



L3HARRIS

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Revision – A1

A320 Full Flight Simulator Instructor Reference Manual

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Revision Record

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HOW TO OPERATE THE SIMULATOR SAFELY

Obey the General Safety instructions in the safety guide.

PERSONNEL

Before you operate the simulator:

- < Make sure that you are trained to operate the simulator.
- < Make sure that no persons are in areas of the simulator where they could be exposed to hazards when control loading systems are engaged.
- < Make sure that all persons know how to get out of the trainer in an emergency.

CONTROL LOADING

Before you operate the control loading system:

- < Make sure that any loose items are clear of the flight controls and pedals.
- < Make sure that all persons on the flightdeck know that the control loading system is to be engaged.

DURING OPERATION

- < If the simulator or building fire alarm operates evacuate the flight compartment immediately.
- < If you discover a fire, operate an emergency stop then evacuate the simulator.

SAFETY FEATURES

- < The Emergency Stop switch removes all electrical power from the simulator.
- < Warning Signs. Must be read and meaning understood.

TOUCHSCREEN DISPLAY REGION

The display region consists of:

- < Title Area that displays the name of the current page.
- < **PAGE AREA** that displays maps, plots, schematics, controls and information. Pages are selected by dedicated buttons or automatically under predefined conditions, for example in the event of pilot action resulting in a crash then the 'crash conditions' IOS page is automatically displayed. When appropriate, items are also displayed on pop-ups to provide access to information without removing the current page from display
- < **TOOLBAR AREA** that displays a series of buttons enabling easy access to other pages or controls.
- < **READOUTS AND ALERTS AREA**. This section displays a number of constantly updated key training related parameters required by the instructor, for example altitude, reference runway. The alerts area display messages for the Instructor such as malfunctions, freezes and failed radio stations. This area is on permanent display on one of the two IOS screens.
- < **DIRECT ACTIONS AREA** that provides access to fourteen frequently used functions, for example freezes, resets, set-up and instructor. This area is on permanent display on one of the two IOS screens.

PAGE DISPLAY AREA (1 OF 3)

This area displays the interactive pages that allow you to control and monitor the training exercise.

BUTTONS

The type of IOS button available and displayed on the IOS page defines the function of the button. The following functions are provided:

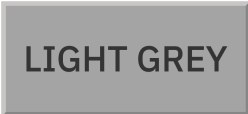
- < Displaying a new page, or navigating to a selected page
- < Setting an action to occur immediately
- < Displaying a pop-up selection
- < On/Off (true/false)
- < Data entry
- < displaying the current value of a parameter
- < Imaging; a picture or icon is used to enhance visual recognition of commonly used functions. An image button could have any of the above behaviours.

Selecting a button causes that button to change to the relief effect selected state. When you remove your finger directly from the button, the selection becomes active.

If you slide your finger off the button and then off the screen, the function will not be selected and the button will revert to its previous state.

The following button states are possible and are defined by the colours shown:

GENERAL BUTTON

PERMANENTLY UNAVAILABLE	
TEMPORARILY UNAVAILABLE	
AVAILABLE/NORMAL	
ACTIVE	

PAGE DISPLAY AREA (2 OF 3)

MALFUNCTION BUTTON

AVAILABLE	BLUE
ARMED	YELLOW
ACTIVE	RED

TEXT

Text is a static string used to display useful information to the instructor. The colour of the text reflects the importance of the information on display or the type of failure being described.

The following text colours define the type of text on display:

GENERAL TEXT

STATIC	WHITE
DYNAMIC PARAMETER VALUES	GREEN
ALERT/WARNING	RED
FREEZES	AMBER
ARMED CONDITIONS	YELLOW

PAGE DISPLAY AREA (3 OF 3)

MALFUNCTION TEXT

ARMED	YELLOW
ACTIVE	RED

TABS

Tabs are used to group a related set of pages, and provide direct access to all the pages within the tab group.

TABLES

Tables are used to display related parameters.

The selection of cells or rows in a table is used for a range of standard functions including:

- < Display of a new page
- < Display of data entry
- < Display of the current value of a parameter
- < Setting an action to occur immediately for example, running a TCAS scenario

Where appropriate the table provides a scroll bar to scroll through the information.

TOOLBAR AREA (1 OF 2)

The Toolbar Area is positioned on the right hand side of the screen and consists of three main areas:

- < **PAGE NAVIGATION TOOLBAR**
- < **CONTEXT-SPECIFIC TOOLBAR**
- < **FIXED TOOLBAR**

PAGE NAVIGATION TOOLBAR

This area displays the following buttons which provide access to the pages.

MASTER INDEX	Displays the MASTER INDEX page within the SIMULATOR CONTROL tab suite.
MALFS/CBS	Displays the MALF INDEX page within the MALFUNCTIONS/CIRCUIT BREAKERS tab suite.
FREEZE/RESET	Displays the MAIN FREEZES/RESETS page within the FREEZE/RESETS tab suite.
POSN CTRL	Displays the REPOSITION page with the POSITION CONTROL tab suite.
A/C CTRL	Displays the SERVICES page within the AIRCRAFT CONTROL tab suite.
ENV CTRL	Displays the BASIC page within the ENVIRONMENT CONTROL tab suite.
AREA MAP	Displays the AREA MAP page.
PLOTS/DATA	Displays the APPROACH page within the PLOTS tab suite.
STATUS	Displays the MALF/CB STATUS page within the STATUS/MONITOR tab suite.
TRAFFIC	Displays the PREDICTABLE SCENARIOS page within the TRAFFIC tab suite.
ARPT TRAFF	Displays the AIRPORT TRAFFIC page within the TRAFFIC tab suite.
QUICK MENU	Displays the CUSTOMER OPTIONS page within the SIMULATOR CONTROL tab suite.

NAV/COMMS	Displays the COMMS page within the NAVIGATION/COMMUNICATIONS tab suite.
CBS	Displays the CIRCUIT BREAKER INDEX page.
LESSON PLAN	Displays the LESSON PLAN INDEX page.

DIRECT ACTIONS AREA

The Direct Actions Area is positioned at the top of the screen and consists of a number of frequently used direct action buttons.

This display can be toggled with a **READOUTS AND ALERTS** display using the Toggle Disp button on the fixed toolbar.

FREEZES

FLIGHT FREEZE	Freezes aerodynamic parameters (aircraft speed, attitude, altitude and geographical position). Aircraft systems remain operational.
POSITION FREEZE	Freezes aircraft at current geographical location. All other aerodynamic and aircraft systems remain operational.

RESETS

ALL SYSTEMS RESET	Resets all systems defined on the page to normal operating conditions.
TAKEOFF REPOS	Repositions the aircraft to the Takeoff position.
MALF RESET	Resets all active and armed malfunctions and restores all failed radio stations.
CAVOK	Allows you to select from a number of pre-defined visual set-ups.

SETUP

EXTERNAL POWER	Simulates connection of external power supply when aircraft is stationary on the ground.
ENGINE START	Starts all engines immediately regardless of air, fuel, oil or electrical supplies, provided the fuel cut-off switches are in the flow position. Engines will continue to run if fuel and oil supplies are available.
IRS ALIGN	Initiates an instantaneous re-alignment of the inertial reference system.
VISUAL ON/OFF	Switches the simulator visual on/off.

INSTRUCTOR

BLANK SCREEN	Select to display a blank screen. Click anywhere in blank screen to return.
TAKE SNAP	The simulator conditions are stored in the snapshot and displayed on the page.
USER MALF TRIGGER	Triggers malfunctions armed against 'User Trigger'.
START/PAUSE/RESET STOPWATCH	Select to start/pause/reset stopwatch shown on button.
SPEEDUP X4	
QUICK GO-AROUND	Activates the runway incursion vehicle. Vehicle will then procede from the hold to the Touch Down zone.



LOGO

This page is displayed on both screens at system startup.

Selecting START on the upper screen displays the **AREA MAP** page.

Selecting START on the lower screen displays the **SERVICES** page.

OVERLAYS (1 OF 7)

Overlays allow you to change the value of a parameter. The following overlays are provided:

- < Numeric Keypad
- < Slew Tool
- < Dual Numeric Keypad
- < Dual Slew Tool
- < Alphanumeric Keypad
- < Pop-Up Menu

Hyds Reservoir Quantity			
13.9 qt			
Max	19.0 qt		
Min	0.0 qt		
7	8	9	00
4	5	6	000
1	2	3	AC
.	0		CLR
OK	Slew	Cancel	

NUMERIC KEYPAD

The Numeric Keypad (see left) or the Slew Tool (**SEE PAGE 3**) is displayed automatically when a touchpoint is selected which requires a numeric data input. The overlay displayed is determined by which format was last used. A button on each overlay (Slew/Keypad) allows you to select the other format for display.

OVERLAYS (2 OF 7)

The current value for the parameter is displayed on the overlay. Maximum and minimum values for the parameter are also displayed where appropriate.

The display line at the top of the overlay shows the value being entered. When you are satisfied with the entry, select OK and the new value will be entered into the simulation. The overlay is removed from the display.

If you are not satisfied with the entry, select AC to clear the complete entry or select CLR to clear the last input.

If you select CANCEL, the overlay is removed from the display and the parameter reverts to its previous state.

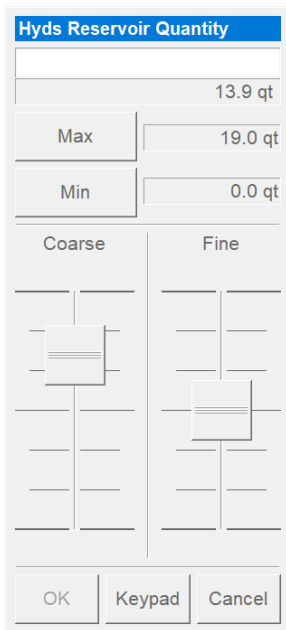
When entering data, you will need to enter the figures exactly as required, except when entering heading values when the leading zeros are not required (030 can be entered as 30).

Latitude and longitude values can be entered as **N, S, E or W** in degrees, minutes, seconds and tenths of second (eg., N42_27'02.0") (it is not necessary to type the degrees, minutes and seconds symbols).

If the selected parameter has pre-defined maximum and minimum limits, buttons to select maximum and minimum are displayed.

If the entered value exceeds the maximum or minimum limits for the selected parameter, the OK function is disabled and the entered value is displayed in red.

OVERLAYS (3 OF 7)



The screenshot shows a software overlay titled "Hyds Reservoir Quantity". At the top, a text field displays "13.9 qt". Below this are two buttons, "Max" and "Min", each followed by a text field showing "19.0 qt" and "0.0 qt" respectively. The main area is divided into two vertical sections: "Coarse" on the left and "Fine" on the right. Each section contains a vertical slider bar with a horizontal handle. At the bottom of the overlay are three buttons: "OK", "Keypad", and "Cancel".

SLEW TOOL

The Slew Tool (see left) provides an alternative to the Numeric Keypad for entering numeric data when the selected parameter has maximum and minimum limits. The Slew Tool is not available when editing latitude and longitude.

Two slider bars are provided: coarse, to set the value of the parameter approximately to the required setting, and fine, to adjust the value to exactly the right setting.

To change the value of the parameter, use your finger to move the slider bar up or down until the required value is achieved. Select OK to confirm the entry.

OVERLAYS (4 OF 7)

Speed			
0 kt			
Max			
	200 kt		
Min			
	0 kt		
7	8	9	00
4	5	6	000
1	2	3	AC
.	0		CLR
OK	Slew	Cancel	

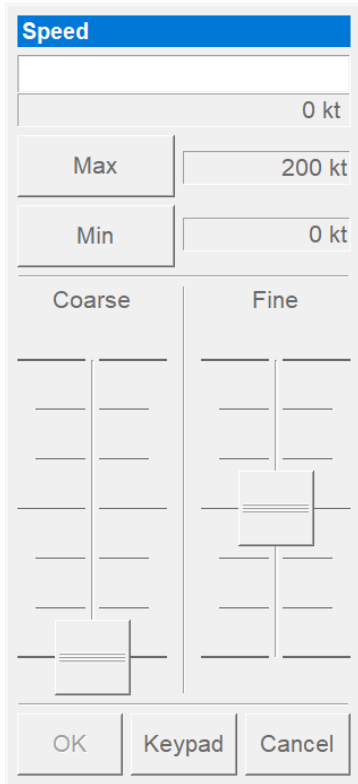
DUAL NUMERIC KEYPAD

The Dual Numeric Keypad (see left) or the Dual Slew Tool is displayed automatically when a touch point requiring two numeric entries is selected (for example wind direction / speed).

The specific overlay format displayed is determined by which format was last used.

A button on each overlay (either Slew or Keypad as appropriate) allows you to select the other format for display. Operation is similar to the single Numeric Keypad, with the addition of the / button that allows you to swap between the two parameters being edited.

OVERLAYS (5 OF 7)



The screenshot shows a control interface for the 'Speed' parameter. At the top, a blue header bar contains the word 'Speed'. Below it is a large white input field displaying '0 kt'. Underneath this are two rows of controls: the first row has a 'Max' button and a value field showing '200 kt'; the second row has a 'Min' button and a value field showing '0 kt'. Below these are two vertical slider bars labeled 'Coarse' and 'Fine'. The 'Coarse' slider has a handle near the bottom, and the 'Fine' slider has a handle near the middle. At the bottom of the interface are three buttons: 'OK', 'Keypad', and 'Cancel'.

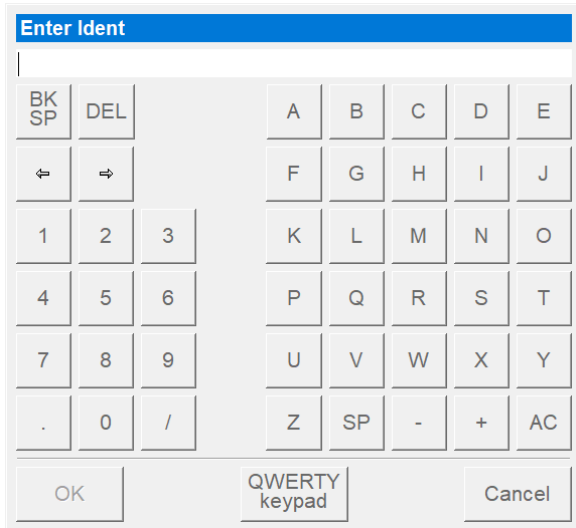
DUAL SLEW TOOL

The Dual Slew Tool (see left) provides an alternative to the Dual Numeric Keypad for entering numeric data when the selected parameter has maximum and minimum limits.

Two slider bars are provided: coarse, to set the value of the parameter approximately to the required setting, and fine, to adjust the value to exactly the right setting.

To change the value of the parameter, use your finger to move the slider bar up or down until the required value is achieved. Select OK to confirm the entry.

OVERLAYS (6 OF 7)



Enter Ident									
BK SP	DEL								
←	→			A	B	C	D	E	
1	2	3		F	G	H	I	J	
4	5	6		K	L	M	N	O	
7	8	9		P	Q	R	S	T	
.	0	/		U	V	W	X	Y	
				Z	SP	-	+	AC	
OK		QWERTY keypad				Cancel			

ALPHANUMERIC KEYPAD

The Alphanumeric Keypad is displayed automatically when a touchpoint is selected which requires an alphanumeric data input.

Two formats of the keypad are available: CDU and PC QWERTY.

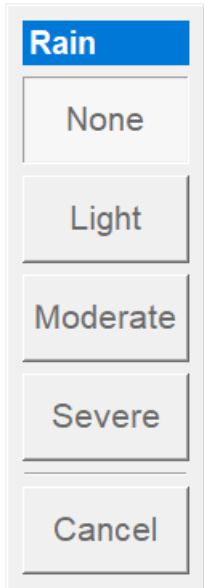
The format displayed is determined by which format was last used. A button (PC/CDU) on the keypad will allow you to select the other format.

The current entry is shown on the overlay. The display line at the top of the overlay shows the data being entered. When you are satisfied with the entry, select OK to enter the new data into the simulation and remove the keypad from display.

If you are not satisfied with the entry, select AC to clear the complete entry or select CLR to clear the last input.

If you select CANCEL, the overlay is removed from the display and the parameter reverts to its previous state.

OVERLAYS (7 OF 7)



POP-UP MENU

A Pop-Up Menu will be displayed automatically if the selected parameter has a number of alternative states (eg., rain). The menu (see example) will display a title, a 3D-style button for each selection and a CANCEL button. The button corresponding to the currently selected state will be displayed in relief-effect.

Selecting a button causes that button to change to the relief-effect selected state. When you remove your finger directly from the button, the selection becomes active and the pop-up menu is removed from the display.

If you slide your finger off the button area then off the screen, the function will not be selected and the button will revert to its previous state.

READOUTS AND ALERTS (1 OF 2)

The following information is displayed at the top of the screen replacing the **DIRECT ACTIONS** buttons when the Toggle Disp button is used in the Fixed Toolbar Area.

The first row displays the current fit, the current load and the time. Underneath the first row, the three columns display:

ARPT/RWY	The ICAO code of the selected airport from the repositions page and the runway in use for the selected airport.
ILS	The ILS frequency for the runway in use at the selected airport.
WIND SRF	Wind direction and speed in knots on the ground.
VISIBILITY	Visibility in Km.
RVR	Runway visible range in meters.
CLOUD TOP	Height in feet of the low level cloud top.
CLOUD BASE	Height in feet of the low level cloud base.
FIELD TEMP	Ground level temperature of the selected airport.
QNH	Barometric pressure in hetoPascals.
WIND A/C	Wind direction and speed in knots at aircraft altitude.
SAT	Saturated Air Temperature at aircraft altitude, degrees centigrade.
V1/VR	
V2	
FLT PHASE	Airbus flight phase number.
ZFW	Aircraft zero fuel weight in kilogrammes.
TOTAL FUEL	Aircraft fuel load in kilogrammes.
GW	Aircraft gross weight in kilogrammes.

GW CG	Aircraft center of gravity in mac chord.
CAS/MACH	Aircraft airspeed in knots and mach number.
HDG/TRK	Aircraft magnetic heading/aircraft ground track in degrees.
ALT/RADALT	Aircraft altitude in feet.

ACP

A virtual ACP is displayed on the left-hand pane of screen and shows a graphical representation of the ACP appropriate to the aircraft type.

Momentary switches may be pressed by touching them on the display.

Three-position toggle switches can be set to any of their states by touching just to the side of the switch in the direction the user wants it to move. The switch will latch in position if this is the behaviour of the aircraft panel, if not it will return to the centre when the user releases their finger. Touching anywhere on the latched switch will cause it to unlatch and return to the centre.

Briefly touching a Volume knob toggles it in or out.

Volume levels are adjusted by selecting the Volume knobs and then sliding the finger left or right to decrease or increase the volume.

The volume decreases/increases gradually as long as the user's finger remains in contact with the interactive area of the touchscreen.

Operation Tips: Arrows are displayed while adjusting the volume as a reminder of how the slider operates. The active direction (i.e. volume increase/decrease) is displayed in green. A bar graph is displayed to show the current volume level selected.

AIRPORT SELECT

This page is selectable from a number of pages and allows you to change the currently active airport.

Selecting one of the airports from the list changes the active airport to that selected.

SEARCH

SEARCH BY ICAO	Displays an alphanumeric keypad to allow you to enter the ICAO code or the first part of the ICAO code for the required airport.
SEARCH BY AIRPORT NAME	Displays an alphanumeric keypad to allow you to search for a specific airport by name.

CUSTOMER AIRPORTS

EUROPE	Changes the list of airports to those located within Europe.
AMERICAS	Changes the list of airports to those located within the Americas.
ASIA	Changes the list of airports to those located within Asia.

AREA MAP (1 OF 10)

This page is selectable from the **PAGE NAVIGATION TOOLBAR** and displays the aircraft flight path relative to the airport and the navigational facilities in the area defined by the scale of the map.

The following display modes are available:

Ref Airport
A/C North Up
A/C Heading Up

REF AIRPORT

The map is centred on the currently active airport with true north at the top of the screen.

The following elements can be displayed:

	COLOUR	COMMENTS
NDB Radio Navigation Stations	Green	Normal. Displayed with appropriate symbols, identification code and frequency.
VHF Radio Navigation Stations and waypoints	Cyan	Normal. Displayed with appropriate symbols, identification code and frequency.
	Magenta	When stations are tuned.
	Red	Failed.
Airports (with ICAO code)	Grey	Map centre airport.

AREA MAP (1 OF 10)

This page is selectable from the **PAGE NAVIGATION TOOLBAR** and displays the aircraft flight path relative to the airport and the navigational facilities in the area defined by the scale of the map.

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- < A/C North Up
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REF AIRPORT

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	Magenta	When stations are tuned.
	Red	Failed.
Airports (with ICAO code)	Grey	Map centre airport.

AREA MAP (2 OF 10)

	COLOUR	COMMENTS
AIRCRAFT TRACK	Red	Last 30 minutes displayed.
STORM	Green Yellow Amber Red Magenta	Outlines only when selected but not active. Full colour image when active. Colours depict storm reflectivity (intensity).
SNAPSHOT	Red	Red "S" in a circle and snapshot number.
MICROBURST	Magenta	Location of microburst.
WINDSHEAR	Magenta	Location of active windshear.
LAT/LONG GRID	White	Displayed in steps of latitude and longitude appropriate to the map range in use.
SPIDER WEB	White	Scaled appropriate to the map range in use.
AIRCRAFT LOCATION	White	Orientated to the true heading of the aircraft.
TCAS TRAFFIC		If applicable. The relative altitude and a vertical speed arrow (where applicable) are displayed for each traffic symbol.
RESOLUTION ADVISORY.	Red square	
TRAFFIC ADVISORY.	Amber circle	
PROXIMATE TRAFFIC.	White lozenge (solid)	
OUT-OF-RANGE AIRCRAFT.	White lozenge (wire frame)	

AREA MAP (3 OF 10)

By default the following are only displayed when the map scale is less than 20nm:

	COLOUR	COMMENTS
OUTER MARKERS		
MIDDLE MARKERS	Yellow	
INNER MARKERS		
ILS AND LDA FANS		
IDENTIFICATION CODE AND FREQUENCY OF ILS AND LDA	Yellow	Orientated to the true heading of the localiser beam.
RUNWAYS	Grey	Orientated to the true heading of the runway axis.
IDENTIFICATION CODE OF RUNWAY IN USE	Grey	

The map range can be set to one of a number of preset values to maintain the present map centre and the current aircraft position on the map.

The aircraft track is shown as a line drawn from the centre towards the edge of the display. As the edge of the display is reached, the scale of the map automatically changes to the next available. When the aircraft approaches the edge of the largest map, the map mode changes automatically to A/C North Up (with the aircraft at the centre).

A/C NORTH UP

The map is centred on the aircraft with true north at the top of the screen. The navigational facilities move in relation to the aircraft and the track is shown as a line leading backwards from the aircraft. All other features are the same as Active Airport Mode.

A/C HEADING UP

The aircraft symbol is fixed at the mid-point between the centre and lower edge of the map with aircraft true heading at the top of the screen. The navigational facilities move in relation to the aircraft. All other features are the same as Active Airport Mode.

AREA MAP (4 OF 10)

MAP TOOLBAR

When Map pages are displayed, the Map Toolbar appears directly beneath the Page Navigation Toolbar.

MODE/RANGE	Displays Map Mode/Range popup which allows the map display mode to be set and the map range to be selected manually or automatically. The map display mode defines the map centre. The currently selected mode is shown on the icon. The following options are available; Active Airport, A/C North Up and A/C Heading Up. The map range allows the diameter of the map to be selected manually or automatically. If Auto is selected, the range changes as the aircraft nears the edge of the map, maintaining the current map centre and ensuring the current aircraft position remains on the display.
DE-CLUTTER	Displays the MAP DECLUTTER keypad which allows you to control the quantity and type of information shown on the map display.
FULL SCREEN	Displays the map over the whole screen (page title, permanent readouts and toolbars are removed from the display). Touching the screen again restores the display format to normal.
A/C SLEWS	Displays the A/C SLEW keypad which allows you to change the geographical position, speed, heading and altitude of the aircraft.
WIND SLEW	Allows you to change the wind speed and direction. When selected, a white circle with a projecting arrow and the Surface Wind Slew keypad are displayed. Touch the area map display to change the wind speed and direction. The keypad readouts and the size and direction of the arrow will change accordingly. Select OK on the keypad to confirm the selection.
RNG/BRG	Allows you to determine the range and bearing to radio facilities or a lat/long position. When selected, a white square frame (centred at the map reference position) and the RANGE & BEARING keypad are displayed. Move the white square frame to select a lat/long position and use the keypad to determine the range and bearing.

SEL ON MAP	When selected, a white circle and the SELECT ENTITY ON MAP keypad are displayed. Move the white circle to select an area of interest and use the keypad to select required facility. When a facility has been successfully selected, the Select Station menu is displayed to allow you to: - Display station information - Fail/restore the facility - Display range/bearing information - Set the facility as the map centre Selecting range/bearing displays the ident, bearing and range of the facility in the map display title bar.
STORM CTRL	Displays the STORM CONTROL menu to allow you to control and modify the storm models.

AREA MAP (5 OF 10)

MAP DECLUTTER

This popup is displayed when De-clutter is selected on the Map Toolbar.

AUTO	Selects/deselects Auto mode. In Auto mode, the display of symbols is automatically and selectively controlled as the area covered increases or decreases. In Manual mode, the display of the symbols is controlled by this keypad.
FREQ	Displays radio station broadcast frequency details.
APT	Displays airport positions and ICAO codes, and enables the RWY button.
RWY	Only operable when APT is selected on. Displays and identifies airport runways, and enables ILS and MKR buttons.
ILS	Only operable when RWY is selected on. Indicates where runway ILS facilities exist.
MKR	Only operable when RWY is selected on. Displays location of runway outer, middle and inner marker beacons.
VHF LO PWR	Displays location of low-powered VHF stations.
VHF HI PWR	Displays location of high-powered VHF stations.
NDB	Displays location of NDB stations.
AWY MKR	Displays locations of airway marker beacons.
APPROACH DATA	Displays active runway identification and approach radio facilities.
SNAPSHOTS	Identifies locations where snapshots were taken.
TERMINAL WAYPOINTS	Displays location of waypoints in the terminal area.
ENROUTE WAYPOINTS	Displays location of route waypoints incidental to the flight plan.

STORM	Displays storm data.
TRAFFIC	Displays location of traffic.
ROUTE	Displays the currently selected route.
WEB	Overlays the display with a 'spider web' (compass rose) with radials at 45° intervals and circles at full and half range from the centre, annotated in accordance with the current display range. Mutually exclusive with Grid.
GRID	Overlays the display with a latitude/longitude grid of lines, identified with their co-ordinates. The interval between the lines varies with map range. Mutually exclusive with Web.
TRACK	Displays a trace of the aircraft flight path.
ERASE TRACK	Momentary action. Deletes existing trace of aircraft flight path.
CLOSE	Removes keypad from display.

AREA MAP (6 OF 10)

A/C SLEWS

POSITION	Displays a white square frame (centred at the aircraft position) and the Position Slew keypad. Move the white square frame and use the keypad to set a target value for aircraft position.
HEADING	Displays a white circle with a projecting arrow (at the map centre), and the A/C Heading Slew keypad. Move the arrow around the circle to set the target value for the aircraft heading and confirm selection using the keypad.
HEADING LEFT HEADING RIGHT	Move the aircraft in the associated direction, relative to its current position.

AREA MAP (7 OF 10)

RANGE & BEARING

READOUTS	Display current range and bearing to the radio facility or lat/long position selected by the white square frame.
ZOOM IN	Steps down through the map ranges with each selection.
ZOOM OUT	Steps up through the map ranges with each selection.
RNG/BRG REFERENCE	Updates the range and bearing information in the map display title bar with the range and bearing to the facility or lat/long position selected by the white square frame.
SET AS MAP CENTRE	Causes the map to be redrawn with the facility or lat/long position selected by the white square frame as the map centre.
SLEW AIRCRAFT TO SELECTED	Slews the aircraft to the selected range & bearing.
ENTER IDENT	Displays the alphanumeric keypad to allow a facility to be selected by its ident. When a facility has been successfully selected, the Select Station menu is displayed to allow you to: - Display station information - Fail/restore the facility - Display range/bearing information - Set the facility as the map centre Selecting range/bearing displays the ident, bearing and range of the facility in the map display title bar.
CLOSE	Removes keypad from display.

AREA MAP (8 OF 10)

SELECT ENTITY ON MAP

APT	
RWY	
ILS	
MKR	Allow the associated facilities to be displayed/hidden during station selection. Refer to Declutter for a description of each station type.
VHF LO PWR	
VHF HI PWR	
NDB	
AWY MKR	
ZOOM IN	Steps down through the map ranges with each selection.
ZOOM OUT	Steps up through the map ranges with each selection.
OK	Displays the Select Station menu of details for those stations within the area of interest defined by the white circle. The menu displays “Nothing Found” if there are no stations within the area of interest.
ENTER IDENT	Displays the alphanumeric keypad to allow a facility to be selected by its ident.
CANCEL	Removes the keypad from the display.

AREA MAP (9 OF 10)

STORM CONTROL

This toolbar is selectable from the Map Toolbar and allows you to control and modify the storm models.

MAP RANGE	Displays the Range keypad which allows the diameter of the map to be selected manually or automatically. If Auto is selected, the range changes as the aircraft nears the edge of the map, maintaining the current map centre and ensuring the current aircraft position remains on the display.
SELECT	Displays the Storm Select keypad which shows the available storm models pictorially and dimensionally. When a storm is first selected, it is inactive and is displayed in outline form in its default position on the Map display, but it will not be shown on the weather radar display. NOTE: It may be necessary to change the map range to make the storm visible.
POSITION	Displays a white square frame (at the centre of the storm model) and the STORM POSITION keypad. Move the white square frame and use the keypad to select a position for the storm.
ROTATION	Displays a white circle with a projecting arrow (at the centre of the storm model) and the STORM ROTATION keypad. Move the arrow round the circle to set the storm rotation and confirm the selection using the keypad.
DRIFT	Displays a white circle and arrowhead (at the map centre) and the Storm Drift keypad to allow you to select the storm drift speed and direction. Move the arrowhead around the circle to select the direction and away from the circle to select the speed. Confirm the selection by selecting OK on the keypad.
STATUS	Activates/deactivates the selected storm model. When a storm is activated, the complete image is displayed on the Map display and the storm is shown on the weather radar display. If the storm characteristics (position, rotation and drift) are changed, the button legend shows Modified. Selecting the button activates the modified storm.

BRIGHTNESS

Displays the Storm Brightness keypad to allow you to control the intensity of the storm image on the Map display. Select High, Medium or Low.

NOTE: The outline storm display is always shown at High brightness.

AIRCRAFT CONTROL

Selectable from the **PAGE NAVIGATION TOOLBAR**, the Aircraft Control tab suite comprises 5 tabs providing access to the following pages:

- < **SERVICES** page which allows you to perform functions normally undertaken on the ground.
- < **AIRCRAFT WEIGHTS** page which allows you to select the fuel loading and centre of gravity for the aircraft.
- < **FLIGHT PLAN** page which allows you to configure the FMC with route information.
- < **DOORS** page which allows you to control the aircraft doors.
- < **QUICK SETUP** page which allows you to quickly set up a training exercise from a single page.

AIRCRAFT WEIGHTS

This page is selectable from the **AIRCRAFT CONTROL** tab suite and allows you to select the fuel loading and centre of gravity for the aircraft.

ZERO FUEL WEIGHT	Allows you to set the zero fuel weight of the aircraft.
TOTAL FUEL	Allows you to set the total fuel load in the aircraft. The fuel will be evenly loaded between the fuel tanks.
GROSS WEIGHT	Displays the gross weight of the aircraft.
ZFW CG	Allows you to set the centre of gravity as a percentage of mean aerodynamic chord (MAC) when there is no fuel on the aircraft.
GW CG	Allows you to select the centre of gravity as a percentage of mean aerodynamic chord (MAC).
LEFT WING TANKS CENTRE RIGHT WING TANKS	Allow you to select the fuel load in each of the fuel tanks on the aircraft. Outer wing tanks are filled before inner wing tanks, to a maximum weight of 691kg.
FUEL BALANCE	Balances the fuel load between the tanks.
PRESETS	Displays a pop-up menu which allows you to select from a number of preset values for zero fuel weight, fuel load and centre of gravity.

DOORS

This page is selectable from the **AIRCRAFT CONTROL** tab suite and allows you to control the aircraft doors.

LH FWD CABIN	
LH AVIONIC ACCESS	
FWD AVIONIC ACCESS	
AFT AVIONIC ACCESS	
LH FWD EMER EXIT	
LH AFT EMER EXIT	
LH AFT CABIN	
RH AVIONIC ACCESS	Open/close associated door.
RH FWD CABIN	
FWD CARGO	
RH FWD EMER EXIT	
RH AFT EMER EXIT	
AFT CARGO	
BULK CARGO	
RH AFT CABIN	

OPEN DOORS SEQUENCE	Opens all doors in sequence.
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CLOSE ALL DOORS & ARM SLIDES	Closes all doors and arms slides.
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SLIDES	Arms/disarms operation of the emergency passenger slides.
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FLIGHT PLAN

This page is selectable from the **AIRCRAFT CONTROL** tab suite and allows you to configure the FMC with route information.

To select a Flight Plan click on the row containing the required plan in the table.

PAGE UP/PAGE DOWN	Allow you to scroll up/down through the list of available flight plans.
--------------------------	---

STATUS

STATUS	System status is displayed.
---------------	-----------------------------

FROM LIST

LOAD TO FMGC	Programs the FMGC with a flight plan from the selected line in the stored routes list.
---------------------	--

SAVE TO FMGC	Extracts the active FMGC flight plan to the selected line in the stored routes list.
---------------------	--

EDIT CMMNT	Allows you to edit the comment for the selected flight plan.
-------------------	--

VOLATILE FLIGHT PLAN

LOAD	Programs the FMGC with the information from the selected route.
-------------	---

SAVE	Saves the existing FMGC load configuration to the selected route number for future use.
-------------	---

QUICK SETUP

This page is selectable from the **AIRCRAFT CONTROL** tab suite and allows you to quickly set up a training exercise from a single page.

To set up a training exercise:

- < Select Predefined Setup. A pop-up menu is displayed listing the available setups.
- < Select the required setup. The predefined values are displayed in each of the buttons on the page.
- < To modify the values, select the appropriate button and enter the new value.
- < Select Enter to confirm the set up values. Flight Freeze is set and the new values are entered into the simulation. While the data is being entered, the Enter button text changes to Setup In Progress (Will Take ~ 45s).
- < Deselect Flight Freeze to continue the training exercise.

SERVICES

This page is selectable from the **AIRCRAFT CONTROL** tab suite and allows you to perform functions normally undertaken on the ground.

EXTERNAL POWER	Simulates connection of external power supply when aircraft is stationary on the ground.
GROUND AIR	Simulates connection of external air supply when the aircraft is stationary on the ground.
GROUND CONDITIONED AIR	Simulates connection of external conditioned air supply when the aircraft is stationary on the ground.
IRS ALIGN	Initiates an instantaneous re-alignment of the inertial reference system.
APU START	Starts APU immediately regardless of air, fuel, oil or electrical supplies, provided APU master switch is on. APU will continue to run if fuel and oil supplies are available.
ENGINES START	Starts all engines immediately regardless of air, fuel, oil or electrical supplies, provided the fuel cut-off switches are in the flow position. Engines will continue to run if fuel and oil supplies are available.
CABIN MODE (DEFAULT: AUTO)	In Auto mode cabin ready is activated: 1. When the auto mode timer expires (default 5 mins). The timer only decrements while the ownship is positioned at a gate, engine(s) are started, doors are closed, slides are armed and flight freeze is off. 2. During approach and landing after flaps are extended to 2 and gear is down. In Manual mode the instructor can control the emulation by toggling the cabin status button (greyed in auto mode).
CABIN STATUS (DEFAULT: NOT READY)	Cabin Status when Ready emulates activation of the forward cabin ready control by the flight attendance to indicate that all the flight checks in the cabin have completed and the passenger cabin is ready.

MARSHALLER	Selects marshaller on/off. The Marshaller is available when the aircraft is positioned at the gate (but not at generic airports). The marshaller is automatically deselected by: < instructor action < when the aircraft has stopped at the gate and the park brake has been applied for 10 seconds < during gate reposition < when pushback is in progress
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A/C ON JACKS	Simulates aircraft on jacks.
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WHEEL CHOCKS	Simulates aircraft on wheel chocks.
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HYDRAULIC GROUND POWER

GREEN	Simulates connection of external green hydraulic supply when aircraft is stationary on the ground.
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BLUE	Simulates connection of external blue hydraulic supply when aircraft is stationary on the ground.
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YELLOW	Simulates connection of external yellow hydraulic supply when aircraft is stationary on the ground.
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HYDRAULICS RESERVOIR QUANTITY

GREEN/BLUE/YELLOW	Allows you to set the oil quantity for individual hydraulic reservoirs.
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OIL QUANTITY

ENGINE 1 ENGINE 2 APU	Allows you to set the oil quantity for individual engines.
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ENVIRONMENT CONTROL

Selectable from the **PAGE NAVIGATION TOOLBAR**, the Environment Control tab suite comprises 8 tabs providing access to the following pages:

- < **BASIC** page which allows you to control basic weather conditions.
- < **CLOUD** page which allows you to control cloud conditions.
- < **ATMOS** page which allows you to control atmospheric conditions.
- < **ICING** page which allows you to control the icing effects.
- < **VISUAL/RUNWAY CONDS** page which allows you to set various visual and runway conditions.
- < **AIRFIELD LIGHTING** page which allows you to set airfield lighting conditions.
- < **SMGCS** page.
- < **WINDSHEAR** page which allows you to select from a number of pre-defined windshear profiles.
- < **MICROBURST/PREDICTIVE WINDSHEAR** page.
- < **MULTIWEATHER** page which allows you to setup multiweather scenarios.

BASIC

This page is selectable from the **ENVIRONMENT CONTROL** tab suite and allows you to control basic weather conditions.

PERIOD OF DAY	Allows you to select the time of day (Day, Dusk, Dawn or Night) for the visual scene.
SURFACE WIND DIR/SPD	Allows you to set the surface wind direction/speed.
GUSTING TO	Allows introduction of pseudo-random gusts. A surface wind of at least 10 knots must be active for this function to be selectable.
FIELD TEMPERATURE	Allows you to set the temperature at the airport.
QNH	Allows you to set the QNH value.
QFE	Allows you to set the QFE value.
VISIBILITY	Allows you to set the visibility range for the visual scene.
FOG	Allows type of fog to be selected from pop-up menu. Selecting FOG automatically sets an RVR value. Likewise, setting an RVR value automatically inserts FOG.
FOG HEIGHT	Allows you to set the height of the fog layer.
RVR	Allows you to set the runway visible range.
VISUAL CATEGORY	Allows you to select from a number of pre-defined visual set-ups.
STORM	Displays the Area Map with the Storm Control Popup menu to allow you to control and modify the storm models.

LOWER CLOUD LAYER

TOP	Allows you to set the height of the lower cloud layer top above mean sea level.
CLOUD TYPE	Allows you to select normal, scattered or broken cloud types.
SCUD	Selects scud effects.
BASE (AGL)	Allows you to set the height of the lower cloud layer base.

WEATHER SCENARIO

ACTIVATE SCENARIO WITH CURRENT SETTINGS	Activates the currently selected Multiweather Scenario using the current settings.
--	--

RESETS

ISA STANDARD DAY RESET	Selects standard day weather conditions: Tropopause level: FL360 QNH: 1013.2 mb Temperature gradient: -1.98°C/1000 ft Sea level temperature: 15°C Delta ISA: 0°C
WEATHER SCENARIO RESET	Restarts an active multi-weather scenario using the default values loaded upon initial activation of the scenario.

CLOUD

This page is selectable from the **ENVIRONMENT CONTROL** tab suite and allows you to set various cloud conditions.

HIGH ALTITUDE CLOUD

TYPE	Allows you to select Blue Sky or one of a variety of different types of cloud.
-------------	--

UPPER CLOUD LAYER

TOP	Allows you to set the height of the upper cloud layer top above mean sea level.
------------	---

TYPE	Allows you to select none, overcast, scattered or broken cloud types.
-------------	---

SCUD	Selects scud effects.
-------------	-----------------------

BASE	Allows you to set the height of the upper cloud layer base.
-------------	---

LOWER CLOUD LAYER

TOP	Allows you to set the height of the upper cloud layer top above mean sea level.
------------	---

TYPE	Allows you to select none, overcast, scattered or broken cloud types.
-------------	---

SCUD	Selects scud effects.
-------------	-----------------------

BASE (AGL)	Allows you to set the height of the upper cloud layer base.
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ATMOS (1 OF 2)

This page is selectable from the **ENVIRONMENT CONTROL** tab suite and allows you to set various atmospheric conditions.

CRUISE LAYER

WIND DIR/SPD	Allows you to set the wind direction/speed.
ALTITUDE	Allows you to set the altitude AMSL.
TURBULENCE	Allows you to select cobblestone or rough air turbulence conditions. NOTE: Conditions are mutually exclusive.
ICING	Allows you to select icing conditions.
JET UPSET	Allows you to select special wind effects at the aircraft.

INTERMEDIATE LAYER

WIND DIR/SPD	Allows you to set the wind direction/speed.
ALTITUDE	Allows you to set the altitude AMSL.
TURBULENCE	Allows you to select cobblestone or rough air turbulence conditions. NOTE: Conditions are mutually exclusive.
ICING	Allows you to select icing conditions.

SURFACE LAYER

WIND DIR/SPD	Allows you to set the wind direction/speed.
TURBULENCE	Allows you to select cobblestone or rough air turbulence conditions. NOTE: Conditions are mutually exclusive.
ICING	Allows you to select icing conditions.
GUSTING TO	Allows introduction of pseudo-random gusts if a surface wind above 10 knots is selected.

FAA GUST PROFILE *

Allows the selection of the FAA Gust Profile

*FAA Part 60 Change 2 (FSTD Directive 2) introduced a requirement for training with gusting crosswind for take-off and landing using realistic real world data. Realistic gusting crosswind profiles must be available to the instructors that have been tuned in intensity and variation to require pilot intervention to avoid runway departure during takeoff or landing roll.

TEMPERATURE**FIELD TEMPERATURE**

Allows you to set the Field Temperature.

LAPSE RATE

Allows you to set the Lapse Rate

ATMOS (2 OF 2)

TROPOPAUSE

ALTITUDE (AMSL)	Allows you to set the height of the tropopause level.
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PRESSURE

METRIC QNH	Allows you to set the Metric QNH value.
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QFE	Allows you to set the QFE value.
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TEMPERATURE INVERSION

LOWER ALTITUDE	Allows you to set lower altitude level.
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UPPER ALTITUDE	Allows you to set upper altitude level.
-----------------------	---

INVERSION LAPSE RATE	Allows you to set the inversion lapse rate.
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ACTIVATE INVERSION	Select to enter the selections into the simulation.
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ICING (1 OF 2)

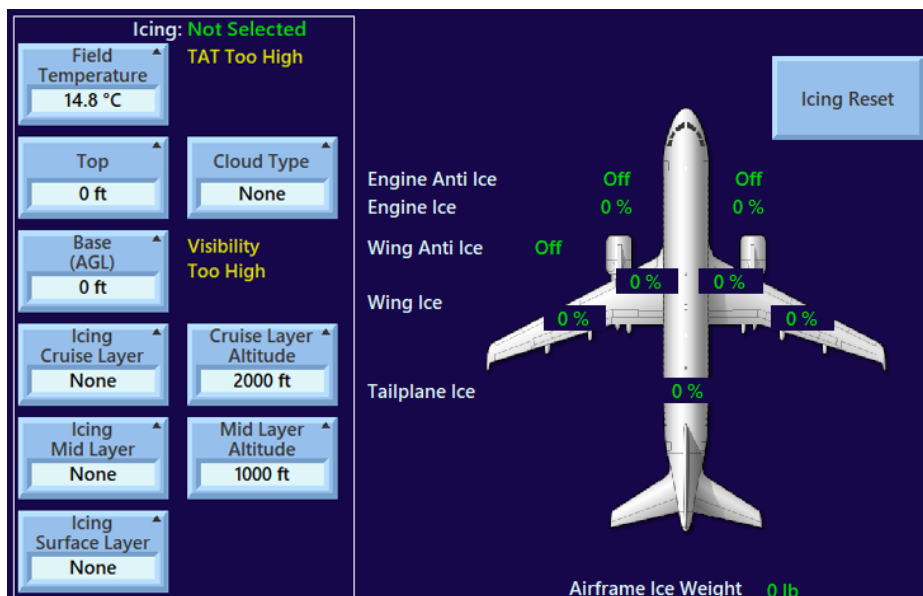
This page is selectable from the **ENVIRONMENT CONTROL** tab suite and allows you to set various cloud conditions.

ICING CONTROLS

FIELD TEMPERATURE	Allows you to set the temperature at the airport.
TOP	Allows you to set the height of the lower cloud layer base above ground level.
CLOUD TYPE	Allows you to select the following cloud types: None, Normal, Scattered and Broken.
BASE (AGL)	Allows you to set the height of the lower cloud layer base.
ICING CRUISE LAYER	Allows you to select the cruise layer icing as: None, Light, Modereate, Severe
CRUISE LAYER ALTITUDE	Allows you to set the altitude of the cruise layer.
ICING MID LAYER	Allows you to select the mid layer icing as: None, Light, Modereate, Severe
MID LAYER ALTITUDE	Allows you to set the altitude of the mid layer.
ICING SURFACE LAYER	Allows you to select the surface layer icing as: None, Light, Modereate, Severe
ICING RESET	Clears all icing conditions

ICING (2 OF 2)

ICING READOUTS



ICING	Displays the icing status: Not selected, Armed or Active.
TAT	Displays the Total Air Temperature status relative to the current altitude: In Range, Too High (> 7.99 deg C), or Too Low (< -39.99 deg C).
VISIBILITY	Displays the Visibility status: In Icing Range, or Too High (> 5280 FT).
ENGINE ANTI-ICE	Displays the Engine 1 & 2 Anti-ice system status in the cockpit: On or Off.
ENGINE ICE	Displays the Engine 1 & 2 ice fraction, and reflects the combination of Cowl and Fan ice fractions: Cowl ice is de-iceable with Engine Anti-ice system switched on, else will fall off once the ice mass reaches maximum. Fan ice is not de-iceable with Engine Anti-ice system switched on, but will shed when N1 exceeds 70% N1.
WING ANTI-ICE	Displays the Wing Anti-ice system status in the cockpit: On or Off.
WING ICE	Displays the inner and outer ice fractions. Inner surfaces are non-de-iceable, while outer are de-iceable with Wing Anti-ice active.
TAILPLANE ICE	Displays the Tailplane ice fraction. This is non-de-iceable.
AIRFRAME ICE WEIGHT	Displays the total mass of ice accretion. Note that Aircraft Gross Weight readouts no longer include ice mass.

AIRFIELD LIGHTING

This page is selectable from the **ENVIRONMENT CONTROL** tab suite and allows you to set airfield lighting conditions.

RUNWAY LIGHTING	Displays popup menu listing all the available runways at the currently active airport to allow you to select a runway for lighting control. Currently selected runway is displayed on the button.
RWY LIGHTING CONTROL MODE	Allows you to select Auto or Manual mode. The currently selected mode is displayed in the button. In Auto mode, lighting levels are set to default whenever a new active runway is selected. In Manual mode, manually set levels are retained regardless of the runway in use.
ALL LIGHTS INTENSITY	Displays popup menu to allow you to set the intensity of all the runway lights to the same level (0 = off, 5 = max).
RANDOMIZE	Sets the lighting intensities to random levels.
ENV LIGHTS	Display popup menu to allow you to set the intensity of the lights around the airport (0 = off, 5 = max). Current setting is displayed on the button.
TAXI	Display popup menu to allow you to set the intensity of the lights around the airport (0 = off, 5 = max). Current setting is displayed on the button.
STOP BARS	Allows you to switch on/off the stop bars lights. Current setting is displayed on the button.
VASI/PAPI CENTRE EDGE APP STROBE/REIL T/HOLD TDZ	Display popup menu to allow you to set the intensity of individual sets of lights (0 = off, 5 = max). Current settings are displayed on the buttons.

VISUAL/RUNWAY CONDS (1 OF 2)

This page is selectable from the **ENVIRONMENT CONTROL** tab suite and allows you to set various visual and runway conditions.

PERIOD OF DAY	Allows you to select the time of day (Day, Dusk, Dawn or Night) for the visual scene.
AMBIENT LIGHTING	Allows you to set the level of ambient lighting to automatic, always on or always off.
SURFACE ROUGHNESS	Allows you to set the surface roughness as a percentage.
CONTAMINATION	Allows you to select from a list of available runway contaminations.
BRAKING ACTION	Allows you to set the braking action of: Good, Good to Medium, Medium, Medium to Poor, Poor, Very Poor
VISIBILITY	Allows you to set the amount of visibility in kilometers.
FOG	Allows type of fog to be selected from pop-up menu.
FOG HEIGHT	Allows you to set the height of the fog layer.
RVR	Allows you to set the runway visual range.
SCENE	Displays a pop-up menu to allow you to select the type of visual scene.
RAIN	Displays a popup menu which allows you to select the level of rain intensity.
HAIL	Displays a popup menu which allows you to select the level of hail intensity.

VISUAL/RUNWAY CONDS (2 OF 2)

VISUAL CATEGORY

Allows you to select from a number of pre-defined setups, detailed below:

SCENARIO	CAVOK	CAVU	CAT I	CAT II	CAT IIIA	CAT IIIB	CAT IIIB	CIRCLING 1	CIRCLING 2	CIRCLING 3	LVTO	ZERO/ZERO
Visibility	50 SM	124 SM	1800	1200	700	300	300	800ft 2.5 SM	600ft 2.5 SM	400ft 1.2 SM	410ft 125m	0
RVR	0	0	1800ft 549m	1200ft 366m	700ft 213m	300ft 92m	300ft No DH	0	0	0	410	0
Fog	FALSE	FALSE	TRUE	TRUE	TRUE	TRUE	TRUE	FALSE	FALSE	FALSE	TRUE	TRUE
Patchy Fog	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Fog Height	0	0	230	130	65	55	40	0	0	0	400	200
Cloud 1 Top	0	0	5000	5000	5000	5000	5000	5000	5000	5000	5000	8000
Cloud 1 Base	0	0	230	130	65	55	40	800	600	400	400	200
Cloud 1 Scud	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Cloud 2 Top	0	0	0	0	0	0	0	0	0	0	0	0
Cloud 2 Base	0	0	0	0	0	0	0	0	0	0	0	0
Cloud 2 Scud	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE

NOTES: (1) * Available Fog: None, Ground or Patchy
 (2) Cloud Transition Depth is automatically defined by these settings.

VISUAL EFFECTS

LIGHTNING
 FALLING SNOW
 BLOWING SNOW
 BLOWING SAND
 SAND STORM
 CONVERGING BIRDS
 VOLCANIC ASH
 FIRE TRUCKS
 RUNWAY INCURSION VEHICLE
 ANIMATE INCURSION VEHICLE

Select the associated effect on/off.

SMGCS

This page is selectable from the **ENVIRONMENT CONTROL** tab suite.

SURFACE MOVEMENT GUIDANCE CONTROL SYSTEM (SMGCS)

On change of airfield, if SMGCS are available this page will be populated with SMGCS route descriptions.

ACTIVE ROUTE	Selection of this button will cause 'ordinary' taxiway lights to be extinguished and only the appropriate taxiway lights in the near vicinity of the aircraft will be illuminated.
ACTIVATE STOP BAR	When selected, the next stop bar encountered will remain illuminated thus preventing onward travel.
PROCEED ONTO RUNWAY	For SMGCS routes that convey the aircraft to a runway, the taxiway lighting from the final HOLD to the runway will only be illuminated when this button is selected.
SCROLL UP/SCROLL DOWN	These will only be authorised if the page cannot display all of the available SMGCS routes.

MICROBURST/PREDICTIVE WINDSHEAR

This page is selectable from the **ENVIRONMENT CONTROL** tab suite and allows you to select the position and intensity of the microburst.

PREDICTIVE WINDSHEAR

DETECTION SYSTEM	Enables/disables the predictive windshear function of Weather Radar.
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MICROBURST

INTENSITY	Allows you to change the preset intensity value in percent from 10% to 100%.
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The pre-defined options are given below:

Position	Intensity	Distance	Distance from Centreline
Takeoff	50%	1.0 NM	On CL
Takeoff	50%	1.8 NM	On CL
Approach	50%	3.0 NM	On CL
Approach	50%	1.2 NM	On CL
Approach	50%	1.2 NM	0.5 NM Left
Approach	50%	1.2 NM	0.5 NM Right
Approach	50%	0.8 NM	On CL

MULTI-WEATHER

This page is selectable from the **ENVIRONMENT CONTROL** tab suite to allow you to set up a variety of environmental parameters at each airport defined within the currently selected Multiweather Scenario. These parameters may only be edited when a Multiweather Scenario is active. At all other times the buttons are grey and unavailable for selection.

The Scenario Control functions and Closest Airport Data readouts are displayed on each of the four Multiweather Scenario Setup pages.

SELECT DEFAULT SCENARIO	Displays the MULTI-WEATHER SCENARIO SELECT page. This button is unavailable when a Scenario is active.
AIRPORT	Displays the MULTI-WEATHER - AIRPORT page.
SCENARIO STORM	Toggles the Scenario Storm function on and off. Only available if a storm was defined within the Scenario when it was created.
CLOUD	Displays the MULTI-WEATHER - CLOUD page that allows you to edit the cloud parameters at the selected airport.
ATMOS	Displays the MULTI-WEATHER - ATMOS page that allows you to edit the wind, turbulence and icing parameters at the selected airport.
VISUAL/RUNWAY CONDS	Displays the MULTI-WEATHER - VISUAL/RWY CONDS page that allows you to edit the visual effects and runway conditions at the selected airport.
WINDSHEAR	Displays the currently selected windshear profile.
MICROBURST	Displays the currently selected microburst profile.
ACTIVATE SCENARIO WITH CURRENT SETTINGS	Activates the currently selected settings.
WEATHER SCENARIO RESET	Resets weather scenario to normal operating conditions.

MUTLI-WEATHER - AIRPORT SELECT

Allows you to select any one of the airports defined in the selected Multi-weather Scenario. Up to 150 airports may be defined in each Scenario and up to 10 airports may be added on-line.

ADD NEW AIRPORT	Displays an alphanumeric keypad which allows you to enter the ICAO code of the airport to be added to the Scenario.
SCROLL UP/DOWN	Scroll the list of airport ICAO codes up and down when more than 20 airports are defined in a Scenario.

MULTI-WEATHER - ATMOSPHERE

CRUISE LAYER

WIND DIR/SPD	Allows you to set the wind direction/speed.
ALTITUDE	Allows you to set the altitude AMSL.
TURBULENCE	Allows you to select cobblestone or rough air turbulence conditions. NOTE: Conditions are mutually exclusive.
ICING	Allows you to select icing conditions.
JET UPSET	Allows you to set the severity of the jet upset effect (None, Light, Moderate, Severe).

INTERMEDIATE LAYER

WIND DIR/SPD	Allows you to set the wind direction/speed.
ALTITUDE	Allows you to set the altitude AMSL.
TURBULENCE	Allows you to select cobblestone or rough air turbulence conditions. NOTE: Conditions are mutually exclusive.
ICING	Allows you to select icing conditions.

SURFACE LAYER

WIND DIR/SPD	Allows you to set the wind direction/speed.
TURBULENCE	Allows you to select cobblestone or rough air turbulence conditions. NOTE: Conditions are mutually exclusive.
ICING	Allows you to select icing conditions.
GUSTING TO	Allows introduction of pseudo-random gusts. A surface wind of at least 10 knots must be active for this function to be selectable.

TEMPERATURE

FIELD TEMPERATURE	Allows you to set the Field Temp.
LAPSE RATE	Allows you to set the Lapse rate.

TROPOPAUSE

ALTITUDE (AMSL)	Allows you to set the height of the tropopause level.
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PRESSURE

QNH	Allows you to set the QNH value.
QFE	Allows you to set the QFE value.

TEMPERATURE INVERSION

LOWER ALTITUDE	Allows you to set lower altitude level.
UPPER ALTITUDE	Allows you to set upper altitude level.
INVERSION LAPSE RATE	Allows you to set the inversion lapse rate.
ACTIVATE INVERSION	Select Activate Inversion to enter the selections into the simulation.

MULTI-WEATHER - SCENARIO SELECT

This page is selectable from the **MULTI-WEATHER** page and allows you to select one of up to 20 pre-defined Multi-weather scenarios.

MULTI-WEATHER - CLOUD

UPPER CLOUD LAYER

TOP	Allows you to set the height of the upper cloud layer top above mean sea level at the selected airport.
TYPE	Allows you to select None or one of a variety of different types of cloud layer at the selected airport.
BASE	Allows you to set the height of the upper cloud layer base at the selected airport.

LOWER CLOUD LAYER

TOP	Allows you to set the height of the lower cloud layer top above mean sea level at the selected airport.
TYPE	Allows you to select NONE or one of a variety of different types of cloud layer at the selected airport.
BASE (AGL)	Allows you to set the height of the lower cloud layer base at the selected airport.

MULTI-WEATHER - VISUAL/RWY CONDS

DEFAULT RUNWAY	Allows you to set the default active runway for the selected airport.
RUNWAY CONTAMINATION	Allows you to set the runway contamination at the selected airport.
VISIBILITY	Allows you to set the visibility at the selected airport.
FOG HEIGHT	Allows you to set the fog height. If a non-zero value is entered, ground fog will be switched ON at the selected airport. Enter a value of 0 ft to switch fog and RVR OFF at the selected airport.
RVR	Allows you to set the runway visual range. If a non-zero value is entered, ground fog will be switched ON at the selected airport using the default fog height.
SNOW SCENE	Displays a pop-up menu which allows you to select the level of snow at the selected airport.
RAIN	Displays a pop-up menu which allows you to select the level of rain intensity at the selected airport.
HAIL	Displays a pop-up menu which allows you to select the level of hail intensity at the selected airport.

VISUAL EFFECTS

LIGHTNING	Toggles lightning on and off at the selected airport.
FALLING SNOW	Toggles falling snow on and off at the selected airport.

WINDSHEAR

This page is selectable from the **ENVIRONMENT CONTROL** tab suite and allows you to select from a number of pre-defined windshear profiles.

PROFILE INTENSITY

LIGHT (50%) MODERATE (100%) SEVERE (150%) INTENSITY (MANUAL SELECTION)	Select the required intensity.
PROFILE INTENSITY	Allows you to select the intensity of the selected windshear profile as a percentage.

WIND TRAINING AIDS

- < **WTA 1 PRIOR TO VR VR -8 KTS**
- < **WTA 1 (ROTATION 3° PITCH)**
- < **WTA 1 (LANDING) (300 FT)**
- < **WTA 2 (TAKEOFF) (200 FT)**
- < **WTA 3 (TAKEOFF) (100 FT)**
- < **WTA 4 (LANDING) (1200 FT)**

Select the required profile above to view a graphical representation of the associated profile.

BOUNCED LANDING TRIGGER

- < Bounced Landing*

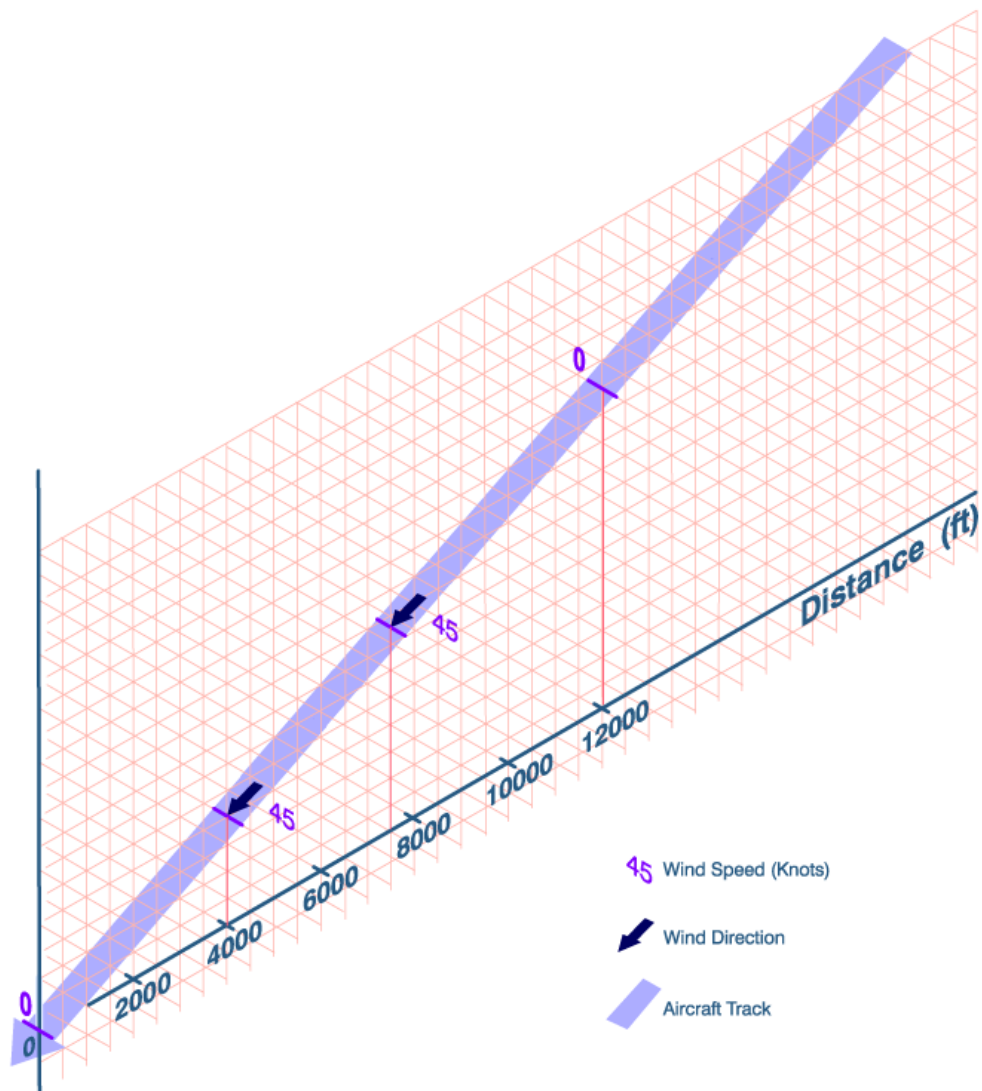
The Bounced Landing Scenario should be selected in approach configuration. The actual bounced landing effect will automatically activate when the Aircraft descends below 50 Ft AGL (varies for each aircraft type but typically between 35 and 50 FT). After bounced landing has occurred, the scenario will clear automatically. If required, the instructor can deselect the scenario manually at any time prior to scenario activation.

The scenario is designed to bounce the aircraft upon touchdown. This is achieved through a combination of tail wind and vertical wind to initially produce a sink effect, resulting in a bounce. Tail height plot is available on the IOS to monitor the effectiveness of trainee's bounced landing handling procedure.

* FAA Part 60 Change 2 (FSTD Directive 2) introduced a training requirement for bounced landing. IOS provides a bounced landing scenario to facilitate training.

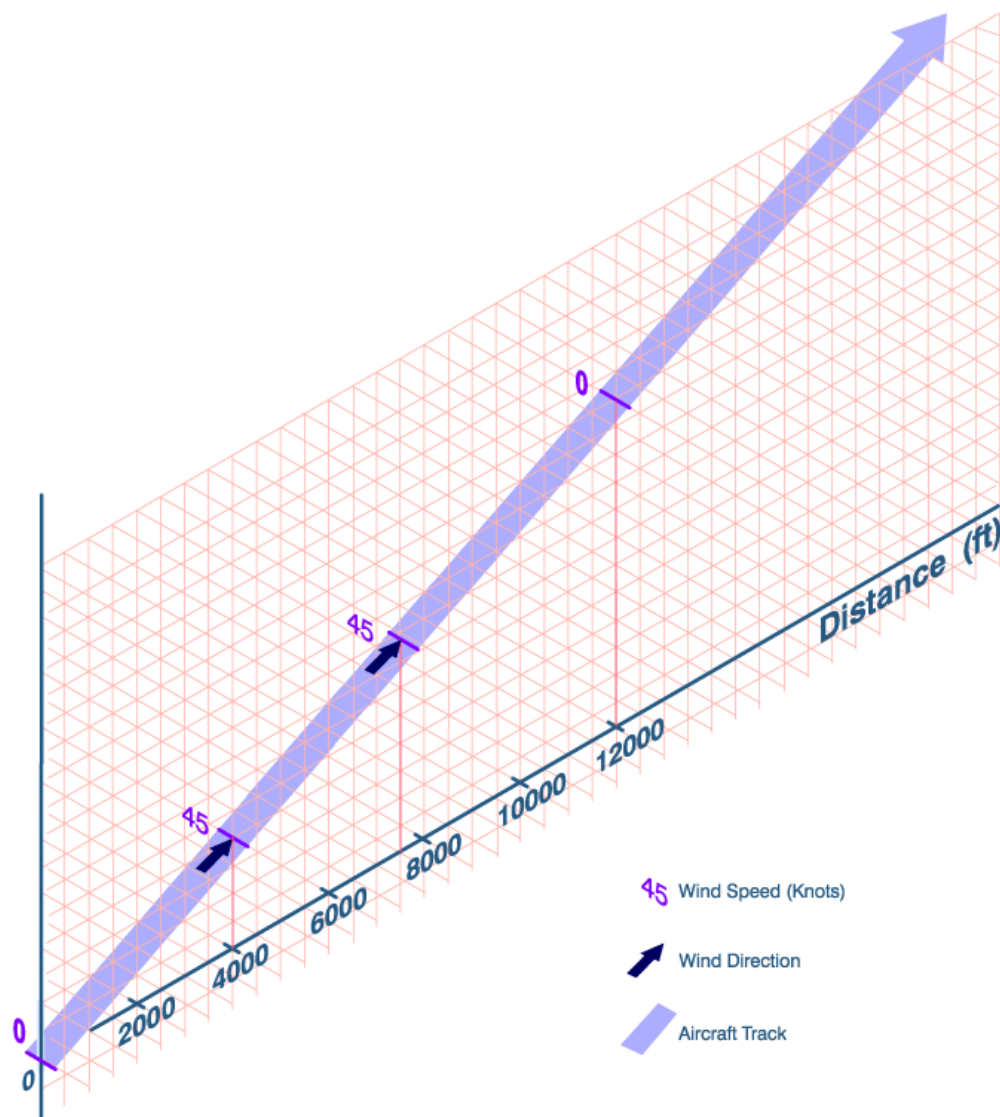
WTA 1 (LANDING) (300 FT)

Windshear is activated when aircraft descends through 300 feet.



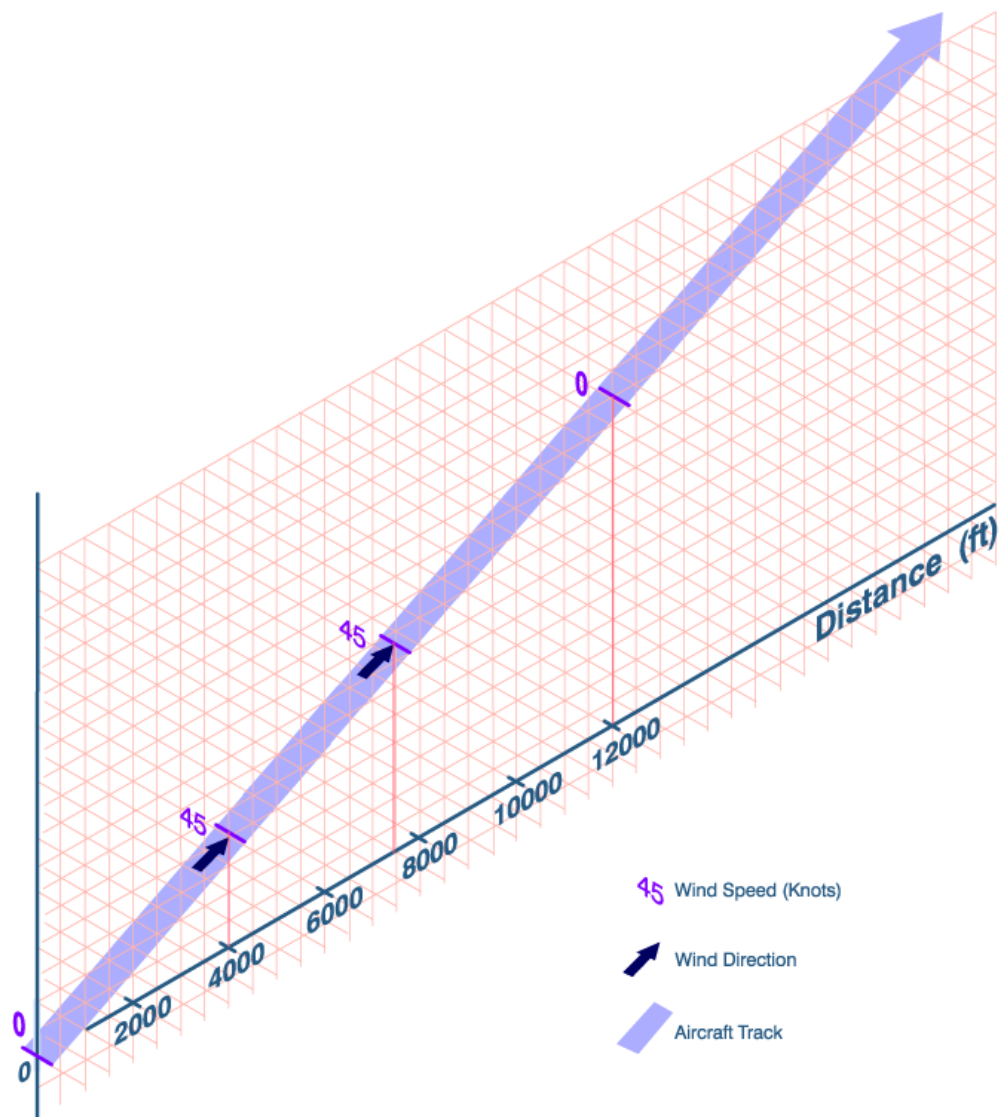
WTA 1 (PRIOR TO VR) (VR -8 KTS)

Windshear activated at ($V_R - 8$) Knots.



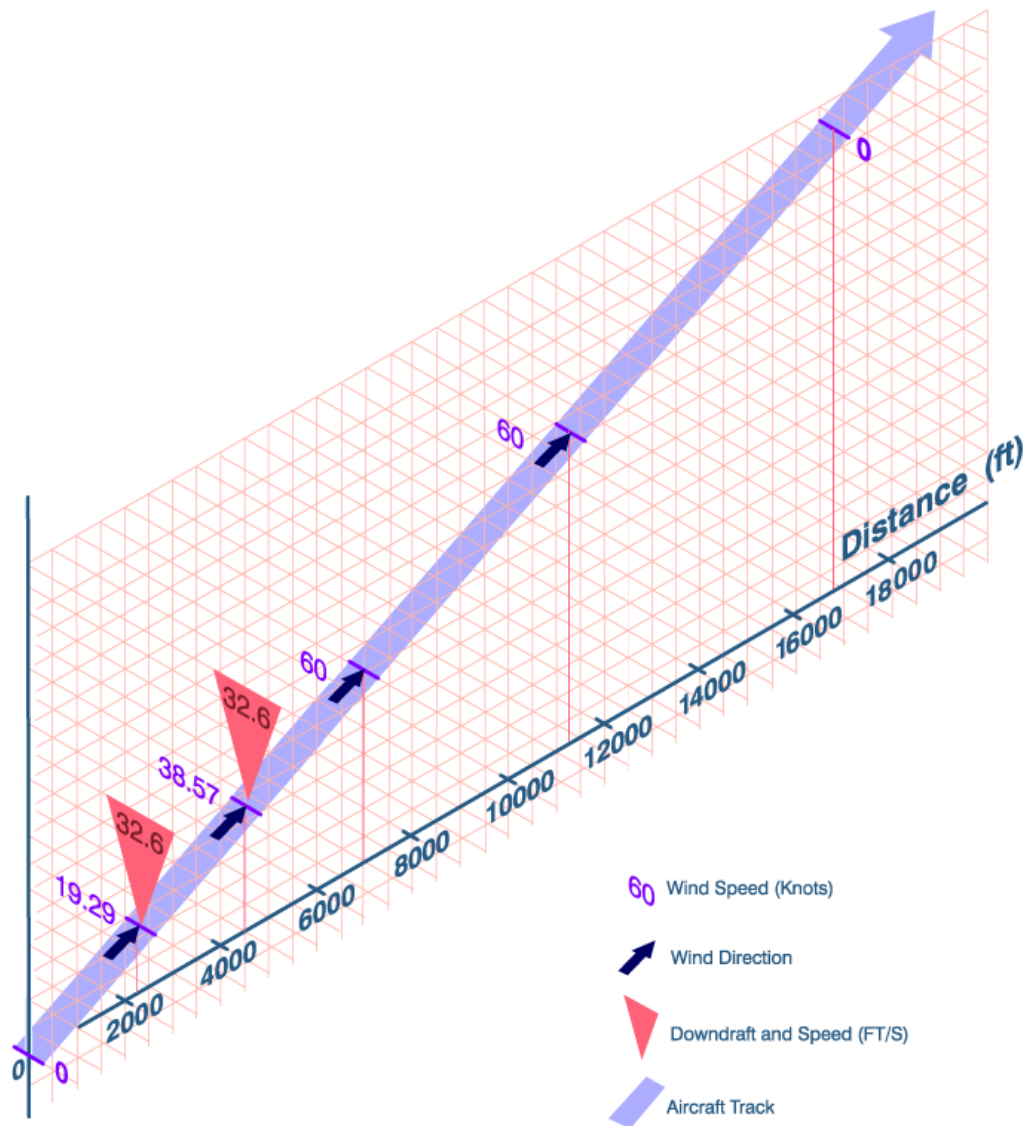
WTA 1 (ROTATION) (3° PITCH)

Windshear is activated when pitch angle passes 3 degrees.



WTA 2 (TAKEOFF) (200 FT)

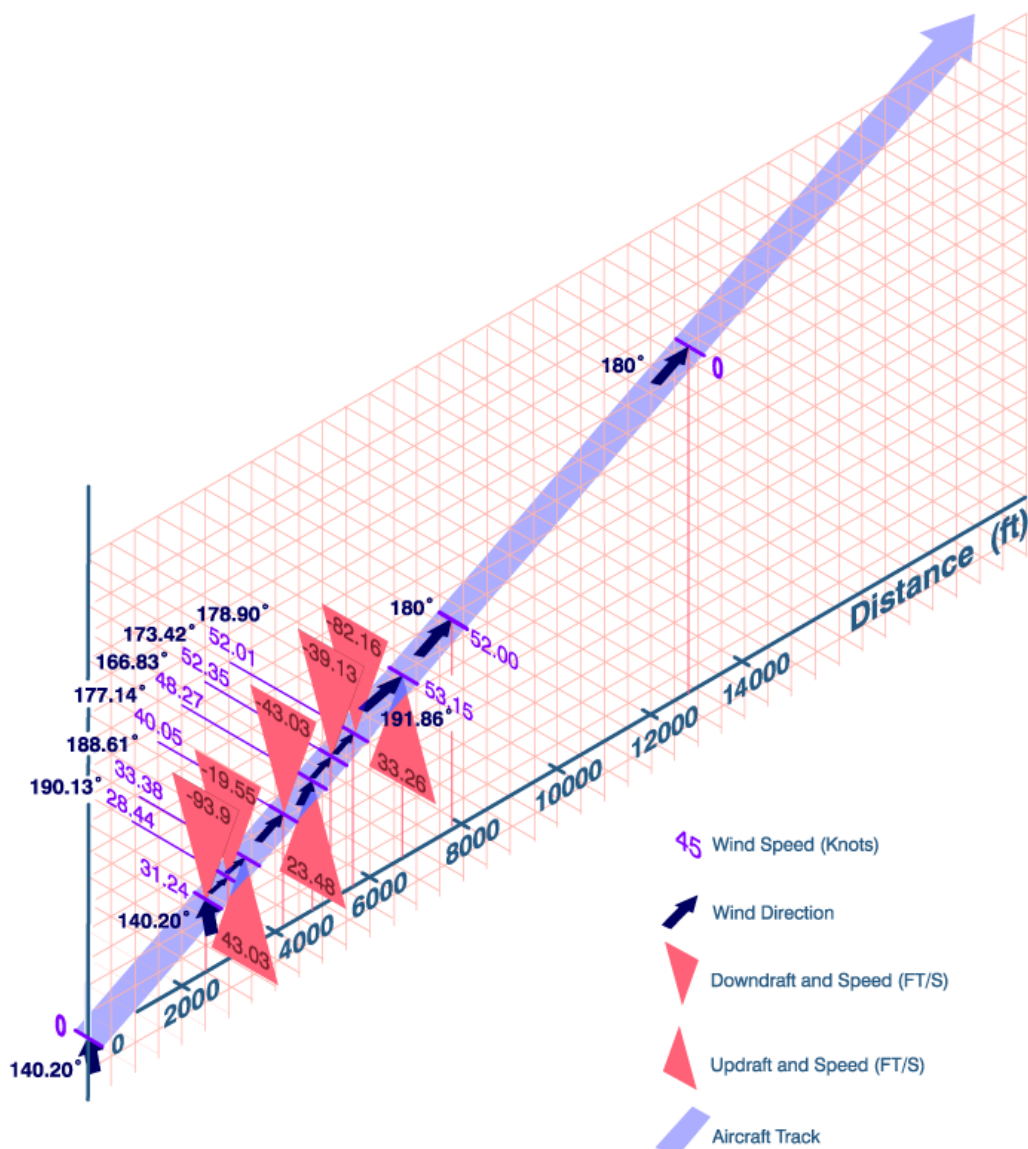
Windshear is activated when aircraft climbs through 200ft AGL.



WTA 3 (TAKEOFF) (100 FT)

A complex wind model for use during take-off which includes horizontal vortices similar to observed accident winds. Significant disturbances in all 3 axes are present, although the primary component is a 52 knot tailwind shear.

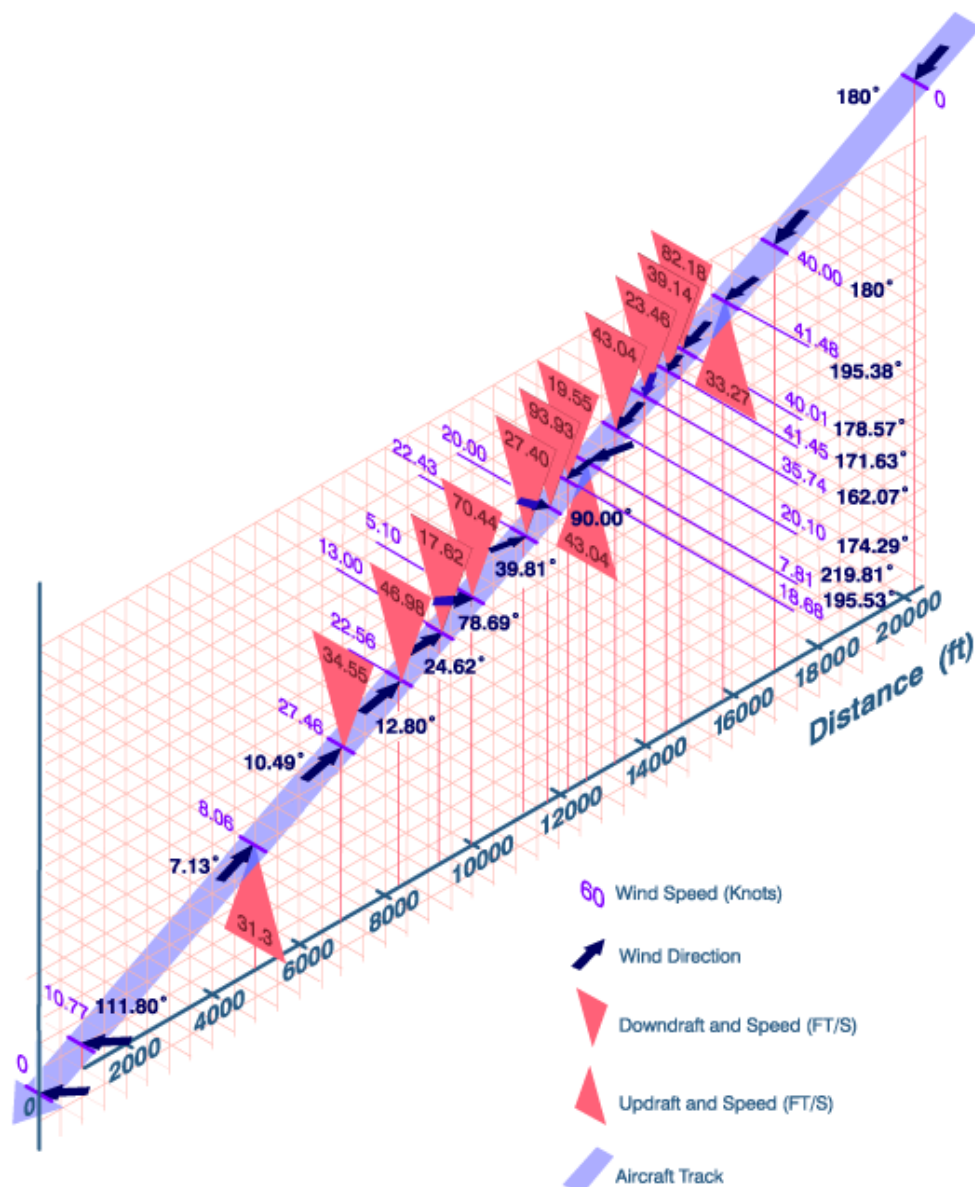
During initial climb, windshear is activated when aircraft climbs through 100 feet AGL.



WTA 4 (LANDING) (1200 FT)

An increasing performance segment is added to FAA3 to provide a complete microburst transition similar to accident winds.

During short final approach, windshear is activated when the aircraft descends through 1200 feet AGL.



FREEZE/RESETS

Selectable from the **PAGE NAVIGATION TOOLBAR**, the Freeze/Resets tab suite comprises 3 tabs providing access to the following pages:

- < **MAIN FREEZES/RESETS** page which allows you to suspend and restart all or some of the simulated systems, and to reset the main aircraft systems to normal operating conditions.
- < **SYSTEM RESETS 1** page which allows you to reset aircraft systems and temperatures to normal operating conditions.
- < **SYSTEM RESETS 2** page which allows you to reset the associated computers to normal operating conditions.

MAIN FREEZES/RESETS

This page is selectable from the **FREEZE/RESETS** tab suite and allows you to suspend and restart all or some of the simulated systems, and to reset the main aircraft systems to normal operating conditions.

NOTE:IOS remains operational during all freeze states.

FREEZES

TOTAL FREEZE	Complete freeze of all simulated systems, except FMS. Simulator returns to level position and sound system is inhibited. Inputs to simulation from IOS and cockpit controls have no effect.
FLIGHT FREEZE	Freezes aerodynamic parameters (aircraft speed, attitude, altitude and geographical position). Aircraft systems remain operational.
POSITION FREEZE	Freezes aircraft at current geographical location. All other aerodynamic and aircraft systems remain operational.
ALTITUDE FREEZE	Freezes aircraft altitude at current setting. All other aerodynamic and aircraft systems remain operational.
FUEL FREEZE	Freezes fuel quantities at current value. Engine fuel flows unaffected, but no fuel depletion occurs.

RESETS

MASTER RESET	Resets all systems and temperatures defined on the second page to normal operating conditions. Resets all active and armed malfunctions, restores all failed navigational facilities and clears all circuit breaker trip conditions. NOTE: Popped circuit breakers must be manually reset. Master Reset also performs: - IRS Fast Align and EFCS Box Reset - Deactivates any active Lesson Plans - Deactivates ATIS Override Mode - Removes Altitude, Airspeed and Fly Level Locks - Clears Windshears, Storms, etc.
ENVIRONMENT RESET	No storms, standard atmosphere, no icing conditions, no weather effects, no microburst/wind shear, no wind and no wind gradient, CAVOK, Horizon bright, Runway dry and smooth, visual day conditions, no turbulence, no TCAS, no ground traffic, Airport lighting reset.

ISA STANDARD DAY RESET	Selects standard day weather conditions: < Tropopause level: FL360 < QNH: 1013.2 mb < Temperature gradient: -1.98°C/1000 ft < Sea level temperature: 15°C < Delta ISA: 0°C
WEATHER SCENARIO MASTER RESET	Deactivates any active scenarios, restores default settings and reactivates defined default scenario.
ALL SYSTEMS RESET	Resets all systems defined on the page to normal operating conditions.
ALL TEMPERATURES RESET	Resets all temperatures defined on the page to normal operating conditions.
MALFUNCTIONS, FAILED STATIONS & CBS RESET	Resets all active and armed malfunctions and restores all failed radio stations.

SYSTEM RESETS 1

This page is selectable from the **FREEZE/RESETS** tab suite and allows you to reset aircraft systems and temperatures to normal operating conditions.

NOTE: IOS remains operational during all freeze states.

SYSTEMS

APU	Refills APU oil tank to normal level.
BATTERY	Resets batteries to fully charged.
CABIN PRESSURE	Resets cabin pressure to appropriate value for current conditions.
EMERGENCY GENERATOR	Resets the essential transform rectifiers.
ENGINE	Resets engine RPM to normal operating level.
ENGINES EGT	Zeroes engine RPM and sets EGTs to ambient, if the unit is shutdown.
ENGINE OIL QTY	Refills all engine oil tanks to normal levels.
ENGINE RPM	Resets engine RPM to normal operating level.
FIRE AGENT	Refills all fire bottles to normal levels.
HYDRAULIC QTY	Refills all hydraulic reservoirs to normal levels.
IDG RECONNECT	Reconnects engine-driven generator.
OXYGEN	Replenishes oxygen cylinders to normal levels and resets passenger oxygen system (if deployed).
RAT	Restores RAT to normal rate.
TR RESET	Reconnects transformer rectifiers.
TYRE PRESSURE	Restores all deflated tyres to normal operating pressure.
FAC	

FWC MESSAGES

TEMPERATURES

BRAKES	Resets all brake pad temperatures to ambient level.
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HYDRAULIC	Resets hydraulic fluid temperature to normal operating value.
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FUEL	Resets fuel temperature to normal operating value.
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WINDOW HEAT	Resets the aircraft de-icing control system.
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AIRCRAFT DE-ICING	Resets the aircraft de-icing control system.
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SYSTEM RESETS 2

This page is selectable from the **FREEZE/RESETS** tab suite and allows you to reset associated computers to normal operating conditions.

FLT CTL: ELAC
FLT CTL: SEC
FMGC
DMC
EGPWS

Reset associated computers.

MALFUNCTIONS/CIRCUIT BREAKERS

Selectable from the **PAGE NAVIGATION TOOLBAR**, the Malfunctions/Circuit Breakers tab suite comprises 2 tabs providing access to the following pages:

- < **MALF INDEX** page which displays a list of available malfunctions.
- < **CIRCUIT BREAKER INDEX** page which allows you to trip the circuit breakers associated with the aircraft equipment specified on the button.

MALF INDEX (1 OF 3)

This page is selectable from the **MALFUNCTIONS/CIRCUIT BREAKERS** tab suite and lists the available malfunction pages by aircraft system to assist you in locating the required malfunction.

Selecting one of the aircraft system touchpoints displays the associated malfunction page which lists the available malfunctions for that system.

A Malfunction Mode selection touchpoint is available in the Toolbar area.

Two types of malfunction are available:

Discrete (eg., Landing Gear Fail)

Variable, where you can set the value for the malfunction (eg., Fuel Leak)

The selection procedure for discrete and variable malfunctions is similar, although that for a variable malfunction allows for the associated parameter to be changed.

MALFUNCTION SELECTION

The malfunctions can be set to take immediate effect, or can be armed to take effect when specified aircraft parameters reach a pre-determined value.

The Malfunction Mode touchpoint allows you to select either Direct or Arm.

In Direct mode, selecting a malfunction touchpoint immediately activates or de-activates the associated malfunction.

In Arm mode, selecting a malfunction displays a pop-up menu with selections according to malfunction status and type:

ARM	Displays the ARM EXPRESSION popup menu which allows you to select the arming conditions for the malfunction. One or more conditions can be specified, as required. When arming conditions have been set, the malfunction becomes active when the corresponding parameters reach the selected values.
ACTIVATE	Only operable when the selected malfunction is inactive. Activates the malfunction immediately.
CLEAR	Only operable when the selected malfunction is already armed or active. De-activates the malfunction immediately.
CLOSE	Removes the menu from display.

MALF INDEX (2 OF 3)

ARM EXPRESSION

This menu is displayed when a malfunction is selected in Arm mode and allows you to set one or more parameter conditions to trigger the selected malfunction.

(	Used to identify the start of a trigger component in a trigger definition that includes more than one condition.
)	Used to identify the end of a trigger component in a trigger definition that includes more than one condition.
CLR	Only operable following data entry. Clears the last data item entered.
AC	Only operable following data entry. Clears all the components that have been entered.
OK	Only operable when valid selection has been made. Used to confirm your selections. Selected values will be entered into the simulation.
CANCEL	Removes the menu from the display.

TRIGGER PARAMETERS:

USER TRIGGER	Activates the malfunction when User Malf Trigger on Direct Actions Area is selected.
SPEED CROSSES V2 SPEED CROSSES V1	Discrete selections.
FLAP LEVER	Displays the Flap Lever pop-up menu which allows you to select one of a number of flap lever positions as the trigger condition.
LDG GEAR LEVER	Displays the Ldg Gear Lever pop-up menu which allows you to select either UP or DOWN as the trigger condition.
HEADING	Displays transition options (see below). Selecting an option displays the numeric keypad to allow you to enter a heading value as the trigger condition.
SPEED (IAS)	Displays transition options (see below). Selecting an option displays the numeric keypad to allow you to enter a speed value as the trigger condition.

ALTITUDE(AMSL)	Displays transition options (see below). Selecting an option displays the numeric keypad to allow you to enter an altitude (above mean sea level) value as the trigger condition.
ALTITUDE(AGL)	Displays transition options (see below). Selecting an option displays the numeric keypad to allow you to enter an altitude (above ground level) value as the trigger condition.
TIMER	Displays the Timer keypad to allow you to enter a time as the trigger condition.

When a trigger component has been defined, **and** and **or** selections are displayed to allow further conditions to be added, if required.

MALF INDEX (3 OF 3)

TRANSITION OPTIONS

The transition options displayed depend on the type of parameter selected:

ANGULAR PARAMETERS (HEADING)

<@ BACKS THRU	Sets the condition to activate when the aircraft turns left through the specified angle.
@ CROSSES	Sets the condition to activate when the parameter crosses the specified angle from a greater or lesser angle.
>@ VEERS THRU	Sets the condition to activate when the aircraft turns right through the specified angle.

NON-ANGULAR PARAMETERS(SPEED, ALTITUDE)

<@ SINKS BELOW	Sets the condition to activate when the parameter changes to any value below the specified value from a greater value.
@ CROSSES	Sets the condition to activate when the parameter crosses the specified value from a greater or lesser value.
>@ RISES ABOVE	Sets the condition to activate when the parameter changes to any value above the specified value from a lesser value.
< LESS THAN	Sets the condition to activate whenever the value is less than the specified value.
> GREATER THAN	Sets the condition to activate whenever the value is greater than the specified value.

CIRCUIT BREAKER INDEX

This page is selectable from the **MALFUNCTIONS/CIRCUIT BREAKERS** tab suite and allows you to trip the circuit breakers associated with the aircraft equipment specified on the button.

NOTE: Popped circuit breakers must be manually reset.

NAVIGATION/COMMUNICATIONS

Selectable from the **PAGE NAVIGATION TOOLBAR**, the Navigation/Communications tab suite provides access to the following pages:

- < **COMMS** page which allows you to simulate radio communication between the ground and the flight crew.
- < **ATIS (US)** page which allows you to manually control ATIS messages.
- < **RADIO STATIONS** page which allows you to fail and subsequently restore radio stations.
- < **GPS** page.

COMMS

This page is selectable from the **NAVIGATION/COMMUNICATIONS** tab suite and allows you to simulate radio communication between the ground and the flight crew.

TUNED FREQUENCIES

SELCAL	The display in each of the buttons (VHF 1, VHF 2, VHF 3, HF 1, HF 2) indicates the currently tuned frequency of each of the radio receivers.
MECH CALL	The display above the button indicates the station called from the flight deck. No display when there is no transmission. Selecting this button when station displayed above allows you to respond to a call from the flight deck. Selecting this button when no station displayed initiates a call from the ground crew to the flight deck. Chimes continue to sound until call acknowledged by flight crew, or self-cancel after 30 seconds.
PURS CALL	Initiates a cabin to cockpit call.

PRIVATE INTERPHONE

TO CM1 TO CM2 TO CM3	Allow you to communicate directly with the flight crew. Once selected, the boomset of the associated crew member is connected to your boomset in a separate audio system, allowing direct communication between you and the crew member. You do not need to use the mic PTT as a hot mic system is active. While private interphone is active, other crew members can receive and transmit as normal.
CABIN EVAC	

COCKPIT DOOR LOCKING SYSTEM

ROUTINE DOOR OPEN REQUEST	Sounds a chime to indicate a request for normal access to the cockpit.
EMERGENCY DOOR OPEN REQUEST	Sounds a continuous chime to indicate that emergency access to the cockpit has been obtained. The chime will continue to sound for two minutes. Selecting the button again will deactivate the chime.
SYSTEM STATUS	Displays the current status of the CDLS system as Open, Unlocking or Locked.

MISCELLANEOUS

RT CHATTER	Starts/stops radio chatter transmission. Chatter stops automatically when the instructor or flight crew transmit, and resumes two seconds after the end of the transmission.
COMM NOISE	Allows you to set a level of noise interference on the communications channels.

ATIS (1 OF 2)

This page is selectable from the **NAVIGATION/COMMUNICATIONS** tab suite and allows you to manually control ATIS messages.

ATIS messages are automatically created for each airport according to the weather conditions selected for the airport. When the conditions at the airport are changed, the associated ATIS message is automatically updated, and its information letter is incremented.

NOTE: The ATIS messages will be displayed in US format for all airports in the USA and in ICAO format for all other airports.

To manually update an ATIS message:

Select ATIS Override which stops the ATIS message automatically updating when the weather conditions for the airport change.

- < Select Airport, which displays **AIRPORT SELECT** page.
- < Select the airport where you want to update the ATIS message. ATIS page is redisplayed.
- < The values of the parameters in the current ATIS message are displayed.
- < Select the parameter you want to change and enter the new value.

The function of each touchpoint is described below:

AIRPORT	Displays AIRPORT SELECT page to allow you to select the required airport.
INFORMATION	Indicates the information letter (revision level) of the ATIS message (A to K). Selecting the button allows you to select previous revisions of the message for transmission.
UTC	Allows the time of the message to be set.
APPROACH TYPE	Allows you to select the type of radio navigation station used on approach.
RUNWAY IN USE	Allow active runway to be changed for currently selected airport.
ILS STATUS	Allows you to select the type of failure associated with the ILS on the currently active runway.
RUNWAY CONDITION PRECIPITATION VISIBILITY RESTRICTION CLOUD 1 CONDITION CLOUD 2 CONDITION	Allow the condition of the associated parameter to be changed

ATIS (ICAO) (2 OF 2)

WIND DIRECTION WIND SPEED VISIBILITY CLOUD 1 HEIGHT CLOUD 2 HEIGHT FIELD TEMPERATURE DEW POINT QNH QFE	Allow the value of the associated parameter to be changed.
RVR T/DOWN RVR MIDFIELD RVR STOP END	Allow the runway visual range (RVR) to be set for the associated points on the runway.
RVR INOP	Displays a pop-up menu, with selection options TDZ INOP, Midfield INOP and Rollout INOP, which allow you to suppress the broadcast of RVR information for the associated runway area.
BRAKING ACTION	Allows you to set the braking action of: Good, Good to Medium, Medium, Medium to Poor, Poor, Very Poor.
SIGMET	Displays significant meteorological information.
COMPLEMENTARY MESSAGE NO	Displays COMPLEMENTARY ATIS MESSAGE page.
ATIS OVERRIDE	Stops the ATIS message updating automatically to allow you to edit the message using the buttons on the page.



L3HARRIS

COMPLEMENTARY ATIS MESSAGE

This page is selectable from the **ATIS** page. It provides a range of messages, one of which may be appended to the ATIS broadcast, normally to advise of a situation (possibly a limitation or hazard) at the related airfield.

Select the row containing the required message to turn it on. To have no message select the No Message row.

GPS

This page is selectable from the **NAVIGATION/COMMUNICATIONS** tab suite.

No of Usable Satellites	Allows you to change the number of usable satellites.
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RADIO STATIONS

This page is selectable from the **NAVIGATION/COMMUNICATIONS** tab suite and allows you to fail and subsequently restore radio stations. The buttons on the right of the page allow you to select a radio station. The display at the left of the page lists the currently failed radio stations.

SELECT BY IDENTIFIER

VHF NAVAID NDB NAVAID AIRWAY MARKER ILS	Displays the alphanumeric keypad to allow you to enter a radio station identifier. After the identifier has been entered, a pop-up menu is displayed to allow you to select a specific radio aid at the station. NOTE: If the keypad identifier is unknown, the message Nothing Found is displayed on the pop-up menu.
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SELECT BY AIRPORT/RUNWAY REFERENCE

AIRPORT ICAO CODE	Displays the AIRPORT SELECT page to allow you to select the airport to be used as a reference for the ILS, Comm Stations and Landing Markers buttons.
RUNWAY	Displays pop-up menu to allow you to select the runway to be used as a reference for the ILS, Comm Stations and Landing Markers buttons.
ILS COMM STATIONS LANDING MARKERS	Display a pop-up menu listing the appropriate radio stations for the selected airport/runway. When you select a radio station, another pop-up menu is displayed to allow you to fail individual radio aids at the station.
RESTORE ALL FAILED STATIONS	Restores all failed radio stations.

PLOTS

Selectable from the **PAGE NAVIGATION TOOLBAR**, the Plots tab suite allows you to monitor the flight crew's performance on take-off and landing. This page comprises 4 tabs providing access to the following pages:

- < **APPROACH** page.
- < **RUNWAY** page.
- < **DEPARTURE** page.
- < **T/O AND LANDING PERFORMANCE** page.

APPROACH (1 OF 2)

This page is selectable from the **PLOTS** tab suite and consists of three graphs:

- < **Localiser deviation plot** (distance left/right from the localiser; Y axis scale is dependent on localiser beam width and X axis scale is dependent on Scale button selection)
- < **Glideslope deviation plot** (distance above/below the glideslope; Y axis scale is dependent on glideslope beam width and X axis scale is dependent on Scale button selection)
- < **Approach Speed plot** (aircraft speed and a reference speed; Y axis scale is 120 to 220 kt, X axis scale is dependent on Scale button selection).

The approach plots are active when the aircraft is in proximity to the active runway. The 'box' limits around the runway are:

- < Front: 12 nm
- < Back: Runway length
- < Side: 7000 ft either side
- < Top: 10 000 ft

The 'zero' point on the graphs is the latitude and longitude co-ordinate of the glideslope beam as defined in the Navigation Data, offset laterally to be on the runway centreline.

The localiser beam width and glideslope beam width and angle are obtained from the Navigation Data. If no data exists, the following defaults are used:

- < Localiser beam width: 4°
- < Glideslope beam width: 1.44°
- < Glideslope angle: 3°

By default, the localiser and glideslope beams are displayed with deviation lines at 1 and 2 dots either side of the beam centreline.

By default, the localiser and glideslope lines flash when the aircraft is within the proximity 'box' (4Nm) of the active runway but outside of the glideslope beam.

The plots are erased under the following conditions:

- < Change in active runway
- < When the Erase Track button is selected by the instructor

The lateral and vertical deviation graphs display a vertical yellow bar across the plot as an 'incident' marker. This is displayed when any malfunction is activated while these plots are active. The position of the marker is determined by the aircraft position at the time of the incident.

The position of Approach Landing Markers are displayed graphically (as cones) on the vertical deviation graph. The localiser and glideslope beams and the approach marker cones are displayed in red if the associated radio navigation stations are failed.

APPROACH (2 OF 2)

The position of Microbursts and Windshears are displayed using representative symbols (a shear sign and a spiral with a down arrow) on the lateral and vertical deviation graphs. The symbols are displayed in magenta.

The speed graph plots two parameters: aircraft speed (red) and a reference speed (Vref) (green).

The following data readouts and buttons are displayed in the plot toolbar area (directly below the Page Navigation Toolbar):

- < Elevation
- < Rwy Cond
- < Gusting To
- < C/L Dev

This is the current deviation distance in dots from the active runway centre line. It is always calculated, irrespective of the aircraft's position.

- < G/S Dev

This is the current deviation distance in dots from the active runway glideslope beam centreline (or virtual glideslope if non-GS equipped). It is always calculated, irrespective of aircraft position.

- < Max C/L Dev

This is the maximum localiser deviation from the active runway. It is always calculated, irrespective of the aircraft's position.

- < Max G/S Dev

This is the maximum glideslope deviation from the active runway. It is always calculated, irrespective of the aircraft's position.

- < TCH

This is the height at which the aircraft crosses the runway threshold as it flies down the ILS glideslope.

- < T/D Dist

This is the point to point distance from the aircraft to the active runway touchdown zone. This touchdown zone is represented on most runways as 2 large white blocks either side of the runway centreline, approximately 1000ft from the runway threshold.

- < T/D ROD

ERASE TRACK	Erases the current plot.
SCALE	Allows you to change the scale of the plot (auto, high, medium, low).

DEPARTURE

This page is selectable from the **PLOTS** tab suite and consists of three graphs:

- < Lateral deviation (distance left/right from the extended runway centreline; X and Y axis scales are dependent on Scale selection)
- < Altitude (aircraft altitude; X and Y axis scales are dependent on Scale selection)
- < Speed (aircraft speed; Y axis scale is 100 to 250 kt, X axis scale is dependent on Scale button selection)

The departure plots are active when the aircraft is in proximity to the active runway. The 'box' limits around the runway are:

- < Front: 0 nm (ie., active runway threshold)
- < Back: 12 nm
- < Side: 15 000 ft either side
- < Top: 10 000 ft

The 'zero' point on the graphs is the active runway threshold.

The runway image on the lateral deviation graph is sized to the actual runway length as defined in the Navigation Data.

The plots are erased under the following conditions:

- < Change in active runway
- < When the Erase Track button is selected by the instructor

The lateral and vertical deviation graphs display a vertical yellow bar across the plot as an 'incident' marker. This is displayed when any malfunction is activated while these plots are active. The position of the marker is determined by the aircraft position at the time of the incident.

The position of Microbursts and Windshears are displayed using representative symbols (a shear sign and a spiral with a down arrow) on the lateral deviation and altitude graphs. The symbols are displayed in magenta.

The following data readouts and buttons are displayed in the plot toolbar area (directly below the Page Navigation Toolbar):

- < Elevation
- < Rwy Cond
- < Gust

ERASE TRACK	Erases the current plot.
SCALE	Allows you to change the scale of the plot (auto, high, medium, low).

RUNWAY

This page is selectable from the **PLOTS** tab suite and consists of four graphs:

- < A/C Position (aircraft position on the runway; Y axis scale is dependent on runway width, X axis scale is dependent on runway length)
- < Brakes (left and right pedal deflection; Y axis scale is 0 to 100 %, X axis scale is dependent on runway length)
- < Speed (aircraft speed; Y axis scale is 0 to 200 kt, X axis scale is dependent on runway length)
- < Rudder Pedals (deflection left (negative) and right (positive) in degrees; Y axis scale is -20° to +20°, X axis scale is dependent on runway length)

The runway plots are active when the aircraft is on the active runway or less than 35 ft above it.

The 'zero' point on the graphs is the active runway threshold.

The graphs are sized to the actual active runway length as defined in the Navigation Data. There is no Scale control.

The plots are erased under the following conditions:

- < Change in active runway
- < When the Erase Track button is selected by the instructor

The position of Microbursts and Windshears are displayed using representative symbols (a shear sign and a spiral with a down arrow) on the aircraft position graph. The symbols are displayed in magenta.

The aircraft position graph displays a vertical yellow bar as an 'incident' marker. This is displayed when any malfunction is activated while this plot is active.

The following data readouts and buttons are displayed in the plot toolbar area (directly below the Page Navigation Toolbar):

- < Elevation
- < Rwy Cond
- < Gusting To

Erase Track

Erases the current plot.



T/O AND LANDING PERFORMANCE (1 OF 4)

This page is selectable from the **PLOTS** tab suite and displays the values of various aircraft parameters during take-off, landing or go-around phases to enable the performance of the flight crew to be checked.

The values of the parameters are displayed automatically when the aircraft enters the appropriate phase of the flight. The parameters are grouped into two types:

- < Type 1, which are snapshots at a particular moment in time and are cleared whenever a new Take-off or Landing Phase is detected.
- < Type 2, which are updated in real time and change as the value of the parameter changes.

TAKEOFF PERFORMANCE

The takeoff phase is initiated when:

- < Aircraft is on ground
and
- < Aircraft < 200ft from runway centreline
and
- < Ground speed > 0.1 kt
and
- < Either TLA $\geq 50^\circ$

This is the origin for calculations of distance and time.

T/O AND LANDING PERFORMANCE (2 OF 4)

The Takeoff phase ends when:

- < Gear and flaps are up
or
- < Takeoff Reset is selected
or
- < In-air Reposition is selected
or
- < Aircraft On Jacks is selected

T/O POSN (TYPE 1)	When above conditions are satisfied.
V1 (TYPE 1)	If T/O detected and calibrated airspeed $\geq$ V1 as calculated by the host software using the QRH data.
VR (TYPE 1)	If T/O detected and calibrated airspeed $\geq$ VR as calculated by the host software using the QRH data.
V2 (TYPE 1)	If T/O detected and calibrated airspeed $\geq$ V2 as calculated by the host software using the QRH data.
VLOF (TYPE 1)	If T/O detected and aircraft no longer on ground.

After calibrated airspeed has exceeded 40 kt:

ENG FAIL (TYPE 1)	If N1 on either engine $\leq$ 70% and both TLAs have not changed by more than 1°
POWER IDLE (TYPE 1)	If on ground and both TLAs $\leq$ 5°
BRAKE ON (TYPE 1)	If on ground and either of the outboard tyre forces = 1000 lbs
REVERSERS (TYPE 1)	If on ground and either TLA $\leq$ -90°
VSTOP (TYPE 1)	When aircraft is on ground and ground speed $\leq$ 10 kts
15 FT HT AGL (TYPE 1)	If radio altitude $\geq$ 15 ft
35 FF HT AGL (TYPE 1)	If radio altitude $\geq$ 35 ft

2ND SEG GRAD (TYPE 2)

Updated in real time with the average climb gradient to the current point from where the gear has been raised and there is a positive rate of climb. This is continually updated to the point where the flaps are moved from take-off setting. This last calculated gradient (which is effectively the average over the whole segment) is held after the flaps start to move. This value is held until the initiation of another T/O Phase is detected.

T/O AND LANDING PERFORMANCE (3 OF 4)

LANDING PERFORMANCE

The Landing Phase is initiated when:

- < Aircraft is not on ground
and
- < Rate of climb $\leq -200\text{ft/min}$
and
- < Radio altitude $\leq 100\text{ ft}$
and
- < Calibrated airspeed $\geq 1.5 \times$ (stall speed of current configuration)

The Landing Phase ends when:

- < Takeoff Reset is selected
or
- < In-air Reposition is selected
or
- < Aircraft On Jacks is selected

50 FT AGL (TYPE 1)	When radio altitude $\leq 50\text{ ft}$
T/D POINT (TYPE 1)	When any strut has load on it. This is the origin for the time and distance calculations for 50 FT AGL and VSTOP.
VSTOP (TYPE 1)	When aircraft is on ground and ground speed $\leq 10\text{ kts}$

T/O AND LANDING PERFORMANCE (4 OF 4)

GO-AROUND (GA) PHASE

The GA Phase is initiated when:

- < Aircraft is in Landing Phase
- < Either TLA $\geq 50^\circ$
- < Rate of climb is positive
- < Radio altitude < 2000 ft

APP CLIMB GRAD (TYPE 2)

Updated in real time with the average gradient to the current point from where a GA Phase has been detected and the gear is up. This is continually updated to the point where the GA Phase is no longer valid. This last calculated gradient is effectively the average over the whole of the segment. This value is held until initiation of another landing is detected.

LDG CLIMB GRAD (TYPE 2)

Updated in real time with the average gradient to the current point from where a GA Phase has been detected and the gear is down. This is continually updated to the point where the GA Phase is no longer valid. This last calculated gradient is effectively the average over the whole of the segment. This value is held until initiation of another landing is detected.

POSITION CONTROL

Selectable from the **PAGE NAVIGATION TOOLBAR**, the Position Control tab suite comprises 3 tabs providing access to the following pages:

- < **REPOSITION** page which allows you to reposition the aircraft relative to any selected airport and runway.
- < **AIRCRAFT SLEW** page.
- < **PUSHBACKS** page.

AIRCRAFT SLEW

This page is selectable from the **POSITION CONTROL** tab suite.

NOTE: Flight Freeze is set automatically during reposition.

AIRCRAFT	Allows aircraft to be repositioned relative to its current position. Selecting a touchpoint moves the aircraft in that direction. Releasing the touchpoint stops the action.
GEOGRAPHIC	Allows aircraft to be repositioned relative to its geographic heading. Selecting a touchpoint moves the aircraft in that direction. Releasing the touchpoint stops the action.
HEADING ALTITUDE (AMSL) SPEED MACH NO	Allow value of associated parameters to be changed.
SPEED	Allows aircraft ground speed to be changed.
TARGET LAT/LON	Allow geographic position of the aircraft to be set. Select Activate to confirm setting.
ACTIVATE SLEW	Confirms the requested LAT/LONG setting.
SPEED UP	Allows a change in speed taken to activate slew (x1, x2 or x4).
CONTINUOUS HEADING - LEFT CONTINUOUS HEADING - RIGHT	

PUSHBACKS

This page is selectable from the **POSITION CONTROL** tab suite.

Selection of any pushbacks is prevented by:

- < Flight Freeze selected ON
- < Position Freeze selected ON
- < Reposition being actioned
- < Ground Cart connected to the aircraft
- < External Air connected to the aircraft
- < Thrust to high, such that the tug would be pushed back
- < Aircraft moving
- < Aircraft in Flight

INSERT NWS PIN	Disconnects nosewheel steering from rudder pedals.
NOSE RIGHT	Aircraft is reversed from ramp and turned 90° to the left.
NOSE LEFT	Aircraft is reversed from ramp and turned 90° to the right.
STRAIGHT	Aircraft is reversed from ramp in a straight line.

REPOSITION (1 OF 2)

This page is selectable from the **POSITION CONTROL** tab suite and the **CRASH CONDITIONS** page and allows you to reposition the aircraft relative to any selected airport and runway.

To initiate a reposition, select the appropriate touchpoint. Flight freeze is set automatically during the reposition. When the reposition is completed, deselect Flight Freeze to continue the training exercise.

Details of each of the repositions are given below:

						Configuration		
	Distance along extended centreline, or "On G/S"	Cross Track	Heading	Altitude	Speed	Gear	Flaps	Speedbrake
On Ground								
Takeoff	According to the Airport/Runway in use. Hold point aligned will be the hold closest to the landing strip end. Taxi point will be approximately 2000 ft back from the hold position.				-	Down	2	armed
Opposite Takeoff				ON GND	-	Down	2	armed
Taxi				ON GND	-	Down	1	armed
Hold				ON GND	-	Down	1	armed
Ramp / Gate	According to Airport in use			ON GND	-	Down	0	armed
In Air								
Final 12 nm	12 nm	ON LOC	RW	On G/S	Calculated	Up	1	stowed
Final 7 nm	7 nm	ON LOC	RW	On G/S	Calculated	Up	2	stowed
Final 3 nm	3 nm	ON LOC	RW	On G/S	Calculated	Down	Full	armed
3000 ft 12 nm 2 nm L	12 nm	2 Nm Left	-	3000 ft	Calculated	Up	1	stowed
3000 ft 12 nm 2 nm R	12 nm	2 Nm Right	-	3000 ft	Calculated	Up	1	stowed
LH Down Wind 1500ft	-2.0 nm	3 Nm Left	RW+180	1500 ft	Calculated	Up	1	stowed
RH Down Wind 1500ft	-2.0 nm	3 Nm Right	RW+180	1500 ft	Calculated	Up	1	stowed
Air Work								
FL350 150 Nm	50 Nm	ON LOC	RW	35000 ft	0.78 MACH	Up	0	stowed
FL200 90 Nm	90 Nm	ON LOC	RW	20000 ft	280	Up	0	stowed
FL100 30 Nm	30 Nm	ON LOC	RW	10000 ft	250	Up	0	stowed

REPOSITION (2 OF 2)

REFERENCE AIRPORT	Displays the AIRPORT SELECT page which allows you to select the airport that will be used for the next reposition. When reposition is selected, the selected airport becomes the active airport. The currently selected airport is displayed in the button.
REFERENCE RUNWAY	Displays a pop-up menu which allows you to select the runway that will be used for the next reposition. When reposition is selected, the selected runway becomes the active runway. The currently selected runway is displayed in the button.
ARRIVAL AIRPORT	Displays the AIRPORT SELECT page which allows you to select the destination airport. The currently selected airport is displayed in the button.
ARRIVAL RUNWAY	Displays a pop-up menu which allows you to select the runway. The currently selected runway is displayed in the button.
AIRWORK REPOSITIONS	Displays a popup menu to allow you to select a high altitude reposition.
SPECIAL REPOSITIONS	Special Repositions allow unique in air repositions to be set up for a particular airport and runway. This is in addition to the normal in air repositions available from the Reposition page. The Special Reposition button on the IOS is only authorised when Special Repositions have been set up for the reposition airport. When a Special Reposition is selected it triggers the same sequence of events as a normal in air reposition including visual blanking, CNIA popup, aircraft trimming and flight freeze activation. The required latitude, longitude, heading, altitude etc. for special repositions cannot be modified by the Instructor, but can be set by a technician via the apts XML file.

SIMULATOR CONTROL

Selectable from the **PAGE NAVIGATION TOOLBAR**, the Simulator Control tabs provide access to the following pages:

- < **MASTER INDEX** page which allows access to most used pages.
- < **CUSTOMER OPTIONS** page which allows you to recall sets of predefined configurations that are specific to particular customers.
- < **DEVICES/TOOLS** page.
- < **SNAPSHOT** page.
- < **IOS E-PRINT** page.
- < **LESSON PLAN** page.
- < **UPRT** page.
- < **SMOKE** page.

MASTER INDEX

This page is selectable from the **SIMULATOR CONTROL** tab suite and the **TOOLBAR**.

SET UP

SERVICES	Displays the SERVICES tab on Aircraft Control page.
REPOSITION	Displays the REPOSITION tab on Position Control page.
AIRCRAFT WEIGHTS	Displays the AIRCRAFT WEIGHTS tab on Aircraft Control page.
ENVIRONMENT	Displays the BASIC tab on Environment Control page.
FLIGHT PLAN	Displays the FLIGHT PLAN tab on Aircraft Control page.

CONTROL

REEZE / RESETS	Displays the MAIN FREEZES / RESETS tab on the Freeze / Resets page.
PUSHBACKS	Displays the PUSHBACKS tab on the Position Control page.
SLEWS	Displays the AIRCRAFT SLEW tab on the Position Control page.
COMMUNICATIONS	Displays the COMMS tab on the Navigation / Communications page.
ATIS	Displays the ATIS (ICAO) tab on the Navigation / Communications page.
RADIO STATIONS	Displays the RADIO STATIONS tab on the Navigation / Communications page.
DISPLAY UNITS	Selects the displayed units as either US or Metric.
TCAS	Displays the PREDICTABLE SCENARIOS tab on the Traffic page.
AIRPORT TRAFFIC	Displays the AIRPORT TRAFFIC tab on the Traffic page.
SNAPSHOT	Displays the SNAPSHOT tab on the Simulator control page.
LESSON PLAN	Displays the LESSON PLAN tab on the Simulator Control page.

STATUS

FLIGHT CONDITIONS	Displays the FLIGHT CONDITIONS tab on the Status / Monitor page.
CRASH CONDITIONS	Displays the CRASH CONDITIONS tab on the Status / Monitor page.
CNIA	Displays the CNIA tab on the Status / Monitor page.
MALF / CB STATUS	Displays the MALF / CB STATUS tab on the Status/Monitor page.
MOTION INTERLOCKS	Displays the MOTION INTERLOCKS tab on the Status/Monitor page.
SIM MESSAGE LOG	Displays the SIM MESSAGE LOG tab on the Status/Monitor page.

MISCELLANEOUS

MAINTENANCE	Display the MAINTENANCE INDEX page once a password is entered.
INSTRUCTOR'S REFERENCE MANUAL	Displays the Instructor's Reference Manual.
IOS DEVICES/TOOLS	Displays DEVICES/TOOLS page on Simulator Control tab.

MAINTENANCE INDEX

This page is selectable from the **PAGE NAVIGATION TOOLBAR** and lists all the available Maintenance pages which are provided for use by the technician to set up the IOS and to run acceptance tests on the simulator.

Use of the pages is password-protected.



CUSTOMER OPTIONS

This page is selectable from the **SIMULATOR CONTROL** tab suite and allows you to recall sets of predefined configurations that are specific to particular customers.

DEVICES/TOOLS

This page is selectable from the **SIMULATOR CONTROL** tab suite.

PRINTING

PRINT DESTINATION	Allows you to select to print to either offboard or onboard printers or to a file.
--------------------------	--

SOUND

VOLUME	Allows you to select the level of volume, from a 0 to 100%.
---------------	---

MUTE	Toggle button allowing you to mute the volume.
-------------	--

TOOLS

DISPLAY UNITS	Allows you to choose between metric and US units.
----------------------	---

BLANK SCREEN	Displays a blank screen. Click anywhere on blank screen to return to previous page.
---------------------	---

DOCUMENT VIEWER	Displays the DOCUMENT VIEWER page.
------------------------	---

STOPWATCH

PLAY	Select to start or pause stopwatch.
-------------	-------------------------------------

STOP	Select to stop and reset stopwatch.
-------------	-------------------------------------

DOCUMENT VIEWER

This page is selectable from the **DEVICES/TOOLS** page and provides the ability to view selected PDF files.

PDF files saved in the /doc folder and subfolders will be available for selection.

FOLDER UP	Displays the contents of the parent directory in the table.
VIEW	Displays the currently selected PDF file.
LOAD FROM USB DRIVE	Allows you to select a PDF file stored on a USB drive for viewing.

SNAPSHOT (1 OF 2)

This page is selectable from the **SIMULATOR CONTROL** tab suite.

The snapshot system allows you to record the condition of the simulator during a flight so that you can re-configure the simulator to that condition at a later time in order to repeat an exercise or incident. The system is capable of storing ten selectable snapshots.

EDIT TITLE	:
TAKE	The simulator conditions are stored in the snapshot and displayed on the page.
LOCK	Locks the data in the selected snapshot so that it cannot be erased. Second selection unlock the data.
ERASE	Erases the data from the selected snapshot (only available if not locked).
RECALL	Resets the simulator to the configuration specified by the selected snapshot (as shown in the SNAPSHOT display).
RELEASE	Releases the current snapshot

TAKING SNAPSHOTS

Select Number and from the pop-up displayed, select the number (between 1 and 10) of the snapshot where you want to store the data.

If the snapshot selected contains data, the snapped values are displayed on the page. If you no longer require this snapshot, select Erase to clear the data. If you do want to retain the snapshot, select another number.

Select Take. The simulator conditions are stored in the snapshot and displayed on the page.

NOTE: Armed malfunctions are not recorded as part of the snapshot as they are not active and do not for part of the current state of the simulator.

SNAPSHOT (2 OF 2)

RECALLING SNAPSHOTS

- < Select Number and from the pop-up displayed select the number of the snapshot you want to recall.
- < Select Recall to re-configure the simulator to the conditions in the snapshot. Flight Freeze is set automatically during the reposition.
- < Deselect Flight Freeze in the Direct Actions Area to re-run the exercise from the point of snapshot.

NOTE: Armed malfunctions will be cleared and any active lesson plan will be stopped following a snapshot recall.

CLEARING SNAPSHOTS

- < Select Erase All to remove all unlocked snapshot data.
- < Select Erase to remove the data from the selected snapshot (if unlocked).

LOCKING SNAPSHOTS

- < Select Lock to prevent the selected snapshot from being erased.
- < Re-select Lock to unlock the snapshot so that the data can be erased and a new snapshot taken.

IOS E-PRINT

This page is selectable from the **SIMULATOR CONTROL** tab suite.

OPEN FOLDER	Allows you to select the required folder
FILE TYPE / FILE NAME	Lists files in the selected folder
SESSION NAME	Allows you to add a name to the session
REFRESH TABLE	Allows you to refresh the table of file types and names
VIEW	Allows you to view a file
PRINT HARD COPY	Allows you to print the selected files
PRINT OPTIONS	Opens the Image Operations pop-up which allows you to: < Push Selected Image To Network < Push All Images To Network < Push Selected Image to USB < Push All Images to USB < Delete Selected Image < Delete All Images < Cancel

LESSON PLAN INDEX (1 OF 3)

This page is selectable from the **PAGE NAVIGATION TOOLBAR** and allows you to select the appropriate lesson plan for the training exercise. Selection may be from either the displayed table or loaded from a USB drive.

The lesson plan system enables a training session to be run automatically or semi-automatically with minimum instructor intervention.

Each lesson plan consists of a series of events which are executed sequentially. The events can be activated automatically when a condition is satisfied (for example, when a quantity reaches a specific level, or a pre-defined altitude is reached), or manually by selecting a button. In addition, it is possible to have non-sequential events in the lesson plan which do not form part of the sequential flow but can be selected at any time.

The lesson plans are created off-line using the Lesson Plan Editor utility.

The lesson plans can be displayed in either Profile view or List view.

NOTE: A lesson plan may be 'locked' in either view from the Editor.

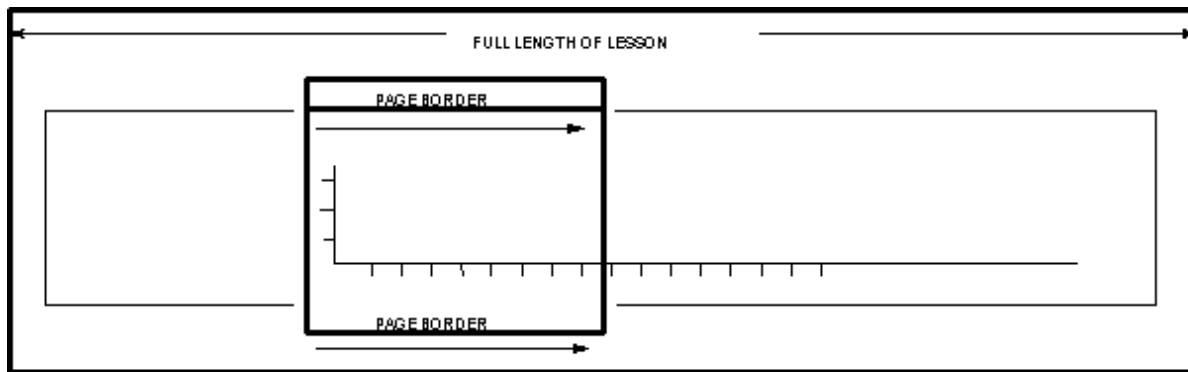
When a lesson plan is selected, the associated lesson plan is displayed in either Profile view or List view, as defined in the Editor when the lesson plan is created.

Only one lesson plan can be active (running) at any time.

PROFILE VIEW

The lesson plans are displayed graphically as a plot of altitude (vertical axis) against time (horizontal axis). Each lesson plan can be several hours in duration, but only a section of the plan can be displayed at any one time. Therefore, the display scrolls automatically from left to right as the lesson proceeds, keeping the current section of the lesson on the screen. Scroll arrows are provided to allow you to manually scroll through the lesson plan. A 'time-bar' is displayed along the horizontal axis indicating the elapsed time since the lesson plan started.

LESSON PLAN INDEX (2 OF 3)



AT1043

Each lesson plan consists of a series of numbered events which are displayed as buttons on the screen. As the lesson progresses, the events are activated sequentially. Automatic events (indicated by an A) occur when the pre-set conditions are met; manual events (indicated by an M) require action by you before they become active. To execute a manual event, either touch the button and then select Execute from the pop-up menu, or select Enter Item. To override the preset conditions for an automatic event, either touch the button and then select Execute from the pop-up menu, or select Enter Item. In addition, you can override the event sequence to repeat or skip a particular section (for example). To jump to a particular event, select the appropriate button and then select Goto from the pop-up menu.

The status of each event in the lesson plan is indicated by the colour of the associated button. The button is normally blue and changes to orange when the event is active (ie., it is the current event), then to red when the event is executing. The button changes to dark green when the event is completed. If the lesson plan is not running, all the buttons are grey and cannot be selected.

Events may have more than one set of associated actions and you can change the set that is active for the current lesson plan. To select a different set of actions, touch the button and then select the appropriate button on the pop-up menu. The selection of a non-default set has to be made before the corresponding event is executed. The sets of actions are mutually exclusive so that only one set will be activated during the execution of the lesson plan.

If an event has multiple actions, the actions will be executed sequentially.

LESSON PLAN INDEX (3 OF 3)

In the Lesson Plan Editor, it is possible to create complete sequencing scenarios by linking two events that would otherwise be disjointed. At run time, once the first linked event has been completed, the second linked event will become the current event; all intervening events are ignored.

List View

The lesson plans are displayed in a vertically sequenced list with the initial event at the top of the screen. As the lesson progresses, the display scrolls vertically to keep the current section of the lesson on the screen. Scroll arrow buttons are provided to allow you to manually scroll through the lesson plan. Operation of the lesson plan is the same as in Profile view.

Operating a Lesson Plan

Buttons are provided in the Lesson Toolbar to allow you to control the lesson:

- < Play (or Stop). Selecting Play starts the lesson plan. Selecting Stop stops the lesson plan.
- < Enter Item, which allows you to activate manual events. Automatic events also respond to Enter Item and act as if the associated preset conditions have been satisfied.
- < Mode, which allows you to switch between Manual and Automatic modes. In Manual mode, automatic events must be manually selected before the event will start to monitor the preset conditions.

NOTE: A lesson plan can be 'locked' in either mode from the Lesson Plan Editor.

- < View, which switches between Profile and List view.
- < Back and Forward arrow buttons, which allow you to scroll through the lesson plan.

The lesson stops automatically when the last event has finished executing.

UPSET AND RECOVERY TRAINING (UPRT) (1 OF 9)

The UPRT page is selectable from the **SIMULATOR CONTROL** tab suite.

This page allows you to set aircraft upset scenarios, and provides reposition scenarios that put simulation into target upset attitudes to enable Upset Recovery Training whilst providing additional instructor feedback.

CS-FSTD(A) Issue 2, AMC9 FSTD(A).300(a)(2)(iii); The stall manoeuvres stated in CS-FSTD(A) have been fully assessed during the initial evaluation, it has been confirmed that simulator is representative of the aircraft and the models provided by the OEM have been correctly integrated. See the Statement of Compliance (SoC) in the Front Document, which contains a statement that the required manoeuvres can be supported by the aerodynamics model installed on this FSTD.

SCENARIO CONTROL

MANOEUVERS (RECOVERY TRAINING)	Displays the MANOEUVERS (Recovery Training) page.
SCENARIOS (PREVENTION TRAINING)	Displays the SCENARIOS (Prevention Training) page.

ROLL OFF

In order to meet regulatory qualification requirements, at the point of stall the aerodynamic modelling can provide an un-commanded roll response or roll-off, requiring significant control deflection to counter. The modelling also provides apparent randomness or non-repeatability. The Instructor can select the Roll Off intensity and the direction of roll either banking the aircraft to the left or right.

Quick selection buttons for either direction of roll with light, moderate and severe roll rates can be initiated. The roll off intensity can be pre-selected prior to stall event or modified during the stall event to adjust the response behaviour of the aerodynamic model. The effects of the roll off are removed post stall recovery and re-activated upon re-entry into the stall. Selection of an intensity of 0.0 will result in no un-commanded roll response or roll-off during the stall event.

ROLL OFF INTENSITY	Instructor can select the Roll Off intensity
CLEAR ALL UPRT PLOTS	Clears all UPRT plots (Simulator Envelope, Aircraft Limits and UPRT Time History plots)
CRASH INHIBIT	Inhibits Recoverable Crashes
DIRECT LAW	Reverts Flight Control systems to Direct Law
ALTERNATE LAW	Reverts Flight Control systems to Alternate Law

INSTRUCTOR FEEDBACK

SIMULATOR ENVELOPE	Displays the Simulator Envelope Graph
AIRCRAFT LIMITS	Displays the Aircraft Limits Graph
FLIGHT CONTROLS / STANDBY INSTRUMENTS	Displays the Flight Controls and Standby Instruments repeats
AC PARAMETER - TIME / HISTORY PLOTS	Displays plots of pertinent parameters against time
FLIGHT CONTROLS - TIME / HISTORY PLOTS	Displays plots of pertinent parameters against time
AIRCRAFT LIMITS AND CONTROLS	Displays the Aircraft Limits Graph and a selection of pertinent Flight Controls repeats
AIRCRAFT LIMITS AND TIME HISTORY	Displays the Aircraft Limits Graph and a selection of pertinent Flight Controls repeats
AIRCRAFT LIMITS, LOAD FACTOR AND AIRSPEED	Displays the Aircraft Limits Graph and Load Factor and Airspeed plots

MANOEUVRES (RECOVERY TRAINING) (1A)

Pitch Up: 40 ° Wings Level	Pitch Down: -25 ° Wings Level	Pitch Up: 30 ° Bank Left: -60 °	Stall
Pitch Up: 30 ° Bank Right: 60 °	Pitch Down: -20 ° Bank Left: -70 °		
Pitch Down: -20 ° Bank Right: 70 °	Pitch Down: 0 ° Wings Level		
FL 350	Upset Recovery Scenarios - Aircraft will be slewed to the target attitudes for recovery training		Direct Law
FL 150			Alternate Law
FL 050	Note: Altitude Selection is Optional		Execute

SELECT DIRECT OR ALTERNATE LAW

MANOEUVRE BASED

Reposition scenarios that put simulation into target upset attitudes to enable Upset Recovery Training.

When a 'Recovery' scenario is selected by the instructor, the aircraft is slewed to the selected Pitch and Roll (and altitude, if selected) and trimmed at a pre-determined airspeed.

At the end of the 'slew' the simulator is frozen (*Flight Freeze*). When Flight Freeze is released by the instructor, the controls will perform normally and recovery can be carried out without exceeding the 'high confidence' limits of the aerodynamic model.

The stall scenario behaves in the same way, except that the aircraft is trimmed in straight & level flight, at a low speed, in preparation for a manual stall entry manoeuvre.

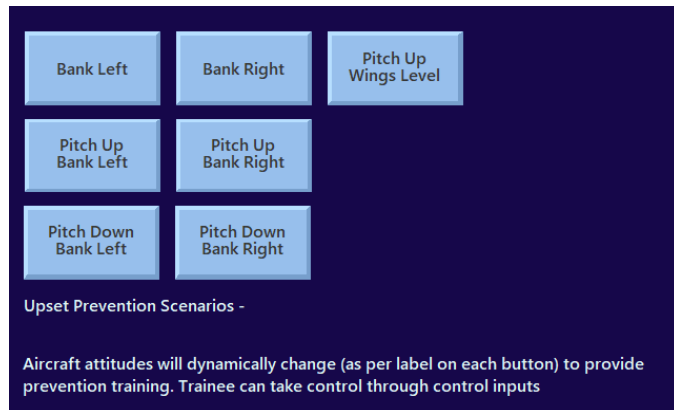
Selection of a scenario will also set the 'crash inhibit' function, which will avoid activation of **FLIGHT FREEZE** during recovery in the event of a crash condition activation.

Most unusual attitude and stall training require the aircraft to be in alternate or direct law. The STALL button slews the aircraft to an airspeed close to VLS.

Note: For the Stall Demo to operate, the Throttles must be set to idle. If they are not set to idle, the scenario will revert back to the normal simulation mode.

SCENARIOS (PREVENTION TRAINING) (1B)

This page is selectable from the **UPRT** page.



SCENARIO BASED (STARTLE EFFECT)

Startle effect scenarios that disturb Aircraft in normal flight and can lead to exceeding normal flight envelope if Upset not prevented.

The scenarios are selected whilst in normal flight and apply a disturbance to the aircraft in pitch/roll, via the aerodynamic coefficients, as indicated on the IOS popup.

Whilst these are active the controls continue to function normally and any control input made by the pilots will remove the upset drive, allowing recovery.

A full recovery is again possible without exceeding the '*high confidence*' limits of the aerodynamic model.

TOOLBAR

The following toolbar is displayed in the toolbar area, for each selected Instructor Feedback page.

UPRT Index	Returns to the UPRT Index page	Clear UPRT Plots	Clears all UPRT plots (Simulator Envelope, Aircraft Limits and UPRT Time History plots)
Sim Env	Displays the Simulator Envelope Plot page	AC Limits	Displays the Aircraft Limits Plots page
Ctrls/ Instr	Displays the Flight Controls / Standby Instruments page	Limits/ Ctrls	Displays the Aircraft Limits and Controls page
Limits/ Ctrls Plots	Displays the Aircraft Limits and Time History page	Limits/ LF/Spd Plots	Displays the Aircraft Limits, Load Factor and Airspeed page
Aircraft Params	Displays the AC Parameter - Time / History Plots page	Flight Ctrls	Displays the Flight Controls - Time / History Plots page
Flight Freeze	Freezes aerodynamic parameters (aircraft speed, attitude, altitude and geographical position). Aircraft systems remain operational.		

SIMULATOR ENVELOPE (2 OF 9)

The parameters being plotted and the underlying envelopes reflect the current aircraft configuration (Flaps position). Plots Angle of Attack (α) vs Sideslip angle (β). Three underlying envelopes are shown that indicate where the source data for the simulator aerodynamic model has come from, this indicating to the instructor the level of confidence that the simulator is behaving like the aircraft:

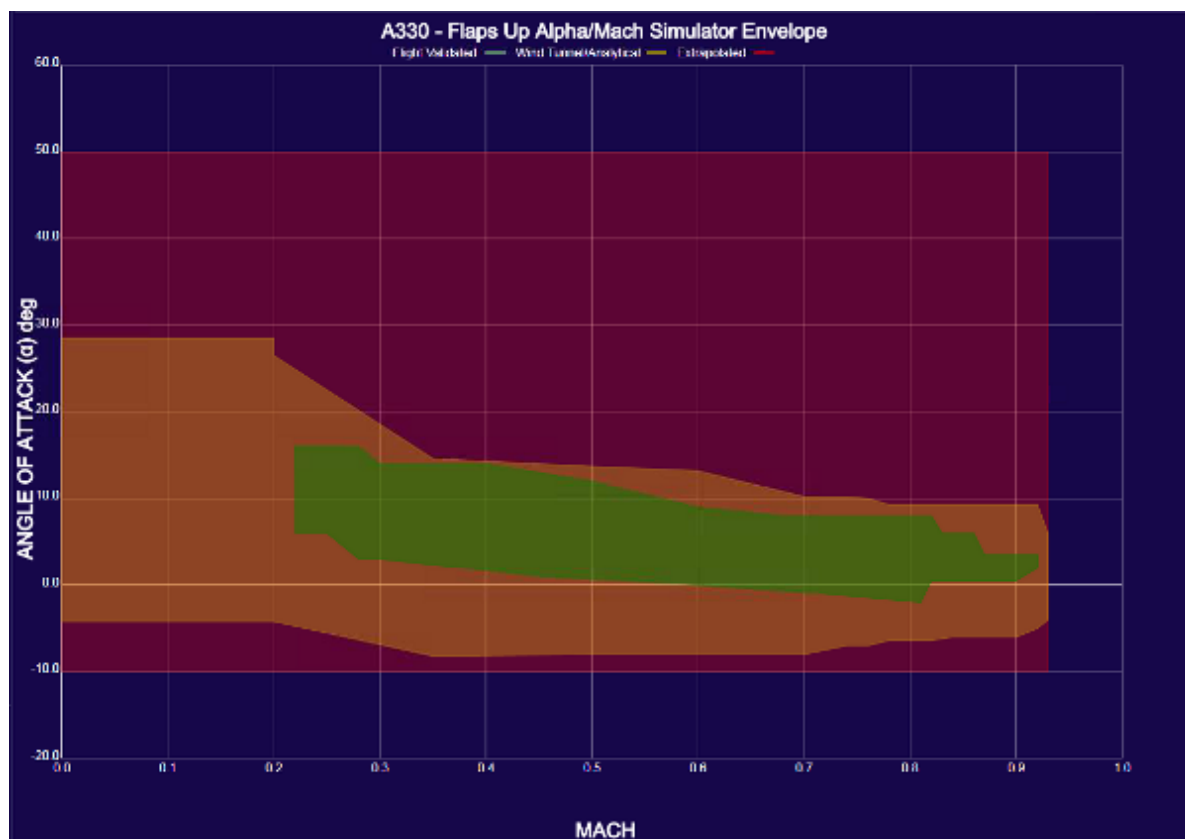
- **Green** - Flight Test Data, high confidence
- **Yellow** - Wind Tunnel / Analytical Data, medium confidence
- **Red** - Extrapolated Data, low confidence

The colour of the plot line reflects the envelope that the plot point is in.

The source of the data is described in the QTG Statement of Compliance, and is provided by the Airframe Manufacturer

Where appropriate (as determined by the current aircraft configuration), allows you to select which type of plot is displayed.

SIMULATOR ENVELOPE PLOT



AIRCRAFT LIMITS (PAGE 3 OF 9)

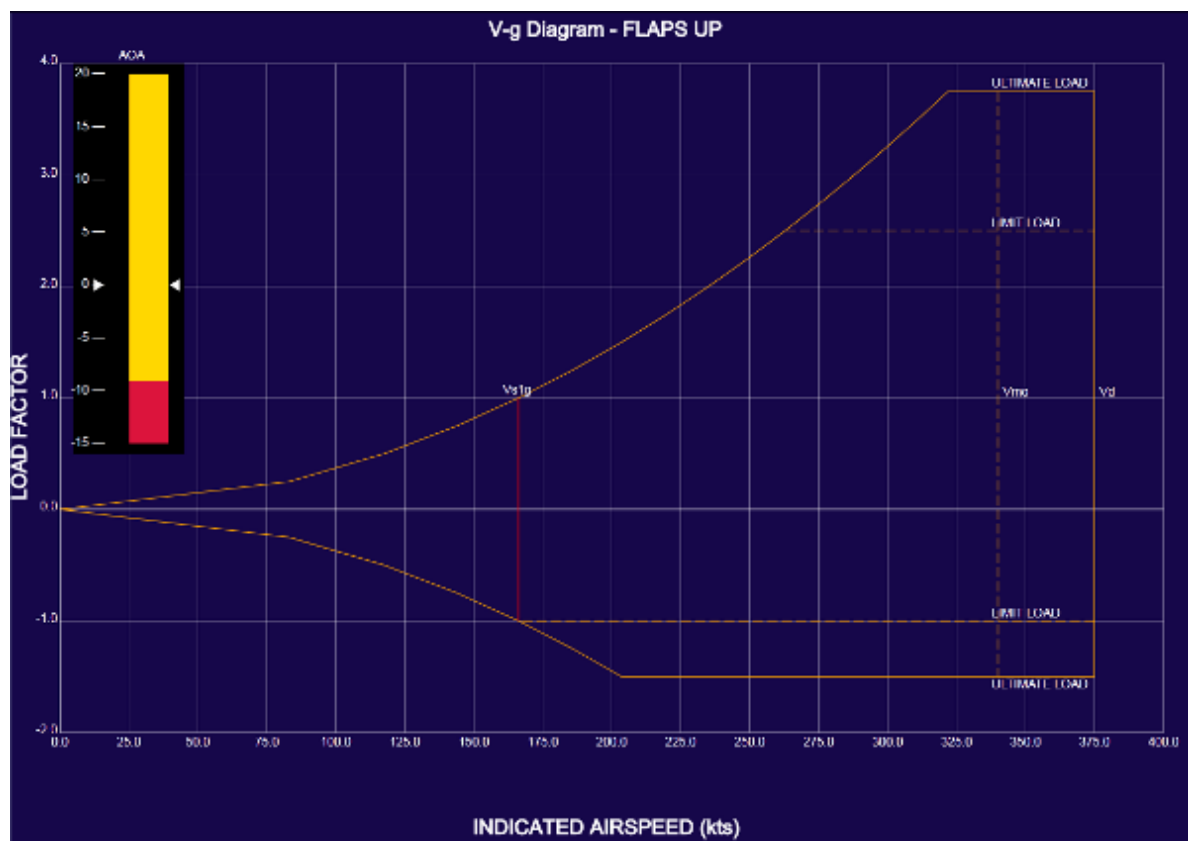
Often referred to as a V-n diagram, V-g diagram or aircraft manoeuvre envelope, this plot shows the structural limits of the airframe. A vertical red line indicates the 1g stall speed (V_{s1g}). The colour of the plot point reflects the portion of the envelope that the plot point is in.

From initiation, up to 10 minutes of data plotting is available. Plotting will pause when Flight Freeze is selected

The plots shows Load Factor (n) vs Indicated Airspeed. A dynamic envelope is drawn with boundaries for Limit Load and Ultimate Load, the envelope varies with current aircraft configuration.

Inset in the graph is a view of the current Angle of Attack. Pointers are displayed for Alpha and Alpha stall. Note: Alpha Stall is not the same as the Stall Warning Alpha.

AIRCRAFT LIMITS PLOT



FLIGHT CONTROLS / STANDBY INSTRUMENT (PAGE 4 OF 9)

This page contains repeats for the flight controls, allowing the instructor to see the crew inputs.

The yoke and pedal images translate to display control position.

The graphical indications outboard of the control indicate the force being applied on the control.

CONTROL REPEATS

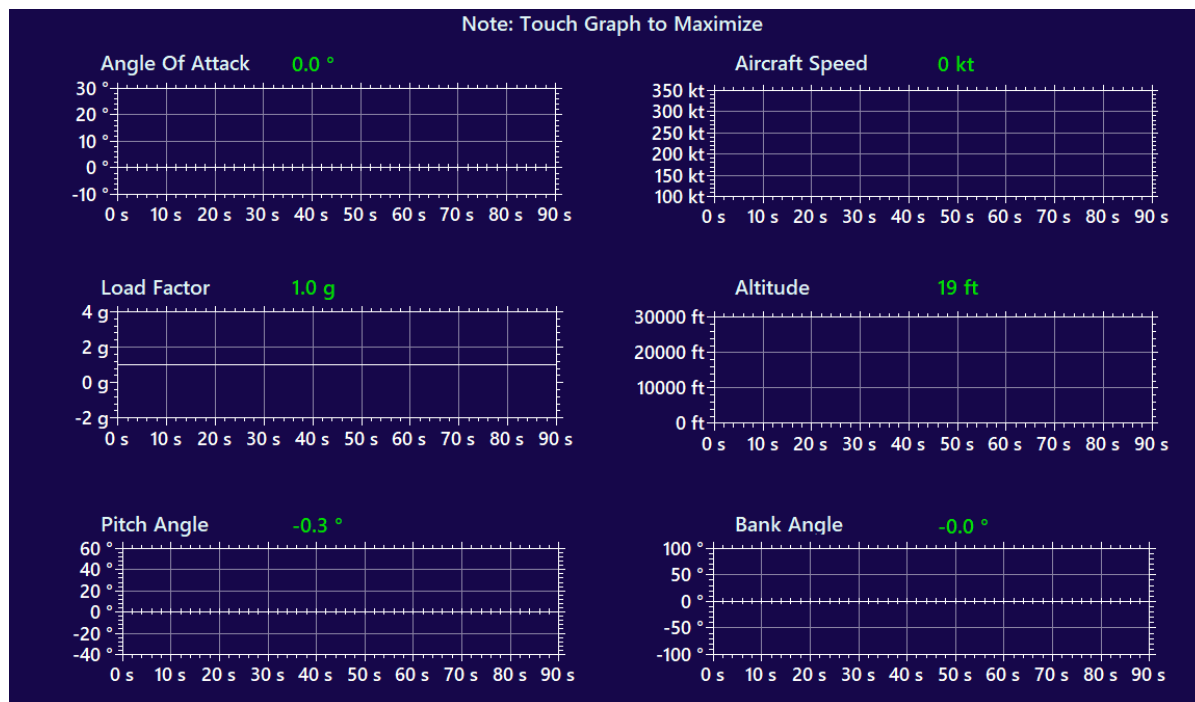


TIME HISTORY PLOTS - AIRCRAFT PARAMETERS (PAGE 5 OF 9)

These pages provide a time history of the maneuver. Two pages are provided, one for the aircraft flight parameters, and one for the crew control inputs. Plotting starts automatically with a maneuver, but the controls in the sidebar allow manual stop, start and erase of the plots.

ANGLE OF ATTACK	Plots Angle of Attack vs Time.
LOAD FACTOR	Plots Load Factor vs Time.
PITCH ANGLE	Plots Pitch Angle vs Time.
AIRCRAFT SPEED	Plots Indicated Aircraft Speed vs Time.
ALTITUDE	Plots Altitude vs Time.
BANK ANGLE	Plots Bank Angle vs Time.

AIRCRAFT PARAMETERS

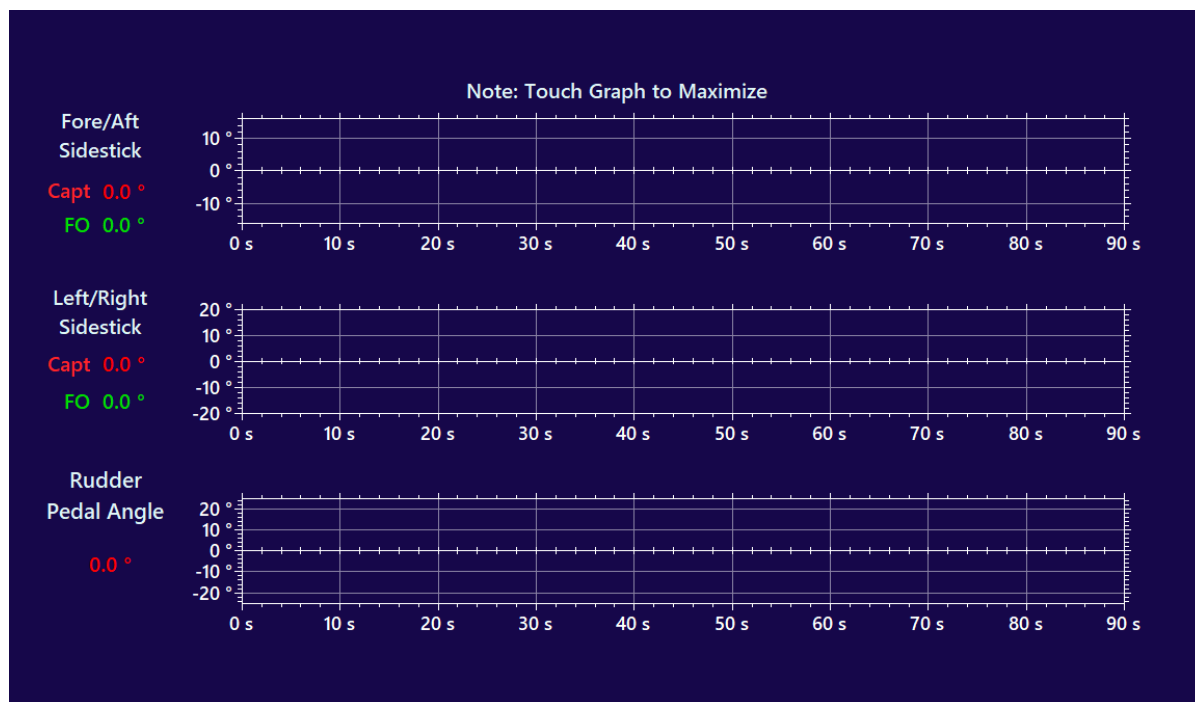


TIME HISTORY PLOTS - FLIGHT CONTROLS (PAGE 6 OF 9)

These pages provide a time history of the manouver. Two pages are provided, one for the aircraft flight parameters, and one for the crew control inputs. Plotting starts automatically with a manouver, but the controls in the sidebar allow manual stop, start and erase of the plots.

FORE/AFT SIDESTICK	Plots Captain (red) and First Officer (green) Column fore (+ve) and aft (-ve) position vs Time.
WHEEL POSITION	Plots Captain (red) and First Officer (green) Wheel left (+ve) and right (-ve) position vs Time.
RUDDER PEDAL ANGLE	Plots rudder pedal left and right deflection vs Time.
COLUMN FORCE	Plots Captain (red) and First Officer (green) Column applied force vs Time.
WHEEL FORCE	Plots Captain (red) and First Officer (green) Wheel force vs Time.
RUDDER PEDAL FORCE	Plots rudder pedal left right force vs Time.

FLIGHT CONTROLS



AIRCRAFT LIMITS AND CONTROLS (PAGE 7 OF 9)

AIRCRAFT LIMITS

Often referred to as a V-n diagram, shows the structural limits of the airframe. Plots load factor (n) vs Indicated Airspeed.

A dynamic envelope is drawn with boundaries for Limit Load and Ultimate Load, the envelope varies with current aircraft configuration.

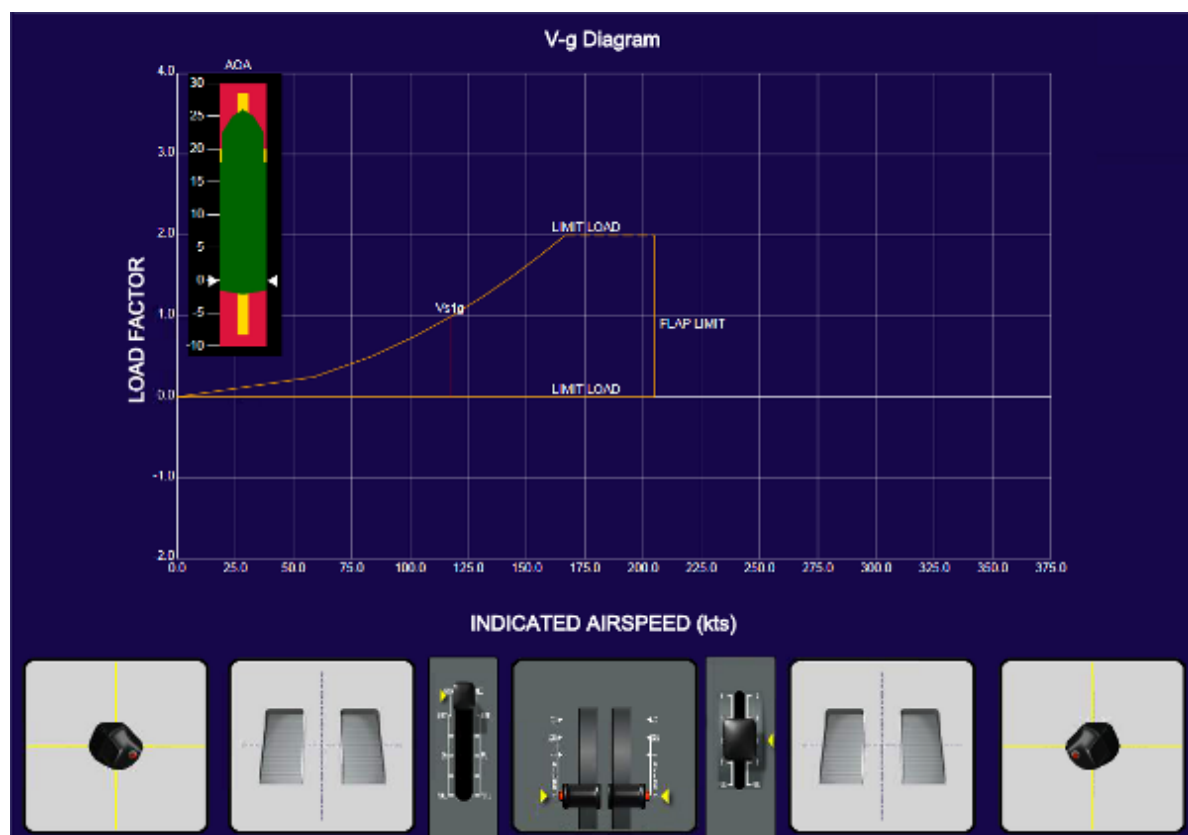
A vertical red line indicates the 1g stall speed (V_{s1g}). The colour of the plot line reflects the portion of the envelope that the plot point is in.

Inset in the graph is a view of the current Angle of Attack.

CONTROLS

Pertinent Flight Control repeats

AIRCRAFT LIMITS AND CONTROLS



AIRCRAFT LIMITS AND TIME HISTORY (PAGE 8 OF 9)

AIRCRAFT LIMITS

Often referred to as a V-n diagram, shows the structural limits of the airframe. Plots load factor (n) vs Indicated Airspeed.

A dynamic envelope is drawn with boundaries for Limit Load and Ultimate Load, the envelope varies with current aircraft configuration.

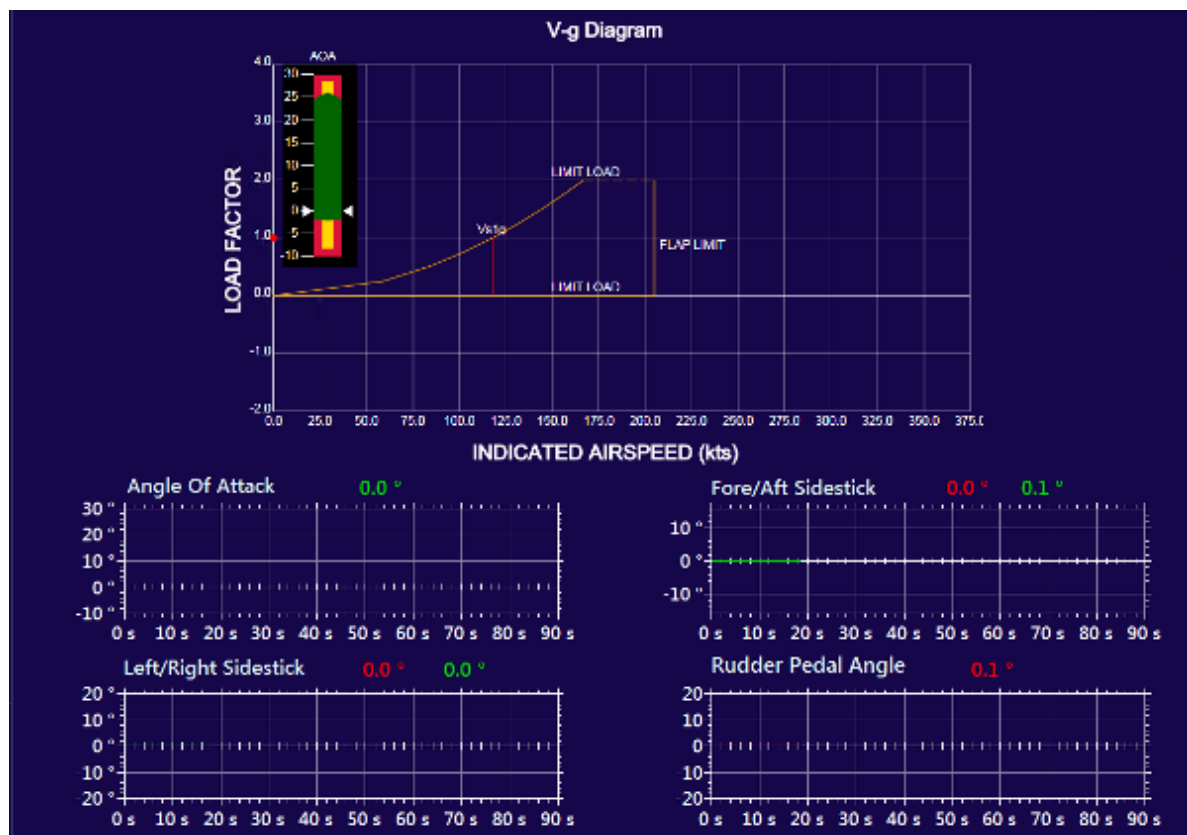
A vertical red line indicates the 1g stall speed (V_{s1g}). The colour of the plot line reflects the portion of the envelope that the plot point is in.

Inset in the graph is a view of the current Angle of Attack.

TIME HISTORY

A series of time history plots including Angle of Attack, Rudder Pedal Angle and flight controls related plots

TIME HISTORY PLOTS



AIRCRAFT LIMITS, LOAD FACTOR AND AIRSPEED (PAGE 9 OF 9)

AIRCRAFT LIMITS

Often referred to as a V-n diagram, shows the structural limits of the airframe. Plots load factor (n) vs Indicated Airspeed.

A dynamic envelope is drawn with boundaries for Limit Load and Ultimate Load, the envelope varies with current aircraft configuration.

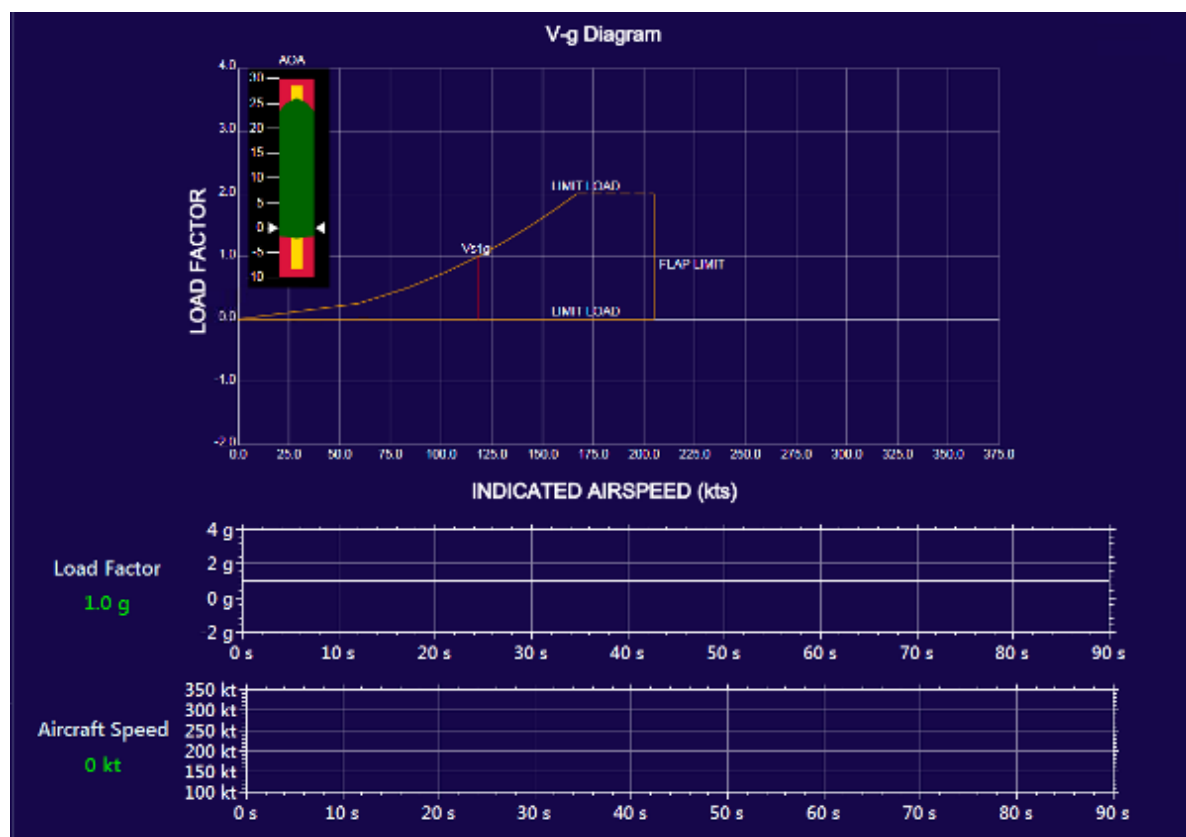
A vertical red line indicates the 1g stall speed (V_{s1g}). The colour of the plot line reflects the portion of the envelope that the plot point is in.

Inset in the graph is a view of the current Angle of Attack.

LOAD FACTOR PLOT

Plots Load Factor vs Time.

TIME HISTORY PLOTS



SMOKE

This page is selectable from the **SIMULATOR CONTROL** tab suite.

SMOKE

SMOKE REQUEST	Arms the smoke generator.
SMOKE VOLUME CTRL	Allows you to select the volume of smoke (25%/50%/75%/100%)
GENERATOR	Displays the smoke generators status.

STATUS/MONITOR

Selectable from the **PAGE NAVIGATION TOOLBAR**, the Status/Monitor tab suite comprises 6 tabs providing access to the following pages:

- < **MALF/CB STATUS** page which displays the status of malfunctions, circuit breakers, radio stations and other entities.
- < **CRASH CONDITIONS** page which lists available crash conditions.
- < **FLIGHT CONDITIONS** page which displays current value of listed aircraft and environment parameters.
- < **CONTROLS NOT IN AGREEMENT** page which identifies those flying controls not in agreement with the current aircraft configuration.
- < **MOTION INTERLOCKS** page which displays the status of all the motion system interlocks.
- < **SIM MESSAGE LOG** page.

MALF/CB STATUS

This page is selectable from the **STATUS/MONITOR** tab suite and displays the status of malfunctions, circuit breakers, radio stations and other entities.

Descriptive text lines appear, chronologically, at the display, with a time stamp on their incidence. When the number of incidents registered exceeds the page capacity, further pages are generated and linked. Those conditions which may be reset are provided with selection buttons. The information and control provided by this page are as follows:

CLEAR ALL MALFUNCTIONS	Clear all Malfunctions currently active.
RESTORE ALL FAILED STATIONS	Clear Malfunctions currently set to Failed.
RESET CIRCUIT BREAKERS	Reset all Circuit Breakers currently broken.
SORT NEWEST TO OLDEST	List all current malfunctions starting with the most recent.

In the Malf/CB Status toolbar area selection buttons are provided to "de-clutter" the information display.

NOTE: Popped circuit breakers must be manually reset.

These correspond to the above condition categories and their alternate action may be used to display or suppress the related information:

ACTIVE MALFS	These are identified in red text. Selection of an associated button displays a keypad, which allows the malfunction definition to be displayed, or for it to be set inactive.
ARMED MALFS	These are identified in yellow text, each with its selected arming conditions. Selection of an associated button displays a keypad, which allows the malfunction definition to be displayed, for the arming conditions to be changed, for the malfunction to be activated, or for it to be disarmed.
FAILED STATNS	Failed radio stations are identified in cyan text. Selection of an associated button displays a keypad, with options to view the station information, to restore the station (or to fail or restore co-located facilities), or to select it as the area map reference centre.
HARD CBS	These are circuit breakers which are within the simulated area and have been manually tripped.
SOFT CBS	These are circuit breakers which are within the simulated area and have been thermally tripped, and are identified in magenta text.
MISC	These are typically simulation "freeze" conditions and are identified in green text. Selection of an associated button resets the condition.

CRASH CONDITIONS (1 OF 2)

This page is selectable from the **STATUS/MONITOR** tab suite.

If the aircraft crashes, Total Freeze is set and this page is displayed with the reason for the crash highlighted:

CRASH INHIBIT	Inhibit all Crashes.
CRASH RESET 20S	Reset a Crash in 20 seconds
REPOSITION PAGE	Go to Reposition Page
RESET ADVISORY	Reset Advisory

RECOVERABLE CRASHES

EXCESSIVE IAS	IAS > VMO + 60 knots (VD)
EXCESSIVE MACH	Mach > MD (Mach Drive)
COLLISION WITH MOVING OBJECT	Aircraft collides with any moving object in air or on ground.

NON RECOVERABLE CRASHES

EXCESSIVE RATE OF DESCENT AT TOUCHDOWN	Rate of descent at touchdown >1200 ft/min.
NOSEWHEEL LANDING	Nosewheel touches down first before the main gear.
EXCESSIVE BANK AT TAKEOFF/TOUCHDOWN	Left or right wing tip contacts the ground at takeoff or touchdown with nose gear and opposite main gear off ground.
EXCESSIVE LANDING GEAR SIDEFORCE	Lateral acceleration >0.7g on touchdown.
IMPACT WITH TERRAIN	Aircraft approaches the ground at >25 ft/s.
COLLISION WITH FIXED OBJECT	Aircraft collides with any fixed object on ground.
ULITMATE LOAD FACTOR	

ADVISORY CONDITIONS

TAIL STRIKE	Rear fuselage height above ground < 0.
ENGINE POD CONTACT	Left/right engine pod height above ground < 0.
LANDING GEAR NOT DOWN AND LOCKED AT TOUCHDOWN	Landing gear not locked fully down and strut has compressed.
HARD LANDING	Rate of descent at touchdown greater than 700 ft/min but less than 1200 ft/min.
BURST TYRE(S)	Any tyre burst detected.
EXCESSIVE NORMAL LOAD FACTOR	Vertical acceleration > 3.5g or < -2.0g with gear up, or Vertical acceleration > 3.0g or < -1.0g with gear down.

CRASH CONDITIONS (2 OF 2)

If an In-flight Limitation is indicated, select Crash Reset 20s. The pilot will then have 20s to fly out of the condition before Total Freeze is reset.

If a Crash is indicated:

Select Crash Reset 20s to reset the aircraft to the take-off position on the currently active runway, or
Select Reposition Page which displays Reposition page to allow you to select a reposition for the aircraft.

If you want the aircraft to continue flying even if an in-air crash is detected, select Crash Inhibit. This disables the crash monitoring system so that the simulation does not stop if one of the in-air crash conditions is detected.

Select Reset Advisory to cancel advisory warnings.



FLIGHT CONDITIONS

This page is selectable from the **STATUS/MONITOR** tab suite and displays current value of listed aircraft and environment parameters.

CONTROLS NOT IN AGREEMENT

This page is selectable from the **STATUS/MONITOR** tab suite and identifies those flying controls not in agreement with the current aircraft configuration.

MOTION INTERLOCKS

This page is selectable from the **STATUS/MONITOR** tab suite and displays the status of all the motion system interlocks. The page is also displayed automatically when Motion is requested but one or more of the interlocks are not safe. If any of the interlocks are not safe, then the motion system cannot be activated.

The status of the interlocks when the unsafe condition was detected is shown in the Failure Warnings column. The current status of the interlocks is shown in the Current column. This allows you to check whether the unsafe condition has been cleared since the circuit detected the failure.

If all of the interlocks are safe and the motion system cannot be activated, check the Maintenance Operators Display Unit (MODU) at the motion cabinet in the simulator hall for messages.

RESET LATCHES	Resets latched conditions to current.
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SIM MESSAGE LOG

This page is selectable from the **STATUS/MONITOR** tab suite and is used to display critical software error messages that have been logged by software systems that impact training in some way.

For example, errors detected during the loading of some or all of the Nav Databases will impact the ability to perform repositions and select airports/runways etc.

The instructor has visibility of when critical software errors occur that would impact the training session.

TRAFFIC

Selectable from the **PAGE NAVIGATION TOOLBAR**, the Traffic tab suite comprises 4 tabs providing access to the following pages:

- < **PREDICTABLE SCENARIOS** page which allows you to setup TCAS scenarios.
- < **EDITABLE SCENARIOS** page which allows you to set the flight plan for each of two intruder aircraft in a new scenario.
- < **RANDOM TRAFFIC** page which allows you to select conflicting traffic which will induce warnings and advisories appropriate to the situation.
- < **AIRPORT TRAFFIC** page.

PREDICTABLE SCENARIOS

This page is selectable from the **TRAFFIC** tab suite and allows you to set up TCAS scenarios. Each scenario can consist of up to two intruder aircraft (aircraft posing a threat to your aircraft) and up to four proximate traffic aircraft (incidental traffic within the environment of your aircraft).

Intruder or proximate traffic aircraft are selected randomly from the following aircraft types: ATR42, B747-400, B737-300, B757-200, B767-300, A320, A340.

NOTE: If you select an intruder aircraft with no transponder fitted, the system will display an ATR42 only.

This page allows selection of scenarios that will generate a predictable TCAS voice call-out. The requested voice call-out will be generated as long as the own aircraft's manoeuvres are within the limits specified for the selected scenario.

The Vertical Separation / Distance diagram displays the initial range and vertical separation. It also shows the intruder relative altitude that will be maintained during the progress of the scenario.

The Intruder Bearing / Heading Diagram displays the initial relative bearing/heading of the intruder; range is not representative in this diagram.

SCENARIO	Arms the associated scenario and the diagrams will reflect the initial positions of the own aircraft and intruder.
PAGE UP/DOWN	Pages through the list of available scenarios.
SCENARIO PERFORMANCE REQUIREMENTS	Lists the altitude, vertical speed and ground speed limits that have to be maintained by the own aircraft in order to obtain the requested voice call-out. This display will display red text and flash to an exceeded limits display.

In the Toolbar area are buttons for the following functions:

PLAY	Activates the armed scenario if the own aircraft is within the specified limits displayed for the selected scenario.
STOP	Stops the active scenario.

EDITABLE SCENARIOS

This page is selectable from the **TRAFFIC** tab suite and allows you to set the flight plan for each of two intruder aircraft in a new scenario.

The touchpoints for each of 2 intruders allow you to set the initial and final position of the intruder.

INITIAL BEARING	Initial bearing of intruder from this aircraft (+ or - 180 degree +ve is right)
INITIAL DISTANCE	Initial distance in nautical miles of intruder from this aircraft
INITIAL RELATIVE ALTITUDE	Initial altitude of the intruder, relative to this aircraft (+ve is above)
TRANSPONDER TYPE	Intruders fitted TCAS equipment operating mode. Selectable are MODE A, MODE C, MODE S or None
FINAL BEARING	Final bearing of intruder from this aircraft (+ or - 180 degree +ve is right)
FINAL DISTANCE	Final distance in nautical miles of intruder from this aircraft
FINAL RELATIVE ALTITUDE	Final altitude of intruder from this aircraft (+ve is above)
SPEED	Speed of the intruder in Knots
CLEAR INTRUDER	Clears all the instructor selections for that intruder.

In the Toolbar area are buttons for the following functions:

PLAY	Activates the Editable Scenario.
STOP	Stops the Editable Scenario.

NOTE:TCAS advises on traffic which will encroach into this aircrafts safe airspace. It does this by dynamically predicting traffic paths. Since the predictions are constantly adjusted for this aircrafts circumstances a single description of the effects of random traffic is not possible TCAS prediction functions adjust for this aircrafts altitude. To consistently demonstrate conflicts this aircraft is best at 15000 feet.

RANDOM TRAFFIC

This page is selectable from the **TRAFFIC** tab suite and allows you to select conflicting traffic which will induce warnings and advisories appropriate to the situation.

PROXIMATE TRAFFIC

PROXIMATE TRAFFIC	Allows proximate aircraft to be selected on or off within the selected scenario.
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RANDOM TRAFFIC (POINT OF ORIGIN)

FRONT BEHIND LEFT RIGHT ABOVE BELOW LEVEL	Arms a threat with a single aircraft approaching from the selected directions.
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In the Toolbar area are buttons for the following functions:

PLAY	Activates the selected random traffic.
STOP	Deactivates random traffic.

NOTE: TCAS advises on traffic which will encroach into this aircrafts safe airspace. It does this by dynamically predicting traffic paths. Since the predictions are constantly adjusted for this aircrafts circumstances a single description of the effects of random traffic is not possible TCAS prediction functions adjust for this aircrafts altitude. To consistently demonstrate conflicts this aircraft is best at 15000 feet.

AIRPORT TRAFFIC

This page is selectable from the **TRAFFIC** tab suite and allows you to control the appearance and movement of up to 6 repeating and 2 non-repeating routes. These incidents are normally designed to present the aircrew with a hazard, in the vicinity of the runway, during take-off or landing. They may, additionally, be used to provide traffic scenarios in and around the airport.

REPEATABLE ROUTES

Repeatable Routes initialise a number of entities using the Separation time specified for the runway the route uses. The separation is constant for any entities using that runway, if the separation time is changed, any new entities created by the system will have the new time. Select a row to load, clear or stop a repeatable route.

NON-REPEATABLE ROUTES

Non-Repeatable Routes either start when the scenario play button is pressed or when triggered by an ownship event (see Play Trigger Structure). Select a row to load, clear or stop a non-repeatable route.

RUNWAY TOUCHDOWN INTERVALS

CONFIGURE INTERVALS	Displays a popup menu to allow you to set touchdown intervals. Selected intervals times are displayed for each runway.
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SCENARIO OPTIONS

OWNSHIP PRIORITY	Ownship Priority is used when the ownship is taking off and can be set to either Manual or Automatic. If in manual mode then the instructor has to decide if the ownship has enough space to take-off in respect to other landing aircraft. If in Automatic, the system will temporarily suspend the creation of new landing entities to give the ownship space to take-off. Once the ownship has taken off, the normal creation at that separation will be resumed.
RUNWAY FOR GEN ROUTES	For airports with more than one runway (auto-generics or specifics) the Runway for Gen Routes button allows all generic routes (routes recorded at a generic airport, which can be used anywhere) within a scenario to use an alternative reference runway to the active runway. The button will only be active before the scenario begins, as the routes cannot be altered once a scenario has started.
ROUTE CONTROL	Displays the Airport Traffic - Route Control page which allows you to control the appearance and movement of up to eight incidences of routed traffic. These incidents are normally designed to present the aircrew with a hazard, in the vicinity of the runway, during take-off or landing. They may, additionally, be used to provide traffic scenarios in and around the airport.
LOAD	Displays the Scenario Select page.

ABOUT

Document Number	Revision	Date
70016114-1040	A1	04NOV2020

Change History

TCN-606	Version 5 of IRMPart60.xls : Wording of UPRT pages reflect this version of the mandated terminology
-	Style update

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