SECTION 2

AIR CONDITIONING/PRESSURIZATION

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SECTION 2

AIR CONDITIONING/PRESSURIZATION

1. AIR CONDITIONING (Figures 1, 2 and 3)

A. General

The air conditioning system provides complete environmental control for the cabin and flight compartment. The system also provides air for instrument cooling, windshield demist and flight compartment footwarmers. The avionics equipment in the underfloor area is cooled by flight compartment exhaust air.

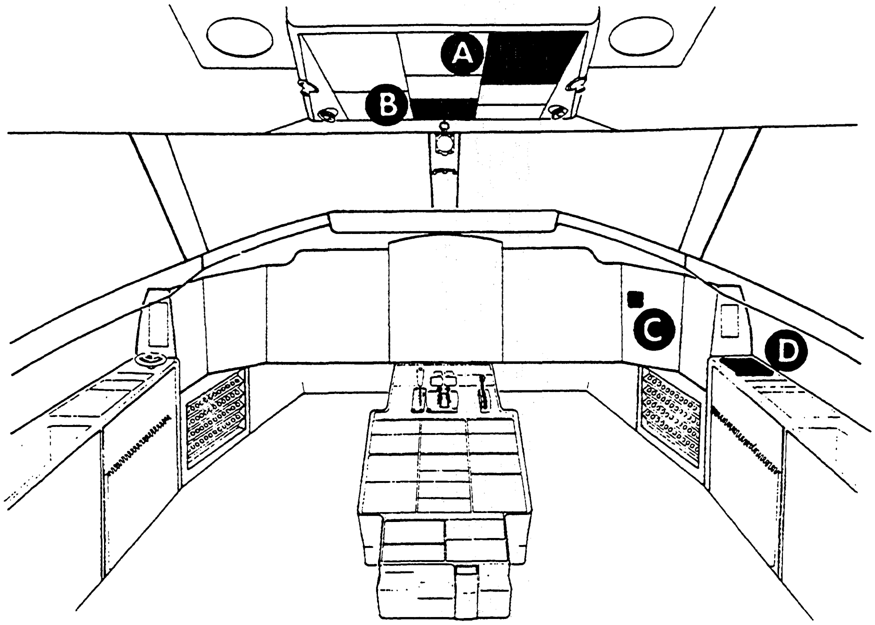
Two air cycle type air conditioning units, designated ACU 1 and ACU 2, deliver cold and conditioned air to the cabin and flight compartment. Air for operation of the ACUs is delivered from the bleed air manifold of the bleed air system and is supplied by engine bleeds, the APU or a ground air source (refer to Section 17, POWER PLANT for details of the aircraft bleed system).

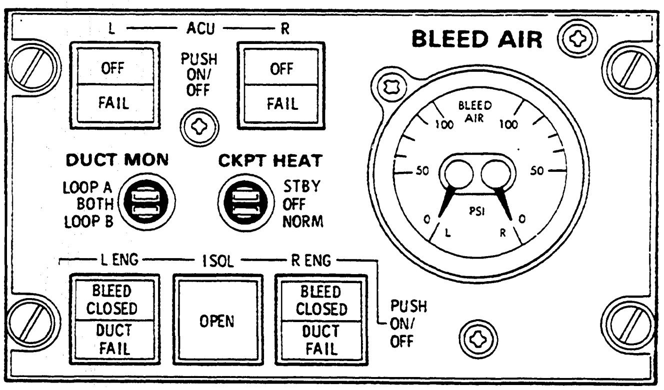
The cabin and flight compartment temperatures are controlled either automatically or manually and may be selected from 16 to 32°C (60 to 90°F).

The air conditioning system includes a bleed air control system, a refrigeration system, a cold and conditioned air ventilation system, and a cabin and flight compartment temperature control system.

B. Bleed Air Control System (Figure 4)

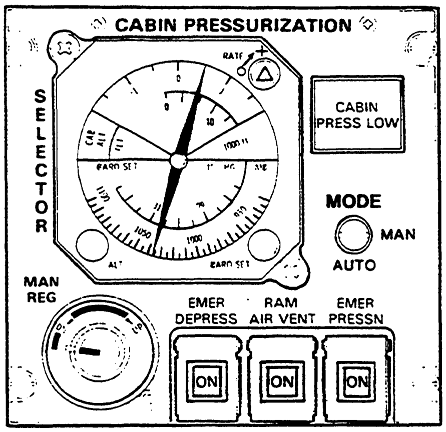
Bleed air from the bleed air manifold enters the ACUs via associated pressure regulator and shutoff valves controlled by the L and R ACU switch/lights on the BLEED AIR panel. Each pressure regulator and shutoff valve delivers air to its ACU at a regulated pressure of either 39.5 or 24.0 psi. The higher pressure, which improves ACU cooling on the ground and ensures that a sufficient volume of air is available to the system during single ACU operation, is delivered whenever a weight-on-wheels signal is present or when only one of the ACUs is in operation. The lower pressure is delivered when both ACUs are in operation and no weight-on-wheels signal is present. An exception to the sequence of pressure delivery occurs if engine bleed air is selected when the aircraft is on the ground. In this case, the lower pressure is delivered, regardless of the number of ACUs in operation or the weight-on-wheels signal, to prevent pressure surges through the ACU if engine air is selected after relatively low pressure air from the APU or a ground air source has been used to pressurize the bleed air manifold.





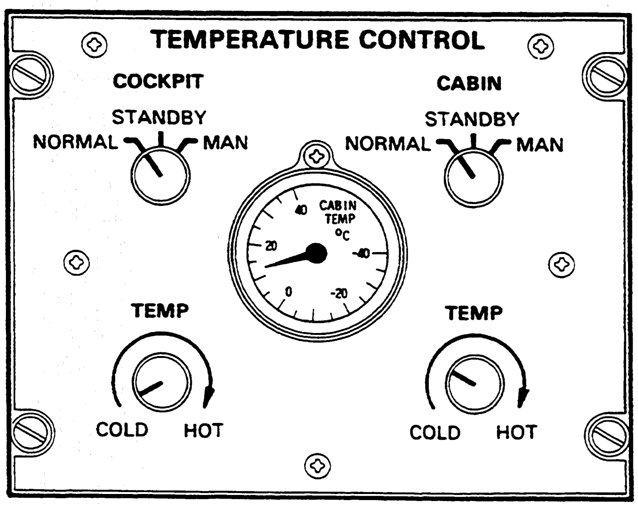
BLEED AIR CONTROL PANEL

B



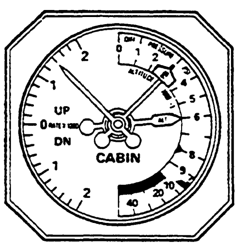
CABIN PRESSURIZATION CONTROL PANEL

A



TEMPERATURE CONTROL PANEL

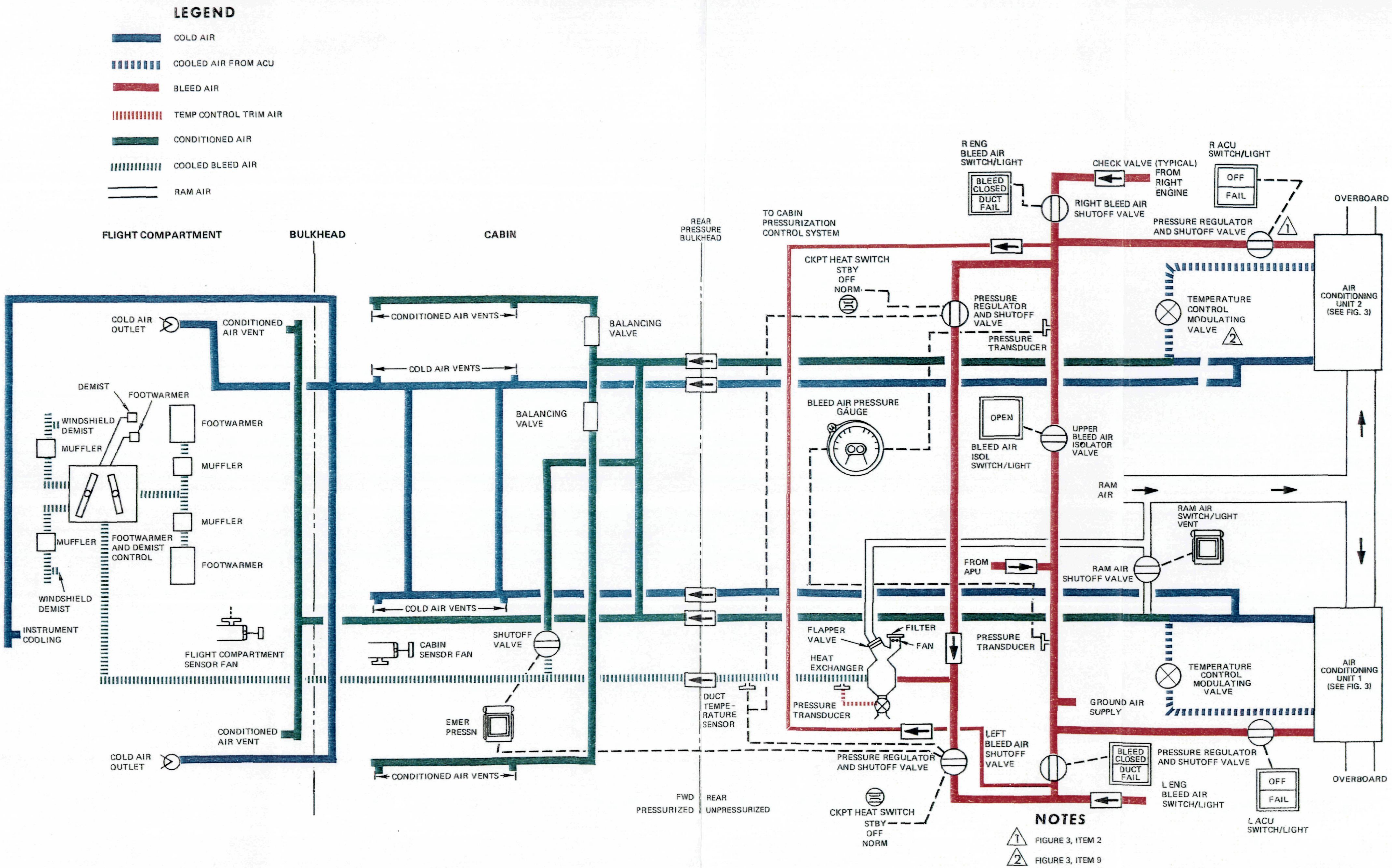
D



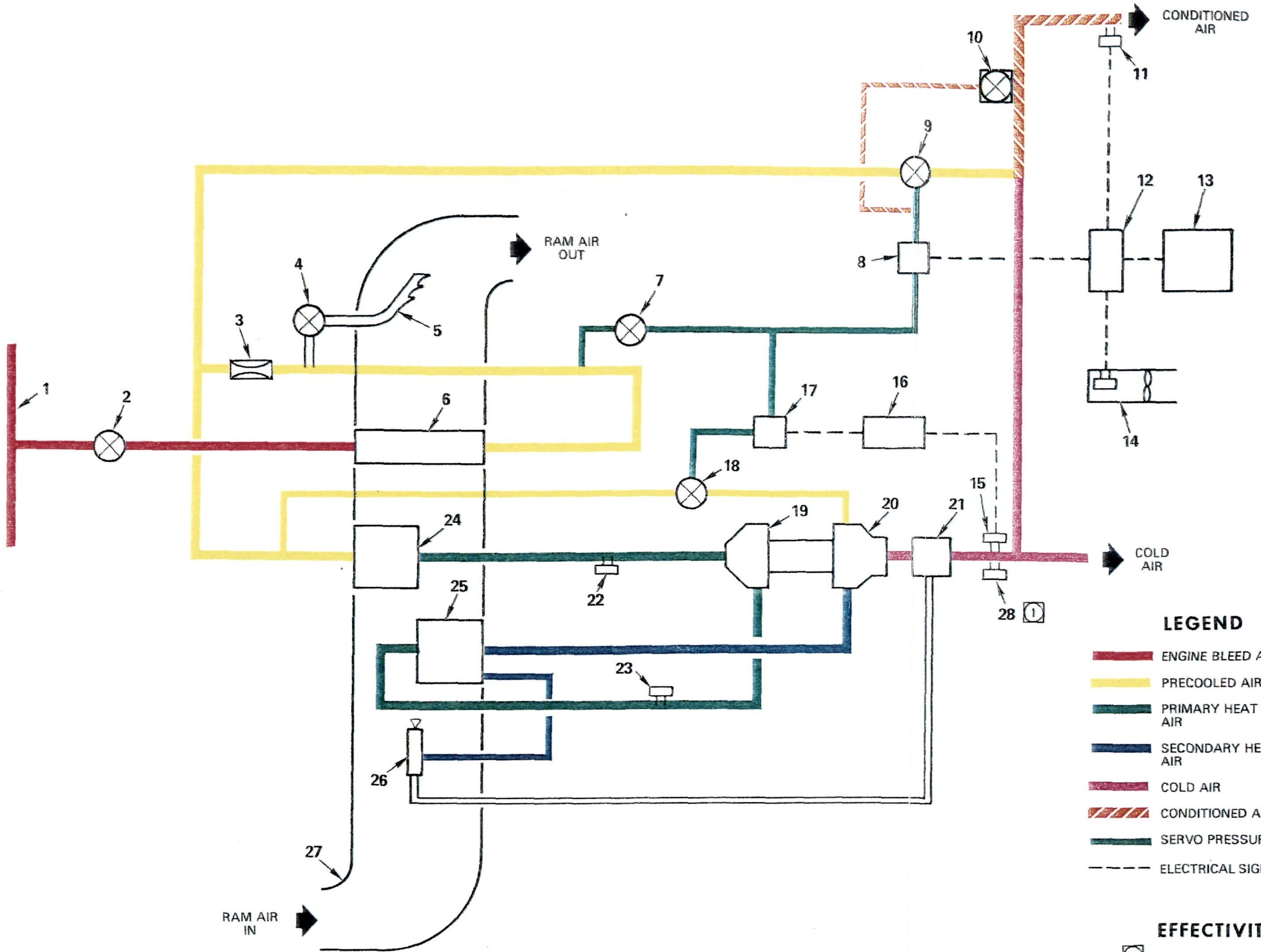
CABIN ALTITUDE INDICATOR

C

Air Conditioning and Pressurization
Control Panels
Figure 1



Air Conditioning System - Schematic
Figure 2



1 BLEED AIR MANIFOLD
2 ACU PRESSURE REGULATOR AND SHUTOFF VALVE
3 FLOW LIMITER
4 EJECTOR SHUTOFF VALVE
5 EJECTOR
6 PRECOOLER
7 SERVO PRESSURE REGULATING VALVE
8 ELECTROMAGNETIC CONTROL VALVE
9 TEMPERATURE CONTROL MODULATING VALVE
10 TEMPERATURE LIMITER
11 DUCT TEMPERATURE SENSOR
12 ELECTRONIC TERMPERATURE CONTROL UNIT
13 TEMPERATURE CONTROL PANEL
14 COMPARTMENT FAN/SENSOR
15 DUCT TEMPERATURE SENSOR
16 LOW LIMIT TEMPERATURE CONTROLLER
17 ELECTROMAGNETIC CONTROL VALVE
18 LOW LIMIT MODULATING VALVE
19 COLD AIR UNIT COMPRESSOR
20 COLD AIR UNIT TURBINE SECTION
21 WATER SEPARATOR
22 PRESSURE SENSING SWITCH
23 THERMAL SWITCH
24 PRIMARY HEAT EXCHANGER
25 SECONDARY HEAT EXCHANGER
26 ASPIRATOR
27 RAM AIR DUCT
28 THERMAL SWITCH (ACU FAIL LIGHT)

LEGEND

- ENGINE BLEED AIR
- PRECOOLED AIR
- PRIMARY HEAT EXCHANGER AIR
- SECONDARY HEAT EXCHANGER AIR
- COLD AIR
- CONDITIONED AIR
- SERVO PRESSURE
- ELECTRICAL SIGNAL

EFFECTIVITY

1 A/C incorporating SB 600-0476

Air Conditioning Unit (ACU) - Schematic
Figure 3

C. Refrigeration System (Figure 3)

The refrigeration system consists of the left and right ACUs located in the rear equipment bay. Each ACU includes a precooler, primary and secondary heat exchangers, and a cold air unit. A ram air intake, located at the base of the vertical stabilizer leading edge, directs ram air through bifurcated ducting across each ACU heat exchanger and precooler. The expended ram air is ducted overboard.

NOTE: In the following description only one ACU is described, the other is similar.

Bleed air from the bleed air control system is fed to the ACU and is passed through the precooler, where it is cooled to a temperature of less than 287°C (550°F). The precooled air is passed through a flow limiter and then splits into two paths. One path feeds the precooled air to a temperature control modulating valve where it is used to increase the temperature of the fully cooled air to provide conditioned air. The remaining path is passed to the primary heat exchanger where it is cooled further.

The cooled air from the primary heat exchanger is passed to the compressor section of the cold air unit where it is compressed and heated. The heat of compression is removed in the secondary heat exchanger after which the air is passed to the turbine section of the cold air unit. The air expands and cools considerably as it drives the cold air unit turbine and is routed to a water separator before entering the ventilation system. The water separator removes condensation produced in the cold air unit turbine and directs it to an aspirator in the ram air duct. Bleed air tapped from the secondary heat exchanger sprays the condensation across the heat exchangers to improve system cooling.

To prevent the accumulation of ice in the water separator and to provide for maximum system cooling efficiency, the temperature of the air discharged from the cold air unit is maintained at 2°C by a low limit temperature control system. The system consists of a duct temperature sensor, a low limit temperature controller, an electromagnetic control valve and a low limit modulating valve. In response to temperature signals from the duct sensor, the temperature controller operates the electromagnetic control valve to vary the amount of servo pressure delivered to the low limit modulating valve. The low limit modulating valve allows air from the ACU precooler to enter the turbine section of the cold air unit to maintain the cold air at the desired temperature.

The servo pressure required for the operation of the low limit modulating valve is tapped from precooled air via a servo pressure regulating valve. Servo pressure from this valve is also supplied to the temperature control modulating valve of the temperature control system (refer to paragraph E).

When the aircraft is on the ground, bleed air from the ACU precooler is passed via a solenoid operated shutoff valve to an ejector in the ram air duct to induce a flow of cooling air across the heat exchangers. The shutoff valve opens whenever the ACU is selected on and the aircraft is on the ground or when an overheat anticipator thermal switch, between the cold air unit and the secondary heat exchanger senses that the air temperature is near the overheat trip point (see below for details of the ACU overtemperature protection system). In this case, the action of the ejector prevents automatic shutdown of the ACU caused by high transient temperatures usually associated with single ACU operation at high engine power settings (high engine bleed temperatures).

The ACU is protected against overpressures by an overpressure sensor located on the line between the primary heat exchanger and the cold air unit. If the pressure in this line exceeds a preset limit, the switch operates to close the associated pressure regulator and shutoff valve thereby shutting off the supply of bleed air to the ACU. At the same time, the FAIL light on the appropriate ACU switch light comes on and remains on until the pressure drops to a preset level below the overpressure trip point. After an overpressure, the system can be reset by pressing out the affected ACU switch/light and opening the L or R AIR COND SHUT OFF circuit breaker or pressing out the L or R ENG switch/light. If the FAIL light on the ACU switch/light goes out, the system can return to operation by closing the circuit breaker or pressing in the L or R ENG switch/light and pressing in the ACU switch/light.

Protection against ACU overtemperature is provided by an overheat sensor located on the line between the cold air unit compressor section and the secondary heat exchanger. If the sensor detects an overheat condition, the ACU pressure regulator and shutoff valve closes and the FAIL light on the affected ACU switch/light comes on. The FAIL light remains on until the temperature in the line drops to a preset level below the overtemperature trip point. When this occurs, the ACU switch/light, which is normally pressed out immediately after the overtemperature occurs, can be pressed in to open the pressure regulator and shutoff valve and return the system to operation.

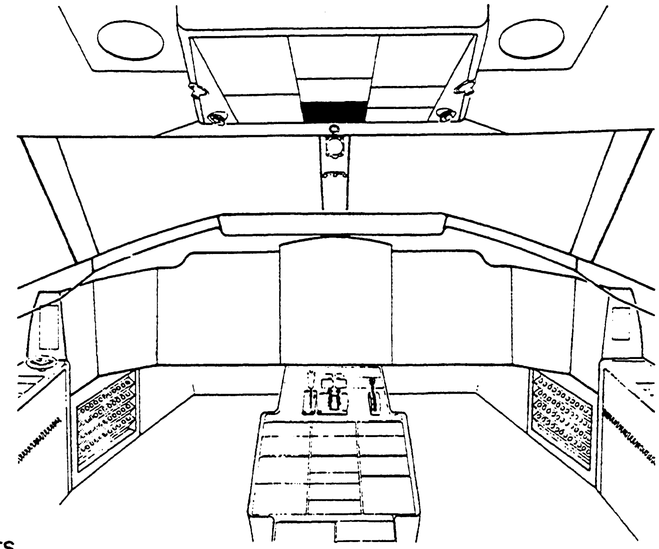
On aircraft incorporating Canadair Service Bulletin 600-0476, an additional thermal switch is installed in each of the cold air ducts upstream from the point where the cold air is mixed with precooled air from the temperature control modulating valve. The thermal switch causes the appropriate (L or R) ACU FAIL light to come on if bleed air continues to enter the ACU when the ACU switch light is pressed out. This condition can only occur if the ACU pressure regulating and shutoff valve fails open when the ACU is selected off.

D. Ventilation System (Figure 2)

The cold air from the ACU is split into two lines. One line supplies cold air to personal, eyeball-type air vents in the cabin and in the flight compartment. A tapping is taken off this line to circulate air behind the instrument panels for instrument cooling. The cold air lines from each ACU are connected by crossover ducts enabling asymmetric supply to balance the system. The other line mixes with warm air from the ACU to supply conditioned air through the cabin and flight compartment air distribution ducting. Balancing valves are located in the conditioned air ducting to ensure even distribution of conditioned air. The conditioned air ducts from both ACUs are connected by crossover ducts to provide adequate ventilation under asymmetric conditions. Temperature of the conditioned air is controlled by selection in the flight compartment.

The cold air lines and conditioned air lines are ducted through the pressure bulkhead via check valves to prevent reverse airflow.

During normal operation, the total output of conditioned air from ACU No. 2 and approximately 40% of the output from ACU No. 1 is supplied to the cabin. The remainder of the output from ACU No. 1 is supplied to the flight compartment.



L AND R ACU OFF SWITCH/LIGHTS

Control flow of engine bleed air to the air conditioning units.

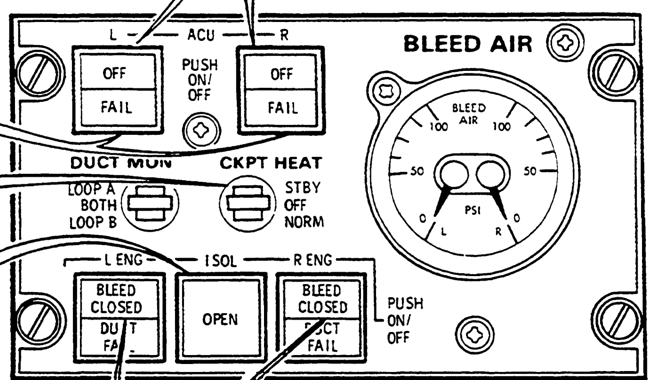
When pressed in, associated pressure regulator and shutoff valve opens and white OFF light goes out.

When pressed out, associated pressure regulator and shutoff valve closes and OFF light comes on.

L AND R ACU FAIL LIGHTS

Amber FAIL light comes on:

- When overpressure occurs between primary heat exchanger and compressor section of cold air unit.
- When air supply from cold air unit to secondary heat exchanger in associated ACU overheats.
- On aircraft incorporating Canadair Service Bulletin 600-0476, FAIL light comes on if switch/light is pressed out (ACU off) and ACU pressure regulator and shutoff valve fails open.



CKPT HEAT SWITCH

Three-position switch controls supply of engine bleed air to footwarmer and demist system.

NORM — Right pressure regulator shutoff valve is open.

STBY — Left pressure regulator shutoff valve is open.

OFF — Both pressure regulator shutoff valves are closed.

ISOL OPEN SWITCH/LIGHT

Controls upper bleed air isolator valve to isolate ACU No. 1 from ACU No. 2.

When pressed in, upper bleed air isolator valve opens and green OPEN light comes on.

When pressed out, upper bleed air isolator valve closes and light goes out.

L ENG AND R ENG BLEED CLOSED SWITCH/LIGHTS

Control the flow of engine bleed air from associated engine into the bleed air manifold.

Bleed Air Control Panel
Figure 4

E. Temperature Control (Figure 5)

The cabin and flight compartment temperatures are controlled by separate control systems. One system monitors and controls the cabin temperature through ACU No. 2; the other system monitors and controls the flight compartment temperature through ACU No. 1. The temperatures are selected by operation of individual controls located on the temperature control panel in the flight compartment.

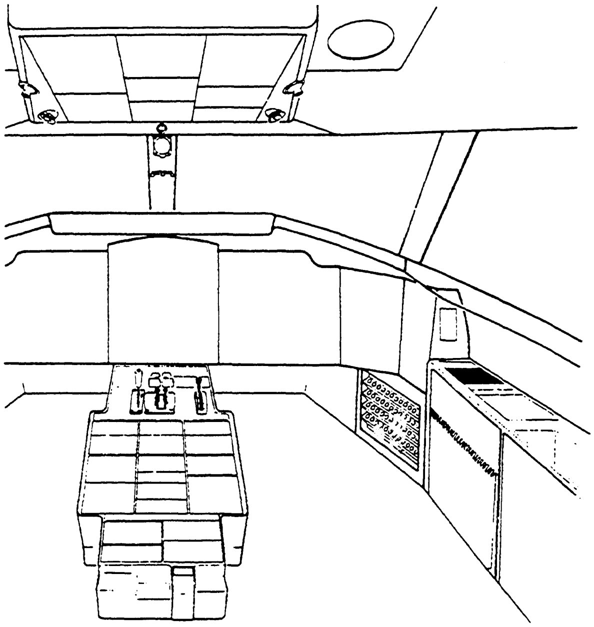
The temperature control panel contains two, three-position mode selector switches, marked NORMAL, STANDBY and MAN, and two temperature control switches. One selector switch and control switch are used for cabin control and the remaining two for flight compartment control. When the selector switch is in the NORMAL position, the control is fully automatic and uses a fan/sensor to measure the temperature in the cabin or flight compartment with reference to the temperature control switch. The temperature sensed by the fan/sensor is fed to an electronic temperature controller which also receives signals from a duct temperature sensor and the TEMPERATURE CONTROL panel. If a difference exists between the temperatures, the temperature controller causes an electromagnetic control valve to vary the amount of servo pressure delivered to the temperature control modulating valve which mixes precooled and cold air to produce the desired conditioned air temperature. When the desired and selected compartment temperatures are equal, the temperature controller returns the temperature control modulating valve to a mid position to maintain a steady temperature.

When the temperature control switch is in the STANDBY position, the control is still fully automatic but only the temperature sensed by the duct sensors is fed to the temperature controller. The temperature controller uses this signal together with the temperature selected on the temperature control panel to operate the temperature control modulating valve.

When the temperature control switch is in the MAN position, the automatic control facility is de-activated. Control of the temperature control modulating valve is determined by the position of the temperature selector switch on the temperature control panel.

The STANDBY and MAN modes are regarded as alternate modes of operation and are used in the event of a malfunction in the NORMAL mode of operation.

A temperature limiter reduces the temperature of the air in the conditioned air duct if a failure causes the temperature control modulating valve to open too wide. The temperature limiter has a spring loaded poppet valve which opens if an overheat condition occurs in the conditioned air duct. The open poppet valve vents the servo pressure normally supplied to the temperature control modulating valve causing that valve to close. A greater portion of cold air then enters the conditioned air duct and lowers the duct temperature. When the temperature decreases to a safe level, the poppet valve closes and the system returns to normal operation. If the cause of the overheat condition is still present, the temperature limiter will continue to cycle to limit the temperature in the conditioned air duct.



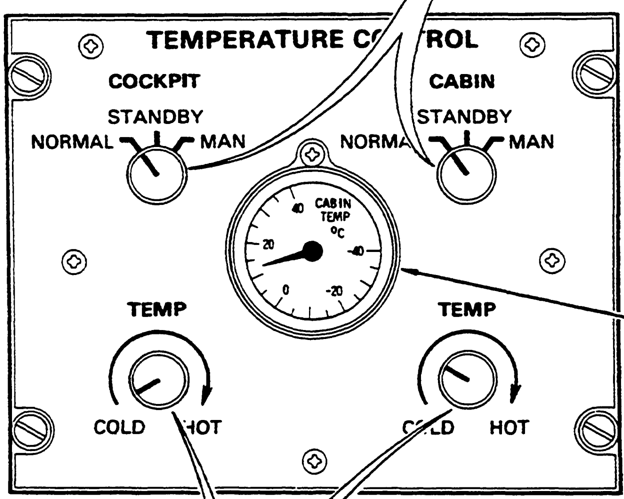
COCKPIT AND CABIN TEMPERATURE MODE SELECTOR SWITCHES

Three-position selector switches used to select mode to control operation of the temperature control modulating valves.

NORMAL - Controls temperature control modulating valve automatically with reference to fan/sensor, duct temperature sensor and temperature control switch.

STANDBY—Controls temperature control modulating valve automatically with reference to duct temperature sensor and temperature control switch.

MAN—Automatic mode is inoperative. Temperature control modulating valve is controlled by temperature control switch.



CABIN TEMPERATURE INDICATOR

COCKPIT AND CABIN TEMP CONTROL SWITCHES

Rotary switches used to select desired cabin or flight compartment temperature.

Temperature Control Panel
Figure 5

A cabin temperature indicator is provided on the temperature control panel. The indicator is connected to a temperature sensing bulb in the cabin and has a range from -40 to 40°C (-40 to 104°F) in 5°C increments.

F. Footwarmer and Demister

The footwarmer and demister system is independent of the normal environmental control system and is used to supplement flight compartment heating and to provide a means of demisting the inside surface of the windshields.

The air supply for the footwarmer and demist system is taken from the bleed air manifold through a pressure regulator and shutoff valve, and a heat exchanger. During normal operation, bleed air is taken from the right engine. However, a similar supply is available from the left engine for standby/emergency use. The standby supply is also passed through a pressure regulator and shutoff valve.

The pressure regulator and shutoff valves are controlled by a CKPT HEAT switch in the flight compartment. The CKPT HEAT switch has three positions, NORM, STBY and OFF. The NORM position controls the operation of the right pressure regulator and shutoff valve, and the STBY position controls the operation of the left pressure regulator and shutoff valve. A check valve is located in the supply line from the right engine to prevent reverse air flow to the engine.

The heat exchanger cools the bleed air to a temperature of 49°C (120°F); ram air is the cooling medium. The flow of ram air is controlled by a modulating valve which in turn is controlled by a heat sensing unit. When the aircraft is on the ground, cooling air for the heat exchanger is provided by a fan which operates whenever the aircraft weight is on the landing gear, and the CKPT HEAT switch is set to NORM or STBY.

In an emergency, the air from the footwarmer and demist system may be fed into the cabin and flight compartment by operation of a normally closed shutoff valve. The shutoff valve feeds air into the crossover duct between the conditioned air ducts and is controlled by an emergency pressurization switch/light on the cabin pressurization control panel.

If an overheat condition occurs in the duct downstream of the heat exchanger, a heat-sensitive switch operates. When the switch operates, an electrical circuit is completed to close automatically whichever pressure regulator and shutoff valve is open, and isolate the cause of the overheat. If emergency pressurization has been selected, the pressure regulator and shutoff valve remains open.

G. Avionics Cooling

The avionics equipment is located in the underfloor area of the cabin on both sides of the fuselage between the flight compartment rear bulkhead and the wing centre section front spar. Cooling for this area is provided by the flow of exhaust air from the flight compartment towards the outflow valves.

2. PRESSURIZATION (Figures 6, 7 and 8)

A. General

The pressurized area of the aircraft extends from the bulkhead immediately forward of the windshield to the pressure bulkhead at the rear of the cabin, and includes the underfloor area. The pressure in this area is controlled by two outflow valves in the rear pressure bulkhead. The outflow valves are controlled by an automatic electronic selector with a manual pneumatic selector provided as a backup. The pressurized area of the aircraft is maintained to a maximum altitude of 8000 feet, and the cabin differential pressure is maintained between maximum positive and negative differentials of +9.35 and -0.5 psi.

B. Outflow Valves

There are two outflow valves, located side by side in the rear pressure bulkhead. One of the valves is designated the electropneumatic outflow valve and contains a torque motor controlled by the automatic selector on the CABIN PRESSURIZATION panel. The other valve is designated the pneumatic outflow valve and is controlled and operated pneumatically.

The torque motor in the electropneumatic valve receives electrical signals from the automatic selector on the cabin pressurization control panel and is positioned to modulate vacuum pressure to a diaphragm chamber in the valve. This vacuum causes a low pressure internally that opens the valve which is spring-loaded closed. When the torque motor is commanded by the automatic selector to reduce the valve opening it reduces the vacuum and allows the valve to close. Opening the valve reduces cabin pressure, closing the valve increases cabin pressure.

In the manual operating mode, the pneumatic valve operates in a similar manner to the electropneumatic valve, except that the torque motor is replaced by a pneumatic relay. The pneumatic relay is operated by the manual regulator on the cabin pressurization control panel.

The outflow valve diaphragm chambers are connected by a pressure equalizing line so that the valves operate together to regulate cabin pressure. In the automatic operating mode, the operation of the pneumatic outflow valve is slaved to that of the electropneumatic outflow valve. In the manual operating mode, the slaving sequence is reversed.

In the manual mode, the system requires occasional adjustment to maintain a selected cabin pressure, while the automatic mode is self-monitoring.

The vacuum required for the operation of the outflow valves is generated by an air jet pump in the rear fuselage equipment bay. When pressurized air from the bleed air manifold is forced through the jet pump, an integral venturi creates a vacuum in an adjoining tee-fitting which connects with the outflow valves.

C. Cabin Pressurization Control Panel (Figure 6)

The cabin pressurization control panel is located in the pilot's overhead panel and contains the components described below:

(1) Automatic Selector

The automatic selector has ALT, RATE and BARO SET controls for selection of cabin altitude, cabin altitude rate of change and airfield barometric pressure. A pressure transducer and associated circuits in the selector detect the cabin pressure and measure its rate of change. The selector then powers the torque motor on the electropneumatic outflow valve to achieve the desired cabin altitude and selected rate of change.

(2) Manual Regulator

The manual regulator is a needle valve assembly that meters jet pump vacuum and cabin pressure to the pneumatic relay of the pneumatic outflow valve. The needle valve is located behind the CABIN PRESSURIZATION panel and is controlled by the rotary MAN REG switch. To ensure that the pneumatic outflow valve is fully slaved to the electropneumatic outflow valve during operation of the system in the automatic mode, the MAN REG selector must be turned to the full down (DN) position.

(3) Emergency Depressurization Switch/light

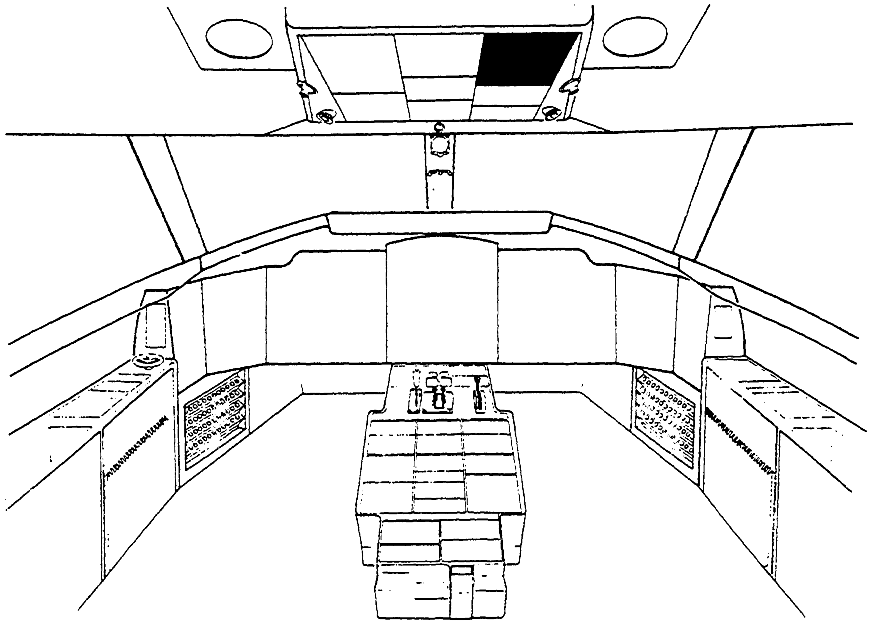
The emergency depressurization switch/light, EMER DEPRESS, is used to depressurize the aircraft rapidly. This is achieved by supplying power to the outflow valve torque motor which causes the outflow valve to open to vent the aircraft pressure.

(4) Emergency Pressurization Switch/light

The emergency pressurization switch/light, EMER PRESSN, is used to open a normally closed shutoff valve to permit the entry of warm air from the footwarmer and demist system. When the switch/light is operated, the left footwarmer and demist system pressure regulator and shutoff valve also open, and air from the footwarmer and demist system enters the conditioned air crossover duct which supplies air to the cabin and flight compartment. This switch/light is only used if both air conditioning units fail.

(5) Emergency Air Ventilation Switch/light

The emergency air ventilation switch/light, RAM AIR VENT, is used to open a normally closed emergency ram air shutoff valve. When the switch/light is operated, the shutoff valve opens to permit the entry of ram air, at ambient temperature, into the left conditioned air duct. This supplies air to both the cabin and flight compartment. This switch/light is used only if both air conditioning units fail.

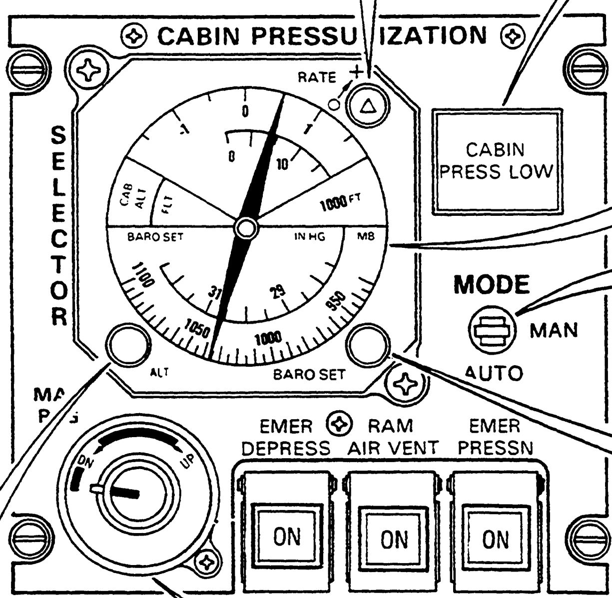


RATE SELECTOR

Used to select rate of change of cabin pressure between ±175 and ±2500 feet per minute. Detent at centre position corresponds to 500 feet per minute.

CABIN PRESS LOW WARNING LIGHT

Amber CABIN PRESS LOW light comes on if cabin altitude increases above 10,000 feet.



SELECTOR INDICATOR

Indicates selected cabin altitude, cabin pressure rate, and barometric pressure.

MODE SELECTOR SWITCH

Used to select mode of control for cabin pressurization control system.

BARO SET SELECTOR

Used to select barometric setting between 29 and 31 inches of mercury.

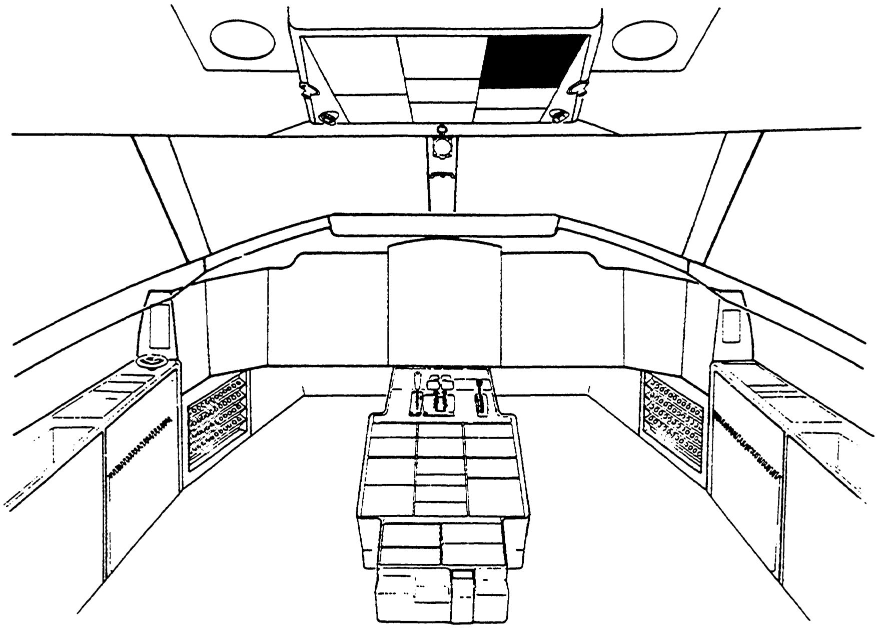
ALT SELECTOR

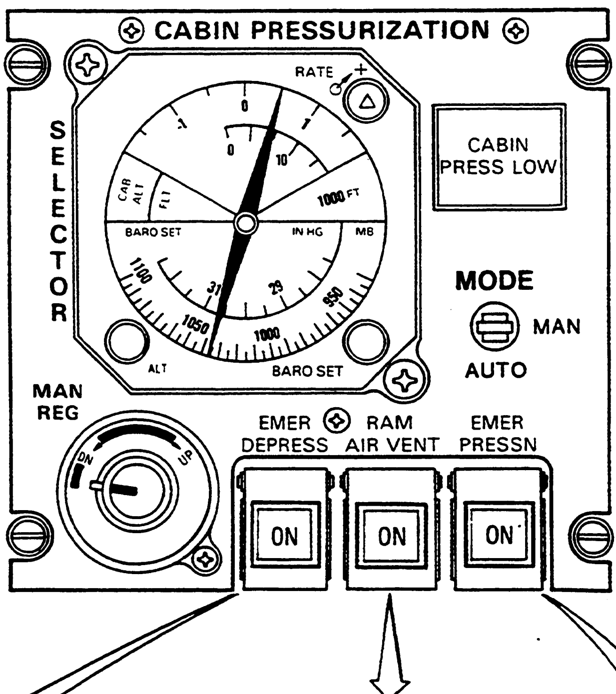
Used to select cabin altitude between −1000 and 10,000 feet or the corresponding maximum flight altitude.

MANUAL REGULATOR

Rotary switch provides manual control of cabin pressurization if automatic control fails.

Cabin Pressurization Control Panel
Figure 6 (Sheet 1)





EMER DEPRESS SWITCH/LIGHT

When pressed in, amber light comes on and both outflow valves open to depressurize the aircraft in an emergency.

RAM AIR VENT SWITCH/LIGHT

When pressed in, white light comes on and ram air at ambient temperature enters to supply air to the flight compartment and cabin in an emergency.

EMER PRESSN SWITCH/LIGHT

When pressed in, amber light comes on and warm air from the footwarmer and demist system enters to pressurize the aircraft in an emergency.

Cabin Pressurization Control Panel
Figure 6 (Sheet 2)

(6) Low Pressure Warning Light

The automatic selector contains a pressure switch that is set to operate when the cabin altitude increases above 10,000 feet. If this happens, the CABIN PRESS LOW light on the cabin pressurization control panel comes on, the ENV CONT light on the 10-channel annunciator panel comes on and the master caution lights come on and flash.

D. Ground Control Subsystem

A ground control subsystem in the automatic selector pressurizes the cabin at the selected rate whenever a weight-on-wheels signal is present and either of the throttles is advanced beyond 62% of its maximum travel (80% N1 rpm, approximately). The purpose of the subsystem is to pre-pressurize the cabin during the take-off roll, thus avoiding cabin pressure surges immediately after take-off.

E. Safety Relief Systems

The system is designed to limit the maximum cabin differential pressure to 9.35 psi regardless of the cabin altitude setting on the cabin pressurization control panel.

Negative pressure relief is an automatic function of the outflow valves and starts whenever the ambient pressure exceeds the cabin pressure by more than 0.25 psi. If the pressure differential continues to increase, the outflow valves open sufficiently to limit the negative differential to -0.5 psi.

F. Cabin Altitude Limiters

Each of the outflow valves contains an altitude limiter in the form of an aneroid device that operates to close the valve if an increasing cabin altitude cannot be controlled or if emergency pressurization is selected. Each aneroid device detects the absolute cabin pressure and, if the cabin altitude increases to 12,500 ±1,000 feet, admits cabin pressure into the outflow valve diaphragm chamber to force the valve closed.

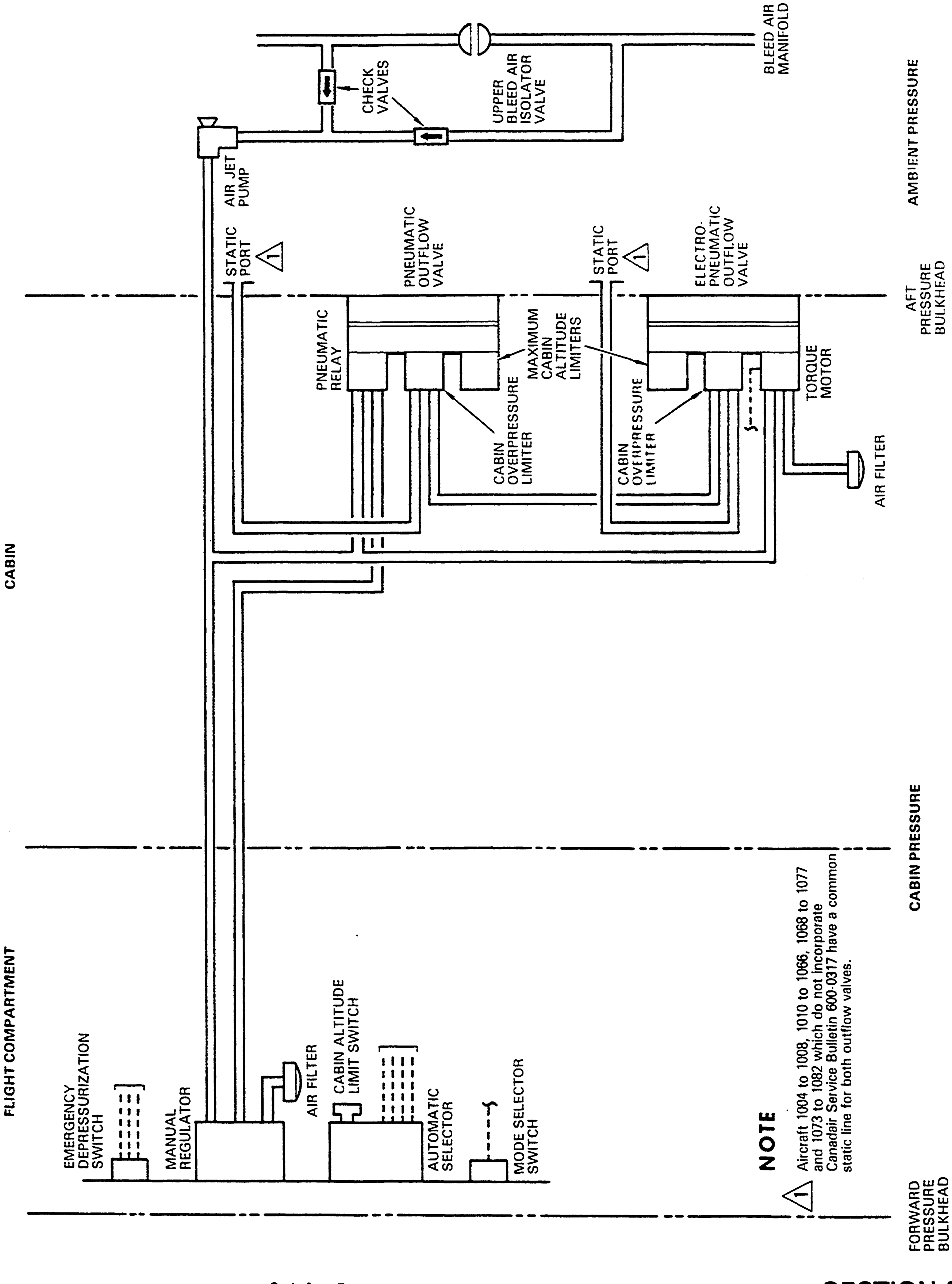
G. Automatic Operation

Prior to take-off, the system is prepared for automatic operation by setting the MODE switch to AUTO and turning the MAN REG selector clockwise to the full down (DN) position. The desired rate of cabin climb, the take-off field barometric pressure and the cabin altitude desired for cruise are then set using the RATE, BARO SET and ALT controls on the automatic selector.

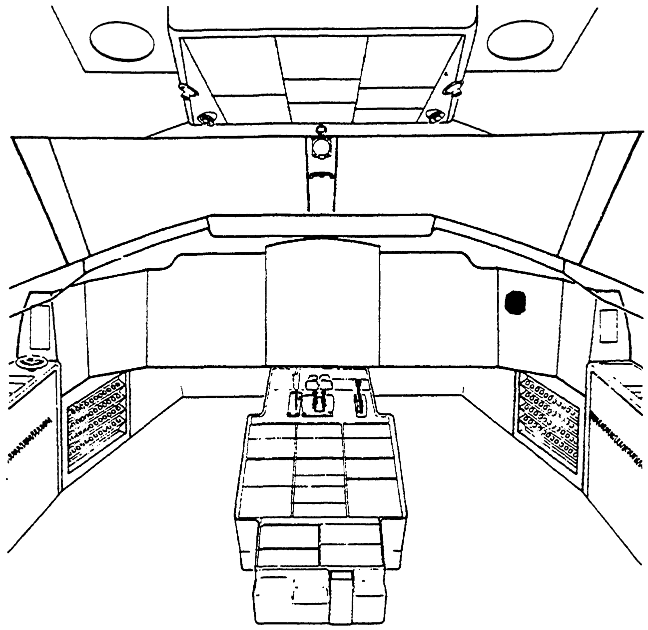
During take-off, the ground control subsystem pressurizes the cabin at the selected rate when the throttles are advanced beyond 60% of their maximum travel. If the throttles are subsequently retarded below 60% travel, the cabin automatically depressurizes at the selected rate. When the aircraft lifts off, the weight-on-wheels signal is removed and the automatic selector increases cabin altitude at the selected rate until the desired cabin altitude is reached. The system maintains the cabin at the desired altitude until the ALT selection is changed to accomodate aircraft climb or descent.

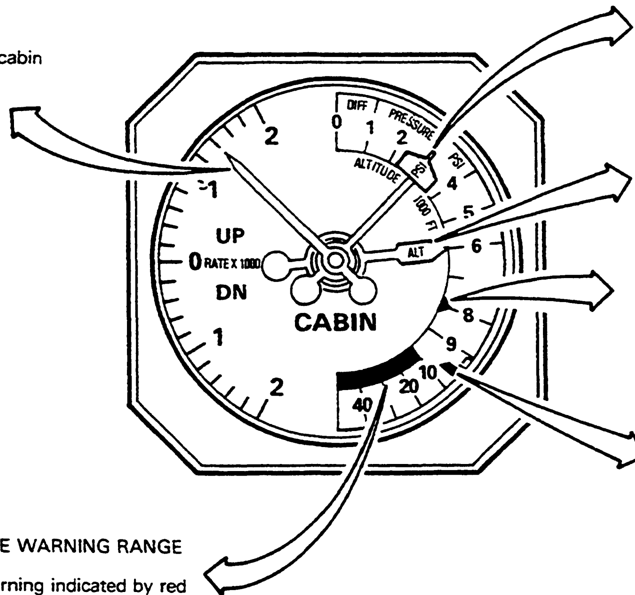
H. Manual Operation

When the MODE selector switch is set to MAN, the automatic sensing devices are inoperative, and the system is controlled by operation of the manual regulator. In order to maintain the cabin pressurization at the required level, the altimeter needle and rate indicator on the cabin altitude indicator (refer to Figure 8) must be monitored.



Cabin Pressure Control - Schematic
Figure 7





RATE OF CLIMB POINTER

Indicates rate of climb or descent of cabin altitude.

DIFFERENTIAL PRESSURE POINTER

Indicates cabin/ambient pressure in psi up to 10 psi maximum.

ALTITUDE POINTER

Indicates cabin altitude in thousands of feet up to maximum of 50,000 feet.

MAXIMUM INDEX

White index at normal maximum cabin altitude of 8000 feet.

DIFFERENTIAL PRESSURE CAUTION AND WARNING INDEXES

Yellow band - 9.16 to 9.3 psi.
Red band - 9.3 to 9.6 psi.

CABIN ALTITUDE WARNING RANGE

Cabin altitude warning indicated by red band between 10,000 and 50,000 feet.

CABIN ALTITUDE INDICATOR

Indicates cabin altitude and rate of change of cabin altitude. Pneumatic mechanism receives inputs from cabin and aircraft static pressure sources.

Cabin Altitude Indicator
Figure 8