Falcon 7X

ECS & Pressurization

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Introduction

In order to maintain a comfortable area inside the cabin and the cockpit, the Falcon 7X is equipped with an air conditioning system and a pressurization system.
Air conditioning and pressurization system is split into the following sub-chapters:

- Air Conditioning,
- Pressurization.

Acronyms

A/C	Airplane Control
ACM	Air Cycle Machine
AMM	Air Management Module
AMSAC	Air Management System Automatic Controller
AMSEC	Air Management System Emergency Controller
CB	Circuit Breakers
DU	Display Unit
EMM	Emergency Management Module
FBW	Fly By Wire
NPRV	Negative Pressure Relief Valve
OP	Overhead Panel
PDU	Primary Display Unit
PPDB	Primary Power Distribution Box
PPRV	Positive Pressure Relief Valve
PSU	Passenger Supply Unit
SPDB	Secondary Power Distribution Box
SSPC	Solid State Power Controllers
TBPV	Turbine Bypass Valve
WAI	Wing Anti-Icing

Flight Deck

Controls

The controls for the air conditioning system are:
Primarily via the AIR CONDITIONING section of the Overhead Panel

- Via the BAG FAN pushbutton on the Emergency Panel to manually activate the fan located in the baggage compartment
- Via an ECS soft key on the TEST synoptic page to trigger pre-flight testing of the ECS,
- Via a HUMID pushbutton located on the RH console to activate the humidifier (optional).

Additionally, a manual cabin/crew isolation valve handle is used for interconnecting the passenger and crew air supplies.

Indications

The air-conditioning indications are located on:

- The ECS synoptic page,
- The ENG-CAS window for CAS messages,
- The STATus synoptic / FAULT tab for fault messages.

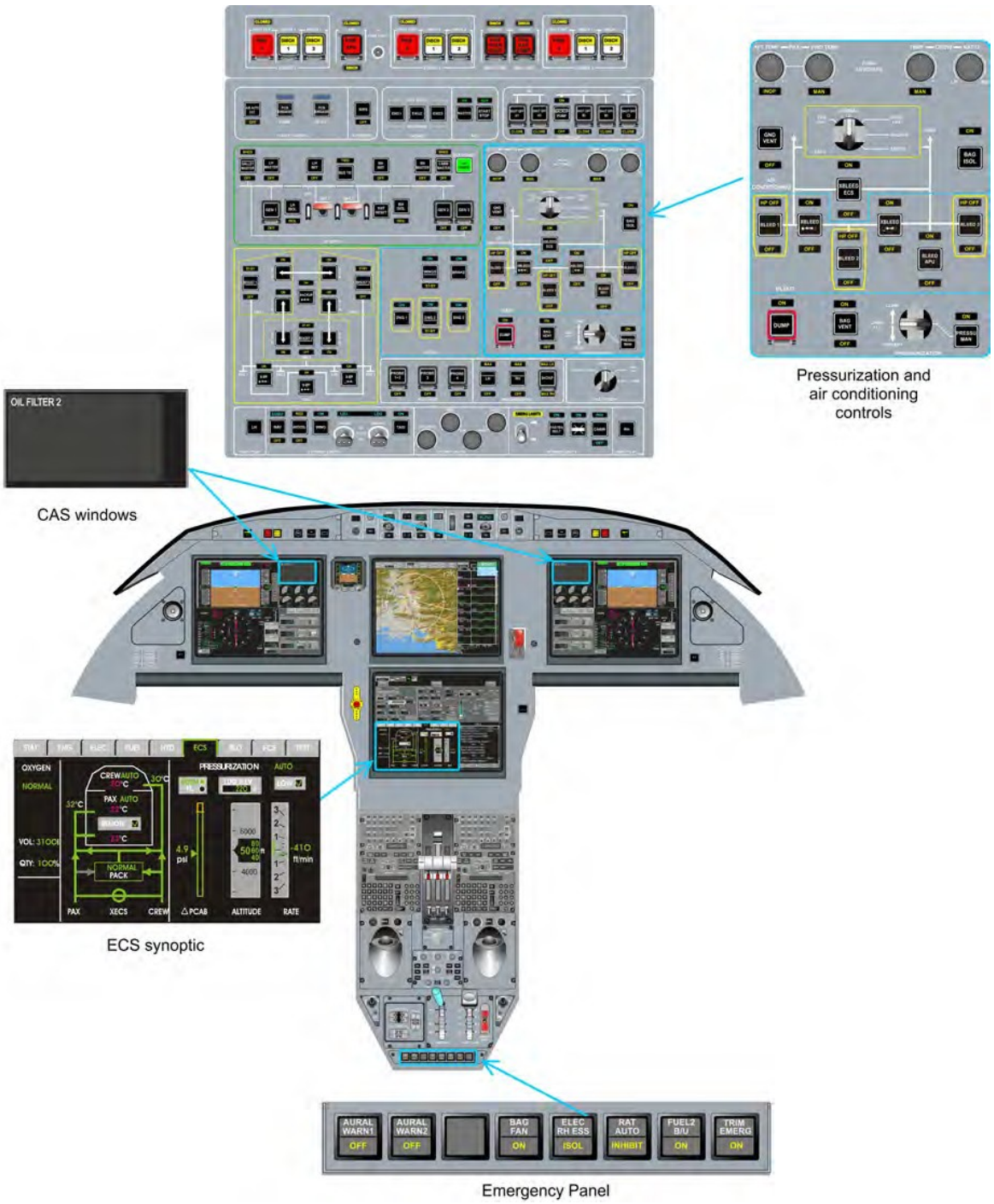

Figure 1 FLIGHT DECK OVERVIEW

General

Hot bleed air from the engines (or APU) is cooled

In normal operation:

- By the main pack,
- Managed by the Air Management System Automatic Controller (AMSAC),

In the event of partial or total failure of the main pack, or AMSAC:

- By the emergency pack,
- Managed by the Air Management System Emergency Controller (AMSEC).

Conditioned air resulting from mixing cold and hot air is then distributed through 2 separate lines for the passenger and crew supplies.

In addition, for equipment cooling purposes, cold air is distributed directly to:

- Gaspers and panel instrument (DU, forward FBW racks),
- Rear FBW racks.

Operating Principle

Sources

The air conditioning system uses the hot bleed air sources available on the common bleed air manifold:

- On the ground: APU or engine bleed air (if both are available, APU bleed air takes
- precedence) or ground cart,
- In flight without Wing Anti-Ice (WAI): engine 1 and 3 bleed air,
- In flight with WAI: all engines bleed air.

The hot bleed air initially goes through the ozone converters, in order to reduce the ozone concentration, and is partly routed:

- In normal ECS operation, to a main pack,
- In emergency ECS operation, to an emergency pack.

Generation

The hot bleed air is cooled by the main pack or emergency pack depending on the ECS operating mode.

MODES

The ECS can operate in 5 modes: NORMAL, PAX OFF, CREW OFF, BACKUP and EMERG modes:

- NORMAL - In NORMAL mode the hot air is cooled by the main pack.
- PAX OFF and CREW OFF - In PAX OFF, CREW OFF modes, the hot air is cooled by the main pack (as in NORMAL mode).
- PAX OFF and CREW OFF are used if there is a supply failure, with no impact on distribution through use of the manual cabin/crew isolation valve. Crew or PAX supply lines are isolated by closing the corresponding cold / hot valves.
- BACKUP - In BACKUP mode, the hot air is cooled by the emergency pack. Emergency pack control is performed by the AMSEC, the rest of the system is managed by the AMSAC.
- EMERG - In EMERG mode, the hot air is cooled by the emergency pack only. The system is managed by the AMSEC.

Air Conditioning

Design Principles

The air conditioning system was designed on the basis of the following design principles:

AIR SUPPLIES

There are 2 independent hot air supplies routed through 2 different zones of the airplane, and 2 independent cold air sources (1 main pack and 1 emergency pack situated in different A/C locations). This segregation ensures that there is always a cold and a hot air supply in the event of a main engine rotor burst or multiple failures.

AIR CONDITIONING REGULATION

- There are 2 separate controllers, AMSAC and AMSEC (situated in different airplane locations) to provide either full automatic regulation of cockpit/cabin temperature or manual positioning of the cockpit/cabin valves.
- Absence of air conditioning during take-off allows maximum engine thrust,
- A recirculation jet pump is used below 14,000 ft to provide optimized cooling capability.

TEMPERATURE REGULATION

In NORMAL (or PAX OFF, CREW OFF and BACKUP) ECS operation, the AMSAC:

- Directly manages the cabin and cockpit target temperatures (if the temperature selectors are in AUTO mode) by varying the amount of hot air through the cabin and cockpit “hot” air valves (also referred to as “trim” valves).
- Ensures that the conditioned airflow is mainly directed to the cabin (60/40 ratio) by means of the cockpit cold valve.
- Manages the cabin cold air valve to maintain a constant gasper pressure.

In EMERG mode, the AMSEC only manages the cabin hot valve position.

HOT AIR GENERATION

The cabin and cockpit hot air supply lines and controls are segregated to ensure that both supplies are not lost in the case of an engine rotor burst.

The cockpit hot air valve is used to regulate the cockpit temperature.

The cabin hot air valve is used to regulate the cabin temperature.

In addition, the cockpit hot air limiting valve enables hot air to be mixed with cooler air exhausted from the primary heat exchanger. The aim is to regulate the cockpit hot air temperature to 200°C on APU bleed only. If the cockpit hot air temperature exceeds 200°C, the AMSAC drives the cockpit hot air valve closed and a CAS message is generated.

COLD AIR GENERATION

Hot air is ducted to the primary heat exchanger where it is cooled by heat transfer to cooler ambient air. The air then passes through the cold flow regulation valve and into the compressor portion of the Air Cycle Machine (ACM). After compression, the air enters the secondary heat exchanger where it is cooled by heat transfer to ambient coolant air.

On the ground and during low altitude flight, the ACM fan induces the airflow used to cool the bleed air in the heat exchangers.

In flight, the cabin air jet pump accelerates the external air (the static air inlet is located behind engine 3 pylon leading edge). The induced airflow is the main source for cooling the heat exchangers and the ACM fan only assists the cabin air jet pump. The cabin air jet pump uses the air evacuated through the baggage outflow valve.

EMERGENCY ECS PACK

In the case of a main pack failure, the emergency pack is used to generate cold air after selection of ECS BACKUP or EMERG modes by the crew.

Hot air is supplied to the emergency heat exchanger via the emergency bleed line. The emergency cold air valve is open and the XBLEED ECS is closed by the AMSEC.

The pneumatic emergency cold air valve acts as a basic flow regulation device by regulating differential pressure across the emergency supply flow and the emergency pack.

Operating Modes

The air conditioning system has 5 operating modes, which ensure air supply in normal and abnormal conditions, and can be seen as 3 main modes with 2 sub-modes:

- NORMAL mode with the CREW OFF and PAX OFF sub-modes. These modes are driven by the AMSAC, with multiple system protections. In this mode, cold air is supplied by the main pack.
- BACKUP mode. This mode is driven by the AMSAC, and is a degraded mode but with the same system protections. In this mode, the cold air is supplied by the emergency pack (the ACM, secondary exchanger and condenser-reheater-water separator of the main pack are bypassed but the primary exchanger is still operating) and comfort can be degraded at low altitude.
- EMERG mode. This mode is driven by the AMSEC. It is a highly degraded mode with only a few parameters monitored. In this mode, the cold air is supplied by the emergency pack.

On the ground, pre-flight testing of the ECS system is required. Its aim is to check the correct operation of the emergency pack.

The EMERG mode is selected in the case of total loss of control of the air conditioning system by the AMSAC.
The AMSEC:

- Closes the engine HP bleed valves and the MP 3 bleed valve,
- Closes the XBLEED 2↔3,
- Opens the XBLEED 1↔2,
- Closes the ECS Crossfeed Valve (XBLEED ECS),
- Opens the emergency cold air valve.

In this case, hot bleed air (LP) is supplied by engines 1 and 2 only. The cold air is supplied by the emergency pack only.

Conditioned air is supplied by the cabin distribution system. The lounge valves are driven fully open by the AMSEC, and the cockpit cold air valve is driven fully closed.

The crew members must open the cabin/crew isolation valve and must manually set the required temperature using the cabin manual control. The LH / RH pilot flow ratio valve remains in its last position.

Controls

The crew has control over the air conditioning system through - The AIR CONDITIONING part of the Overhead Panel (OP).

Figure 2 AIR CONDITIONING OVERHEAD PANEL

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CONTROL	FUNCTION	TO ACTIVATE / TO DEACTIVATE	SYNOPTIC
	PACK rotary switch: switches between the five ECS control modes. NORMAL: Main pack is used (primary and secondary heat exchanger) PAX OFF or CREW OFF: Main pack is operative. The respective cold and hot valves are closed. BACKUP: The emergency pack is used with AMSAC control. EMERG: The emergency pack is used with AMSEC control.	Normal	
		PAX OFF	
		CREW OFF	
		BACKUP	
		EMERG	

CONTROL	FUNCTION	TO ACTIVATE / TO DEACTIVATE	SYNOPTIC
	Automatic mode: the AFT TEMP rotary knob, and the FWD TEMP rotary pushbutton are used to set cabin target temperature (between 12°C and 32°C). Push on the FWD TEMP rotary pushbutton to select pax automatic / MAN mode. MAN mode: The crew manages the corresponding hot valve position. **NOTE** In MAN mode: - MAN is displayed under the PAX FWD TEMP rotary knob, - INOP is displayed under the PAX AFT TEMP rotary knob which is disabled.	Automatic mode	PAX Auto
		MAN mode	PAX Manual

CONTROL	FUNCTION	TO ACTIVATE / TO DEACTIVATE	SYNOPTIC
	Automatic mode: the CREW TEMP rotary pushbutton is used to set cockpit target temperature (between 12°C and 32°C). CREW RATIO rotary knob allows the crew members to modulate the proportions of hot air supplied to the cockpit floor right-hand and left-hand sides when the PACK mode selector is in the NORMAL, PAX OFF, or BACKUP positions. Push on the TEMP rotary pushbutton to select crew automatic / MAN mode. MAN mode: The crew manages the corresponding hot valve position.	Automatic mode	CREW Auto
		MAN mode	CREW Manual

CONTROL	FUNCTION	TO ACTIVATE / TO DEACTIVATE		SYNOPTIC
	BAG ISOL pushbutton: when pressed (amber ON lighted) closes the baggage isolation valves and the baggage outflow valve (BAG VENT).	Unlighted (valves opened)		No synoptic
		ON (valves closed)		No synoptic
	GND VENT pushbutton: when pressed (amber OFF lighted) closes the ground outflow valve and recirculation valve	Unlighted (valves opened)		No synoptic
		OFF (valves closed)		No synoptic
	XBLEED ECS pushbutton: when pressed, cycles through - Unlighted auto (normal) position, - ON: opens the XBLEED ECS valve, - OFF: closes the XBLEED ECS valve.	Unlighted auto		
		OFF		
		ON		

Indications

The ECS synoptic page displays operating modes, system status, cockpit and cabin temperatures, and crew and PAX supply duct temperatures.

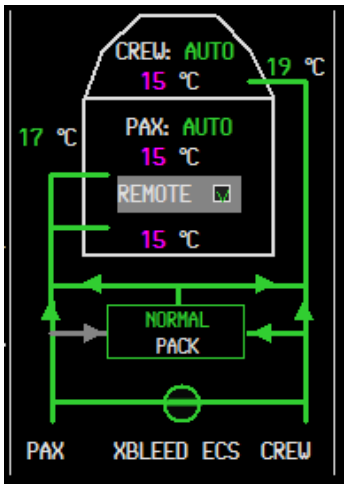

Figure 3 ECS SYNOPTICS PAGE - CONDITIONING SECTION

COCKPIT AND CABIN TEMPERATURES

The cockpit temperature indication is displayed beside the CREW label.

The cabin temperature indication is displayed under the PAX label. Two cabin temperature indications are displayed: forward and aft cabin temperatures.

In AUTO mode, the readouts range from 12 to 32°C and correspond to the desired temperature commanded by the crew members. The temperature readings are displayed in magenta (target value) When the CREW TEMP (or PAX FWD TEMP) rotary pushbutton is in MAN, the corresponding temperature indication is replaced by a percentage, indicating the opening of the cockpit (or cabin) hot air valve (full hot corresponds to an opening of at least 90 %). When the signal is invalid, two amber dashes are displayed in place of the temperature indication.

PACK MODE SELECTOR

The PACK rotary switch located on the overhead panel enables the crew to select one of the five following modes: NORMAL, BACKUP, CREW OFF, PAX OFF and EMERG.
The table summarizes the operational status in all modes.

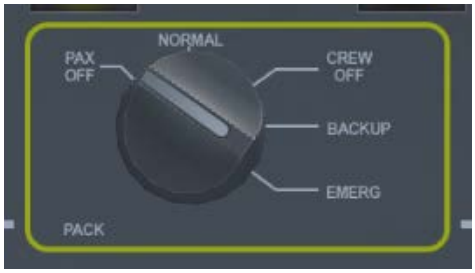

Figure 4 PAX Mode Selector

MODES	CONTROL AND MONITORING	SYSTEM IMPACT	ECS FUNCTIONS LOST
NORMAL	AMSAC	None	None
PAX OFF & CREW OFF	AMSAC	PAX and CREW supplies are to be manually interconnected	None
BACKUP	AMSAC	Main pack isolated	Main pack cooling Rear FBW cooling Recirculation below 14,000 ft
EMERGency	AMSEC	Main pack is isolated (Bleed 3 isolated and XECS open) Emergency Heat Exchanger is fed by engine 1 and 2 bleed air PAX and CREW supplies are to be manually interconnected	Main pack cooling Rear FBW cooling Recirculation below 14,000 ft Automatic temperature regulation

XBLEED ECS PUSHBUTTON

The XBLEED ECS pushbutton enables the crew members to manually open or close the ECS cross-feed valve. The AMSAC drives the valve when the ECS mode selector is in the NORMAL, PAX OFF, CREW OFF or BACKUP position. With the XBLEED ECS pushbutton in the AUTO position and the ECS operating correctly, the AMSAC drives the ECS cross-feed valve open. The AMSAC automatically drives the XBLEED ECS valve closed if there is a main pack overheat or a distribution duct overpressure.

When the PACK rotary switch is in the EMERG position, the AMSEC drives the XBLEED ECS valve closed irrespective of pilot command.

With the XBLEED ECS pushbutton in the OFF position, the XBLEED ECS valve is driven to the closed position.

With the XBLEED ECS pushbutton in the ON position, the XBLEED ECS valve is driven to the open position, except in EMERG mode.

GND VENT PUSHBUTTON

The GND VENT pushbutton enables the crew members to close the recirculation valve and the ground ventilation valve manually.

With the GND VENT pushbutton in the normal position (unlit) the recirculation valve is controlled by the AMSAC and closes at 14,000 ft, (except if the PACK rotary switch is in the EMERG position; the valve remains in the last commanded position).

The ground ventilation valve is controlled by the cabin ventilation valve. With the GND VENT pushbutton in the OFF position, the recirculation valve and the GND VENT Valve are driven to the closed position.

CREW RATIO SELECTOR

The CREW RATIO rotary knob enables the crew members to modulate the proportion of hot air supplied to the cockpit floor right-hand and left-hand sides when the PACK rotary switch is in the NORMAL, PAX OFF, or BACKUP positions.

The AMSAC modulates the crew LH / RH distribution valve to the desired position set point; the central position supplies a 50 / 50 flow split and this can be increased to a maximum flow split of 70 / 30 in either direction.

With the PACK rotary switch in the EMERG position, the valve remains in the last commanded position.

Pressurization

The pressurization system adjusts the cabin pressure by regulating the conditioned air discharged outside the cabin, according to:

- Airplane altitude,
- Airplane vertical speed,
- Maximum differential pressure compatible with the airframe.

In the case of failure (overpressure, negative pressure, maximum altitude), protections ensure that altitude and structural limitations are not exceeded.

The pressurization system has an automatic mode and a manual mode, allowing the crew members to control the pressurization valves directly.

The purpose of pressurization is to maintain a level of pressure inside the fuselage that is comfortable for the passengers and the crew, taking account of the structural limits of the airframe, whatever the flying conditions.
The pressurization system also allows control of:

- Nose cone ventilation and pressurization,
- Baggage compartment isolation, ventilation and main pack heat exchanger cooling,
- Underfloor ventilation air evacuation.

Flight Deck Overview

CONTROLS

The controls for pressurization system are:

- Primarily via the PRESSURIZATION section of the overhead panel,
- Via a LOW soft key on the ECS synoptic to reduce the normal cabin altitude rate by approximately 300 ft/min.

INDICATION

Pressurization indications are located:

- On the ECS synoptic,
- At the bottom of the STATus synoptic for the cabin altitude,
- In the ENG-CAS window for CAS messages,
- On the STATus synoptic / FAULT tab for fault messages.

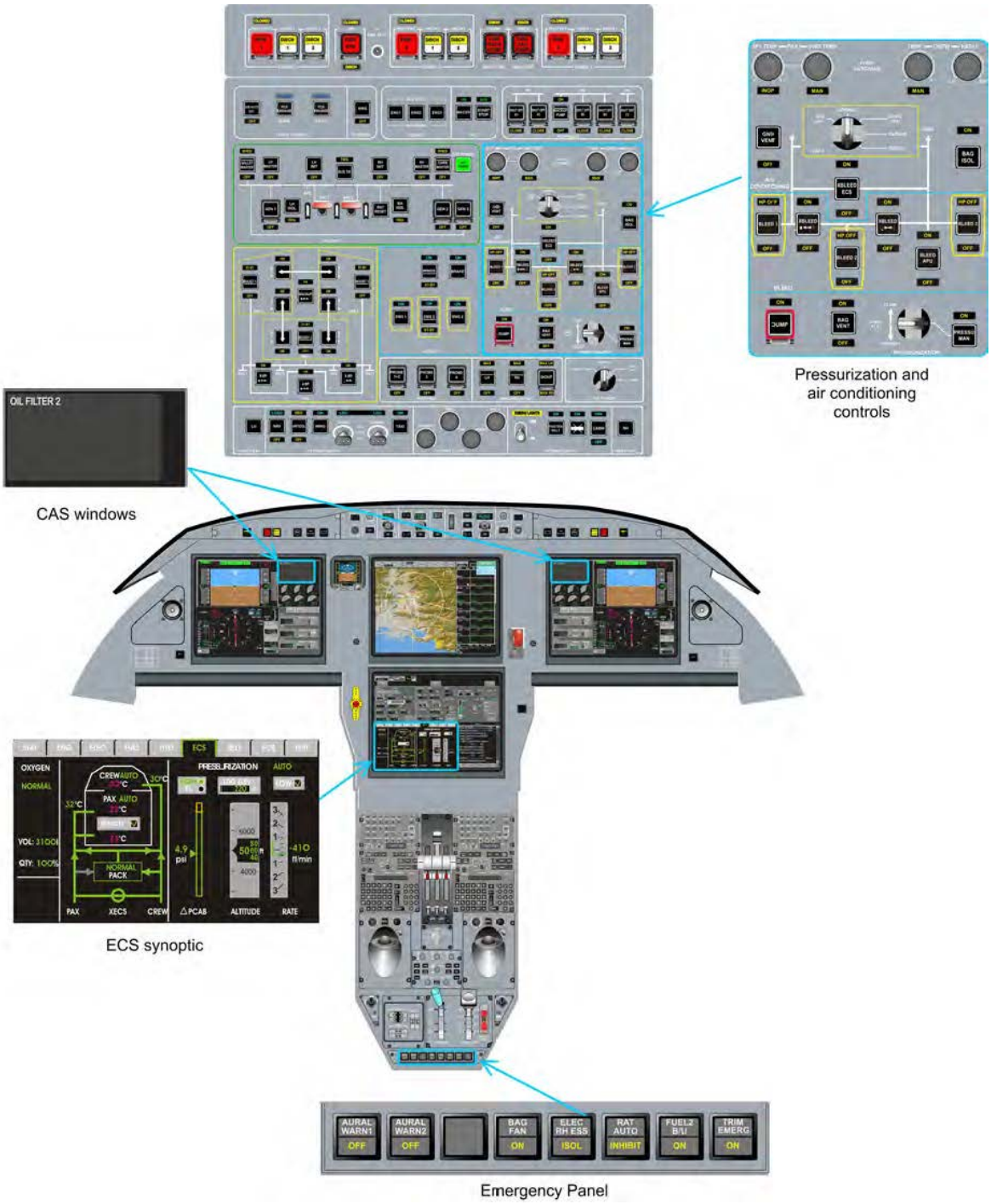

Figure 5PRESSURIZATION FLIGHT DECK OVERVIEW

Pressurized Areas

The airplane comprises three pressurized areas:

- The main cabin, including the cockpit, the forward and aft lounges, and the lavatory
- The baggage compartment,
- The nose cone compartment, which is semi-pressurized and air-cooled for satisfactory operation of the avionics.

The baggage compartment can be isolated in the case of a leak or fire.

The underfloor area is pressurized and ventilated, in order to avoid any build-up of fuel or hydraulic fluid vapors.

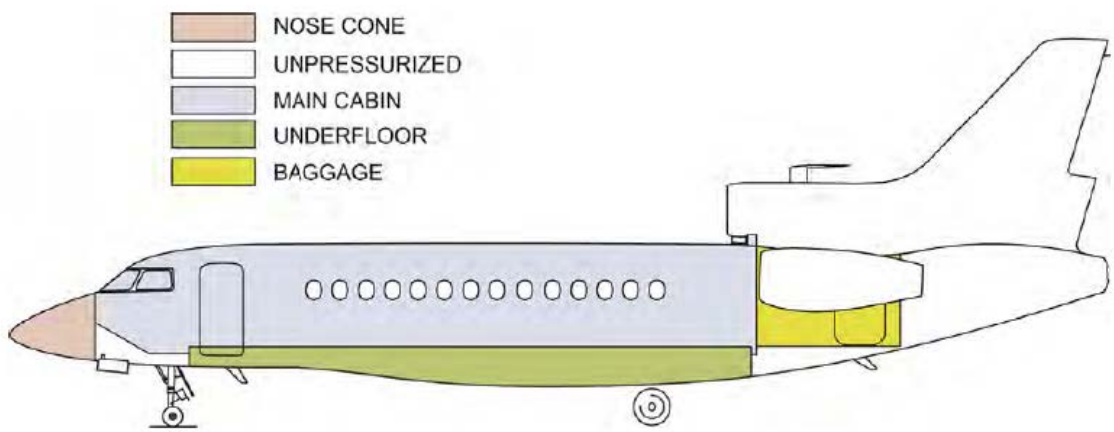

Figure 6 PRESSURIZED AND VENTILATED AREAS

Principle of Operation

Pressurization is automatic or manual by regulating cabin conditioning airflow through two electrically commanded outflow valves located in the fuselage rear bulkhead:

- The cabin outflow valve,
- The baggage outflow valve.

Each valve has its own controller (dual channel, with one channel active at a time).

The cabin outflow controller can be considered the “master” controller as it sends orders to the baggage outflow valve controller.

DESIGN PRINCIPLES

The pressurization system was designed on the basis of the following design principles:

- Pressurization regulation - For passenger comfort, ensure that cabin altitude at the maximum certified ceiling does not exceed 6,000 ft.
- Provide a fully automatic normal operating mode and a manual backup mode.
- Allow high altitude airfield operations up to 14,200 ft, - Pressurization regulation and mechanical protections ensure that delta P will remain within limits that are acceptable for the structure.

Ventilation of the ECS pack is by a pressurization jet pump, to avoid having to use a ram air intake which would induce drag.

A pressurized bulkhead allows isolation of the baggage compartment in the case of rotor burst.

AUTOMATIC MODE

In automatic mode, the pressurization system automatically controls cabin altitude, delta P and cabin vertical speed (pressurization rate of change) according to programmed laws and destination airfield elevation.

In normal operation, the cabin altitude target is 6,000 ft. Inputs for pressurization control are primarily:

- NORM / FL law and LOW rate selection,
- Airplane altitude, vertical speed and baro correction,
- Weight-On-Wheel, T/O power, doors closed,
- LDG ELEV: Destination airfield elevation.

And secondarily, to optimize comfort:

- Init Cruising level,
- Time To Destination.

MANUAL MODE

In manual mode, the crew manually opens or closes the cabin outflow valve to achieve the desired cabin vertical speed by using the CABIN ALT spring-loaded rotary knob.

An impulse of 1 second on the spring loaded rotary knob induce a cabin vertical speed variation of ± 300 ft/mn.

BAGGAGE ISOLATION, VENTILATION AND MAIN PACK HEAT EXCHANGER COOLING

The baggage compartment can be isolated from the cabin by closing the 2 baggage isolation valves:

- Automatically, by the cabin outflow valve controller when it senses cabin depressurization.
- Manually, by the crew through a BAG ISOL pushbutton in the case of fire or smoke in the baggage compartment.

When the baggage compartment is isolated, the "cabin air jet pump" located downstream of the baggage compartment ventilation valve is not fed and cooling of the main pack heat exchangers is left to the ACM (less effective at high altitude).

Electrical Power Supply

The following paragraph describes the power supply to the main equipment of the pressurization system.

Electrical protection is provided either by Solid State Power Controllers (SSPC), or by Circuit Breakers (CB).

EQUIPMENT	POWER SUPPLY	TYPE OF PROTECTION
Cabin valve	LH and RH Essential (one for each computer)	CB
Baggage valve	LH and RH Main (one for each computer)	SSPC
Isolation valves	LH and RH Essential (one for each computer)	CB
Ground vent valve	LH Main	CB
Nose cone fan	LH Main	CB

Pressurization System Components

The cabin outflow valve is located on the main cabin pressure bulkhead, below the S-Duct, allowing cabin air to exit the pressurized cabin.

The cabin outflow valve consists of a valve body assembly, a rotary electromechanical actuator, and a dual-channel digital electronic control with manual control backup.

The valve controller is fitted with two digital and two analog pressure sensors.

BAGGAGE COMPARTMENT PRESSURIZATION AND ISOLATION

The baggage compartment is normally pressurized at approximately the same differential pressure as the main cabin area.

Due to engine layout, the baggage compartment could be a path for fuselage depressurization in the case of a rotor burst, or could be the source of hazardous smoke in the event of a fire. Therefore, if depressurization in the baggage compartment is sensed or if a fire is detected, the baggage compartment can be isolated from the rest of the pressurized cabin.

Baggage compartment isolation is by closing the two baggage isolation valves. Automatically, when the cabin outflow valve senses rapid cabin decompression (cabin altitude exceeding 14,200 ft), or manually, when there is a fire warning or a slow cabin decompression warning, by selecting the BAG ISOL pushbutton on the overhead panel.

Pressurization System Operation

Figure 7 Pressurization Controls

In automatic mode, the pressurization system automatically controls cabin altitude and pressurization rate of change according to programmed laws and airfield elevation.

The automatic mode has two main operating laws:

- The NORMal law (NORM).
- The Flight Level law (FL).

Both automatic mode laws include a cabin altitude LOW rate of change option.
The pressurization system allows high-altitude landing and take-off.

On the ground, it also provides:

- Pre-pressurization of the cabin at an altitude below the runway elevation, in order to avoid cabin pressure surges during take-off.
- An automatic depressurization sequence, by pressurizing the cabin at an altitude below the runway elevation, in order to avoid cabin pressure surges during landing.

NORM LAW

This mode provides the most comfortable pressurization mode by limiting the cabin pressure rate of change during climb and descent based on airplane vertical flight plan data provided by the FMS (time to top of climb, time to destination, cruising level).

FL LAW

This mode is intended to maintain a low cabin altitude of 1,000 ft until the airplane reaches 27,000 ft. Climbing to 51,000 ft is possible in this mode but the cabin pressure variation is less comfortable above 27,000 ft.

LOW CABIN RATE

LOW cabin altitude rate of change can be activated with either NORM or FL laws, to limit the rate of change to lower values: +300 / -300 ft/min instead of +500 / -450 ft/min.

HIGH ALTITUDE LANDING AND TAKE-OFF

When the flight plan includes an airfield elevation above 8,000 ft, the nominal excessive cabin altitude threshold (8,300 ft ± 250 ft) is automatically modified by the pressurization system, while the airplane is in descent or on the ground, to the landing field elevation plus 1,700 ft. This altitude will never be higher than the cabin limit of 14,500 ft. The cabin altitude is regulated at 8,000 ft, until the airplane descends through 25,000 ft, then increases normally to the landing field elevation as per the flight plan.

MANUAL PRESSURIZATION MODE

In case of failure of the automatic pressurization mode, the crew can:

Activate the manual pressurization mode with the PRESSU MAN pushbutton on the overhead panel:

- Cabin and baggage outflow valves remain in their last commanded position.
- A target cabin altitude is displayed in magenta on the ECS synoptic. This altitude is the target cabin altitude corresponding to the current airplane altitude as computed by the pressurization law.

Directly control the cabin altitude rate (cabin vertical speed) using the CABIN ALT spring-loaded rotary knob:

- When actuated, the knob opens or closes the cabin outflow valve (only). When released, the valve remains in its last position.
- The baggage outflow valve is not regulated by the knob. It can be manually closed or opened using the BAG VENT pushbutton. When the baggage outflow valve is closed, the cabin air jet pump, which cools the main air pack, is not fed. Cooling is then only provided by the ACM fan, which is less effective above 40,000 ft.

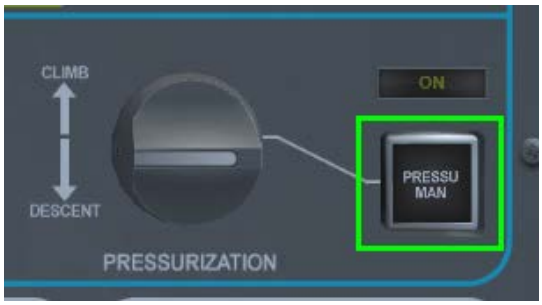

Figure 8 MANUAL PRESSURIZATION BUTTON

DUMP EMERGENCY DEPRESSURIZATION MODE

In DUMP mode, the cabin outflow valve is commanded open. The baggage outflow valve remains in its last commanded position. The cabin altitude limitation overrides the dump command when the cabin exceeds the altitude limit threshold.

Pressurization Controls

The controls for the air conditioning system are with:

- The PRESSURIZATION part of the Overhead Panel
- A soft key on the ECS synoptic page for selecting the landing field elevation.

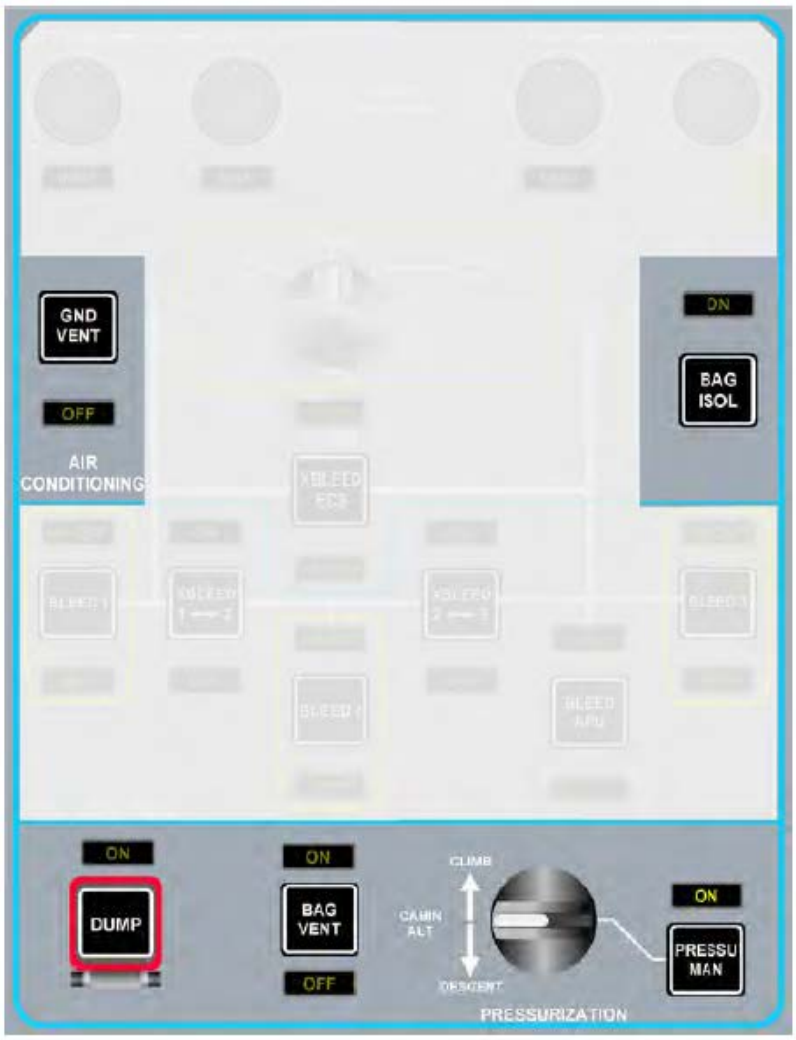

Figure 9 PRESSURIZATION CONTROLS ON THE OVERHEAD PANEL

CONTROL	FUNCTION	TO ACTIVATE / TO DEACTIVATE	SYNOPTIC
	- Selects the pressurization system automatic / MAN mode - In MAN mode, use the manual pressurization control knob	Push out: automatic mode	AUTO
		Push in: MAN mode	MAN
	DUMP guarded pushbutton, allows rapid depressurization by forcing the cabin outflow valve to fully open (until the cabin altitude limit is reached)	Guarded: automatic mode	No synoptic
		Raise the guard and push in: DUMP mode	DUMP

CONTROL	FUNCTION	TO ACTIVATE / TO DEACTIVATE	SYNOPTIC
	CABIN ALT spring knob: when manual mode is selected, this spring loaded knob allows to control the cabin altitude rate of climb/descent by opening or closing the cabin outflow valve. (The knob is spring loaded to the center position; an impulse of 1 second on the spring knob induces a cabin vertical speed of ± 300 ft/mn. Do not maintain in position more than 3 seconds.)	Rotate clockwise	Increase the cabin altitude rate of climb Or Decrease the cabin altitude rate of descent
		Rotate counter clockwise	Increase the cabin altitude rate of descent Or Decrease the cabin altitude rate of climb

CONTROL	FUNCTION	TO ACTIVATE / TO DEACTIVATE	SYNOPTIC
	BAG VENT pushbutton: cycling through, ON, OFF, automatic position enables the baggage outflow valve to be opened, closed or set to automatic	Unlighted (automatic mode)	No synoptic
		ON (fully opened)	No synoptic
		OFF (closed)	No synoptic
	BAG ISOL pushbutton: when pressed (amber ON lighted), closes the baggage isolation valves and the baggage outflow valve (BAG VENT)	Unlighted (valves opened)	No synoptic
		ON (valves closed)	No synoptic
	GND VENT pushbutton: when pressed (amber OFF lighted), closes the ground outflow valve and the cabin recirculation valve.	Unlighted (valves opened)	No synoptic
		OFF (valves closed)	No synoptic

Indication

Pressurization indication takes place on MDU 2.

PRESSURIZATION SYNOPTIC PAGE

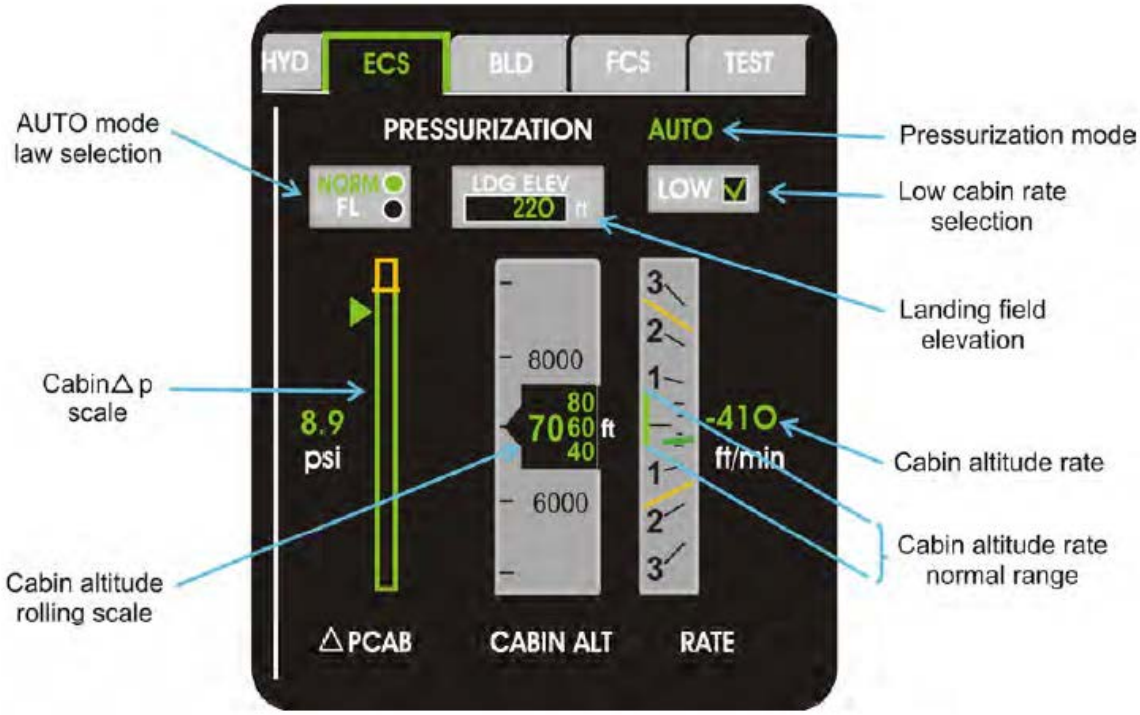

Figure 10 PRESSURIZATION SYNOPTIC IN AUTOMATIC MODE

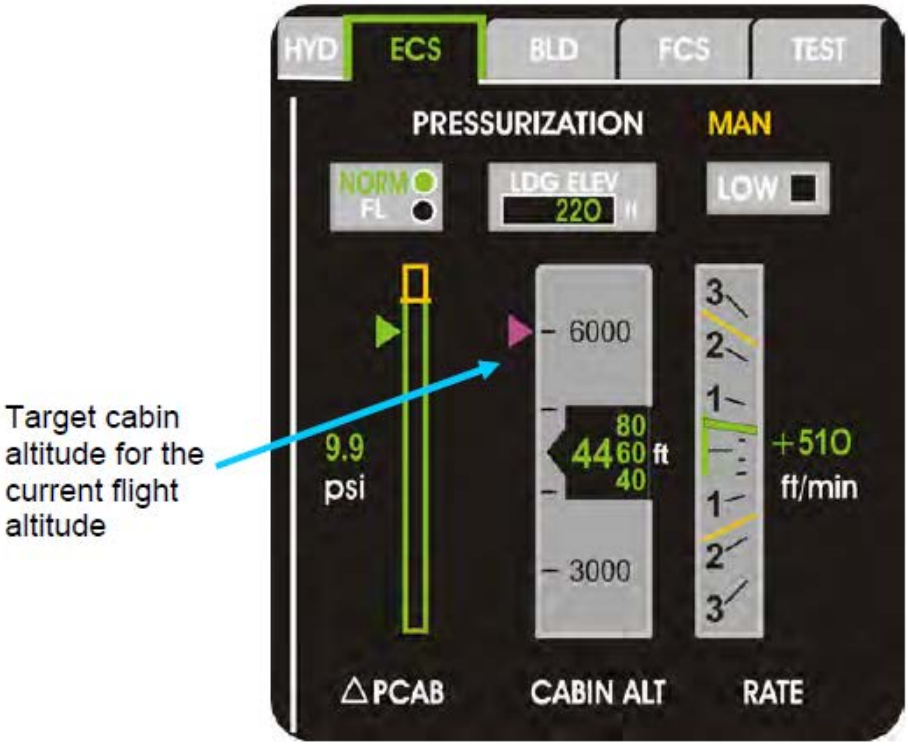

Figure 11 PRESSURIZATION SYNOPTIC IN MANUAL MODE

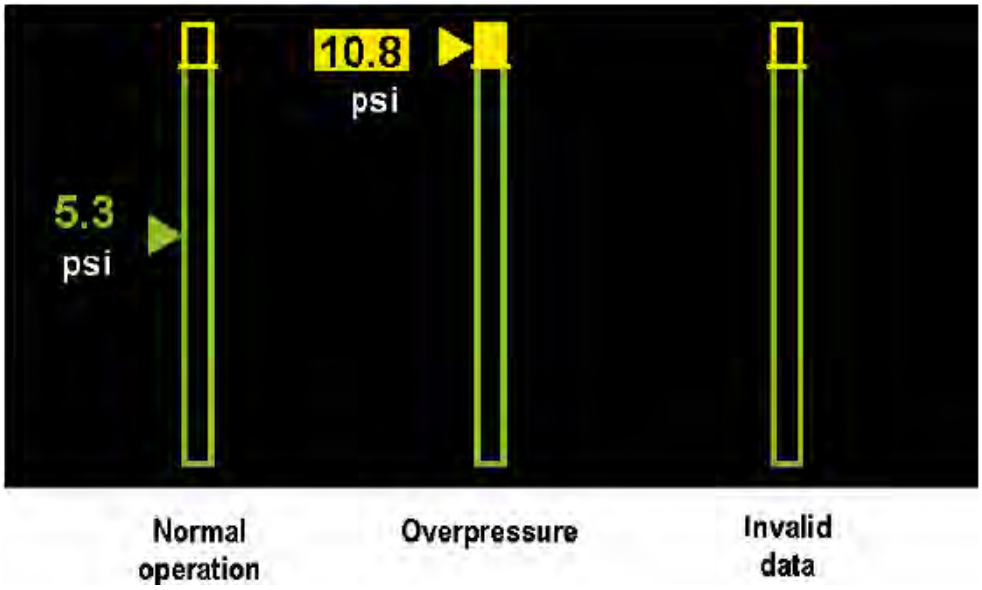

Figure 12 CABIN DIFFERENTIAL PRESSURE INDICATIONS

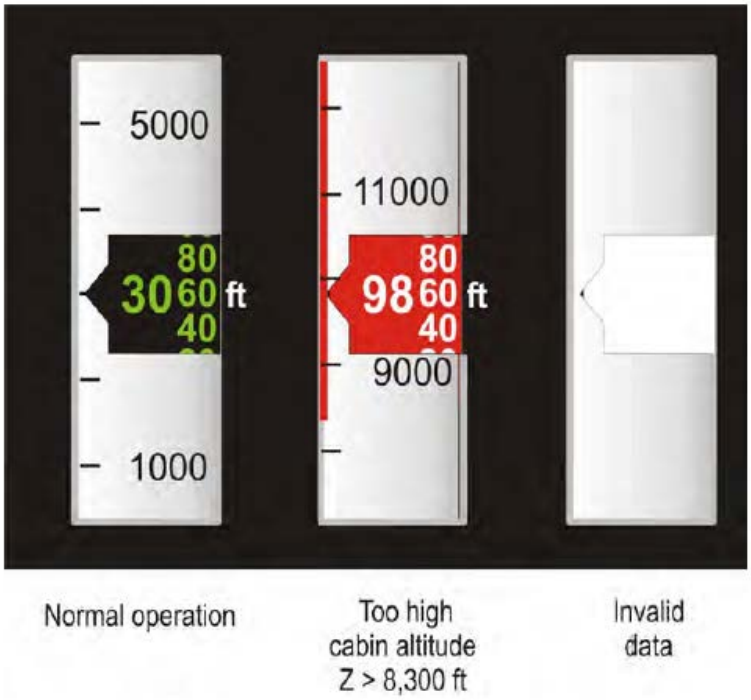

Figure 13 CABIN ALTITUDE INDICATIONS WITH LDG ELEV < 8,000 FT

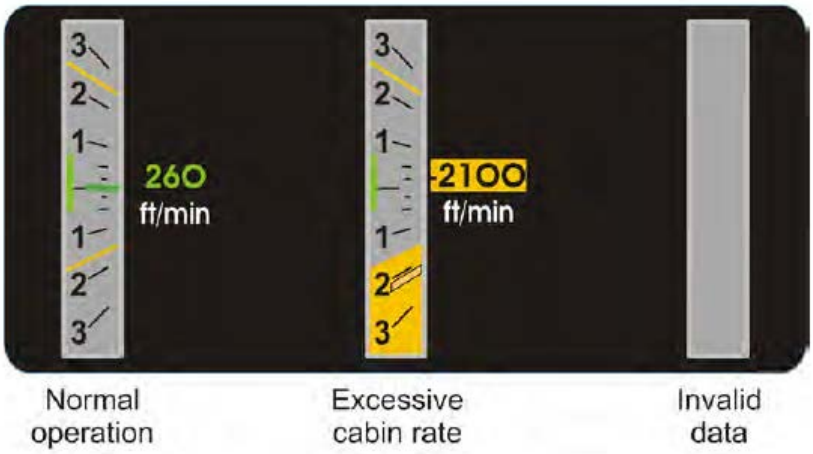

Figure 14 CABIN RATE INDICATION

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