



146

PROFESSIONAL

ELECTRONIC FLIGHT BAG (EFB)



Just Flight™



Electronic Flight Bag (EFB)

Please note that this manual is specifically for the Electronic Flight Bag (EFB) as installed in the Flight Just Flight 146 Professional add-on for Microsoft Flight Simulator.

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EFB OVERVIEW



The aircraft is equipped with an Electronic Flight Bag (EFB) tablet which is divided into two main areas:

1. An Electronic Flight Bag (EFB) which can be used for viewing your SimBrief operational flight plan (OFP), monitoring your position on a moving map, viewing your Navigraph charts and making notes.
2. An Aircraft app for controlling various aircraft options and payload.

The tablet can be powered on/off with the physical power button, located on the lower right side of the device. The physical 'Home' button can also be used to return to the EFB homepage from any app. The EFB can be hidden by using a clickspot on each of the compass deviation cards.



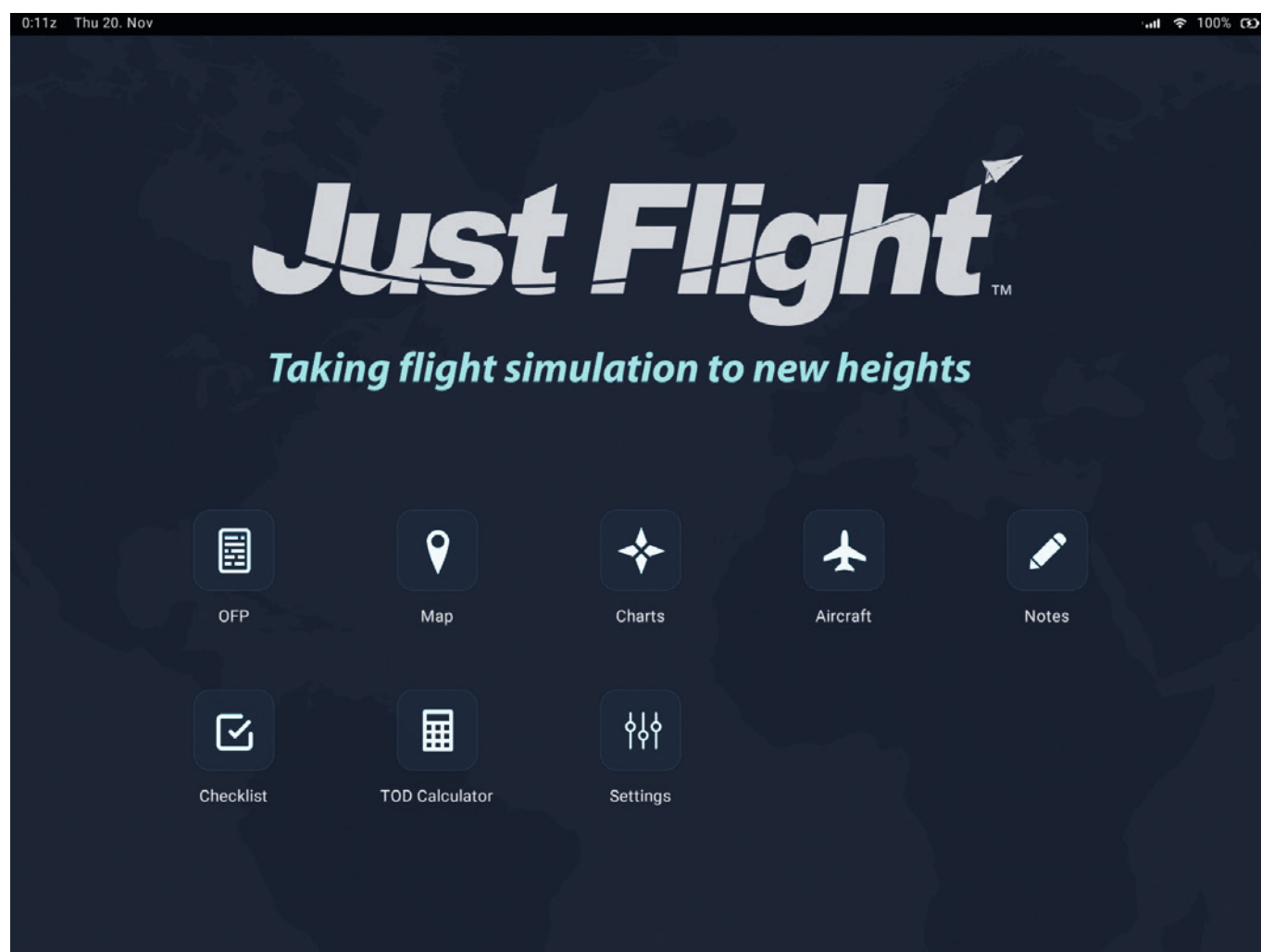
The Home page of the EFB shows the icons of the various applications (apps) that are available to use. Pressing one of these icons will open the respective app.

The top bar of the EFB shows the current simulator time and date in the top left corner, as well as the current battery status of the tablet in the top right corner. The battery will drain over time if the aircraft's electrical power (ESS DC) is switched off and will recharge once it is powered on again.

The tablet will automatically move between the Captain and Co-pilot sills depending on the selected camera view. Both tablets can also be toggled on at the same time by clicking on both compass deviation cards.

The tablet can be moved between the windowsill and side window by clicking on the bezel area above or below the screen.

The background on the EFB can be changed to an image of your choice by replacing the wallpaper.jpg file in the following file directory: ...Community\justflight-aircraft-146\html_ui\Pages\VCockpit\Instruments\Airliners\JF_146\EFB\img. The recommended file size is 2048x1536 in the .PNG format.



OPERATIONAL FLIGHT PLAN (OFP)

The OFP app allows you to view your latest SimBrief OFP and displays its information conveniently within the simulator.

On selecting the OFP app you will be prompted to enter your SimBrief pilot ID to access your last exported flight plan. Alternatively, you can choose to identify yourself via your SimBrief username by enabling the 'OFP: Username login' setting in the EFB settings.

Once you have entered your SimBrief credentials and pressed the 'Continue' button, you are presented with a summary of your active OFP, including origin and destination airports, scheduled timings, flight number, route information, weather, and fuel and payload.

0:11z Thu 20. Nov

OFP

100%

ORIGIN YPDN - 11:30z	DESTINATION YBCS YBTL 13:57z	AIRLINE QF FLIGHT NO 943	
ROUTE DCT DN Y25 RUPEG DCT SOCAR J61 CS DCT			
AVG ISA P018	AVG W/C P008	AVG WIND 283 / 8	
ZERO FUEL WEIGHT 35865 kg	BLOCK FUEL 9494 kg	CRUISE ALTITUDE 25000 ft	DISTANCE 930 NM
RELOAD		LOGOUT	
SUMMARY	METAR	OUTPUT	

Pressing the METAR button at the bottom of the page allows you to view the wind information for the origin, destination and alternate airports listed in the OFP. This information is shown in both raw and simplified forms.

0:12z Thu 20. Nov

0FP

100%

ORIGIN

YPDN

PRESSURE

29.65inHg / 1004.00mb

TEMPERATURE

30.00°C / 86.00°F

VISIBILITY

10000m / 6mi

WIND

260deg, 9kts

METAR YPDN 191000Z AUTO 26009KT 9999 // NCD 30/26 Q1004

DESTINATION

YBCS

PRESSURE

29.80inHg / 1009.00mb

TEMPERATURE

27.00°C / 80.60°F

VISIBILITY

10000m / 6mi

WIND

170deg, 6kts

METAR YBCS 191000Z AUTO 17006KT 9999 // NCD 27/22 Q1009

ALTERNATE

YBTL

PRESSURE

29.80inHg / 1009.00mb

TEMPERATURE

28.00°C / 82.40°F

VISIBILITY

10000m / 6mi

WIND

30deg, 9kts

METAR YBTL 191000Z 03009KT 9999 FEW028 28/21 Q1009

SUMMARY

METAR

OUTPUT

To view the full OFP, press the OUTPUT button. The entire flight plan will then be shown in text form, which can be scrolled as desired by using the scrollbar to the right of the OFP output area. A four-arrowed icon at the bottom right corner of the page enables 'click and drag' scrolling on the page itself. With this option enabled, hold left-click anywhere on the page and move your cursor up/down to scroll the page.

0:12z Thu 20. Nov
OFP
100%

[OFP]

QF0943 19NOV2025 YPDN-YBCS B463 GJUST RELEASE 1039 19NOV25
OFP 2 DARWIN INTL-CAIRNS INTL
WX PROG 1909 1912 1915 OBS 1906 1906 1906

ATC C/S QFA943 YPDN/DRW YBCS/CNS CRZ SYS M70
19NOV2025 GJUST 1110/1130 1348/1356 GND DIST 930
BAE 146-300 / ALF 502R-5 STA 1405 AIR DIST 912
CTOT:.... G/C DIST 905
AVG WIND 283/008
MAXIMUM TOW 45132 LAW 39236 ZFW 36514 AVG W/C P008
ESTIMATED TOW 45132 LAW 38933 ZFW 35865 AVG ISA P018
AVG FF KGS/HR 2694
FUEL BIAS P00.0
TKOF ALTN

ALTN YBTL
FL STEPS YPDN/0250/

DISP RMKS PAYLOAD/CARGO LIMITED BY MTOW

PLANNED FUEL

FUEL	ARPT	FUEL	TIME
TRIP	CNS	6199	0218
CONT 15 MIN		674	0015
ALTN	TSV	1508	0042
FINRES		886	0030
MINIMUM T/OFF FUEL		9267	0345
EXTRA		0	0000
T/OFF FUEL		9267	0345
TAXI	DRW	227	0020
BLOCK FUEL	DRW	9494	
PIC EXTRA			
TOTAL FUEL			
REASON FOR PIC EXTRA			

FMC INFO:
FINRES+ALTN 2394
TRIP+TAXI 6426

NO TANKERING RECOMMENDED (P)

I HEREWITH CONFIRM THAT I HAVE PERFORMED A THOROUGH SELF BRIEFING
ABOUT THE DESTINATION AND ALTERNATE AIRPORTS OF THIS FLIGHT
INCLUDING THE APPLICABLE INSTRUMENT APPROACH PROCEDURES, AIRPORT
FACILITIES, NOTAMS AND ALL OTHER RELEVANT PARTICULAR INFORMATION.

DISPATCHER: ANDRES CASTANEDA PIC NAME: JAMES ALLISON, MAR

TEL: +1 800 555 0100 DTG: 070000Z

SUMMARY
METAR
OUTPUT

The OFP data can be refreshed at any time by pressing the RELOAD button at the bottom of the Summary page; this will update the OFP to the last exported SimBrief flight plan.

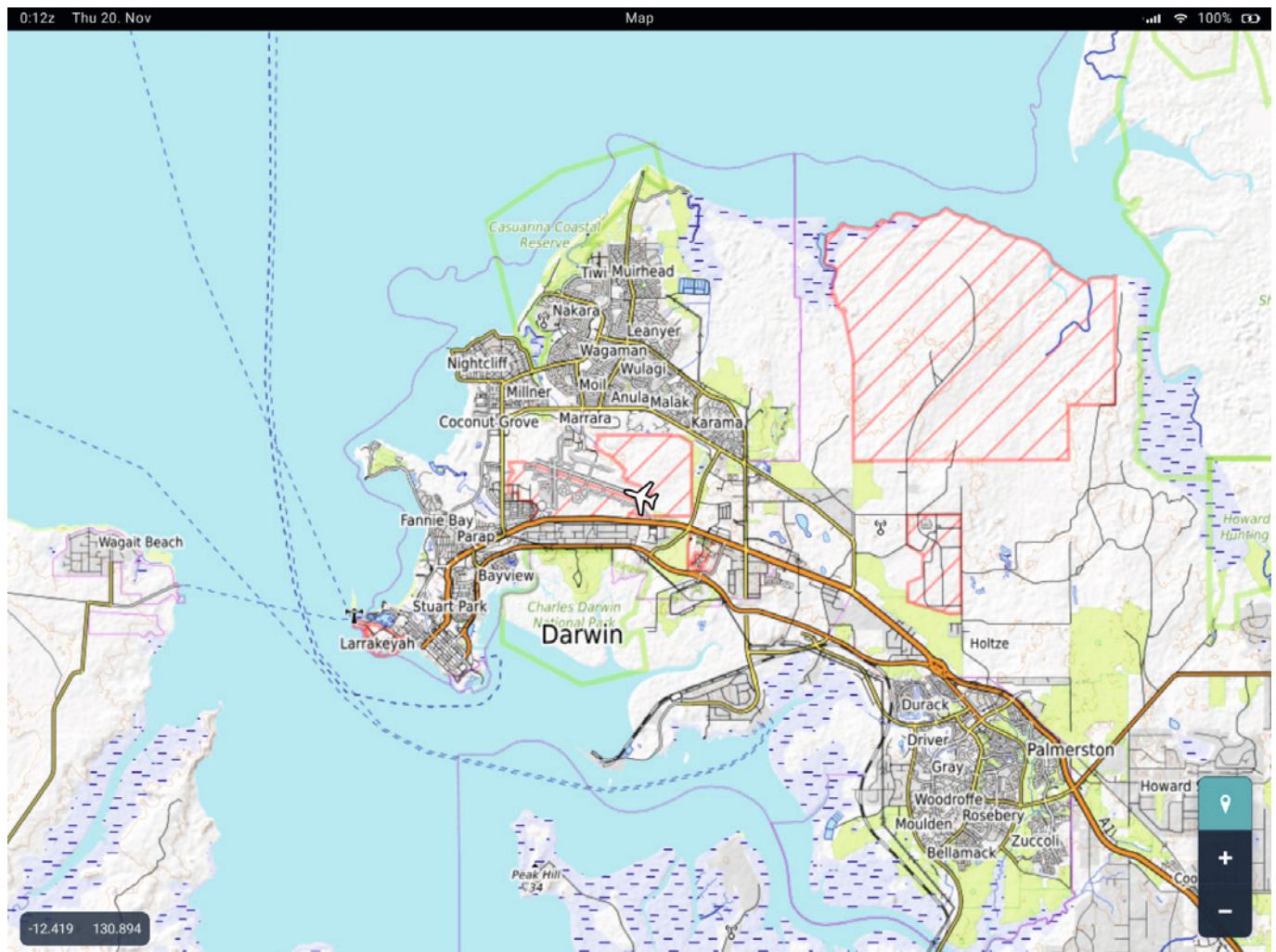
Note: A free Navigraph/SimBrief account is required for this functionality.

MAP

The Map app provides you with a moving map with visual data provided by [OpenTopoMap.org](https://open.topo-map.org/).

By default, the map is set to track the aircraft's current position (displayed in the bottom right corner). It is also possible, however, to move the map manually by deselecting the aircraft icon in the bottom right corner of the display and then simply clicking and dragging anywhere on the map. Reselecting the aircraft icon will centre the view back to the aircraft's current position.

The map's zoom level can be adjusted via the '+' and '-' buttons.



CHARTS

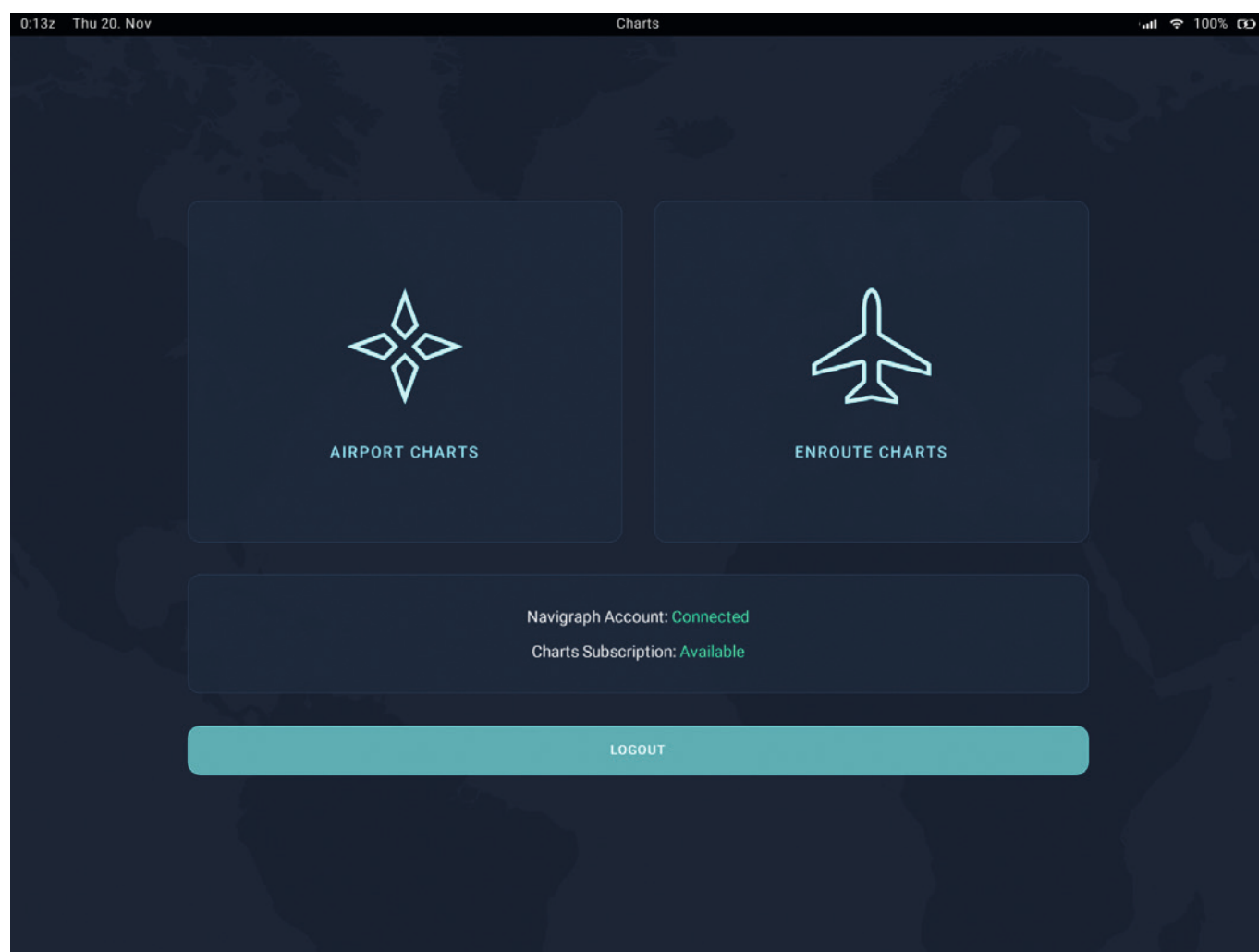
The Charts app allows you to browse aviation charts provided by Navigraph as part of an active Navigraph subscription. A login (via external link or QR code) is required to link the EFB to your Navigraph account when opening the Charts app for the first time. After opening the Charts app for the first time, follow the instructions on the EFB and your external internet browser to complete the linking process.

With a Navigraph account linked, two chart options will be available for selection: AIRPORT CHARTS and ENROUTE CHARTS. Clicking on one of these options will open the respective chart.

A LOGOUT button will unlink the Navigraph account from the EFB.

A 'Navigraph Account' field shows the current login status and the 'Charts Subscription' field shows the status of the Navigraph subscription.

Note: A paid Navigraph subscription is required for the functionality described in this section.



Airport charts

The **AIRPORT CHARTS** page allows you to search for and view charts for any airport in the world.

An airport's ICAO code can be entered in the ICAO code search field and the charts for that airport can be viewed by pressing the STAR/APP/TAXI/SID/REF buttons.

If a SimBrief OFP has been loaded on the OFP page, charts for the departure and arrival airports can quickly be accessed by pressing the DEPARTURE and ARRIVAL buttons.

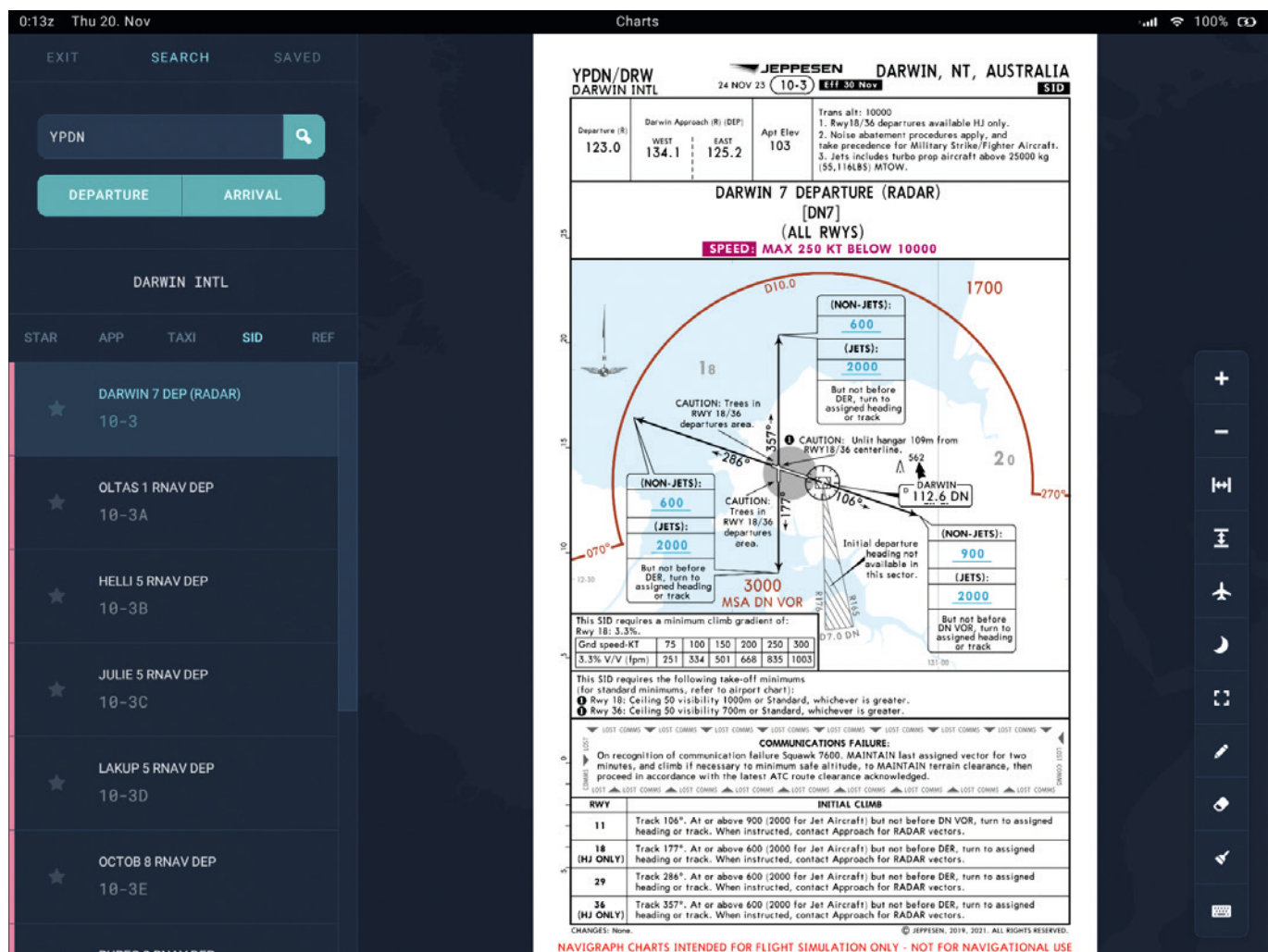
To view a chart, click on one of the charts listed on the left side of the page and the chart will open on the right side of the page. The active chart can be moved/resized/fitted as needed by using the controls at the bottom right of the page. Charts that provide georeferenced data will also display the aircraft's current position in the form of an aircraft icon.

Charts can be annotated by pressing the pen icon at the bottom right corner of the page and then moving your cursor across the page whilst holding left-click. Two eraser options allow you to either erase annotations via the same method or erase all annotations instantly.

To close a chart, click on the selected chart on the left side of the page or select another chart.

Charts can be saved for quick reference by pressing the star icon to the left of the chart's name. The star icon will change colour to indicate that the chart has been saved. All saved charts can be accessed by pressing the SAVED button at the top of the page. Saved charts can be removed from this list by pressing the star icon again.

Pressing the EXIT button at the top left of the page will return the EFB to the opening Charts page where the AIRPORT CHARTS or ENROUTE CHARTS pages can be selected.



Enroute charts

The ENROUTE CHARTS page allows you to view charts covering the various nav aids and airways that are used for navigation between airports.

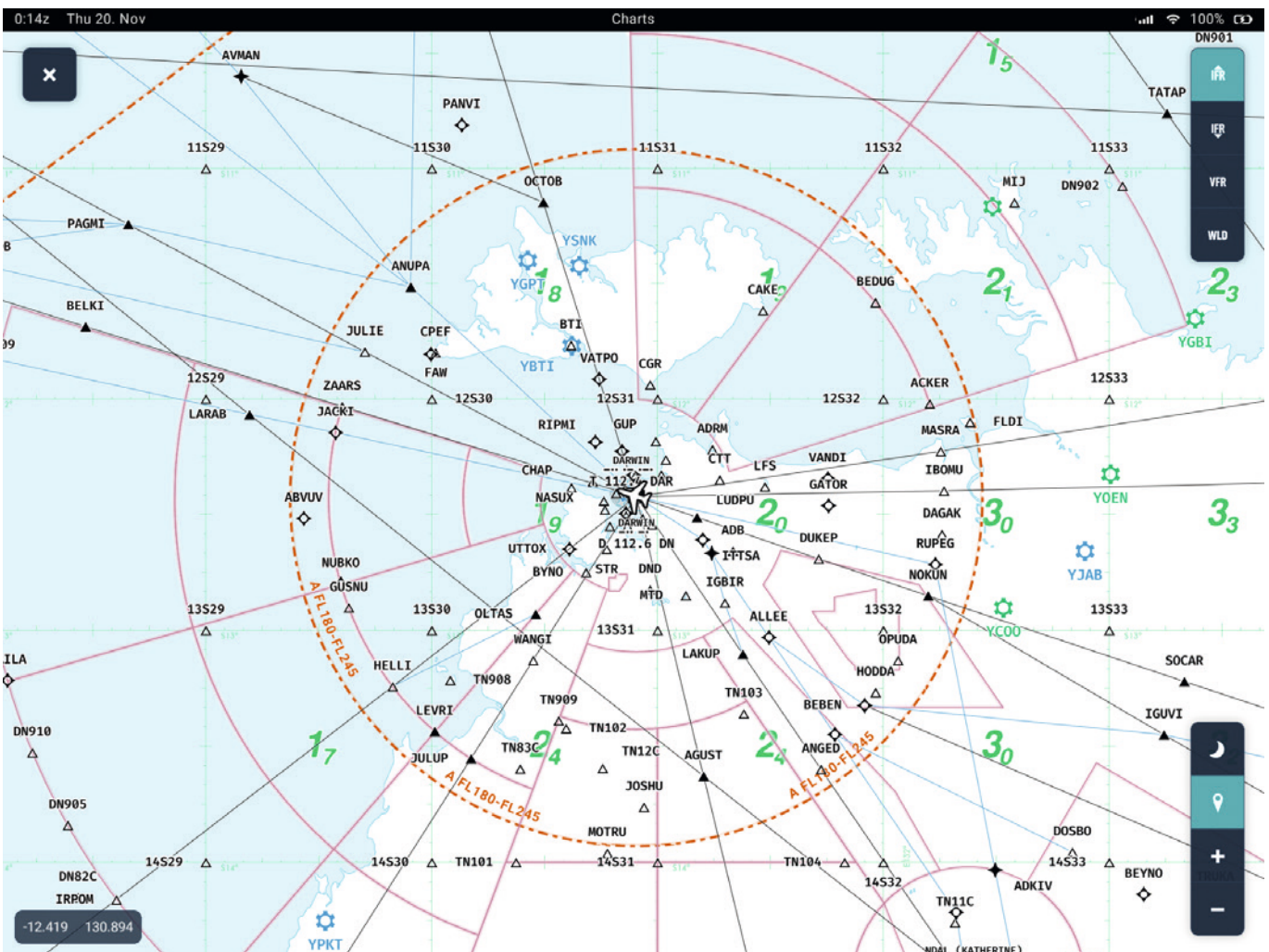
Four options in the top right corner of the page control which chart is shown:

- **IFR High Altitude** – High Altitude IFR charts designated for flights above 18,000ft
- **IFR Low Altitude** – Low Altitude IFR charts designated for flights below 18,000ft
- **VFR** – VFR charts
- **WLD** – world map

Various options at the bottom right corner of the page provide controls for zooming the charts in/out, following the aircraft's present position and toggling on/off dark mode.

The latitude and longitude at the centre of the chart are shown in the bottom left corner of the page.

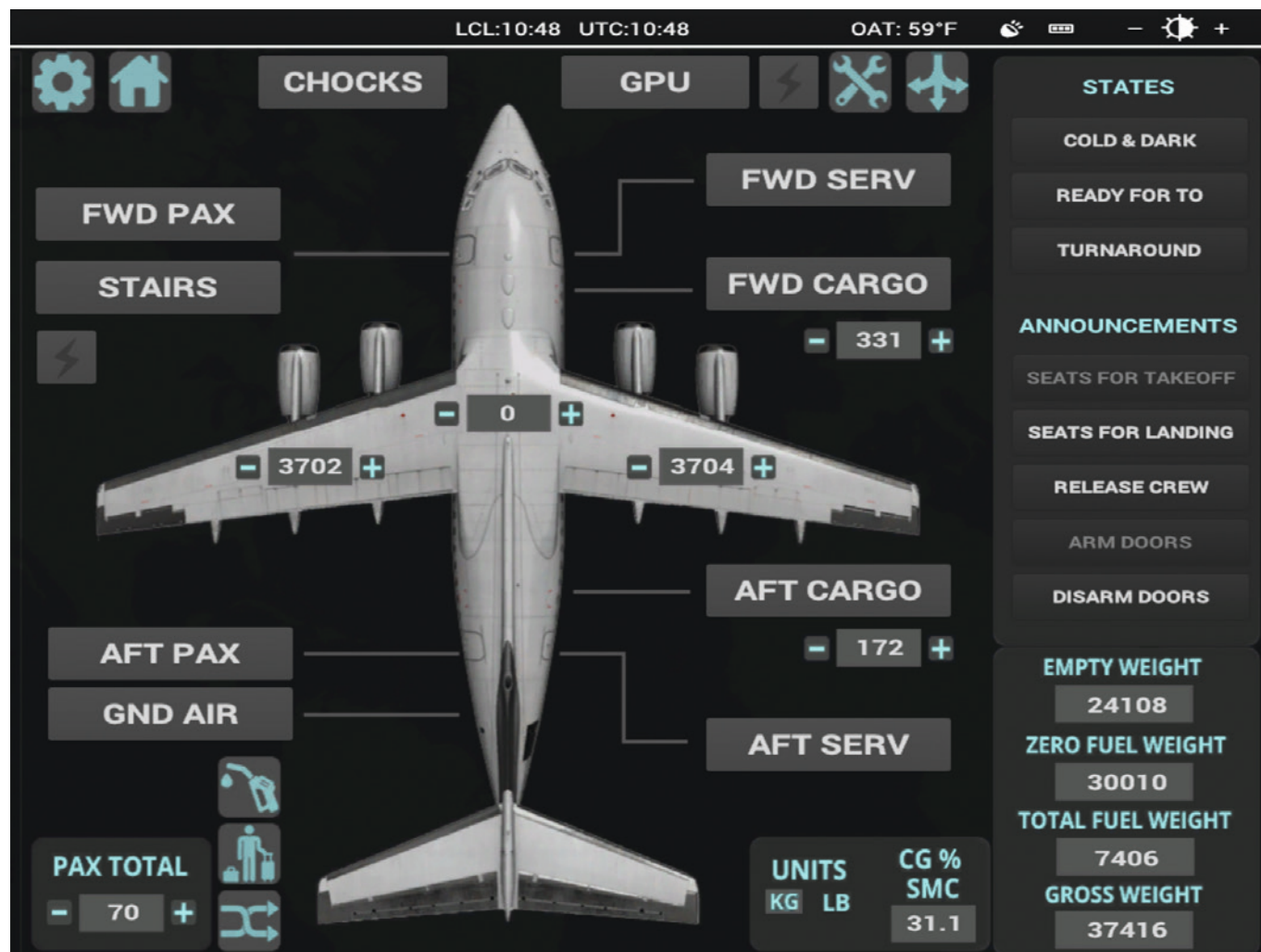
Pressing the 'X' button at the top left corner of the page will return the EFB to the initial Charts page where the AIRPORT CHARTS or ENROUTE CHARTS pages can be selected.



AIRCRAFT

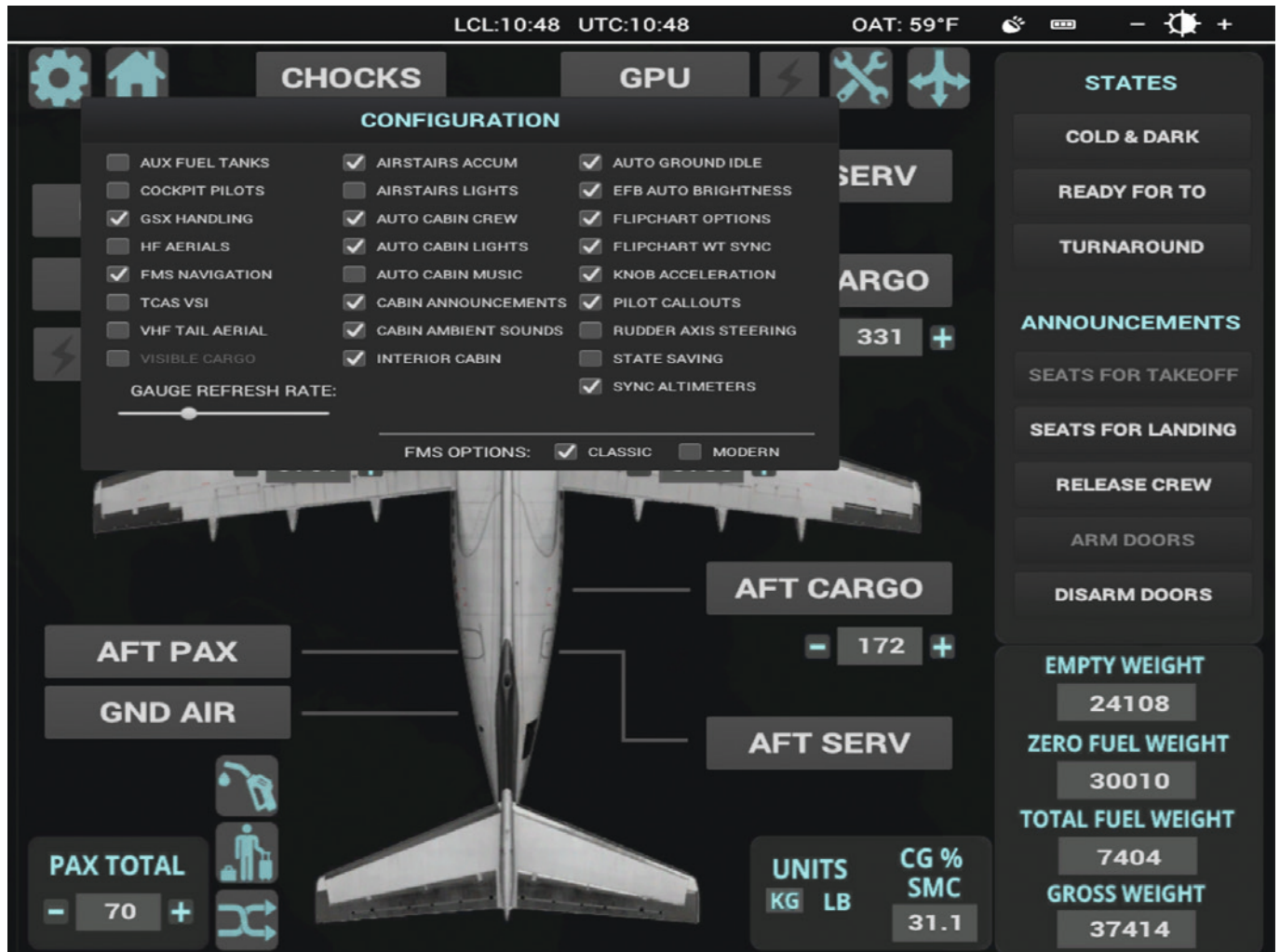
Selecting the Aircraft app from the Home page will launch the Aircraft screen, which allows you to control various aircraft options and payload.

Please refer to the sections below for further information on the individual functions of the Aircraft page. You can return to the EFB from the Aircraft screen by either clicking the 'Home' icon or the physical 'Home' button.



Configuration

With the Aircraft menu selected, pressing the Settings 'cog' icon enables or disables the Configuration menu.



This menu has the following options:

- **AUX FUEL TANKS** – enables/disables the auxiliary fuel tanks.
- **COCKPIT PILOTS** – enables/disables the visible Co-pilot and Captain with interior camera selected.
- **GSX HANDLING** – enables/disables the logic used to integrate the 146 Professional's boarding/deboarding logic with GSX. This option should be enabled if you wish to use GSX with the 146 Professional.
- **HF AERIALS** – enables/disables HF aerial wires on the exterior (will be set automatically if the selected livery has a custom-created exterior equipment configuration).
- **FMS NAVIGATION** – enables/disables the Flight Management System (FMS) Control Display Units (CDUs) on the pedestal. When enabled, an FMS OPTIONS field will appear in the lower right corner of the configuration menu with the option to toggle between CLASSIC and MODERN FMS options. When this option is disabled, the autopilot and HSI will take GPS information from the default MSFS flight planner.
- **TCAS VSI** – toggles between traditional and TCAS vertical speed indicators.
- **VHF TAIL AERIAL** – enables/disables the visibility of the VHF3 aerals on the tail of the aircraft (will be set automatically if the selected livery has a custom-created exterior equipment configuration).

- **VISIBLE CARGO** – enables/disables the visibility of the cargo containers in the cargo variants of the 146 (200QC, 200QC and 300QT). The cargo will progressively load/unload during the boarding simulation and the total amount of visible cargo will be determined by how much cargo is loaded on the EFB.
- **AIRSTAIRS ACCUM** – when this option is enabled, the aircraft is fitted with an airstairs accumulator allowing up to two full retractions of the airstairs with the hydraulic systems powered off and the airstairs accumulator at maximum pressure. Once accumulator pressure has depleted, the Yellow hydraulic system must be pressurised to allow the airstairs to be retracted. When the option is disabled, the aircraft is not fitted with an airstairs accumulator and will require Yellow system hydraulic pressure (via the AC pump) in order to retract the airstairs.
- **AIRSTAIRS LIGHTS** – enables/disables the airstairs lights. When enabled, the airstairs lights will be lit whenever the STAIR RETRACTION switch is not in the retracted position.
- **AUTO CABIN CREW** – enables/disables the Automatic Cabin Crew features. When enabled, the cabin crew will control the cabin lights and other galley equipment at various stages during the flight. When enabled, the CABIN ANNOUNCEMENTS option will also be enabled automatically. When disabled, the AUTO CABIN MUSIC option will be disabled automatically.
- **AUTO CABIN LIGHTS** – when enabled, the intensity of the cabin lights is automatically set depending on the time of day. When disabled, a slider provides control of the intensity.
- **AUTO CABIN MUSIC** – enables/disables the automatic cabin music feature. When enabled, the cabin crew will play cabin music at various stages during the flight. When disabled, music will not be automatically triggered at any stage of the flight.
- **CABIN ANNOUNCEMENTS** – enables/disables cabin announcements (“The seatbelt sign has been turned off” etc.). This option must be enabled prior to enabling the AUTO CABIN CREW option.
- **CABIN AMBIENT SOUNDS** – enables/disables the cabin ambient sounds.
- **INTERIOR CABIN** – enables/disables the cabin with interior camera selected (note that the cabin is low-poly for performance).
- **AUTO GROUND IDLE** – enables/disables the automatic selection of throttles to ground idle from flight idle upon touchdown.
- **EFB AUTO BRIGHTNESS** – toggles on/off the auto brightness logic of the EFB Aircraft page. With this option enabled, the brightness of the EFB Aircraft page will vary depending on ambient lighting within the simulator. With this option disabled, the EFB Aircraft page brightness can be manually adjusted by using the brightness buttons at the top right corner of the page. Manually adjusting the EFB Aircraft page brightness will automatically disable this option (if enabled).
- **FLIPCHART OPTIONS** – when enabled, you can click on the relevant row of the speeds flipchart (located below the landing gear lever) to specify which flap setting you would like the speed bugs to be set for. This allows you to pre-select your take-off or approach flap setting. When disabled, clicking anywhere on the flipchart will set the speed bugs based on your current flap setting.
- **FLIPCHART WT SYNC** – when enabled, the speeds flipchart will be automatically synchronised to the aircraft’s current weight and will display the correct speeds for the aircraft’s current weight. When disabled, the speeds flipchart will not be synchronised with the aircraft’s current weight and will therefore require you to manually find the correct speed chart for the aircraft’s current weight. With this option disabled, hovering your mouse over the speeds flipchart will allow two arrows to appear either side of the weight field at the top of the flipchart. Clicking the left/right arrows will cycle through the various flipchart pages which are in 1,000 kg intervals.
- **KNOB ACCELERATION** – enables/disables acceleration on the MCP ALT/CRS/HDG knobs, altimeter bugs and COMM radio knobs.
- **PILOT CALLOUTS** – enables/disables pilot callouts (“V1”, “Rotate” etc.).
- **RUDDER AXIS STEERING** – when enabled, the rudder axis control assignment will also control the tiller for nose-wheel steering. When disabled, the ‘STEERING INC/DEC’ and ‘NOSE WHEEL STEERING AXIS’ assignments can be used to control the tiller without moving the rudder pedals. You can also click and drag the tillers to control only the steering.
- **STATE SAVING** – enables/disables aircraft state saving. The aircraft state can be saved and reloaded automatically between flights, allowing you to always return to your cockpit in the same state that you last left it.

- **SYNC ALTIMETERS** – automatically synchronises standby and Co-pilot/Captain altimeter barometric settings ('master setting' is based on camera selection).
- **GAUGE REFRESH RATE** – allows you to control the digital gauge refresh rates (lower refresh rate = higher FPS).
- **CABIN LIGHTS** – only available if the AUTO CABIN LIGHTS option is disabled. This option allows for manual control of the cabin light intensity.
- **FMS OPTIONS** – only available if the FMS NAVIGATION option is enabled. This option allows the selection of either the CLASSIC (UNS-1) or MODERN (Pro Line 21) Flight Management System.
Note: Changing the FMS option during flight is not recommended. Doing so may remove the active flight plan from both FMS units and will require it to be re-entered on the chosen FMS unit.

Aircraft states

Three aircraft states can be selected:

- **Cold & Dark** – aircraft is fully cold and dark, chocks are fitted and all doors are closed.
- **Turnaround** – aircraft is configured in a turnaround state with the engines off, cargo and forward passenger doors open and stairs deployed, chocks fitted and ground power connected.
- **Ready For Takeoff** – aircraft is fully configured for take-off, with the parking brake on.

The aircraft will automatically be configured in the 'Cold & Dark' state when a flight is started at a parking/ramp/gate position, otherwise the 'Ready For Takeoff' state will be selected. Restoration of a saved state, if enabled in the Configuration menu, will then occur.

Announcements

Five cabin announcements can be triggered:

- **SEATS FOR TAKE-OFF** – flight deck to cabin PA for crew to take seats for take-off. After a short time the crew will confirm that the cabin is secure and slide the CABIN SECURED sign on the aft pedestal to the take-off position.
- **SEATS FOR LANDING** – flight deck to cabin PA for crew to take seats for landing. After a short time the crew will confirm that the cabin is secure and slide the CABIN SECURED sign on the aft pedestal to the landing position.
- **RELEASE CREW** – flight deck to cabin PA to release crew to begin their service.
- **ARM DOORS** – cabin PA to arm doors and cross-check.
- **DISARM DOORS** – cabin PA to disarm doors.

The announcement buttons will be disabled (greyed out) if they have already been triggered.

The "Seats for take-off", "Cabin crew released" and "Seats for landing" cabin announcements can also be triggered by pressing the CABIN CALL button on the overhead panel at the relevant stage of the flight (before take-off, during the climb and during the descent).

The announcements will also be triggered automatically if the AUTO CABIN CREW option is enabled on the EFB.

Doors and equipment

All passenger, service and cargo doors can be opened/closed by pressing the associated button:

- **FWD PAX** – door 1L, main passenger door. The stairs must be fully retracted before the door can be closed.
- **STAIRS** – door 1L, integrated airstairs. Door 1L must be fully open before the stairs can be extended. Extension is under gravity, but retraction requires Yellow hydraulic pressure (supplied by the AC pump prior to engine start).
- **AFT PAX** – door 2L, rear passenger door.
- **FWD SERV** – door 1R, forward service door.
- **AFT SERV** – door 2R, rear service door.
- **FWD CARGO** – forward lower cargo door.
- **AFT CARGO** – aft lower cargo door.
- **SIDE CARGO** – fuselage cargo door (QC/QT variants only).

The **CHOCKS** button enables/disables the wheel chocks.

The **GPU** button enables/disables the Ground Power Unit, which supplies external AC/DC power to the aircraft. A lightning bolt indicator to the right of the GPU button will be grey when external power is not connected to the aircraft, amber when external power is available but not connected to the aircraft's electrical system, and green when the external power is connected to the aircraft electrical system. Clicking on this button with the GPU connected will perform the same function as the EXT AC switch on the overhead panel.

A lightning bolt indicator below the STAIRS button indicates the status of external power if a jetway is connected to the aircraft. The lightning bolt will be grey when a jetway is not connected to the aircraft or in transit, amber when external power is available from the jetway but not connected to the aircraft's electrical system, and green when the external power from the jetway is connected to the aircraft electrical system. Clicking on this button with a jetway connected to the aircraft will perform the same function as the EXT AC switch on the overhead.

Note: *The jetway external power cables are not modelled as external equipment).*

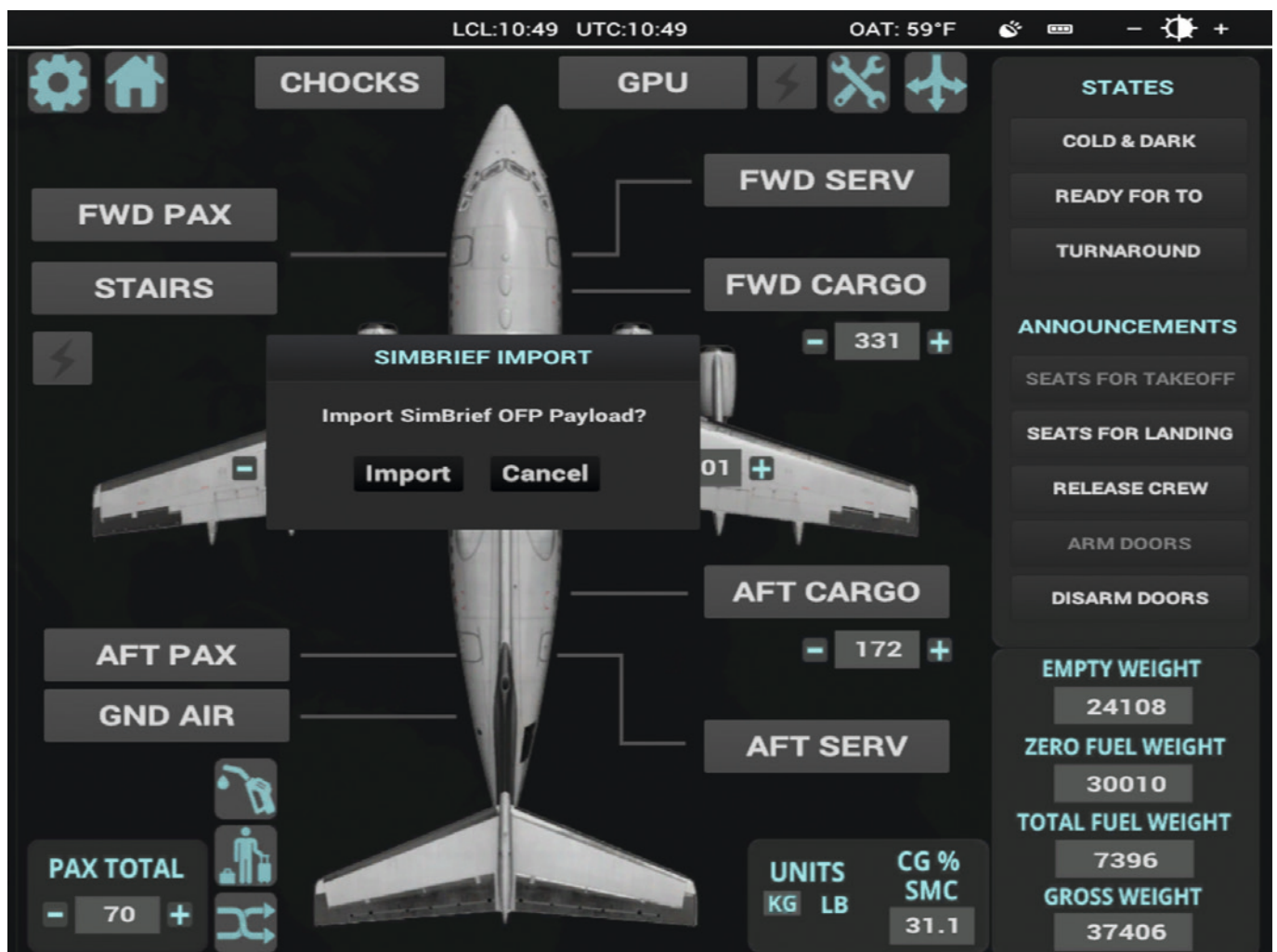
The **GND AIR** button enables/disables a ground air supply unit, which supplies air to the aircraft via an external air source. **Note:** *Although GND AIR is simulated, the ground air supply unit is not modelled as external equipment.*

An **EMER GEAR RESET** button will appear after an emergency landing gear deployment. Pressing this button will reset the emergency landing gear system, allowing the gear to be retracted again.

Fuel and payload

The EFB can be used to set:

- Fuel load in each of the tanks – left and right wing and auxiliary tanks (if equipped) and centre tank.
- Forward and aft cargo payload.
- Fuselage cargo payload (QC/QT variants only).
- Total passenger (PAX) load.
- Zero fuel weight (ZFW) – the selected weight will be automatically split into a suitable passenger quantity and cargo load.
- Total fuel weight – the selected weight will be automatically split between the tanks.



Fuel and cargo loads, ZFW and total fuel weight values can be increased/decreased by 5% using the plus/minus buttons at either side of the field or they can be entered manually. Manual entry can be achieved by clicking on the relevant field, inputting the value with the number keys on your keyboard and then pressing the 'Enter' key, or by using the on-screen keyboard in the EFB. The 'Backspace' key can be used to delete an entry.

A 'Randomise' icon consisting of two arrows is located immediately to the right of the PAX TOTAL field. Clicking this icon will set a random passenger and cargo load.

The auxiliary fuel tanks will only be shown if they are enabled in the EFB Configuration menu and the fuel level can be increased/decreased using the same method as for the wing and centre fuel tanks.

Units of measurement can be toggled between kilograms (KG) and pounds (LB) at the bottom of the page. Due to simulator limitations, any changes to the fuel or payload on the EFB/tablet may not be correctly displayed on the MSFS FUEL/PAYLOAD window. We therefore advise you to only use the EFB for setting and reviewing fuel and payload.

The CG % SMC (Standard Mean Chord) is shown and the value can be left-clicked to automatically set the pitch trim to the correct position for take-off. The value will turn red if the CG is outside of the aircraft's limits.

The gross weight value will turn red if the aircraft's maximum take-off weight (MTOW) has been exceeded.

If a SimBrief OFP has been imported on the OFP app, a window prompt will ask you whether you would like to import the fuel and payload from the OFP data. This option will trigger the zero fuel weight and total weight to be automatically set to the OFP values.

Boarding simulation

Boarding simulation is possible in both the passenger and the freighter variants of the 146. The BOARDING menu can be opened by clicking the passenger icon at the bottom left corner of the Aircraft page and includes options to start the boarding/deboarding process and control its speed, as well as displaying useful tips for the next step which may be required to advance the process.

When loading into the aircraft at a gate in a cold and dark or 'turnaround' state, the aircraft will be loaded with full wing fuel tanks but with no passengers or cargo, simulating a 'ready for boarding' state. In order to begin the boarding process, the required aircraft weights must first be entered into the flashing data fields, either by using the 'plus' and 'minus' arrows, clicking on the field and inputting the weights with the on-screen keyboard, or by importing the weights from a SimBrief imported flight plan on the OFP page.

Once the desired weights have been entered, clicking the START BOARDING button will begin the boarding process. If the passenger and cargo doors are not already open, they will be automatically opened at the start of the boarding/deboarding process (with the exception of the INSTANT boarding speed option which is explained below).

The speed of the boarding/deboarding process can be altered by adjusting the BOARDING SPEED field. The boarding speed must be selected prior to starting the boarding/deboarding process:

- **REAL** – boarding/deboarding will proceed at a realistic rate and will vary depending on the number of passengers and the amount of cargo to be loaded. With this option selected, boarding/deboarding can take up to 20 minutes for a fully laden 146-300 variant.
- **INSTANT** – boarding/deboarding will be completed instantly once the START BOARDING button has been clicked. The passenger and cargo doors will not be opened and the passenger and cargo weights will be instantly set.
- **5 MINS** – boarding/deboarding will take five minutes to complete once the START BOARDING button has been pressed.
- **10 MINS** – boarding/deboarding will take 10 minutes to complete once the START BOARDING button has been pressed.
- **20 MINS** – boarding/deboarding will take 20 minutes to complete once the START BOARDING button has been pressed.

During boarding/deboarding, a progress bar will replace the START BOARDING button and will display the current progress as a percentage. The fields will turn amber when the weight is increasing/decreasing towards the previously set value and will turn green once the previously set value has been reached.

Once boarding is complete, the fields will return to their non-flashing state, indicating that the current weights shown are the actual weights loaded onto the aircraft. Editing the weights in this state will return the fields to their flashing state and a new boarding/deboarding process must be completed for the new weights to affect the aircraft.

If the aircraft is in a state where boarding/deboarding cannot be completed, all fields will be greyed out and the aircraft weights cannot be edited. This will occur if, after boarding has already been completed, the seat belt signs are still on and the landing and strobe lights are on, or if the aircraft is moving with neither parking brake nor chocks set.

Deboarding the aircraft at the end of the flight can be completed by using the same process as for boarding; the button used to begin the deboarding will now be changed to START DEBOARDING to signify the different state.

Once the deboarding process is complete, the boarding menu will reset back to the pre-boarding state and the data fields on the Aircraft page will begin flashing, indicating that the aircraft's fuel and payload can now be adjusted ahead of the next flight.

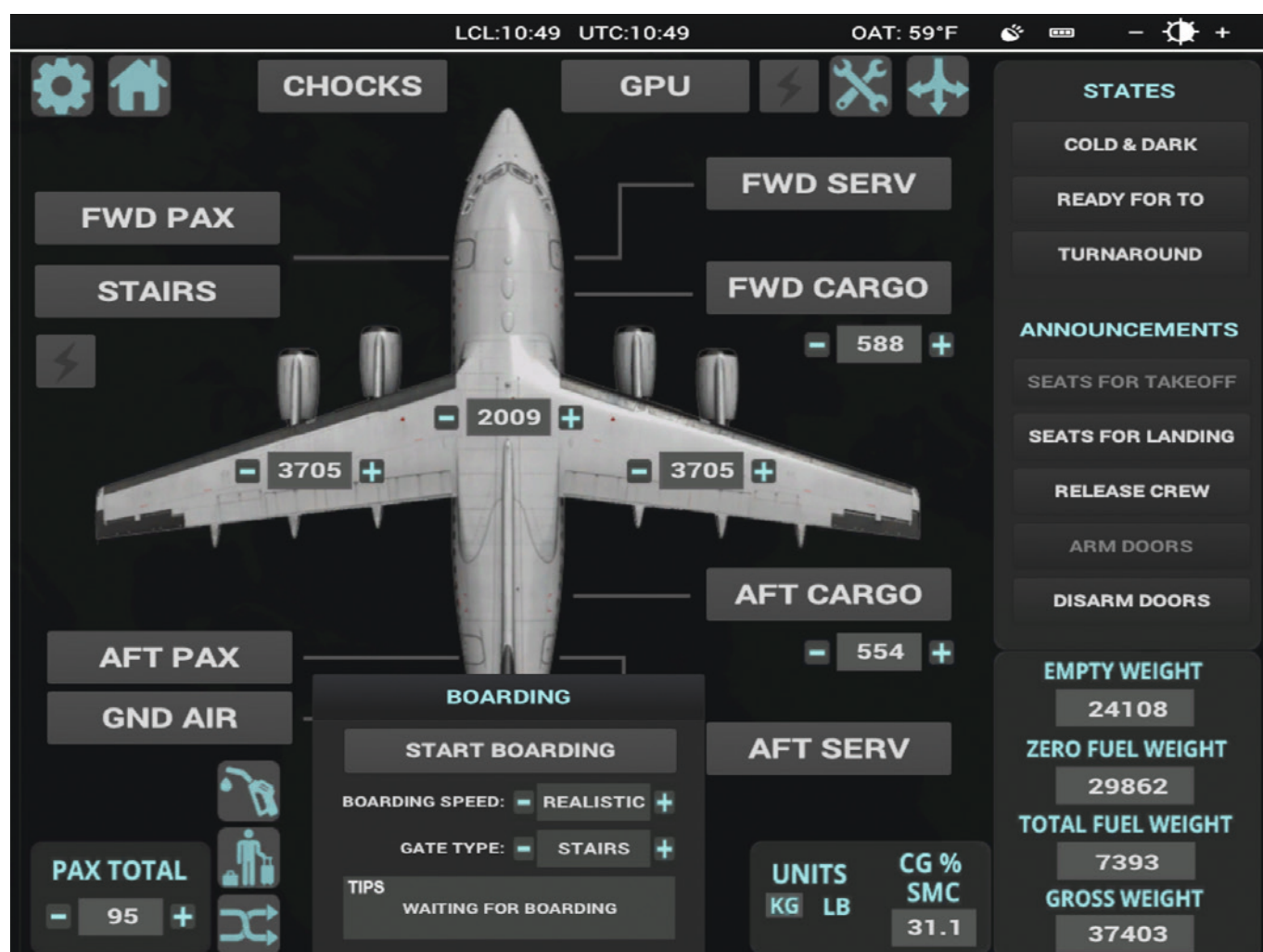
In order to start the boarding/deboarding process, the aircraft must be stationary with the parking brake ON or chocks enabled; seat belt signs must be switched OFF and landing and strobe lights must also be switched OFF.

When starting a flight on the runway, the aircraft will be loaded with maximum payload weights. Unlike starting a flight at a gate, you will not be prompted to begin the boarding process. The payload values can still be changed by editing the respective fields to the desired values, but these new values will only take effect once a boarding process has been completed. When starting a flight on the runway, the most efficient way of achieving this is to set the boarding speed to INSTANT before clicking the START BOARDING button; this will allow the values to take effect instantly without requiring doors to be opened.

Users of GSX can enable the GSX HANDLING option in the Configuration menu to allow GSX to integrate with the 146 Professional's boarding/deboarding processes.

Note 1: The EFB cannot be closed during the boarding/deboarding process.

Note 2: We advise against using the default MSFS Weight and Balance menu when using the Boarding and Refuelling features of the 146 Professional. Doing so can lead to conflicting values being shown between our custom fuel and payload logic and the default MSFS logic. To prevent any issues from occurring on your flight, we recommend restarting the flight if any changes are made inadvertently to the MSFS Weight and Balance menu.



Refuelling simulation

Refuelling simulation is possible in both the passenger and the freight variants of the 146. The REFUELLING menu can be opened by clicking the fuel nozzle icon in the bottom left corner of the Aircraft page and includes options to start the refuelling/defuelling process and control the speed, as well as displaying useful tips for the next step which may be required to advance the process.

When loading into the aircraft at a gate in a cold and dark or 'turnaround' state, the aircraft will be loaded with 1,000 kg of fuel in each wing tank, simulating a 'turnaround' state. In order to begin the refuelling process, the required aircraft weights must first be entered into the data fields, either by using the 'plus' and 'minus' arrows, clicking on the field and inputting the weights with the on-screen keyboard, or by importing the weights from a SimBrief imported flight plan on the OFP page.

Once the desired fuel weights have been entered, clicking the START REFUELLING button will begin the refuelling process.

The speed of the refuelling/defuelling process can be altered by adjusting the REFUEL SPEED field. The REFUEL SPEED must be selected prior to starting the REFUELLING/DEFUELLING process.

- **REAL** – refuelling/defuelling will proceed at a realistic rate of approximately 330 US gallons per minute (1,249 kg/min / 2,754 lb/min). With this option selected, refuelling/defuelling can take up to 10 minutes to fuel any 146 variant to maximum capacity, including auxiliary fuel tanks.
- **INSTANT** – refuelling/defuelling will be completed instantly once the START REFUELLING button has been pressed.
- **5 MINS** – refuelling/defuelling will take five minutes to complete once the START REFUELLING button has been pressed.
- **10 MINS** – refuelling/defuelling will take 10 minutes to complete once the START REFUELLING button has been pressed.
- **20 MINS** – refuelling/defuelling will take 20 minutes to complete once the START REFUELLING button has been pressed.

During refuelling/defuelling, a progress bar will replace the START REFUELLING button and will display the current progress as a percentage, and a REFUEL SELECTED caption will illuminate on the FUEL section of the overhead panel. The EFB fuel fields will turn amber when the weight is increasing/decreasing towards the previously set value, and will turn green once the previously set value has been reached.

Once refuelling/defuelling is complete, the fields will return to their non-flashing state, indicating that the current fuel weights shown are the actual fuel weights loaded onto the aircraft. This can be verified by checking the fuel quantity indicators on the main instrument panel. Editing the weights in this state will return the fields to their flashing state and a new refuelling/defuelling process must be completed in order for the new fuel weights to affect the aircraft.

If the aircraft is in a state where refuelling/defuelling cannot be completed, all fields will be greyed out and the aircraft weights cannot be edited.

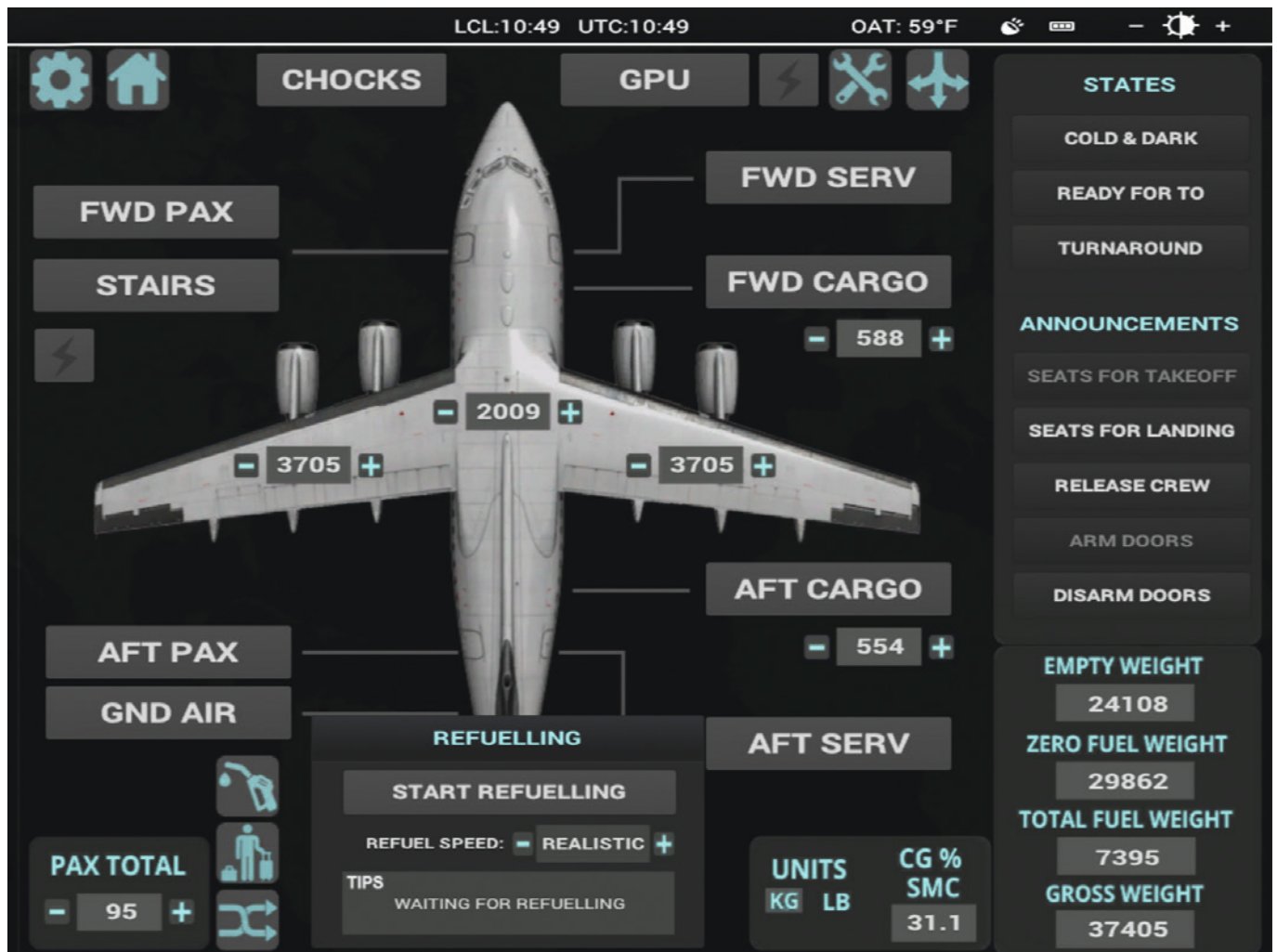
In order to start the refuelling/defuelling process, the aircraft must be stationary with the parking brake ON or chocks enabled, seat belt signs switched OFF and landing and strobe lights also switched OFF.

When starting a flight on the runway, the aircraft will be loaded with full wing fuel tanks. Unlike starting a flight at a gate, you will not be prompted to begin the refuelling process. The fuel values can still be changed by editing the respective fields to the desired values, but these new values will only take effect once a refuelling/defuelling process has been completed. When starting a flight on the runway, the most efficient way of achieving this is to set the refuelling speed to INSTANT before clicking the START REFUELLING button; this will allow the values to take effect instantly without any extended waiting time.

Users of GSX can enable the GSX HANDLING option in the Configuration menu to allow GSX to integrate with the 146 Professional's refuelling/defuelling processes.

Note 1: The EFB cannot be closed during the refuelling/defuelling process.

Note 2: We advise against using the default MSFS Weight and Balance menu when using the Refuelling and Boarding features of the 146 Professional. Doing so can lead to conflicting values being shown between our custom fuel and payload logic and the default MSFS logic. To prevent any issues from occurring on your flight, we recommend restarting the flight if any changes are made inadvertently to the MSFS Weight and Balance menu.



Failures

The FAILURES menu can be accessed by clicking on the two-spanner icon in the top right corner of the Aircraft page.

Over 90 system failures are simulated, with each failure accurately simulating a failure of the respective system as well as producing the correct visual and aural alerts.

- **FAIL** – a tick indicates a failure in the respective system is active.
- **ARM** – a tick indicates that a failure in the respective system is armed and the system will fail at the time specified in the MINS field.
- **MINS** – if a failure is armed, the value in this field will indicate how long until the failure becomes active. The default value is 60 mins, indicating that a failure will occur 60 minutes after being armed. The time can be adjusted by clicking the + (plus) and - (minus) buttons either side of the MINS field.
- **RANDOM** – enables/disables random system failures.
- **PROBABILITY** – determines the rate at which random system failures occur. This field has four settings which can be cycled using the + (plus) and - (minus) buttons on either side of the field: REAL, LOW, MED and HIGH, with REAL being the lowest probability of failure and HIGH being the highest probability of failure.
- **NEXT/PREV** – cycles through the various system failure pages.
- **FIX ALL** – fixes all active and armed failures and returns the aircraft to a fully functional state.

The screenshot shows the 'FAILURES' menu in a dark-themed aircraft simulation interface. At the top, status information includes 'LCL:10:50 UTC:10:50' and 'OAT: 59°F'. The main menu is divided into three sections: 'HYDRAULIC', 'ELECTRICAL', and 'FUEL'. Each section contains a table with columns for 'FAIL', 'ARM', and 'MINS'. The 'HYDRAULIC' section includes items like 'DC PUMP', 'AC PUMP', 'PTU', 'ENG 2 PUMP', and 'ENG 3 PUMP'. The 'ELECTRICAL' section includes 'BATT 1', 'BATT 2', 'STBY GEN', 'ENG 1 GEN', 'ENG 4 GEN', 'APU GEN', 'YD MSTR 1', 'YD MSTR 2', 'AP MSTR', 'AVIONICS A', and 'AVIONICS B'. The 'FUEL' section includes 'CTR XFER', 'CTR XFEED', 'L COM FEED', 'R COM FEED', 'L STBY PUMP', 'R STBY PUMP', 'L OUTER PUMP', 'L INNER PUMP', 'R INNER PUMP', and 'R OUTER PUMP'. The bottom of the menu has controls for 'RANDOM' (checked), 'PROBABILITY' (set to 'REAL'), and buttons for 'PREV', 'NEXT', and 'FIX ALL'. On the right side, there are panels for 'STATES' (COLD & DARK, READY FOR TO, TURNAROUND), 'ANNOUNCEMENTS' (SEATS FOR TAKEOFF, SEATS FOR LANDING, RELEASE CREW, ARM DOORS, DISARM DOORS), and 'WEIGHTS' (EMPTY WEIGHT: 24108, ZERO FUEL WEIGHT: 29862, TOTAL FUEL WEIGHT: 7383, GROSS WEIGHT: 37393).

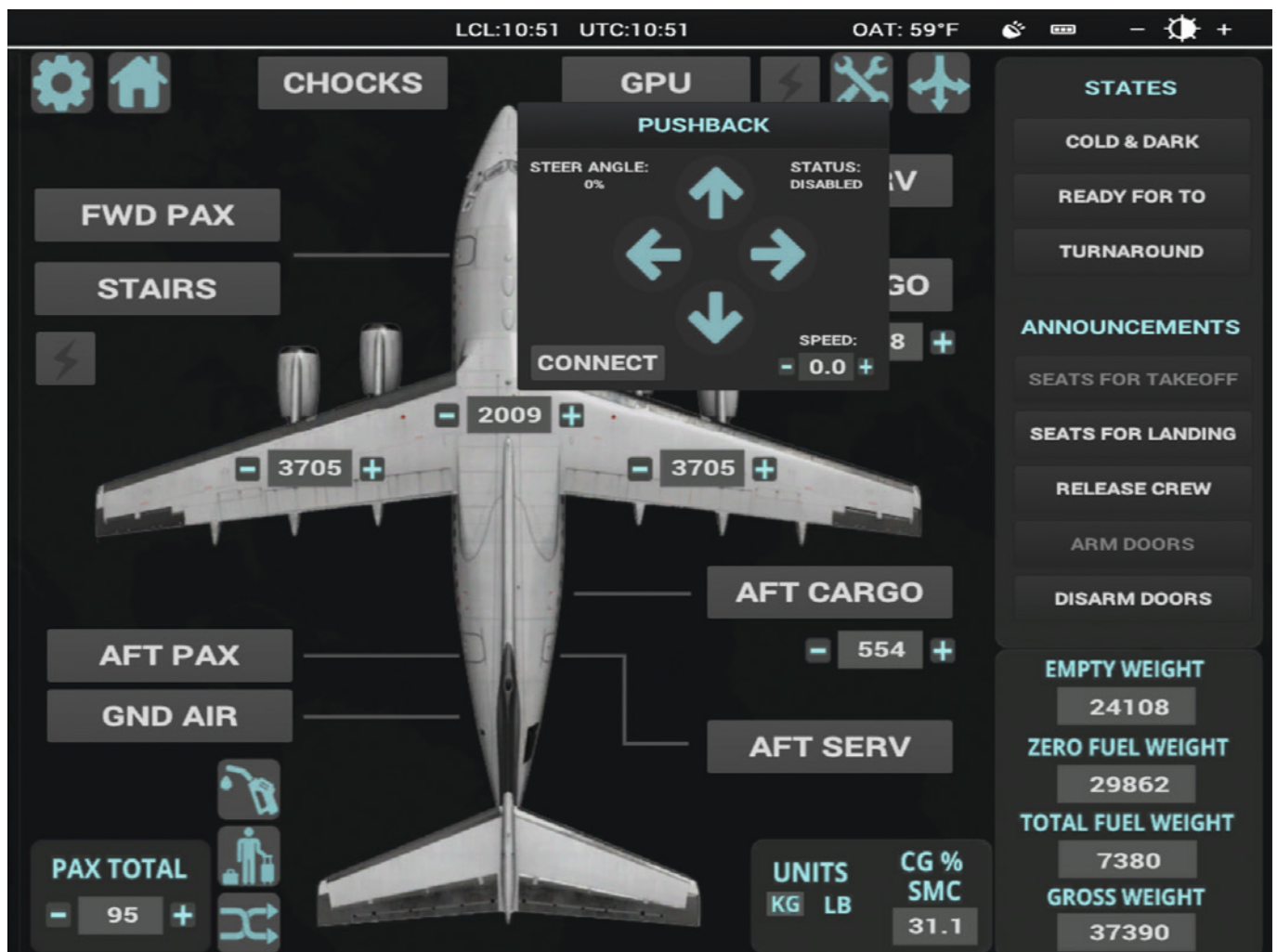
Pushback controls

Pushback controls can be accessed by clicking on the three-arrow icon in the top right corner of the Aircraft page.

A pop-out PUSHBACK menu will open, providing controls for manoeuvring the aircraft on the ground with a pushback tug.

- **CONNECT** – connects the pushback tug to the aircraft. Pushback will begin once a direction is chosen via the arrow buttons. Text will change to CANCEL once a button is pressed.
- **CANCEL** – stops the pushback and disconnects the pushback tug. Text will revert back to CONNECT once button is pressed.
- **ARROW BUTTONS** – provide control of the aircraft in four directions. An arrow will change to green once that direction is selected. Multiple directions can be selected at the same time (e.g. reverse and left). The pushback direction can also be controlled with MSFS rudder axis control assignments.
- **SPEED** – provides control over the pushback tug speed. The greater the value, the higher the speed.
- **STEER ANGLE** – displays the current steering angle of the pushback tug.
- **STATUS** – displays the current status of pushback.

Note: Due to simulator limitations you may experience a slight jolt when the pushback tug connects to the aircraft, as well as some jittering when the aircraft speed varies between speeds 0 and 2.



NOTES

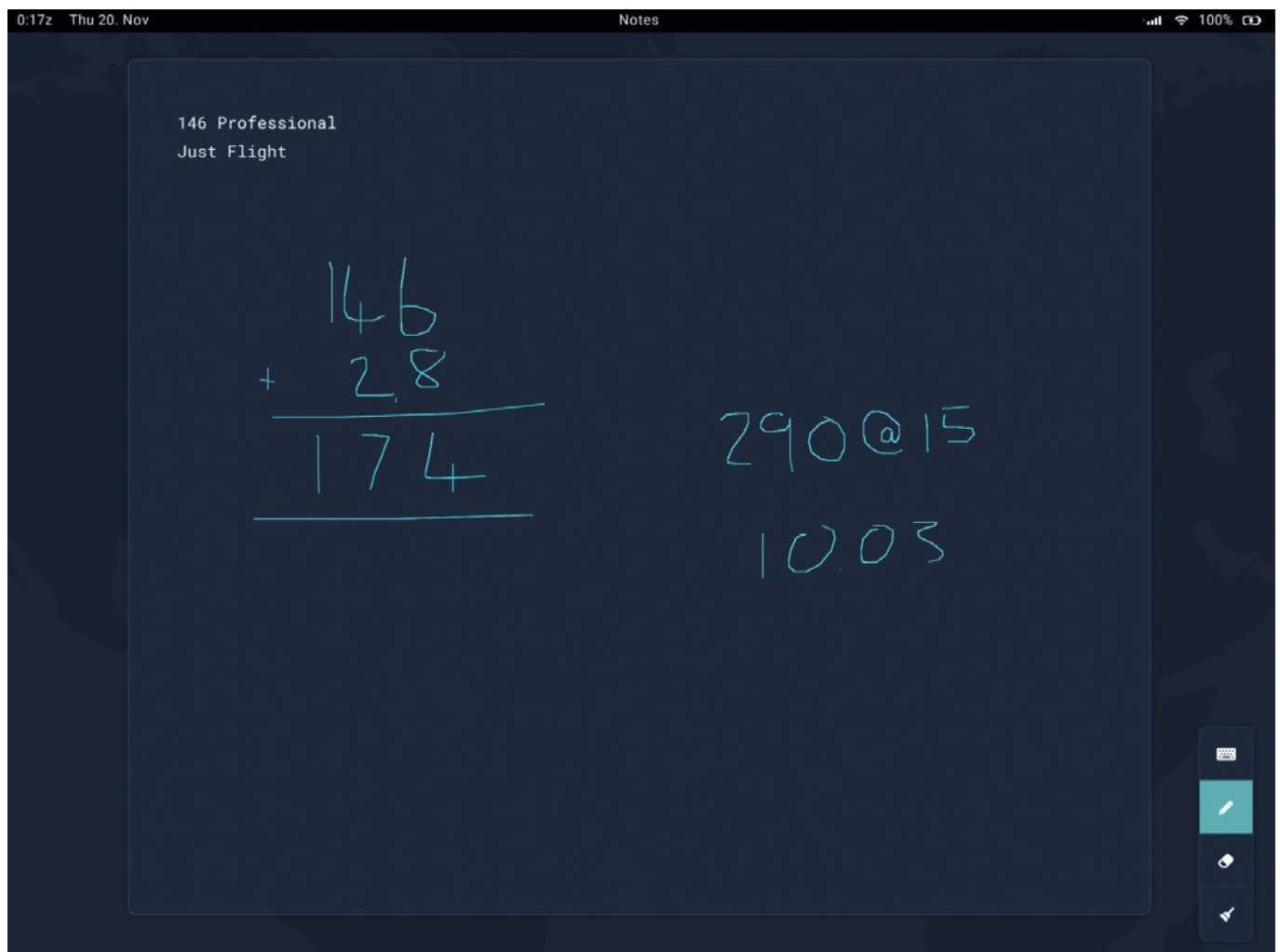
The Notes app acts as a virtual notepad for the pilot, allowing you to take text-based and handwritten notes on the fly (particularly useful for noting clearances and taxi instructions).

The Notes app supports standard keyboard inputs and will automatically display a scrollbar once the content exceeds the height of the input area.

An on-screen keyboard is also available. This can be toggled on/off by pressing the keyboard icon at the bottom right of the page. Once open, the keyboard can be moved freely to any position on the display by pressing and holding the top bar of the keyboard. To hide the keyboard, simply press the keyboard icon again (this feature is particularly useful for VR users).

To write handwritten notes, press the pen icon at the bottom right of the page and then left-click with your mouse and drag the pen to write on the screen. To erase text, press the eraser icon and, again with your mouse, left-click and drag to erase what you have written.

To erase all handwritten notes from the page, simply press the paintbrush icon at the bottom right of the page.



CHECKLIST

The Checklist app allows you to view all the aircraft's checklists on one easy-to-navigate page. The title of each checklist is shown on the left side of the page. Pressing the title of a checklist will open the respective checklist on the right side of the page.

Each step of a checklist has an item, action, and a tickbox which can be manually ticked to allow you to keep track of your progress. You can see your progress through the checklist at the top of the page.

Two controls at the bottom right of the page allow you to tick all boxes on the page or to untick all boxes.

Note: The Checklist page on the EFB is intended to be used as a guide only. For automated checklists please use the interactive checklist menu within MSFS.

The screenshot displays the Checklist app interface. At the top, the status bar shows '0:18z Thu 20. Nov', 'Checklist', and '100%' battery. The left sidebar lists checklist categories: 'FLIGHT DECK SAFETY' (selected), 'BEFORE START', 'ENGINE STARTING', 'AFTER START', 'BEFORE TAKE-OFF', 'AFTER TAKE-OFF', 'CLIMB', 'DESCENT', 'APPROACH', 'LANDING', and 'AFTER LANDING'. The main area shows the 'FLIGHT DECK SAFETY' checklist with a progress indicator 'Completed: 5 / 35' and 'Progress: 14%'. The checklist items are as follows:

Item	Status
Landing Gear - DOWN	Completed
Weather Radar - OFF and 15 Degrees UP	Completed
Transponder - STBY	Completed
Airbrake and Flaps - IN and UP	Completed
No Smoking Signs - ON	Completed
NAV Lights - ON	Pending
BATT 1 and 2 - Both ON, Voltage Checked	Pending
Parking Brake - YELLOW and PARK	Pending
Master Switches - All ON	Pending
Ground Ignition - As Required	Pending
Anti-Skid - ON	Pending
Lift Spoilers Yellow and Green - Both ON	Pending
AC and DC BUS-TIE - Both AUTO	Pending

At the bottom right, there are two controls: a checkbox icon and a square icon.

TOD CALCULATOR

The Top Of Descent Calculator is a useful tool which allows you to calculate and view the exact point at which you should begin your descent.

The distance of your descent can be calculated based on the following four factors:

- Current altitude (feet)
- Ground speed (knots)
- Target altitude (feet)
- Desired angle (degrees)

Each of these factors is shown on this page, where text can be entered into each of these fields either via an external keyboard or via the on-screen keyboard which can be toggled from the lower right corner of the page.

Once values have been entered into each of these four fields, the calculator will then produce two outputs:

- Desired TOD distance – the ground distance covered between the start of your descent and your target altitude.
- Desired vertical speed – the vertical speed that the aircraft will have to descend at to meet the distance stated.

Note: *Desired distance, Desired vertical speed, and Desired angle are all interchangeable values and can be toggled by pressing the arrows in the fourth field.*

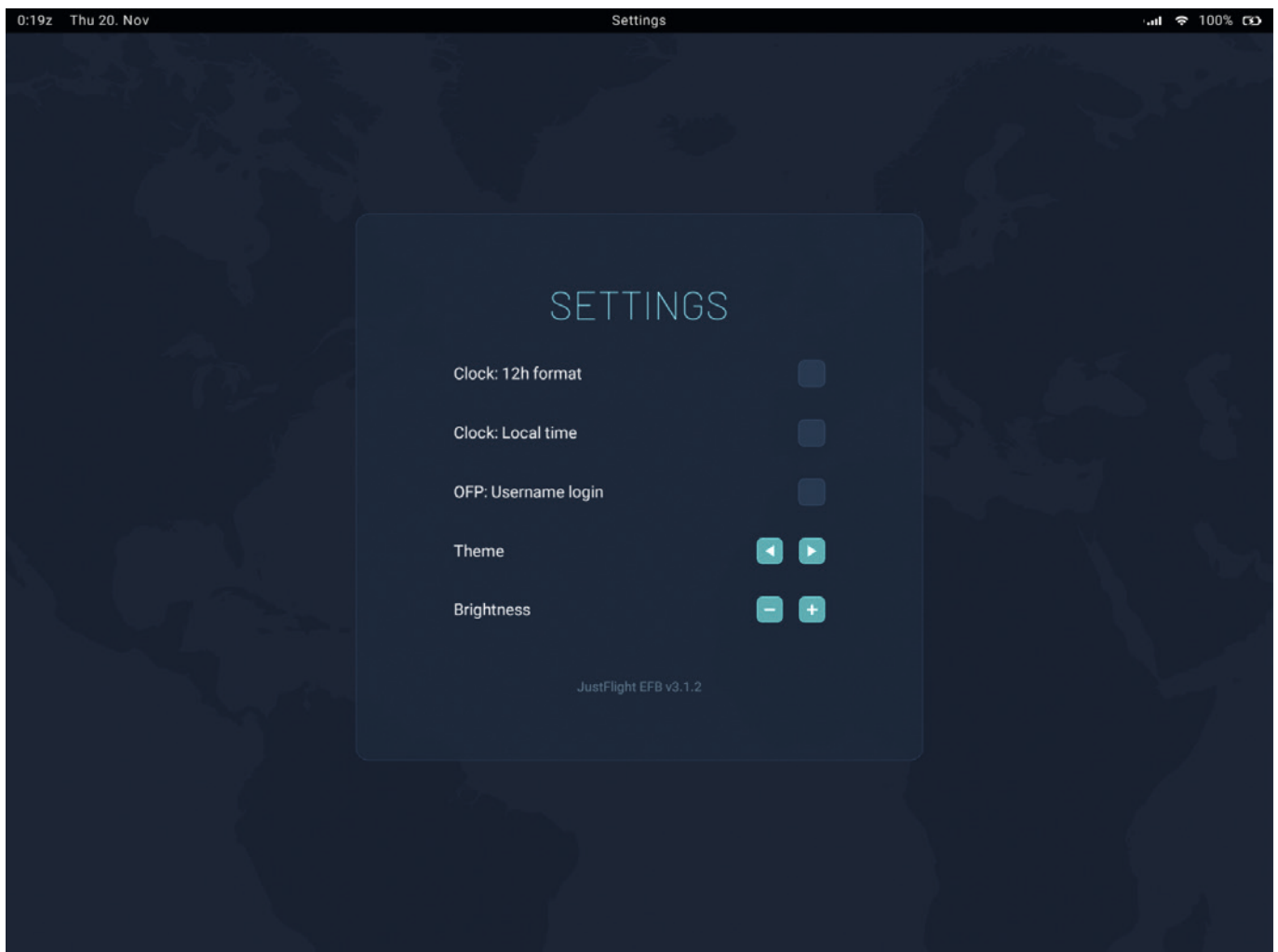
For ease of use, the CURRENT ALTITUDE and GROUND SPEED (KT) fields both have a 'SYNC' feature; once active, this continuously inputs the aircraft's current altitude and ground speed into their respective fields. With this feature active, the calculator's outputs will be constantly updated as the aircraft's altitude and speed change during its descent.

The screenshot displays the TOD Calculator app interface. At the top, the status bar shows the time as 0:18z, the date as Thu 20. Nov, and the battery level at 100%. The app title "TOD Calculator" is centered at the top. The main interface features four input fields arranged in a 2x2 grid. The top-left field is labeled "CURRENT ALTITUDE (FT)" and contains the value "29000", with a "SYNC" button to its right. The top-right field is labeled "GROUND SPEED (KT)" and contains the value "420", also with a "SYNC" button. The bottom-left field is labeled "TARGET ALTITUDE (FT)" and contains the value "2000". The bottom-right field is labeled "DESIRED ANGLE (DEG)" and contains the value "3", with left and right arrow buttons on either side. Below these input fields, a large box displays the calculated results: "Desired TOD distance: 85 NM" and "Desired vertical speed: 2127 ft/min".

SETTINGS

The Settings screen offers several options to adjust the look and behaviour of the EFB:

- **Clock: 12h format** – toggles the 12/24-hour format of the top bar clock.
- **Clock: Local time** – toggles between UTC and local time on the top bar clock.
- **OFP: Username login** – allows SimBrief identification via username instead of pilot ID.
- **Theme** – switches the EFB's colour scheme.
- **Brightness** – increases/decreases the EFB's brightness.



CREDITS

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Design	Fink Creative

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