



FlightSafety[®] international

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FlightSafety International is both a TDM and a simulator operator.

The TDM side is based in Broken Arrow, OK and has designed an implementation package based on the requirements of the FAA Part 60 Change 2 and FSTD Directive 2 requirements for:

- Full stall
- UPRT
- Engine and Airframe Icing
- Gusting Crosswinds
- Bounced Landings

We are confident the updates to the FSTDs will meet CS-FSTD(A) Issue 2 requirements

Changes to the FSTD

The most visible change to the operator of the FSTD is the Instructor Operating System (IOS) displays available to aid the instructor in setting up and monitoring the simulated aerodynamic conditions of the FSTD.

IOS Screen for Condition Set Up

The IOS operator has the option to position the FSTD in an upset condition immediately or allow the upset to develop during normal flight conditions.

Enabled:
Entering an Unusual Attitude will result in the simulator being driven to those attitudes and frozen.

Disabled:
Entering an Unusual Attitude will result in an upset condition during normal flying.

Trigger: (Not Defined)

Select/Edit Unusual Attitudes Event ...

ADVANCED UPRT
Advanced Disabled

Enable ...

Unusual Attitudes ...

Erase All Tracks

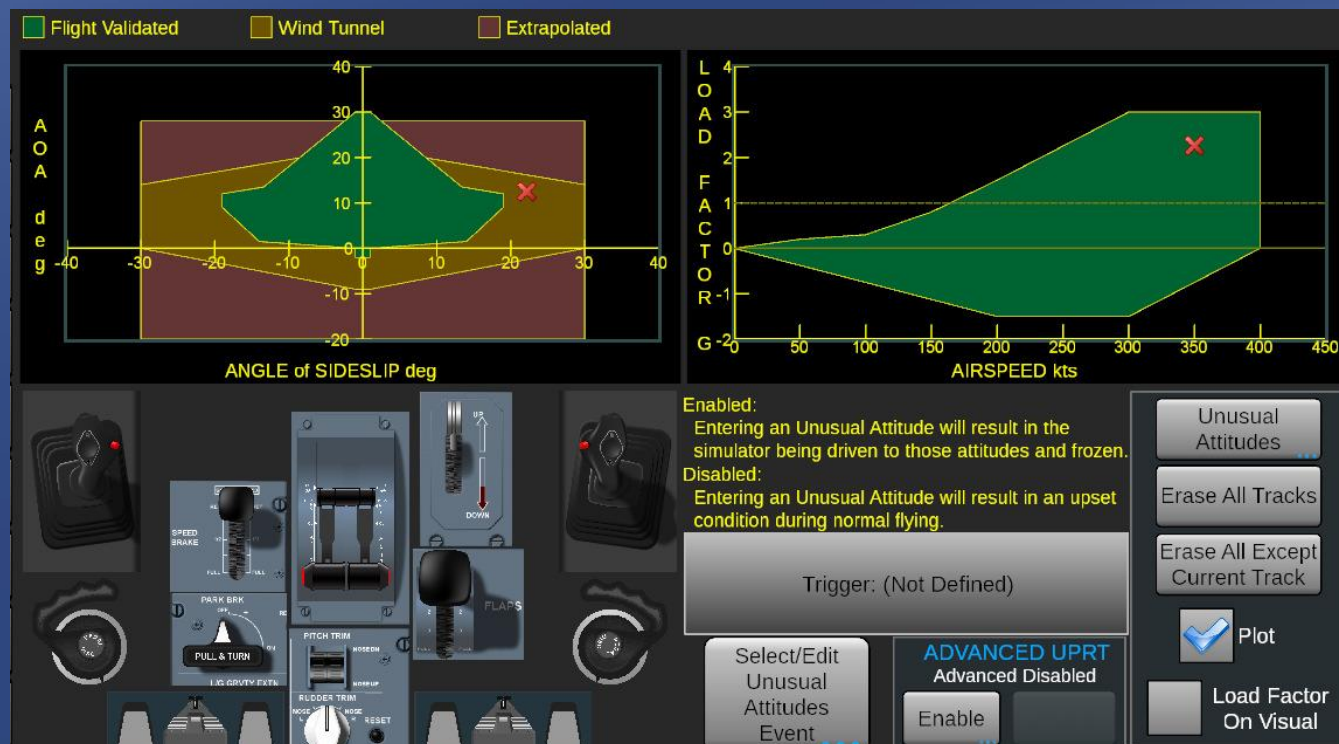
Erase All Except Current Track

☒ Plot

☐ Load Factor On Visual

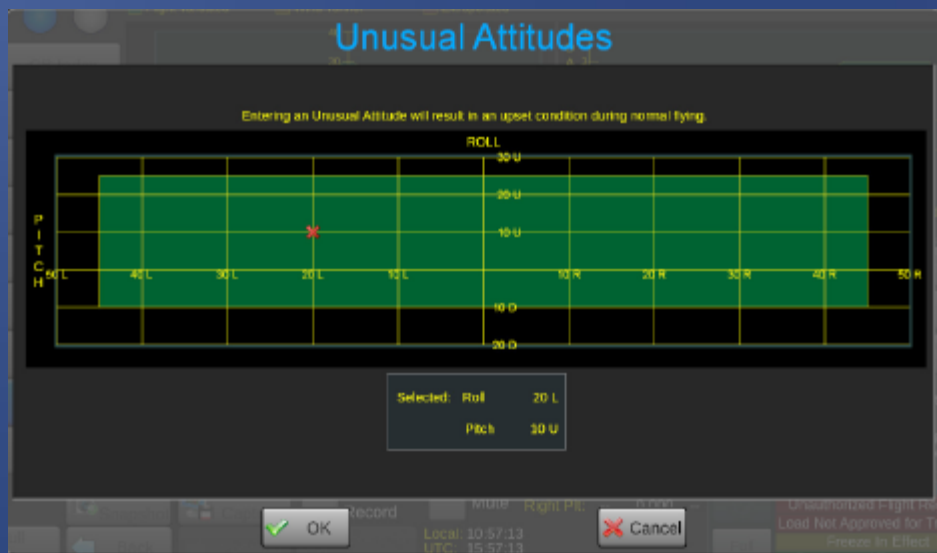
IOS Displays of Attitude and Aero Loads

The IOS will display simulated aircraft attitudes on Alpha-Beta and V_n plots, as well as FSTD controls positions. The requisite “Levels of Confidence” based on flight test data, wind tunnel data, and extrapolated data are displayed, as well as a red X indicating current FSTD position within the conditions.



Instructor Controls

The instructor can set the FSTD in any condition within the green area by touching the desired position on the touchscreen control.



Triggered Upsets

The instructor can also set “trigger conditions” for the upset



Trigger Condition Display

The IOS will display the selected “trigger conditions”



The IOS also has a Message Center that advises the instructor if the FSTD is flown into conditions outside the authorized flight regime.



Aerodynamic modeling has been improved in the high AOA regime based on OEM flight test data and SME pilot input. In some cases the flight test data already existed while in others new flight testing was conducted.

Engine and Airframe Icing

FlightSafety Simulation's Staff Scientist, Dan Littmann, has been actively refining our engine and airframe icing models and has presented on the subject at numerous industry conferences as well as at Royal Aeronautical Society meetings and ICAO workshops. The resultant simulator model improvements have been subjected to rigorous peer and regulatory reviews.

Implementation Plan

FlightSafety currently operates and/or supports more than 130 devices with approximately 150 configurations used for EASA training. The devices range in age from current production models to FSTDs that are 25+ years old. OEM support ranges from good to non-existent.

We are currently working with our internal and external customers to determine how many devices will need to be updated to meet CS-FSTD(A) Issue 2 requirements.



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