alerts (In-Flight only).

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APPLICATION START

Start the Airbus Landing application by tapping the AIB Landing icon in the general menu.



Start the Airbus Landing application by tapping the AIB Landing icon in *My flight* page.



The Landing application main interface is displayed.

IN FLIGHT Dispatch

LFBO/TLS BLAGNAC
RWY

WIND °/kt (000/0)
OAT °C
QNH hPa
RWY COND
A-ICE

LW T 182
LDG CG
LDG CONF AUTO CONF (STD)>
AIR COND Off (STD)>
APPR TYPE Normal (STD)>
GA GRADIENT % Min (STD)
VPilot kt 0
LDG TECH MAN-A/THR on >
BRK MODE Manual >
REV Yes (STD) >

MEL 0 CDL 0 ECAM 0

CLEAR COMPUTE

Airport Data

Conditions Data

Aircraft Status Data

Results

All fields must be completed to compute your landing performance data

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The interface is composed of the following panels:

1. AIRPORT DATA PANEL

By default, the destination airport set in the Flight Ops status page is selected. The User may choose another airport and select one or several runways to perform the computation. In this case, the link with the other EFB applications is lost.

2. CONDITIONS DATA PANEL

This panel permits to define the runway conditions and the aircraft configuration.

3. AIRCRAFT STATUS PANEL

This panel permits the selection of MEL / CDL items and/or ECAM alerts. Click on the corresponding button to select a MEL/CDL/ECAM alert item.

4. RESULTS PANEL

This panel presents the results as soon as a computation has been run and is complete.

Several action buttons are displayed at the bottom of the window:

- COMPUTE: Runs a computation
- CLEAR: Clears or resets the data to their default values
- MODIFY: Allows to modify an input after a computation.

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LANDING CONDITIONS FOR DISPATCH – INPUTS

1. AIRPORT PANEL

The User uses the airport panel to select the airport and runway(s).

The standard mode is the single runway computation.

If enabled by the Administrator, the Landing calculations can be performed for a selection of several runways (for a given airport): this is the Multiple Runway computation mode.

1.1. Single Runway Computation

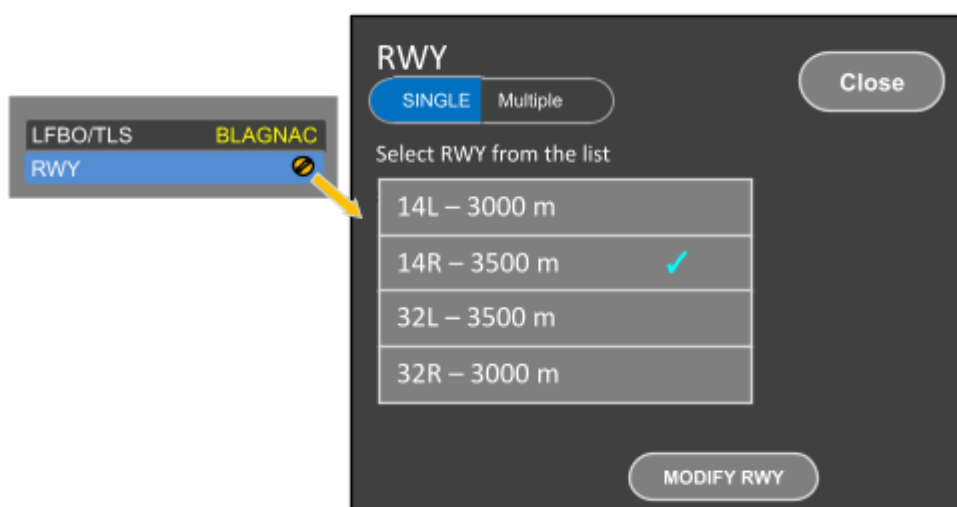
The User enters the SINGLE RWY COMPUTATION panel to select the desired runway.

The airport field is initialized with the airport selected in the STATUS PAGE ('TO' airport).

It is however possible to modify the preselected airport as described in the "Aircraft" chapter of the document "Application management".

When the airport is defined, the runway field provides the list of the airport runways.

Choose the required runway from the list by clicking on the corresponding row. A mark is displayed on the selected landing runway, the user shall then validate by clicking on the *Close* button.



Once a runway is selected, the interface switches to the next parameter to set.

1.2. Runway Modifications

The selected runway characteristics can be modified if allowed by the Administrator. Three modes are available for the runway modifications:

- None
- Reduced
- Full.

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When “None” is selected by the Administrator, the MODIFY RWY option is deactivated in the Landing application.

When “Reduced” mode or “Full” mode is selected, the MODIFY RWY button enables to display the Modification panel.

If enabled by the Administrator, the User is able to modify the runway characteristics in accordance with NOTAMS.

The available options are listed below:

1.2.1. Reduced Mode

Available if the Administrator has selected the “Reduced” mode for “Runway modifications” in the Landing specific preferences.

To modify a runway:

- Click on *Modify RWY* button below the runway list
- In the runway list, click on the *Modify RWY* button associated to the runway to modify.

RWY

SINGLE Multiple

Close

Select RWY from the list

14L – 3000 m	Modify RWY
14R – 3500 m	Modify RWY
32L – 3500 m	Modify RWY
32R – 3000 m	Modify RWY

Cancel

When the User clicks on “Modify RWY”, the following window is then displayed:

Back MODIFY 14R Close

RWY Length Reduction m

GA GRADIENT AT 1988 ft

Restore Done

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The User has to click on a cell of the runway characteristics list in order to modify the value.

The “GA GRADIENT AT” field is displayed only if the Administrator has activated the “Increase Go Around Height computation” option.

Note: The modifications entered at this level are lost when the runway is changed and do not affect the airport database as created by the Administrator.

Any change in the runway definition is notified on the Airport/Runway panel with the message “modified” next to the runway identifier.

After modification, the modified values are displayed in blue.

The User can click on the *Restore* button to reset the runway characteristics, or the *Done* button to validate the changes.

The User can then click on the runway to use in the computation.

1.2.2. Full Mode

Available if the Administrator has selected the “Full” mode for “Runway modifications” in the Landing specific preferences.

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When the User clicks on the *MODIFY RWY*, the following window is then displayed:

MODIFY 14R	
ELEVATION	488 ft
LENGTH	3500 m
SLOPE	0.10 %
SURFACE	SMOOTH >
GA GRADIENT AT	1988 ft

The modification process is the same as described for Reduced mode.

All the modified parameters are displayed in blue.

Any change in the runway definition is notified on the Airport/Runway panel with the message “modified” next to the runway identifier.

Note: “Surface” is displayed only if the selected runway is defined as Grooved/PFC in the airport manager and if the option is ticked in the “DEFINE LD RUNWAY CONDITIONS” in the PA Admin settings. The value can be modified if the runway surface is different from Dry (at Dispatch) or is 5-Good or 5-Wet PFC/Grooved (in flight).

Note: The Elevation and Slope parameters can be modified on Windows only.

1.3. Runway Creation

If the Administrator has selected the “Full” mode for “Runway modifications” in the Landing specific preferences, a *CREATE RWY* button is displayed below the runway identification to allow complete modifications of the runway by the User.

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The User can create a runway only from an airport that belongs to the airport database.

To create a runway:

- Tap on *CREATE RWY*. A window appears in order to set runway characteristics. The default values are displayed (except for the runway name). All values are displayed in blue.

- Enter the runway characteristics and validate (*Done* button).

The User has to enter all the values to define the runway characteristics. All the required data can usually be found in the airports charts.

1.3.1. RWY

The User enters the name of the runway they want to create.

The Name has to respect the NNLL format (NN is a number from 01 to 36 and LL are two optional letters).

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1.3.2. Elevation

The User has to enter the elevation of the runway threshold.

1.3.3. Length

The User has to enter the runway length.

1.3.4. Slope

The User has to enter the runway slope. The runway slope can be positive or negative.

Note: The runway slope has to remain within the Flight Manual limitations.

1.3.5. Surface

The User has to enter the state of the runway (smooth or Grooved / PFC).

1.3.6. GA Gradient AT

The User has to enter the Go Around Altitude.

All the created runway values appear in blue in the single runway computation panel.

Once created, the new runway appears on the RWY list for the selected airport with the indication “(Created)”.

Note: The creations entered at this level do not affect the airport database created by the Administrator.

1.4. Multiple Runway Computation

The User enters the MULTIPLE RWY COMPUTATION panel to select several runways of the selected airport.

This option enables the User to compute in one computation the landing performance for a selection of the airport runways, and then to determine which runway is the most appropriate for the defined landing conditions. As the landing computation is done on several runways, this function increases the calculation time.

Note: In the case of a Multiple Runway selection, make sure that the wind conditions panel is filled with wind direction / speed (° / kt).



The User selects an airport in the list of available airports. All the runways defined for this airport are then displayed. The User selects the desired runways by tapping the corresponding cells.

The *Select all* tick box enables the selection of all available runways.

In order to modify their selection, the User can:

- Select other runways by tapping the corresponding cells
- Unselect runways by tapping the corresponding cells again.

1.5. Effective Date of NOTAM

There is a way to inform the flight crew of the effective date of one NOTAM (NOTice to AirMen) that is associated with the landing.

The Administrator shall set the airport database as follows:

In the airport manager, indicate the NOTAM validity in the landing comment field (see the green box on the figure below). The comments will be displayed on the result panel, after the landing computation is performed on the runway.

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RWY ID Data

RWY ID : 14 R _A5_#DEC10

Applicability : ▼

Main Data | Obstacle Data | Additional Data

Length display : TODA - ASDA ▼

Geometric elev. (ft) : 485,564

TORA (m) : 3500

☐ Takeoff Shift (m) :

TODA (m) : 3560

ASDA (m) : 3300

LDA (m) : 3300

Slope (%) : 0.09

Entry angle (°) : 90 ▼

Comments

TakeOff : STD. At 2000 turn LEFT to TOE HP. 415 TOE HO; Inbound 259°. LEFT turn.
TEMP: ASDA reduced to 33000 till December, 10th 2017

Landing : TEMP: LDA reduced to 33000 till December, 10th 2017.

Save
Cancel

An additional way to inform the flight crew of the NOTAM validity date is to use, in addition to the 3 characters that are used to define the runway (ex: 14R), the 10 additional characters (see box in blue on the figure here above) to define the specificities of the runway.

For example, the administrator can enter “_A5_#DEC10” to inform the pilots that these runway data correspond to the A5 reduced runway and that the data are valid until December 10, 2017. The way to define the specificities of the runway with these additional 10 characters depends on the airline policy. This airline policy shall be commonly shared between the administrators and the flight crew.

After publishing the new performance data for the EFB, both of these two elements are displayed to the flight crew in Flysmart+, in the Runway panel when selecting the runway and after a computation is performed in the landing comments.

In this way, the flight crew is aware of the validity of the NOTAM either with the name of the runway and/or when reading the comments.

2. CONDITIONS PANEL

The CONDITIONS panel enables the User to define the outside conditions and the aircraft configuration data.

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When starting the application, all the fields are empty, except for some of them if the Administrator has defined standard values.

First of all, a button located at the top of the screen field permits selecting the computation mode: IN-FLIGHT or DISPATCH.

If the Administrator has enabled both In-Flight and Dispatch computation modes, the LDG PERF application starts with the mode selected by the User for the default landing computation in Landing General options of the Administration part.

Select “DISPATCH” to prepare the flight.

The screenshot displays the LDG PERF application interface in DISPATCH mode. At the top, there are two buttons: "In flight" and "DISPATCH", with "DISPATCH" being the active mode. Below these are several input fields organized into groups:

- Location and Runway:** LFBO/TLS, BLAGNAC, RWY (with a warning icon).
- Weather and Conditions:** WIND °/kt (000/0), OAT °C (with a warning icon), QNH hPa (with a warning icon), RWY COND (with a warning icon), A-ICE (with a warning icon).
- Performance and Configuration:** LW T 182, LDG CG (with a warning icon), LDG CONF AUTO CONF (STD)>, AIR COND Off (STD)>, APPR TYPE Normal (STD)>, GA GRADIENT % Min (STD), VPilot kt 0, LDG TECH MAN-A/THR on >.

At the bottom, there are four buttons: MEL 0, CDL 0, CLEAR, and COMPUTE. A central message states: "All fields must be completed to compute your landing performance data".

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2.1. Outside Conditions

The Outside Conditions subpanel enables to enter the following information:

WIND °/kt	(000/0)
OAT °C	
QNH hPa	
RWY COND	
A-ICE	

2.1.1. Wind

There are two ways of defining wind values:

2.1.1.1. Longitudinal Speed Component

It is possible to directly enter a longitudinal wind component. The User has to:

- Click on the button *Relative*
- Click on the blue header to display either HD for Headwind or TL for Tailwind
- Enter the wind value in the field
- Click on Done button on the virtual keypad.

A wind sock indicating wind direction is displayed next to the runway. An arrow and a numeric indication are also displayed, showing wind direction and wind speed.

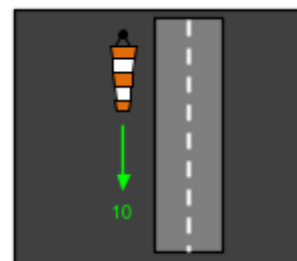
WIND

Absolute
RELATIVE

HD

WIND format: HDXX or TLXX

WIND °/kt	HD10
OAT °C	15
QNH hPa	1010
RWY COND	Dry
A-ICE	Off



2.1.1.2. Direction/Speed (/Gust)

The User can enter the wind speed and direction (and the gust). The user has to:

- Click on the *Absolute* button
- Enter the values in the three fields giving direction, wind speed and gust speed
- Click on the *Done* button on the virtual keypad.

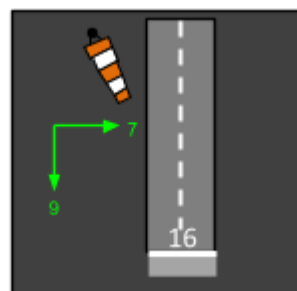
WIND

ABSOLUTE
Relative

110/10/G15

WIND format: XXX/XX or XXX/XX/GXX or XXX/XX/XX

WIND °/kt	(110/10/G15)
OAT °C	15
QNH hPa	1010
RWY COND	Dry
A-ICE	Off



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The entry is projected along and perpendicularly to the runway axis, to determine respectively the headwind (or tailwind) and the crosswind components.

Note: The direction/speed combination is required in the case of a **MULTIPLE RUNWAY COMPUTATION**.

If the Administrator has activated the “gust” option for crosswind limitation, the User has the possibility to enter the value of the gust when needed.

The User has the information that the gust can be entered when the format displayed in the status bar shows “XXX/XX/GXX”:

The Gust component is only taken into account for the check of the maximum crosswind limitation. Others limitations such as landing distance, braking energy etc. are based on the steady wind only.

Note: The gust may be considered for some runway states only, as defined by the Administrator.

2.1.2. Temperature (OAT)

The User enters the Outside Air Temperature (OAT) for the airport.

The deviation from the International Standard Atmosphere (ISA) is automatically computed and displayed next to the OAT field.

OAT °C	15
--------	----

2.1.3. QNH

The User enters the QNH (mean sea level pressure) for the airport.

QNH hPa	1010
---------	------

2.1.4. Runway Conditions (RWY COND)

The **RWY COND** field provides the different runway states for which a computation is possible. Note that the selection of some runway conditions may affect the temperature range. The temperature value may then have to be changed to fit into the defined range.

WIND °/kt	(110/10/G15)
OAT °C	15
QNH hPa	1010
RWY COND	Dry
A-ICE	Off

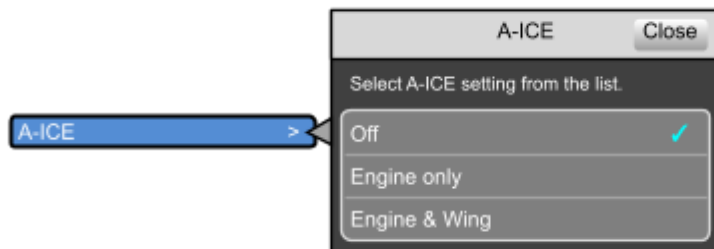
RWY COND		Close
Select RWY COND setting from the list.		
Dry		✓
Wet		
Compacted snow		
Dry snow		
Wet snow		
Slush		
Standing Water		

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Note: For numerical fields, the Administrator can authorize the use of alternate units. In this case, the User can enter a value with a unit different from the default one, provided that the right abbreviation is used (shown in the status bar if enabled).

2.1.5. Anti-Ice (A-ICE)

The User selects the desired anti-ice setting:



2.2. Aircraft Configuration

LW T	182
LDG CG	
LDG CONF	AUTO CONF (STD)>
AIR COND	Off (STD)>
APPR TYPE	Normal (STD)>
GA GRADIENT %	Min (STD)
VPilot kt	0
LDG TECH	MAN-A/THR on >

2.2.1. Landing Weight (LW)

The User enters the planned Landing Weight value.

At Dispatch, the Landing Weight must not exceed the certified Maximum Landing Weight (MLW).



Tip: The User can enter “*” in the text box to retrieve the MLW.

Note: The LW is automatically retrieved from the LOADSHEET module if a LOADSHEET calculation is performed.

2.2.2. Landing Center of Gravity (LDG CG)

The Landing CG field is displayed for some aircraft types that feature two or more certified forward CG limits at landing. Set the value here according to the aircraft Landing CG position after loading.

For example, the User can select:

- Basic or Alternate for A340-500/600, some A318 and some A319
- Basic or Extended forward for A320 OCTOPUS
- Standard (basic) or Alternate for A320 TAB.
- Basic or Alternate 1, Alternate 2 for A330-941
- Other CG envelopes for A350

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The Administrator can modify the options to be more explicit (e.g. CG > 27% instead of *Standard (basic)* and CG < 27% instead of *Alternate for A320 for instance*).

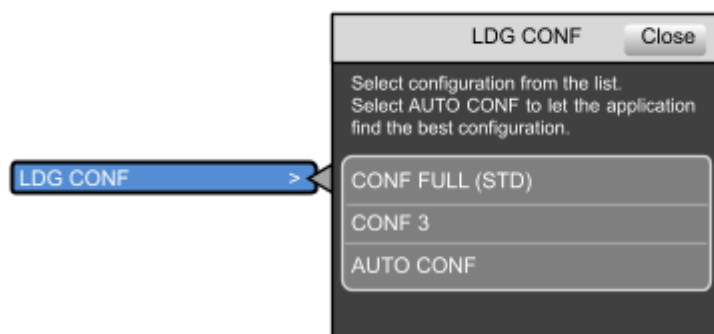


Note: If enabled by the administrator, the LDG CG field is automatically set in accordance with the LDG CG value from the LOADSHEET module if a LOADSHEET calculation is performed. In this case, it is displayed in yellow.

Note: The LDG CG is customizable by the user in Admin part (refer PPM Admin – LDG STD Values).

2.2.3. Landing Configuration (LDG CONF)

The User has to select the desired Landing Configuration.



The “AUTO CONF” option provides the results relative to the configuration that permits:

- To land at the Landing Weight in input (if one configuration leads to a landing limited by the performance), or
- To get the shortest Runway Length (i.e. CONF FULL) if both Configurations permit to land with the Landing Weight in input.

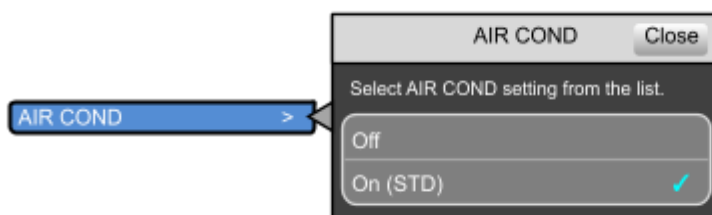
Note: The Approach Configuration is not accessible as it is linked to the landing configuration. Landing configuration FULL gives approach configuration 3 and landing configuration 3 gives approach configuration 2.

In the particular case of a high altitude airport, the Approach Configuration 1+F can be applied as well with a Landing Configuration 3, if the “CONF 1+F go-around (High ALT ARPT)” option has been selected by the user in Admin part (refer to PPM Admin – Engine Options). This option is only available for A319-115, A319-133, and A350-1041 aircraft models.

2.2.4. Air Conditioning (AIR COND)

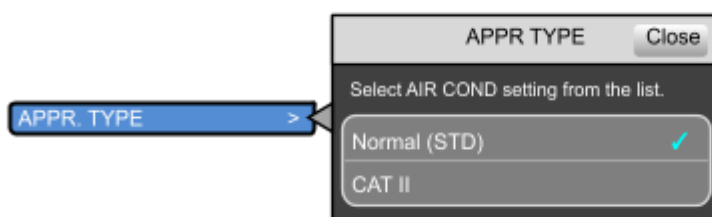
The User has to enter the desired Air Conditioning setting.

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2.2.5. Approach Type (APPR TYPE)

The Approach Type field gives the choice between Normal Approach (CAT I) and CAT II (and CATIII) approaches.



For A318 aircraft fitted with steep approach option, if the Administrator has ticked the steep approach box in the aircraft options of aircraft details, the User can select a third approach type: Steep Approach. The User can enter the value of the flight path angle (range: -5.5° to -4.5°).

2.2.6. Go Around Gradient (GA GRADIENT)

By regulation, a minimum Climb Gradient of 2.1% for a 2-engine aircraft (2.5% in CAT II), and 2.7 % for a 4-engine aircraft, is required in the case of a Go Around. The administrator can also define a minimum go-around value (above the minimum regulatory value) applicable to each individual runway. The User can enter a gradient above these minimum values in the GA GRADIENT field.



Tip: The User can enter “MIN” to insert the minimum Gradient value.

GA GRADIENT % Min (STD)

In multiple runway mode, only one value can be set for the Go Around Gradient in the user inputs. Then, for each runway, the landing application compares the Go Around Gradient set by the User to the one set by the Administrator in the airport manager, takes the highest Go Around Gradient and uses it for the computation.

2.2.7. Approach Speed Increment (VPilot)

If “Increase Vapp for Dispatch” option is enabled by the Administrator, the pilot can use the VPilot parameter to increase the approach speed.

VPilot kt 0

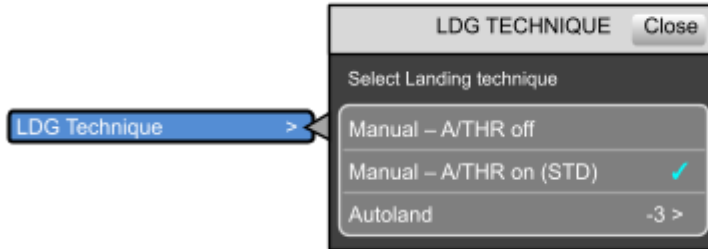
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2.2.8. Landing Technique (LDG TECHNIQUE)

The Landing Technique field permits to select, for all aircraft:

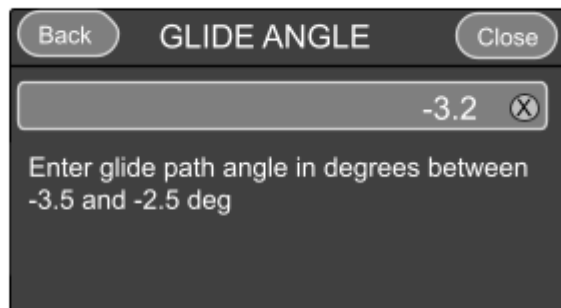
- Manual A/THR OFF
- Manual A/THR ON
- Autoland.

This field is displayed in the conditions panel only if the autoland option is defined in the aircraft performance database.

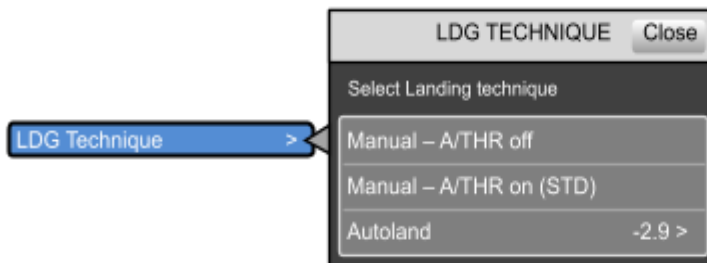


When the User selects Autoland, he has two possibilities:

- If no glide path angle has been defined for the runway in the airport database, the glide path angle is set by default to -3 °. When the User selects the autoland technique, an edit box appears to enter the value for the glide path angle (range: -3.5° to -2.5°).



- If a glide path angle has been defined in the airport database, the glide path angle is automatically set to this value. However, when the User selects the Autoland Technique, an edit box appears and the User can modify the glide path angle (range: -3.5° to -2.5°).



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Back
GLIDE ANGLE
Close

-3.2

Enter glide path angle in degrees between -3.5 and -2.5 deg

LDG Technique
>

LDG TECHNIQUE
Close

Select Landing technique

Manual – A/THR off	
Manual – A/THR on (STD)	
Autoland	-3.2 >

- If an ILS glide path angle has been defined in the airport database, the User has just to select Autoland. The glide path angle is in this case fixed and the User cannot modify it.

LDG Technique
>

LDG TECHNIQUE
Close

Select Landing technique

Manual – A/THR off	
Manual – A/THR on (STD)	
Autoland	-2.9 ✓

Note: The performance applications Administrator can define standard values for the following fields:

- LDG CONF
- AIR COND
- APPR TYPE
- GA GRADIENT
- LDG TECHNIQUE.

In this case, the default values are displayed with the indication (STD) when opening the LDG PERF application. For example:

LDG CONF
CONF FULL (STD) >

3. AIRCRAFT STATUS PANEL

For Dispatch, the AIRCRAFT STATUS panel lists the MEL and CDL items that have an impact on performance.

The ECAM Alerts part is active only for IN-FLIGHT computations.

If the aircraft is dispatched without any MEL/CDL item that affects Landing performance, “MEL 0” and “CDL 0” appears in the MEL / CDL buttons labels.

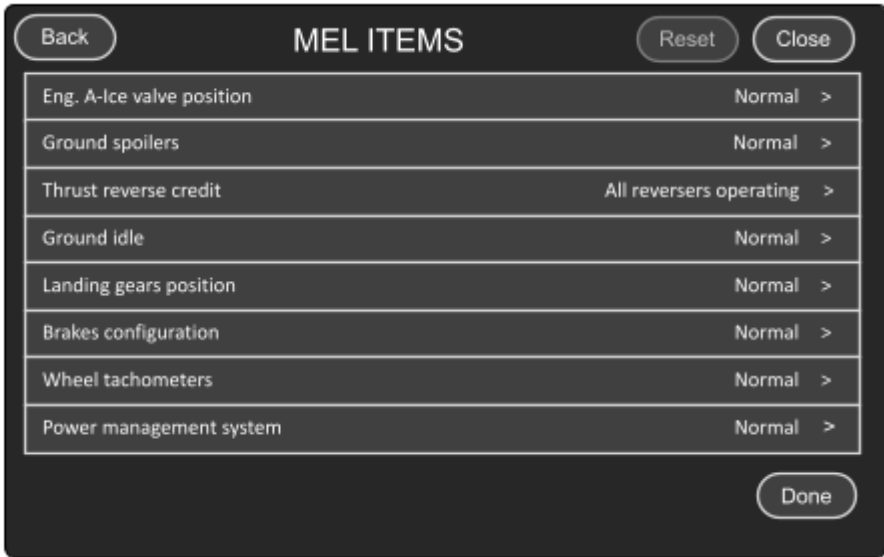


By clicking on the MEL or CDL button, the User can select MEL and/or CDL items.

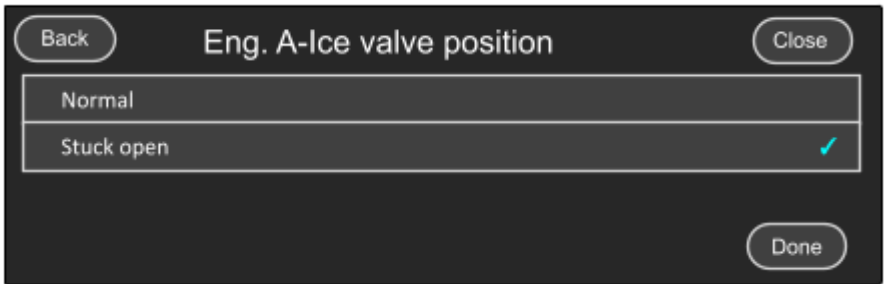
3.1. Minimum Equipment List (MEL) Items

The MEL items panel displays the list of systems failures that have an impact on landing performance.

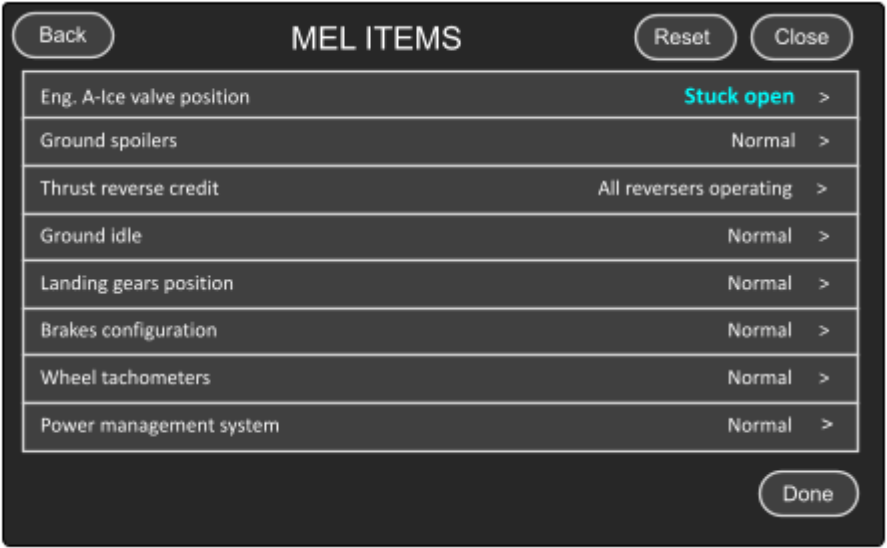
The User selects the desired items in the following panel by clicking or tapping on the chosen row. A scroll bar on the right can be used to navigate in the list.



A panel in which the User can select the failure appears. Item selection can be done by clicking or tapping on the chosen row, then on the *Done* button.

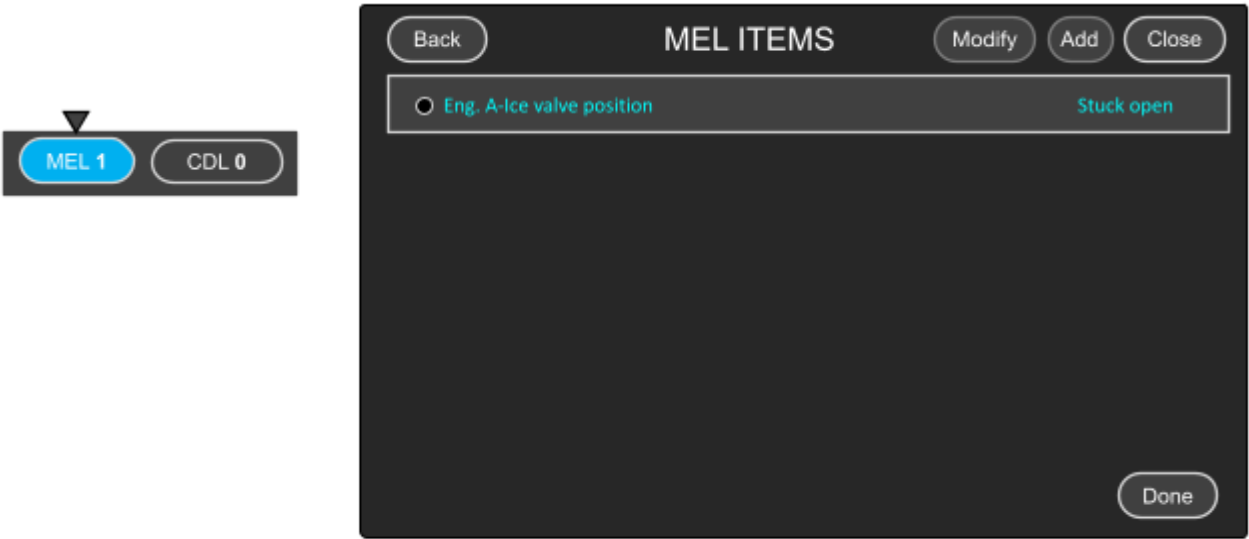


After one MEL item has been selected, the *Reset* button is activated in order to reset all MEL items to normal.



Tap on the *Done* button of MEL items panel to validate the choices.

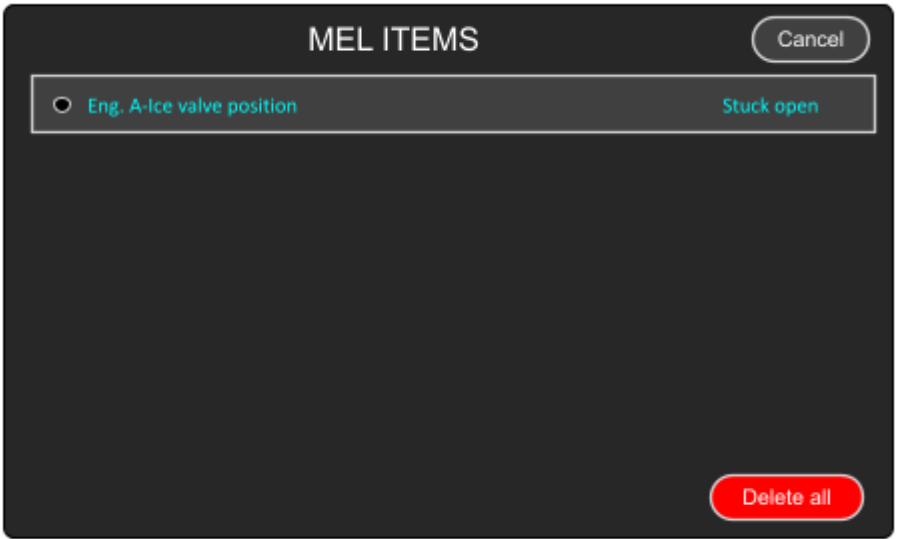
The number of MEL items selected is updated on the MEL button. The User can display the selected MEL items by tapping on the MEL Button.



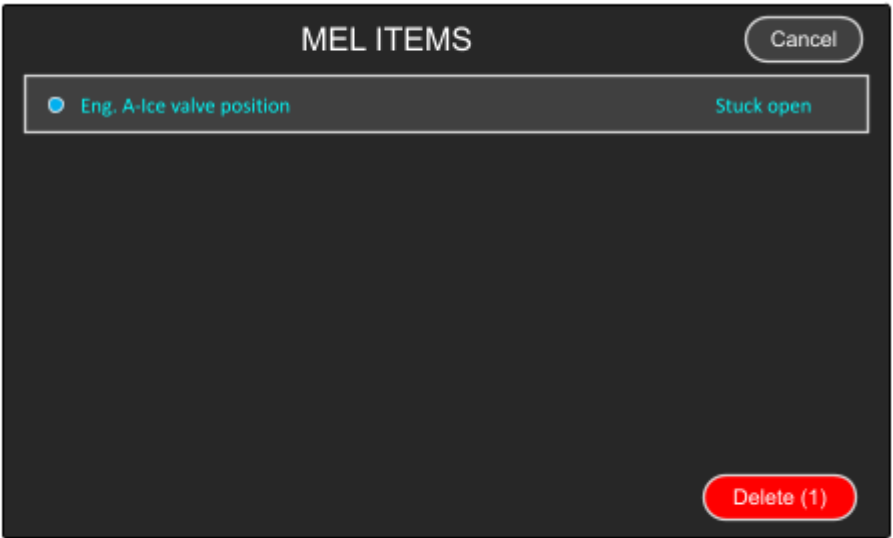
The User can Add new MEL items by tapping on the *Add* button, and perform the same process as explained here above.

The User can remove selected MEL items by tapping on the *Modify* button.

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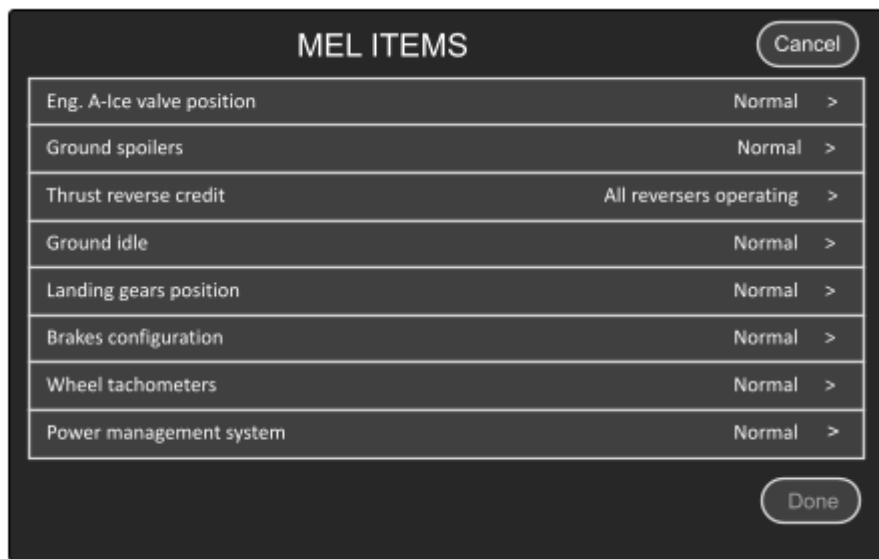


The User can either tap on the *Delete all* button to remove all selected MEL items, or tick the MEL items to remove, and then tap on the *Delete* button.





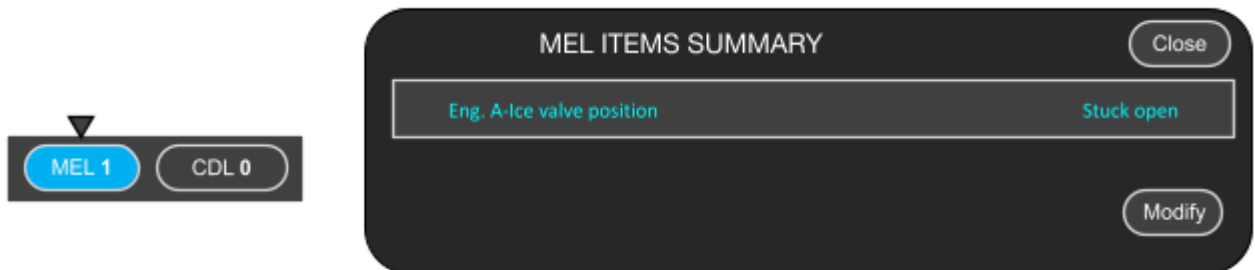
On Windows devices, the MEL item selection is the following:



The MEL ITEMS screen displays a list of aircraft systems with their current status and a chevron icon for modification. The items are: Eng. A-Ice valve position (Normal), Ground spoilers (Normal), Thrust reverse credit (All reversers operating), Ground idle (Normal), Landing gears position (Normal), Brakes configuration (Normal), Wheel tachometers (Normal), and Power management system (Normal). Buttons for Cancel, Done, and a back arrow are visible.

MEL Item	Status	Action
Eng. A-Ice valve position	Normal	>
Ground spoilers	Normal	>
Thrust reverse credit	All reversers operating	>
Ground idle	Normal	>
Landing gears position	Normal	>
Brakes configuration	Normal	>
Wheel tachometers	Normal	>
Power management system	Normal	>

On Windows devices, the User can modify the MEL items selection by tapping on the Modify button:



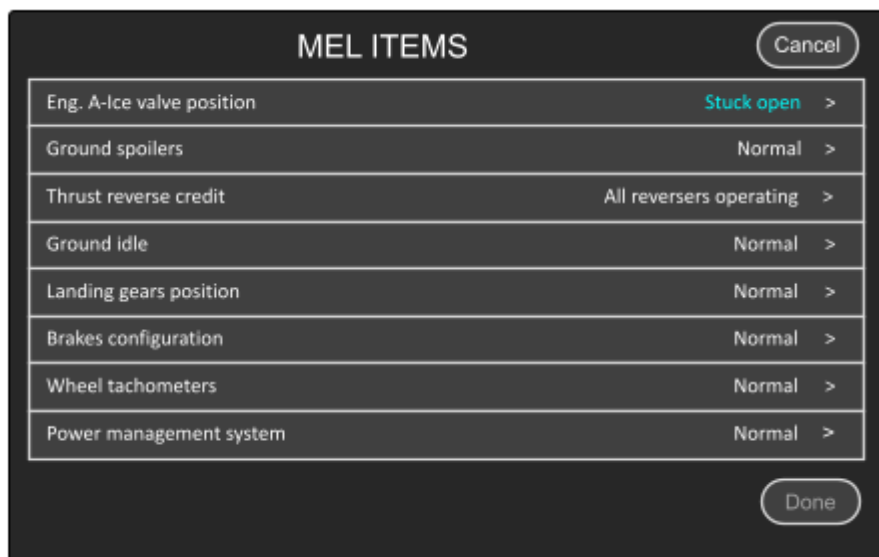
The MEL ITEMS SUMMARY screen shows the selected item 'Eng. A-Ice valve position' with its status 'Stuck open'. A Modify button is at the bottom right. To the left, a MEL selection bar shows 'MEL 1' selected and 'CDL 0' as an alternative.

MEL ITEMS SUMMARY

Eng. A-Ice valve position Stuck open

Modify

MEL 1 CDL 0



The MEL ITEMS screen after modification, showing 'Eng. A-Ice valve position' set to 'Stuck open' in red text. All other items remain at 'Normal'. Buttons for Cancel, Done, and a back arrow are visible.

MEL Item	Status	Action
Eng. A-Ice valve position	Stuck open	>
Ground spoilers	Normal	>
Thrust reverse credit	All reversers operating	>
Ground idle	Normal	>
Landing gears position	Normal	>
Brakes configuration	Normal	>
Wheel tachometers	Normal	>
Power management system	Normal	>

They can then select new MEL items or set one modified MEL item to another value.

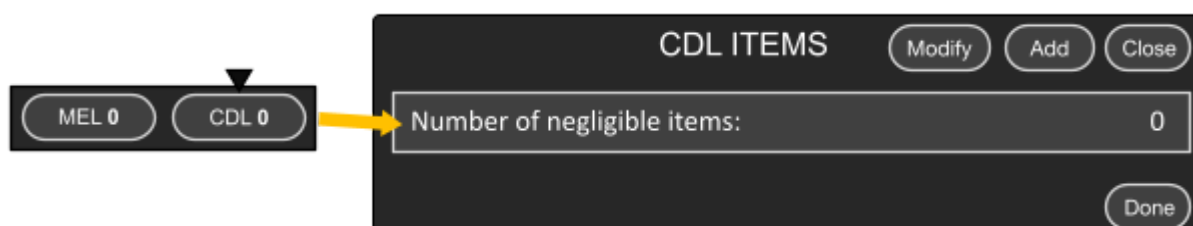
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3.2. Configuration Deviation List (CDL) Items

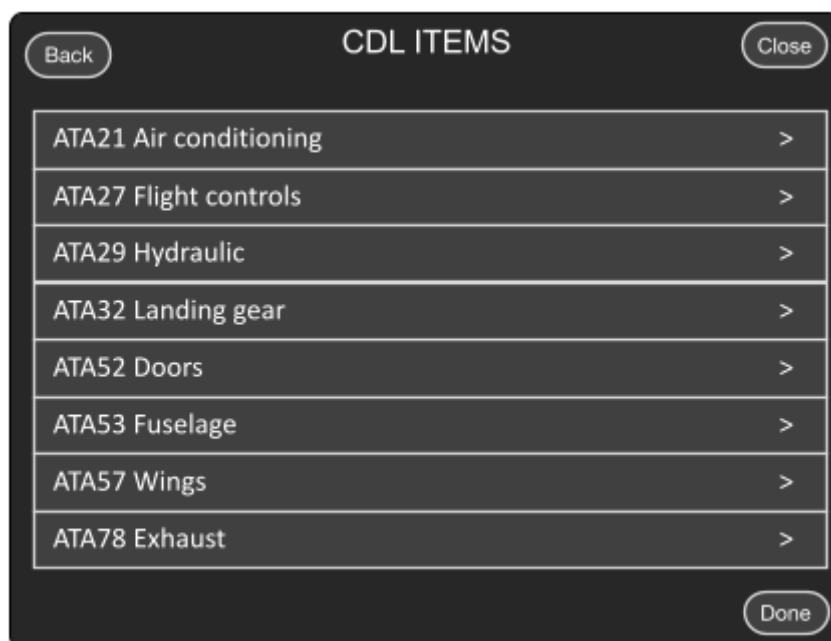
The List (CDL) subpanel displays the list of missing structural parts that affect landing performance. The User can select CDL items in:

- The Ops Library Browser (OLB) when consulting the CDL
- In the Landing application.

 In the Landing application, the User selects first the number of negligible items by tapping on the *CDL* button:



By tapping on the *ADD* button of the CDL subpanel, the User opens the CDL items panel. The CDL items panel displays the list of structural parts that can be missing, and for which performance penalties have to be considered for the calculation of the landing performance.



 On Windows device, the *CDL* button directly opens the CDL items subpanel, that enables the selection of the number of negligible items and the CDL items list for which performance penalties have to be considered for the calculation of the landing performance.

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The User validates the Item Number Missing by tapping on the *Done* button in the virtual keypad, then on the *Done* button.

The User can display CDL items by tapping on the *CDL* button.

The user can modify the CDL items list by tapping on the *Modify* button. They can then tap on one selected CDL items to remove it. They can also tap on a not selected CDL item to select it.



Item	Count
Number of negligible items:	0
ATA21 Air conditioning	>
ATA27 Flight controls	>
ATA29 Hydraulic	>
ATA32 Landing gear	>
ATA52 Doors	>
ATA53 Fuselage	>
ATA57 Wings	(1 MISSING) >
ATA78 Exhaust	>



The User can delete CDL items by tapping on Modify.

Item	Count
Number of negligible items:	0
ATA57-02 Winglet	(1MISSING)

The User can then remove all the CDL items by tapping on the *Delete all* button, or they can tick the CDL to remove and click on the *Delete* button.

Item	Count
Number of negligible items:	0
☐ ATA57-02 Winglet	(1MISSING)

In order to add a new CDL item, the User must tap on the *Modify* button in the CDL Items Summary subpanel.

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LANDING RESULTS FOR DISPATCH – OUTPUTS

When the runway is selected and the dispatch conditions are set, click on the “*COMPUTE*” button to run a computation and get results.

The results appear as soon as the computation is complete.

For dispatch purposes, the User must verify that the planned landing weight is lower than or equal to the Maximum Landing Weight limited by performance (MLW(Perf)) according to the forecasted conditions.

If the Administrator has disabled the “LW Input in Dispatch” option, the planned Landing Weight is always equal to the certified Maximum Landing Weight (MLW).

If the Administrator has enabled the “In-Flight LDG distance considered at dispatch” option, the landing calculations can be performed taking into account the Factored In-flight LDG Distance at dispatch.

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1. SINGLE RUNWAY COMPUTATION WITHOUT IN-FLIGHT LANDING DISTANCE CONSIDERED

Depending on the computation results, two cases are possible:

1.1. Dispatch Not Possible

The dispatch of the aircraft is not possible when the landing is limited by performance, i.e. when the planned Landing Weight (LW) is greater than the computed MLW(Perf).

The screenshot shows the 'DISPATCH' screen for runway 14R. The interface is divided into several sections:

- Top Bar:** 'In flight' (disabled) and 'DISPATCH' (active) buttons. Runway '14R' is selected.
- Left Panel (Inputs):**
 - LFBO/TLS: BLAGNAC
 - RWY: 14R
 - WIND °/kt: (110/10/G20)
 - OAT °C: 15
 - QNH hPa: 1015
 - RWY COND: Wet
 - A-ICE: Off (STD)
 - LW T: 182
 - LDG CG: CG >27%
 - LDG CONF: CONF 3
 - AIR COND: On (STD)
 - APPR TYPE: Normal (STD)
 - GA GRADIENT %: Min (STD)
 - VPilot kt: 0
 - LDG TECH: MAN-A/THR on
- Right Panel (Outputs):**
 - LDG CONF: CONF 3
 - LIMITATION CODE: LDA
 - VAPP: --- kt
 - MLW(PERF): 180.5 T
 - EO GA GRADIENT AT 1989 ft: --- %
 - EO GA SPEED: --- kt
- Visuals:** A diagram of runway 14R with a 3500m length and a 10% gradient. A green arrow indicates the approach direction.
- Buttons:** MEL 0, CDL 0, CLEAR, and MODIFY.

When the calculated MLW(Perf) is below the LW entered by the User, red dashes "---" are displayed instead of the output values.

The aircraft cannot be dispatched with this LW value. The actual Landing Weight must be reduced at least to the value of MLW(Perf).

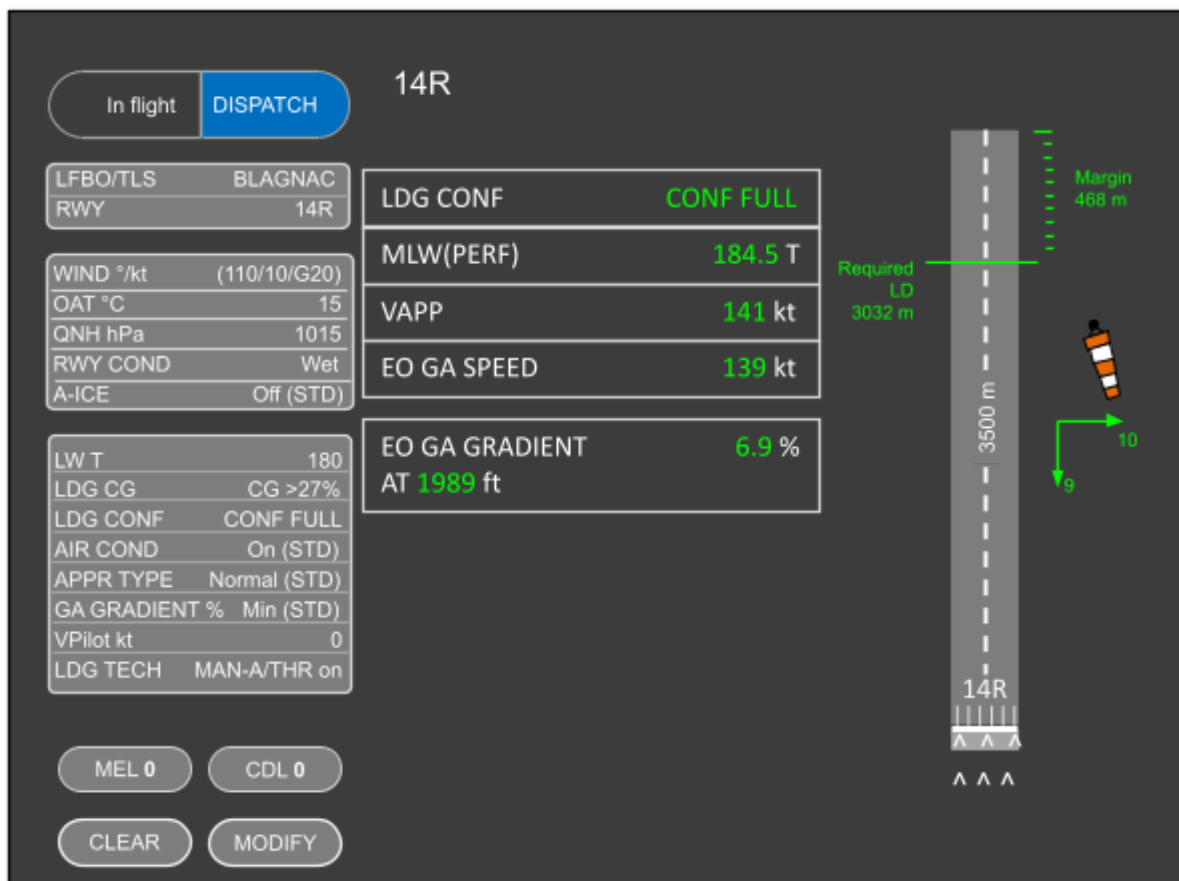
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1.2. Dispatch Possible

The dispatch is possible when the landing is not limited by performance, i.e. when the planned Landing Weight (LW) is lower than the computed MLW(Perf).

1.2.1. Main Results Page

The Main Results page provides the following data.



The results given for a dispatch computation are the following:

1.2.1.1. Landing Configuration (LDG CONF)

The results page displays the landing configuration selected by the User, or the result of the optimization when the AUTO CONF option is selected.

When AUTO CONF is selected, the landing performance is determined for CONF 3 (Go Around in CONF 2) and CONF FULL (Go Around in CONF 3).

If the landing is possible for both conditions, then the results for CONF FULL are displayed.

If the landing is possible only in CONF FULL (respectively CONF 3), then the results for CONF FULL (respectively CONF 3) are displayed.

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1.2.1.2. Maximum Performance-Limited Landing Weight (MLW(Perf))

The Maximum Performance-Limited Landing Weight (MLW(Perf)) is the maximum weight that complies with all the regulatory requirements at landing.

CAUTION

The MLW(Perf) may be higher than the certified Maximum Landing Weight (MLW), but the aircraft must not be dispatched with an estimated Landing weight at destination higher than the certified MLW.

1.2.1.3. Approach Speed (VAPP)

VAPP is the aircraft approach speed considered for the landing computation, 50 ft above the runway surface. VAPP is defined from the Lowest Selectable Speed (VLS), with the addition of a speed increment due to the wind correction or induced by the effect of autothrust or ice accretion. Its computation is detailed in the Additional Results page. The administrator must enable the parameter "Increase Vapp for dispatch" in the PA Admin, in order to display the Vapp, the Vpilot and the approach correction value.

1.2.1.4. Engine Out Go Around Speed (EO GA SPEED)

The EO GA SPEED displayed corresponds to the go around speed.
The EO GA SPEED field is displayed only if the Administrator has activated the "Optimize Go Around Speed" option.

1.2.1.5. Engine Out Go Around Gradient (EO GA GRADIENT)

The EO GA GRADIENT displayed corresponds to the go around gradient.
The EO GA GRADIENT AT field is displayed only if the Administrator has activated the "Increase Go Around Height computation" option.

1.2.1.6. Required Landing Distance (REQUIRED LD)

The Required Landing Distance is the result of the Actual Landing Distance (ALD) with the regulatory margins, depending on the runway state.
For example, $RLD_{dry} = 1.667 * ALD_{dry}$.

This RLD must be lower than or equal to the Landing Distance Available on the runway.
The RLD is displayed on the runway graph.

1.2.1.7. Margin

The margin is the difference between the runway length and the computed Required Landing Distance (RLD).
The margin is displayed on the runway graph.

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1.2.2. Additional Results Pages

14R

REV FOR R-LDCOMPUTATION **ALL REVERSERS INOPERATIVE**

LIMITATION CODE	WGT	Required LDG DIST	3022 m
MLW (PERF)	184.5 T	Actual LDG DIST	---- m
EO GA SPEED	139 kt		
EO GA GRAD AT	1989 ft 6.9 %		

VLS	136 kt	ΔV Wind	3 kt
APPR CORR	5 kt	ΔV A/THR	5 kt
ΔV pilot	0 kt	ΔV Ice Accretion	0 kt
VAPP	141 kt		

☐
☐
☐

Additional information can also be displayed as shown below. To do so, the Administrator has to select the requested information in the administrator module.

14R

LDG_CLB_GRAD LD **17.32**

☐
☐
☐

The Additional Results page provides the following results.

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1.2.2.1. LIMITATION CODE

Several regulatory requirements can limit the landing performance. The requirements that limit performance in specific cases are identified in the computation results via limitation codes. The following table indicates the various codes used for the landing limitations:

WGT	Weight limited by the LW
LDA	Weight limited by Landing Distance
ACG	Weight limited by Approach Climb Gradient
LCG	Weight limited by Landing Climb Gradient
TIRE	Weight limited by Tire Speed
BRK	Weight limited by Brake Energy

1.2.2.2. Actual Landing Distance (ALD)

The ALD corresponds to the Actual Landing Distance calculated according to the forecasted conditions.

1.2.2.3. Speeds

- Lowest Selectable Speed (VLS)
- ΔV_{Pilot}
- $V_{\text{APP}} = V_{\text{LS}} + \text{APPR COR} + \Delta V_{\text{pilot}}$
Where APPR COR = MAX (ΔV_{wind} , $\Delta V_{\text{A/THR}}$, $\Delta V_{\text{Ice Accretion}}$)

1.2.2.4. Landing Distances

Dispatch Landing Distance (LD): most limiting among Required LD and Actual LD.

1.2.2.5. Reversers (REV) for Computation

This label gives information regarding the credit of the reversers used for the calculation

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2. SINGLE RUNWAY COMPUTATION WITH IN-FLIGHT LANDING DISTANCE CONSIDERED

The dispatch landing distance and in-flight landing distance models are not the same. Therefore, at dispatch, Airbus recommends also to check the Factored In-flight Landing Distance (F-LD) against the Landing Distance Available (LDA). This avoids that the pilot discovers landing distance limitation when performing the in-flight landing distance assessment during the descent preparation.

Note: LD and thus F-LD are computed with reverser credit.

To activate the In-Flight Landing Distance check at dispatch, the Administrator has to:

- Enable the “In-Flight LDG distance considered at dispatch” option in the landing preferences, and choose one of the two possible options:
 - o “F-LD For Information Only”, or
 - o “MLW limited by MAX of (F-LD; RLD)”
- Enable the “Increase VAPP for dispatch” option. Then, the VAPP at dispatch is computed as VAPP in-flight
- Select Reported Braking Action for In-Flight Landing Distance computation.

Depending on the computation results, two cases are possible:

2.1. Dispatch Not Possible

The dispatch of the aircraft is not possible when the landing is limited by performance, i.e. when the planned Landing Weight (LW) is greater than the computed Maximum Performance-Limited Landing Weight (MLW(PERF)).

The screenshot displays the 'DISPATCH' tab for runway 14R. It shows various flight conditions and landing performance parameters. The landing performance table indicates that the landing is limited by performance (MLW(PERF) is 180.5 T, which is less than the planned LW T of 182). The diagram on the right shows a runway layout with a 3500m length and a 14R runway.

14R	
LDG CONF	CONF 3
LIMITATION CODE	LDA
VAPP	--- kt
MLW(PERF)	180.5 T
EO GA GRADIENT AT 1989 ft	--- %
EO GA SPEED	--- kt

Diagram on the right: A vertical runway layout showing a 3500m length and a 14R runway. A small aircraft icon is shown on the runway.

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When the calculated MLW(PERF) is below the LW entered by the User, red dashes “---” are displayed instead of the output values.

The aircraft cannot land at this Landing Weight. The Landing weight must be reduced at least to the value of MLW(PERF).

2.2. Dispatch Possible

The dispatch is possible when the landing is not limited by performance, i.e. when the planned LW is lower than the computed MLW(PERF).

When the “MLW limited by MAX of (F-LD; RLD)” is activated, three landing distance calculations are performed:

- RLD (Required Landing Distance)
- LD (In-Flight Landing Distance)
- F-LD (Factored In-Flight Landing Distance).

The most limiting of those three landing distances is displayed as the Dispatch LD. The F-LD is considered as a dispatch limitation.

The MLW(PERF) is limited by the maximum of RLD/F-LD.

2.2.1. Main Results Page

The Main Results page provides the following data.

The screenshot displays the 'Main Results Page' for the 'DISPATCH' mode. The interface is divided into several sections:

- Top Bar:** Includes 'In flight' and 'DISPATCH' tabs, and the runway identifier '14R'.
- Left Panel:** Contains two tables of input data.

LFBO/TLS	BLAGNAC
RWY	14R

WIND °/kt	(110/10/G20)
OAT °C	15
QNH hPa	1015
RWY COND	Wet
A-ICE	Off (STD)

LW T	182
LDG CG	CG >27%
LDG CONF	CONF 3
AIR COND	On (STD)
APPR TYPE	Normal (STD)
GA GRADIENT %	Min (STD)
VPilot kt	0
LDG TECH	MAN-A/THR on
- Right Panel:** Displays calculated performance metrics.

LDG CONF	CONF 3
MLW(PERF)	184.5 T
VAPP	141 kt
EO GA SPEED	139 kt
EO GA GRADIENT AT 1989 ft	6.9 %
- Visual Representation:** A vertical scale on the right shows the 'Dispatch LD (RLD)' as 3032 m, with a 'Margin' of 468 m. A diagram of an aircraft is shown with a green arrow indicating the landing distance. The runway length is marked as 3500 m and 14R.
- Bottom Controls:** Includes buttons for 'MEL 0', 'CDL 0', 'CLEAR', and 'MODIFY'.

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2.2.1.1. Landing Configuration (LDG CONF)

This label gives information regarding the configuration used for the calculation.



2.2.1.2. Maximum Performance-Limited Landing Weight (MLW(PERF))

The Maximum Performance-Limited Landing Weight MLW(PERF) is the maximum weight that permits to safely land on the destination runway.

The MLW(PERF) is associated with the Factored Landing Distance (F-LD) when the Landing Distance Available (LDA) is not limiting. It is associated with the LD when:

- The Factored Landing Distance is above the runway length
- The Landing is not possible.

2.2.1.3. Approach Speed (VAPP)

VAPP is the aircraft approach speed considered for the landing computation, 50 ft above the runway surface. VAPP is defined from the Lowest Selectable Speed (VLS), with the addition of a speed increment due to the wind correction or induced by the effect of autothrust or ice accretion. Its computation is detailed in the Additional Results page. The administrator must enable the parameter “Increase Vapp for dispatch” in the PA Admin, in order to display the Vapp, the Vpilot and the approach correction value.

2.2.1.4. Engine Out Go Around Speed (EO GA SPEED)

The EO GA SPEED displayed corresponds to the go around speed.

The EO GA SPEED field is displayed only if the Administrator has activated the “Optimize Go Around Speed” option.

2.2.1.5. EO GA GRADIENT

The EO GA GRADIENT displayed corresponds to the Approach Climb Gradient, and must be higher than or equal to the minimum climb gradient entered in the CONDITIONS panel.

The EO GA GRADIENT AT field is displayed only if the Administrator has activated the “Increase Go Around Height computation” option.

2.2.1.6. Dispatch Landing Distances (DISPATCH LD)

The dispatch landing distance is the most limiting among Required LD (Landing Distance), Factored LD and LD.

2.2.1.7. Margin

If DISPATCH LD < LDA, the displayed margin is the difference between the runway length and the dispatch landing distance.

2.2.2. *Additional Results Page*

The Additional Results page provides the following data.

14R

REV FOR R-LD COMPUTATION **ALL REVERSERS INOPERATIVE**

LIMITATION CODE	WGT	DISPATCH LD(RLD)	3022 m
MLW (PERF)	184.5 T	REQUIRED LD	3022 m
EO GA SPEED	139 kt	LD	2167 m
EO GA GRAD AT 1989 ft	6.9 %	F-LD	2492 m

VLS	136 kt	ΔV Wind	3 kt
APPR CORR	5 kt	ΔV A/THR	5 kt
ΔV pilot	0 kt	ΔV Ice Accretion	0 kt
VAPP	141 kt		

☐
☒
☐

Additional information can also be displayed as shown below. To do so, the Administrator has to select the requested information in the administrator module.

14R

LDG_CLB_GRAD LD **17.32**

☐
☒
☐

2.2.2.1. LIMITATION CODE

Several regulatory requirements can limit the landing performance. The requirements that limit performance in specific cases are identified in the computation results via limitation codes. The following table indicates the various codes used for the landing limitations:

WGT	Weight limited by the LW
LDA	Weight limited by Landing Distance
ACG	Weight limited by Approach Climb Gradient
LCG	Weight limited by Landing Climb Gradient
TIRE	Weight limited by Tire Speed
BRK	Weight limited by Brake Energy

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2.2.2.2. Speeds

- Lowest Selectable Speed (VLS)
- ΔV_{Pilot}
- $V_{\text{APP}} = \text{VLS} + \text{APPR COR} + \Delta V_{\text{pilot}}$
Where APPR COR = MAX (ΔV_{wind} , $\Delta V_{\text{A/THR}}$, $\Delta V_{\text{Ice Accretion}}$)

2.2.2.3. Required Landing Distance (REQUIRED LD)

The Required Landing Distance (RLD) is the result of the Actual Landing Distance (ALD) with the regulatory margins depending on the runway state.

For example, RLD dry = 1.667 * ALD dry.

This RLD must be lower than or equal to the Landing Distance Available on the runway.

The RLD is displayed on the runway graph.

2.2.2.4. Landing Distance (LD)

The LD corresponds to the Landing Distance calculated according to the forecasted conditions.

Reverser credit is accounted unless reverser inoperative MEL is activated.

2.2.2.5. Factored Landing Distance (F-LD)

The F-LD is the Factored Landing Distance. It is the reference for In-Flight landing distance assessment.

2.2.2.6. Reversers (REV) for Computation

This label gives information regarding the credit of the reversers used for the calculation.

2.2.3. *Runway Overrun Warning (ROW) Landing Distance Check*

This option is available only for aircraft fitted with Runway Overrun Warning (ROW) option, and if the Administrator has enabled the “In-Flight LDG distance considered at dispatch” option in the landing preferences.

Whenever the ROW Landing Distance is above the Landing Distance Available (LDA) for destination airport, the message “EXPECTED ROW ALERT” is displayed in the Results panel.

In dispatch mode, the “EXPECTED ROW ALERT” occurs very rarely.

For more information, refer to the part “ROW LDG DIST > LDA” in the chapter *Landing Possible in LANDING RESULTS FOR IN-FLIGHT – OUTPUTS*.

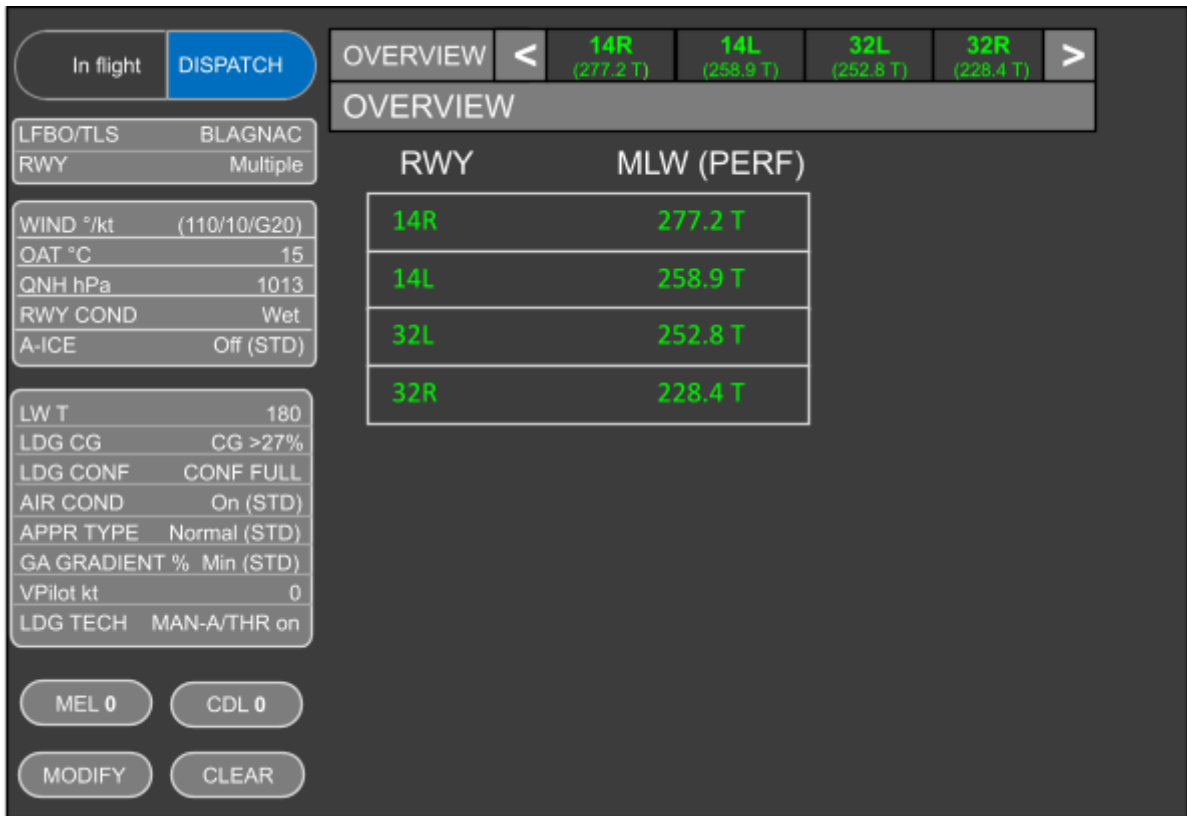
Note: For A350, ROW function is a basic option.

3. MULTIPLE RUNWAY COMPUTATION WITHOUT IN-FLIGHT LANDING DISTANCE CONSIDERED

The LDG PERF application determines the landing performance for the selection of runways. The User can access the results for each runway via a title bar displayed on top of the result panel.

It contains:

- One cell named *Overview*: displays a summary of the results for all the runways



The screenshot shows the 'OVERVIEW' screen of the LDG PERF application. At the top, there are buttons for 'In flight' and 'DISPATCH'. Below these are two tabs: 'OVERVIEW' (selected) and a list of runways: '14R (277.2 T)', '14L (258.9 T)', '32L (252.8 T)', and '32R (228.4 T)'. The main content area is titled 'OVERVIEW' and contains a table with two columns: 'RWY' and 'MLW (PERF)'. The table lists the runways and their corresponding MLW values: 14R (277.2 T), 14L (258.9 T), 32L (252.8 T), and 32R (228.4 T). To the left of the table is a list of parameters and their values: LFBO/TLS (BLAGNAC), RWY (Multiple), WIND °/kt ((110/10/G20)), OAT °C (15), QNH hPa (1013), RWY COND (Wet), A-ICE (Off (STD)), LW T (180), LDG CG (CG >27%), LDG CONF (CONF FULL), AIR COND (On (STD)), APPR TYPE (Normal (STD)), GA GRADIENT % (Min (STD)), VPilot kt (0), and LDG TECH (MAN-A/THR on). At the bottom, there are buttons for 'MEL 0', 'CDL 0', 'MODIFY', and 'CLEAR'.

RWY	MLW (PERF)
14R	277.2 T
14L	258.9 T
32L	252.8 T
32R	228.4 T

For each runway, the Maximum Performance-Limited Landing Weight (MLW(PERF)) is displayed after the runway ID.

The list is sorted by weight, from the highest to the lowest, and is color-coded:

- Green when the LW is lower or equal to the MLW(PERF)
- Red when the LW is higher than the MLW(PERF).

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- One cell for each selected runway: displays the results for this specific runway.

The screenshot displays the Airbus Performance Programs User Interface for runway 14R. The interface is divided into several sections:

- Top Bar:** Includes 'In flight' and 'DISPATCH' buttons, and a 'Overview' tab with a navigation bar showing selected runways: 14R (277.2 T), 14L (258.9 T), 32L (252.8 T), and 32R (228.4 T).
- Left Panel:** Contains flight data and runway information:
 - LFBO/TLS: BLAGNAC
 - RWY: Multiple
 - WIND °/kt: (110/10/G20)
 - OAT °C: 15
 - QNH hPa: 1015
 - RWY COND: Wet
 - A-ICE: Off (STD)
 - LW T: 180
 - LDG CG: CG >27%
 - LDG CONF: CONF FULL
 - AIR CONF: On (STD)
 - APPR TYPE: Normal (STD)
 - GA GRADIENT %: Min (STD)
 - VPilot kt: 0
 - LDG TECH: MAN-A/THR on
- Right Panel:** Displays performance results for runway 14R:
 - LDG CONF: CONF FULL
 - MLW (PERF): 277.2 T
 - VAPP: 137 kt
 - EO GA SPEED: 136 kt
 - EO GA GRADIENT AT 1989 ft: 6.9 %
- Bottom Panel:** Includes buttons for MEL 0, CDL 0, CLEAR, and MODIFY.
- Visual Representation:** A vertical diagram on the right shows the runway layout with a 'Required LD 2130 m' and a 'Margin 1370 m'.

For each runway, the results are presented in the same way as for single runway computation.

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4. MULTIPLE RUNWAY COMPUTATION WITH IN-FLIGHT LANDING DISTANCE CONSIDERED

The LDG PERF application determines the landing performance for the selection of runways, and the User can access the results for each runway via the runway drop-down list.

For each runway, the Maximum Performance-Limited Landing Weight (MLW(PERF)) is displayed after the runway ID.

The list is sorted by weight, from the highest to the lowest, and is color-coded:

- Green when the LW is lower or equal to MLW(PERF)
- Red when the LW is higher than MLW(PERF).

For each runway, the results are presented in the same way as for single runway computation **with in-flight crosscheck**.

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LANDING CONDITIONS FOR IN-FLIGHT – INPUTS

1. AIRPORT PANEL

Please refer to [LANDING CONDITIONS FOR DISPATCH - INPUTS – AIRPORT PANEL](#).

2. CONDITIONS PANEL

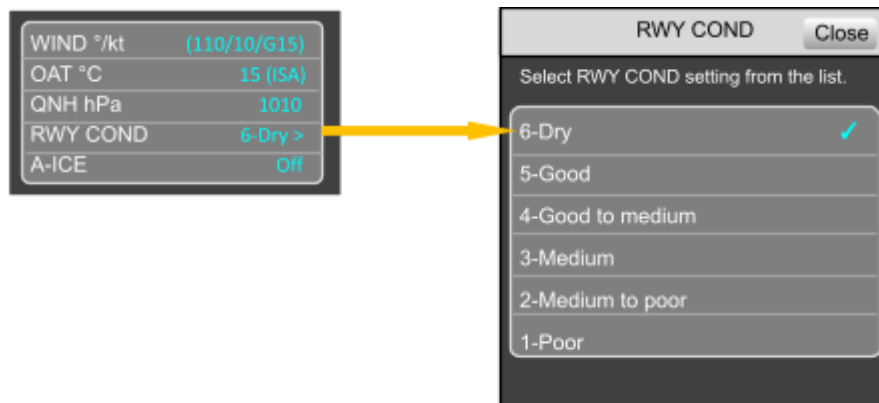
The CONDITIONS panel enables the User to define the outside conditions and the aircraft configuration data.

When starting the application, all the fields are empty, except those for which the Administrator has defined standard values.

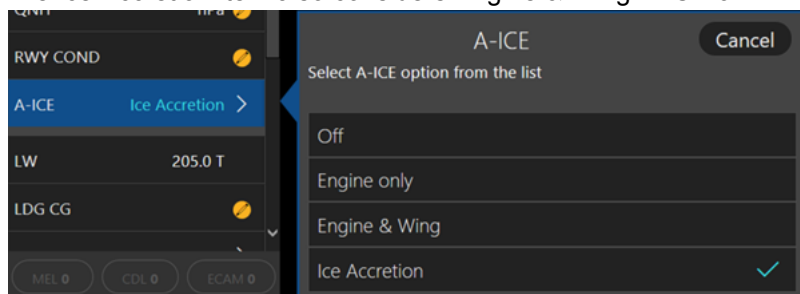
2.1. Outside Conditions

Please refer to [LANDING CONDITIONS FOR DISPATCH - INPUTS – CONDITIONS PANEL – Outside Conditions](#), except for the following settings :

The field RWY COND provides the different runway states for which the computation is possible. Note that the selection of some runway conditions may affect the temperature range. The temperature value may then have to be changed to fit into the defined range.



The field A-ICE has one more item: Ice Accretion.
The Ice Accretion item also considers Engine & Wing A-ICE on.



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2.2. Aircraft Configuration

LW T	182
LDG CG	
LDG CONF	AUTO CONF (STD)>
AIR COND	Off (STD)>
APPR TYPE	Normal (STD)>
GA GRADIENT %	Min (STD)
VPilot kt	0
LDG TECH	MAN-A/THR on >
BRK MODE	Manual >
REV	Yes (STD) >

2.2.1. Landing Weight (LW)

The User enters the planned Landing Weight (LW) value.

In In-flight mode, it is possible to perform an overweight landing computation (i.e. the Landing Weight exceeds the certified Maximum Landing Weight (MLW)).

If the LW is above the MLW, the message “overweight landing” is displayed on the interface and the overweight landing procedure, described in the QRH-ABN-80, applies. This procedure implies a different flare technique and a braking after the nosewheel touch. This procedure lengthens the landing distance and has therefore been implemented in the modelling.



Tip: The User can enter “*” in the text box to retrieve the MLW.

Note: The LW is automatically retrieved from the LOADSHEET module if a LOADSHEET calculation is performed.

2.2.2. Landing Center of Gravity (LDG CG)

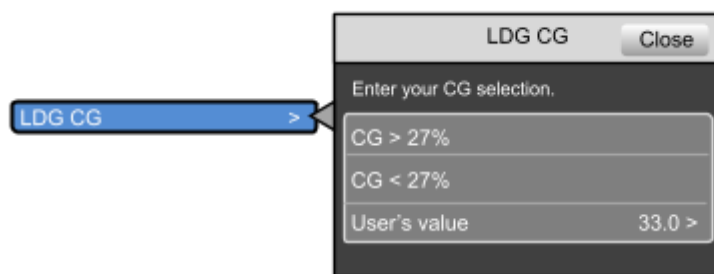
The Landing CG field is displayed only for some aircraft types that feature at least, two certified forward CG limits at Landing (for example all A320 and A340-500/-600, some A318 / A319 and A350). For A350 and some A320 NEO family models, it is also possible to enter a given CG value in the allowed range. Set the value here according to the aircraft Landing CG position after loading.

For example, the User can select:

- Basic or Alternate for A340-500/600, some A318 and some A319
- Basic or Extended forward for A320 OCTOPUS
- Standard (basic) or Alternate for A320 TAB.
- A CG envelope and/or a given value for A350 and A320 NEO family

The Administrator can modify the options to be more explicit (e.g. CG > 27% instead of *Standard (basic)* and CG < 27% instead of *Alternate for A320 for instance*).

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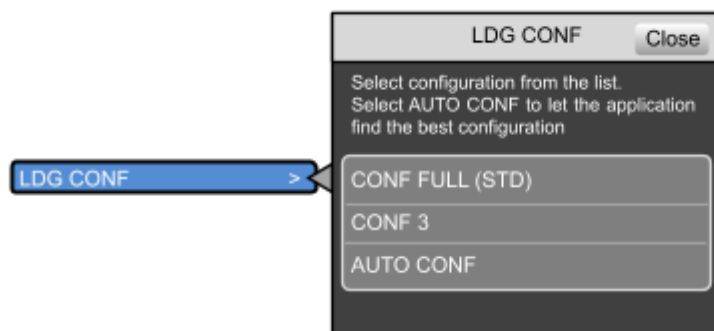


Notes:

- The LDG CG field is automatically set in accordance with the LDG CG value from the LOADSHEET module if a LOADSHEET calculation is performed
- The LDG CG is customizable by the user in Admin part (refer to PPM Admin – LDG STD Values)
- The LDG CG “User’s value” is only available on In-Flight part and for iPad devices from V5.0, and for Windows devices from L7.2.

2.2.3. Landing Configuration (LDG CONF)

The User has to select the desired landing configuration.



The “AUTO CONF” option provides the results relative to the Configuration that permits:

- To land at the Landing Weight in input (if one Conf leads to a landing limited by the performance), or
- To get the shortest Runway Length (i.e. Conf FULL) if both Configurations permit to land with the Landing Weight in input.

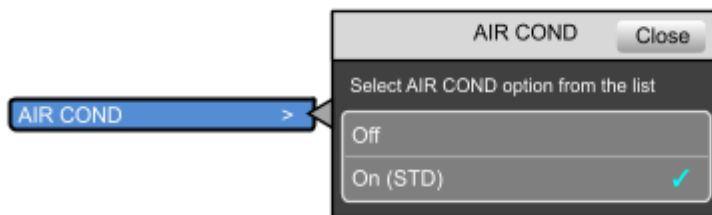
Note: The Approach Configuration is not accessible as it is linked to the Landing configuration. Landing configuration FULL gives Approach Configuration 3 and Landing Configuration 3 gives Approach Configuration 2.

In the particular case of a high altitude airport, the Approach Configuration 1+F can be applied as well with a Landing Configuration 3, if the “CONF 1+F go-around (High ALT ARPT)” option has been selected by the user in Admin part (refer to PPM Admin – Engine Options). This option is only available for A319-115, A319-133, and A350-1041 aircraft models.

2.2.4. Air Conditioning (AIR COND)

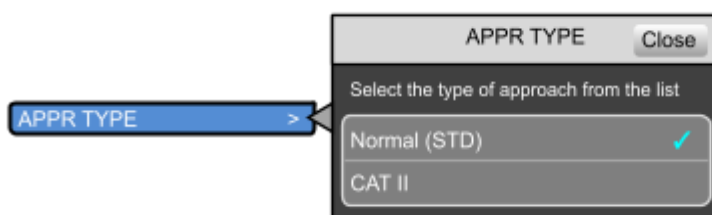
The User has to enter the desired Air Conditioning setting.

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2.2.5. Approach Type (APPR TYPE)

The Approach Type field gives the choice between Normal approach (CAT I) and CAT II (and CAT III) approaches.



For A318 aircraft fitted with steep approach option, if the administrator has ticked the steep approach box in the Aircraft options of Aircraft details, the user can select a third approach type: Steep Approach. The User can enter the value of the flight path angle (range: -5.5° to -4.5°).

2.2.6. Go Around Gradient (GA GRADIENT)

By regulation, a minimum Climb Gradient of 2.1% for a 2-engine aircraft (and 2.5% in CAT II), and 2.7 % for a 4-engine aircraft, is required in the case of a Go Around. The User can enter a gradient above these minimum values in the *GA GRADIENT* field.



Tip: The User can enter “MIN” to insert the minimum Gradient value.

GA GRADIENT %	MIN (STD)
---------------	-----------

2.2.7. Approach Speed Increment (VPilot)

If “Increase Vapp for dispatch” option is enabled by the Administrator, the pilot can use the VPilot to increase the approach speed.

VPilot kt	0
-----------	---

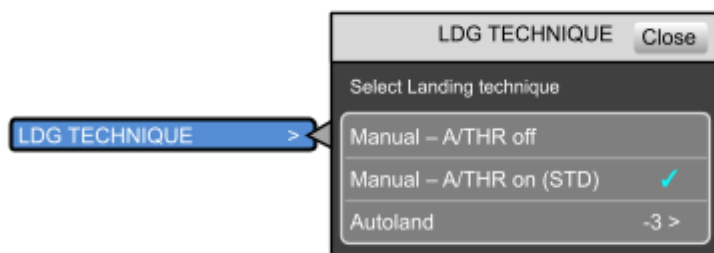
2.2.8. Landing Technique (LDG TECHNIQUE)

The Landing Technique field permits to select, for all aircraft:

- Manual A/THR OFF
- Manual A/THR ON
- Autoland.

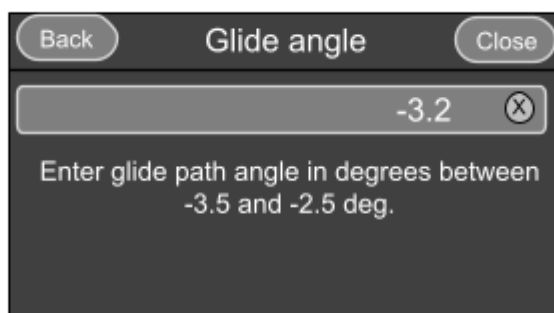
This field is displayed in the Conditions panel only if the Autoland option is defined in the aircraft performance database.

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When the User selects Autoland, they have two possibilities:

- If no glide path angle has been defined for the runway in the airport database, an edit box appears to enter the value for the ILS glide path angle (range: -3.5° to -2.5°).

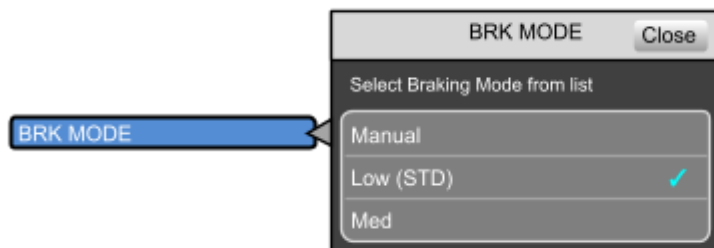


- If a glide path angle has been defined in the airport database, the User has just to select Autoland. The glide path angle is in this case fixed and the User cannot modify it.



2.2.9. Braking Mode (BRK MODE)

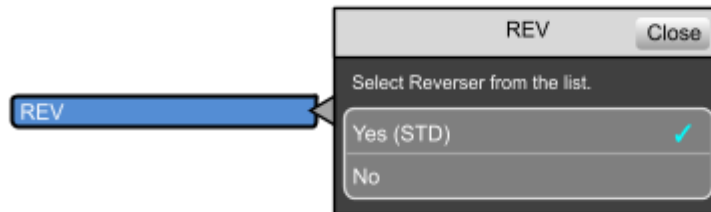
This field allows to select the braking applied during the landing deceleration phase.



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2.2.10. Reverse Mode (REV)

This field allows to choose if engines reverse shall be used or not during landing.



Note: The performance applications Administrator can define standard values for the following fields:

- LDG CONF
- AIR COND
- APPR TYPE
- GA GRADIENT
- LDG TECHNIQUE
- BRK MODE
- REV.

In this case, the default values are displayed with the indication (STD) when opening the LDG PERF application. For example:



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3. AIRCRAFT STATUS PANEL

For In-Flight computation mode, the AIRCRAFT STATUS panel lists the MEL and CDL items that have an impact on performance, as well as the ECAM alerts (panel active only for IN-FLIGHT computations).

If the aircraft is dispatched without any MEL/CDL/ECAM alert item that affects the landing performance, "MEL 0", "CDL 0" and "ECAM 0" appear on the corresponding buttons.



By clicking on the MEL, CDL or ECAM button, the User can select MEL / CDL and/or ECAM items.

3.1. Minimum Equipment List (MEL) Items

Please refer to [LANDING CONDITIONS FOR DISPATCH - INPUTS – AIRCRAFT STATUS PANEL – MEL Items](#).

3.2. Configuration Deviation List (CDL) Items

Please refer to [LANDING CONDITIONS FOR DISPATCH - INPUTS – AIRCRAFT STATUS PANEL – CDL Items](#).

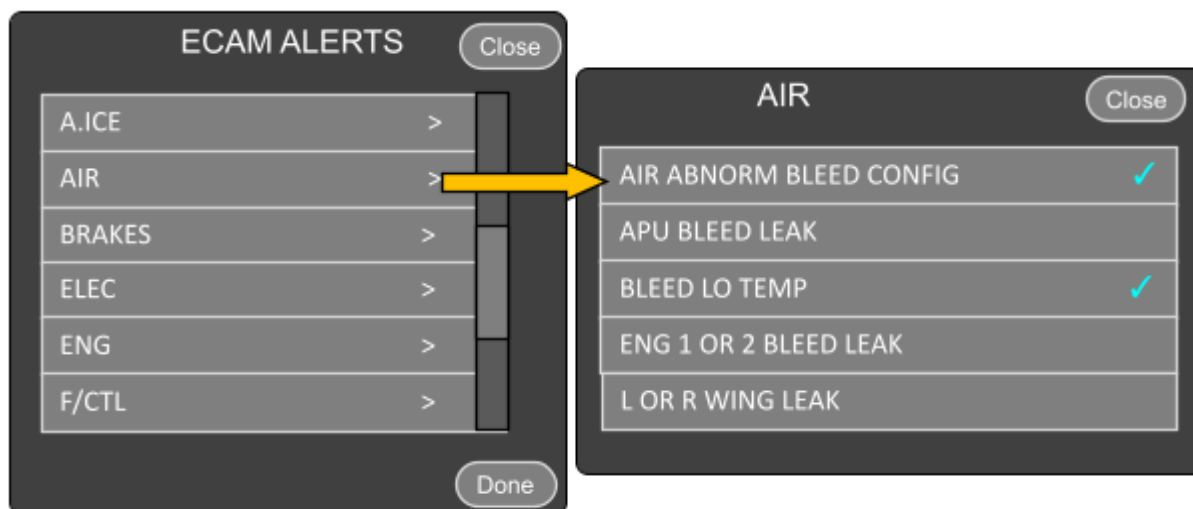
3.3. Electronic Centralized Aircraft Monitor (ECAM) Alerts

By clicking on the ECAM button, the User opens the ECAM alerts panel. This panel contains the list of possible inoperative systems that lead to an abnormal or emergency situation.

Clicking on one cell displays all the possible ECAM alerts for the concerned system.

The User may then select one or several items, and come back to ECAM ALERTS panel to select other items.

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After complete selection, the User clicks on *Done* button to validate.

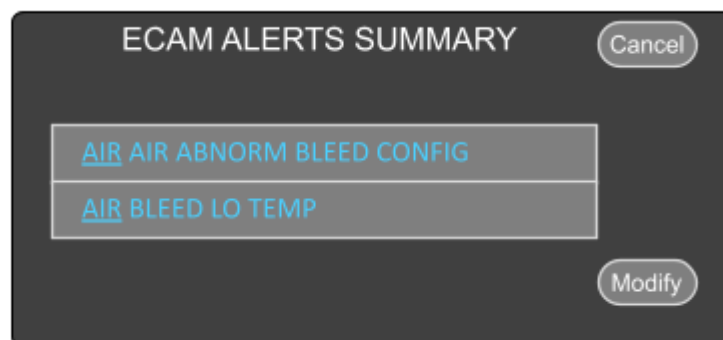
After pressing on the *Done* button, the *ECAM* button label is updated with the corresponding number of selected items.



The selection of an ECAM alert makes the LDG CONF field disappear from the aircraft configuration panel.

The LDG CONF authorized is then automatically managed by the application.

The User can add and/or delete ECAM ALERTS items by clicking on the *ECAM* button, then on the *Modify* button.



Note: On A350 and A380 aircraft, the ECAM alerts are automatically sent to the EFB via avionics synchronization.

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LANDING RESULTS FOR IN-FLIGHT - OUTPUTS

When the runway is selected and the In-Flight conditions are set, click on the *COMPUTE* button to run a computation and get results.

The results appear as soon as the computation is complete.

The landing result panel is divided in two sub-pages:

- A main results page with runway drawing to improve the situation awareness
- Default additional results and additional results chosen by administrator.

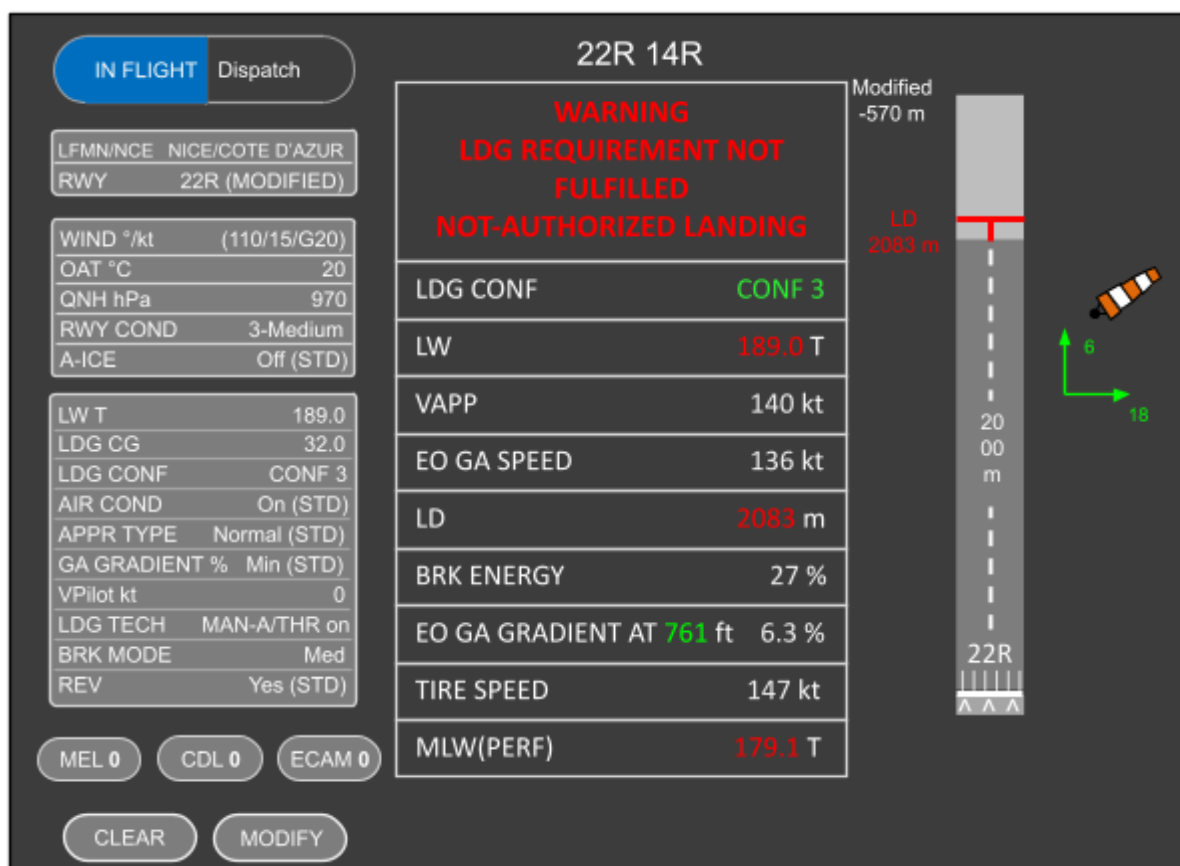
During the flight, the User must verify that they can ensure a safe landing at destination.

Depending on the computation results, the landing will be possible, or not possible.

1. SINGLE RUNWAY COMPUTATION

1.1. Landing Not Possible

The landing is not possible if the estimated Landing Weight (LW) at destination is higher than the Maximum Landing Weight limited by the performance (MLW(PERF)).



When the calculated MLW(PERF) is below the LW entered by the User, a warning message is displayed in red to notify the user that the landing is not authorized. The outputs that are limiting for the landing are displayed in red.

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The aircraft cannot land at this Landing Weight. The Landing weight must be reduced at least to the value of MLW(PERF).

1.2. Landing Possible

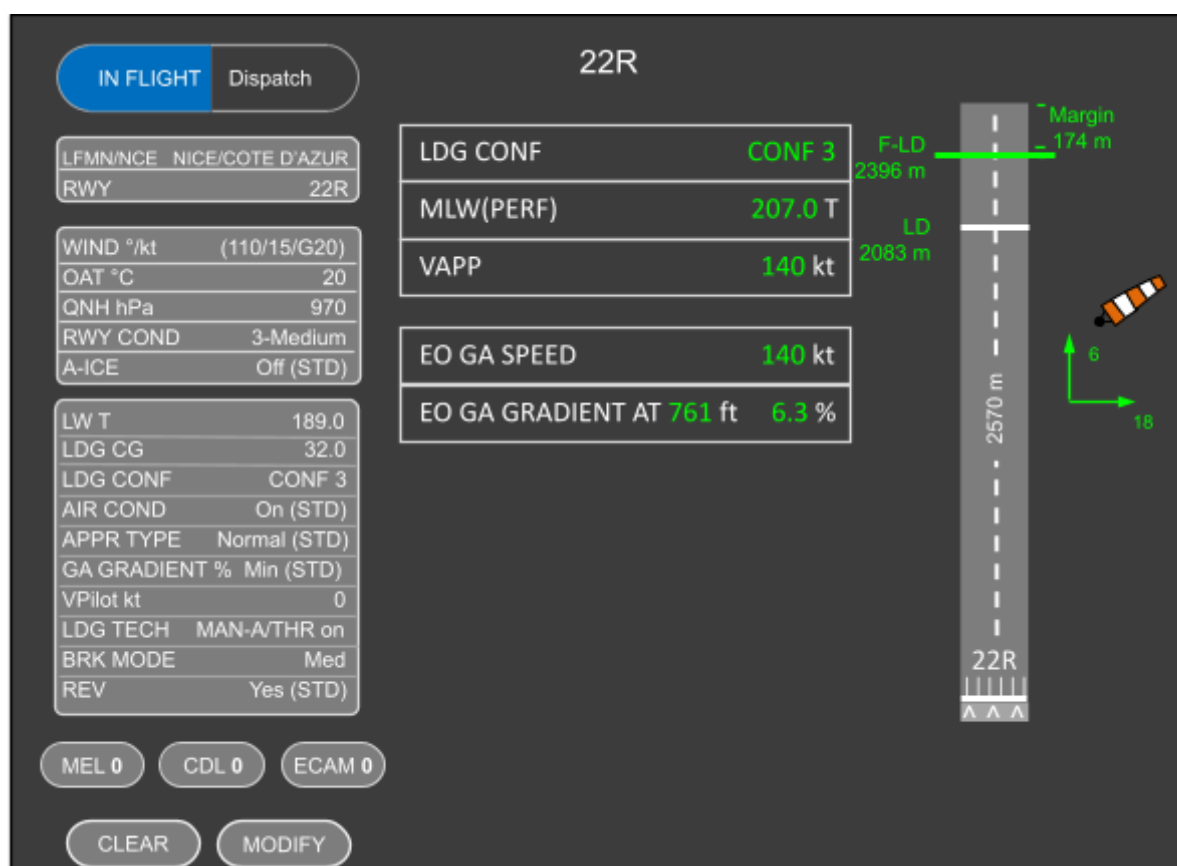
The Landing is possible when the estimated LW at destination is lower than or equal to the Maximum Landing Weight limited by the performance (MLW(PERF)) computed by the Landing application.

The LDG PERF application computes the Landing Distance (LD) and Factored Landing Distance (F-LD) associated to the LW.

Depending on the results found, and on the Landing Distance Available (LDA), the following outputs are displayed:

- $F-LD \leq LDA$

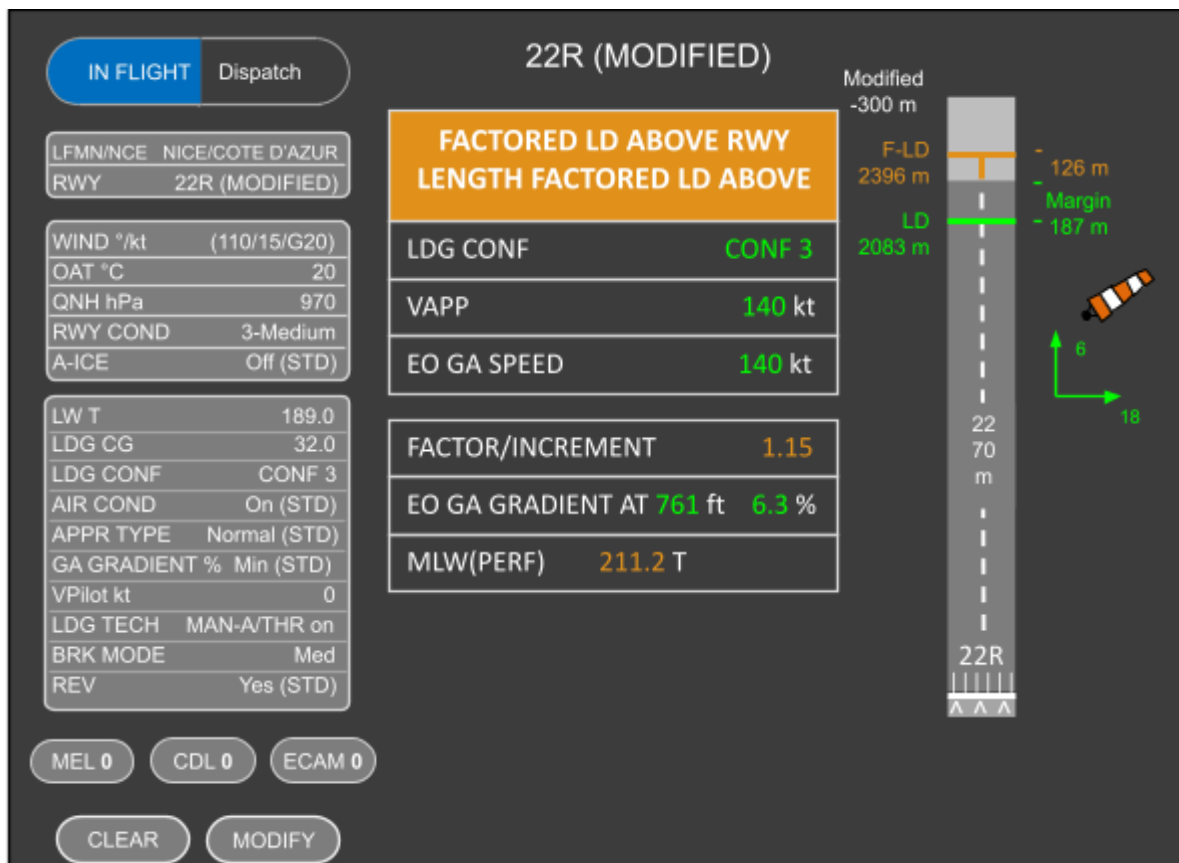
The main results page provides the following data:



AIRBUS <i>Performance Programs</i> <i>Manual</i>	PERF APPLI - LDG PERF <i>USER INTERFACE</i>	P52
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- LD < LDA < F-LD

The main results page provides the following data:



A warning message is displayed in order to notify the user that the F-LD is above the runway length.

- ROW LD > LDA

This option is only available for aircraft fitted with the Runway Overrun Warning (ROW) option.

When the ROW LD is above the LDA at the arrival airport, the message “EXPECTED ROW ALERT” is displayed in the results panel.

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		Windows L7.6 / iPad V5.6 – PPM Issue 1

The screenshot displays the '14L (MODIFIED)' performance interface. It includes a top navigation bar with 'IN FLIGHT' and 'Dispatch' tabs. The main area is divided into several sections:

- Left Panel:** Contains flight data and configuration parameters.
 - LFBO/TLS: BLAGNAC
 - RWY: 14L (MODIFIED)
 - WIND °/kt: (000/00)
 - OAT °C: 0
 - QNH hPa: 1013
 - RWY COND: 5-Good
 - A-ICE: Off (STD)
 - LW T: 67.4
 - LDG CG: Basic
 - LDG CONF: CONF FULL
 - AIR COND: Off (STD)
 - APPR TYPE: Normal (STD)
 - GA GRADIENT %: MIN (STD)
 - VPilot kt: 0
 - LDG TECH: MAN-A/THR on
 - BRK MODE: Manual
 - REV: Yes (STD)
- Center Panel:** Displays key performance indicators.
 - EXPECTED ROW ALERT** (highlighted in orange)
 - LDG CONF: **CONF FULL** (green)
 - VAPP: **137 kt** (green)
 - EO GA SPEED: **143 kt** (green)
 - FACTOR/INCREMENT: **1.15** (orange)
 - EO GA GRADIENT AT **1989ft 6.3 %** (green)
 - MLW(PERF): **70.4 T** (green)
- Right Panel:** A vertical scale diagram showing the runway profile.
 - Modified: -1500 m
 - ROW F-LD: 1445 m
 - LD: 1257 m
 - 1500 m
 - 14L
 - 55 m
 - 243 m

At the bottom, there are buttons for 'MEL 0', 'CDL 0', 'ECAM 0', 'CLEAR', and 'MODIFY'.

1.2.1. Landing Configuration (LDG CONF)

This label gives information on the configuration used for the calculation.

1.2.2. Approach Speed (VAPP)

VAPP is the aircraft approach speed considered for the landing computation, 50 ft above the runway surface. VAPP is defined from the Lowest Selectable Speed (VLS), with the addition of a speed increment due to the wind correction or induced by the effect of autothrust or ice accretion. Its computation is detailed in the additional results page.

1.2.3. Engine Out Go Around Speed (EO GA SPEED)

The EO GA SPEED displayed corresponds to the go around speed.

The EO GA SPEED field is displayed only if the Administrator has activated the "Optimize Go Around Speed" option.

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1.2.4. Engine Out Go Around Gradient (EO GA GRADIENT)

The EO GA GRADIENT displayed corresponds to the approach climb gradient, and must be higher than or equal to the minimum climb gradient entered in the CONDITIONS panel

The “EO GA GRADIENT AT” field is displayed only if the Administrator has activated the “Increase Go Around Height computation” option.

1.2.5. Maximum Performance-Limited Landing Weight (MLW(PERF))

The Maximum Performance-Limited Landing Weight (MLW(PERF)) is the maximum weight that permits to safely land on the destination runway.

The MLW(PERF) is associated with the Factored Landing Distance (F-LD) when the Landing Distance Available (LDA) is not limiting.

It is associated with the LD when:

- F-LD is above runway length
- Landing is not possible.

1.2.6. Factored Landing Distance (F-LD)

The Factored Landing Distance is the reference for In-Flight landing distance assessment. The F-LD is displayed on the runway graph.

1.2.7. Landing Distance (LD)

The LD corresponds to the Landing Distance calculated according to the forecasted conditions. The LD is displayed on the runway graph.

1.2.8. Margin

If $F-LD < LDA$ and $LD < LDA$, the margins are displayed in green :

- The difference between the runway length and the LD
- The difference between the runway length and F-LD.

If $LD < LDA < F-LD$, the displayed margins are:

- The difference between the runway length and the LD displayed in green
- The difference between the F-LD and the runway length displayed in amber.

AIRBUS Performance Programs Manual	PERF APPLI - LDG PERF USER INTERFACE	P55 Windows L7.6 / iPad V5.6 – PPM Issue 1
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1.3. Detailed Results

The Additional Results page provides the following data.

14R

LIMITATION CODE	WGT	LD	2083 m
EO GA SPEED	140 kt	F-LD	2396 m
EO GA GRA AT	761 ft 6.3 %		

VLS	131 kt	ΔV Wind	0 kt
APPR CORR	5 kt	ΔV A/THR	5 kt
ΔV pilot	0 kt	ΔV Ice Accretion	0 kt
VAPP	136 kt		

1.3.1. Limitation Code

Several regulatory requirements can limit the landing performance. The requirements that limit performance in specific cases are identified in the computation results via limitation codes. The following table indicates the various codes used for the landing limitations:

WGT	Weight limited by the LW
LDA	Weight limited by Landing Distance
ACG	Weight limited by Approach Climb Gradient
LCG	Weight limited by Landing Climb Gradient
TIRE	Weight limited by Tire Speed
BRK	Weight limited by Brake Energy

1.3.2. Details for VAPP Calculation

The VAPP is computed and displayed based on the following formula:

- $$VAPP = VLS + APPR\ COR + \Delta V_{pilot}$$

Where $APPR\ COR = \text{MAX} (\Delta V_{wind}, \Delta V_{A/THR}, \Delta V_{Ice\ Accretion})$

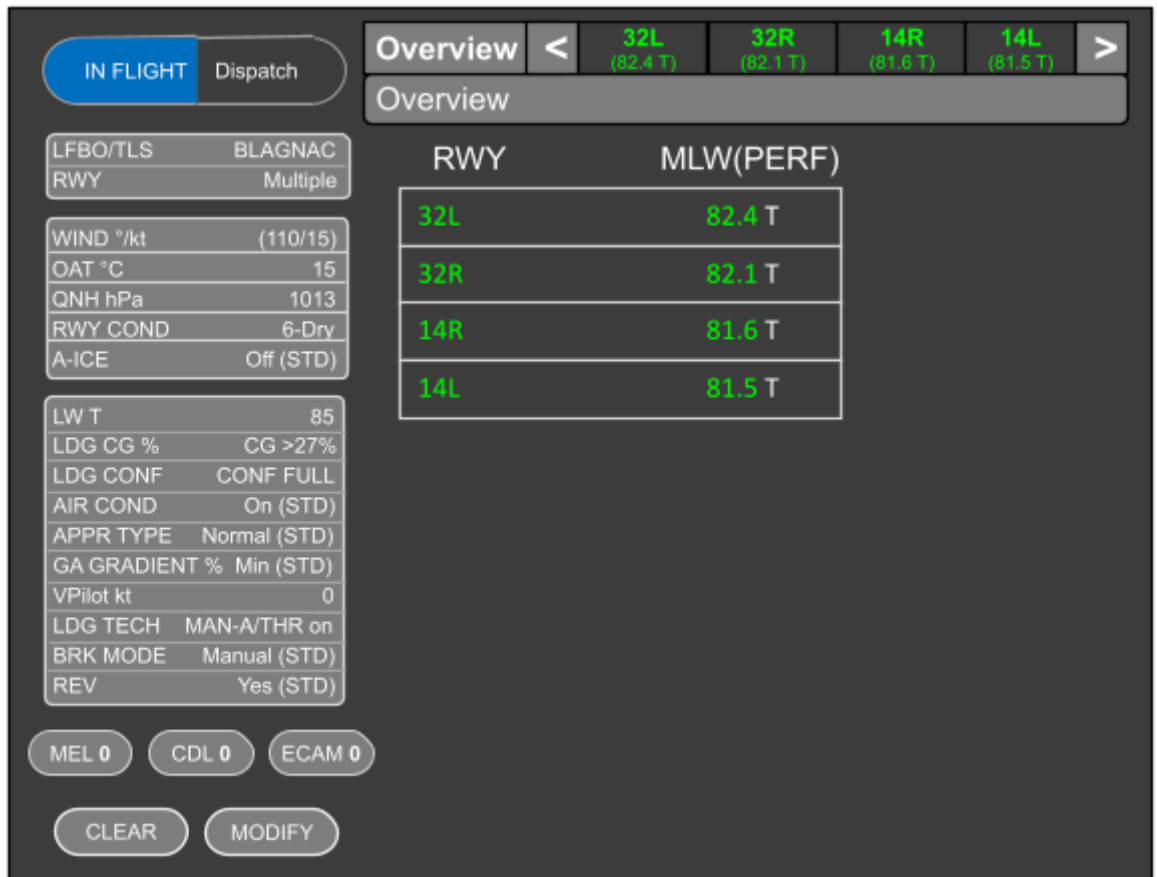
2. MULTIPLE RUNWAY COMPUTATION



The LDG PERF application determines the Landing performance for a selection of runways. The User can access the results for each runway via a title bar displayed on top of the result panel.

It contains:

- One cell named *Overview*: displays a summary of the results for all the runways



The screenshot shows the 'Overview' screen of the LDG PERF application. At the top, there are buttons for 'IN FLIGHT' (highlighted in blue) and 'Dispatch'. Below these are two tabs: 'Overview' (selected) and 'Overview' (inactive). The main display area is divided into two sections. On the left, there are two tables of flight parameters. The top table shows 'LFBO/TLS' (BLAGNAC) and 'RWY' (Multiple). The bottom table shows 'WIND °/kt' (110/15), 'OAT °C' (15), 'QNH hPa' (1013), 'RWY COND' (6-Dry), and 'A-ICE' (Off (STD)). The right table shows 'LW T' (85), 'LDG CG %' (CG >27%), 'LDG CONF' (CONF FULL), 'AIR COND' (On (STD)), 'APPR TYPE' (Normal (STD)), 'GA GRADIENT %' (Min (STD)), 'VPilot kt' (0), 'LDG TECH' (MAN-A/THR on), 'BRK MODE' (Manual (STD)), and 'REV' (Yes (STD)). On the right side, there is a table titled 'RWY' and 'MLW(PERF)' showing the Maximum Performance Limited Landing Weight for four runways: 32L (82.4 T), 32R (82.1 T), 14R (81.6 T), and 14L (81.5 T). The values are color-coded: green for 32L and 32R, and red for 14R and 14L. At the bottom, there are buttons for 'MEL 0', 'CDL 0', 'ECAM 0', 'CLEAR', and 'MODIFY'.

RWY	MLW(PERF)
32L	82.4 T
32R	82.1 T
14R	81.6 T
14L	81.5 T

For each runway, the Maximum Performance Limited Landing Weight (MLW(PERF)) is displayed after the runway ID.

The list is sorted by weight from the highest to the lowest and is color-coded:

- Green when the MLW(PERF) is higher than or equal to the LW
- Red when the MLW(PERF) is lower than the LW.

AIRBUS <i>Performance Programs</i> <i>Manual</i>	PERF APPLI - LDG PERF <i>USER INTERFACE</i>	P57 Windows L7.6 / iPad V5.6 – PPM Issue 1
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- One cell for each selected runway: displays the results for this specific runway.



For each runway, the results are presented in the same way as for single runway computation.

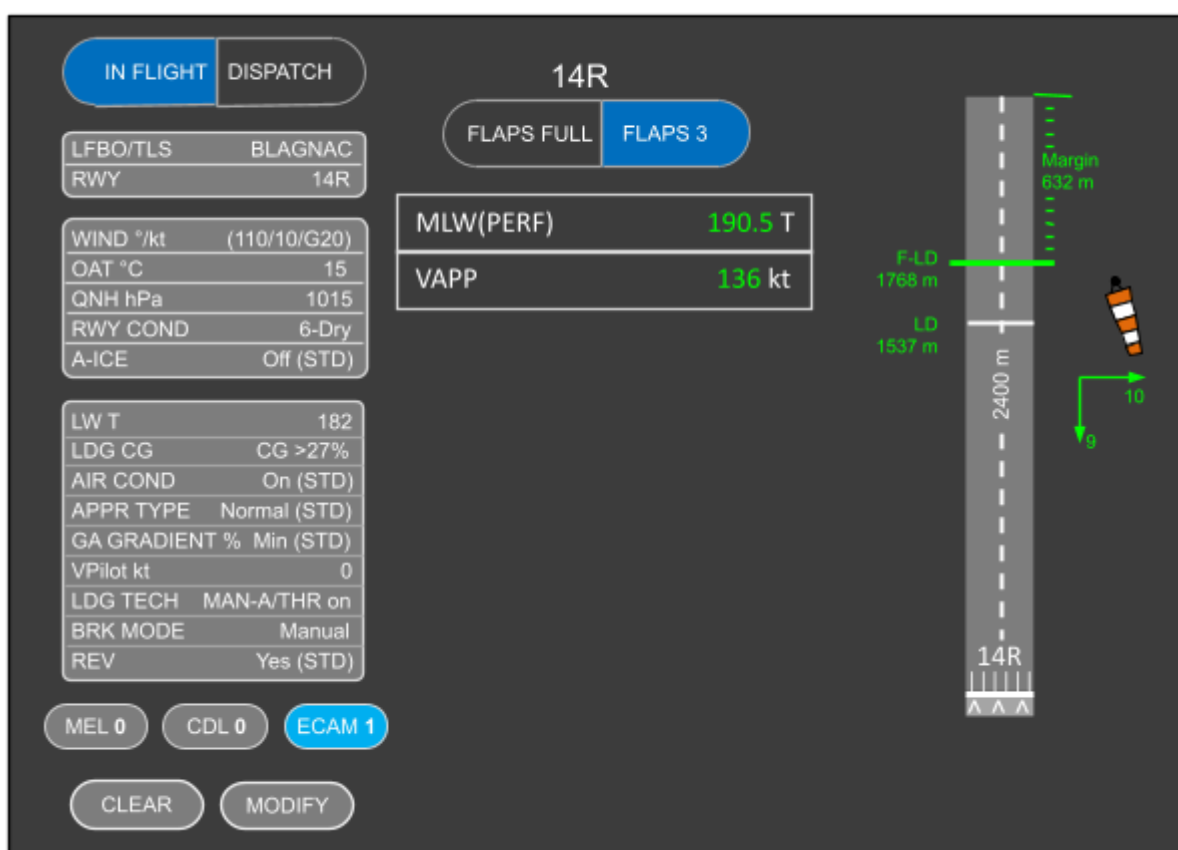
AIRBUS <i>Performance Programs</i> <i>Manual</i>	PERF APPLI - LDG PERF <i>USER INTERFACE</i>	P58 Windows L7.6 / iPad V5.6 – PPM Issue 1
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3. COMPUTATION WITH ECAM ALERT

The results panel is slightly modified (refer to the [LIST of INOP SYSTEMS](#) section below). But the main change that appears when selecting an ECAM alert is linked to the VAPP determination details that appear in the first Additional Results page.

3.1. Main Results Page

The main results page provides the following data:



3.1.1. Flaps Lever Position (FLAPS LVR POS)

Some ECAM alerts require a fixed flaps lever position for landing. For these items, this fixed lever position is displayed in the RESULTS panel.

For other in-flight failures (that permits a landing in Conf FULL or Conf 3), both flaps lever positions are displayed.

The results displayed in the results panel then correspond to the flaps lever position selected by the User with the *FLAPS FULL* / *FLAPS 3* buttons.

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3.1.2. Maximum Performance-Limited Landing Weight (MLW(PERF))

The Maximum Performance-Limited Landing Weight (MLW(PERF)) is the maximum weight that permits to safely land on the destination runway.

The MLW(PERF) is associated with the Factored Landing Distance (F-LD) when the Landing Distance Available (LDA) is not limiting.

It is associated with the Landing Distance (LD) when:

- The F-LD is above the runway length
- The landing is not possible.

3.1.3. Approach Speed (VAPP)

VAPP is the aircraft approach speed considered for the landing computation, 50 ft above the runway surface. VAPP is defined from the Lowest Selectable Speed (VLS), with the addition of a speed increment due to the wind correction or induced by the effect of autothrust or ice accretion. Its computation is detailed in the additional results page.

3.1.4. Factored LD (F-LD)

The Factored Landing Distance is the reference for In-Flight landing distance assessment. The F-LD is displayed on the runway graph.

3.1.5. Landing Distance (LD)

The LD corresponds to the Landing Distance calculated according to the forecasted conditions. The LD is displayed on the runway graph.

3.1.6. Margin

If $F-LD < LDA$ and $LD < LDA$, the margins are displayed in green :

- The difference between the runway length and the LD
- The difference between the runway length and F-LD.

If $LD < LDA < F-LD$, the displayed margins are:

- The difference between the runway length and the LD displayed in green
- The difference between the F-LD and the runway length displayed in amber.

AIRBUS <i>Performance Programs</i> <i>Manual</i>	PERF APPLI - LDG PERF <i>USER INTERFACE</i>	P60 Windows L7.6 / iPad V5.6 – PPM Issue 1
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3.2. Detailed Results

The Additional Results page provides the following data.

14R

LIMITATION CODE	WGT	LD	1537 m
		F-LD	1768 m
Vref	131 kt	ΔV Wind	3 kt
ΔVref	0 kt	ΔV A/THR	5 kt
APPR CORR	5 kt	ΔV Ice Accretion	0 kt
ΔV pilot	0 kt		
VAPP	136 kt		

FLAPS FULL
FLAPS 3

LIST of INOP SYSTEMS

3 pairs of spoilers inop

☐
☒
☐

14R

LIMITATION CODE	WGT	LD	1412 m
		F-LD	1623 m
Vref	130 kt	ΔV Wind	3 kt
ΔVref	0 kt	ΔV A/THR	5 kt
APPR CORR	5 kt	ΔV Ice Accretion	0 kt
ΔV pilot	0 kt		
VAPP	135 kt		

FLAPS FULL
FLAPS 3

LIST of INOP SYSTEMS

3 pairs of spoilers inop

☐
☒
☐

 Performance Programs Manual	PERF APPLI - LDG PERF <i>USER INTERFACE</i>	P61 Windows L7.6 / iPad V5.6 – PPM Issue 1
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3.2.1. Limitation Code

The limitation code appears on this page only when Factored LD < LDA.

3.2.2. Reference Speed (Vref)

Vref is by definition the VLS in CONF FULL of the aircraft, and is used as the reference speed for landing computations with in-flight failures.

3.2.3. Approach Speed (VAPP)

For calculations with ECAM alert, the VAPP determination with failure logic is implemented:

$$VAPP = Vref + \Delta V_{ref} + APPR COR + \Delta V_{pilot}$$

Where:

- Vref is by definition the VLS in CONF FULL of the aircraft, and is used as the reference speed for landing computations with in-flight failures.
- ΔV_{ref} corresponds to the speed increment due to the failure
- APPR COR is the approach speed correction, that depends on:
 - o ΔV_{ref}
 - o A/THR
 - o Ice Accretion
 - o Headwind.
- ΔV_{pilot} : speed increment that the flight crew can enter to increase the approach speed.

Note:

$$APPR COR = VAPP - Vref - \Delta V_{ref} - \Delta V_{pilot}$$

However LDG PERF performs the computation in CAS with 3 decimals precision, then the speeds are converted in IAS and rounded for display.

As a consequence, due to the conversion and the rounding of the speeds, APPR COR displayed can be 1kt above or below $VAPP - Vref - \Delta V_{ref} - \Delta V_{pilot}$.

Note:

The LDG PERF application always computes MLW(PERF) limited by the Approach Climb Gradient with One Engine Inoperative (OEI). The effect of an ECAM alert is not taken into account on Approach Climb Gradient calculation.

For failures with a landing configuration required (e.g. FLAPS LVR POS 2), go-around performance is always computed with flaps 3.

For failures with a landing configuration not required, go-around performance is computed with:

- Flaps 3 for landing flaps FULL, or
- Flaps 2 for landing flaps 3, in non-overweight, or
- Flaps 1+F for landing flaps 3, in overweight.

3.2.4. List of INOP SYSTEMS

The list of INOP SYSTEMS displayed in the LDG PERF application results page are the ones that are considered for the In-Flight landing performance assessment and that have an impact on the aircraft performance.

In some specific cases, the list of INOP SYSTEMS displayed in the LDG PERF application may differ from the list displayed in the aircraft avionics. Indeed, the computation may use more conservative assumptions.

The flight crew must refer to the list of INOP SYSTEMS displayed in the aircraft avionics to read the actual list of the inoperative systems.

FLYSMART+ FOR IPAD*

OLB V5.6.3

USER GUIDE – Rev A

04 MAY 2026

Reference	UG-FSAIOLB20260504
Confidentiality	Flysmart+ Customers ONLY

RECORD OF REVISIONS

Revision	Date	Chapters	Description of Changes
RevA	04 MAY 2026	All	Initialization of the document for Flysmart+ Apps V5.6.3 delivery.

TABLE OF REFERENCES

N°	Title	Reference	Issue	Date
[REF 1]	Flysmart+ for iPad Apps V5.6.3 – Release Note	RN-FSAI20260504	RevA	04 MAY 2026
[REF 2]	Flysmart+ for iPad Apps V5.6.3 – Installation Guide	IG-FSAI20260504	RevA	04 MAY 2026
[REF 2]	Flysmart+ for iPad Manager V5.6.3 – User Guide	UG-FSAIMGR20260504	RevA	04 MAY 2026

LIST OF ACRONYMS

Acronym	Definition
ABN	ABNormal
CDL	Configuration Deviation List
CRM	Crew Resource Management
DM	Dispatch Message
DU	Documentary Unit
ECAM	Electronic Centralized Aircraft Monitor
EMER	EMERgency
FAQ	Frequently Asked Question
FCOM	Flight Crew Operating Manual
FCTM	Flight Crew Techniques Manual
GDU	Group of Documentary Units
ID	IDentification
iOS	Apple Portable Devices Operating System
LEDU	List of Effective Documentary Units
LETR	List of Temporary Revisions
LOM	List Of Modifications
MEL	Minimum Equipment List
MMEL	Master Minimum Equipment List
MSN	Manufacturer Serial Number
OLB	Ops Library Browser
PDF	Portable Document Format
SOH	Summary Of Highlights
TDU	Temporary Documentary Unit

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1 INTRODUCTION

This document is the User Guide of the Flysmart+ for iPad Ops Library Browser (OLB) App **V5.6.3 and all its subsequent minor versions**.

It aims at describing all the features of the OLB.

Flysmart+ for iPad OLB is an application developed by SKYWISE enabling the display and the consultation of the Airbus Flight Ops manuals as well as the Airline's in-house manuals.

The operation of Flysmart+ on iPad devices implies the use of iPadOS Apps on the iPad device as well as the Flysmart+ Gateway software on the ground segment.

ACCESSING THE OLB APP

CHAPTER 02

2 ACCESSING THE OLB APP

The Ops Library Browser (OLB) App can be accessed via one of the following icons.

OLB App on the iPadOS HOME Screen

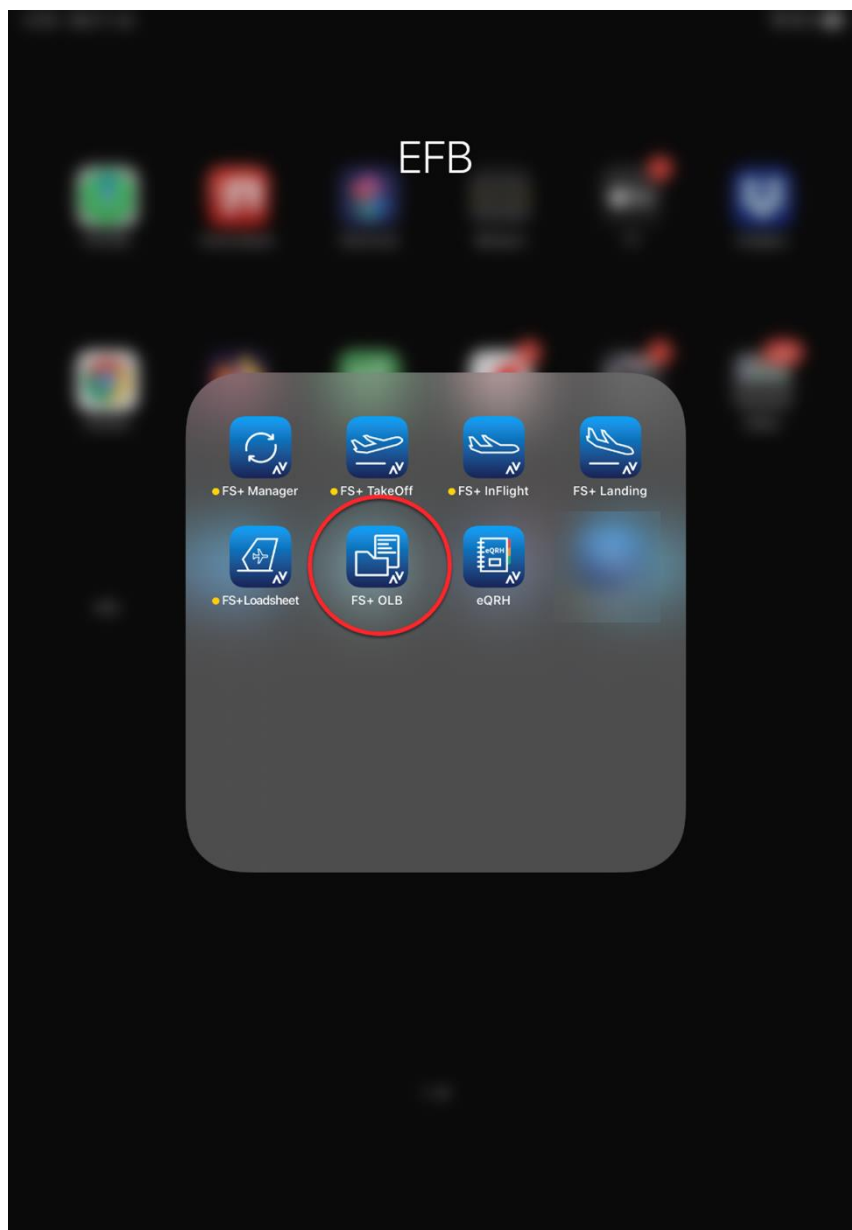


Figure 1: OLB App on iPad Home page

OLB App icon from any Flysmart+ App via the switching bar



Figure 2: OLB icon on Flysmart+ switching bar

OLB App icon from any “My Flight” page



Figure 3: OLB icon on OLB My Flight page

INSTALLATION OF OLB MANUALS

CHAPTER 03

3 INSTALLATION OF OLB MANUALS

For information on the installation of OLB Manuals in the OLB App, refer to the Flysmart+ for iPad Manager User Guide [REF 3].

OLB APP OVERVIEW

CHAPTER 04

4 OLB APP OVERVIEW

4.1 Accessing the Manuals

After starting the OLB, the My Flight page is displayed.

If the aircraft details (aircraft family and aircraft registration) have been selected from the Performance Apps “My Flight” page, they are automatically retrieved and the OLB displays the available manuals for the current aircraft.



Figure 4: OLB My Flight page with information from Performance Apps

If no information comes from the Performance Apps “My Flight” page, the OLB icon is disabled.



Figure 5: Empty OLB My Flight page

It is necessary to select the aircraft family and the aircraft registration from the available lists. The User can select the aircraft family. A filter is then applied on the aircraft registrations and the User can the desired aircraft registration.



Figure 6: List of available aircraft families



Figure 7: List of available aircraft registrations for one aircraft family

The User may also directly select an aircraft registration.

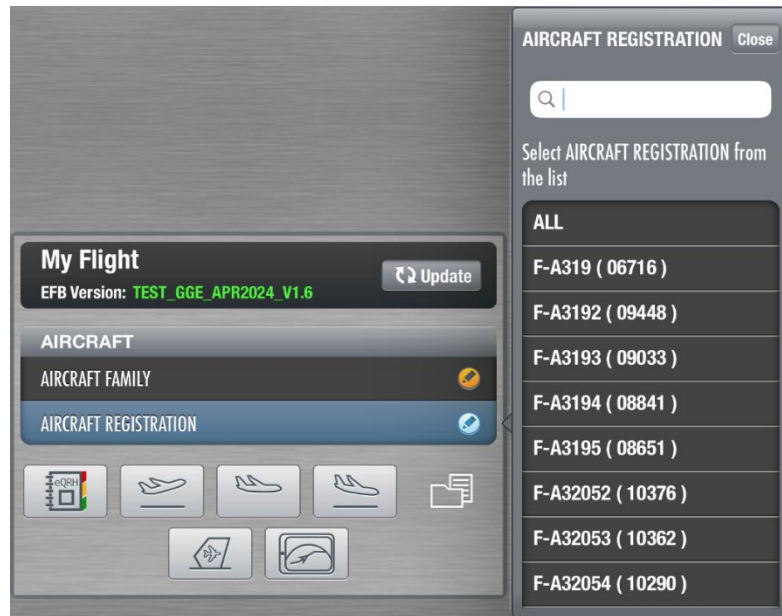


Figure 8: List of all available aircraft registrations

Note

If there is only one aircraft family available, the My Flight page will only propose the list of available aircraft registrations.

4.2 Browsing the content of a manual

4.2.1 Navigation bar

When the OLB button is tapped, the OLB opens and displays the list of available manuals for the current aircraft.

The User may select the desired manual for the consultation.

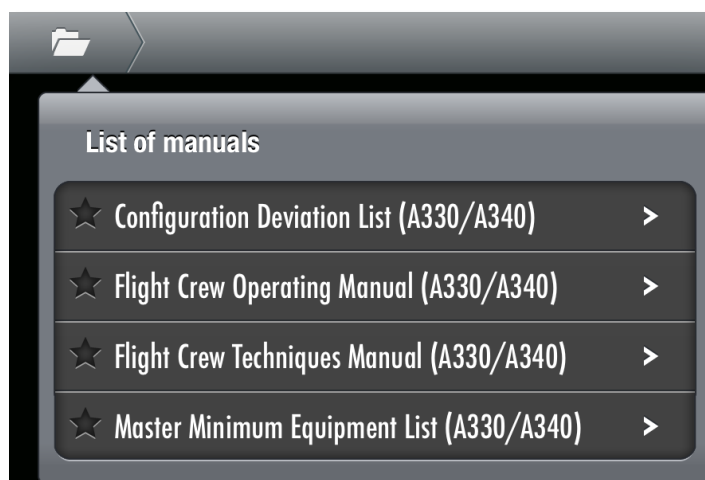


Figure 9: List of available manuals

Note

By default, the manuals are sorted by alphabetical order.

After selecting the content of a manual, the top of the OLB displays the following:

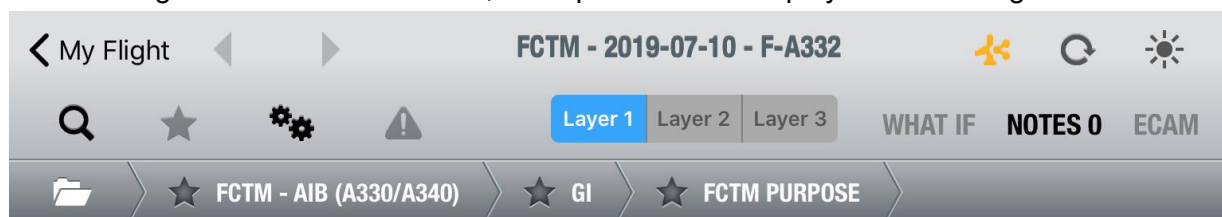


Figure 10: OLB tool bar

The following table explains each available icon and label.

 My Flight	To return to the OLB "My Flight" page
	To browse to the previous / next Documentation Unit (DU)
FCTM - 2019-07-10 - F-A332	Data of the currently consulted manual with: MANUAL NAME MANUAL REVISION DATE AIRCRAFT REGISTRATION
	EFB connection to aircraft network
	To lock / unlock the screen rotation
	To adjust screen brightness

	To give access to information panel with: - List of available manuals - Search Feature
	To open the list of available manuals

Breadcrumb of the consulted DU in the manual. Taping one level of the breadcrumb opens the corresponding sublevels of the manual.



Chapter [5 ADVANCED BROWSING FEATURES](#) provides complete description of the following:

	Search Feature
	Bookmarks
	Options Menu

Chapter [6 ADVANCED FEATURES](#) provides complete description of the following:

	Selected Inoperative Items
Layer 1 Layer 2 Layer 3	Select layer level
WHAT IF	Access to
NOTES 0	Pilot Notes
ECAM	Access to related ECAM Alerts

4.2.2 Hyperlinks

Different types of links are available in the content of the manuals.

4.2.2.1 Link from current manual to another manual

This kind of link starts with “Refer to” and the title of the content in the target manual.
For example: Refer to [FCOM/INTRODUCTION](#)

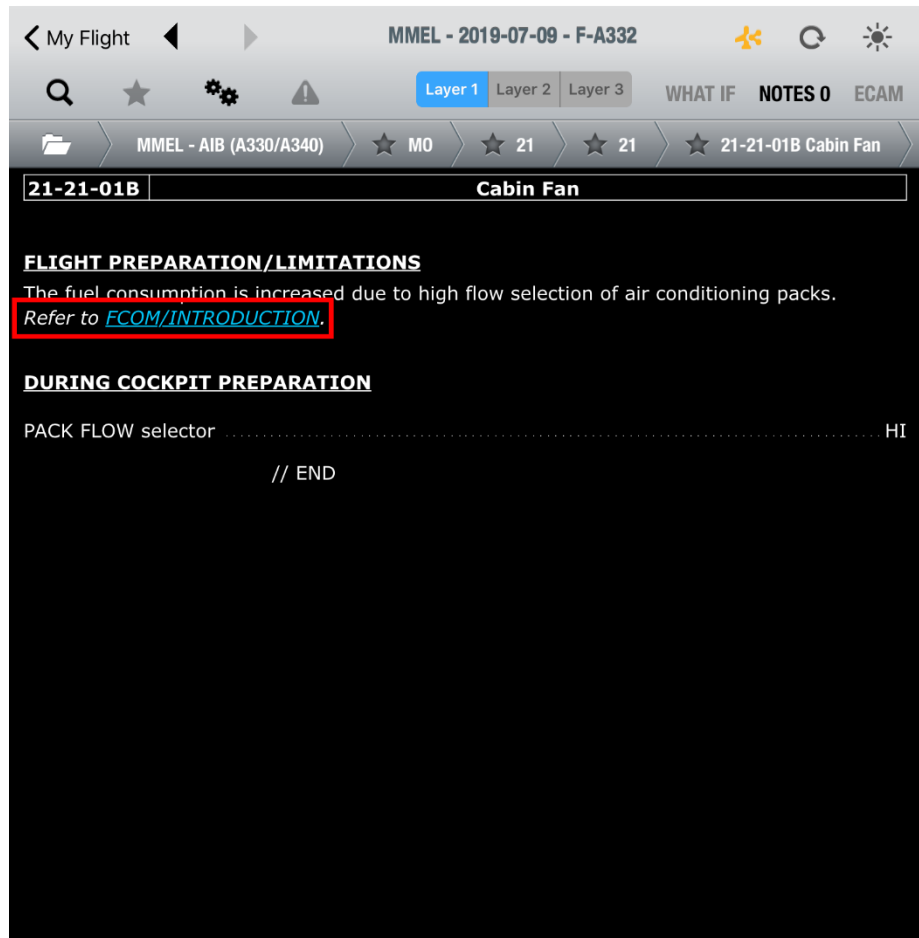


Figure 11: Link to another manual

4.2.2.2 Link inside the current manual

This kind of link starts with “Refer to” and the title of the content in the current manual.
For example: Refer to [Item 27-40-02 Stabilizer Actuator Electric Motor](#)

MMEL - 2019-07-09 - F-A332

Layer 1 Layer 2 Layer 3 WHAT IF NOTES 0 ECAM

- AIB (A330/A340) MI 27 40 27-40-03 PRIM Pitch Channel

27-40-03 PRIM Pitch Channel

☐ 27-40-03A PRIM pitch channel 1 or 2 inoperative due to the THS

Repair Interval	Nbr Installed	Nbr Required
C	3	2

m The PRIM pitch channel 1 or 2 may be inoperative provided that:

- 1) A check is performed before each flight to ensure that the EFCS ground report incriminates only the THS, and
- 2) The associated stabilizer actuator electric motor is considered inoperative.
Refer to [Item 27-40-02 Stabilizer Actuator Electric Motor](#)

☐ 27-40-03B PRIM Pitch channel 1 inoperative not due to the THS

Repair Interval	Nbr Installed	Nbr Required
C	3	2

The PRIM pitch channel 1 may be inoperative provided that the PRIM 1 is considered inoperative.
Refer to [Item 27-93-01 PRIM 1](#)

☐ 27-40-03C PRIM Pitch channel 3

Repair Interval	Nbr Installed	Nbr Required
C	3	2

The PRIM pitch channel 3 may be inoperative provided that the stabilizer actuator electric motor 3 is considered inoperative.
Refer to [Item 27-40-02 Stabilizer Actuator Electric Motor](#)

Figure 12: Link in current manual

4.2.2.3 Link inside the current DU

This kind of link mainly includes the foot notes in tables or procedures. It is displayed next to the content to which the foot note is attached and automatically scrolls to the target text when tapped.

For example: **CKPT TEMP** [\(1\)](#)

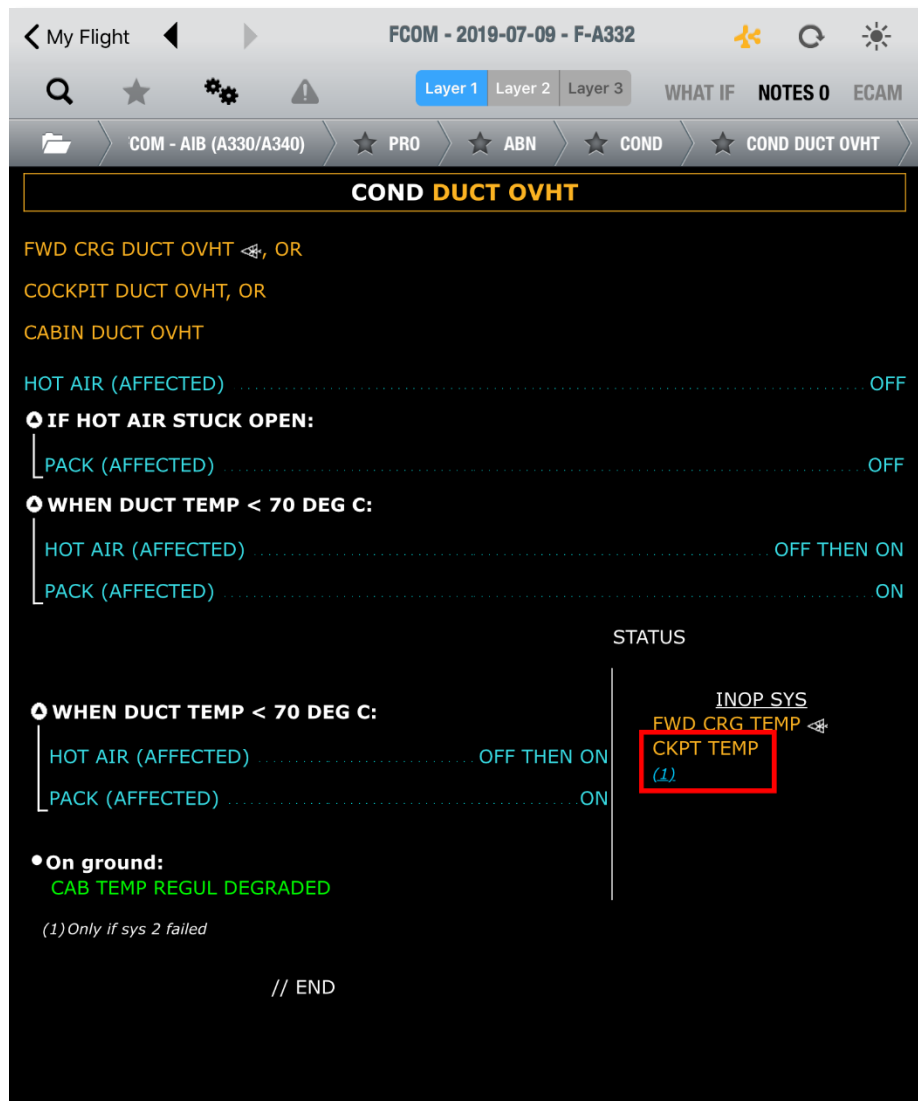


Figure 13: Link in the current DU

4.2.3 Swipe feature

Apply a horizontal movement on the screen with two fingers to swipe from a DU to previous/next one in the current manual section:

- From the right to the left, to swipe from an item to the next one:

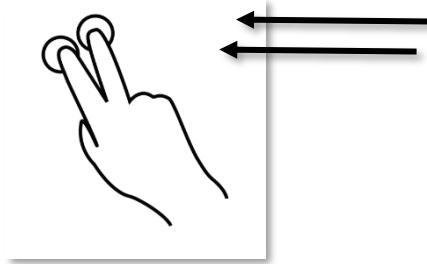


Figure 14: Next Page Swipe

- From the left to the right, to swipe from an item to the previous one:

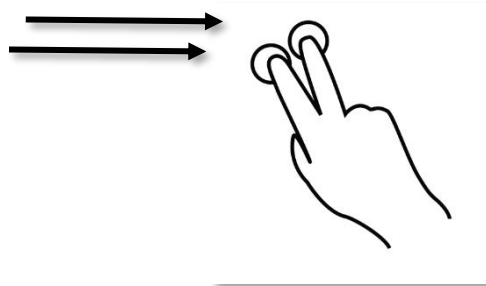


Figure 15: Previous Page Swipe

ADVANCED BROWSING FEATURES

CHAPTER 05

5 ADVANCED BROWSING FEATURES

5.1 Search

5.1.1 Search overall description

The OLB enables 4 types of search:

1. **Word Search**

- Word Search (AND)
- Word Search (OR)
- Word Search (Exact Phrase)

2. **ECAM Search** (when manuals contain ECAM contextual data)

3. **DU Code Search**: to search for a DU via its reference

4. **Functional Code Search**: for MEL/CDL items and MEL operational procedures

5.1.2 Search Capabilities

1. The search is performed both in:

- The DU titles and the DU content:
DU content means in all layers (corresponds to “Information Layer”), in DU ID Strip (corresponds to “Show DU Info”) and in collapse or expand paragraph.
- All manuals that match the aircraft context defined in the “*My Flight*” page (Aircraft Family and Aircraft Registration).
However, some limitations exist depending on the type of search. They are described later in the document.

2. Search is case insensitive.

3. Number of results limited:

If number of results is more than 100, the User will be prompted to refine his search criteria:

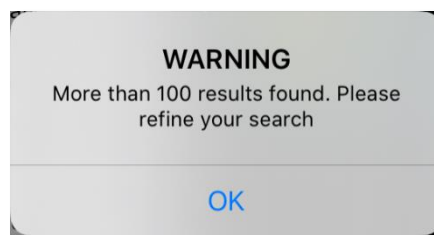


Figure 16: Warning when too many results found

4. List of results and counter

After a search, the list of results displays Documentary Units (DUs) that match the search criteria.

Counter of hits is based on the number of invariant levels found.

If several DU matches search criteria inside one Group of DUs (GDU), then GDU is displayed once in the list of results.

5. Highlight:

When the User selects a DU in the list of results, the DU appears and the search criteria is highlighted in yellow.

6. Example of syntaxes

NOTA “_” character means “ ” (Space character)

Type of Search	Logical Operators		Wildcards (?,*) * replaces 0 or several characters ? replaces 0 or 1 character	Acceptable syntaxes
	AND	OR		
Word Search (AND)	✓	✗	✓ (may be used with logical operators)	Aircraft Air* P?lot Aircraft_ground_pilot
Word Search (OR)	✗	✓	✓ (may be used with logical operators)	Aircraft Air* P?lot Aircraft_ground_pilot
Word Search (Exact Phrase)	✗	✗	✗	limited_weight limited_takeoff_weight
DU Code Search	✗	✗	✓	00007?13.0001001 00007???3.0001001 00007???3 7456 00007513.000* 00007*3.0001001 *7513.0001001
Functional Code Search	✗	✗	✓	22-10-0? 22-?? 30-11-01 22-10* 22*-03
ECAM Search	✗	✗	✗	Not applicable

Note

A Warning message is displayed when “?” and “*” are used alone. They must be combined with at 1 numerical character or 2 alphabetical characters.

5.1.3 How to use the Search features

5.1.3.1 Common features

The search functions are available from the left pane (tap the  icon to display it).

Note

Default Search Type is “WORD Search (AND)”.

Tap the  button to choose the desired Search type:

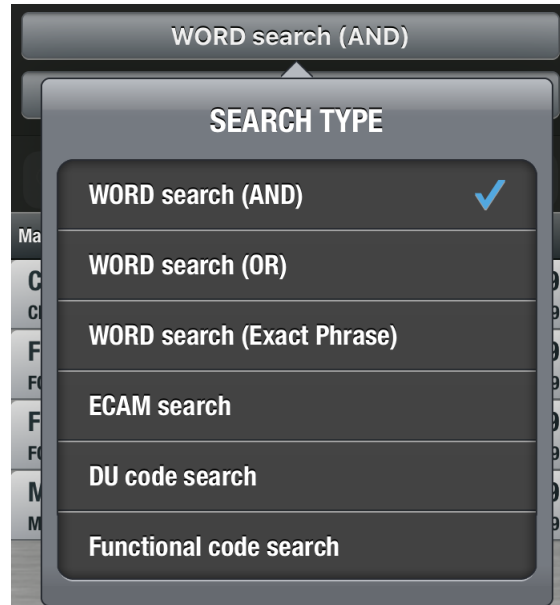


Figure 17: Available Search options

Enter the string to search in the Search Field (1) then hit the Search key of the keyboard (2) to launch the search.

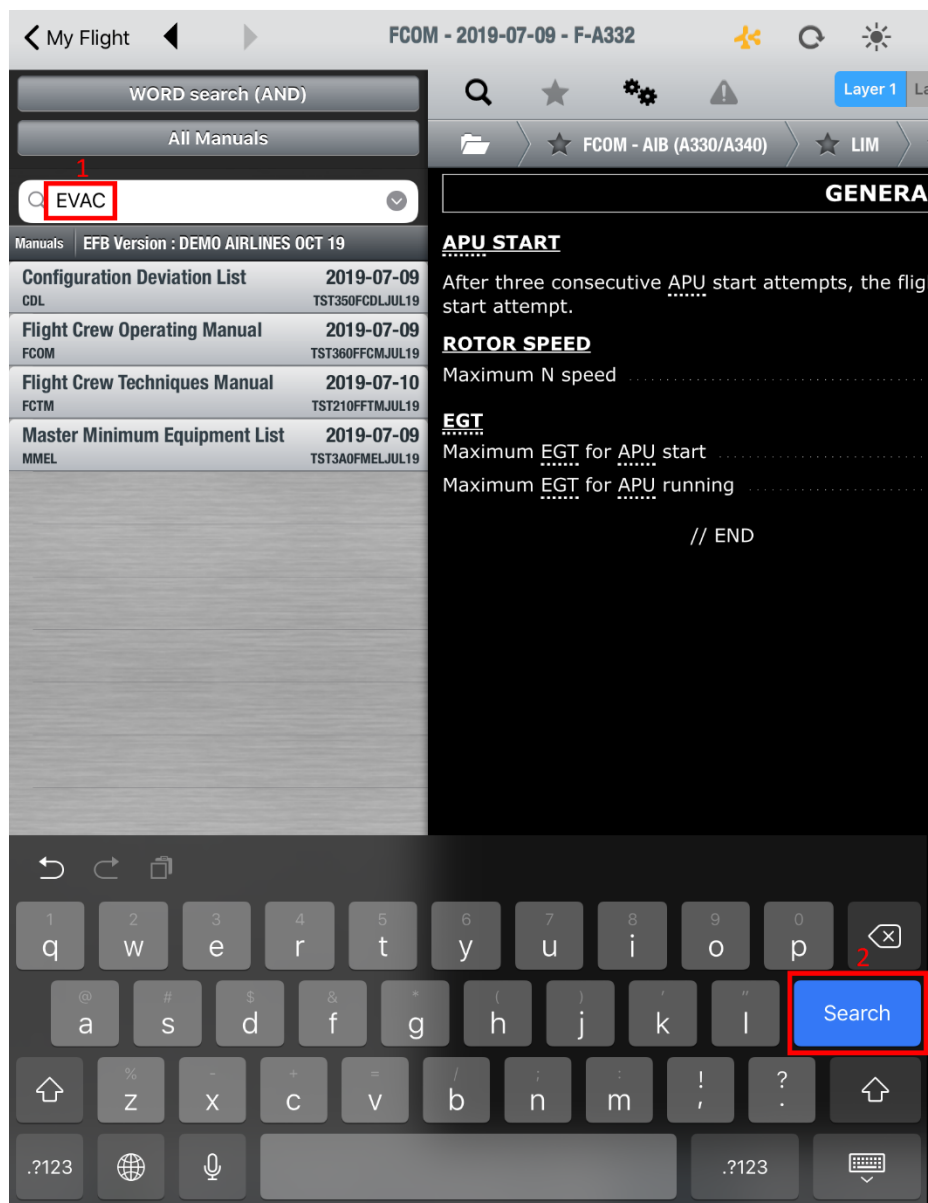


Figure 18: Word Search example

Note

For non-latin languages keyboard, the defined keyboards (see iPad options / General / Keyboard / Keyboards) may be used by tapping the following option button on the keyboard.

The following options are available:

	To remove the current string in the Search filed
	To switch between Search mode and Manual list
	To remove search string and search results
	To activate the green highlight in the breadcrumb of the path to the result.

Tap the DU in the list of results: string is highlighted in yellow.

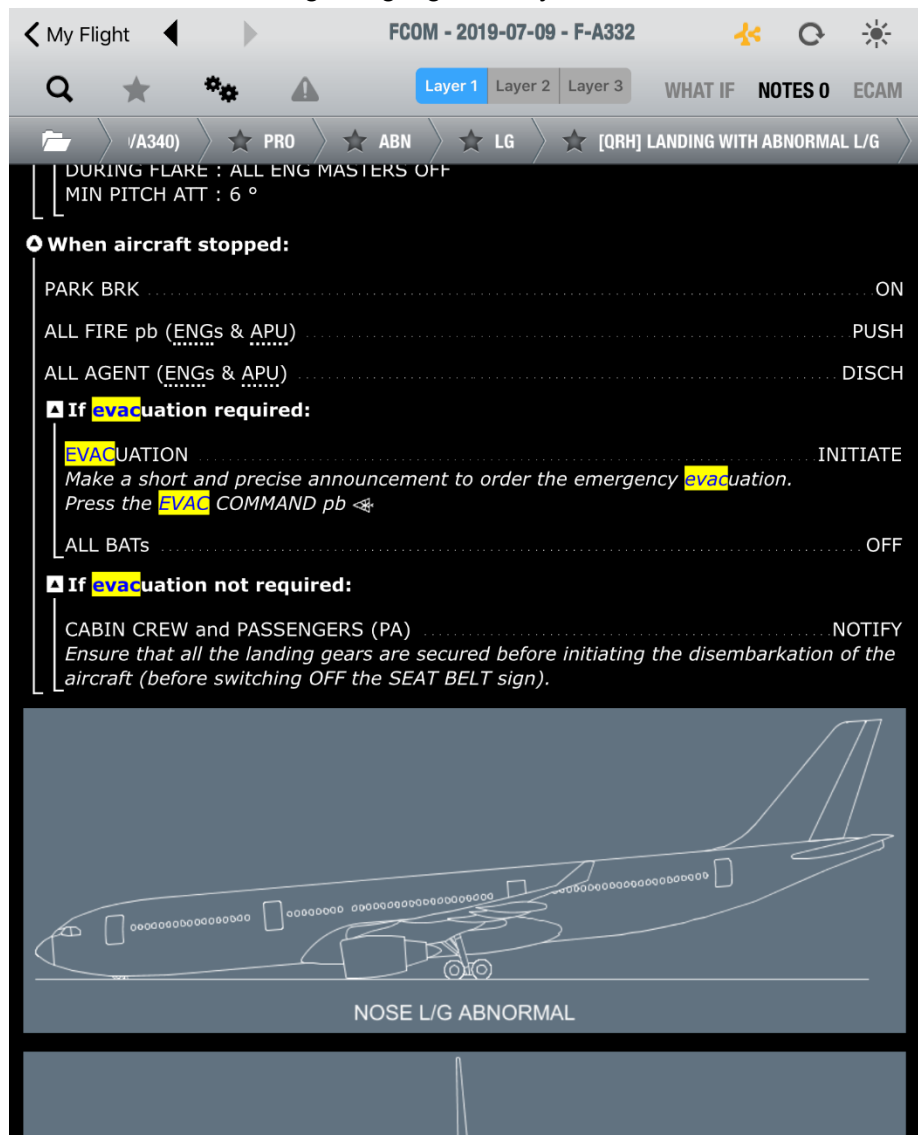


Figure 19: Word Search result highlight

When displaying the resulting DU, it is possible that string does not appear (no highlight). It is recommended to change layer level to the maximum allowed, activate “Show DU info” option and expand all the paragraphs.

5.1.3.2 WORD search

3 types of WORD Search are available in “Search Type” list

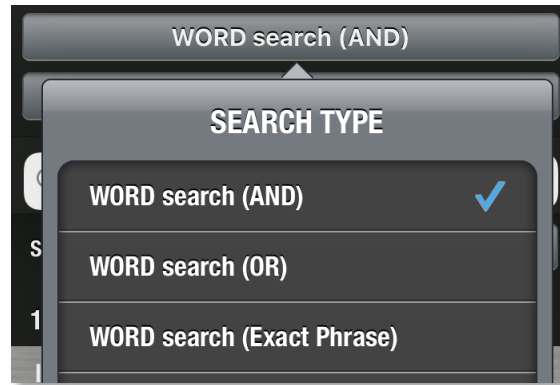


Figure 20: Focus on Word Search options

Space character is dedicated to separate strings to combine when performing a WORD Search (AND) or a WORD Search (OR).

Note

For preliminary pages, only Summary of Highlights (SOH) may be searched (LEDU, LOM, LETR... are not indexed).

Note

For the “Exact Phrase” mode, as search is based on an index, if a word is not indexed, it will not be taken into account. As a consequence, search will find more results as expected.

Example: if the User enters “on left engine”, as “on” is not indexed, the phrase searched will be “left engine”.

5.1.3.3 ECAM search

The “ECAM Search” mode is only available if ECAM alerts are implemented in the manuals available for the current aircraft.

When selecting the “ECAM Search” mode, the ECAM Message list is automatically displayed.

The User can enter the beginning of an ECAM Alert to pre-filter the list, as shown below.

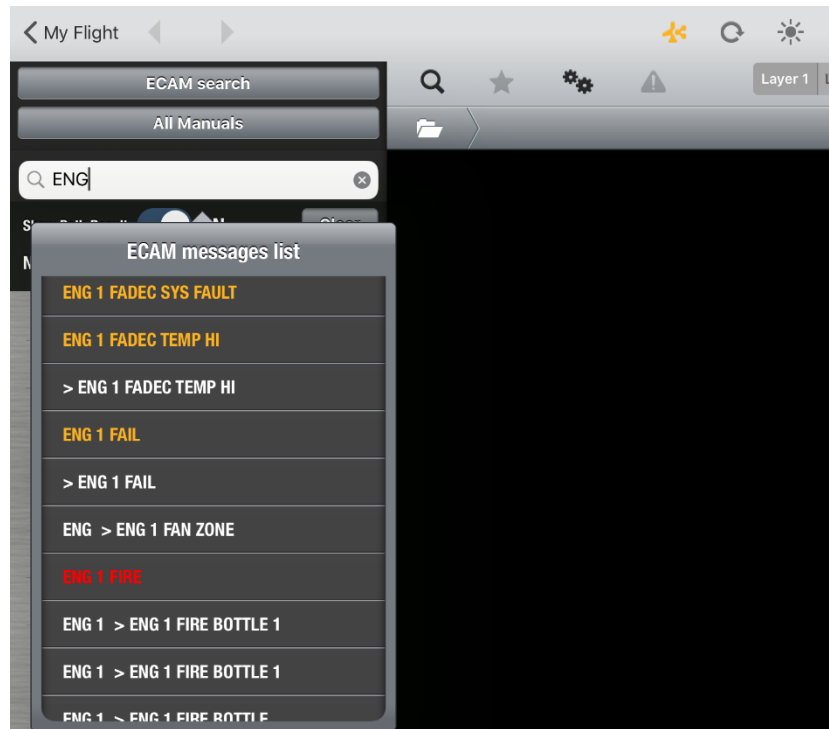


Figure 21: ECAM/Dispatch Messages search

The titles of the ECAM Alerts and Dispatch Messages appear in a dedicated color in the result list (same color than the title of the associated DU):

- ECAM Alerts EMER: Red
- ECAM Alerts ABN: Amber
- Dispatch Message (DM): White

Once the User has chosen an ECAM Message, the associated DU path is available for selection.

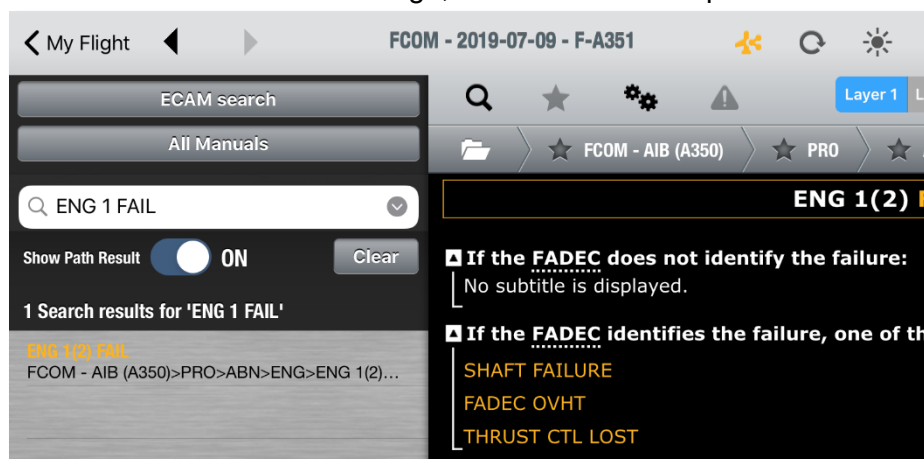


Figure 22: ECAM Search result

5.1.3.4 DU CODE search

The DU Code Search enables the User to search a DU by taping the reference of the DU.

The reference of a DU is located on the DU Information strip:

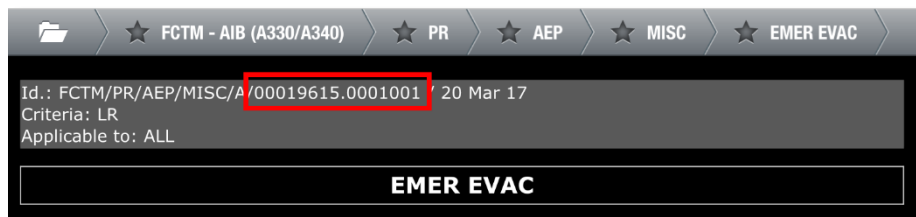


Figure 23: DU Code search

Note

If the User wants to find part of a DU Code, he does not need to put the word between '*' character.

5.1.3.5 FUNCTIONAL CODE search

The Functional Code Search enables the User to search an MEL/CDL item or an MEL Operational Procedure by entering the functional code (e.g. 27-64-01).

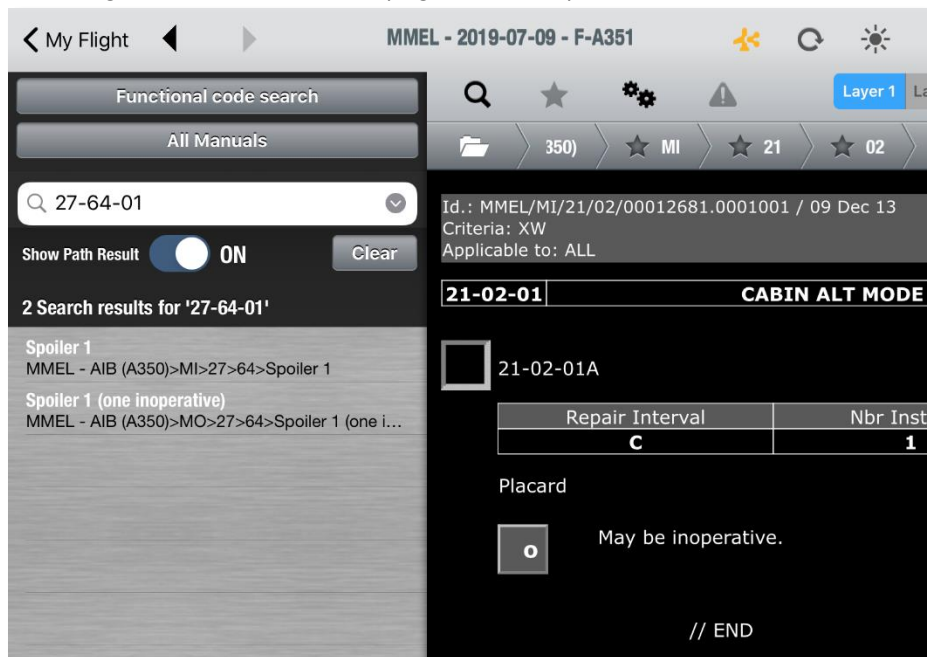


Figure 24: Functional Code Search

When selecting a DU in the search results, the DU opens and the searched Functional Code is highlighted in the content.

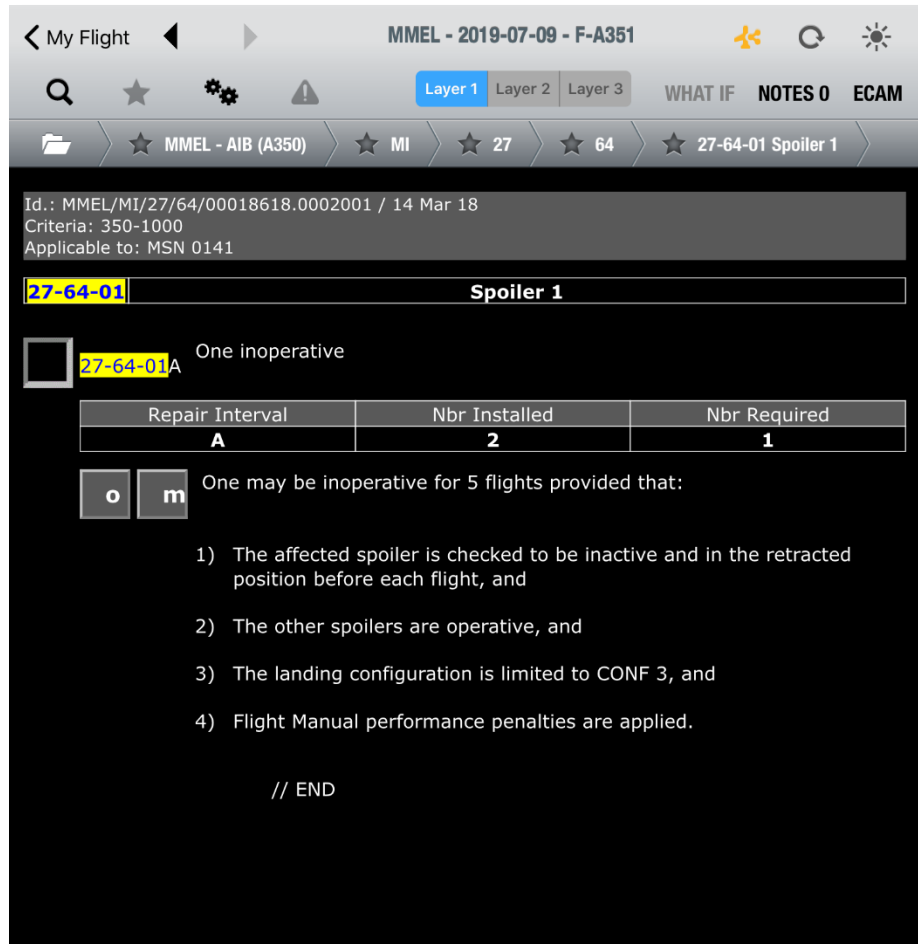


Figure 25: Functional Code search result display

Note

If the User wants to find part of a Functional Code, he does not need to put the word between ‘*’ character.

5.2 Bookmarks

5.2.1 How to create a bookmark

This function enables to add the current DU to a favorites list. If the User changes the aircraft type, the list of bookmarks is cleared.

To bookmark a DU, tap the  icon once. It turns yellow as shown below.

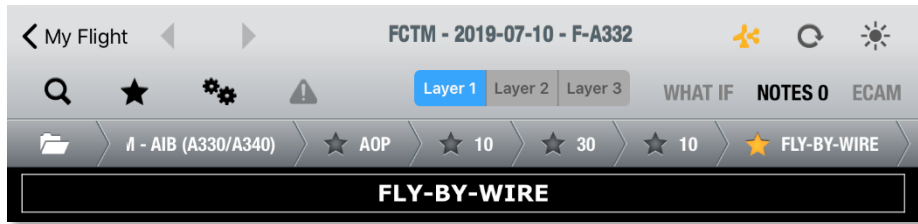


Figure 26: Regular bookmark

5.2.2 How to create a permanent bookmark

A permanent bookmark remains even after a “Clear All” on “My Flight” page or after the OLB App is restarted.

To permanently bookmark a DU, tap the  icon twice or tap the  icon once. It turns yellow with a padlock as shown below.

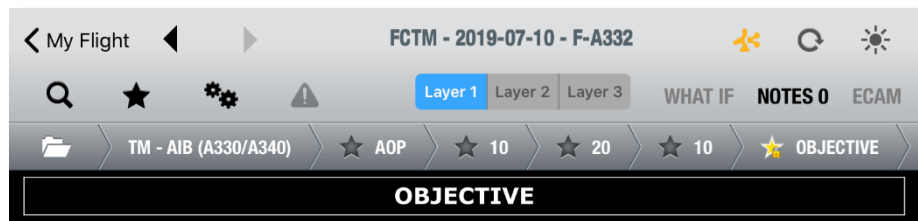


Figure 27: Permanent bookmark

5.2.3 How to consult an existing bookmark

The bookmarks for a manual are available through the  button. Tap the desired bookmark to display the associated DU.

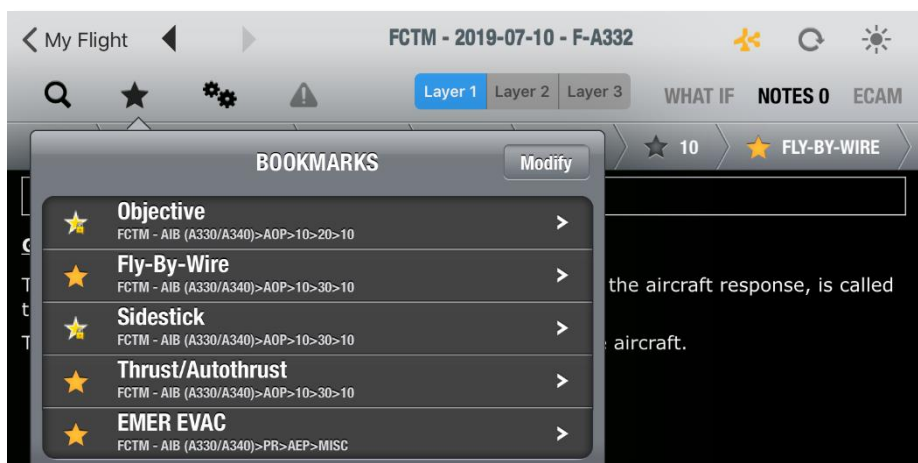


Figure 28: List of available bookmarks

All permanent bookmarks of a manual are kept when this manual is updated.

If the target of a permanent bookmark is no more available in the updated manual, it is greyed out in the list of bookmarks. The User shall manually delete this permanent bookmark.

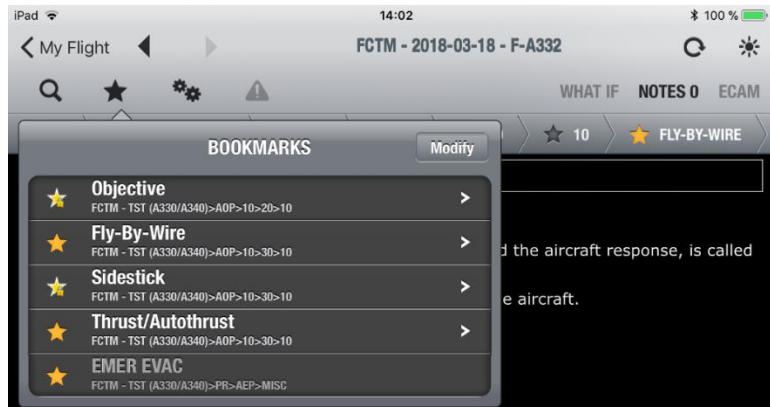


Figure 29: Greyed out permanent bookmark

5.2.4 How to delete a bookmark

In order to delete one or several bookmarks, it is necessary to use the “Modify” button in the bookmark list.

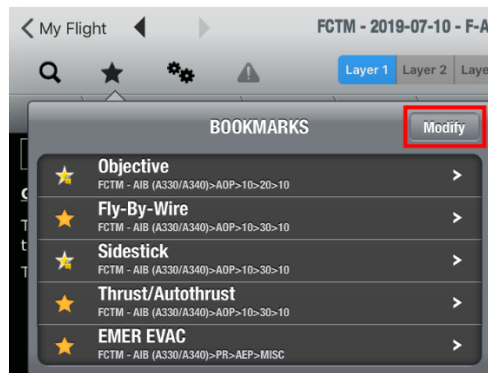


Figure 30: Delete bookmark

Tap the “Delete All” button to clear all the available bookmarks.

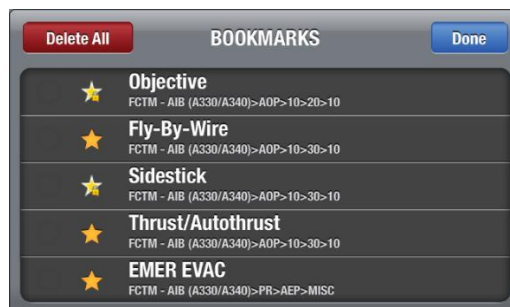


Figure 31: Delete all bookmarks

The User may also select one or some of the bookmarks and tap the “Delete (x)” button to clear the selected bookmarks.

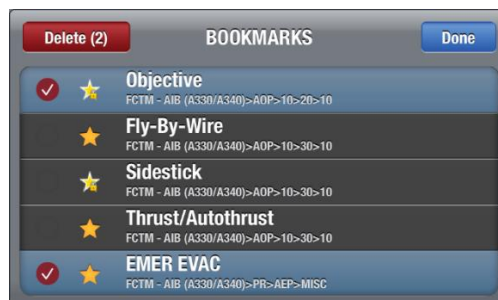


Figure 32: Delete selected bookmarks

5.3 Options Menu

Tap the gear wheels icon  to display the Options menu.

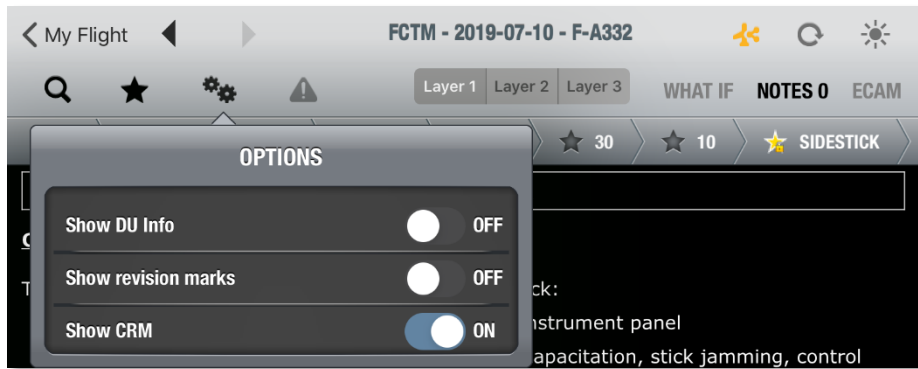


Figure 33: Options Menu

Note

Each option remains ON or OFF until the User changes it.

5.3.1 Show DU Info

To display or not the DU information strip, tap the “Show DU Info” button ON/OFF.

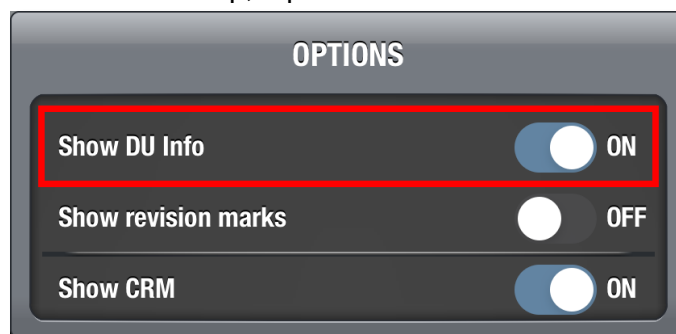


Figure 34: Option “Show DU Info” activated

The DU Information strip is displayed at the beginning of each DU.

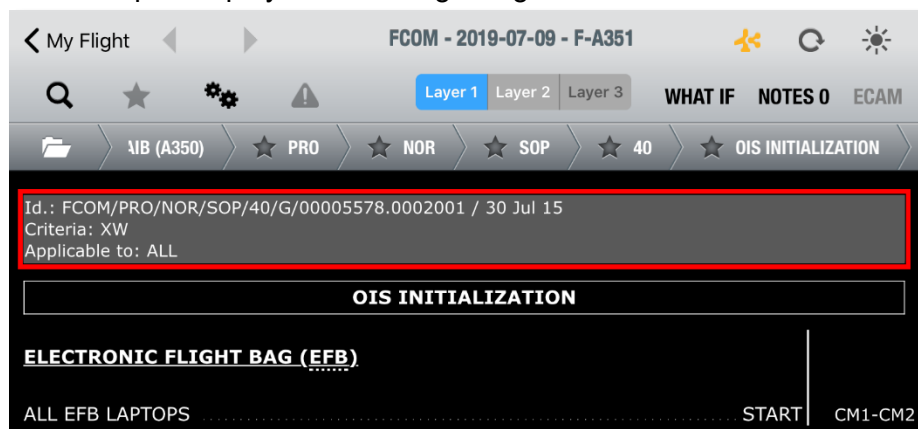


Figure 35: DU Info displayed

5.3.2 Show revision marks

To display or not the Revision Marks, tap the “*Show revision marks*” button ON/OFF.

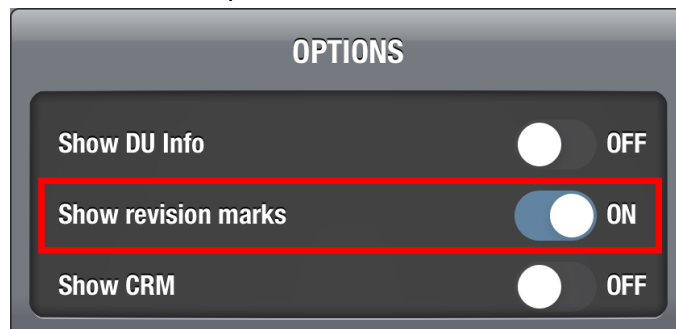


Figure 36: Option “Show revision marks” activated

When set to ON, a white revision bar is displayed on the left-hand side of the modified content, and the associated highlights are displayed in blue.

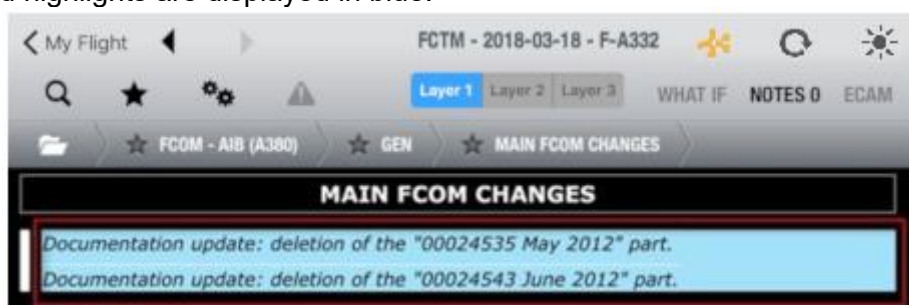


Figure 37: Display of revision marks

5.3.3 Show CRM

The “CRM” option displays the Crew Resource Management concerning the DU content. It is applicable to Standard Operating Procedures.

To display or not the CRM, tap the “*Show CRM*” button ON/OFF.

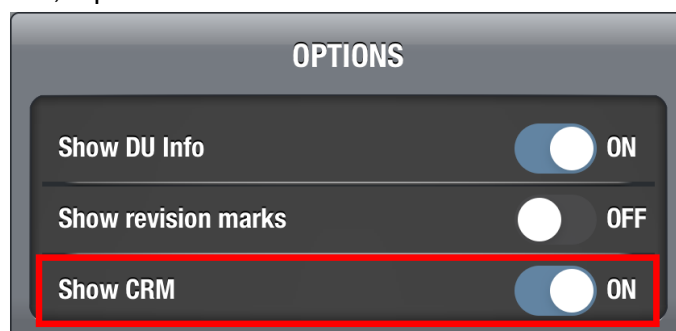


Figure 38: Option “Show CRM” activated

When set to ON, the CRM information is displayed in a dedicated column on the right-hand side of the DU.

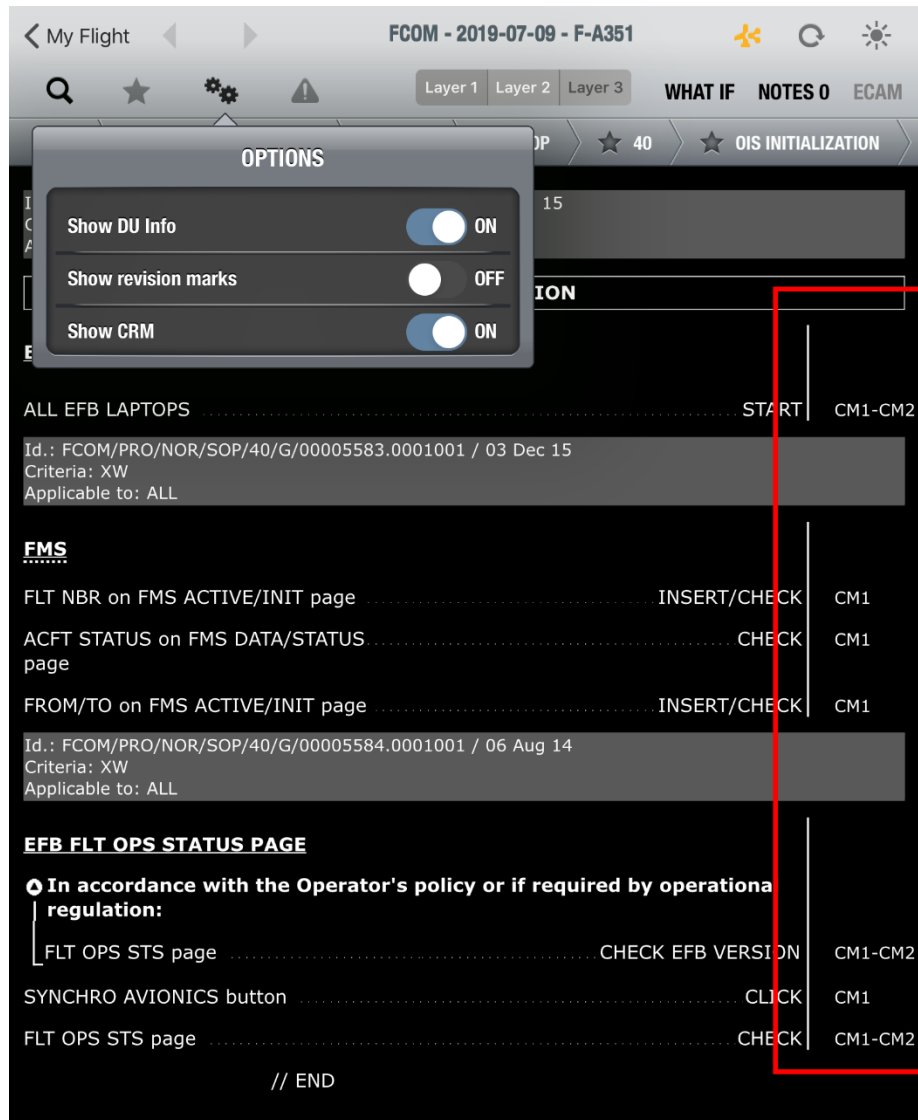


Figure 39: Display of CRM information

Note

The CRM content is displayed only if the manual content has been authored accordingly.

5.4 Information Layer

There are three layers of information:

- Layer 1: “Need to know”, is the default layer
- Layer 2: “Nice to know”, is displayed on a dark grey background
- Layer 3: “Detailed information”, is displayed on a light grey background.



Figure 40: Option "Information Layer" selection

When the User selects a layer of information, it remains selected during the consultation of several DUs.

When the User selects a layer of information that is not available, the highest available layer of information is displayed.

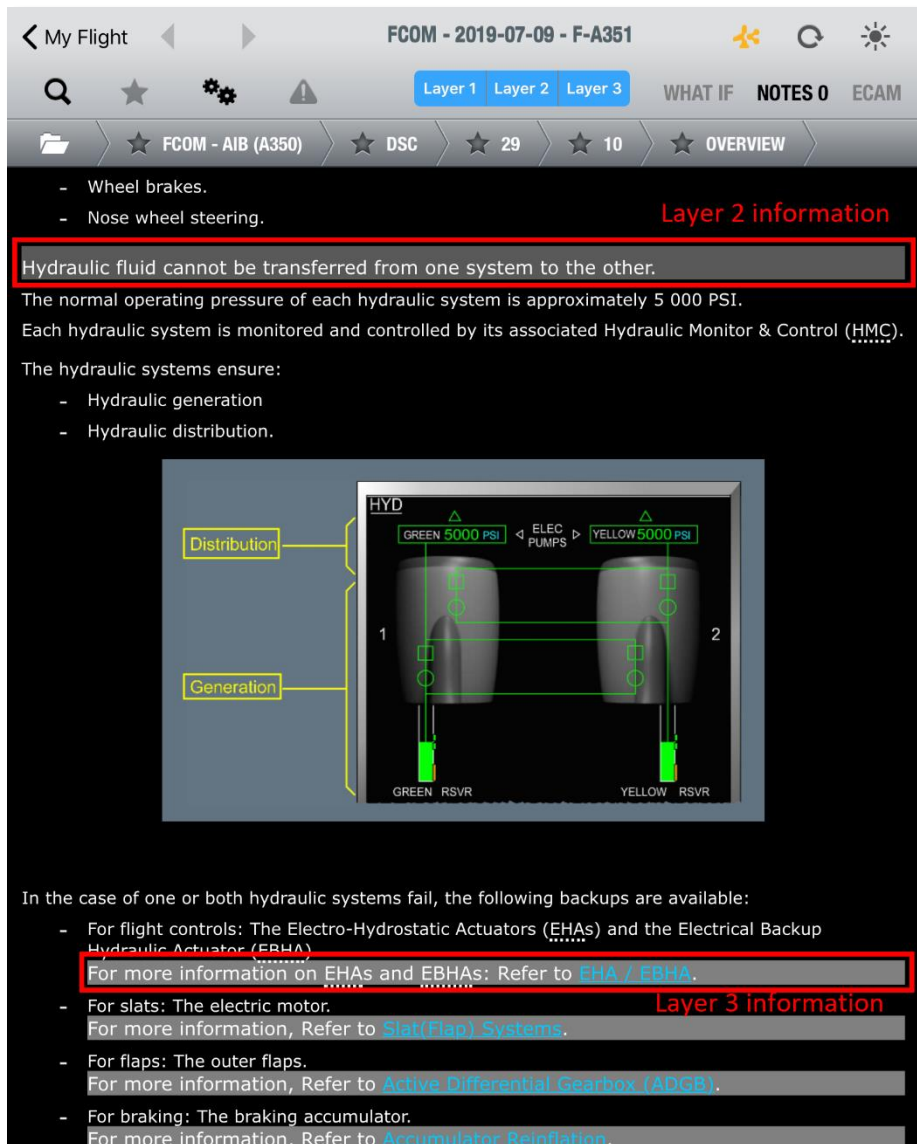


Figure 41: Display of Information Layers in DU content

5.5 Tools

5.5.1 Abbreviations

When abbreviations are available in the content, they are underlined with a dashed line.

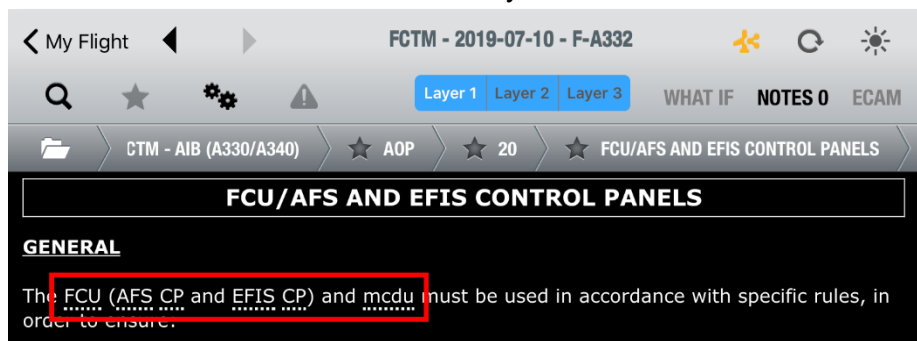


Figure 42: Abbreviation information availability

Tap on the desired abbreviation to display the associated definition.

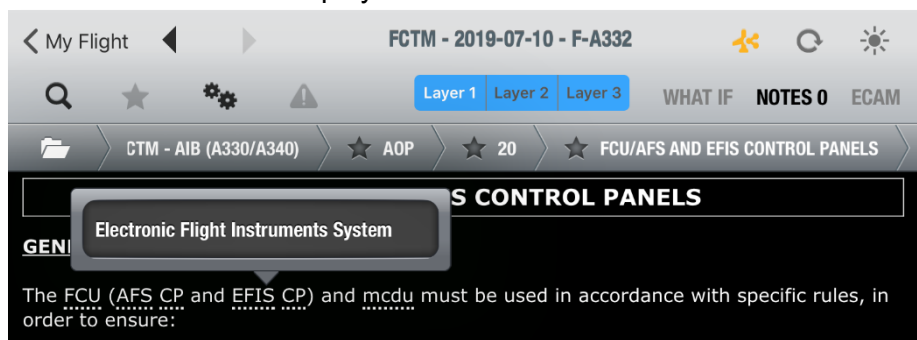


Figure 43: Display of abbreviation definition

5.5.2 Thumbnail Illustrations

Thumbnail illustrations appear as a symbol in the DU content.

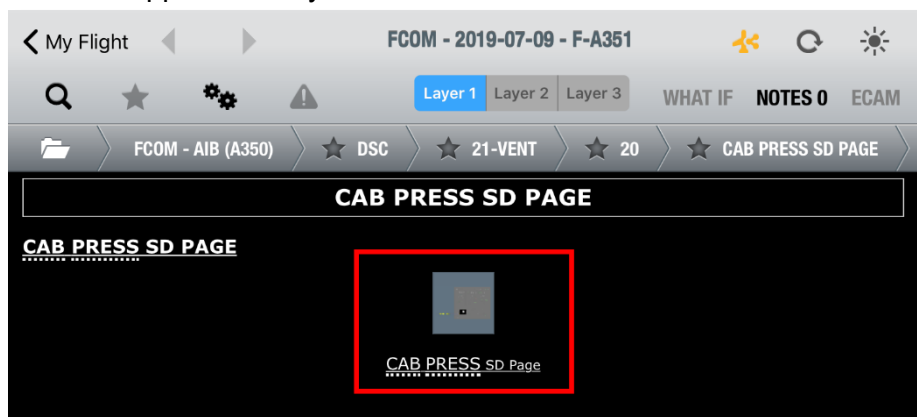


Figure 44: Thumbnail illustration

When tapping the thumbnail, the screen is split in 2 frames.

In portrait mode, the upper frame displays the consulted DU and the bottom frame displays the illustration corresponding to the thumbnail.

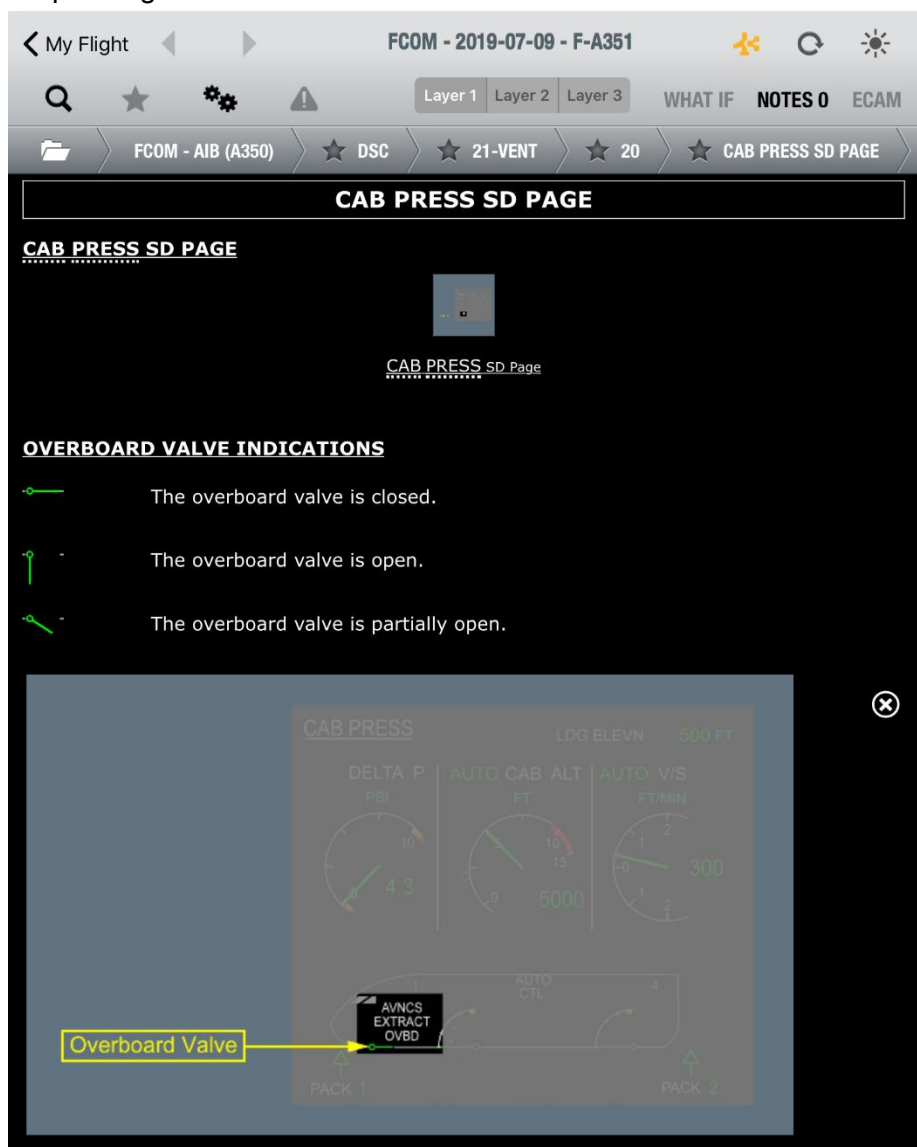


Figure 45: Illustration display in portrait mode

In landscape mode, the left frame displays the consulted DU and the right frame displays the illustration corresponding to the thumbnail.

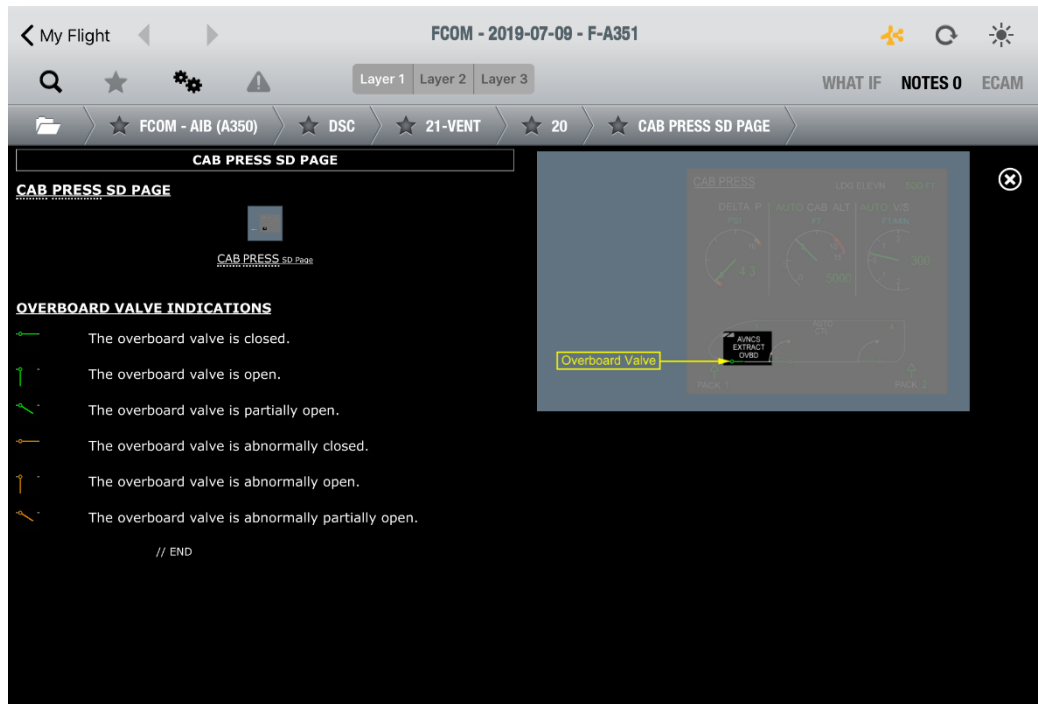


Figure 46: Illustration display in landscape mode

Note

In both cases, it is possible to zoom on the illustration and to close the illustration view by tapping on the  icon.

5.5.3 Media Thumbnails consultation

The manuals may embed video and/or audio files.

Tap the associated icon to open the corresponding file in an independent frame.

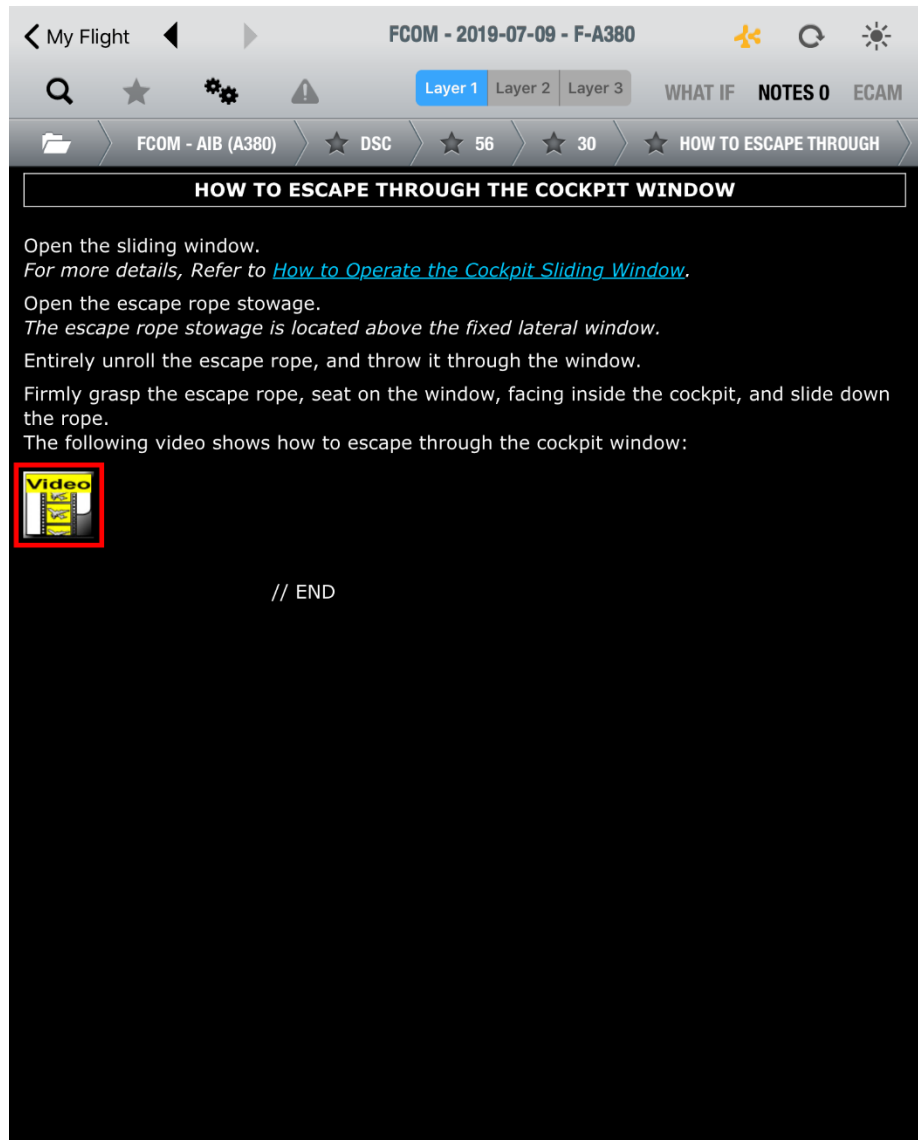


Figure 47: Video icon display

Depending on the selected orientation (portrait/landscape), the video frame is display at the bottom or on the left-hand side.

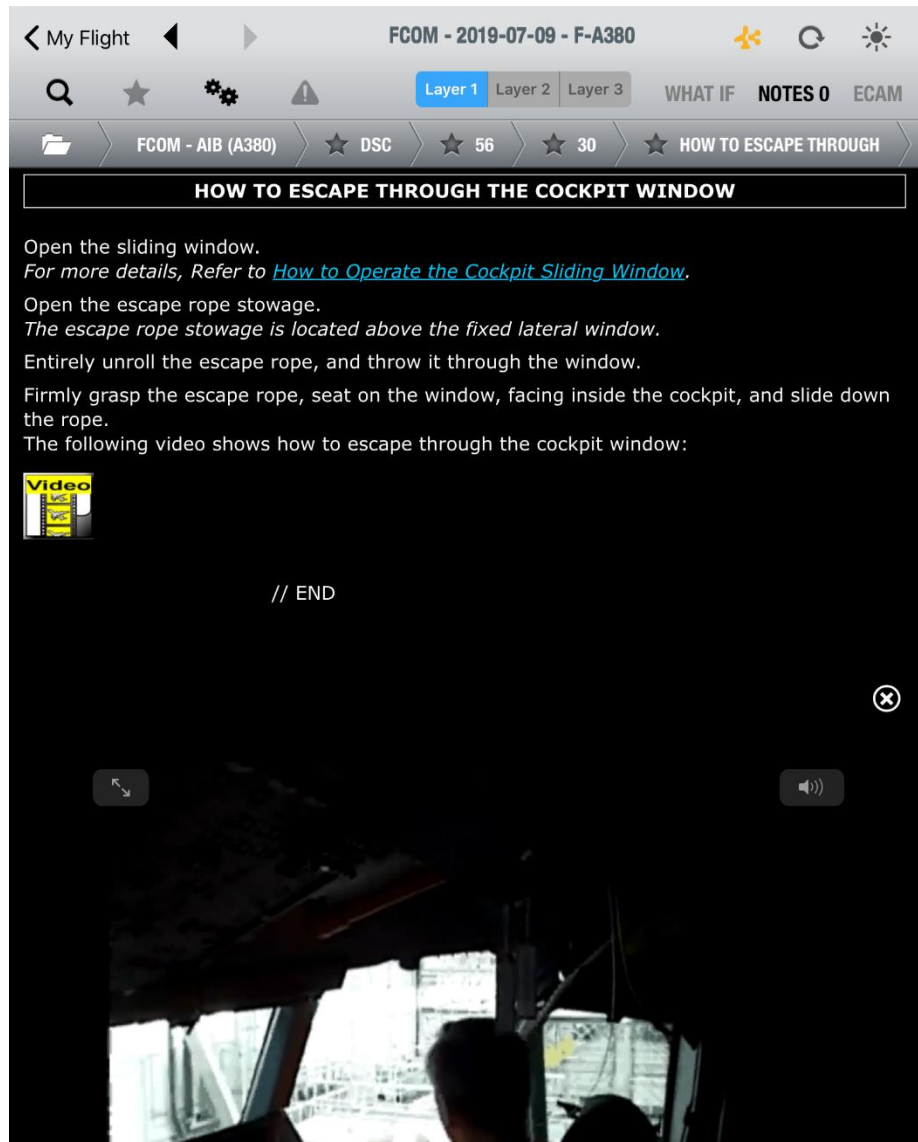


Figure 48: Video content display in portrait mode

If required, the video can be displayed in full screen mode.
Standard video controls are available.



Figure 49: Video display in full screen

FCOM - 2019-07-09 - F-A380

Layer 1 Layer 2 Layer 3 WHAT IF NOTES 0 ECAM

B (A380) DSC 31 40 20 FWS AUDIO INDICATORS

FWS AUDIO INDICATORS

The following table is a list of the audio indicators generated by the FWS:

Audio Indicator	Meaning or Cause	Duration, or Quantity (1)
 Single Chime (SC)	Caution (Amber).	Sounds 1 time
 Continuous Repetitive Chime (CRC)	Warning (Red).	Sounds until the flight crew presses any MASTER WARN light pb
 Buzzer	MECH CALL (Refer to Internal Communication Transmission Keys and Reception Knobs).	- Sounds until the flight crew presses either the MECH key or the RST key on RMP, or - Stops automatically after 60 s.
	SELCAL (Refer to SELCAL).	Sounds until the flight crew presses either the transmission key or the RST key on RMP.
 Buzzer Norm	CABIN CALL (Refer to Internal Communication Transmission Keys and Reception Knobs).	- Sounds until the flight crew presses either the ATT key or the RST key on RMP, or - Stops automatically after 60 s.
 Buzzer Emergency	EMER CABIN CALL (Refer to EMER Pb-sw).	Sounds 1 time
 Cavalry Charge low volume	AP disconnection because the flight crew pressed the	- Sounds until the flight crew presses any

Figure 50: Audio icons display

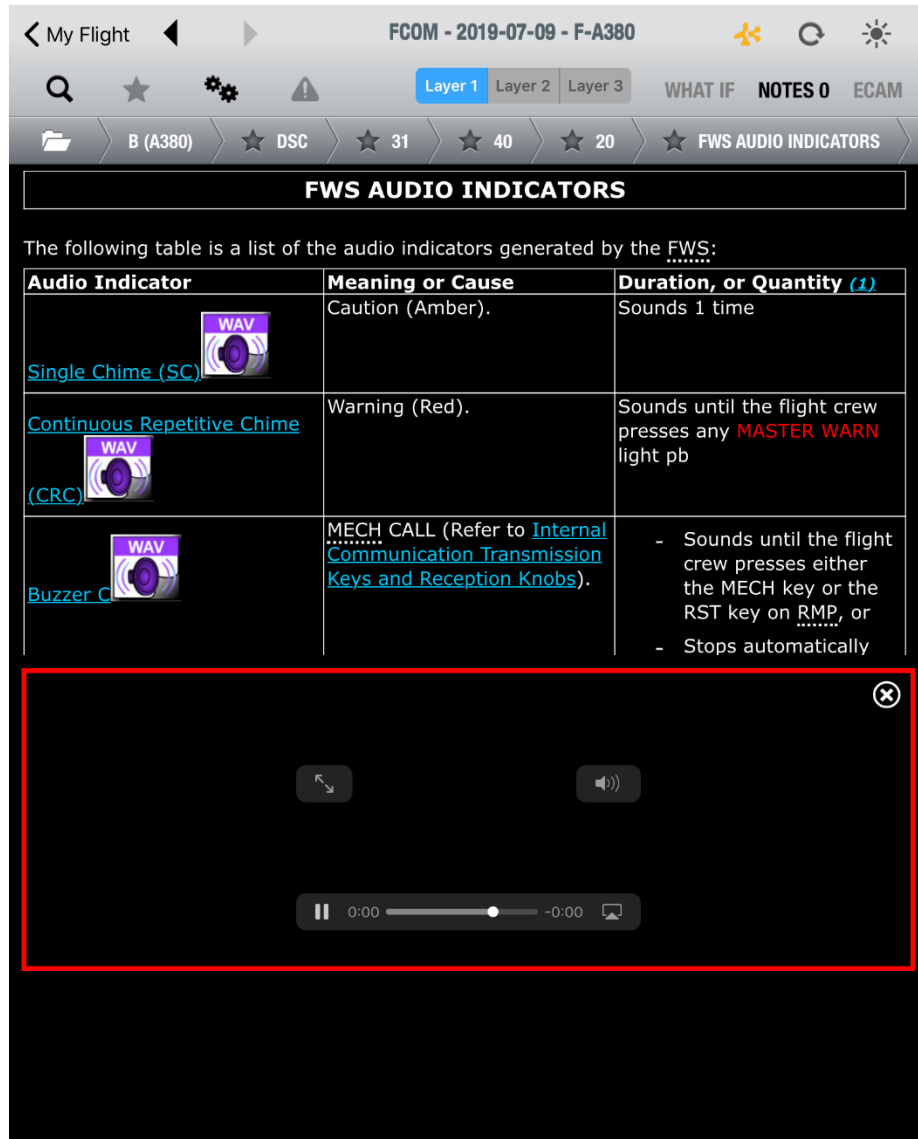


Figure 51: Audio media player

**WARNING**

The Gateway application converts all audio and video files of manuals into their iPad compatible associated formats i.e.: “.m4v” for videos and “.m4a” for audio.

5.5.4 Zoom

Standard iOS zoom features are available on the OLB App.

To zoom in on a given paragraph or illustration, put two fingers on the screen, around the subject on which you want to zoom, and spread them apart.

5.5.5 PDF Consultation

5.5.5.1 PDF embedded within a Manual

PDF files can be attached to a DU. When available, the PDF file appears as a symbol in the content.



Figure 52: PDF manual in DU content

When tapping the icon, the PDF file is displayed in full screen mode.

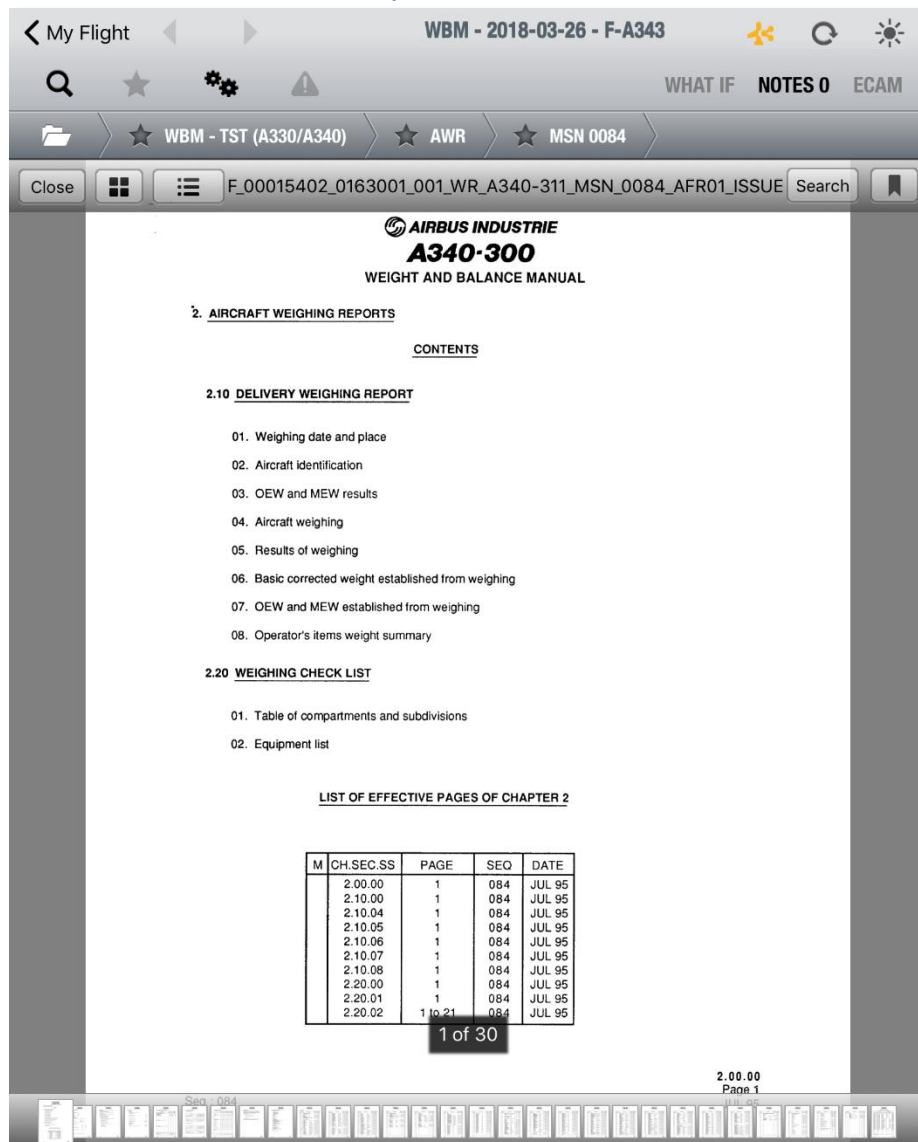


Figure 53: PDF manual display

5.5.5.2 PDF in standalone mode

PDF files can be installed in the OLB without being embedded in an OLB Manual. They appear as independent manuals.

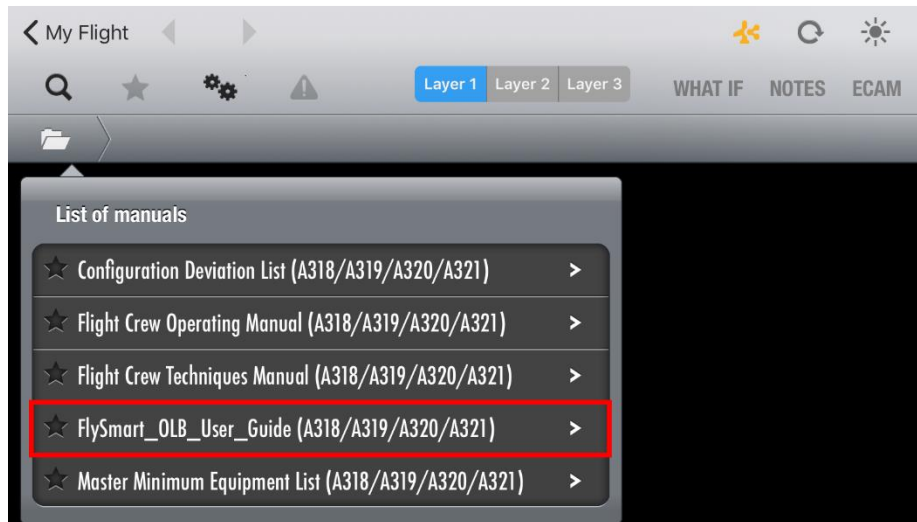


Figure 54: PDF Manual in manuals list

When selected, the PDF manual is displayed in a specific PDF viewer.

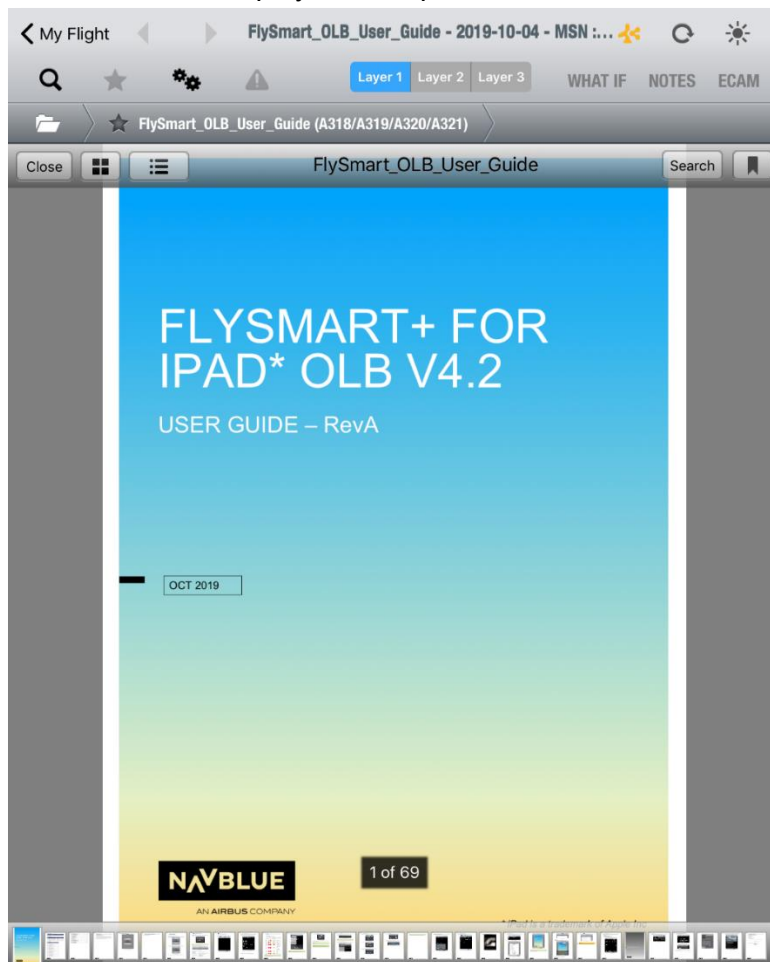


Figure 55: PDF manual display

Note

For more information, refer to the FAQ [“How to see standalone PDF files in OLB”](#) available on the SKYWISE Support Portal.

5.5.5.3 PDF viewer features

The embedded PDF viewer offers several features.



The button closes the current PDF manual and displays back the list of available manuals for the current aircraft.



The button gives access to all the pages available in the manual, displayed in vignette mode.

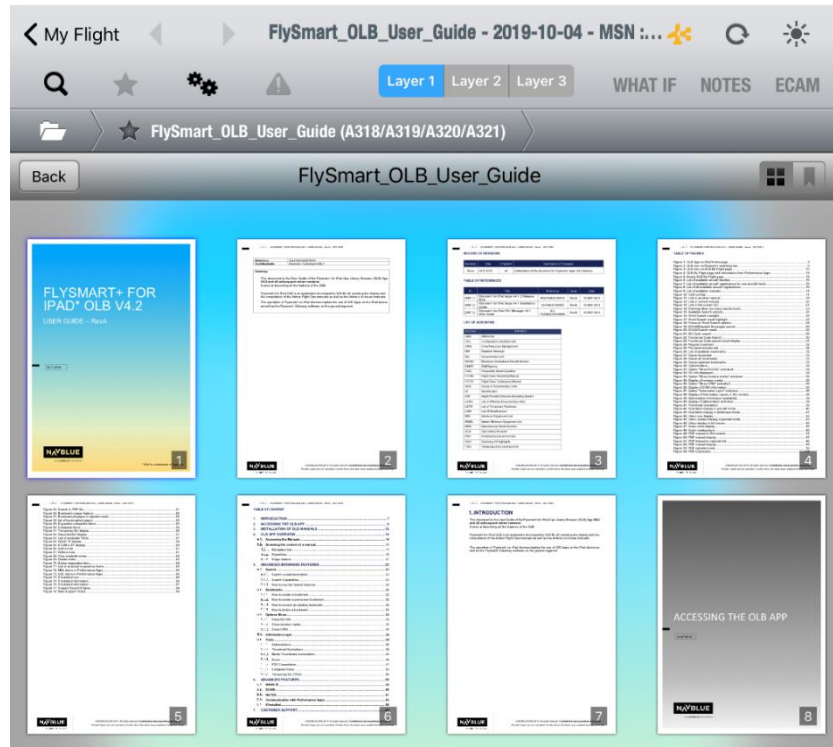
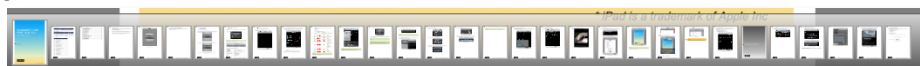


Figure 56: PDF vignette mode

The list of pages is also available at the bottom of the viewer:



The button gives access to the PDF manual chapters, also called bookmarks, when they are available. When displayed, the bookmarks are active and can be tapped to directly display the desired content.

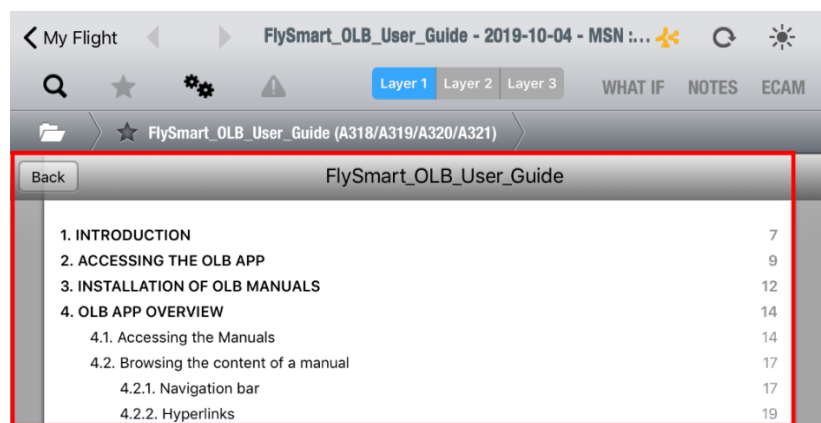
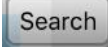


Figure 57: PDF bookmarks

The  button gives access to a Search Engine.

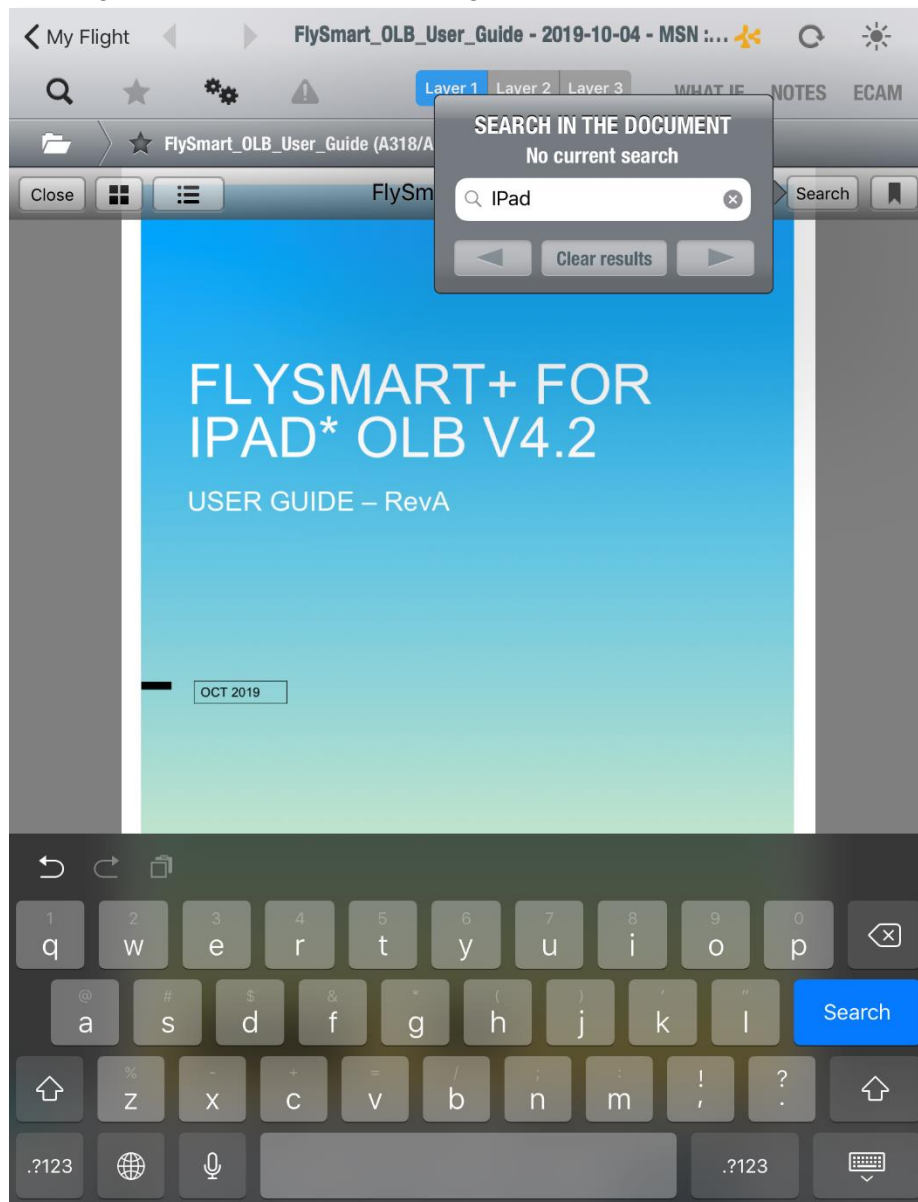


Figure 58: Search in PDF file

Use the virtual keyboard to enter the word or phrase to search. The search results are highlighted in yellow in the document.

The  button can be used to bookmark the current page. When a page is bookmarked, the button turns blue.

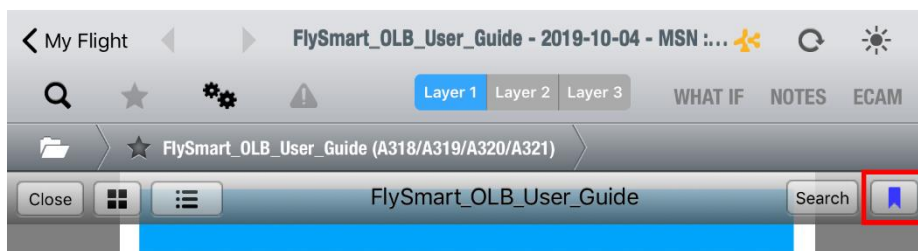


Figure 59: Bookmark a page feature

The bookmarked pages are highlighted in the vignette view.

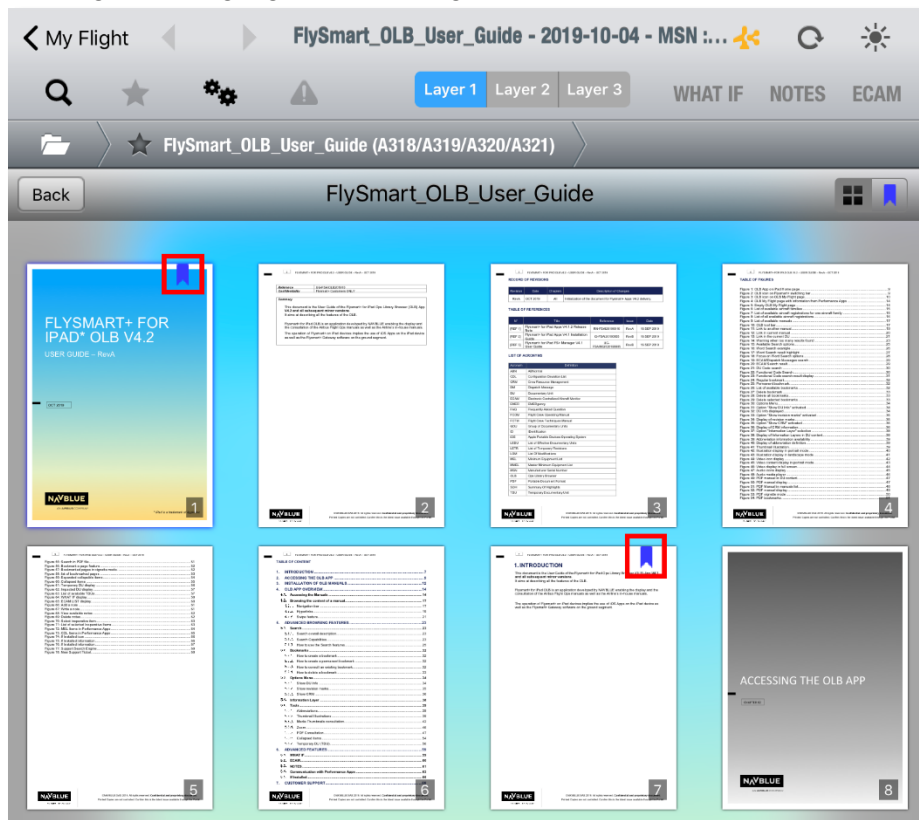


Figure 60: Bookmarked pages in vignette mode

Also, in the vignette view, the  button gives access to the bookmarked pages only.

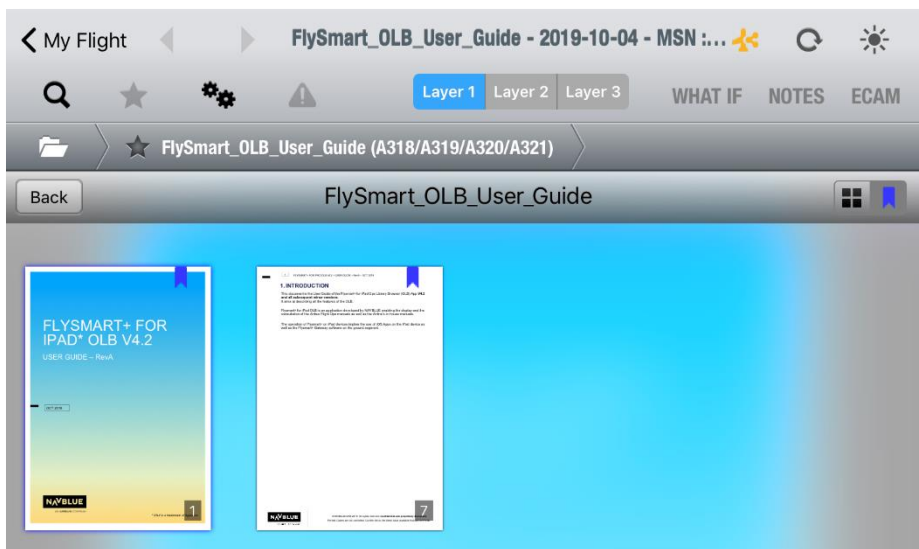


Figure 61: list of bookmarked pages



WARNING

The bookmarked pages are available during the consultation of the manual only. When closed and opened again, the bookmarks within the same manual are not kept.

5.5.6 Collapsible and expandable items

Some DUs contain elements, conditions or annunciations, which can collapse and expand. In the current documentation, all condition or annunciation items are collapsed.

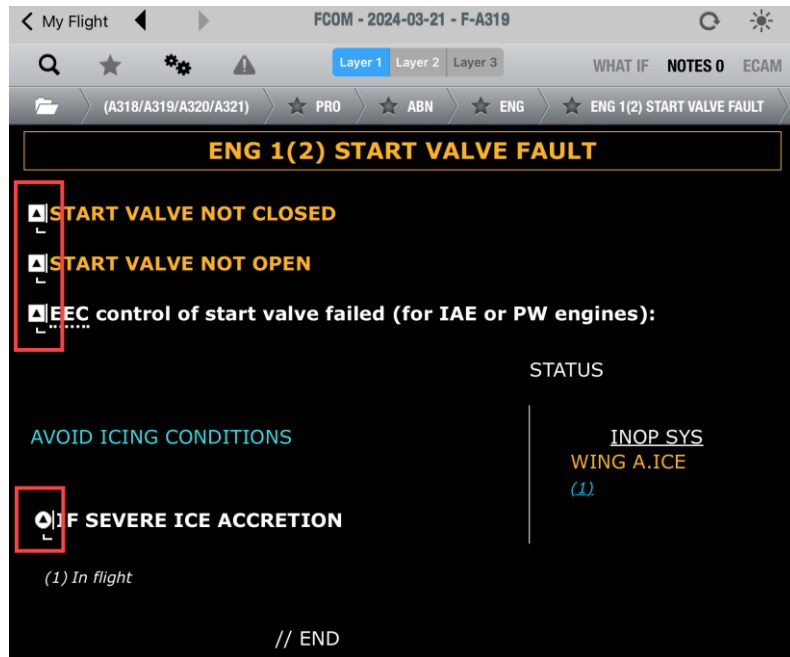


Figure 62: Collapsed items

Tap the icon to expand the content.

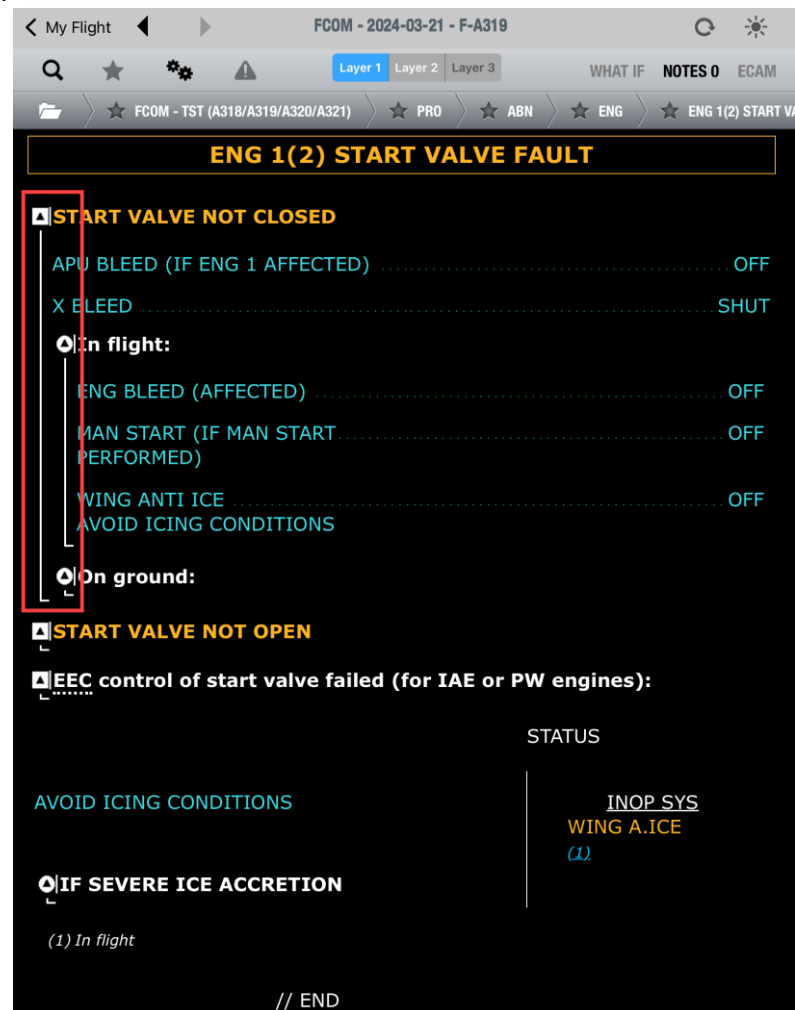


Figure 63: Expanded collapsible items

5.5.7 Temporary DU (TDU)

A Temporary Documentary Unit (TDU) temporarily replaces the original DU in the consultation of the manual. When navigating through the manual, the TDU appears instead of the original DU.

A TDU appears with:

- A yellow strip displaying the release date of the TDU
- A link to the Impacted DU, when applicable
- The reason for the TDU issue
- A dashed yellow line on the right side of the window

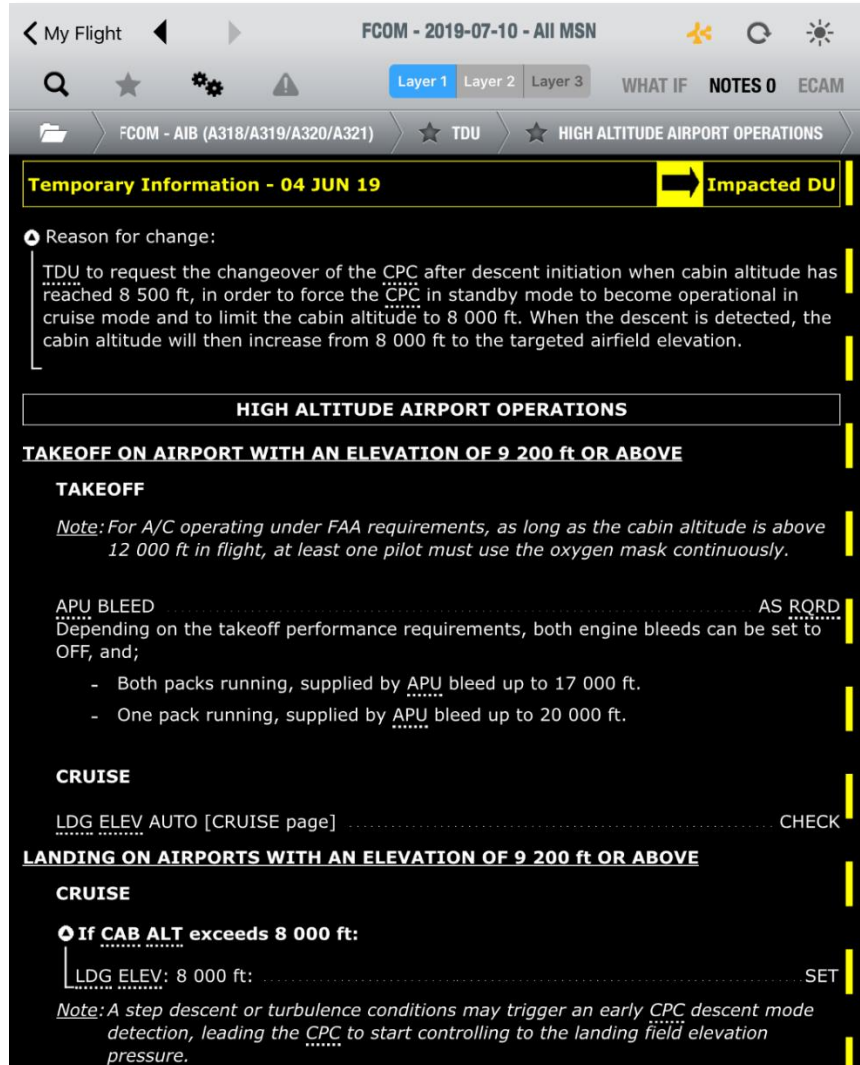


Figure 64: Temporary DU display

When consulting the Impacted DU, the link “Go to Temporary Info” gives access back to the TDU.

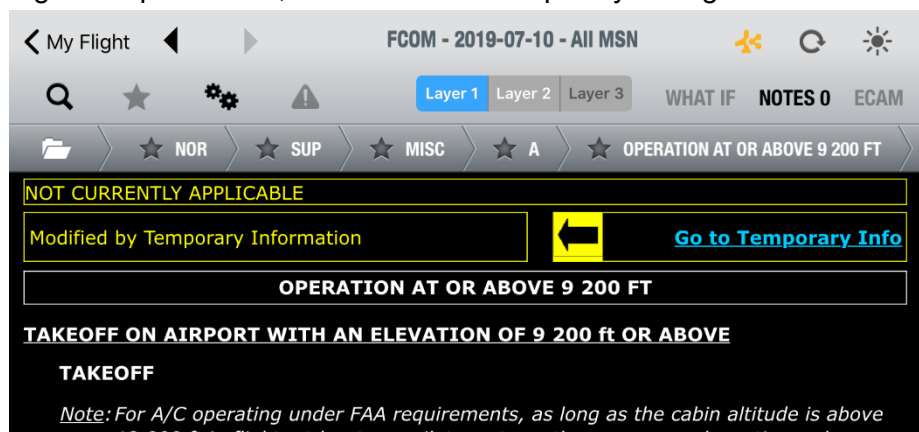


Figure 65: Impacted DU display

The User can also access all TDUs of the manual via the “TDU” chapter of the manual:

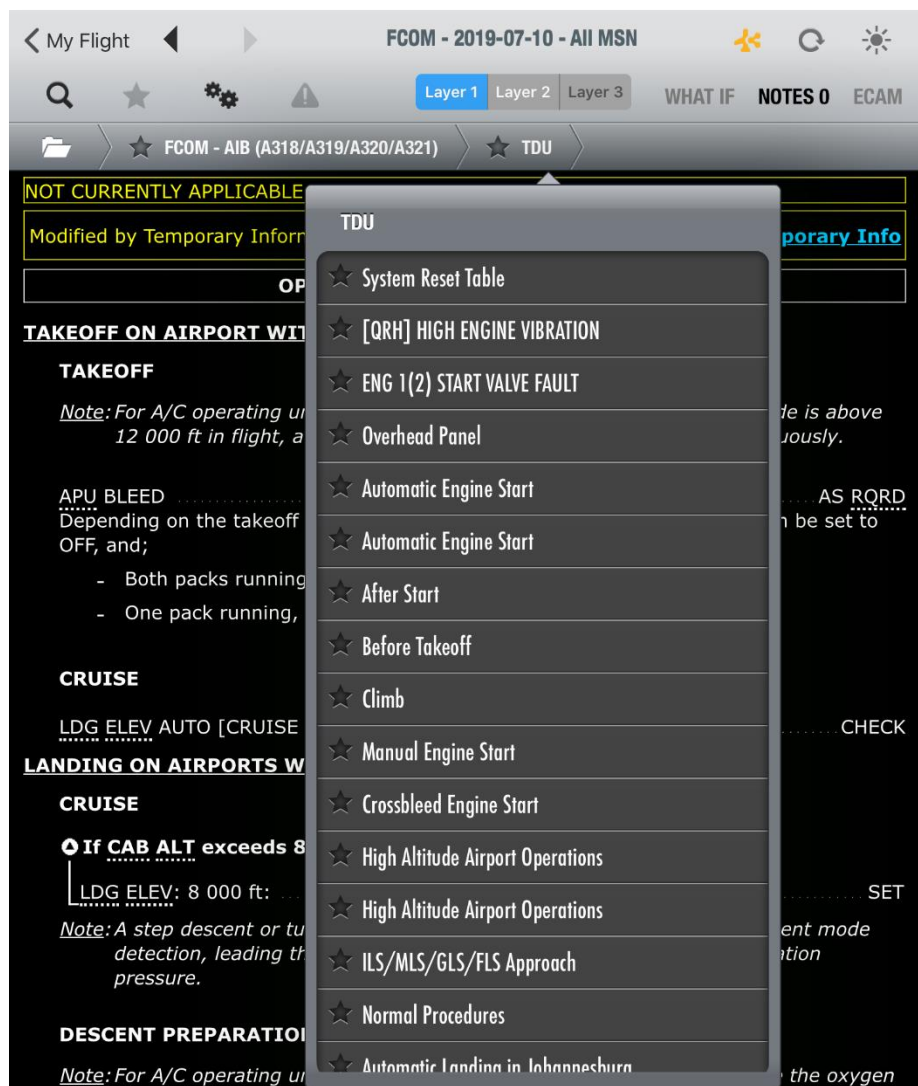


Figure 66: List of available TDUs

ADVANCED FEATURES

CHAPTER 06

6 ADVANCED FEATURES

6.1 WHAT IF

The “*WHAT IF*” function provides the User with a quick access to possible scenarios and information that are related to the displayed DU.

The associated information may be:

- Procedures to be applied
- Failed system description or abnormal operations
- Status of the controls and indicators on the selected scenarios.

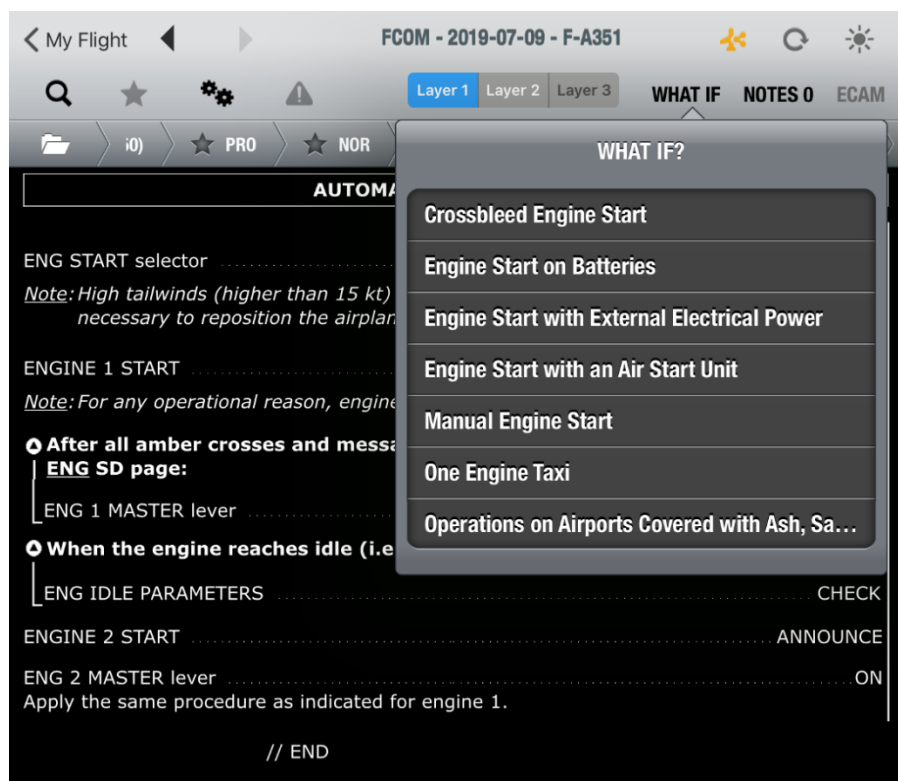


Figure 67: WHAT IF display

6.2 ECAM

The “*ECAM*” function enables the User to access the DUs of the MEL entries chapter of the MEL (ECAM alerts), that are associated with the MEL item that is displayed.

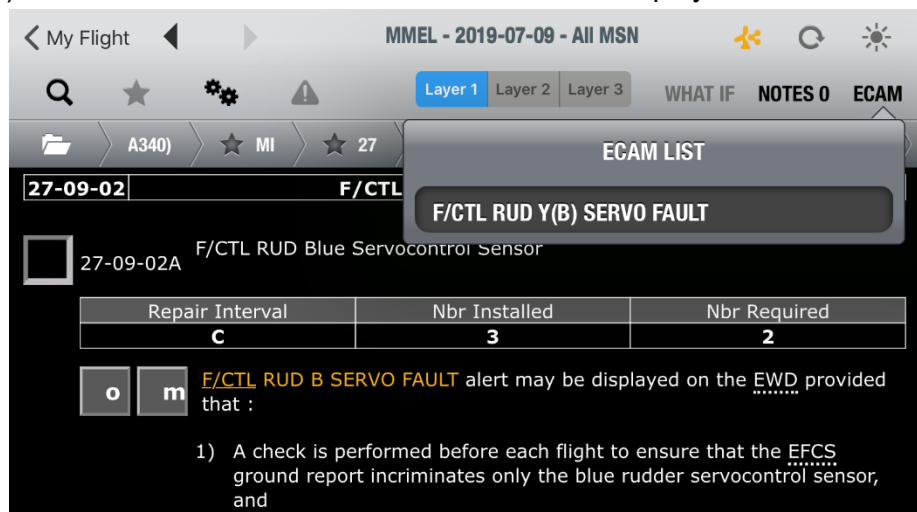


Figure 68: ECAM LIST display

6.3 NOTES

The “NOTES” button enables the User to attach notes (free text) to each DU.

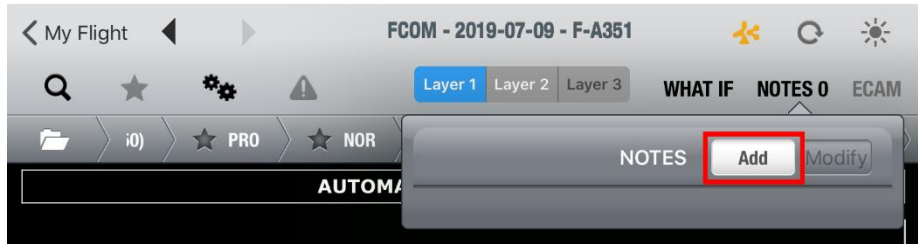


Figure 69: Add a note

Tap the NOTES button to display the note area. Type your note and tap “Done” to validate it.

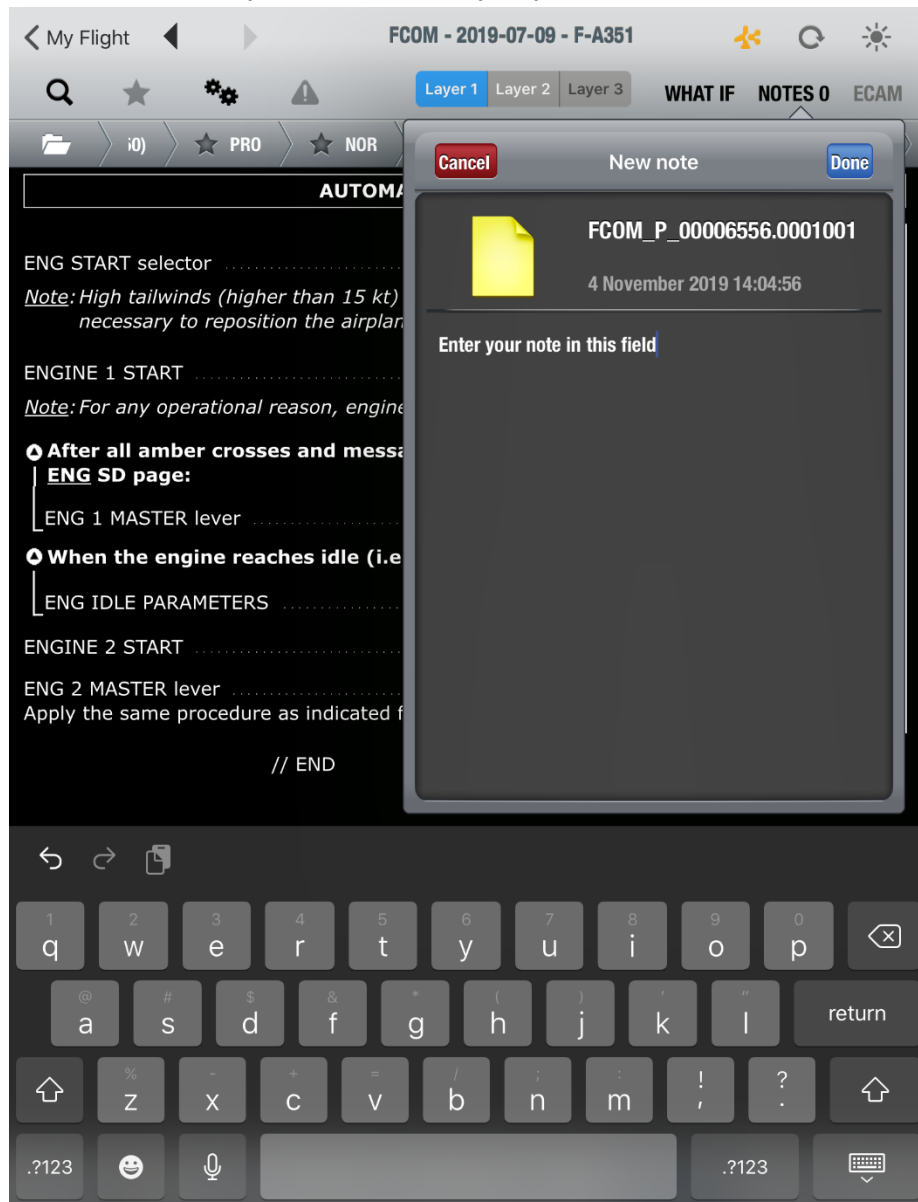


Figure 70: Write a note

The list of Notes is available anytime.

The “N” figure in the “Notes N” button stands for the available notes in the current manual. When opened, the Notes list displays all the notes in all available manuals.

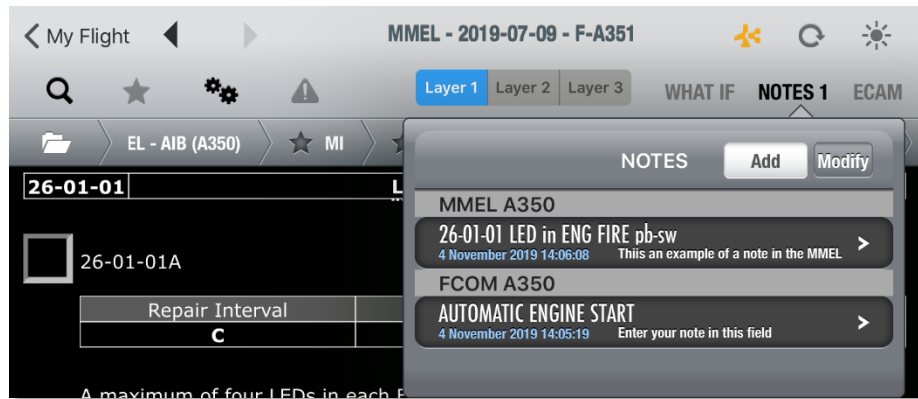


Figure 71: View available notes

To delete one or several notes, tap on the “Modify” button.

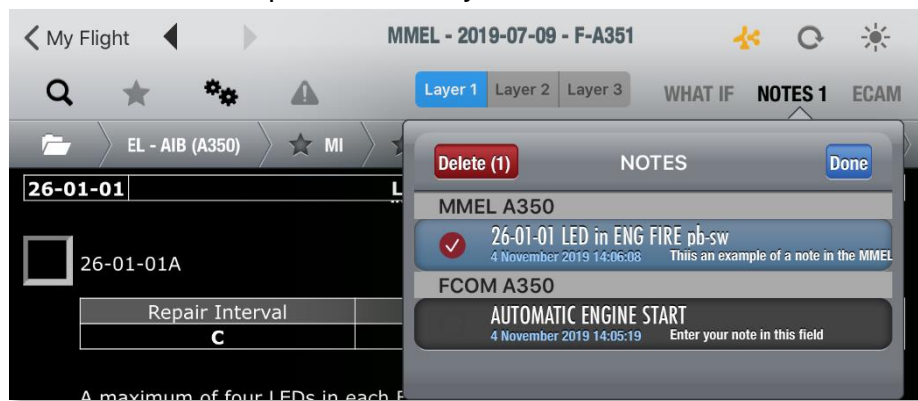


Figure 72: Delete notes

6.4 Communication with Performance Apps

The User can tick MEL / CDL items into the OLB.

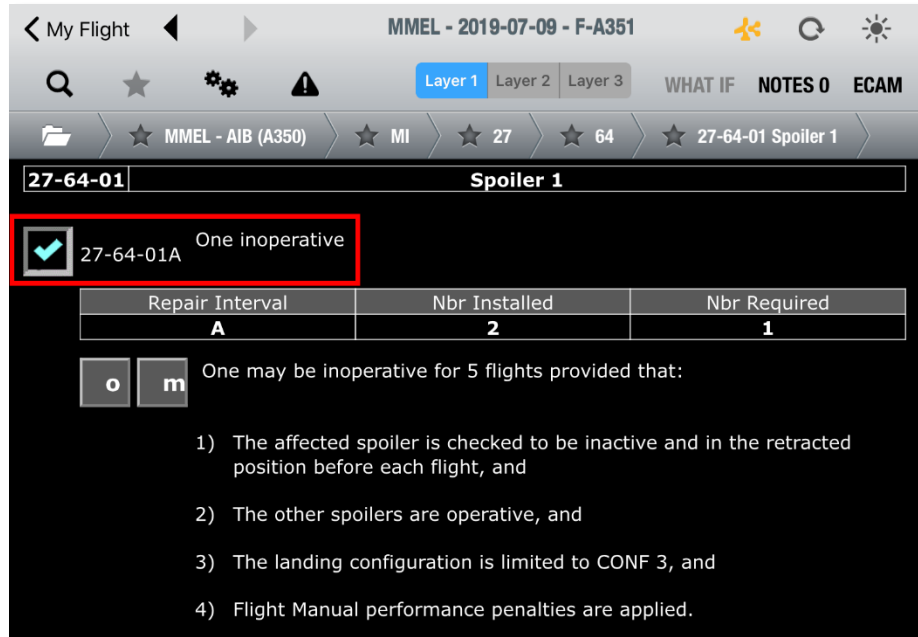


Figure 73: Select inoperative item

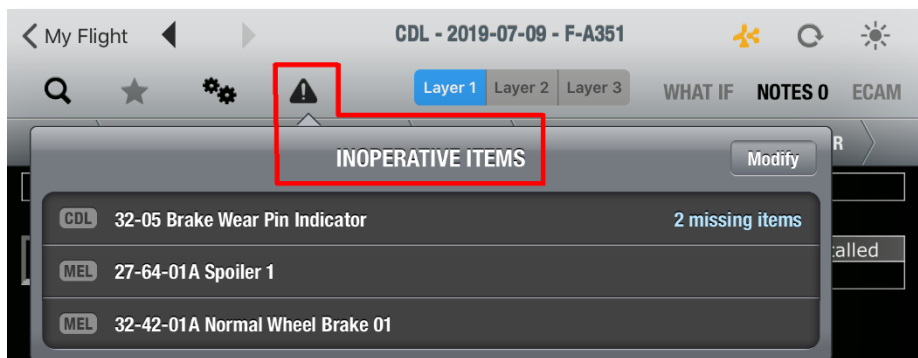


Figure 74: List of selected Inoperative Items

The MEL and CDL items (with CDL missing times) that have been ticked in the OLB are automatically transferred to the Performance Apps.

The selected MEL and CDL Items are displayed in yellow in the corresponding view in the Performance Apps, meaning they have been selected in another App (i.e. in the OLB).

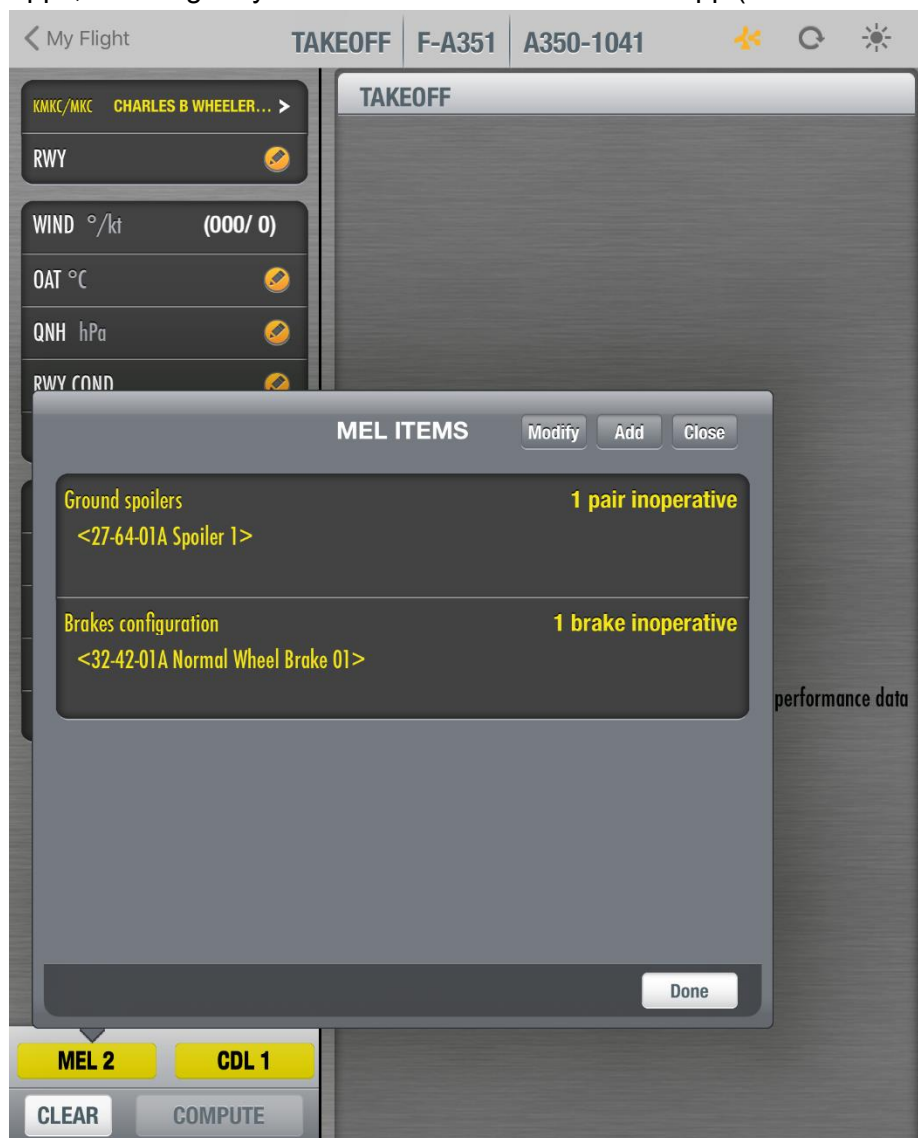


Figure 75: MEL Items in Performance Apps



Figure 76: CDL Items in Performance Apps

6.5 If Installed

The "If Installed" function provides the User to check if an equipment is installed or not on the current aircraft.

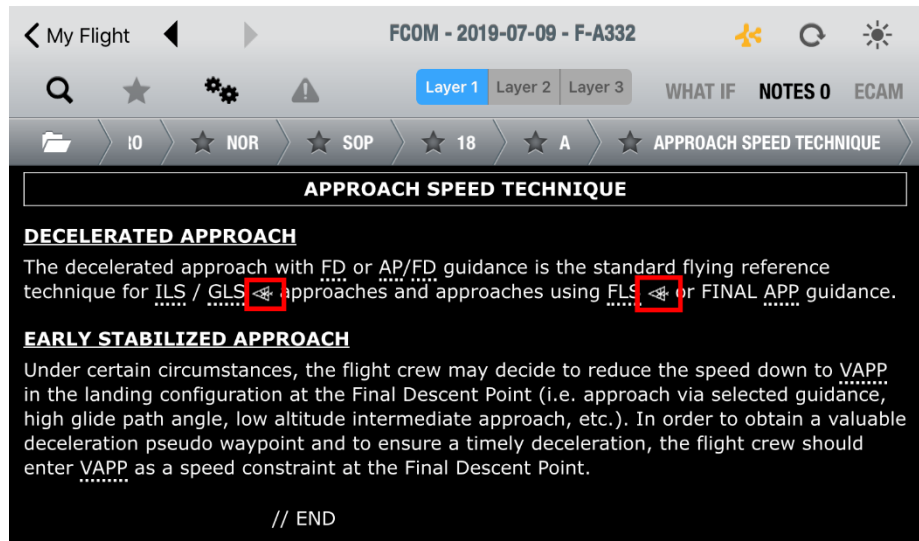


Figure 77: If Installed icon

The associated information may be:

- "Installed on [MSNxxxxx]"
- "Installed on ALL"
- "Installed on [MSNxxxxx], [MSNxxxxx], [MSNxxxxx], ..."
- "May be installed DEPENDING on operator customization"
- "Not Installed"

Tap the if installed button to display the "If Installed" information:

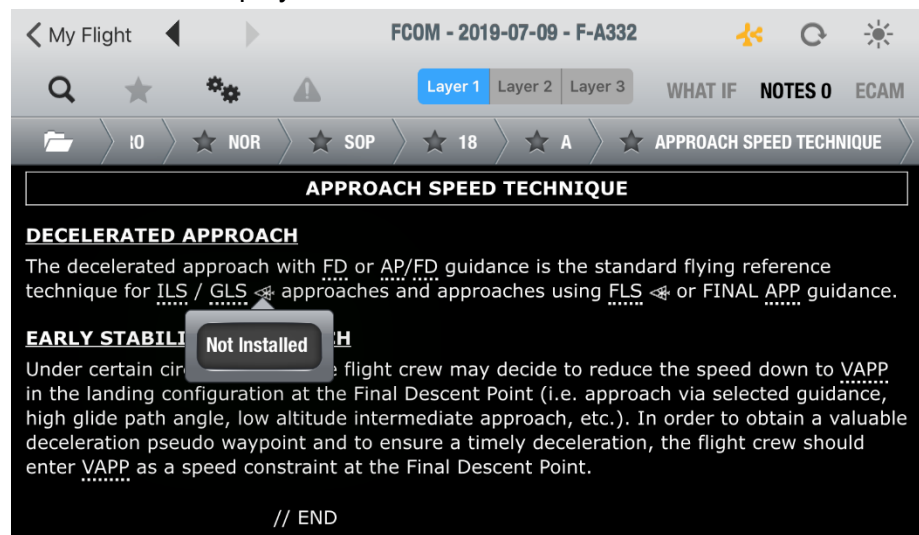


Figure 78: If Installed information

When tapping on the "If Installed" icon, a popup window appears. This popup indicates if the associated equipment is Installed or not according to the current aircraft context.

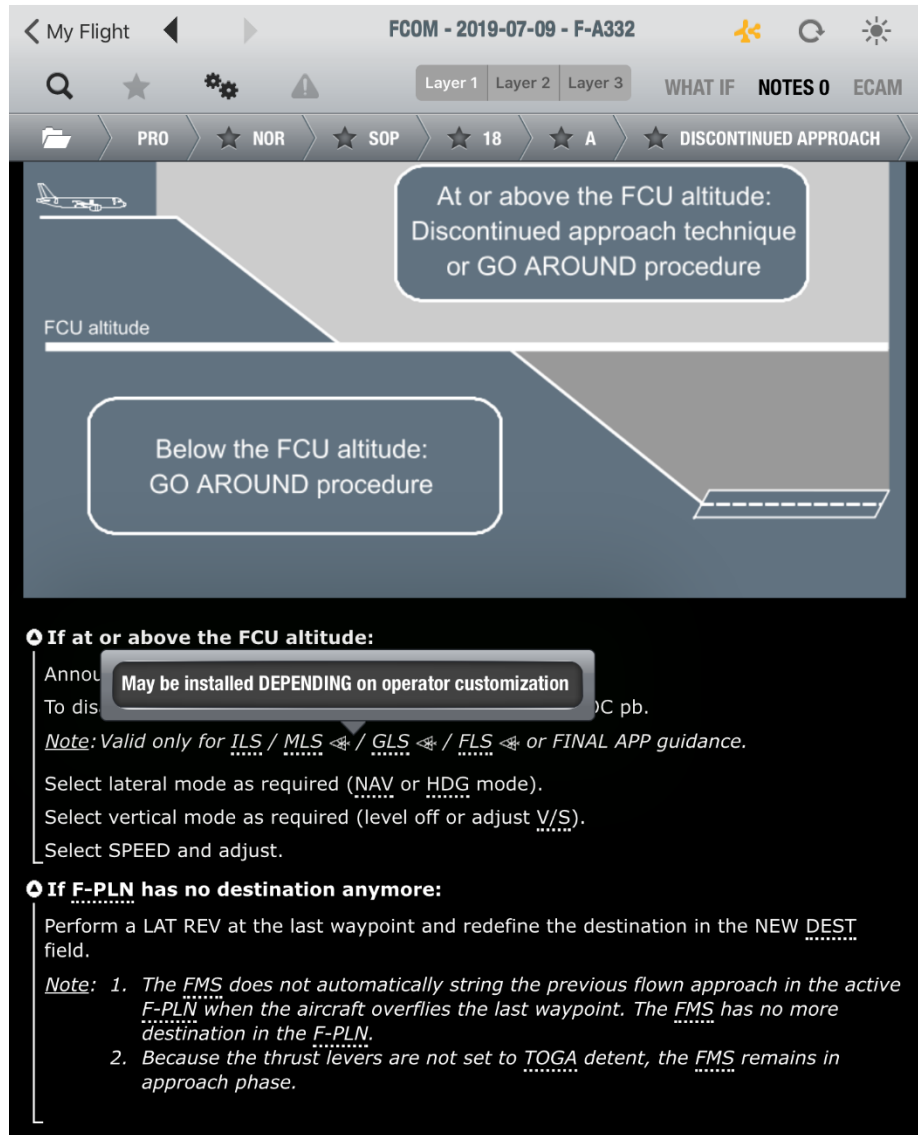


Figure 79: If Installed information

CUSTOMER SUPPORT

CHAPTER 07

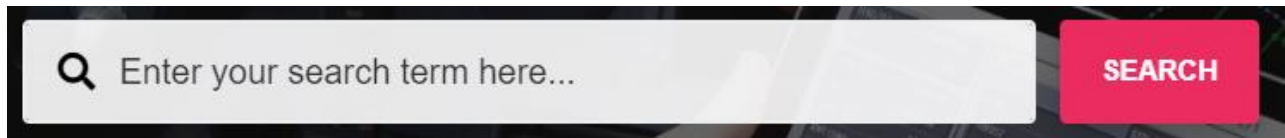
7 CUSTOMER SUPPORT

For any information about our Flysmart+ products, please consult our [Support Web Portal](https://www.skywise.com/support) (<https://www.skywise.com/support>) where you can find:

- The latest roadmaps
- The Operational Documentation
- The Announcements
- The FAQs.

For any support, please feel free to:

- Use our search engine:



A search bar with a magnifying glass icon on the left and a pink button labeled "SEARCH" on the right. The text "Enter your search term here..." is inside the bar.

- Open a support ticket:



A pink button with the text "SUBMIT A TICKET" in white capital letters.

Note: You do not have a SKYWISE Support account?

[CLICK HERE and complete the form](#)