AFR B777-300ER

INSTRUCTOR REFERENCE MANUAL

CONTENTS (1 of 5)

Emergency Procedures

Contents

Emergency Procedures

Contents

Emergency Procedures

Contents

Emergency Procedures

Contents

Emergency
Procedures

INSTRUCTOR OPERATING STATION

Flat Panel Displays

Right Arm Panel

Left Arm Panel

DI143

LEFT ARM PANEL

EMERGENCY STOP   Initiates an emergency stop:

- Switches off all electric and hydraulic power to the simulator, except maintenance intercom.
- Emergency lighting comes on.
- Simulator settles to access position.
- Drawbridge lowers.
- Maintenance Call is activated.

HYDRAULICS OFF   Stops all pumps and removes hydraulic power from the motion system, causing it to settle automatically to the access position.

Audio Control Panel   As aircraft panel. Channel selection is made from the Communications page.

UP, DWN   Control movement of the instructors seat.

Switches display mounted reading light on/off.
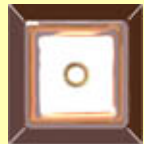
Controls reading light brightness (dim/bright)
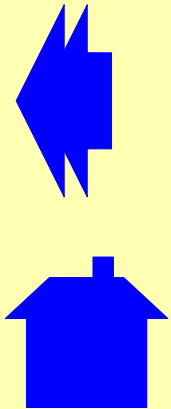
Contents

SOUND	Adjusts volume level of simulated sound inside the cabin, except for alarms which have a fixed sound level.
COMMS	Adjust volume level of communications system.
ROOF LIGHT	Switches the rear compartment lighting on/off.
T/O RESET	Repositions aircraft to the take-off position on the currently active runway. Flight Freeze is set automatically during the reposition. When the reposition is completed, deselect FLIGHT FREEZE to continue the training exercise.
FLIGHT FREEZE	Freezes aerodynamic parameters (aircraft speed, attitude, altitude and geographical position). Aircraft systems remain operational.
POS'N FREEZE	Freezes aircraft at current geographical location. All other aerodynamic and aircraft systems remain operational.
IRS ALIGN	Initiates a rapid re-alignment of the inertial reference system.
CAVOK	Resets the visual to CAVOK conditions.
MOTION	Switches motion system on/off.
	When selected on, status light flashes as simulator rises from access to neutral position, status light remains lit.
	When selected off, status light flashes as simulator settles to access position, status light goes out.
MALF RESET	Resets all active and armed malfunctions, restores all failed radio stations and clears all circuit breaker trip conditions.
	NOTE: Popped circuit breakers must be manually reset.

Contents

Emergency Procedures

FUEL FREEZE	Freezes fuel quantities at current value. Engine fuel flow is unaffected, but no fuel depletion occurs.
ENGINES START	Starts all engines immediately, irrespective of air, fuel, oil or electrical supplies, provided the fuel cut–off switches are in the flow position. Engines continue to run if fuel and oil supplies are available.
EXT POWER	Simulates selection of an external power source provided the aircraft is on the ground.
VISUAL ON/OFF	Switches visual projectors on/off.
CONTROL LOADING	Switches control loading system on/off.

When selected on, hydraulic pressure is applied to the controls and status light flashes while flying controls move to their normal operating position. When system is fully pressurised, status light remains lit.

When selected off, hydraulic pressure is removed from the controls and status light flashes while flying controls become slack.   When system is fully de-pressurised, status light goes out.
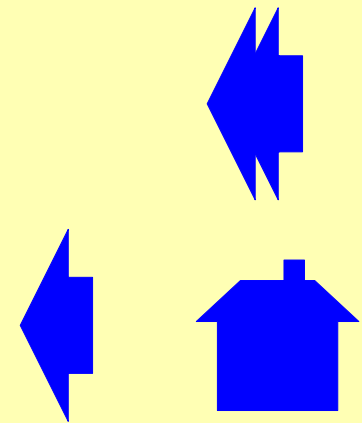
Contents

Emergency
Procedures

FLAT PANEL DISPLAYS

MASTER INDEX

SETUP

CUSTOMER OPTIONS	FLIGHT PLAN

CONTROL

ATIS	TCAS	FREEZE/ SPEEDUP	COMMS
SLEW	RADIO STATIONS	ACARS	FANS
CIRCUIT BREAKERS	GPS	ECL SIMSOFT	

STATUS

FLIGHT CONDITIONS	CRASH CONDITIONS	MOTION INTERLOCKS	CONFIGURATION NOT IN AGREEMENT

MISCELLANEOUS

MAINTENANCE USE ONLY	AMTF USE ONLY	INSTRUCTOR'S REFERENCE MANUAL

	LOWI	26	111.10 / 255°
WIND GD	000° / 0 kt	GW	0.0 tonne
WIND AC	000° / 0 kt	CG	0.0 %mac
QNH	0.0 hPa	ZFW	0.0 tonne
TEMP	0.0 °C	FUEL	0.0 tonne
CLD BASE	6 ft	SAT	0.0 °C
CLD TOP	1600 ft	CAS/MACH	0 kt / 0.00
RVR	0 m	HDG/TRK	261° / 000°
VIS	0.00 km	ALT	0 ft
LAT	N47°15.6'	LONG	E011°21.1'

FLIGHT FREEZE

SOUND NOT MAX

MASTER INDEX	MALF INDEX	MALF / CB STATUS
REPOSITIONS	RESETS	HARD COPY
SERVICES	A/C WEIGHTS	WX / VISUAL
AREA MAP	PLOTS	LESSON PLAN
PREVIOUS	RETURN	NEXT

HELP
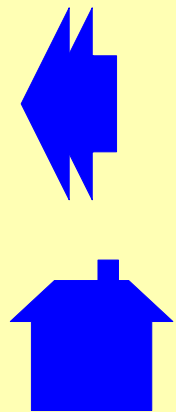
Contents

Emergency Procedures

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

There are five types of page:

- Control, which allow you to set up the conditions for the training exercise, and to control and monitor the progress of the exercise.

- Map, which provide a graphical representation of the flight relative to the radio navigational facilities, or to the runway on approach and take-off.

- Malfunctions, which allow you to enter simulated faults into the aircraft systems.

- Maintenance, which allow the technicians to set up the IOS and run acceptance tests on the simulator. These pages are password-protected.

- Lesson, which allow you to select and control the lesson plans.

Buttons

Three types of button are used on the pages:

STANDARD DAY

Direct action. When selected, associated function is activated or deactivated immediately. (In this example, Standard Day weather conditions would be set up).
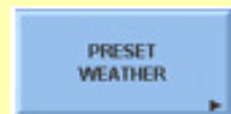
PRESET WEATHER

Page selection, indicated by the small arrow at the bottom right corner of the button. When selected, displays another page. (In this example, Preset Weather page would be displayed).

RVR
3000 ft

Variable selection. When selected, displays an overlay to enable the value of the variable to be changed. (In this example, the numeric keypad would be displayed to enable a new value for runway visible range (RVR) to be entered).
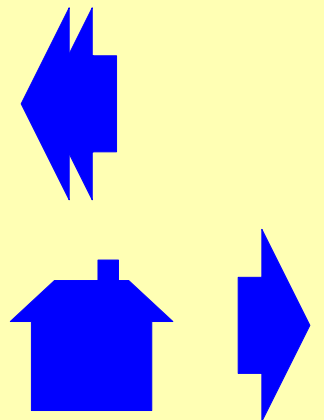
Contents

Emergency Procedures

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.

Colours

Buttons will be displayed in different colours depending on their current condition:

	Condition	**Colour**
General Buttons	Permanently Unavailable	Dark Grey
	Currently Unavailable	Light Grey
	Available/Normal	Blue
	Active	Amber
Malfunction Button	Available	Blue
	Armed	Magenta
	Active	Red
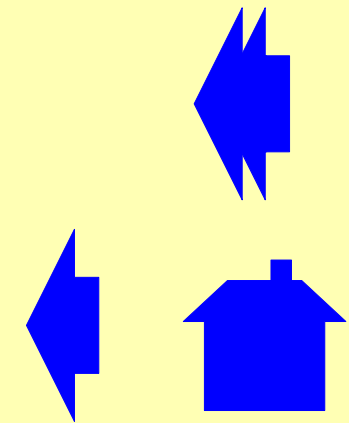
Contents

Emergency Procedures

PARAMETER READOUT

The parameter readout displays the current status of a number of flight parameters (eg., altitude, heading), details of the currently active airport (ICAO code, runway in use, ILS frequency), and also displays a dynamic readout showing messages relating to simulator status (eg., malfunction active, windshear selected, freeze selected).

This information is displayed on all pages, except:

- Plot pages
- Lesson pages
- Maintenance pages
- Area Map display (full screen)
- Circuit Breaker pages
- ECL Normal Checklist page
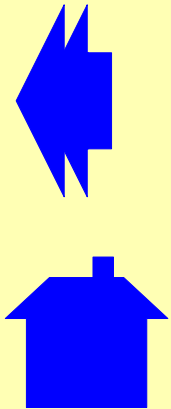
Contents

Emergency
Procedures

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

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

Numeric Keypad

The Numeric Keypad (see below) 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.

Contents

Emergency Procedures

SURFACE WIND SPEED	
	0
	0 kt
Max	50 kt
Min	0 kt
7	8	9	00
4	5	6	000
1	2	3	AC
	0		CLR
OK	Slew	Cancel

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).

Latitude and longitude will be displayed on the IOS in degrees, minutes and tenths of minutes, regardless of the format used to enter the values on the overlay. For example, a value entered as N42°27'30" will be displayed as N42°27.5.

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.
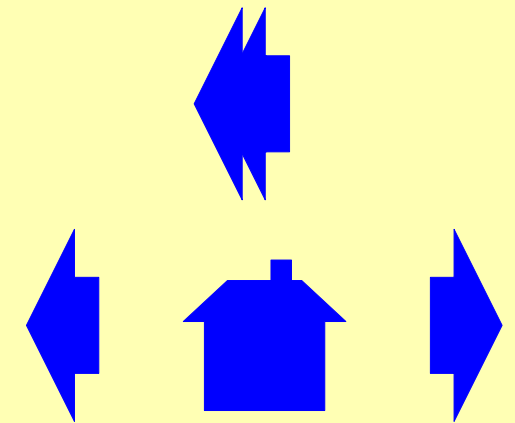
Contents

Emergency
Procedures

Slew Tool

The Slew Tool (see below) 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.

SURFACE WIND SPEED	
	0
	0 kt
Max	50 kt
Min	0 kt
Coarse	Fine
OK	Keypad	Cancel
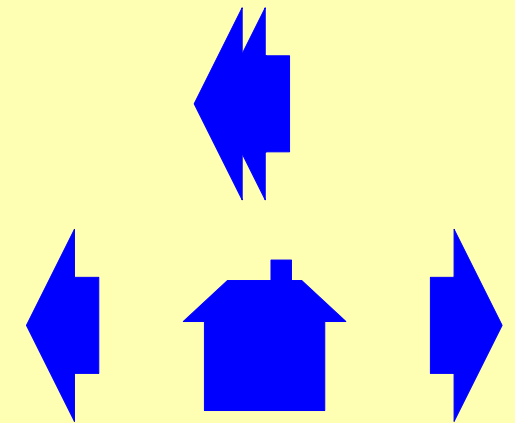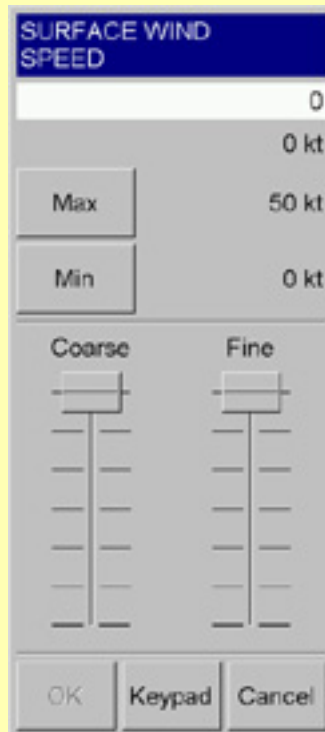
Contents

Emergency Procedures

Alphanumeric Keypad

The Alphanumeric Keypad (see below) 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 and the new data will be entered into the simulation.

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.

AIRPORT ICAO CODE

KSEA

		A	B	C	D	E
		F	G	H	I	J
1	2	3	K	L	M	N	O
4	5	6	P	Q	R	S	T
7	8	9	U	V	W	X	Y
.	0	+/-	Z	SP	AC	/	CLR

OK   PC   Cancel
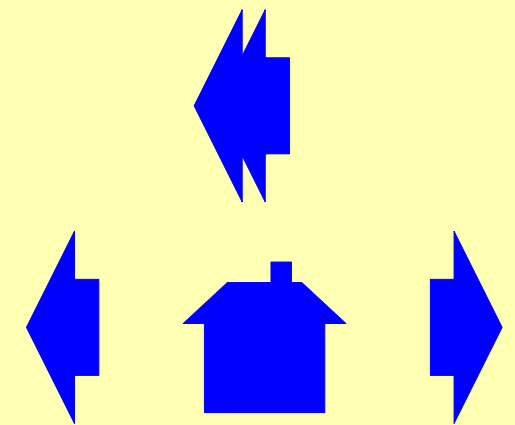
Contents

Emergency Procedures

Pop-Up Menu

A Pop-Up Menu will be displayed automatically if the selected parameter has a number of alternative states (eg., cobblestone). The menu (see example below) 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.

COBBLESTONE

NONE

LIGHT

MODERATE

SEVERE

Cancel
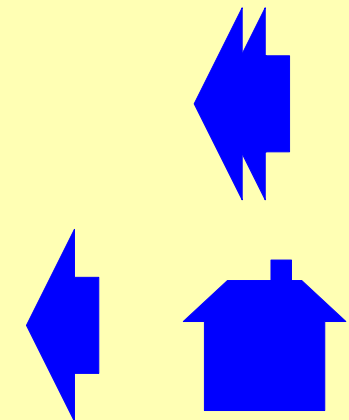
Contents

Emergency
Procedures

This area displays a number of buttons which provide access to the pages. The same buttons are displayed on control pages and malfunction pages. On map pages, some of the buttons are replaced with buttons providing access to functions which are only relevant to map page operation.

On lesson pages, plot pages, the CB Panels Index page and the ECL Normal Checklist page, the page display extends the full width of the screen and toolbar buttons relevant to the operation of the page are displayed horizontally at the bottom of the page.

The function of each of the buttons is detailed below:

MASTER INDEX	Displays Master Index page.
MALF INDEX	Displays Malfunction Index page which lists the available malfunction pages by aircraft system to assist you in loading the required malfunction.
MALF/CB STATUS	Displays the Malfunction/CB Status page which displays the status of malfunctions, circuit breakers, radio stations and other entities.
	Displays Repositions page which allows you to reposition the aircraft relative to the currently active airport and runway.
RESETS	Displays the Resets page which allows you to suspend and restart all or some of the simulated systems, and to reset the aircraft systems to normal operating conditions.
	Prints a copy of the page on the hard copy printer.
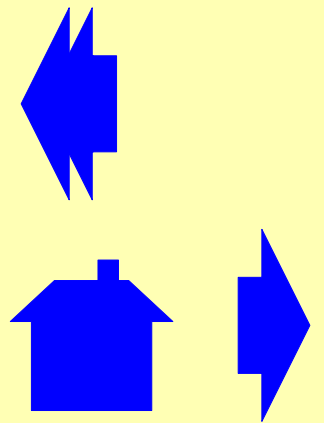
Contents

Emergency Procedures

Displays the Services page which allows you to perform functions normally undertaken on the ground.

Displays Aircraft Weight page which allows you to set up the aircraft fuel loading for the training exercise.

Displays the first of the Weather pages (Atmosphere) which allow you to set up the weather conditions for the training exercise.

Displays Area Map page which provides a graphical representation of the aircraft's flight relative to the radio navigational facilities.

Displays the first of the Plot pages (Approach Plot) which allows you to monitor the performance of the flight crew during an approach, during departure, and during take–off and landing operations at the runway.

LESSON PLAN INDEX

Displays Lesson Plan Index page, which lists the available lesson plans to allow you to select the appropriate lesson plan for the training exercise.
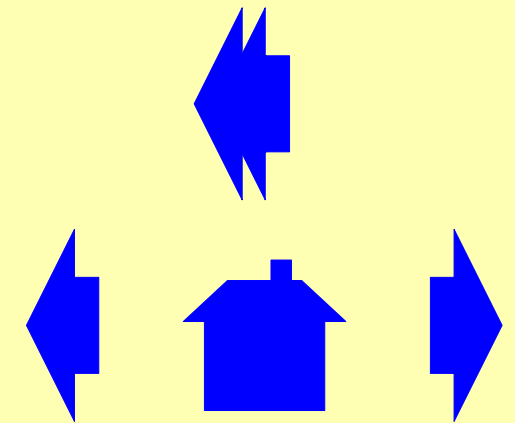
Contents

Emergency Procedures

Previous. Displays previous page in a suite of pages.

Return. Recalls last displayed page.
Up to 31 of the previous page displays are retrievable.

Next. Displays next page in a suite of pages.

HELP   Displays the Instructor Reference Manual page associated
              with the displayed page.
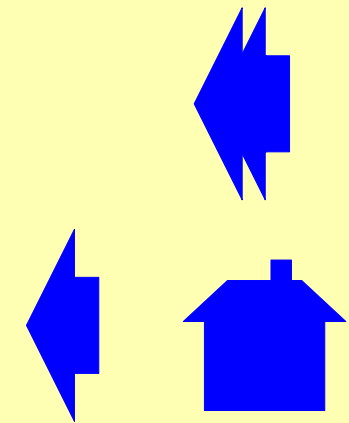
Contents

Emergency
Procedures

ACARS MAIN MENU

This page is selectable from the Master Index and Communications pages.

VOICE CONTACT FREQUENCY	Allows you to select the frequency for voice contact.
GROUND STATION STATUS	Allows you to select the ground station status.
TRANSMIT VOICE CONTACT REQUEST	Sends uplink requesting voice contact on selected frequency.
1 to 9	Allow you to select a pre-defined message for transmission.
PRINTER INHIBIT	Switches cockpit printer on/off.
DOWNLINK POPUP ENABLE	
ACARS RESET	Performs a total reset on the ACARS system. Only functional on ground.
MESSAGE LOG	Displays Message Log Page.
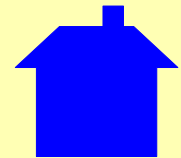
Contents

Emergency Procedures

AIRCRAFT WEIGHT

This page is selectable from the Normal Toolbar 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	Allows you to set the gross weight of the aircraft.
CG	Allows you to set the centre of gravity as a percentage of mean aerodynamic chord (MAC).
LEFT WING CENTER TANK RIGHT WING	Allow you to set the fuel load in each of the fuel tanks on the aircraft.
FUEL JETTISON	
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.
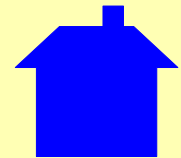
Contents

Emergency Procedures

AIRPORT SELECT

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

Geographic area touchpoints   Display the associated Airport page which lists the available airports within the geographic area. Selecting one of the airports from the list changes the active airport to that selected.

AIRPORT   Displays the alphanumeric keypad to allow you to enter the ICAO code for the required airport.

Contents

Emergency Procedures
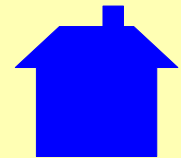
This page is selectable from the Aircraft Type/Livery Info button on the Routed Traffic Record Maintenance page.

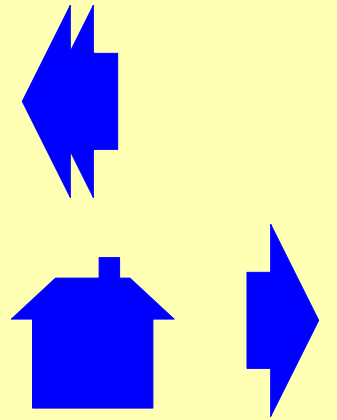| Tbox Ref f	Model Number #	80	81	82	85	86	88	90	91	92	93	108	109	110	111	112	113	114	115	116	117	118	121	126	139	163	173	176	192	193	194	195	205	215
Aircraft Type		Concorde	ATR42	ATR72	A300-600	A310	A320-200	A330	A340-200	A340-300	A300 Belua	B727	B737-200	B737-300	B747-400	B737-500	B747-200	B747-400	B757	B767	B777	B737-700	RJ85	ATP	Cessna 150	RJ145	F100	Gulfstream 3	DC10	MD80	MD87	MD11	SAAB340	TU154
Airline Livery	**Select #**																																	
White Tail	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Manufacturer	2				✓	✓	✓	✓		✓	✓			✓				✓	✓	✓	✓	✓							✓					
Aero Mexico	7																													✓				
Aero Sucre	107										✓																							
Air Canada	9							✓																										
Air China	10									✓											✓		✓											
Air France	12						✓	✓		✓				✓			✓	✓			✓													
Air Tours	99						✓																											
Alaska Airlines	17																					✓												
All Nippon Airlines	19						✓														✓													
American Airlines	20				✓														✓	✓	✓	✓					✓			✓		✓		
American Eagle	101		✓	✓																						✓								✓
Air New Zealand	15															✓						✓	✓											
British Airways	26	✓					✓								✓	✓		✓			✓													
British Midland	27	✓					✓																											
Canadian Airlines	29						✓																											
Cargolux (closed)	97																	✓																
Cargolux (open)	98																	✓																
Cathay Pacific	30									✓																								
China Eastern	32				✓					✓																								
China Southern	34						✓			✓																								
Condor	103						✓												✓	✓														

Contents

Emergency Procedures

Airline Livery (Tbox Ref f)	Select # (Model #)	80 Concorde	81 ATR42	82 ATR72	85 A300-600	86 A310	88 A320-200	90 A330	91 A340-200	92 A340-300	93 A300 Belua	108 B727	109 B737-200	110 B737-300	111 B737-400	112 B737-500	113 B747-200	114 B747-400	115 B757	116 B767	117 B777	118 B737-700	121 RJ85	126 ATP	139 Cessna 150	163 RJ145	173 F100	176 Gulfstream 3	192 DC10	193 MD80	194 MD87	195 MD11	205 SAAB340	215 TU154
Delta Airlines	39																		✓	✓	✓	✓												
DLH Cargo	106																															✓		
Dragonair	41						✓																											
Emirates	44					✓		✓		✓											✓													
Fed Express	46				✓	✓																										✓		
Finnair	47						✓																											
Hapa Lloyd	104																					✓												
Iberia	88						✓			✓							✓		✓												✓			
Kazakstan Airlines	108																																	✓
KLM	54												✓					✓														✓		
Korean Airlines	55							✓										✓																
LTU	105						✓												✓	✓														
Lufthansa	58						✓	✓		✓					✓		✓	✓																
Mexicana	100						✓																											
Northwest Airlines	61						✓											✓																
Portugalia	96																									✓	✓							
Qantas	64																			✓														
Sabena	67												✓			✓							✓											
SATA	95																							✓										
Saudi Arabian Airlines	68																				✓													
Sichuan Airlines	93						✓																											
Southwest Airlines	73																					✓												

Contents

Emergency Procedures

Tbox Ref f	Model Number #	80	81	82	85	86	88	90	91	92	93	108	109	110	111	112	113	114	115	116	117	118	121	126	139	163	173	176	192	193	194	195	205	215
Aircraft Type		Concorde	ATR42	ATR72	A300-600	A310	A320-200	A330	A340-200	A340-300	A300 Belua	B727	B737-200	B737-300	B747-400	B737-500	B747-200	B747-400	B757	B767	B777	B737-700	RJ85	ATP	Cessna 150	RJ145	F100	Gulfstream 3	DC10	MD80	MD87	MD11	SAAB340	TU154
Airline Livery	**Select #**																																	
Swissair	74						✓																				✓			✓		✓		
TAP Air Portugal	75					✓	✓			✓																								
Turkish	78					✓				✓													✓											
United Airlines	80						✓												✓	✓	✓	✓												
United Parcel Service	82				✓							✓																						
US Airways	83						✓																											
Virgin Atlantic	87									✓																								
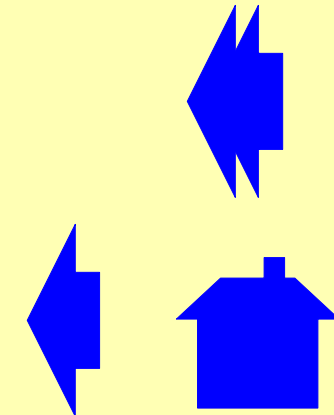
Contents

Emergency Procedures

This page is selectable from the Normal 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.
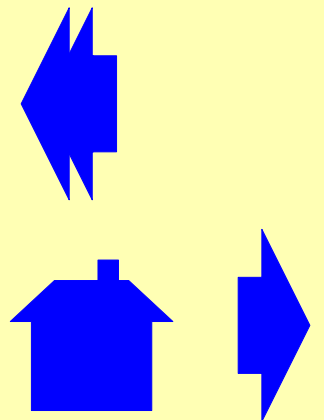
The following display modes are available:

- Active Airport
- Aircraft – North Up
- Aircraft – Heading Up
- User

Active Airport Mode

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.

Contents

Emergency Procedures

|		
Aircraft track	Red	Last 16 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.
	Red square	Resolution advisory.
	Amber circle	Traffic advisory.
	White lozenge (solid)	Proximate traffic.
	White lozenge (wire frame)	Out-of-range aircraft.
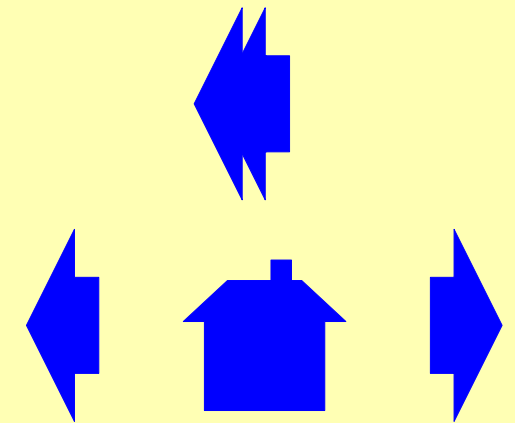
Contents

By default the following are only displayed when the map scale ≤ 20 nm:

	Colour	Comments
Outer markers	Yellow	
Middle markers	Yellow	
Inner markers	Yellow	
ILS and LDA fans	Yellow	Orientated to the true heading of the localiser beam.
Identification code and frequency of ILS and LDA	Yellow	
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 Aircraft – North Up (with the aircraft at the centre).
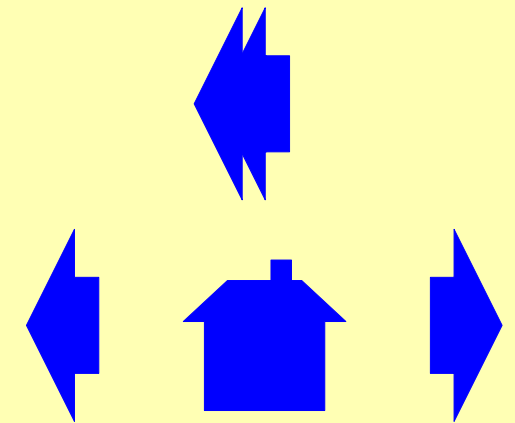
Contents

Emergency
Procedures

Aircraft – North Up Mode

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.

Aircraft – Heading Up Mode

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.

User Mode

This mode is accessed from the Radio Aids and Range Bearing icons on the Map Toolbar, and reflects the fact that a feature (eg. a radio navigation aid) has been selected as the map centre. All other display characteristics are as in Active Airport Mode.

Map Control

When an Area Map is displayed, the Normal Toolbar is replaced by the Map Toolbar which allows you to control the map display.

MASTER INDEX   Displays the Master Index page.

MALF INDEX   Displays Malfunction Index page which lists the available malfunction pages by aircraft system to assist you in loading the required malfunction.

MALF/CB STATUS   Displays Malfunction/CB Status page which lists all the currently active/armed malfunctions, tripped circuit breakers and failed radio stations.

REPOSITIONS   Displays Repositions page which allows you to reposition the aircraft relative to the currently active airport and runway.
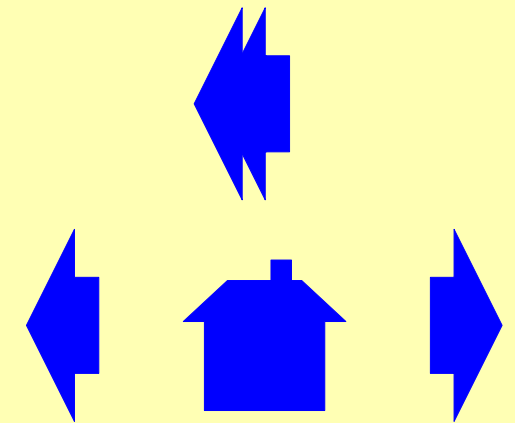
Contents

Emergency Procedures

RESETS | Displays the Resets page which allows you to suspend and restart all or some of the simulated systems, and to reset the aircraft systems to normal operating conditions.

HARD COPY | Prints a copy of the area map.

MODE | Displays the MODE keypad to allow the map display mode to be changed. The 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
- A/C Heading Up

A fourth mode, User, may be displayed and is selected via the Radio Aid or Range/Bearing buttons.

RANGE | Displays RANGE keypad which allows the diameter of the map to be selected from a variety of options.

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.

FULL SCREEN | Displays the map over the whole screen (page title, permanent readouts and toolbar are removed from the display).

Touching the screen again restores the display format to normal.

DE-CLUTTER | Displays the DECLUTTER keypad which allows you to control the quantity and type of information shown on the map display.

Contents

Emergency
Procedures

RADIO AID

When selected, a white circle and the SELECT STATION ON MAP keypad are displayed.   Touch the Area Map display to move the white circle to an area of interest, then use the keypad to select the required facility.

When a facility has been successfully selected, a pop–up 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.

RANGE BEARING

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.

A/C SLEW

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.

STORM SELECT

Displays the Storm Select toolbar in place of the Map toolbar.
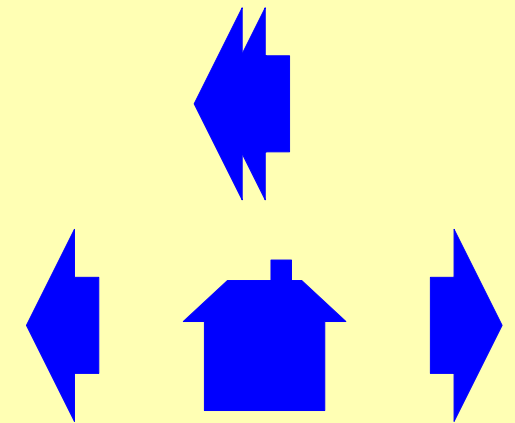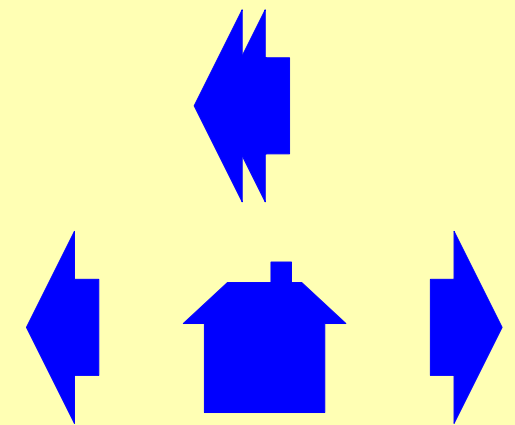
Contents

Emergency Procedures

SELECT STATION ON MAP

This popup is displayed when RADIO AID is selected on the Map Toolbar.

APT
RWY
ILS
MKR   Allow the associated facilities to be displayed/hidden
VHF lo   during station selection. Refer to Declutter for a
VHF hi   description of each station type.
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 a menu of details for the radio station within the
                   area of interest defined by the white circle. If more than
                   one radio station is within the selected area, a pop–up
                   menu will be displayed listing the stations available. The
                   menu of details will be displayed for the radio station
                   chosen from this list. "Nothing Found" will be displayed
                   if there are no stations within the selected 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.

Contents

Emergency
Procedures

RANGE & BEARING

This popup is displayed when SELECT BEARING is selected on the Map Toolbar.

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.
Brg/Rng 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.
Enter Ident	Displays the alphanumeric keypad to allow a facility to be selected by its ident. When a facility has been successfully selected, a pop–up 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.
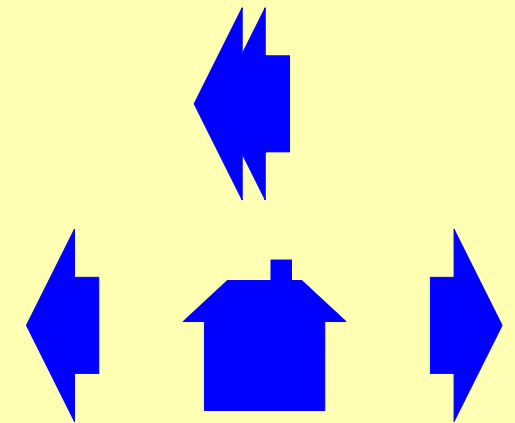
Contents
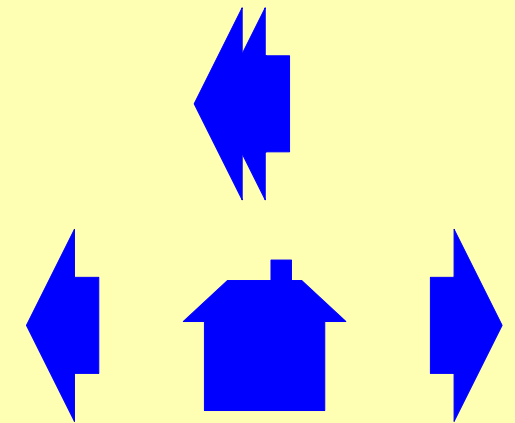
Emergency Procedures

DE-CLUTTER

This popup is displayed when DECLUTTER 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	Displays location of low-powered VHF stations.
VHF hi	Displays location of high-powered VHF stations.
NDB	Displays location of NDB stations.

Contents

Emergency
Procedures

DE-CLUTTER (continued)

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   Displays location of waypoints in the terminal area.
Waypoints

Enroute Waypoints   Displays location of route waypoints incidental to the
                     flight plan.

Storm   Displays shape of selected storm model.

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.
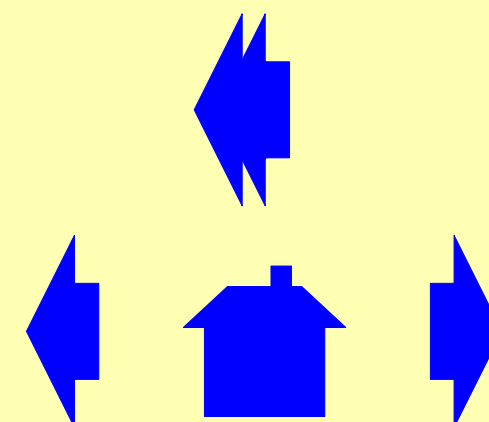
Contents

Emergency
Procedures

A/C SLEW

This popup is displayed when A/C SLEW is selected on the Map Toolbar.

TARGET MODE — These controls allow you to set target values for aircraft position, speed, heading and altitude. When the target is set, the associated parameter changes at a constant rate until the target is reached.

ON MAP — Displays a white square frame (centred at the aircraft position) and the POSITION SLEW keypad.

Touch the Area Map display to move the white square frame, or use the Enter Ident function, to set a target value for aircraft position. Select OK to confirm your choice.

SPD — Displays the numeric keypad to allow a target value for the aircraft airspeed to be entered. Current value is displayed on the button.

HDG — Displays a white circle with a projecting arrow (at the map centre), and the HEADING keypad.

Touch the Area Map display to set the target value for the aircraft heading. The size and direction of the arrow will change accordingly. Select OK on the keypad to confirm your selection.

ALT (AMSL) — Displays the numeric keypad to allow a target value for the aircraft altitude (above mean sea level) to be entered. Current value is displayed on the button.

CONTINUOUS MODE — These controls change the associated parameter continuously while selected.
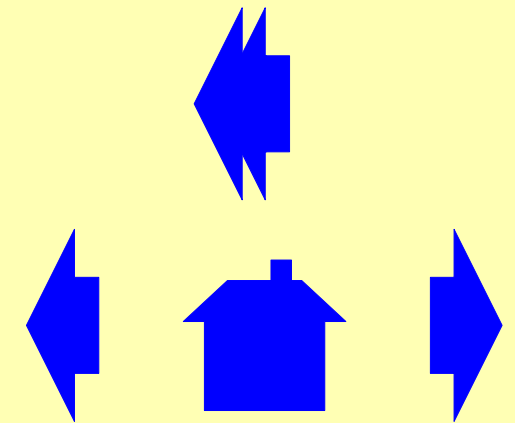
Contents

Emergency Procedures

A/C SLEW (continued)

FWD
LEFT   Move the aircraft in the associated direction, relative to
RIGHT   its current position.
AFT

N
W   Move the aircraft in the associated geographical
E   direction.
S

L
R   Slew the aircraft heading continuously left and right.

Close   Removes the keypad from the display.
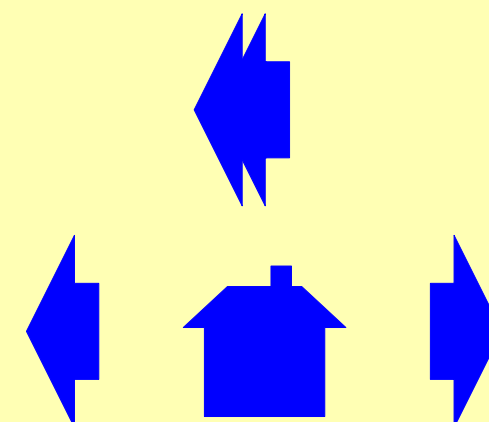
Contents

Emergency
Procedures

POSITION SLEW

This popup is displayed when ON MAP is selected on the A/C SLEW pop–up.

Readout	Displays current geographical position of the aircraft.
Zoom In	Steps down through the map ranges with each selection.
Zoom Out	Steps up through the map ranges with each selection.
OK	Used to confirm the position selected by the white square frame as the target aircraft position.
Enter Ident	Displays the alphanumeric keypad to allow a radio facility to be selected by its ident. The position of facility will then be the target value for the aircraft position.
Cancel	Removes the keypad from the display.

HEADING

This popup is displayed when HDG is selected on the A/C SLEW pop–up.

Readout	Displays current aircraft heading.
Zoom In	Steps down through the map ranges with each selection.
Zoom Out	Steps up through the map ranges with each selection.
OK	Used to confirm the heading selected by the white arrow as the target aircraft heading.
Cancel	Removes the keypad from the display.
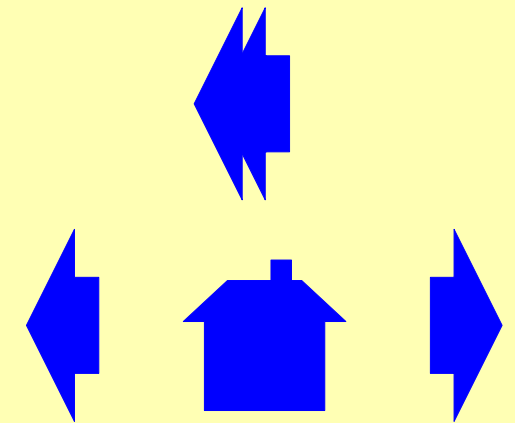
Contents

Emergency
Procedures

STORM CONTROL

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

The centre of the storm is positioned as follows:

Name	Centre of Storm Height (ft)
STORM 1	14501
STORM 2	17078
STORM 3	8079
STORM 4	17001
COLD FRONT 1	15078
COLD FRONT 2	5034
SHOWERS	3077
SQUALLS	15078
SNOW	3077
RAIN	5079

Above the cloud layer, the storm cloud itself exists with a size and shape based on the selection made from the IOS.

There is computed turbulence both under and in the storm cloud, dependent on the position of the aircraft within the storm area.

Rain and hail intensity are computed based on the position within the storm area and the outside air temperature (visual is defocused based on these computed values). By default, there is no precipitation outside the storm area.

Thunder and lightning are present within the storm area and the frequency of thunder and lightning is based on proximity to the centre of the storm.
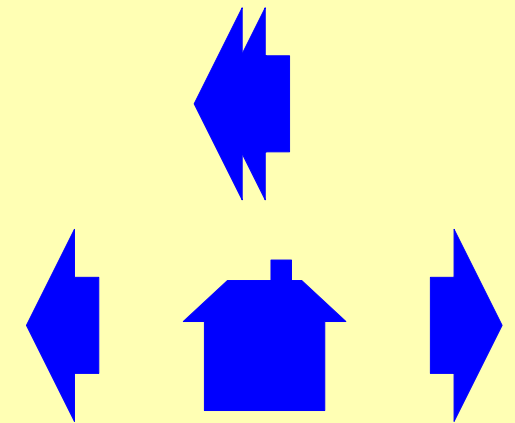
Contents

Emergency Procedures

STORM CONTROL (continued)

A rainshaft is positioned under the centre of the storm.

Out of the window visibility is reduced to zero when approaching the rainshaft.

Ambient brightness levels are reduced again based on proximity to the centre of the storm.

Wet runway contamination is present when the storm is selected.

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.

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.

POSITION — Displays a white square frame (at the centre of the storm model) and the STORM POSITION keypad.

Touch the Area Map display to move the white square frame, or use the Enter Ident function, to set a target value for storm. Select OK on the keypad to confirm your selection.
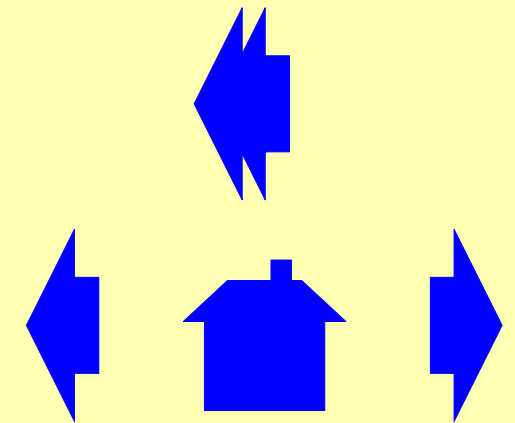
Contents

Emergency
Procedures

STORM CONTROL (continued)

ROTATION
Displays a white circle with a projecting arrow (at the centre of the storm model) and the STORM ROTATION keypad.

Touch the Area Map display to change the rotation of the storm. The arrow will move accordingly. Select OK on the keypad to confirm your choice.

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.

By touching the Area Map display, move the arrowhead around the circle to select the direction, and away from the circle to select the speed. The size and direction of the arrow will change accordingly. Confirm the selection by selecting OK on the keypad.

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.

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.

MAP
Re-displays the Map toolbar in place of the Storm Select toolbar.
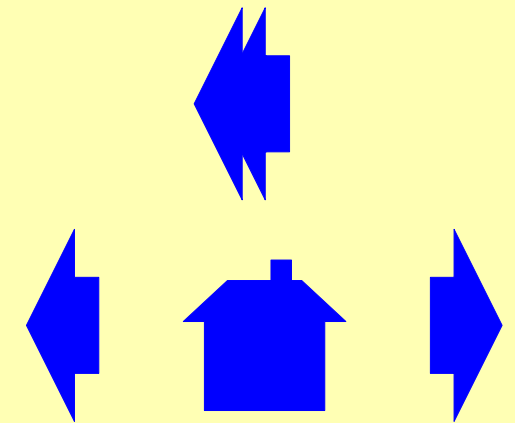
Contents

Emergency
Procedures

STORM POSITION

This popup is displayed when POSITION is selected on the Storm Control Toolbar.

Readout	Displays current geographical position of the storm.
Zoom In	Steps down through the map ranges with each selection.
Zoom Out	Steps up through the map ranges with each selection.
OK	Used to confirm the position selected by the white square frame as the storm position.
Enter Ident	Displays the alphanumeric keypad to allow a radio facility to be selected by its ident. The position of facility will then be the position of the storm.
Cancel	Removes the keypad from the display.

STORM ROTATION

This popup is displayed when ROTATION is selected on the Storm Control Toolbar.

Readout	Displays current storm rotation.
Zoom In	Steps down through the map ranges with each selection.
Zoom Out	Steps up through the map ranges with each selection.
OK	Used to confirm the rotation selected by the white arrow as the storm rotation.
Cancel	Removes the keypad from the display.
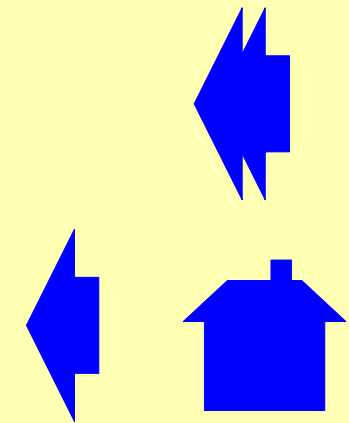
Contents

Emergency Procedures

This page is selectable from the Master Index and Communications pages 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.
RUNWAY IN USE	Allows active runway to be changed for currently selected 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.

Contents

Emergency Procedures

APPROACH TYPE   Allows you to select the type of radio navigation station used on approach.

ILS STATUS   Allows you to select the type of failure associated with the ILS on the currently active runway

RUNWAY CONDITION
PRECIP
VISIBILITY RESTRICTION   Allow the condition of the associated parameter
CLOUD 1 CONDITION   to be changed.
CLOUD 2 CONDITION

GMT
WIND DIRECTION
WIND SPEED
VISIBILITY
CLOUD 1 HEIGHT
CLOUD 2 HEIGHT   Allow the value of the associated parameter to
TEMP   be changed.
DEWPOINT
QNH (ICAO FORMAT ONLY)
QFE (ICAO FORMAT ONLY)
ALTIMETER (US FORMAT ONLY)
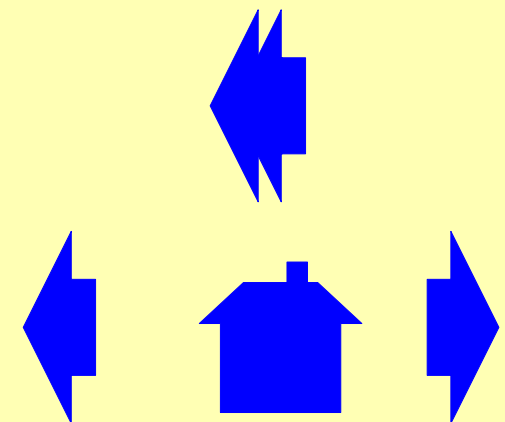
Contents

Emergency Procedures

RVR:
T/DOWN
MIDFIELD
ROLLOUT
}
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.

SIGMET

Displays significant meteorological information.

COMPL MESSAGE

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.
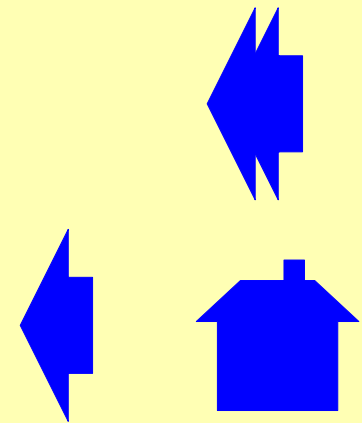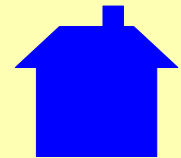
Contents

Emergency Procedures

COMPLEMENTARY ATIS MESSAGE

This page is selectable from the . 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.

An ON/OFF control button is assigned to each message and is accompanied by a brief textual description of its content.

Contents

Emergency Procedures

CB PANELS INDEX

This page is selectable from the page and allows you to trip the software controlled circuit breakers.

Each button on the page relates to a circuit breaker panel. Selecting a button displays a page listing the software–controlled circuit breakers on that panel. Selecting a button on the page trips the associated circuit breaker.
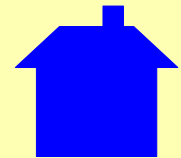
Contents

Emergency Procedures

This page is selectable from the and allows you to simulate radio communication between the ground and the flight crew.

SELCAL	Initiates a SELCAL to the flight deck on the associated channel. The channels and currently tuned frequency are displayed above the button.

The call is cancelled:
- when the flight crew acknowledge the call.
- after 30 seconds if no acknowledgement is received.
- by re-selecting the button.

CAPT, OBS, F/O — Display the radio channel in use when the associated flight crew member is transmitting. No display when there are no transmissions.

Ground Call:

GROUND TO FLIGHT DECK — Alerts the crew via a selcal 'bong' and an EICAS message that there is an incoming maintenance call from the ground crew.

SATCOM VOICE CALL — Alerts the crew via a selcal 'bong' and an EICAS message that there is an incoming satcom comms request.

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.
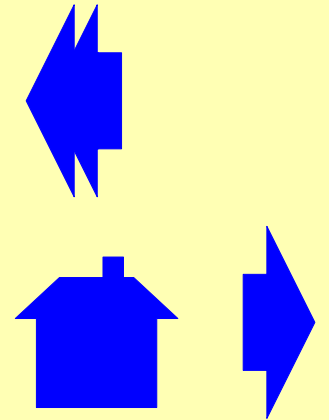
Contents

Emergency Procedures

Attendant Call:

ATTENDANT LOCATION — The display above the button indicates the station called from the flight deck. No display when there is no transmission.

Selecting this button displays a pop-up menu to allow you to select the attendant location. When station is displayed above the button, select the equivalent station to respond to the call from the flight deck. When no station is displayed, selecting an attendant location 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.

CABIN CALL — Once selected a CABIN CALL SELECT pop–up appears allowing you to select from READY or ALERT options.

COMM NOISE — Allows you to set a level of noise interference on the communications channels.

Private Interphone:

CAPT, F/O — 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.

Contents

Emergency Procedures

SERVICE INTERPHONE	Switches flight interphone comms from the instructors station to 'service interphone' mode. The crew can only communicate with the instructor using flight interphone if the overhead panel service interphone switch is selected on. Normal crew flight interphone operation is unaffected.
COMMUNICATIONS MODE	Displays a pop–up menu to allow you to select the communications mode.
ACARS	Display ACARS Main Menu page.
ATIS	Displays ATIS page.
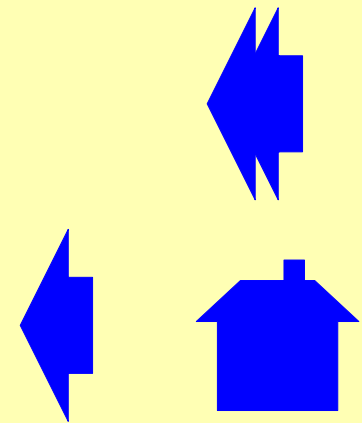
Contents

Emergency
Procedures

CONTROLS NOT IN AGREEMENT (CNIA)

This page is selectable from page and identifies those flying controls not in agreement with the current aircraft configuration.
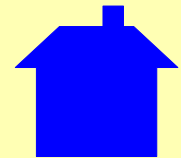
Contents

Emergency
Procedures

This page is selectable from the Master Index page.

If an Inflight Limitation or Ground Crash is detected, Flight Freeze is set and this page is displayed with the reason for the crash highlighted.

If an Advisory Condition is detected, the crash noise is generated by the sound system and this page is displayed with the Advisory Condition highlighted. Flight Freeze is not set.

Inflight Limitations

EXCESSIVE IAS	IAS > VMO + 60 knots (VD)
EXCESSIVE MACH	Mach > MD (Mach Drive)
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.

Ground 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.
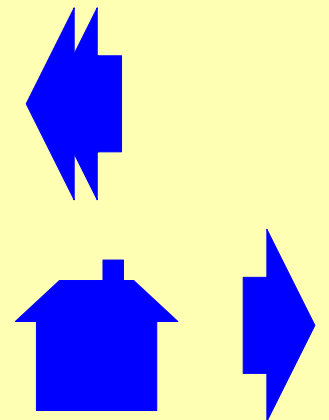
Contents

Emergency Procedures

Advisory Conditions

TAILSTRIKE	Rear fuselage height above ground ≤ 0.
LANDING GEAR NOT DOWN AND LOCKED AT TOUCHDOWN	Gear not locked fully down and strut has compressed.

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 Repositions 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.
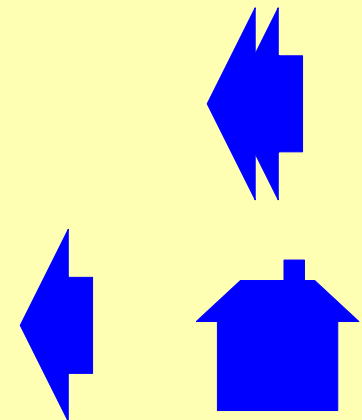
Contents

Emergency Procedures

CUSTOMER OPTIONS

This page is selectable from the Master Index page and allows you to recall sets of predefined configurations that are specific to particular customers.
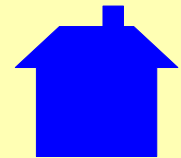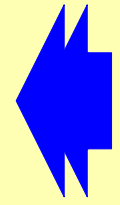
Contents

Emergency Procedures

DOORS

This page is selectable from the Services page and allows you to control the aircraft doors.

FWD ACCESS
ENTRY 1L
ENTRY 2L
ENTRY 3L
ENTRY 4L
ENTRY 5L
FWD CARGO
E/E ACCESS   Open/close associated door.
ENTRY 1R
ENTRY 2R
ENTRY 3R
ENTRY 4R
AFT CARGO
BULK CARGO
ENTRY 5R

FDAS

DOOR LOCK STATUS   Displays the current status of locked doors.

SLIDES TO MANUAL   Arms/disarms operation of the emergency passenger slides.

OPEN SEQUENCE   Opens doors in sequence.

CLOSE SEQUENCE   Closes doors in sequence.

CLOSE ALL   Closes all doors.
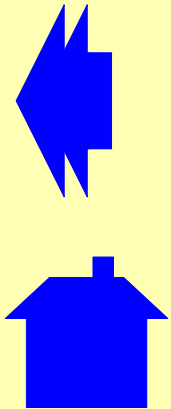
Contents

Emergency Procedures

ECL NORMAL CHECKLIST

The flight phase and the normal and non-normal checklists are automatically reset during repositions as part of simsoft. These pages allow you to override the current fight phase, and to reset the normal and non-normal checklists.

Three checklist pages are provided:

- **ECL Normal Checklist**
- **ECL Non-normal Complete Checklist**
- **ECL Non-normal Incomplete Checklist**

The **ECL Normal Checklist** page is selectable from the Master Index and shows the current state (Idle, Accessed, Complete or Override) of each normal checklist. The checklists are grouped by flight phase and can be selected individually or in groups.

Selecting a checklist allows you to change its state.

The flight phase can also be changed by selecting the appropriate button.

The **ECL Non-normal Complete** and **Incomplete Checklist** pages are accessed by selecting Page Forward or Page Back on the ECL Normal Checklist page. The pages show the current state of each annunciated active non-normal complete and incomplete checklist. The checklists can be overridden individually, or collectively by selected OVERRIDE ALL NON-NORMALS.   Selecting RESET ALL NON-NORMALS resets all the non-normal checklists to Idle.

A display at the bottom of these pages indicates the number of unannunciated checklists that have been selected by the flight crew, and the number that have been completed. Selecting the associated RESET button resets all the unannunciated checklists.
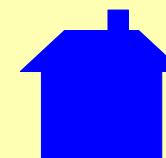
Contents

Emergency
Procedures

This page is selectable from the Master Index page and allows you to control the FANS simulation.

The FANS simulation consists of three processes:

- **Aircraft Facilities Notification (AFN)**
- **Automatic Dependency Surveillance (ADS)**
- **Controller Pilot Data Link Communications (CPDLC)**

AFN is responsible for initiating contact between the aircraft and ATC. When the flight crew logon, AFN transmits a downlink message containing details of the aircraft (such as flight number, tail number, equipment revisions) to the ATC centre selected by the crew. The ATC centre responds with an acknowledgement indicating successful logon. This acknowledgement is echoed at the top of the FANS Main Menu page.

Once logged on, **ADS** and **CPDLC** communications are initiated by the instructor acting as the ATC centre. Neither ADS or CPDLC communications are possible until AFN logon has been successfully completed.

ADS allows ATC centres to request aircraft information (such as position, speed, ETA) by establishing a contract between the ATC and the aircraft. Contracts can request periodic reports, event-driven reports (for example, on passing through an altitude), or demand-driven reports (once only, on request). These reports are controlled from the ADS Period Reports and the ADS Event Reports pages.

CPDLC allows communication between an air traffic controller and the flight crew. A library of pre-defined messages is provided on the FANS Routes page. A free text facility is provided on the CPDLC page.

All messages are delivered via SATCOM.

When a downlink message is received, the Downlink Message Overlay is automatically displayed to allow you to read the message and then to prepare and send a response.
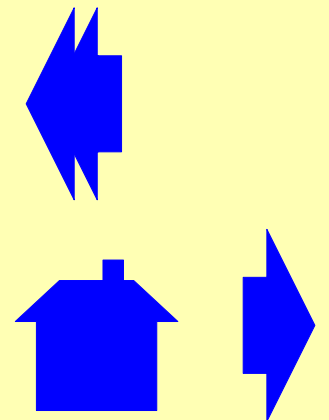
Contents

Emergency Procedures

REQUEST CPDLC CONNECTION — Initiates a CPDLC link between you (as air traffic controller) and the flight crew.

CPDLC DISCONNECT — Disconnects a CPDLC link.

ADS PERIODIC REPORTS — Displays the ADS Periodic Reports page which allows you to select period or demand-driven reports from the aircraft.

ADS EVENT REPORTS — Displays the ADS Event Reports page which allows you to select an event-driven report from the aircraft.

CPDLC — Displays the CPDLC page which allows you to set up a CPDLC message for transmission to the flight crew, and to read messages from the flight crew.

CPDLC LOG — Displays the CPDLC Log overlay which displays a chronological list of all previous uplink and downlink messages.

FANS ROUTES — Displays the FANS Routes page which allows you to select from a list of pre-defined messages.

GROUND STATION STATUS — Displays a pop-up menu to allow you to change the status of the ground station.

FANS RESET — Resets the FANS simulation to status at start of training exercise:

- Message log is cleared
- All existing ADS and CPDLC links are disconnected
- Any messages queued for transmission are deleted
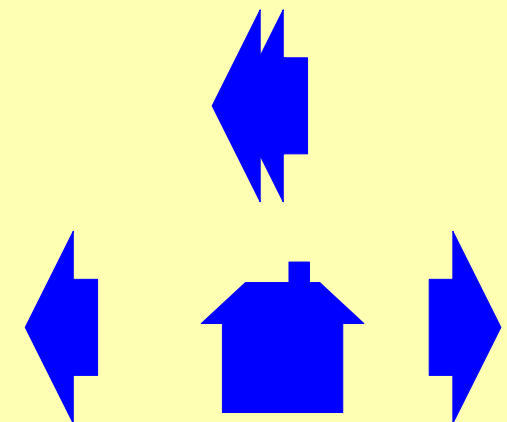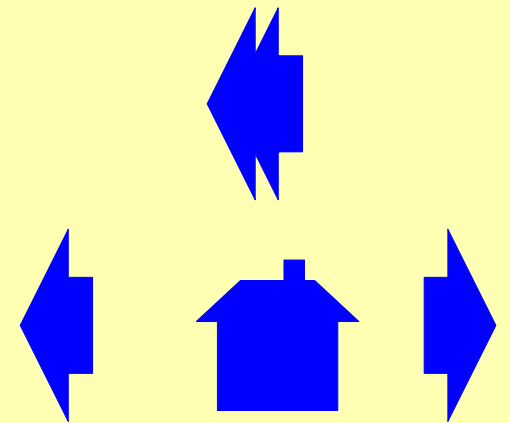
Contents

Emergency Procedures

ADS PERIODIC REPORTS

This page is selectable from the FANS Main Menu page and allows you to select period or demand-driven reports from the aircraft. The report is displayed on the page.

PERIOD	Allows you to set the time period between reports.
REQUEST PERIODIC REPORT	Sends signal to the aircraft requesting reports to be sent at the specified time period.
CANCEL PERIODIC REPORT	Sends signal to the aircraft cancelling the periodic report.
DEMAND REPORT	Sends signal to the aircraft requesting an immediate report.
CLEAR DISPLAYS	Clears the report window.

Allow you to select which groups of parameters are reported in a periodic report.

BASIC GROUP
FLIGHT IDENT GROUP
EARTH REF GROUP
AIR REF GROUP
MET GROUP
PREDICTED ROUTE GROUP
INT PROJ INTENT GROUP
FIXED INTENT GROUP

The buttons change colour to indicate selection status:

Blue – not included in the report

Green – included in the report, but not currently displayed

Amber – included in the report and currently displayed in the report window

NOTE: The Basic Group are always included in the report; the others are optional.

Contents

Emergency Procedures

ADS EVENT REPORTS

This page is selectable from the FANS Main Menu page and allows you to select an event-driven report from the aircraft.

VERTICAL RATE
LATERAL DEVIATION
ALTITUDE CEILING   } Allow you to set the event parameters that will
ALTITUDE FLOOR   initiate the report.
ACTIVE WAYPOINT
CHANGE

REQUEST EVENT   Sends signal to the aircraft requesting report to be
REPORT   sent when the specified event is reached.

CANCEL EVENT   Sends signal to the aircraft cancelling the event
REPORT   report.

Contents

Emergency
Procedures

CPDLC

This page is selectable from the FANS Main Menu page and allows you to set up a CPDLC message for transmission to the flight crew, and to read messages from the flight crew.

Downlink window	Displays the message from the flight crew.
Uplink window	Displays the message to be sent to the flight crew. Selecting CLEAR removes the message from the window.
Message buttons	Allow you to select a message for editing and subsequent transmission.
	The buttons initially display the groups of messages available. Selecting a group displays the messages associated with the group against the right-hand set of buttons. Selecting a message displays the associated parameters against the right-hand set of buttons. Selecting a parameter displays the value of the parameter in the Uplink window and you can use the keypad to edit the value.
SCROLL UP SCROLL DOWN }	Allows you to scroll through the message button displays.
KEYPAD	Displays the alphanumeric keypad to allow you to edit/create messages.
SEND UPLINK	Transmits the message in the Uplink window to the aircraft.
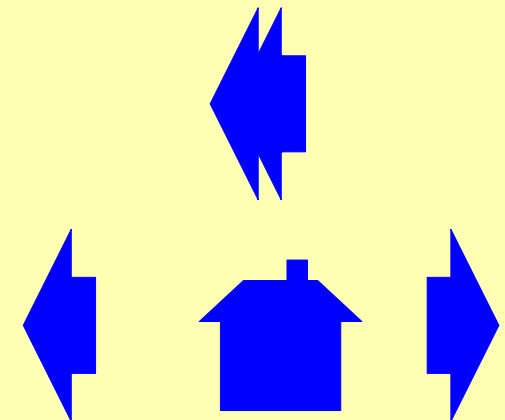
Contents

Emergency Procedures

FANS ROUTES

This page is selectable from the FANS Main Menu page and allows you to select from a list of pre-defined messages. Up to 20 routes are available with up to 20 messages per route. Select the required route and message, then select SEND UPLINK to send the message to the aircraft. Use the SCROLL UP/SCROLL DOWN buttons to scroll through the routes messages.
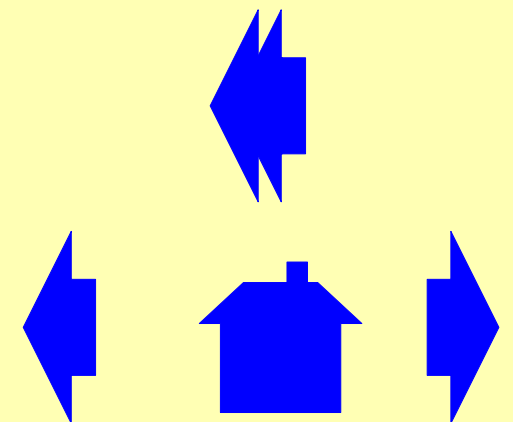
Contents

Emergency Procedures

CPDLC LOG OVERLAY

This overlay displays a chronological list of all previous uplink and downlink messages. Each entry provides an abbreviated version of the associated message, the time received/sent and the status of the message. Selecting the button associated with a message displays the CPDLC Log Overlay 2 which provides the full text of the message.

SCROLL UP
SCROLL DOWN
} Allows you to scroll through the message button displays.
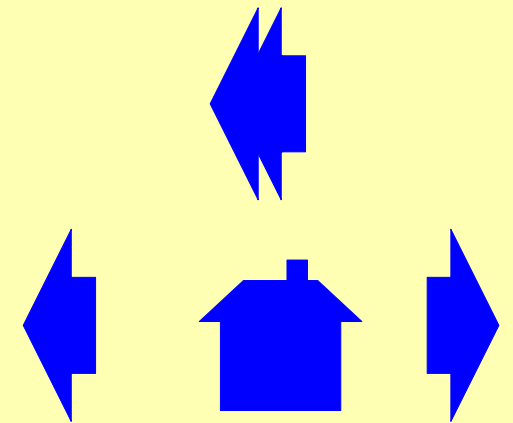
Contents

Emergency Procedures

CPDLC LOG OVERLAY 2

This overlay displays the full text of an uplink or downlink message. If the status of a downlink message is OPEN, then the SELECT RESPONSE button is enabled. Selecting this button displays the CPDLC page to allow you to prepare and send a response to the aircraft.
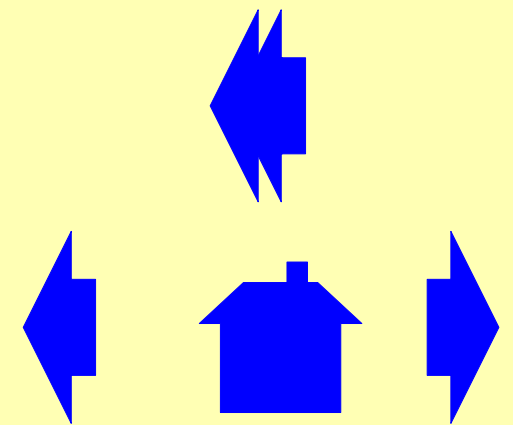
Contents

Emergency Procedures

DOWNLINK MESSAGE OVERLAY

This overlay is displayed automatically when a downlink is received from the aircraft. The downlink message is displayed, together with three possible responses. Select SEND to send the associated uplink response. If you do not want to use one of the pre-selected messages, select OTHER which displays the CPDLC page to allow you to prepare and send an alternative response.
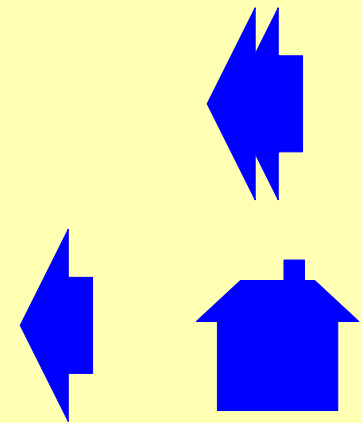
Contents

Emergency Procedures

FLIGHT CONDITIONS

This page is selectable from the page and displays current value of listed aircraft and environment parameters.

Contents

Emergency Procedures

FLIGHT PLAN

This page is selectable from the Master Index page and allows you to configure the FMC with route information.

LOAD TO FMC	Programs the FMC with the information from the selected stored route.
HELP	Programs the FMC with the information from the selected stored route.
PAGE UP PAGE DOWN	Allow you to scroll up/down through the list of available flight plans.
MASTER INDEX	Displays Master Index page.
HARD COPY	Prints a copy of the current page on the hard copy printer.
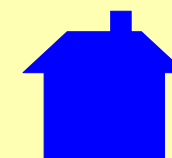
Contents

Emergency Procedures

FREEZE/SPEEDUP

This page is selectable from the Master Index and allows you to suspend and restart all or some of the simulated systems.

NOTE: IOS remains operational during all freeze states.

Freezes:

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.
FLIGHT FREEZE	Freezes aerodynamic parameters (aircraft speed, attitude, altitude and geographical position). Aircraft systems remain operational.
FUEL FREEZE	Freezes fuel quantities at current value. Engine fuel flows unaffected, but no fuel depletion occurs.
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.

Speedup:

SPEEDUP	Allows aircraft ground speed to be changed (other aircraft parameters are not affected).
FUEL JETTISON	
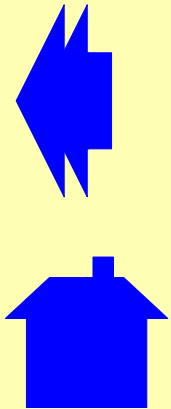
Contents

Emergency Procedures

GLOBAL POSITIONING SYSTEM

This page is selectable from the page.

No. Of Usable Satellites   Allows you to change the number of usable satellites.
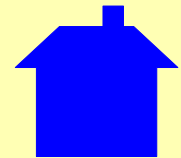
Contents

Emergency Procedures

This page is selectable from the Normal Toolbar and allows you to select the appropriate lesson plan for the training exercise. Selection may be from either a dedicated list or a pop–up list.

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.
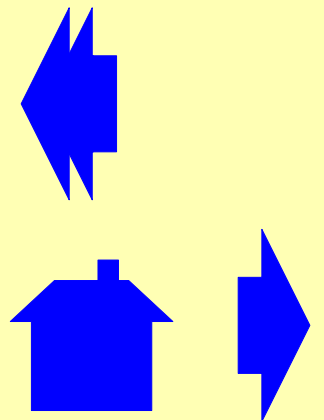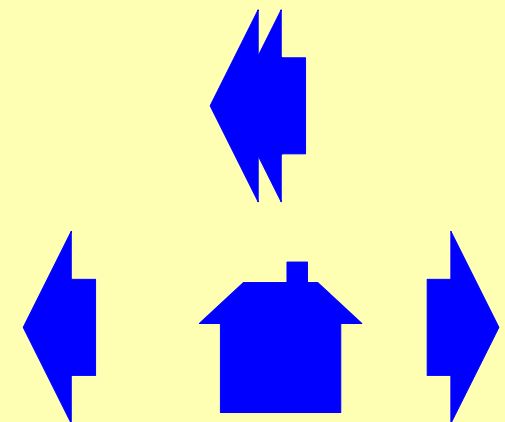
Contents

Emergency Procedures
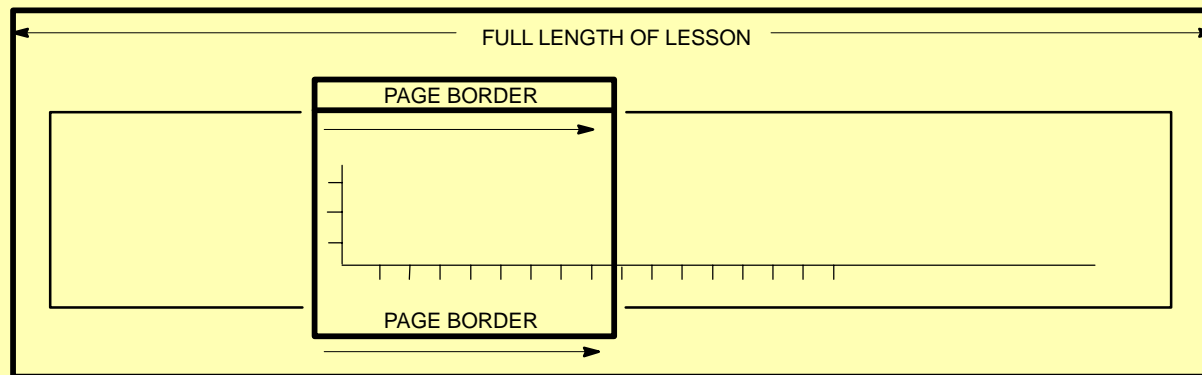
Each lesson plan consists of a series of numbered events which are displayed as buttons on the screen. As the lesson progresses, the events are activated sequentially. Automatic events (indicated by an A) occur when the pre-set conditions are met; manual events (indicated by an M) require action by you 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.

When selected, manual events may provide you with a number of different options, each of which may activate different actions. If an event is active, a popup appears displaying the available options, an Execute button and a Close button. The currently selected option will be activated when the Execute button is pressed. If an event is not active, a Goto button replaces the Execute button, but you can still select a 'current' option. This selection is retained when the task becomes active and the 'Execute' popup is displayed. Options are mutually exclusive, ie., only one option can be selected during a given execution of a lesson plan.

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

Contents

Emergency Procedures

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.
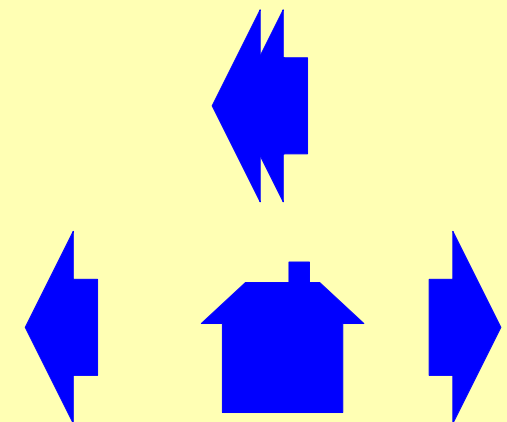
List View

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 along the bottom of the page to allow you to control the lesson:

- START and RESET & START (or STOP and RESET & STOP). Selecting either START or RESET & START starts the lesson plan. (RESET & START performs a Master Reset before starting the lesson plan). Selecting either STOP or RESET & STOP stops the lesson plan. (RESET & STOP performs a Master Reset before stopping the lesson plan).

- 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.

- MASTER INDEX, which displays the Master Index page to provide access to the rest of the IOS pages.

- 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.

- FORWARD and BACK arrow buttons, which allow you to scroll through the lesson plan.

Contents

Emergency Procedures

- HARD COPY, which prints the page on the hard copy printer..

- VIEW, which switches between Profile and List view.

- ZOOM, which displays the whole lesson plan (in Profile view), or removes event descriptions from display thus allowing more events to be displayed (in List view).

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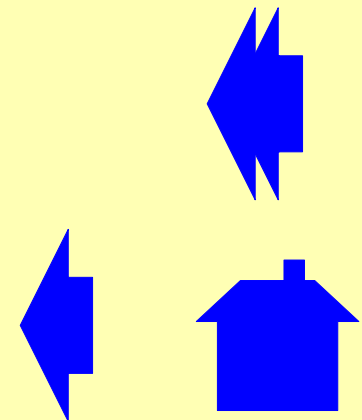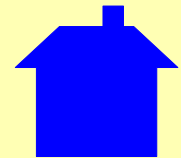
Contents

Emergency Procedures

LOGO

This page is displayed at system startup. Selecting START displays the Master Index page.

Contents

Emergency Procedures

MAINTENANCE INDEX

This page is selectable from the page 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.
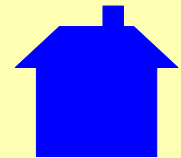
Contents

Emergency
Procedures

This page is selectable from the Normal Toolbar 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:

- **Active Malfunctions** — 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 Malfunctions** — 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 Stations** — Failed radio stations are identified in amber 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.

- **"Soft" Circuit Breakers** — These are open (software), circuit breakers which are outside the simulated area and are identified in white text. Selection of an associated button closes the circuit breaker.
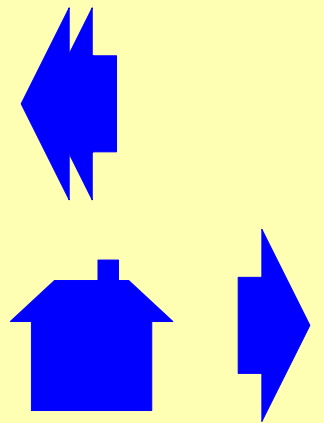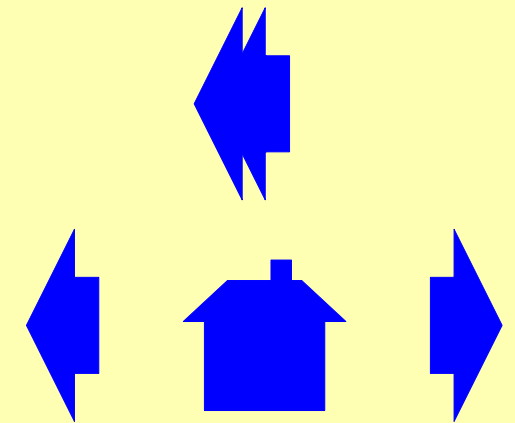
Contents

Emergency Procedures

- Circuit Breakers   These are circuit breakers which are within the simulated area and have been thermally tripped, and are identified in yellow text.

- Misc   These are typically simulation "freeze" conditions and are identified in green text. Selection of an associated button resets the condition.

Along the lower section of the page are selection buttons which are provided to "de-clutter" the information display. These correspond to the above condition categories and their alternate action may be used to display or suppress the related information:

ACTIVE MALFS   Controls the display of active malfunctions, coloured red when their display is enabled, blue when it is suppressed.

ARMED MALFS   Controls the display of armed malfunctions, coloured yellow when their display is enabled, blue when it is suppressed.

FAILED STATIONS   Controls the display of failed radio stations, coloured amber when their display is enabled, blue when it is suppressed.

PHYSICAL CB STATUS   Controls the display of thermally tripped, physically present circuit breakers, coloured yellow when their display is enabled, blue when it is suppressed.

INSTRUCTOR CB TRIPS   Controls the display of tripped software circuit breakers, coloured white when their display is enabled, blue when it is suppressed.
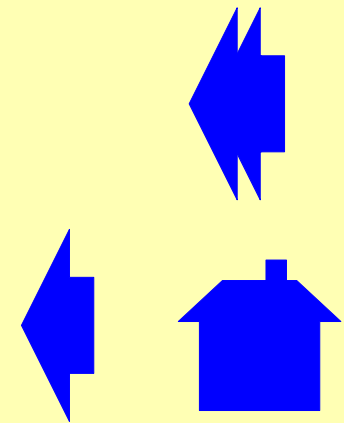
Contents

Emergency Procedures

Misc   Controls the display of other conditions, coloured
                                    green when their display is enabled, blue when it
                                    is suppressed.

NOTE: Popped circuit breakers must be manually reset.

Contents

Emergency
Procedures

This page is selectable from the Normal Toolbar 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 and incorporates a MALFUNCTION MODE selection touchpoint.

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:

INFORMATION   Displays a pop-up window which provides details of the cause and effect of the malfunction.

ARM   Displays the Arm Malfunction pop-up 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.
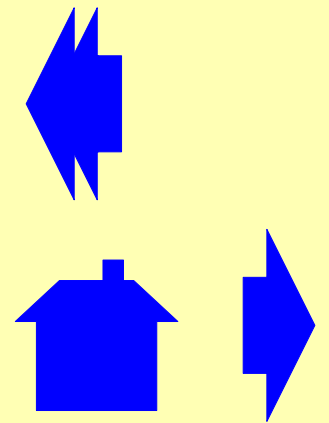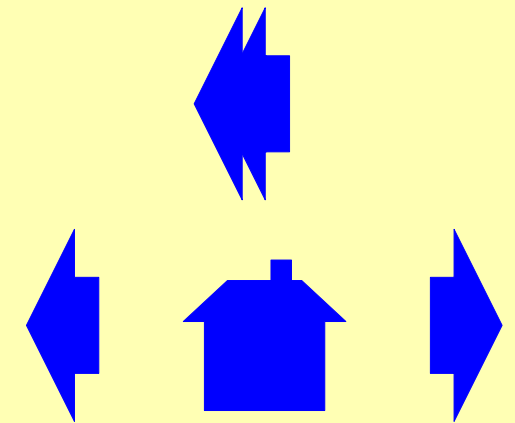
Contents

Emergency Procedures

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.

MODIFY   Only displayed when a variable malfunction is selected.
                Displays the numeric keypad to allow you to change the value
                of the malfunction parameter.

DEFAULT   Only displayed when a variable malfunction is selected.
                Resets the malfunction parameter to the pre-defined default
                value (as indicated by the display adjacent to the malfunction
                selection button).

Cancel   Removes the menu from display.

Contents

**Emergency
Procedures**

ARM MALFUNCTION

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:

    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.

    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.
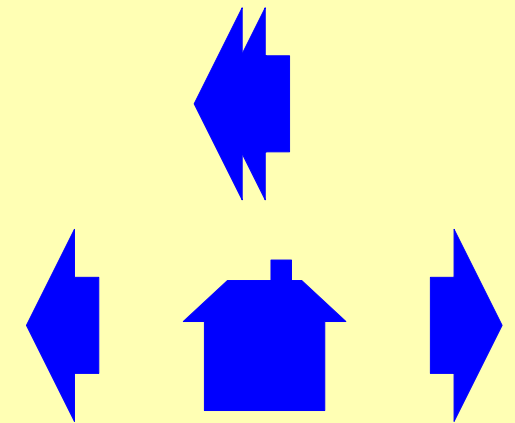
Contents

Emergency Procedures

ARM MALFUNCTION (continued)

Speed
crosses V1
Speed   } Discrete selections
crosses V2
Speed
crosses Vref

Altitude   Displays transition options (see below). Selecting an
(AGL)   option displays the numeric keypad to allow you to enter an
                  altitude (above ground level) value as the trigger condition.

Altitude   Displays transition options (see below). Selecting an
(AMSL)   option displays the numeric keypad to allow you to enter an
                  altitude (above mean sea level) value 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.

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.

Contents

Emergency
Procedures

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.
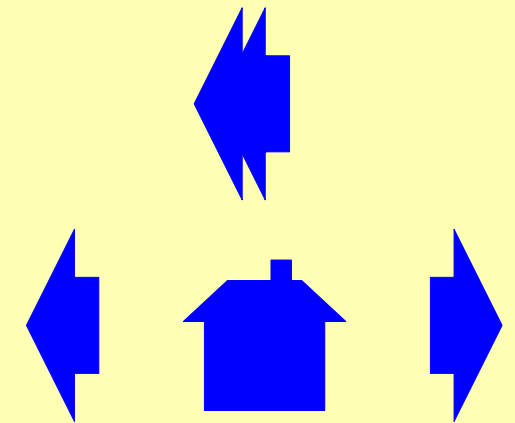
Contents

Emergency Procedures

< 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.
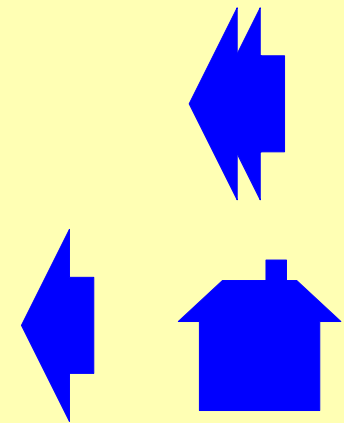
Contents

Emergency Procedures

MASTER INDEX
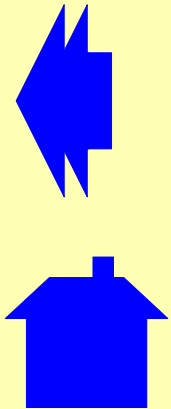
The Master Index provides access to the following pages:

AMTF USE ONLY   This button enables the Maintenance Training mode and access to an extra suite of pages.

INSTRUCTORS REFERENCE MANUAL   Displays this document.

Contents

Emergency Procedures

MICROBURST SELECTION

This page is selectable from the Weather – Atmosphere page and allows you to select the position and intensity of the microburst. The pre-defined options are given below:

POSITION	INTENSITY	DISTANCE	DISTANCE FROM CENTRELINE
TAKE OFF	100%	1.8 NM	ON CL
TAKE OFF	100%	3.3 NM	ON CL
APPROACH	150%	3.0 NM	ON CL
APPROACH	50%	1.2 NM	ON CL
APPROACH	100%	1.2 NM	0.5 NM RIGHT
APPROACH	100%	1.2 NM	0.5 NM LEFT
APPROACH	100%	0.8 NM	ON CL

PREDICTIVE WINDSHEAR DETECTION   Enables/disables the predictive windshear function of Weather Radar.

INTENSITY   Allows you to change the preset intensity value in percent from 10% to 100%.
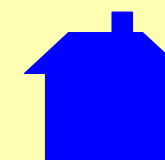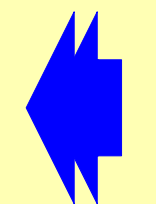
Contents

Emergency Procedures

MOTION INTERLOCKS

This page is selectable from the page 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 LATCHED 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.
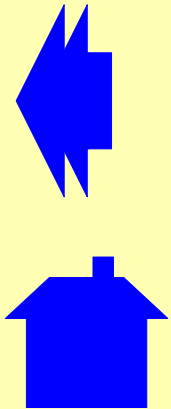
Contents

Emergency
Procedures

Three plot pages are provided, to allow you to monitor the flight crew's performance during an approach, during departure, and during take-off and landing operations at the runway.
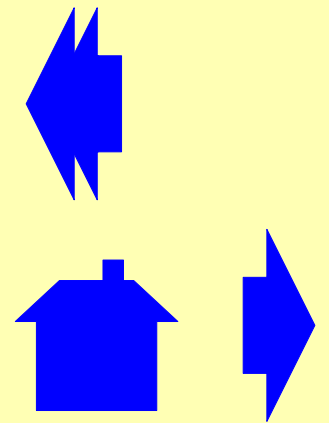
- Approach Plot
- Departure Plot
- Runway Plot

The Approach Plot display is selectable from the Normal Toolbar. All three plot pages are selectable at the Plot Toolbar.

HARD COPY	Prints a copy of the current plot on the hard copy printer.
AREA MAP	Displays Area Map page.
RUNWAY PLOT	Displays the Runway Plot page.
APPROACH PLOT	Displays Approach Plot page.
DEPARTURE PLOT	Displays Departure Plot page.
TAKEOFF AND LANDING PERFORMANCE	Displays T/O and Landing Performance page.
ERASE TRACK	Erases the current plot.
SCALE (not available on Runway Plot page)	Allows you to change the scale of the plot (auto, high, medium, low).
MASTER INDEX	Displays Master Index page.
RETURN	Displays the page that was previously on display.

If a microburst is active, its location is displayed on the plot.

A windshear symbol is displayed if windshear is active.

Contents

Emergency Procedures

APPROACH PLOT

The Approach Plot page consists of three graphs:

- Lateral deviation (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)

- Vertical deviation (distance above/below the glideslope; Y axis scale is dependent on glideslope beam width and X axis scale is dependent on Scale button selection)

- Speed (aircraft speed and a reference speed; Y axis scale is 100 to 200 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^o

- 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.
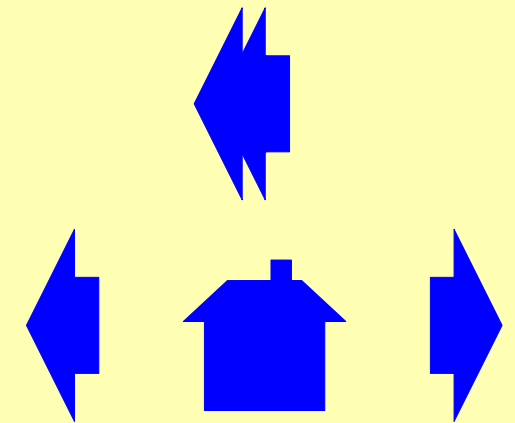
Contents

Emergency Procedures

APPROACH PLOT (continued)

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.

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 are displayed at the top of the page:

Section 1:

- Active airport (ICAO code)
- Active runway
- Active runway ILS frequency and Localiser course (from Navigation Data)
- Active runway elevation (from Navigation Data)
- Active runway contamination (as displayed on the appropriate Weather page)
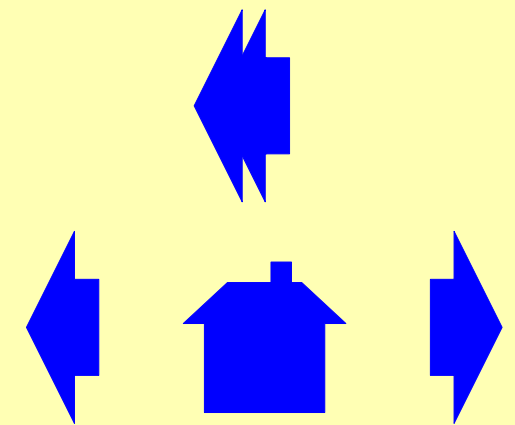
Contents

Emergency Procedures

APPROACH PLOT (continued)

Section 2:

- Gust (as displayed on the Weather – Cloud and Wind page)
- Surface wind speed and direction (as displayed in the standard readouts area)
- Field temperature (as displayed in the standard readouts area)
- Gross Weight (as displayed in the standard readouts area)

Section 3:

- Current glideslope deviation.

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

- Current localiser deviation.

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

- Maximum glideslope deviation

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

- Maximum localiser deviation

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

- Threshold crossing height

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

- Touchdown distance

  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.
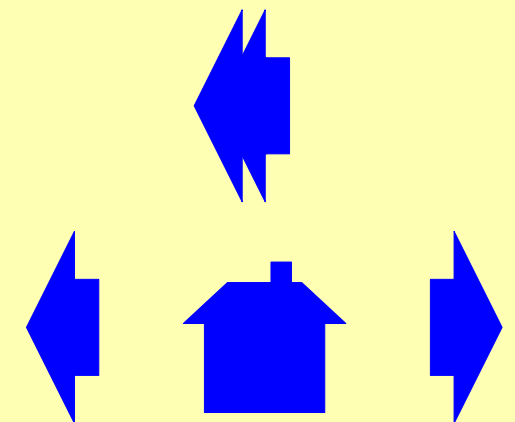
Contents

Emergency Procedures

DEPARTURE PLOT

The Departure Plot page 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 50 to 200 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.
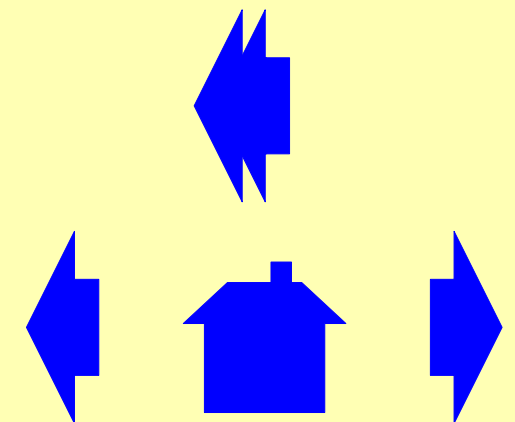
Contents

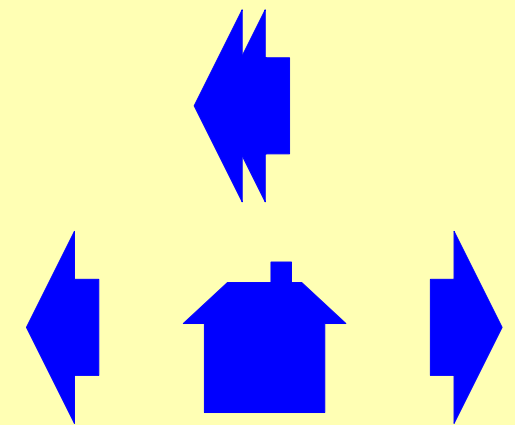Emergency Procedures

DEPARTURE PLOT (continued)

The following data readouts are displayed at the top of the page:

Section 1:

- Active airport (ICAO code)
- Active runway
- Active runway ILS frequency and Localiser course (from Navigation Data)
- Active runway elevation (from Navigation Data)
- Active runway contamination (as displayed on the appropriate Weather page)

Section 2:

- Gust (as displayed on the Weather – Cloud and Wind page)
- Surface wind speed and direction (as displayed in the standard readouts area)
- Field temperature (as displayed in the standard readouts area)
- Gross Weight (as displayed in the standard readouts area)

Contents

Emergency
Procedures

RUNWAY PLOT

The Runway Plot page consists of four graphs:

- Aircraft position (aircraft position on the runway; Y axis scale is dependent on runway width, X axis scale is dependent on runway length)

- Brake pedals (left and right pedal deflection; Y axis scale is 0 to100 %, 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 pedal (deflection left (negative) and right (positive) in degrees; Y axis scale is -20^0 to $+20^0$, 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.
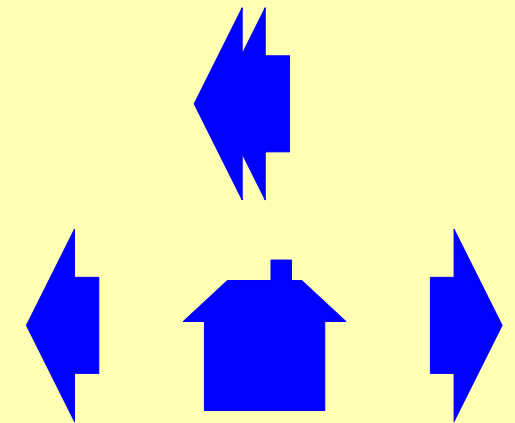
Contents

Emergency Procedures

RUNWAY PLOT (continued)

The following data readouts are displayed at the top of the page:

Section 1:

- Active airport (ICAO code)
- Active runway
- Active runway ILS frequency and Localiser course (from Navigation Data)
- Active runway elevation (from Navigation Data)
- Active runway contamination (as displayed on the appropriate Weather page)

Section 2:

- Gust (as displayed on the Weather – Cloud and Wind page)
- Surface wind speed and direction (as displayed in the standard readouts area)
- Field temperature (as displayed in the standard readouts area)
- Gross Weight (as displayed in the standard readouts area)
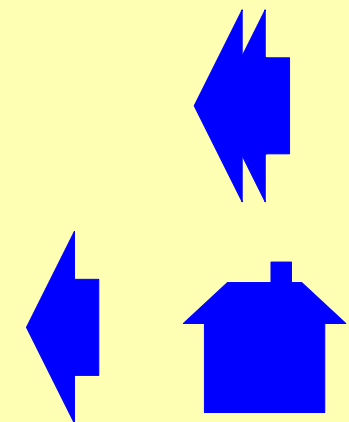
Contents

Emergency
Procedures

RADIO STATIONS

This page is selectable from the Master Index and allows you to fail and subsequently restore radio stations. The buttons at the top of the page allow you to select a radio station, either by identifier or by location (airport/runway reference). The display at the bottom of the page lists the currently failed radio stations with a button to the left of each item. Selection of this button displays a pop–up which can be used to provide information about the station, or to restore the station.

Select by Identifier

- Select the button associated with the required station type. The alphanumeric keypad is displayed.
- Enter the station identifier. Pop–up menu is displayed listing the radio aids at the selected station.
- Select the required radio aid to be failed/restored.

NOTE: If the keypad identifier is unknown, the message NOTHING FOUND is displayed in the pop–up menu.

Select by Airport/Runway Reference

- Select AIRPORT ICAO CODE. The Airport Select page is displayed.
- Select the required airport. This page is re–displayed.
- Select RUNWAY. Pop–up menu is displayed listing the available runways at the airport.
- Select the required runway.
- Select the button associated with the required radio station type. Pop–up menu is displayed listing the radio stations of that type at the selected airport/runway.
- Select the required radio station. Pop–up menu is displayed listing the radio aids at the selected station.
- Select the required radio aid to be failed/restored.

RESTORE ALL   Restores all failed radio stations.
FAILED STATIONS

Contents

Emergency Procedures

This page is selectable from the Normal Toolbar 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:

REPOSITION CASE	DIST ALONG EXTENDED C/L (Nm)	X–TRACK (Nm)	HEADING (°)	ALTITUDE (ft)	SPEED (kt)	CONFIG (SLAT/FLAP GEAR)
GROUND REPOSITIONS						
TAKE OFF	ACCORDING TO THE RUNWAY IN USE		RW	ON GND	–	GR DN, FLP 5
OPP TAKE OFF			RW+180	ON GND	–	GR DN, FLP 5
TAXI			–	ON GND	–	GR DN, FLP UP
GATE			–	ON GND	–	GR DN, FLP UP
HOLDING POINT			–	ON GND	–	GR DN, FLP UP
IN FLIGHT REPOSITIONS				(AGL)		
700ft	4	ON LOC, ON GS	RW	1500 HAA	VLS +5	GR DN, FLP 30
2000ft	6	ON LOC, ON GS	RW	2000 HAA	VLS +5	GR DN, FLP 30
4000ft	15	5Nm Left	RW+90	5000	VLS CONF 1	GR UP, FLP 1
INT ILS LH	10	1Nm Left	RW+45	3000 HAA	VLS CONF 5	GR UP, FLP 5
INT ILS RH	10	1Nm Right	RW–45	3000 HAA	VLS CONF 5	GR UP, FLP 5
Down Wind LH	OPP THR	2Nm Left	RW+180	1500 HAA	VLS CONF 5	GR UP, FLP 5
Down Wind RH	OPP THR	2Nm Right	RW+180	1500 HAA	VLS CONF 5	GR UP, FLP 5
AIR WORK						
FL100 30 NM	–	–	–	10000	250	GR UP, FLP 0
FL350 150 NM	–	–	–	35000	Mach .80	GR UP, FLP 0
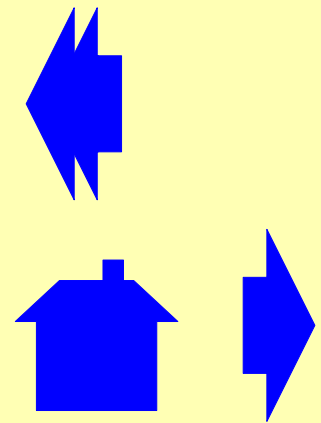
Contents

Emergency Procedures

REPOSITIONING AIRPORT

Displays the Airport Select page which allows you to select the airport that will be used for the next reposition. The selected airport becomes the active airport. The currently selected airport is displayed in the button.

REPOSITIONING RUNWAY

Displays a pop-up menu which allows you to select the runway that will be used for the next reposition. The selected runway becomes the active runway. The currently selected runway is displayed in the button.
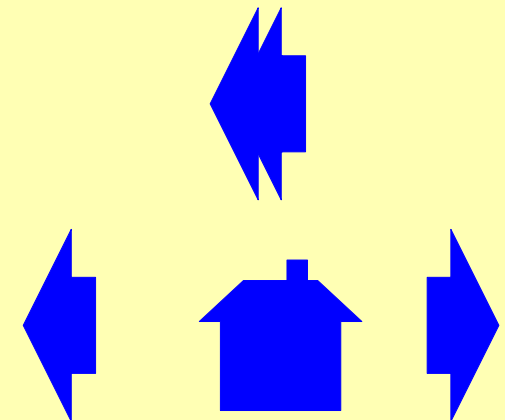
DESTINATION AIRPORT

Displays the Airport Select page which allows you to select the destination airport. The currently selected airport is displayed in the button.

DESTINATION RUNWAY

Displays a pop-up menu which allows you to select the destination runway that will be used for the next reposition. The selected runway is displayed in the button.

FLIGHT FREEZE

Flight freeze is set automatically during the reposition.

When the reposition is completed, select FLIGHT FREEZE to continue the training exercise.
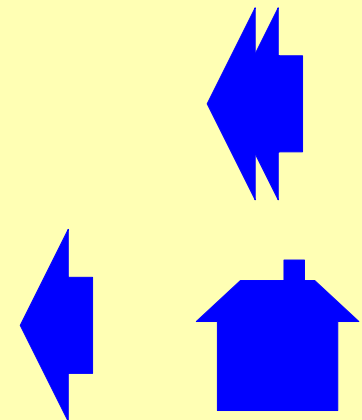
Contents

Emergency Procedures

This page is selectable from the Normal Toolbar and allows you to reset the aircraft systems to normal operating conditions

Main 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.
SYSTEM RESET	Resets all systems defined on the page to normal operating conditions.
CLEAR ALL MALFUNCTIONS	Resets all active and armed malfunctions, restores all failed radio stations and clears all circuit breaker trip conditions.
ENVIRONMENT RESET	Selects standard day weather conditions: Tropopause level: FL360 QNH: 1013.25 mb Temperature gradient: −1.98°C/1000 ft Sea level temperature: 15°C Delta ISA: 0°C
RADIO STATIONS	Displays Radio Stations page.
FMC AUTOLOAD DISABLE	Selection disables the FMC to autoload a designated flight plan when the aircraft is repositioned for takeoff.

Contents

Emergency Procedures

System Resets:

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.
ENGINE	Resets engine RPM to normal operating level.
ENGINE OIL QTY	Refills all engine oil tanks to normal levels.
FIRE EXTINGUISHER	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).
RAM AIR TURBINE	Resets the Ram Air Turbine.
TYRE PRESSURE	Resets all deflated tyres to normal operating pressure.
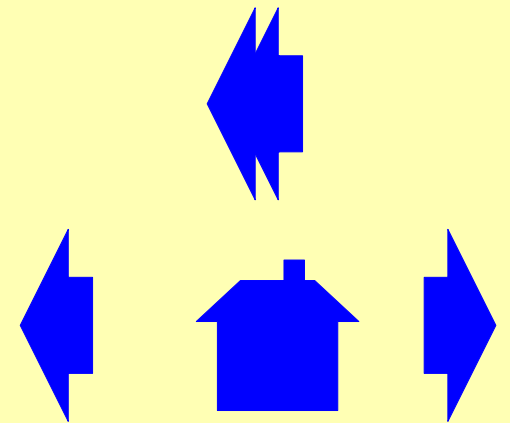
Contents

Emergency Procedures

Temperature Resets:

BRAKE	Resets all brake pad temperatures to ambient level.
EGT	Resets exhaust gas temperature to normal operating value.
ENGINE OIL	Refills all engine oil tanks to normal levels.
FLT DECK/CABIN	Resets air conditioning temperature to normal operating level.
FUEL	Resets fuel temperature to normal operating value.
HYDRAULIC FLUID	Refills all hydraulic reservoirs to normal levels.
IDG OIL	Resets IDG oil temperature to normal operating value.
WINDOW	Resets window heater temperature to normal operating level.
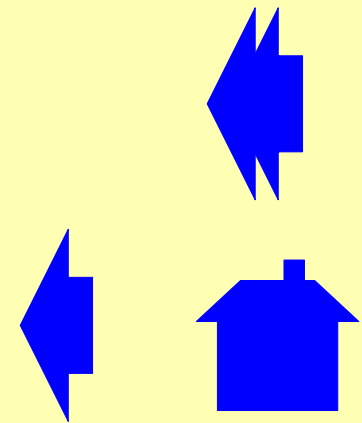
Contents

Emergency Procedures

ROUTED TRAFFIC

This page is selectable from the Weather – Visual/Rwy Conds page and allows you to control the appearance and movement of up to sixteen 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.

STANDBY   Establishes the traffic object at the start of its recorded route. If the associated traffic object is already established, this selection terminates it and removes it from display.

START/STOP   When traffic is inactive at standby, initiates movement of the traffic object along its route. When the traffic is active, stops its movement, subsequent selection causes the movement to resume.

A summary of the routed traffic model is aligned with each pair of control buttons, to define the vehicle concerned and its scheduled performance.
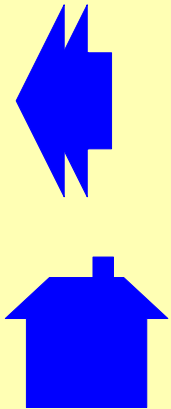
Contents

Emergency Procedures

This page is selectable from the Normal Toolbar and allows you to perform functions normally undertaken on the ground.

PRIMARY EXTERNAL POWER	Simulates connection of primary external power when aircraft is stationary on ground.
SECONDARY EXTERNAL POWER	Simulates connection of secondary external power when aircraft is stationary on ground.
EXTERNAL AIR	Simulates connection of external air supply when aircraft is stationary on ground.
ADIRS ALIGN	Initiates an instantaneous re-alignment of the inertial reference system.
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.
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.
WHEEL CHOCKS	Simulates aircraft on chocks.
A/C ON JACKS	Simulates aircraft on jacks.
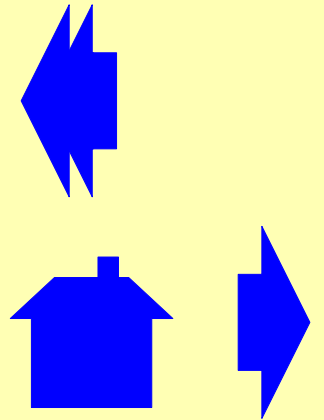
Contents

Emergency Procedures

Hydraulic Reservoir Qty

LEFT
CENTER   } Allow you to select the hydraulic fluid quantity load in each
RIGHT   of the hydraulic reservoirs on the aircraft.

Oxygen Qty

OXYGEN QTY   Allows you to select the oxygen pressure in the system.

Engine Oil Qty

LEFT ENGINE   } Allow you to set the oil quantity in each engine.
RIGHT ENGINE

Smoke Control

SMOKE   Activates the smoke generator. Additonal display indicates
REQUEST   the status of the smoke generator.
             Off OFF (blue)
             Armed WARMING UP (green)
             Ready SMOKE READY (green)

Pushbacks

NOSE LEFT   Aircraft is reversed from ramp and turned 90° to the right.

NOSE RIGHT   Aircraft is reversed from ramp and turned 90° to the left.

NOSE STRAIGHT   Aircraft is reversed from ramp in a straight line.
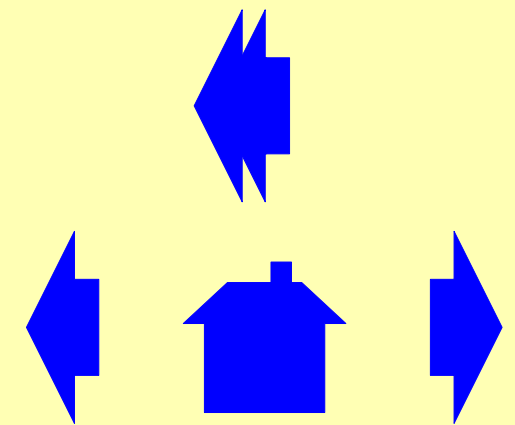
Contents

Emergency
Procedures

Miscellaneous

UNITS   Allows you to select either US, metric or ICAO units to be used on
             the IOS pages.

SOUND   Displays the current sound volume in the simulator as a
VOLUME   percentage of the maximum possible.

DOORS   Displays Doors page.
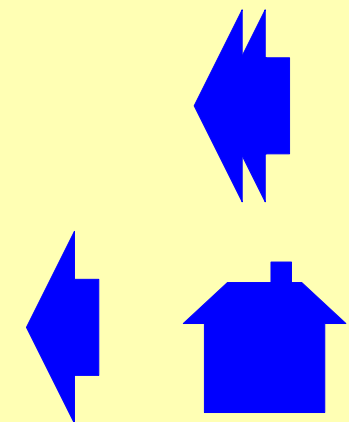
Contents

Emergency
Procedures

SLEW

This page is selectable from the page.

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. Aircraft stops moving when finger is removed from touchpoint.
Geographic	Allows aircraft to be repositioned relative to its geographic heading. Selecting a touchpoint moves the aircraft in that direction. Aircraft stops moving when finger is removed from touchpoint.

HEADING
ALTITUDE
SPEED   } Allow value of associated parameters to be changed.
MACH No

SPEED UP	Displays a pop–up menu which allows you to increase the aircraft ground speed by a factor of 1, 2 or 4 (other aircraft parameters are not affected).
LATITUDE	Allows you to change the latitude of the aircraft using a numeric keypad.
LONGITUDE	Allows you to change the longitude of the aircraft using a numeric keypad.
ACTIVATE	Activates the selected latitude/longitude settings.
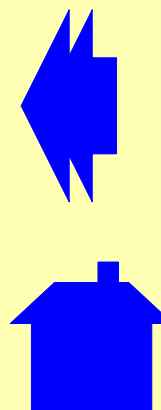
Contents

Emergency
Procedures

This page is selectable from the Master Index page.

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.

NUMBER	Displays a pop–up menu to allow you to select the number of the snapshot which is to be used to store the snapshot data.
TAKE	The simulator conditions are stored in the snapshot and displayed on the page.
RECALL	Resets the simulator to the configuration specified by the selected snapshot (as shown in the SNAPSHOT display).
LOCK	Locks the data in the selected snapshot so that it cannot be erased. Second selection unlocks the data.
ERASE	Erases the data from the selected snapshot (only available if not locked).
ERASE ALL	Erases the data from all the unlocked snapshots.
ACTUAL VALUE	Displays the current value of the listed parameters.
SNAPSHOT VALUE	Displays the stored values of the listed parameters for the selected 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 already 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.
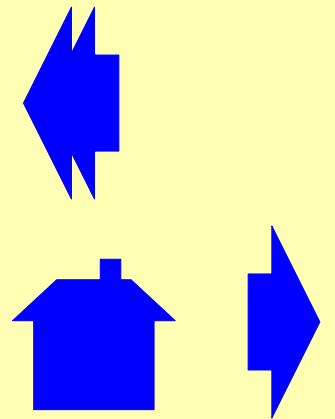
Contents

Emergency Procedures

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

Recalling Snapshots

- Select NUMBER and and from the pop–up displayed select the number of the snapshot you want to recall. The data in the snapshot is displayed on the page.
- Select RECALL to re-configure the simulator to the conditions in the snapshot. Flight Freeze is set automatically during the reposition.
- Deselect FLIGHT FREEZE on the Freezes page to re-run the exercise from the point of the 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.
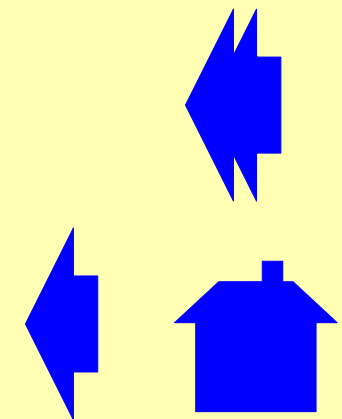
Contents

Emergency
Procedures

T/O AND LANDING PERFORMANCE

This page is selectable from the Plot pages and displays the values of various aircraft parameters during take–off and landing to enable you to check the performance of the flight crew.
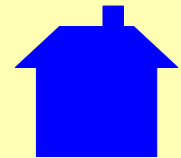
Contents

Emergency Procedures

PREDICTABLE SCENARIOS

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 SELECT	Arms the associated scenario and the diagrams will reflect the initial positions of the own aircraft and intruder.
SCROLL UP/SCROLL DOWN	Scrolls through the list of available scenarios.
RUN SCENARIO	Activates the armed scenario if the own aircraft is within the specified limits displayed for the selected scenario.
STOP SCENARIO	Stops the active scenario.
OWN AIRCRAFT 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 flash to an exceeded limits display when the own aircraft is outside these limits.
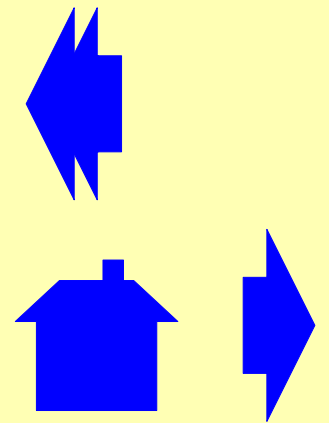
Contents

Emergency Procedures

RANDOM TRAFFIC

This page allows you to select conflicting traffic in the terminal area, or to select a random single aircraft approaching from a defined direction.

Random traffic is selected from the following aircraft types: ATR42, B747–400, B737–300, B757–200, B767–300, A320, A340.

AIR TRAFFIC CONTROL

LIGHT TRAFFIC MEDIUM TRAFFIC HEAVY TRAFFIC	Activates terminal area traffic flying a fixed route relative to the active runway. Aircraft separation on the route is dependent on the traffic density selected.

RANDOM TRAFFIC

AHEAD BEHIND LEFT RIGHT ABOVE BELOW LEVEL	Arms a scenario with a single aircraft approaching from the selected directions.

START	Activates the selected random traffic scenario.
STOP	Deactivates random traffic.
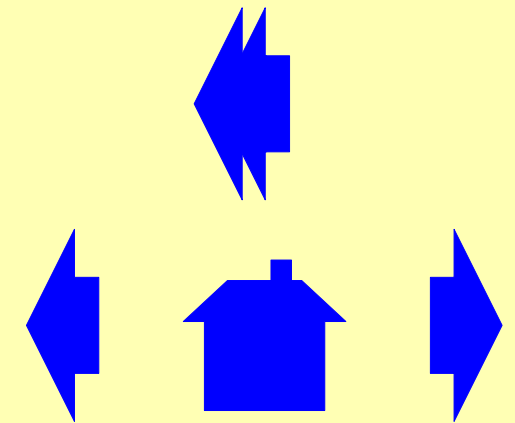
Contents

Emergency Procedures

PRESET SCENARIOS

These pages are selectable from the Master Index and allow 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.

ARM SCENARIO 1 to 8	Arm the associated scenario and traffic is shown on the TCAS display. A summary of the scenario is displayed within each touchpoint.
SCENARIO STATUS	Readouts which provide a summary of the data relating to the intruders in the current active scenario.
RUN SCENARIO	Activates the armed scenario. The TCAS display shows the movement of the traffic.
STOP SCENARIO	Stops the active scenario.
PROXIMATE TRAFFIC	Allows proximate aircraft to be selected on or off within the selected scenario.
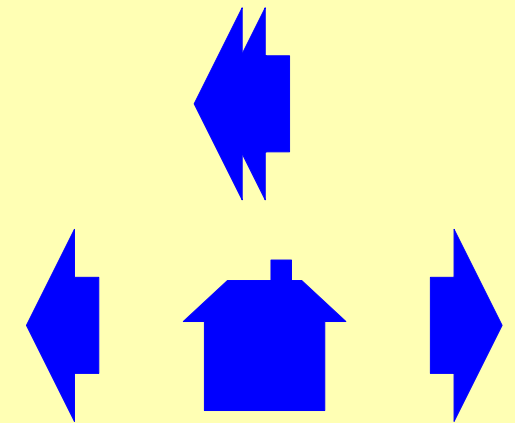
Contents

Emergency Procedures

EDITABLE SCENARIOS

The page allows you to change the flight plan for each of the two intruder aircraft in the armed scenario. The touchpoints allow you to set the initial and final bearing, distance and altitude of the intruders relative to your aircraft. The speed of the intruders can also be set.

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.

Contents

TRANSPONDER TYPE	Displays a pop-up menu to allow you to select the TCAS transponder equipment fitted to the intruder.
CLEAR INTRUDER	Clears all the existing parameters for the associated intruder.
RUN SCENARIO	Activates the armed scenario. The TCAS display shows the movement of the traffic.
STOP SCENARIO	Stops the active scenario.
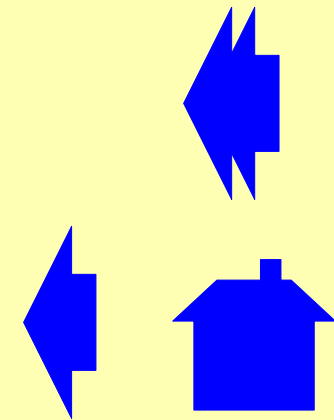
Emergency
Procedures

Scenarios

This page is selectable from the Master Index page and provides you with eight scenarios for Unusual Attitude Recovery Training. These scenarios are achieved by dynamically upsetting the simulator to attain a target pitch and/or bank angle. During this time, Pilot Pitch Controls will have not effect if a Target Pitch is selected, and Pilot Roll and Yaw controls will have no effect if a Target Bank is selected, The scenarios are not available when the aircraft is on the ground or during a reposition with the motion system engaged.

The scenarios are summarised as:

Scenario	Target Pitch Angle (deg)	Target Bank Angle (deg)
● Excessive Climb Angle	+30	Free
● Excessive Climb Angle	−15	Free
● Excessive Bank Angle – Right/Left	Free	+115/−115
● Spiral Climb – Right/Left	40	+15/−15
● Spiral Dive – Right/Left	−20	+150/−150

CLEAR	Aborts any Unusual Attitude Manoeuvre that is currently active.
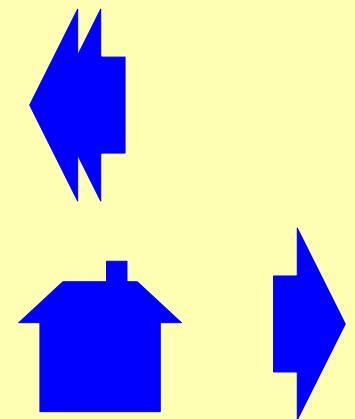
Contents

Emergency Procedures

Plots

Graphical plots of LOAD FACTOR, BANK ANGLE and PITCH ANGLE against TIME are activated when an Unusual Attitude has been selected.

Ideally the Unusual Attitude should only be selected when any plotting has completed and the plotter is no longer active.

If a new Unusual Attitude is selected while plotting is inactive:

- Existing plots from a previous selection are cleared from the graphical displays.
- The timer is reset to zero
- Plotting commences. Once a plot has been activated, it continues until completion of the plot timer (90 sec).

If a new Unusual Attitude is selected while plotting is active:

- Existing plots do not clear
- The timer does not reset
- Plotting continues reflecting changes to the parameters as they occur.

Touching any of the graphical plots within the boundary of the plot grid zooms–in on the selected plot and expands it to a full–page single plot configuration.

Selecting the RETURN button at the top of the page re-displays the three plot configuration.
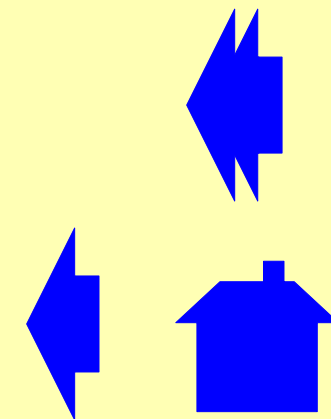
Contents

Emergency Procedures

Five weather pages are provided to allow you to set up the weather conditions for the training exercise.

The Weather – Atmosphere page is selectable from the Normal Toolbar; the other pages are selectable from the Weather pages.

Weather Page Selection (available on all Weather pages)

WIND   Displays the Weather – Wind page.

CLOUD   Displays the Weather – Cloud page.

VISUAL/RWY CONDS   Displays the Weather – Visual/Rwy Conds page.

LIGHTS   Displays the Visual – Lights page.

ATMOSPHERE   Displays the Weather – Atmosphere page.
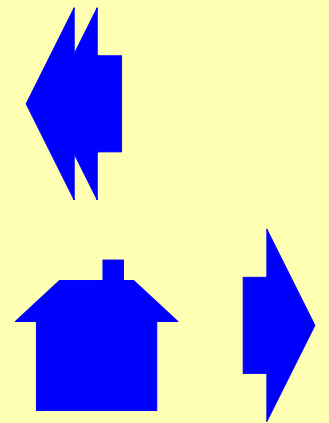
Contents

Emergency Procedures

Wind

Cruise Wind — Allows you to set the cruise wind direction/speed and altitude.

Intermediate Wind — Allows you to set the wind direction/speed at an altitude between the surface and cruising height.

Surface Wind — Allows you to set the wind direction/speed at the surface, and to select from a number of gusting effects.

Cloud

HIGH ALTITUDE CLOUD — Displays a pop-up menu to allow you to select the type of cloud.

Upper Cloud Layer — Allows you to set the height of the upper cloud layer base and top above mean sea level and to select scud effects.

Lower Cloud Layer — Allows you to set the height of the lower cloud layer base above ground level, the lower cloud top above mean sea level and to select scud effects.

CLOUD TYPE — Displays a pop-up menu to allow you to select the cloud type for the lower cloud layer.
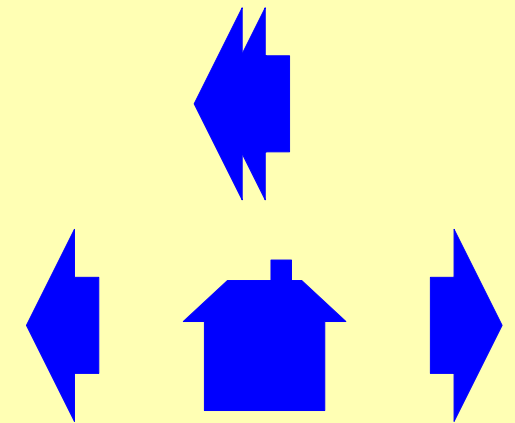
Contents

Emergency
Procedures

Visual/Runway Conditions

DAY, DAWN, DUSK, NIGHT	Allows you to select the time of day for the visual scene.
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.
VISIBILITY	Allows you to set the visibility.
VISUAL CATEGORY	Allows you to select from a number of pre-defined set-ups which are detailed below:

Scenario	CAVOK	CAVU	CAT I	CAT II	CAT IIIA	CAT IIIB	Non precision	Circling	Min T/O
Upper Cloud Top ASL (ft)	35 000		30 000	30 000	30 000	30 000	30 000	30 000	
Upper Cloud Base ASL (ft)	25 000		20 000	20 000	20 000	20 000	15 000	15 000	
Upper Cloud Scud (ft)			18 000	18 000	18 000	18 000	10 000	10 000	
Lower Cloud Top ASL (ft)			5000	5000	5000	5000	8000	8000	10 000
Lower Cloud Base AGL (ft)			250	1000	1000	1000	1100	1500	1000
Lower Cloud Scud				700	700	700			
Visibility	10KM	200KM	800M	2KM	2KM	2KM	6KM	8KM	2KM
RVR (meters)			600	400	200	100			150
FOG*	None	None	None	Ground	Ground	Ground	None	None	Ground
Fog Height AGL (ft)				400	400	400			400
Available Fog: None Ground Patchy									

NOTE: Cloud Transition Depth is automatically defined by these settings.
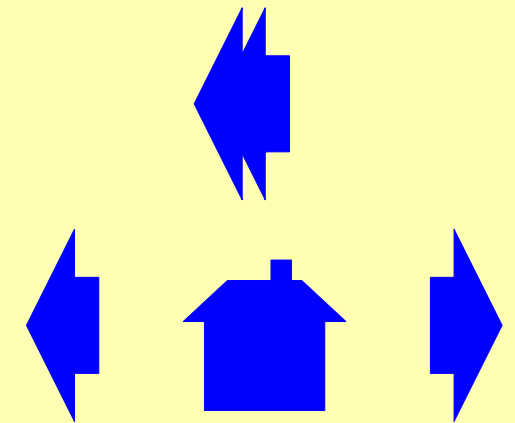
Contents

Emergency Procedures

SURFACE ROUGHNESS CONTAMINATION	} Allow you to set up the runway conditions.
VISUAL SCENE	Displays a pop-up menu to allow you to select the type of visual scene.
FALLING SNOW BLOWING SNOW LIGHTNING	} Select the associated effect on/off.
RAIN	Displays a pop-up menu which allows you to select the level of rain intensity.
HAIL	Displays a pop-up menu which allows you to select the level of hail intensity.
MARSHALLER	Selects marshaller on/off.
ROUTED TRAFFIC	Displays Routed Traffic page.
VISUAL ON	Switches the visual display on/off.

Contents

Emergency
Procedures

Lights

ENVIRONMENT LIGHTS TAXIWAY LIGHTS CAT III STOP BARS	Display pop-up 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.
RANDOMIZE	Sets the lighting intensities to random levels.
RUNWAY LIGHTING	Displays pop-up 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.
ALL RUNWAYS	Displays pop–up menu to allow you to select level of brightness for all runways.
RUNWAY LIGHT CONTROL	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 pop-up menu to allow you to set the intensity of all the runway lights to the same level (0 = off, 5 = max).
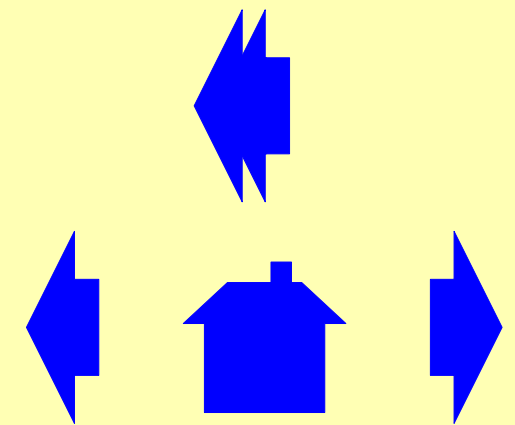
Contents

Emergency Procedures

CENTRELINE LIGHTS
EDGE LIGHTS
APPROACH/
TOUCHDOWN
VASI/PAPI
STROBE/REIL

Display pop-up menu to allow you to set the intensity of individual sets of lights (0 = off, 5 = max). Current settings are displayed on the buttons.

Atmosphere

Turbulence

Allows you to select cobblestone, rough air or jet upset turbulence conditions.
NOTE: Conditions are mutually exclusive.

Pressure

Allows you to set the QNH value.

Temperature

Allows you to set the Field Temp and Lapse rate.

Tropopause

Allows you to set the height of the tropopause level.

Temperature Inversion

Allows you to set a temperature inversion layer. Select ACTIVATE INVERSION to enter the selection into the simulation.

Icing

Allows you to select icing conditions.

WINDSHEAR

Displays the Windshear Index page.

MICROBURST

Displays Microburst Selection page
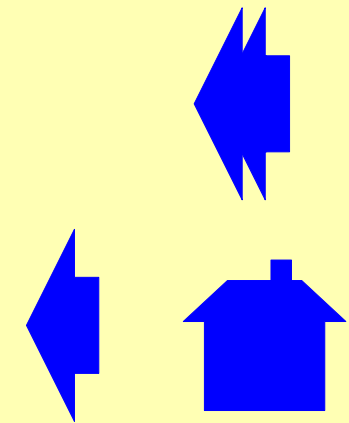
Contents

Emergency
Procedures

WINDSHEAR INDEX

This page is selectable from the Weather – Atmosphere page and allows you to select from a number of pre-defined windshear profiles.

- FAA1 (prior to Vr)
- FAA1 (rotation)
- FAA1 (landing)
- FAA2 (takeoff)
- FAA3 (takeoff)
- FAA4 (landing)
- NEUTRAL
- THUNDERSTORM 1

- THUNDERSTORM 2
- THUNDERSTORM 3
- THUNDERSTORM 4
- THUNDERSTORM 5
- THUNDERSTORM 6 (JFK)
- FRONTAL 1 (TOKYO 1966)
- FRONTAL 2 (LOGAN)
- FRONTAL 3

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

WINDSHEAR INTENSITY   Allows you to select the intensity of the selected windshear profile.
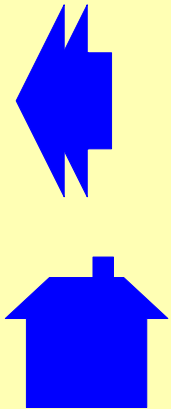
Contents

Emergency Procedures

FAA1 (LANDING)

Windshear is activated when aircraft descends through 500 feet.

0

0

45

45

0

45 Wind Speed (Knots)

Wind Direction

Aircraft Track

2000 4000 6000 8000 10000 12000

Distance (ft)
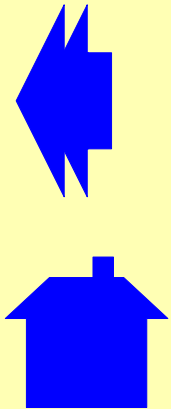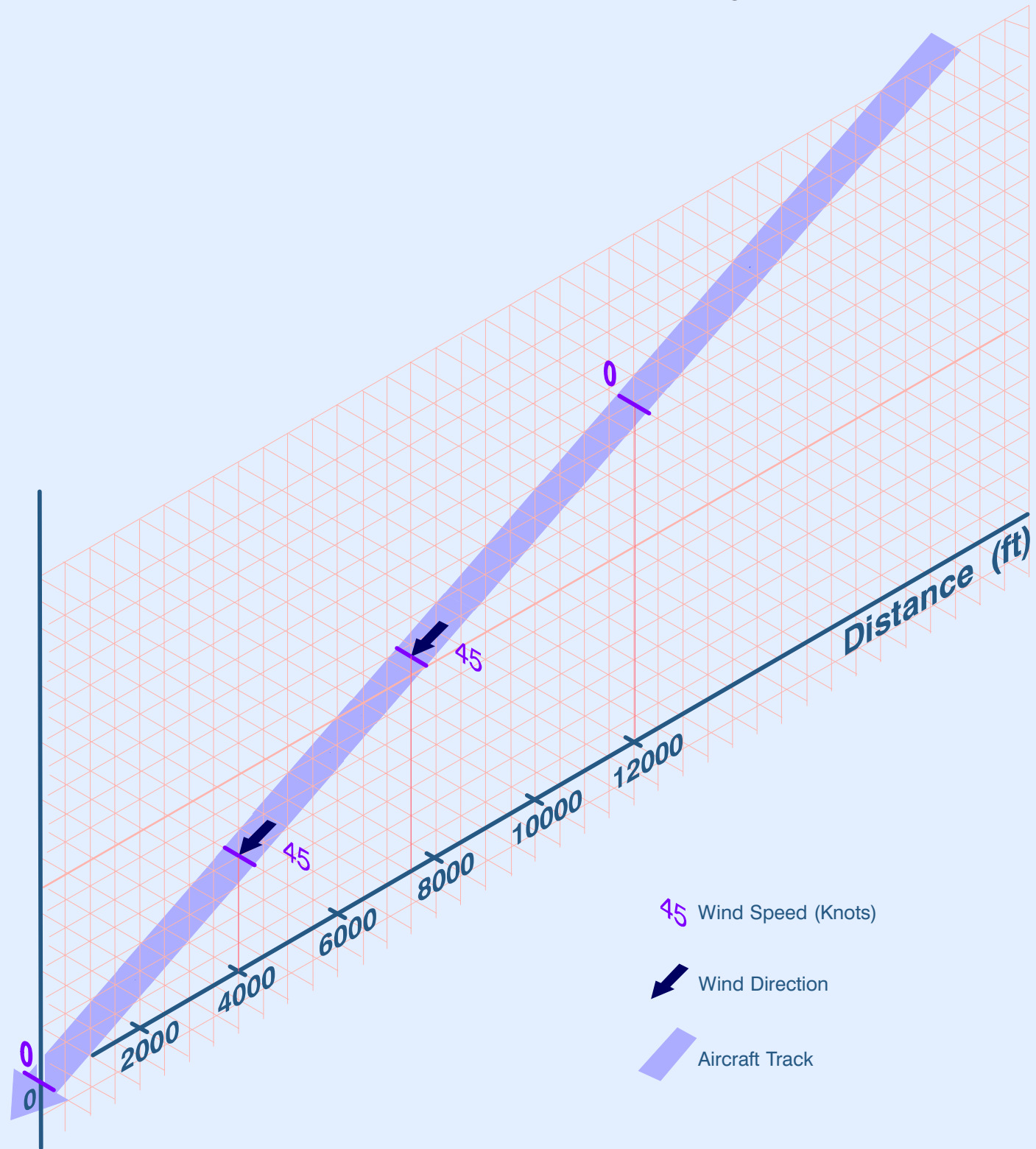
Contents

Emergency
Procedures

FAA1 (PRIOR TO V_R)

$$FAA1\ (PRIOR\ TO\ V_R)$$

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

Distance (ft)

0

45

45

12000

10000

8000

6000

4000

2000

0

0

45 Wind Speed (Knots)

Wind Direction

Aircraft Track
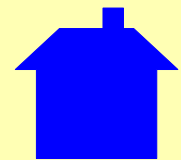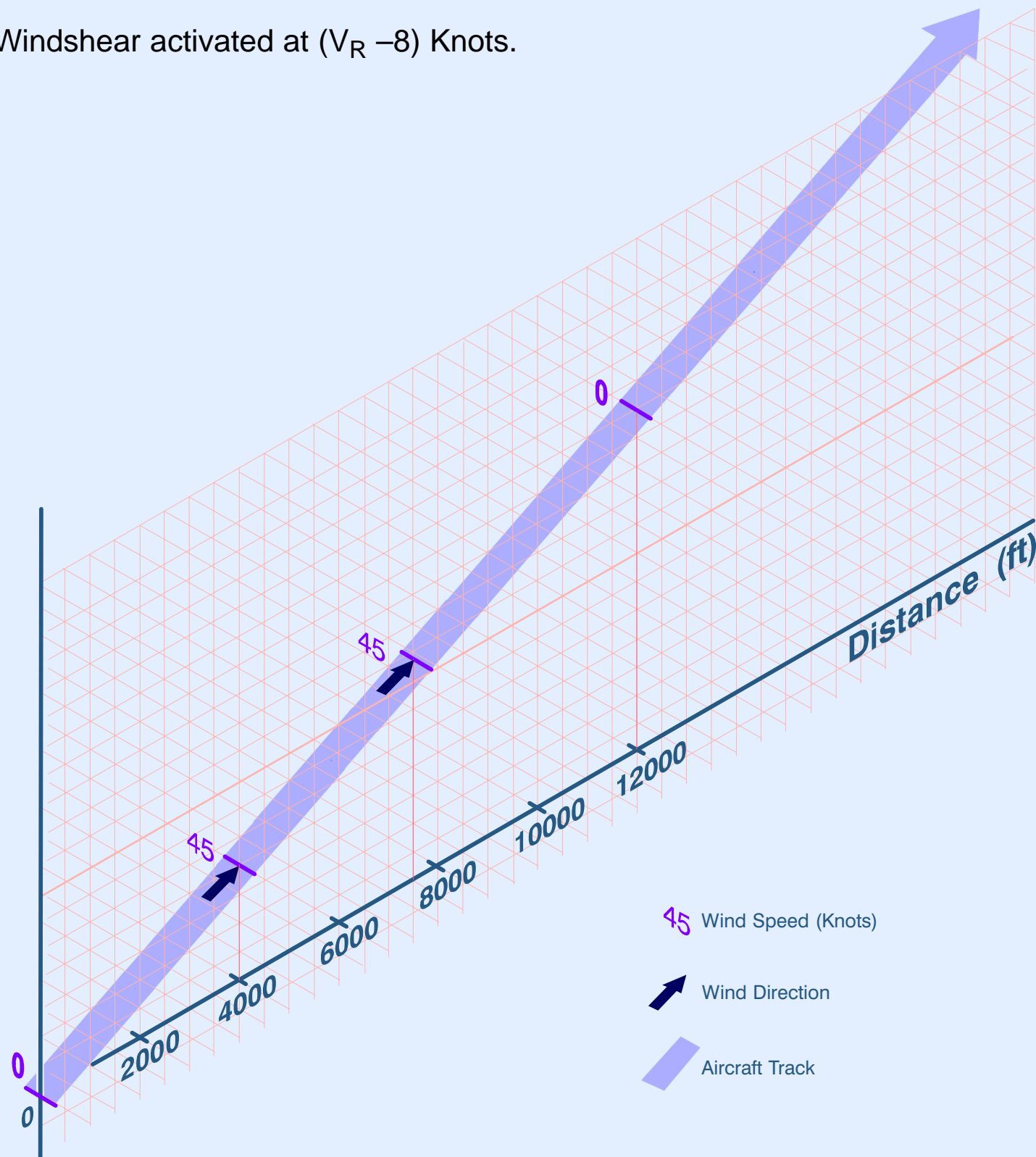
Contents

Emergency
Procedures

Windshear is activated when pitch angle passes 3 degrees.

0

45

45

12000

10000

8000

6000

4000

2000

Distance (ft)

0

0

45 Wind Speed (Knots)

Wind Direction

Aircraft Track
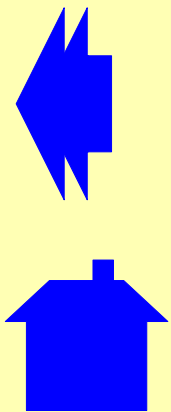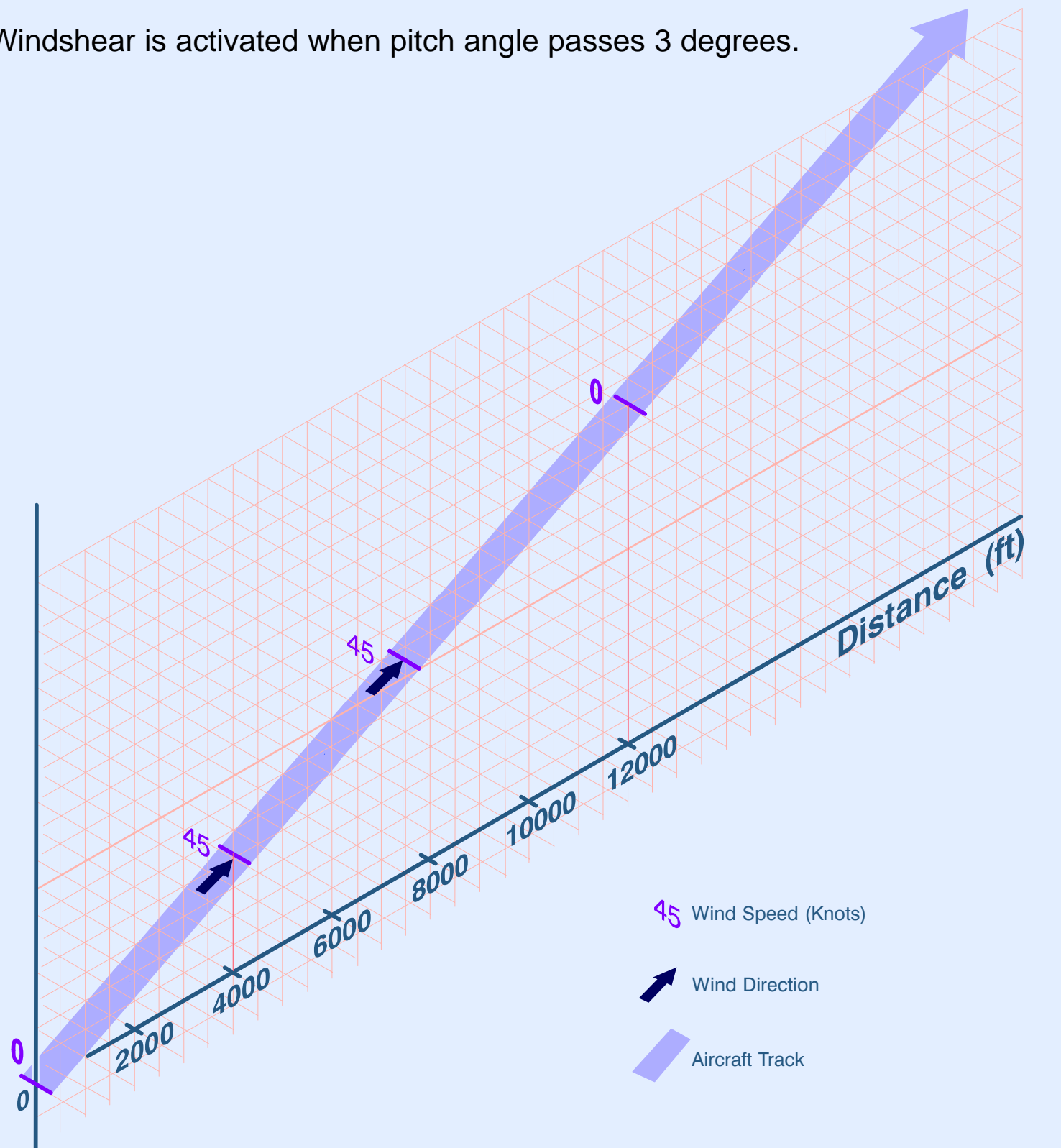
FAA2

Windshear is activated when aircraft climbs through 200ft AGL.

0

60

60

32.6

38.57

32.6

19.29

0 0

Distance (ft)

18000
16000
14000
12000
10000
8000
6000
4000
2000

60 Wind Speed (Knots)

Wind Direction

Downdraft and Speed (FT/S)

Aircraft Track
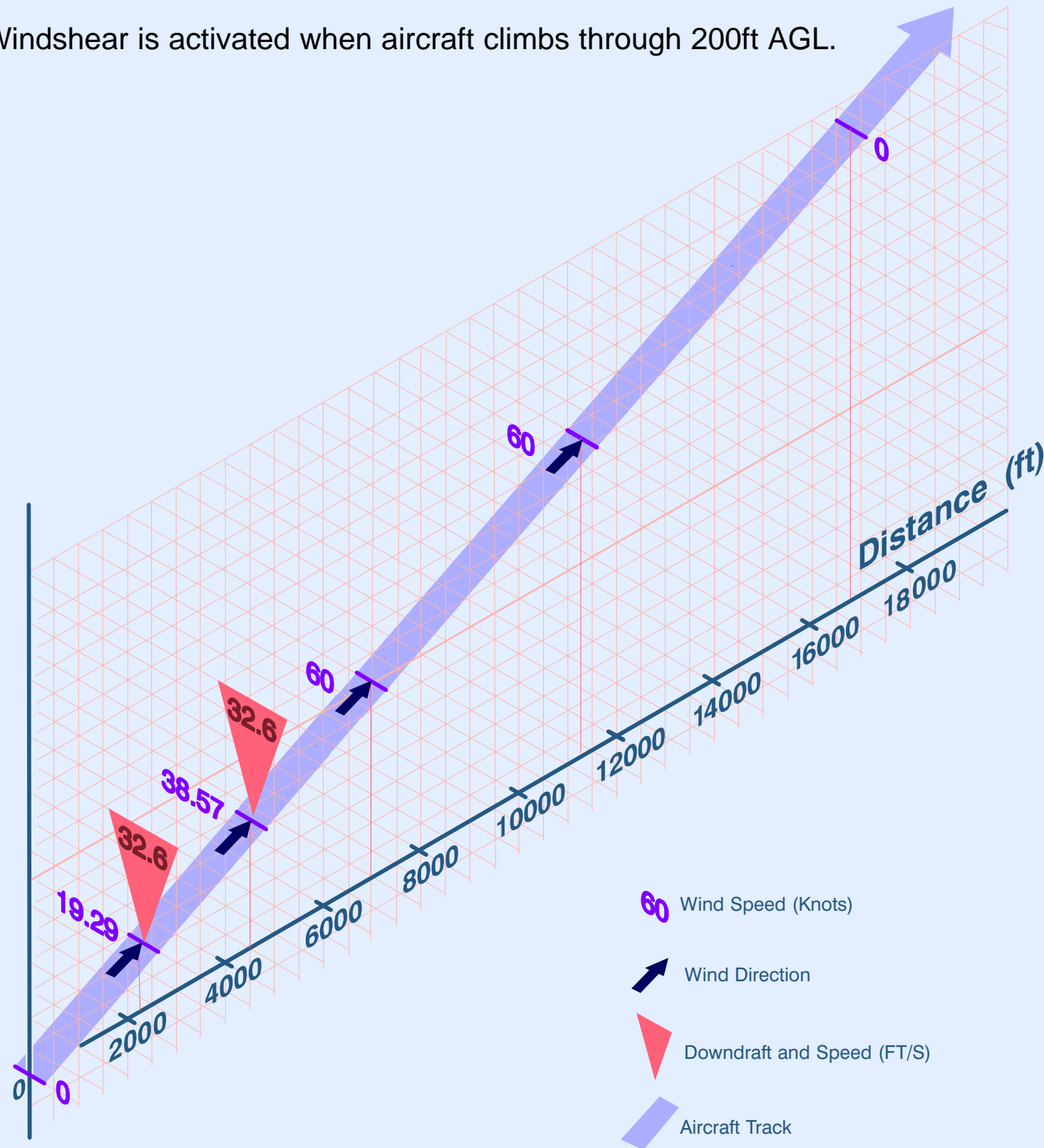
FAA3

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.

180° 0

Distance (ft)

14000

12000

10000

8000

6000

4000

2000

0

180° 52.00

178.90° 52.01
-82.16
-39.13

173.42° 52.35

166.83° 48.27
-43.03

177.14° 40.05

188.61° 33.38
-19.55

190.13° 28.44
-93.9

31.24

53.15

191.86°

33.26

23.48

43.03

140.20°

0

0

140.20°

45 Wind Speed (Knots)

Wind Direction

Downdraft and Speed (FT/S)

Updraft and Speed (FT/S)
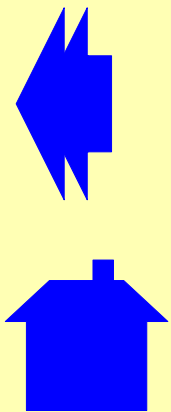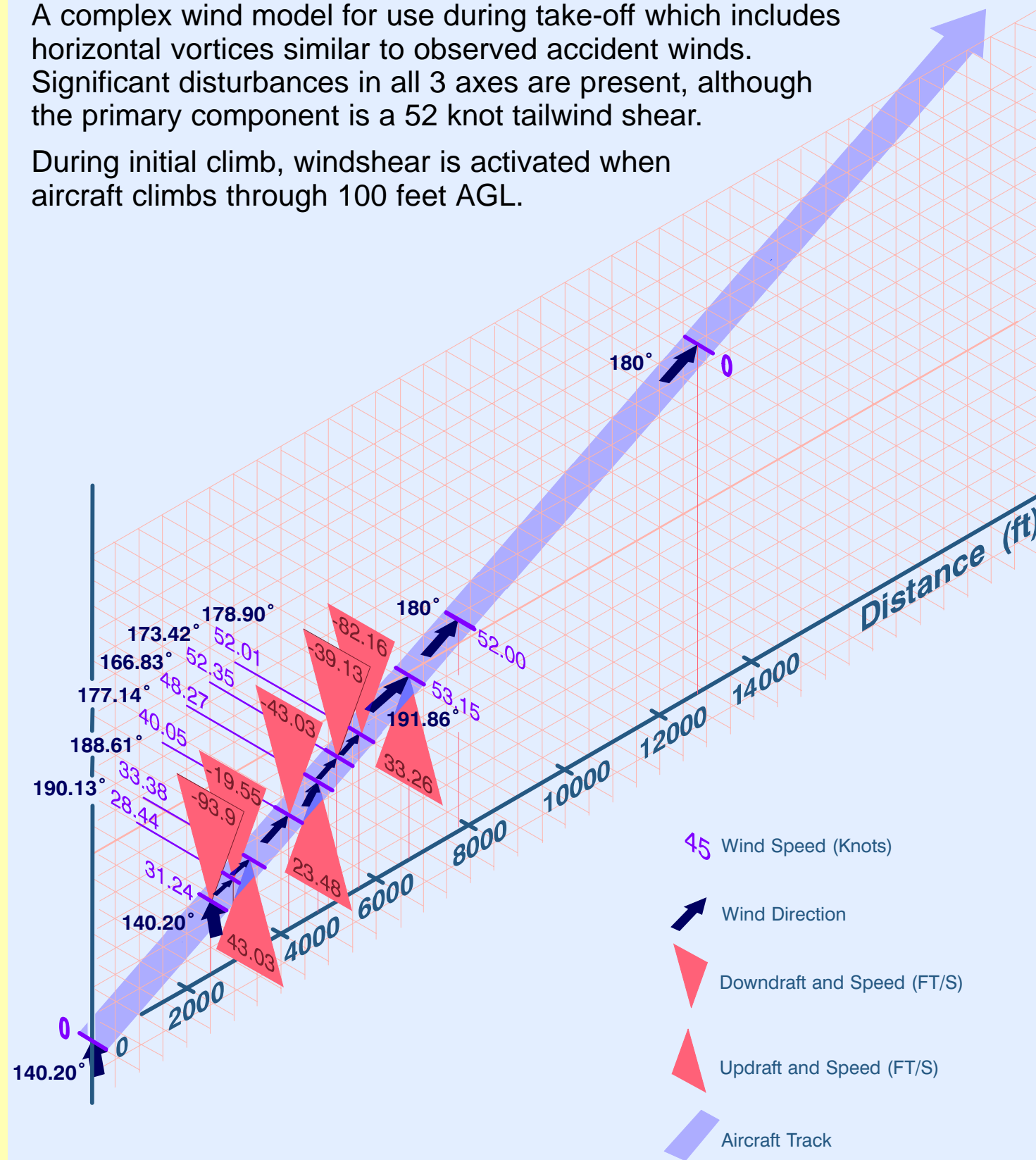
Aircraft Track

Contents

Emergency Procedures

FAA4

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.

180° 0

40.00 180°

41.48 195.38°

82.18
39.14
23.46
43.04 33.27 40.01 178.57°
41.45 171.63°
19.55 35.74 162.07°
93.93 20.10 174.29°
20.00 27.40 90.00° 7.81 219.81°
22.43 70.44 43.04 18.68 195.53°
5.10 17.62 39.81°
13.00 46.98 78.69°
22.56 24.62°
34.55 12.80°
27.48
10.49°
8.06
7.13°
31.3
10.77 111.80°
0
0

Distance (ft)
2000 4000 6000 8000 10000 12000 14000 16000 18000 20000

60 Wind Speed (Knots)

➚ Wind Direction

▼ Downdraft and Speed (FT/S)

▲ Updraft and Speed (FT/S)

▬ Aircraft Track

Contents

Emergency
Procedures

NEUTRAL
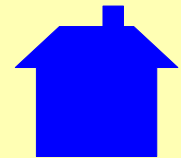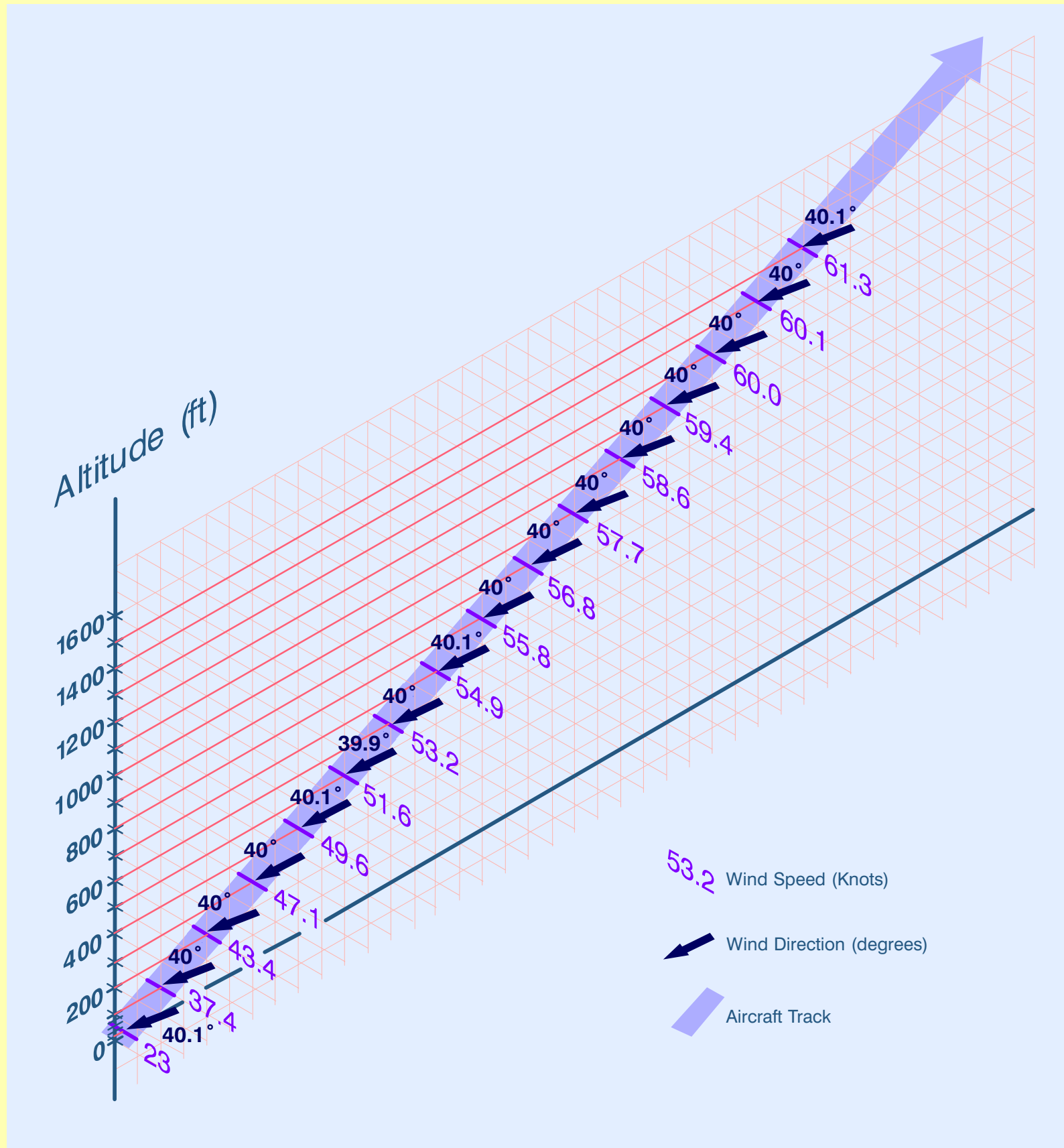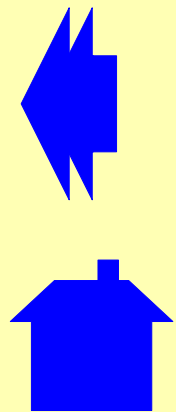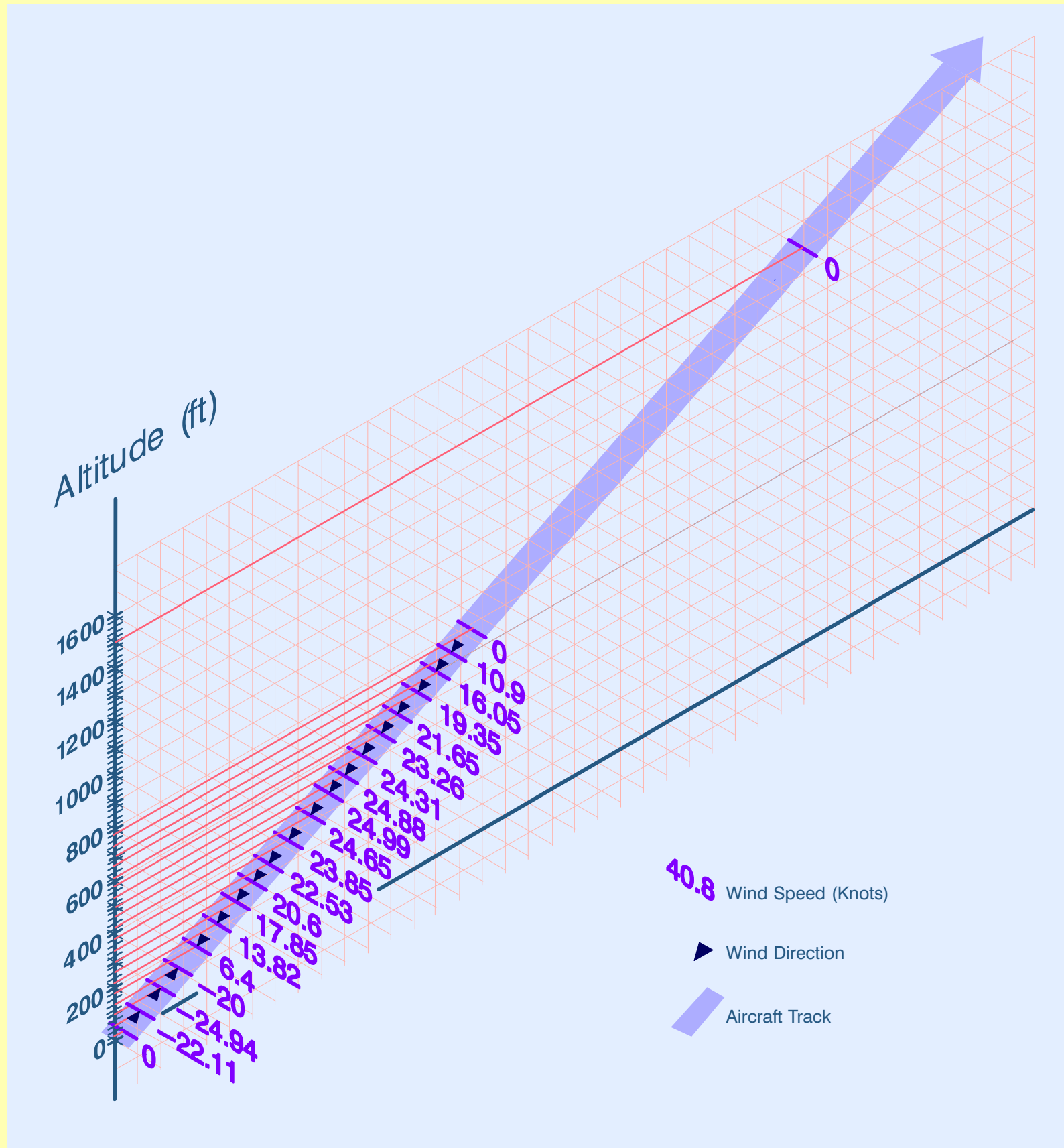
Altitude (ft)

40.1°
61.3

40°
60.1

40°
60.0

40°
59.4

40°
58.6

40°
57.7

40°
56.8

40.1°
55.8

40°
54.9

39.9°
53.2

40.1°
51.6

40°
49.6

40°
47.1

40°
43.4

40°
37.4

40.1°
23

1600
1400
1200
1000
800
600
400
200
0

53.2   Wind Speed (Knots)

◥   Wind Direction (degrees)

▰   Aircraft Track

Contents

Emergency Procedures

THUNDERSTORM 1

Altitude (ft)

1600
1400
1200
1000
800
600
400
200
0

0
10.9
16.05
19.35
21.65
23.26
24.31
24.88
24.99
24.65
23.85
22.53
20.6
17.85
13.82
6.4
−20
−24.94
0 −22.11

40.8 Wind Speed (Knots)

▶ Wind Direction

Aircraft Track

Contents

Emergency Procedures

THUNDERSTORM 2

Altitude (ft)

Downdraft and Speed (FT/S)
▼ −11.9
▼ −8.9
▼ −5.9

Distance from runway (ft)

THUNDERSTORM 3

THUNDERSTORM 4

FRONTAL 1 (TOKYO 1966)

Altitude (ft)

1600
1400
1200
1000
800
600
400
200
0

190° 61.9
190° 61.9
190° 63
190° 64
190° 65
190° 65
190° 66
190° 59.9
270° 40
200° 25
239° 8
149.8° 14.9

64 Wind Speed (Knots)

Wind Direction (degrees)

Aircraft Track
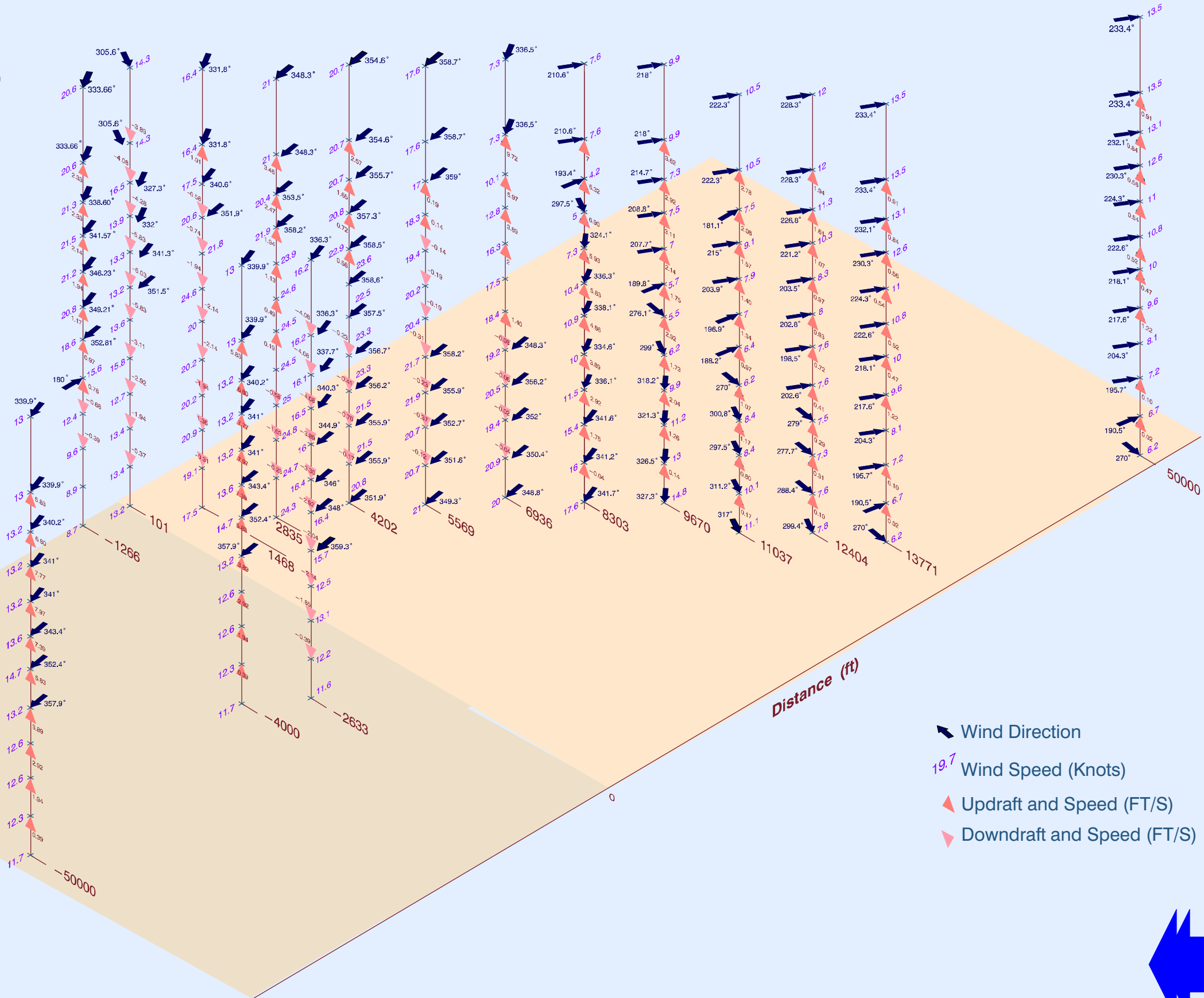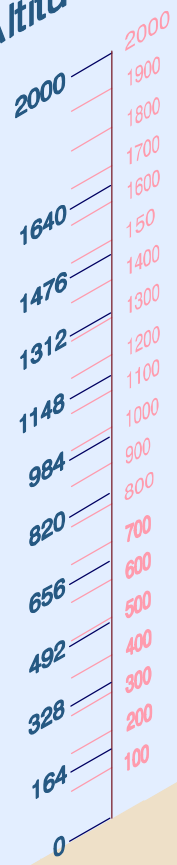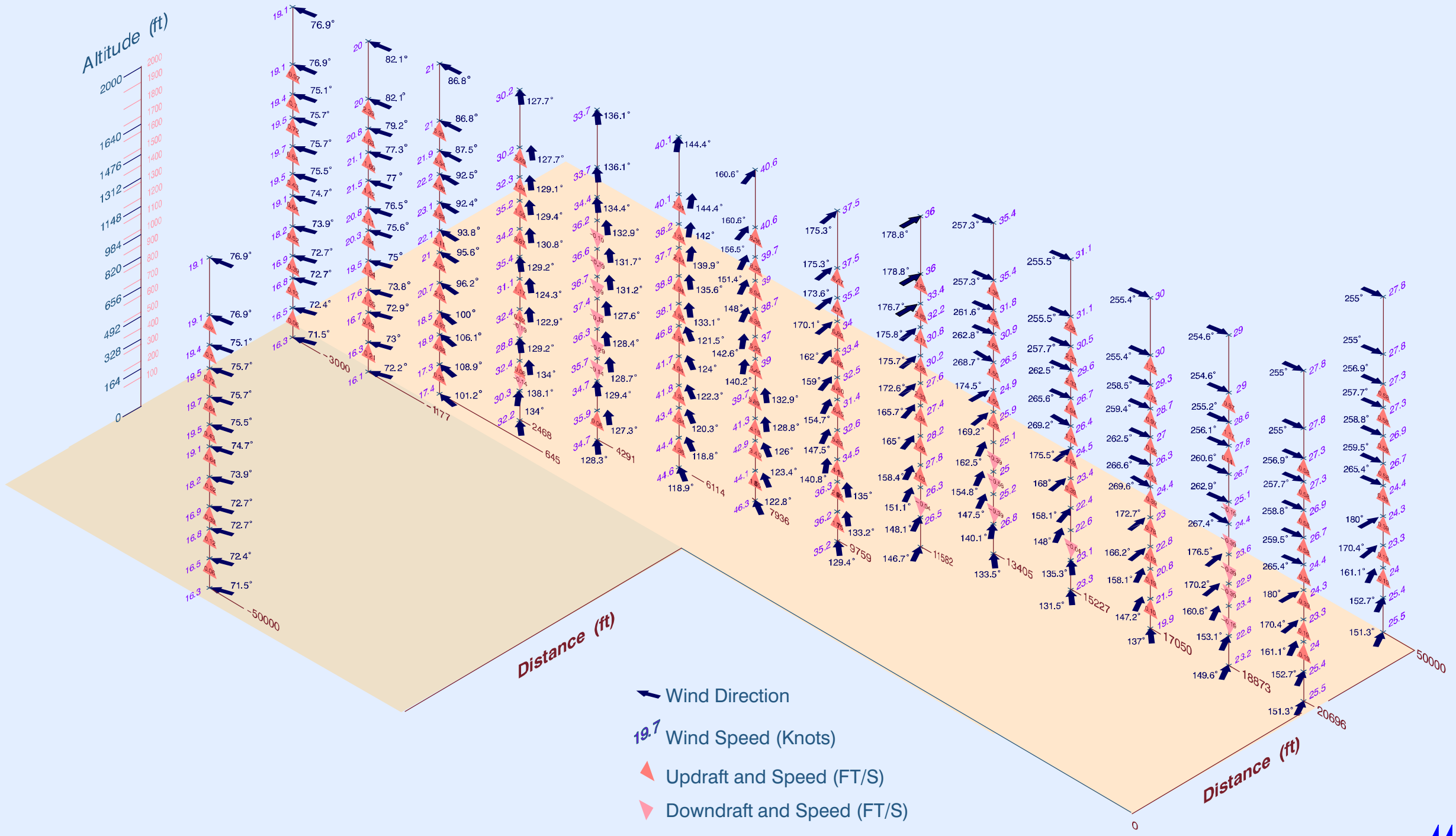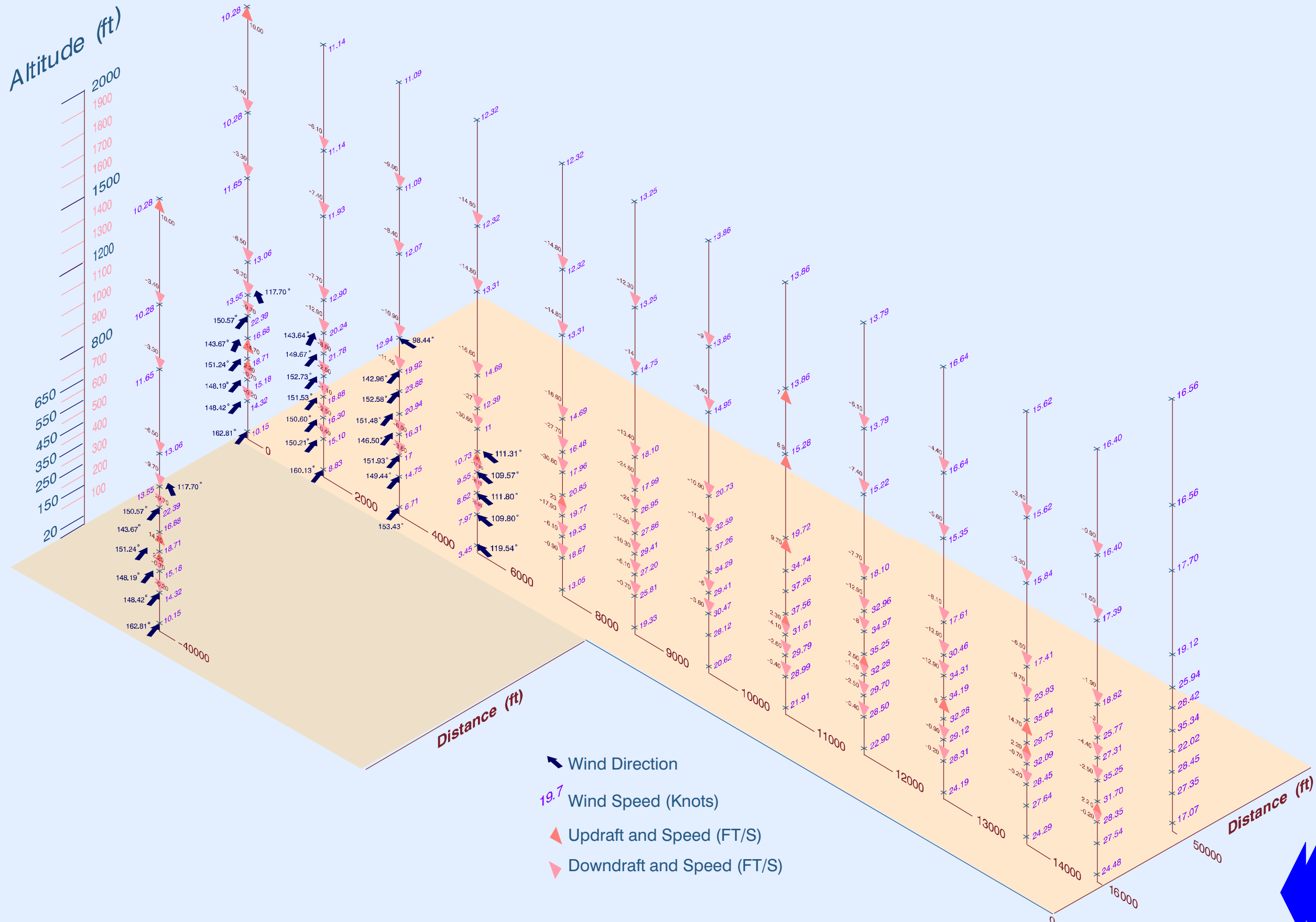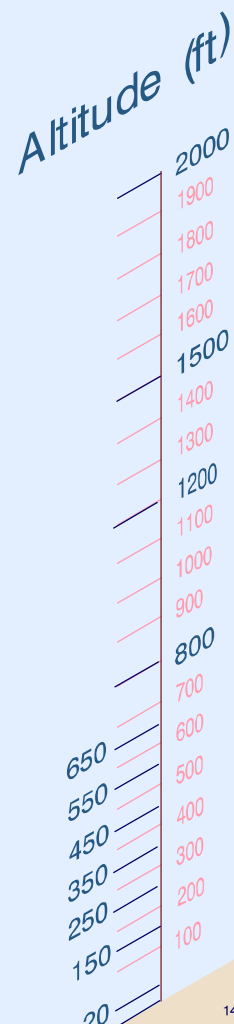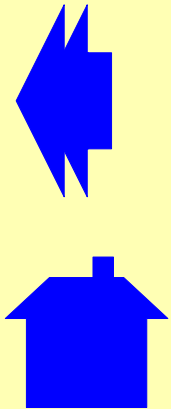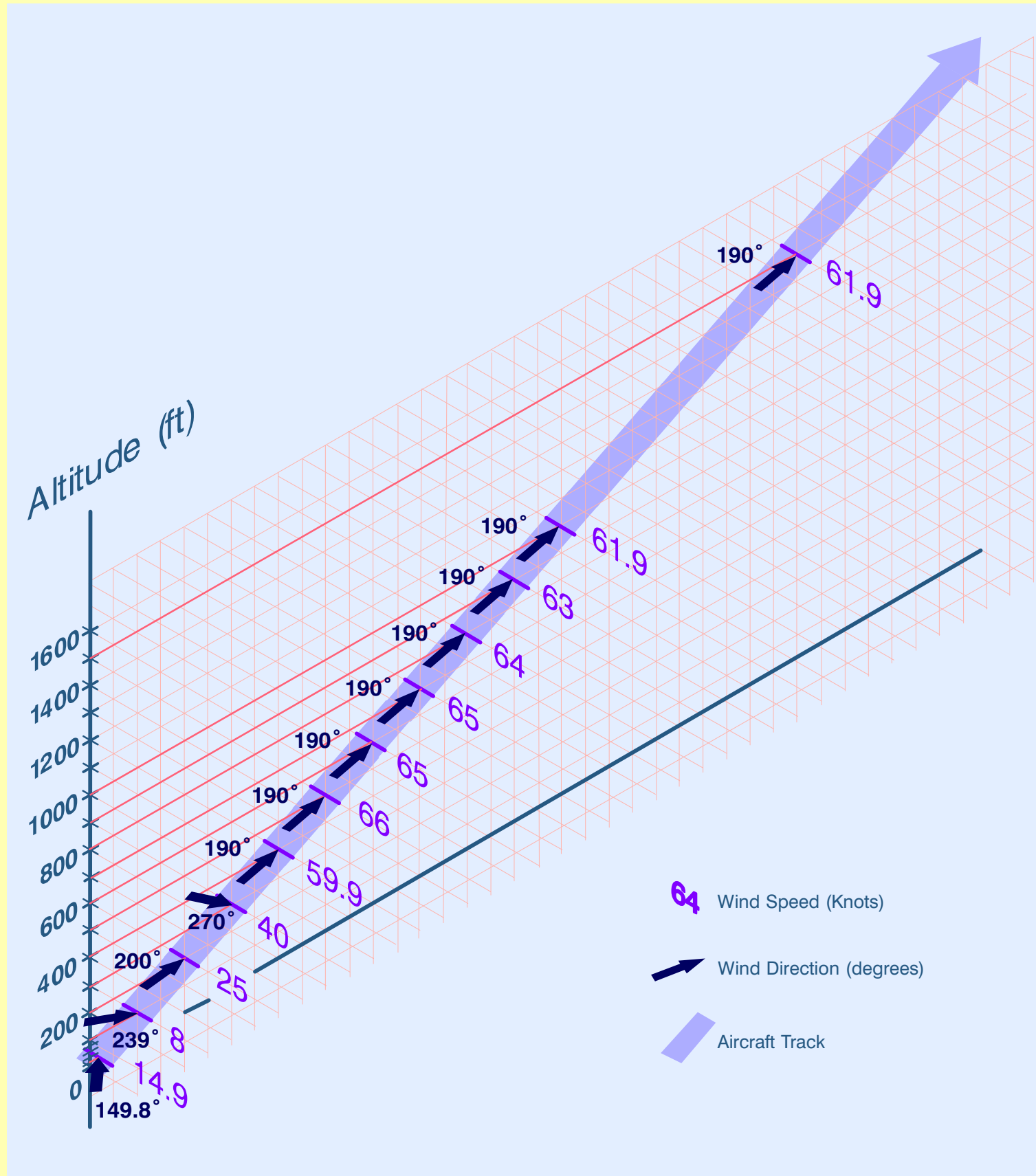
Contents

Emergency Procedures

FRONTAL 2 (LOGAN)
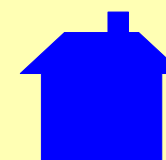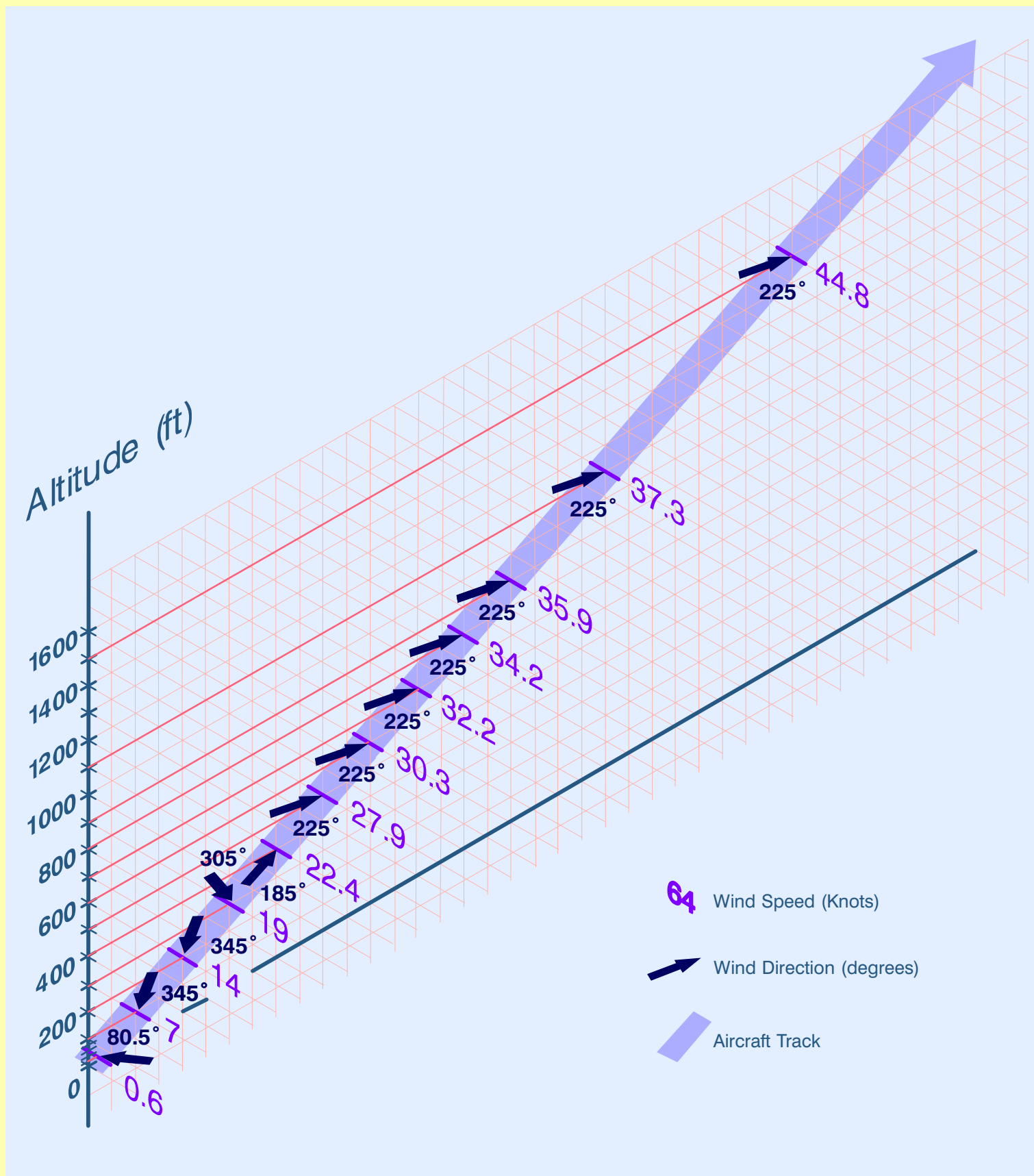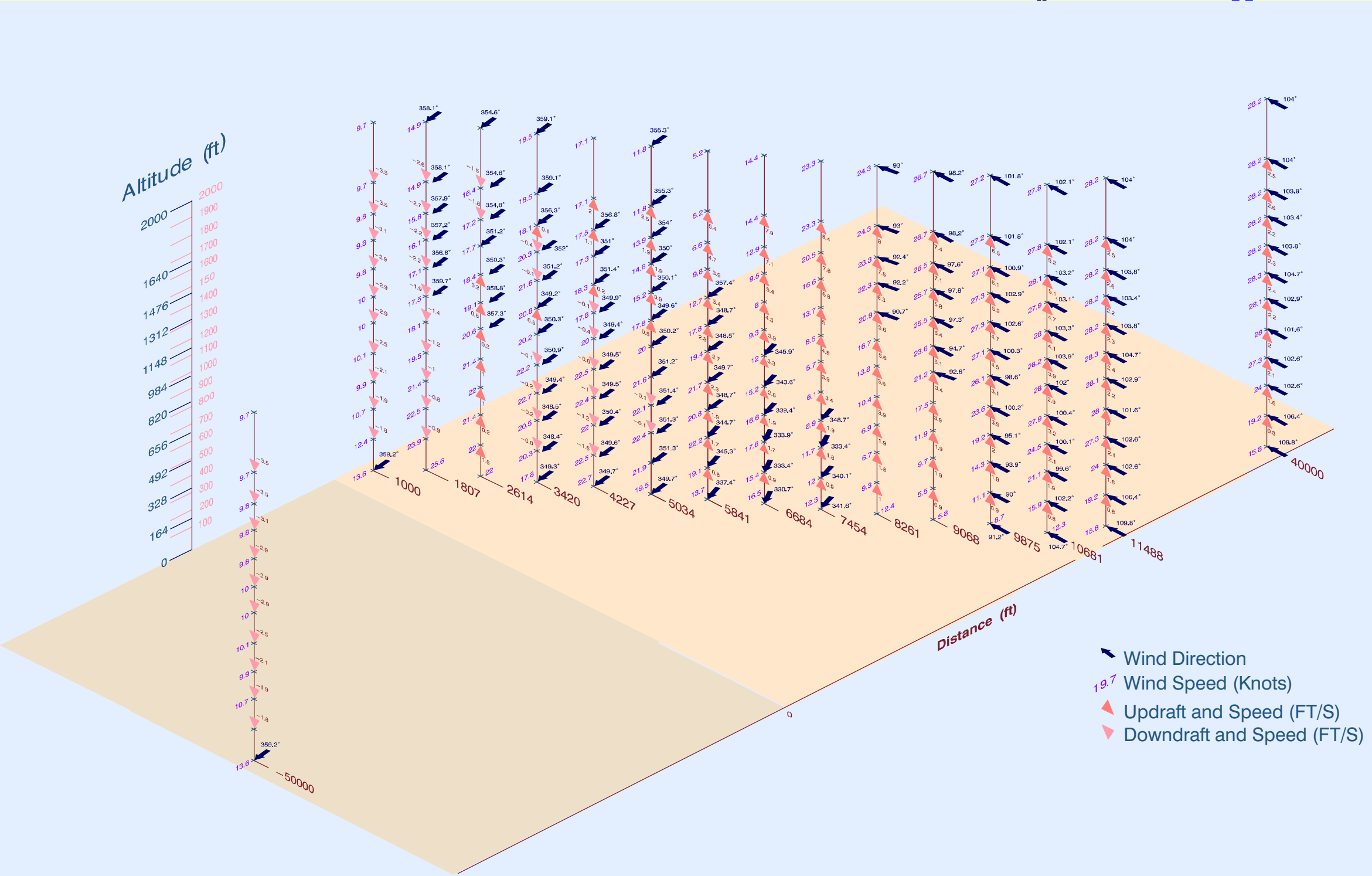
Altitude (ft)

225° 44.8

225° 37.3

225° 35.9

225° 34.2

225° 32.2

225° 30.3

225° 27.9

305° 22.4

185° 19

345° 14

345° 7

80.5° 0.6

1600
1400
1200
1000
800
600
400
200
0

64 Wind Speed (Knots)

Wind Direction (degrees)

Aircraft Track

Contents

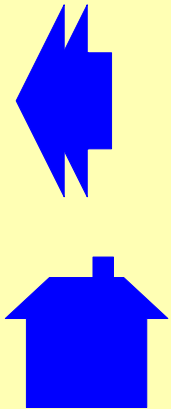Emergency Procedures

FRONTAL 3

SAFETY FEATURES & EQUIPMENT

The following safety features and equipment are provided on the simulator:

- **Emergency Stop switch**, which removes all electrical and hydraulic power from the simulator, causing the simulator to settle to the access position to allow you to evacuate the flight deck.

- **Emergency Exit**. A kick-out panel is provided in the rear door to allow you to evacuate the flight deck if the door will not open.

- **Escape Ropes**. Two escape ropes are provided, one on each side of the rear walkway to allow you to descend from the simulator if the drawbridge fails to come down.

- **Fire Extinguishers**. Two fire extinguishers are provided, one adjacent to the rear door and one on the flight deck (as aircraft).

- **Fire Detection**. If a fire detector is activated, audible and visual warnings are initiated. If the potential hazard is severe, electrical and hydraulic power is removed from the simulator which settles into the access position to allow all personnel on board to evacuate the flight deck.

- **Fire Suppression System** (optional), which will protect the simulator equipment by discharging a gas to extinguish a fire. If the gas is discharged, a continuous fire alarm will sound.

  WARNING: The system must be set to manual operation when there are personnel present within the simulator building. Only set the system to automatic when the simulator is to be left unattended.

  The simulator must be evacuated immediately following the discharge of fire suppression gas.

- **Warning Signs.** Must be read and meaning understood.

- **Interlocks**. Safety interlocks are fitted to the motion system, control loading system and hydraulic power unit (HPU) to ensure that the systems cannot be operated unless it is safe to do so. If any of the interlocks are opened, hydraulic power is removed from the simulator which settles to the access position. The interlock must be closed before the motion and control loading systems can be re-engaged.
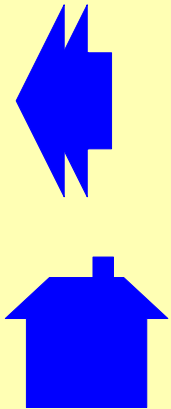
Contents

Emergency Procedures

Safety Precautions

SAFETY PRECAUTIONS

The following safety precautions must be observed when operating the simulator:

- Ensure all personnel are fully conversant with:
    - The Safety Features and Equipment and with the Emergency Procedures.
    - The position that the crew, instructors and observers seats and moveable aircraft panel must be placed in to clear the crew exit route.
- Before entering the simulator, did you check with the maintenance technicians that:
    - The simulator was safe to enter.
    - There were no personnel in areas of the simulator where they could be exposed to hazards when the motion and control loading systems are engaged.
    - The fire suppression system (if fitted) was set to manual.
- Before starting the training exercise, ensure that:
    - All personnel are seated with the seat belt fastened.
    - All personal belongings and loose items are securely stowed.
- During the training exercise, ensure that all personnel remain seated with seat belt fastened until the simulator settles to the access position.

Contents

Emergency Procedures
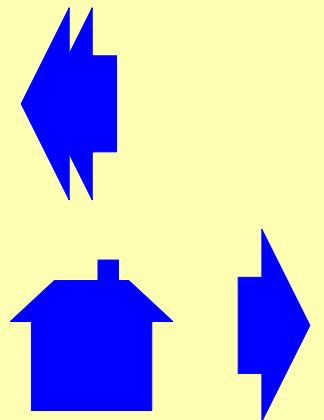
Safety Features

Emergency

If an emergency occurs on the simulator:

- Press **EMERGENCY STOP** button. All personnel must remain seated and strapped in.
  - Electrical and hydraulic power is removed from simulator.
  - Emergency lighting comes on.
  - Simulator settles to access position.
- Once the simulator has reached the access position, all personnel release straps and remove headsets and oxygen masks (if worn).
- All seats and moveable panels must be moved to clear the exit route.
- Open rear door.
  - If door will not open, kick out the lower panel of the door (marked **EMERGENCY EXIT – PUSH**).
- All personnel exit flight deck and leave simulator via the drawbridge.
  - If drawbridge is not down, press **DRAWBRIDGE LOWER** switch on safety rail adjacent to the gate to lower drawbridge.
  - If drawbridge still fails to come down, use escape ropes located in the side walkway to descend from the simulator.
- When all flight crew have evacuated the simulator bay, liaise with maintenance staff before resuming training.

Fire Detected

When a fire is detected the following occurs:

- Alarm sounds.
- Red beacon flashes.
- Electrical and hydraulic power is removed from simulator.

Contents

Safety Precautions

Safety Features

- Emergency lighting comes on.
- Simulator settles to access position.

- Evacuate the simulator as for an Emergency.

Fire Suppression

- The simulator must be evacuated immediately following the discharge of fire suppression gas.
- Gas discharge can follow a continuous fire alarm tone.

Complete Power Loss

If a complete power loss occurs:

- Electrical and hydraulic power is removed from the simulator.
- Emergency lighting comes on.
- Simulator settles to access position.

- Call maintenance and establish cause of power failure and whether it is necessary to evacuate the simulator.
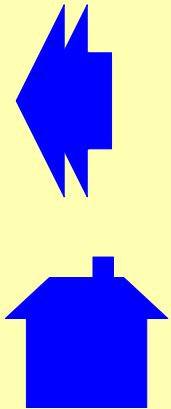- If evacuation is required, leave as normal.

Hydraulic Power Loss

If an hydraulic power loss occurs:

- Controls go slack and do not respond to flight crew inputs.
- Simulator settles to access position.

- Call maintenance and establish cause of power failure and whether it is necessary to evacuate the simulator.
- If evacuation is required, leave as normal.
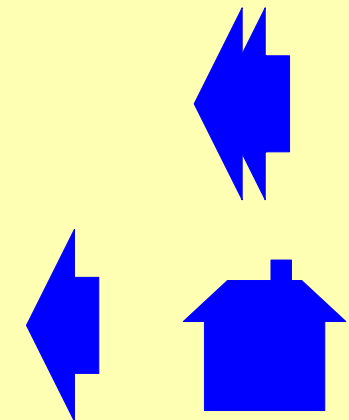
Contents

Safety Precautions

Safety Features

ABOUT ...

Document Number: 61 434 716 -104

Revision: B

Date: February 2006

Contents

Emergency Procedures