

DANGEROUS GOODS PANEL (DGP)

NINETEENTH MEETING

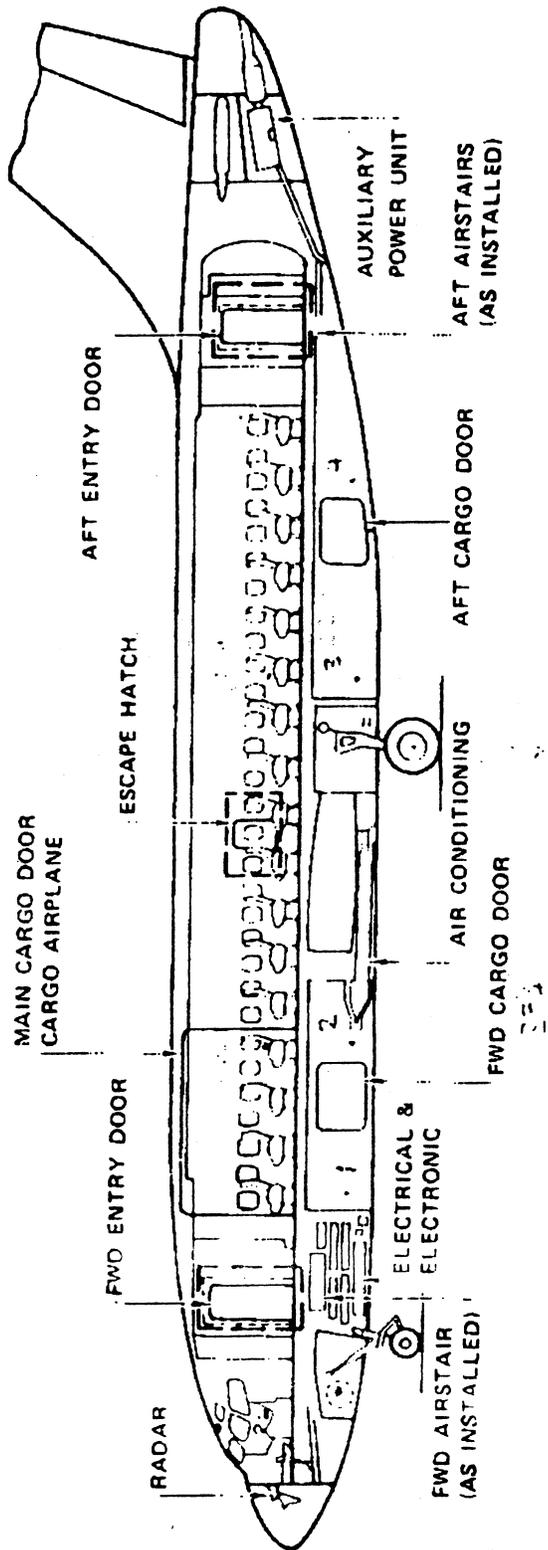
Montreal, 27 October to 7 November 2003

AIRCRAFT SIDE VIEW AND VENTILATION SYSTEM

(Presented by W. A. Schuurman)

- A. A side view to scale the aircraft most widely used in short to medium operations.
- B. Description of the ventilation system of an aircraft used in long range operations.

OPERATIONS MANUAL



PASSENGER CONFIGURATION

1. GENERAL DESCRIPTION**1.1 AIR SUPPLY AND DISTRIBUTION**

Air drawn directly from the pneumatic system ducting is passed through catalytic ozone converters and three airconditioning packs for temperature modulation and for aircraft pressurization. The integral mechanical components of a pack are collectively referred to as an air cycle machine (ACM).

Pack output enters a common conditioned air manifold from which it is distributed to five zones.

- Zone 1 air supplies the cockpit.
- Zone 2 air supplies the passenger cabin forward of No. 2 doors.
- Zone 3 air supplies the passenger cabin area between No. 2 and 4 doors.
- Zone 4 air supplies the passenger cabin area aft of the No. 4 doors.
- Zone 5 air supplies the upper deck passenger area.

Recirculating fans are installed for zones 2, 3 and 4, and a cockpit fan for zone 1. These fans augment the airflow.

On combi aircraft with Main Deck Fire Extinguishing System installed, recirculating fan no. 4 is removed.

Three supplemental vent fans are installed. These fans augment the airflow when packs are operated in 'half-flow'.

If on the ground no pneumatic air is available for operating the ACMs, airconditioning truck(s) can be connected directly to the conditioned air manifold.

1.2 ZONE TEMPERATURE CONTROL

The temperature of the air delivered by the packs to the common manifold is determined by the zone requiring the coolest air input. Other zones, requiring warmer air, are then satisfied by adding 'trim' air directly from the pneumatic system duct.

Two supplemental electric heaters are installed in zone 2.

Air for cockpit gasper air outlets is derived from zone 1 supply duct.

Combi:

Zone 4 temperature indicator and controller are wide range units accommodating lower temperatures which, in combination with manual shut-off valves in the airconditioning distribution ducting for zone 3 and zone 4, permit transportation of perishable cargo.

After conversion to full pax configuration, the wide range indicator and controller remain installed.

1.3 FORWARD CARGO COMPARTMENT HEATING

Warm air from the equipment cooling system is discharged in the forward cargo compartment for heating. The temperature cannot be controlled.

Smoke detection system is provided.

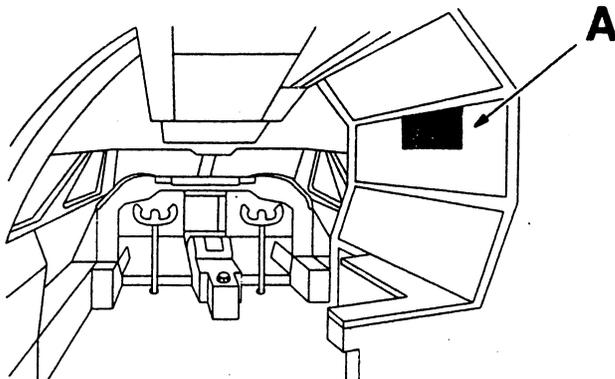
1.4 AFT CARGO COMPARTMENT HEATING

Air for aft cargo compartment heating, including the bulk compartment, is supplied directly from the pneumatic system.

Temperature control is automatic through valve response to thermostat signals. Smoke detection and overheat protection systems are provided.

1.2. AIRCONDITIONING & PRESSURIZATION
1.2.1 Airconditioning

2. CONTROLS AND INDICATORS

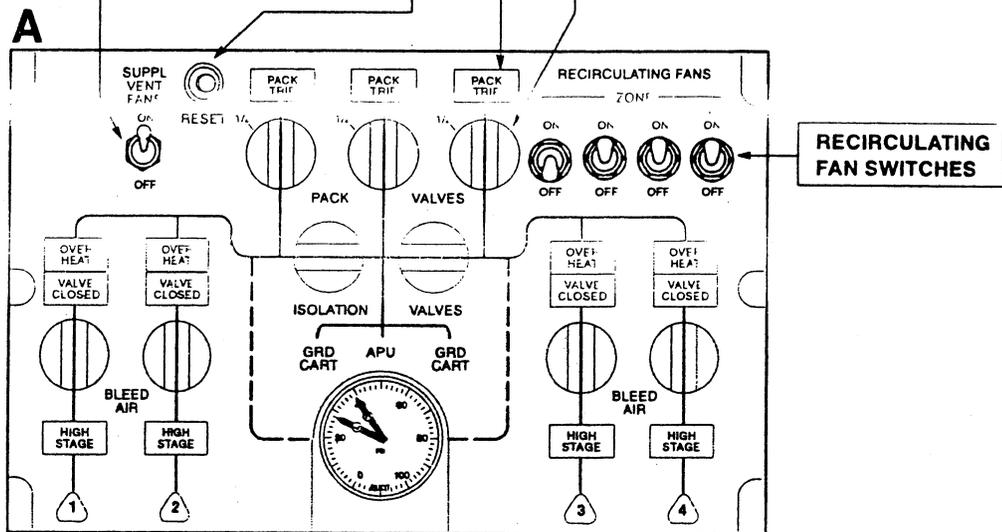


PACK TRIP RESET BUTTON
 Reset button permits reopening of pack valve after automatic trip when deviation has been cured.

PACK TRIP LIGHTS (amber)
 Illuminate when automatic trip occurs, resulting in pack valve closure.
 This could be caused by:
 - High ACM outlet or compressor discharge temperatures.
 - Improper sequencing of bypass valve and inlet or exit doors.
 - Pack 2 trip if either pressure relief valve opens.

SUPPLEMENTAL VENT FANS SWITCH
ON:
 - 3 supplemental vent fans operate. Fans stop automatically when lower cargo fire protection compartment select switch is in FWD or AFT/BULK.
 - Galley/lavatory fan operates with vent shut-off valve closed regardless of cabin differential pressure.

PACK VALVE SWITCHES
 Reference line:
Vertical:
 Pack valve fully open, admitting pneumatic system air to pack unit.
1/2:
 Pack valve partly open.
Horizontal:
 Pack valve closed.



1.2. AIRCONDITIONING & PRESSURIZATION

1.2.1 Airconditioning

3.2 ZONE TEMPERATURE CONTROL

Condition: Zone 3 in control of packs

