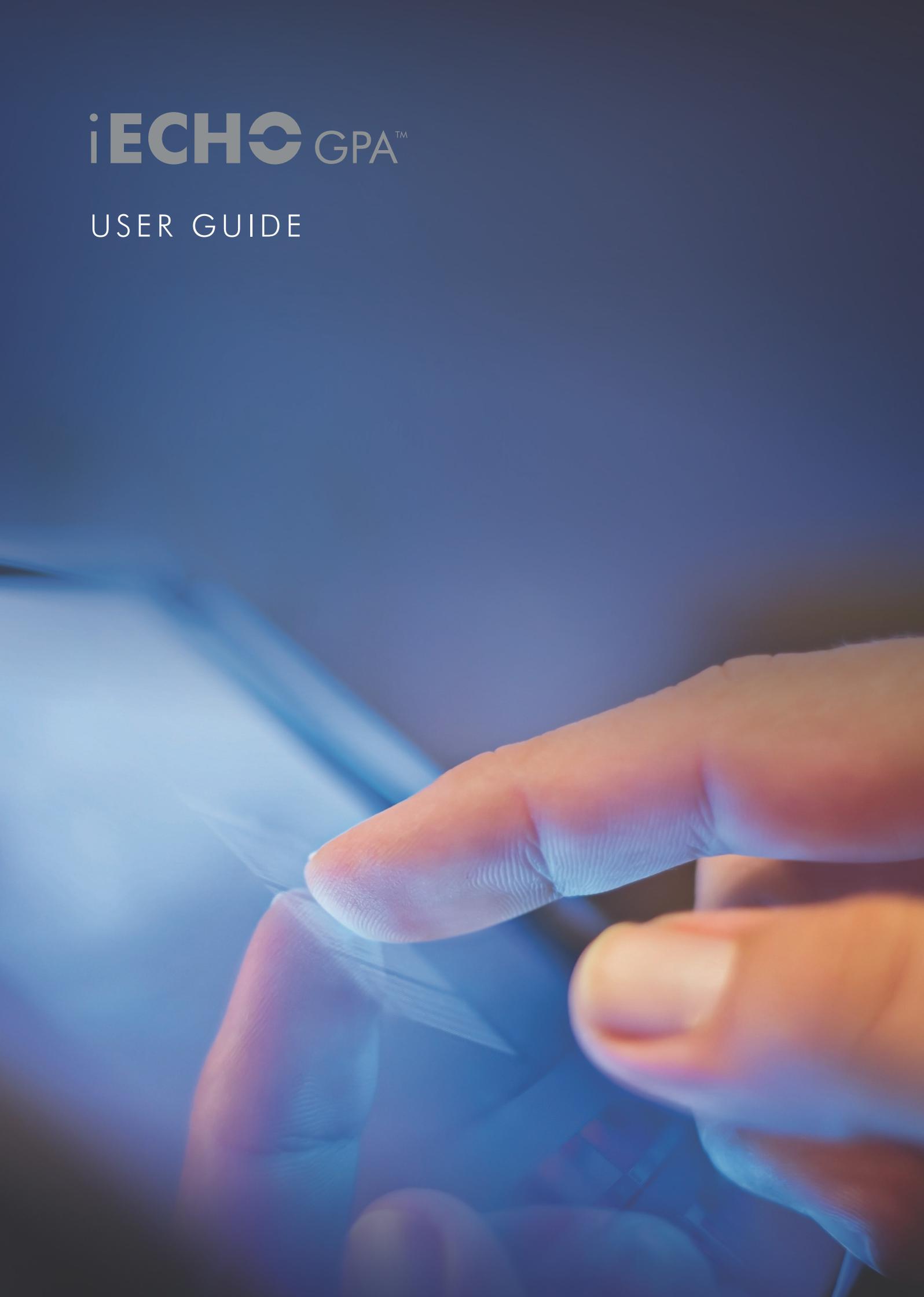


iECHO GPA™

USER GUIDE

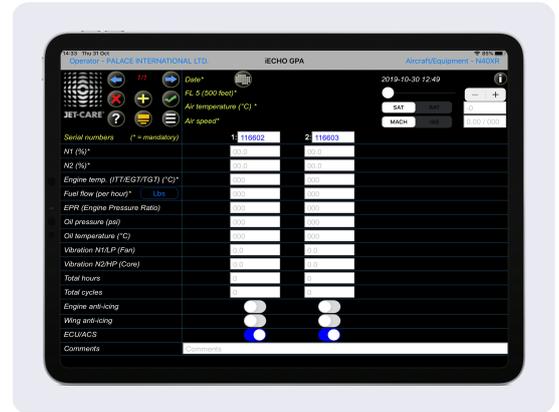




STARTING THE APP

Following installation the App will open on the Flight Data Entry Screen.

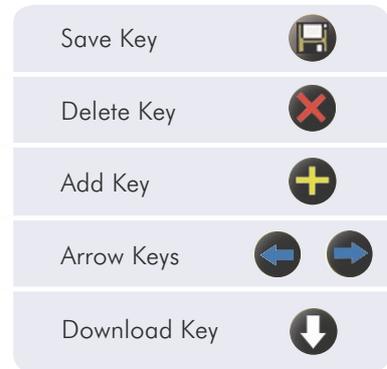
Please use the following guide to submit your flight data to Jet-Care.



THE ACTION KEYS

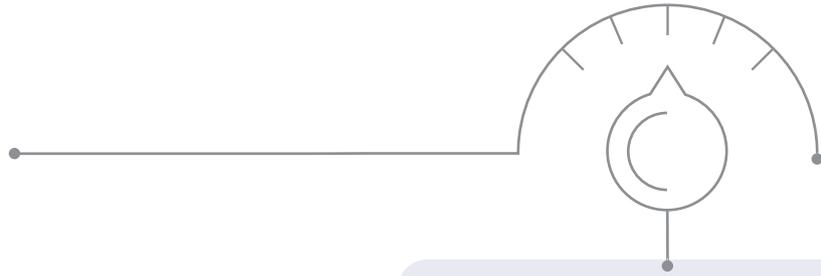
Throughout the App the following keys are used.

- Save the data you have entered by tapping the save icon.
- To delete a record tap the cross icon.
- To add new data tap the plus icon.
- Use the blue scroll arrows to view different sets of data.
- Optionally download operator/aircraft data from webECHO™ to iECHO GPA if you have an internet connection and a username and password. See page 3 for more details.





SETTINGS



This area can be used to define the device’s App settings.

- From the device’s home screen tap Settings and scroll down to iECHO GPA.
- Set the default air temperature type for new flights to SAT/RAT.
- Set the default air speed type for new flights to Mach/IAS.
- Set the default fuel flow unit for new flights to LBS/KG/LTR/GAL (US).
- To receive a confirmation email from Jet-Care upon receipt of data, select ‘Send receipt email on submission’ in App Settings and add your email address in ‘Notification Settings’.
- Confirmation prompt when submitting data – can be switched on or off.
- Set the app for left hand entry. This option will show the parameters from right to left and the parameter names will be on the right instead of the left.
- Enter your webECHO username and password for online data downloads if you wish to use this optional feature.

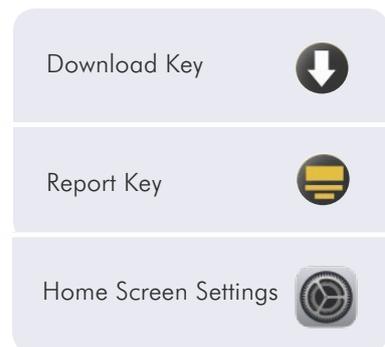
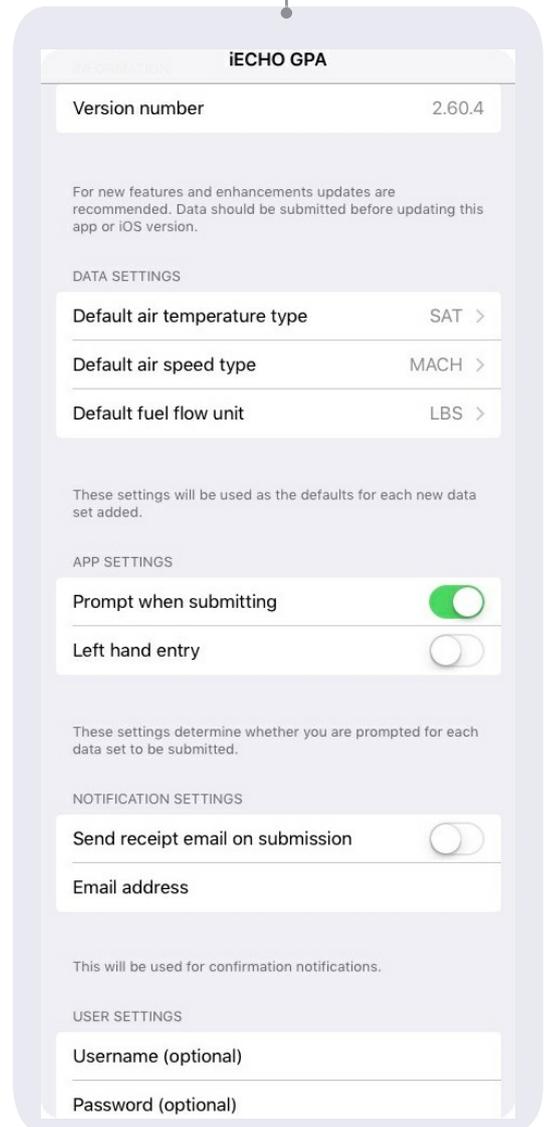
webECHO™

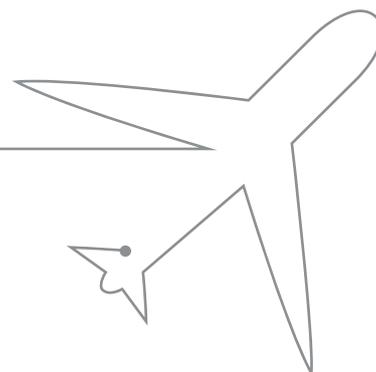
You can also use iECHO GPA to access the webECHO online system.

This feature requires an internet connection if you wish to use it and will allow you to:

- download operator/aircraft details by using the Download key
- view the latest GPA report for a selected operator using the action key

If you would like to access webECHO via the App contact us to request your username and password at webecho@jet-care.com. To enable access you will be required to add your username and password into the iECHO GPA settings within the App settings on your iPad.





INITIAL SET-UP

INITIAL SET UP OF OPERATOR AND AIRCRAFT

If the operator / aircraft details are not downloaded use the instructions below.

The main Flight Data Entry screen is initially empty of data.

Before entering flight data add the Operator and Aircraft details as outlined below.

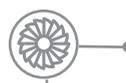
OPERATOR SET UP

- Tap the 'Operator' icon in the top left corner of the screen and enter the data requested.
- The Jet-Care code is a three character code (alpha/numeric) and can be found on the front page of your reports. If you require clarification please contact Jet-Care.
- Press SAVE after each Operator entry.
- The current Operator is shown in the Operator tab.



AIRCRAFT SET UP

- Tap the 'Aircraft' icon in the top right hand corner of the screen and enter the data requested.
- Add the Aircraft Serial Number as shown on your Jet-Care report. e.g. L40.212, CT7.7000, etc

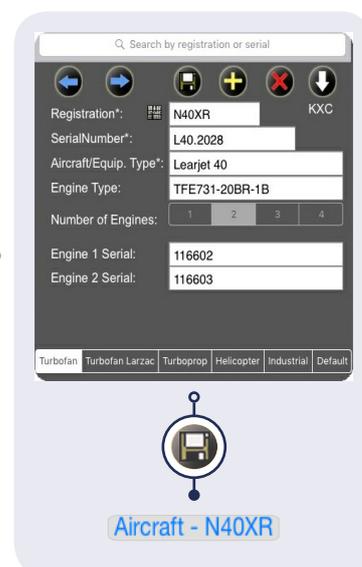


Set the number of engines.

This will restrict the number of engine serial numbers that can be entered as well as the actual flight data columns.

- Select the application iECHO GPA is being used for. EG. Turbofan.
- Press SAVE after each Aircraft entry.

The current Aircraft name is shown in the Aircraft Tab.

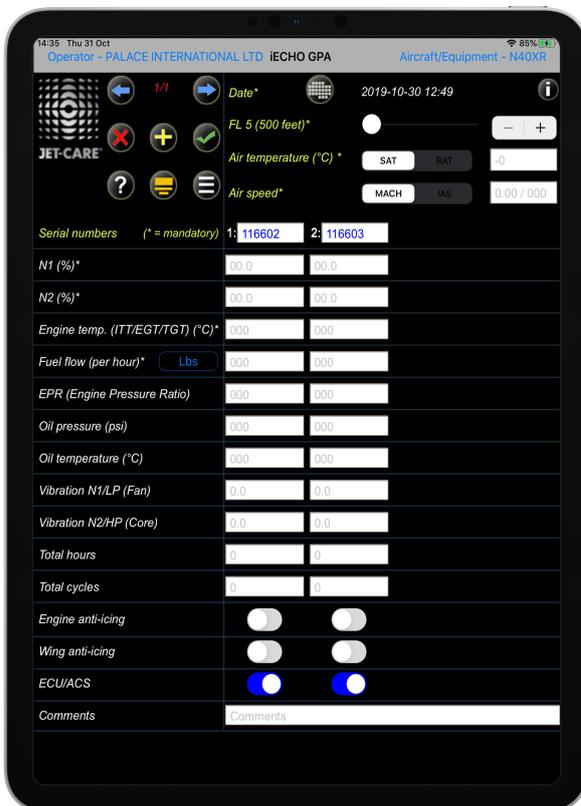
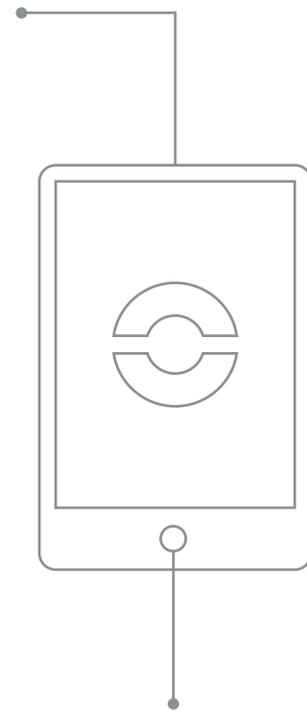




ENTERING FLIGHT DATA

Use the actions keys to manage the entering of information into the flight data screen.

- To add new flight data.
- To delete the current flight.
- To scroll through the flights on the iPad.
- To view a history of flights that has previously been submitted.
- The flight level slider can be “Nudged” in 100ft increments by using the plus and minus buttons.
- Enter OAT and air speed. NB: the default settings are SAT and MACH.

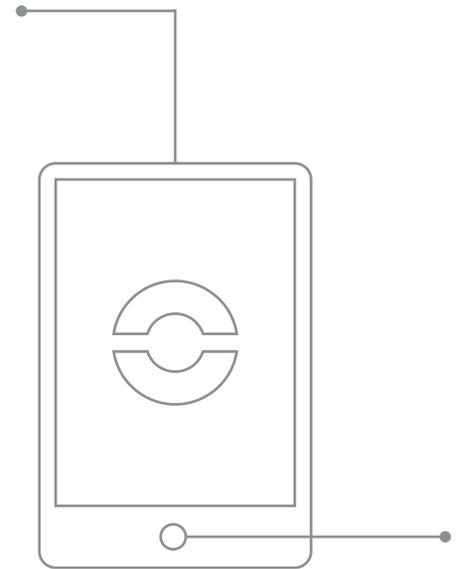
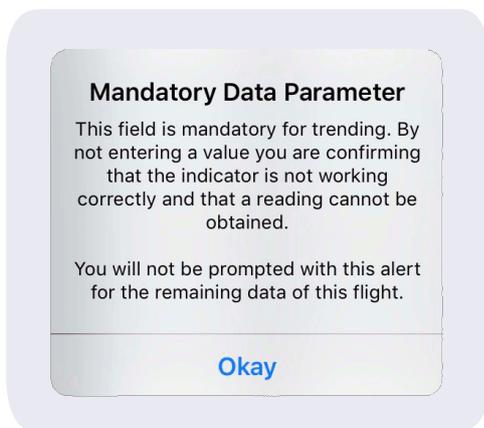


Tip:
Although you can enter data by tapping on each individual box you can press return and it will take you to the next box (left to right then down).

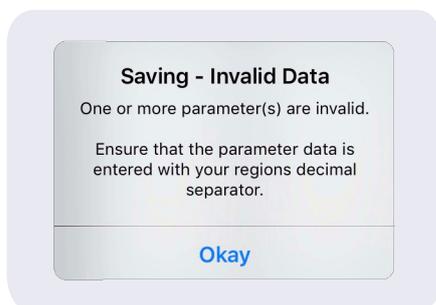


ENTERING FLIGHT DATA (CONTINUED)

- Complete all mandatory engine data fields.
- If a mandatory engine data field is left blank this warning message will appear.



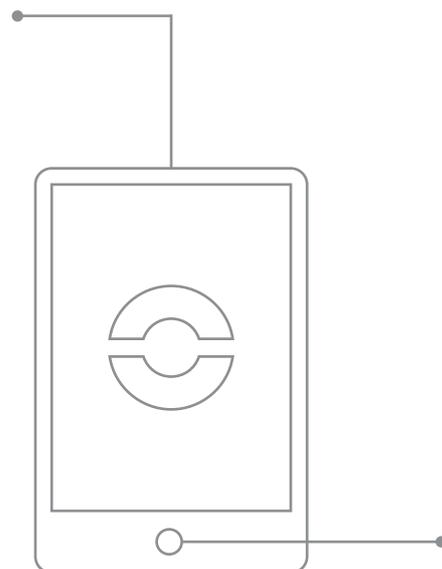
- If entered data is outside the minimum/maximum parameters this error message will appear.





ENTERING FLIGHT DATA (CONTINUED)

- Depending on the application iECHO GPA is being used for refer to one of the following tables to view the minimum/ maximum parameters for Generic, Turbofan, Turbofan Larzac, Turboprop (Twin Spool with FPT, Single Spool with FPT and Single Shaft), Helicopter or Industrial.

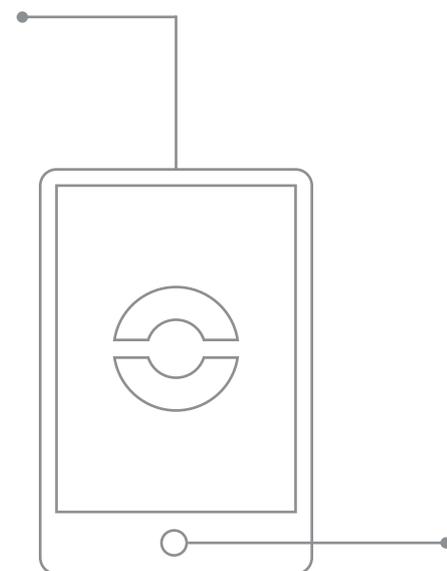


GENERIC

PARAMETER	MINIMUM	MAXIMUM	OPTIONS
Altitude	FL5 (500 ft)	FL510 (51,000 ft)	
OAT	Minus (-) 80°C	Plus (+) 45°C	SAT/RAT
MACH	0.3	0.99	MACH/IAS
IAS	75 kts	600kts	
P2 (psi)			
N1 / NL / NG	60%	105%	
N2 / NH	60%	105%	
Engine Temperature (ITT / EGT / TGT°C)	300°C	999°C	
Fuel Flow (per hour)	0	5,000	lbs/kg
Torque			
Prop / Rotor / Shaft NF Speed			
EPR (Engine Pressure Ratio)			
Oil Pressure	0 psi	200 psi	
Oil Temperature	0°C	200°C	
Vibration N1/ NL / NG	0	10	
Vibration N2 / NH (Core)	0	10	
Engine Bleed Air			On/Off
Engine Anti-Icing			On/Off
Wing Anti-Icing			On/Off
ECU / ACS			On/Off
Water Injection			On/Off



ENTERING FLIGHT DATA (CONTINUED)



TURBOFAN

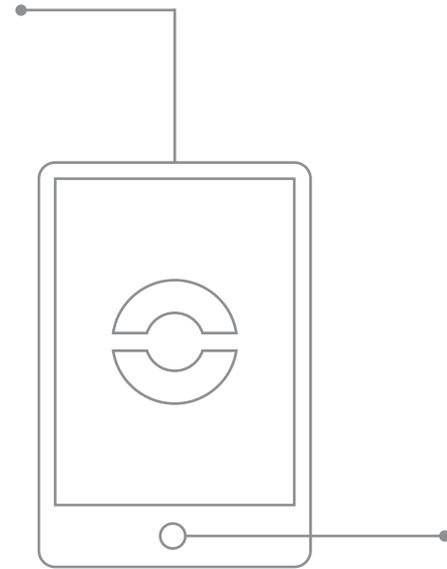
PARAMETER	MINIMUM	MAXIMUM	OPTIONS
Altitude	FL10 (1,000 ft)	FL510 (51,000 ft)	
OAT	Minus (-) 80°C	Plus (+) 35°C	SAT/RAT
MACH	0.4	0.99	MACH/IAS
IAS	150 kts	600kts	
N1 (%)	60%	105%	
N2 (%)	60%	105%	
Engine Temperature (ITT / EGT / TGT°C)	300°C	999°C	
Fuel Flow (per hour)	0	5,000	lbs/kg
EPR (Engine Pressure Ratio)			
Oil Pressure	0 psi	200 psi	
Oil Temperature	0°C	200°C	
Vibration N1 / LP (Fan)	0	10	
Vibration N2 / HP (Core)	0	10	
Engine Anti-Icing			On/Off
Wing Anti-Icing			On/Off
ECU / ACS			On/Off

TURBOFAN LARZAC

PARAMETER	MINIMUM	MAXIMUM	OPTIONS
Altitude	FL10 (1,000 ft)	FL510 (51,000 ft)	
OAT	Minus (-) 80°C	Plus (+) 35°C	SAT/RAT
MACH	0.4	0.99	MACH/IAS
IAS	150 kts	600kts	
N2 (%)	60%	105%	
Engine Temperature (ITT / EGT / TGT°C)	300°C	999°C	
Fuel Flow (per hour)	0	5,000	lbs/kg



ENTERING FLIGHT DATA (CONTINUED)



TURBOPROP - Twin Spool with FPT (e.g. PW100)

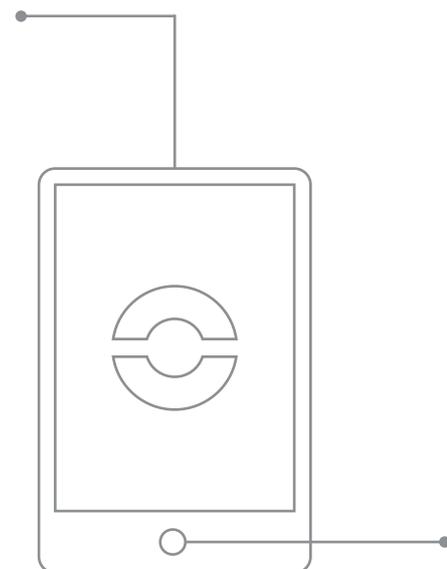
PARAMETER	MINIMUM	MAXIMUM	OPTIONS
Altitude	FL5 (500 ft)	FL400 (40,000 ft)	
OAT	Minus (-) 60°C	Plus (+) 35°C	SAT/RAT
MACH	0.2	0.7	
IAS	75 kts	500 kts	
Torque (TRQ)	20		
NP (%/RPM)			
ITT / EGT (°C)	300°C	999°C	
NH (%)	60%	105%	
NL (%)	60%	105%	
Fuel Flow (per hour)	0	5,000	lbs/Kg
Oil Pressure	0 psi	200 psi	
Oil Temperature	0°C	200°C	
Vibration NP	0	10	
Vibration NL / NG	0	10	
Engine Bleed Air			On/Off
Engine Intake Anti-Ice			On/Off
Wing / Stab De-Ice			On/Off

TURBOPROP - Single Spool with FPT (e.g. PT6)

PARAMETER	MINIMUM	MAXIMUM	OPTIONS
Altitude	FL5 (500 ft)	FL400 (40,000 ft)	
OAT	Minus (-) 60°C	Plus (+) 35°C	SAT/RAT
MACH	0.2	0.7	
IAS	75 kts	500 kts	
ITT (°C)	300°C	999°C	
Torque (TRQ)	20		
Prop NP (%)			
Turbine NG (%)			
Fuel Flow (per hour)	0	5,000	
Oil Pressure	0 psi	200 psi	
Oil Temperature	0°C	200°C	
Total Hours			
Total Cycles			
Engine Bleed Air / AC Pack			On/Off
Engine Intake Anti-Ice			On/Off
Wing / Stab De-Ice			On/Off



ENTERING FLIGHT DATA (CONTINUED)



TURBOPROP - Single Shaft (e.g. TPE331)

PARAMETER	MINIMUM	MAXIMUM	OPTIONS
Altitude	FL5 (500 ft)	FL400 (40,000 ft)	
OAT	Minus (-) 60°C	Plus (+) 35°C	SAT/RAT
MACH	0.2	0.7	
IAS	75 kts	500 kts	
Torque (TRQ)	20		
EGT (°C)	300°C	999°C	
RPM (%)	60%	105%	
Fuel Flow (per hour)	0	5,000	lbs/Kg
Oil Pressure	0 psi	200 psi	
Oil Temperature	0°C	200°C	
Total Hours			
Total Cycles			
Engine Bleed Air			On/Off
Engine Intake Anti-Ice			On/Off
Wing / Stab De-Ice			On/Off

HELICOPTER

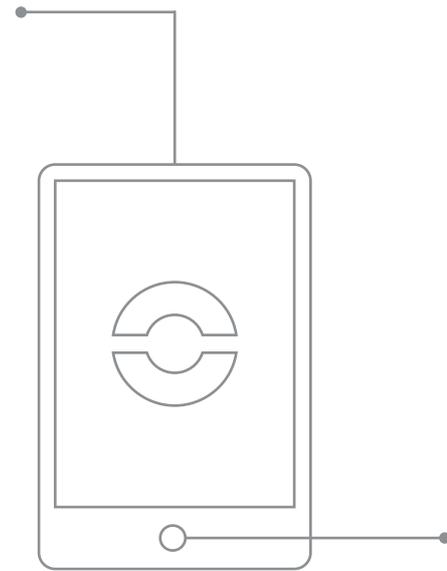
PARAMETER	MINIMUM	MAXIMUM	OPTIONS
Altitude	FL5 (500 ft)	FL120 (12,000 ft)	
OAT	Minus (-) 50°C	Plus (+) 45°C	SAT/RAT
IAS	0 kts	200 kts	
NL / NG (%)	60%	105%	
NH (%)	60%	105%	
Engine Temperature (ITT / EGT / TGT°C)	300°C	999°C	
Fuel Flow (per hour)	0	5,000	lbs/kg
Torque			
Prop / Speed			
Oil Pressure	0 psi	200 psi	
Oil Temperature	0°C	200°C	
Vibration NF (Shaft)	0	10	
Vibration NL / NG (Engine)	0	10	
Engine Anti-Icing			On/Off
Airframe Anti-Icing			On/Off
ECU / ACS			On/Off



ENTERING FLIGHT DATA (CONTINUED)

INDUSTRIAL

PARAMETER	MINIMUM	MAXIMUM	OPTIONS
Air Temperature (°C)	Minus (-) 50°C	Plus (+) 45°C	SAT/RAT
P2 (psi)			
NL / NG (% / rpm)	60% / 4,000	105% / 10,000	
NH (% / rpm)	60% / 4,000	105% / 10,000	
Engine Temperature (ITT / EGT / TGT°C)	300°C	999°C	
Fuel Flow (per hour)	0	5,000	lbs/kg
Torque			
Shaft Speed NF (% / rpm)	60% / 4,000	105% / 10,000	
EPR (Engine Pressure Ratio)			
Oil Pressure (psi)	0 psi	200 psi	
Oil Temperature (°C)	0°C	200°C	
Vibration NP (Shaft)	0	10	
Vibration NG (Core)	0	10	
Water Injection			On/Off





SENDING DATA

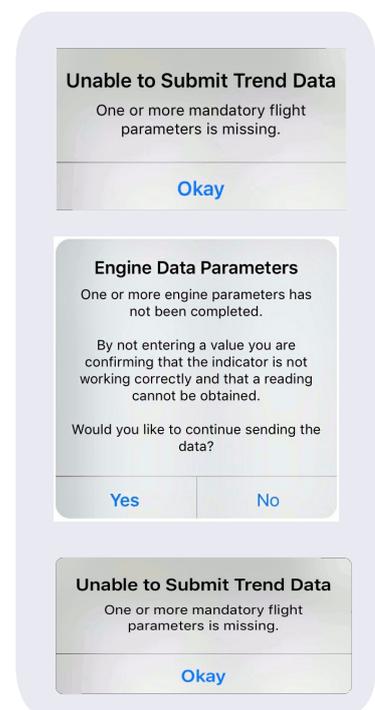
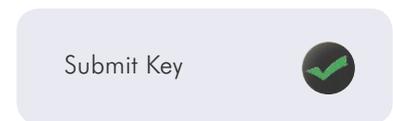


- On completion of the flight(s), or in flight if a network connection is available, the data can be submitted by tapping the green submit icon.
- You will be prompted to send each set of flight data and to confirm the operator and aircraft. This is the default option in 'Settings' and can be changed by disabling this option allowing all flights to be sent at the same time.
- After a successful transmission the App will remove the data from the iPad.
- If flight data cannot be sent one of three warning messages will be shown.

Unable to Submit Trend Data – One or more mandatory flight parameters is missing.

Engine Data Parameters – One or more engine parameters has not been completed. By not entering a value you are confirming that the indicator is not working correctly and that a reading cannot be obtained. Would you like to continue sending the data?

Error – Unable to connect to the server. The data will be kept on the iPad until it can be transmitted or is deleted.



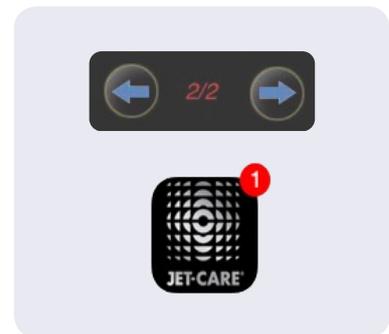


SENDING DATA



IMPORTANT NOTES

- For some flight parameters there are set ranges to reduce the possibility of incorrect data. i.e. N1 = 120% will bring up an error “Invalid Flight Data” box with the invalid data being cleared.
- Under ‘flights to submit’, ‘New’ will change to show which flight you have on screen against the total number of flights e.g. 1/1; 2/2, etc.
- When the App is minimised its icon will show the number of flights waiting to be sent in the upper right corner of the icon.
- When a mandatory data parameter is left blank you are confirming that the indicator is not working correctly and that a reading cannot be obtained. Additional notes should be added in the comments section.



The Jet-Care iECHO GPA™ application for iPad is available to download for free from the App StoreSM





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