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INTRODUCTION

The A 310 is a wide body monoplane transport powered by two turbofan engines. The fuselage has a circular cross section and is pressurized throughout except, nose cone, tail cone, landing gear bays and air conditioning compartments.

In the cockpit, accommodation is provided for two (or three) operating crew members and two observers.

R Passenger seating layout may be varied to suit operating requirements up to the certificated maximum of 275 seats.

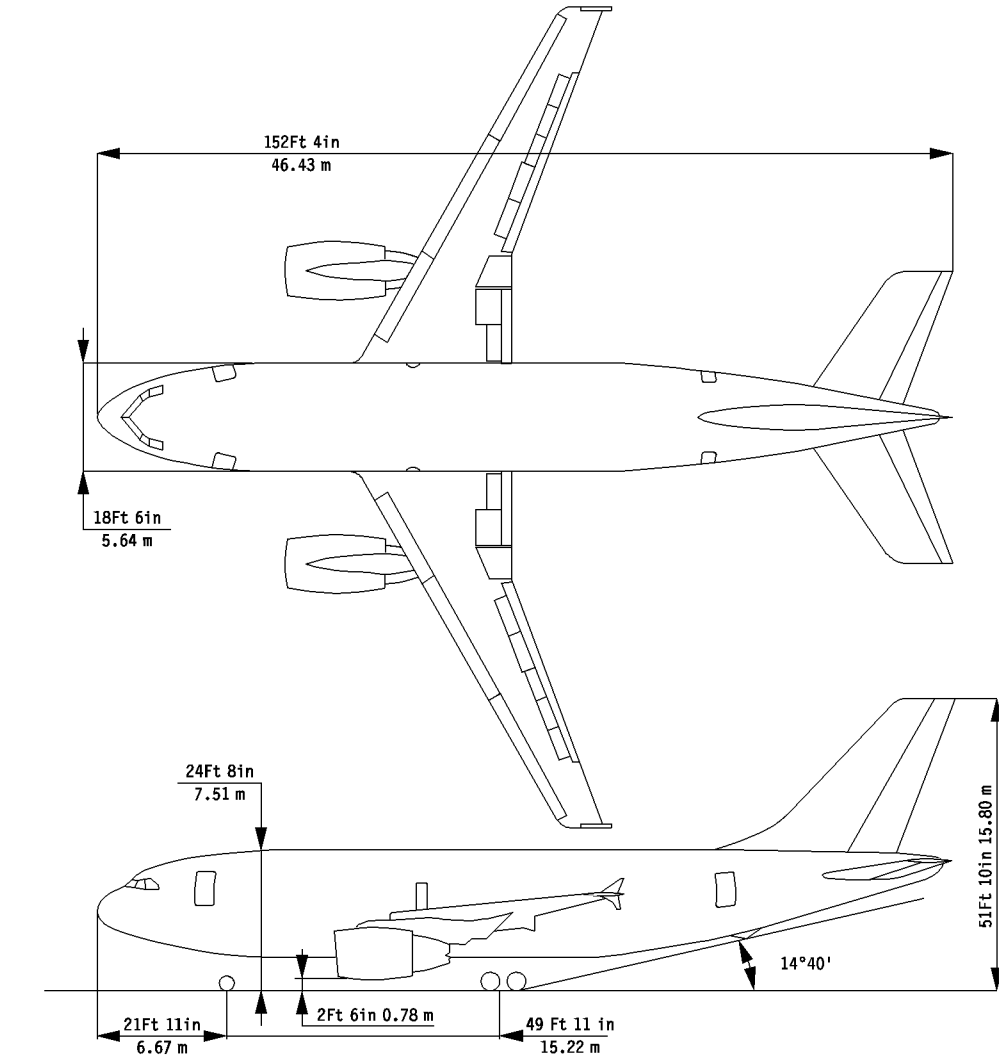
SCOPE

This manual covers all types of A 310.
For weight and performance refer to the appropriate chapter in Volume 2 « Procedures and Performance » of the FCOM.

GENERAL ARRANGEMENT

Overall dimensions of the aircraft, nomenclature of major components and compartments, location of antennas and turning capability on the ground are shown in the figures of this subchapter.

AIRCRAFT DIMENSIONS



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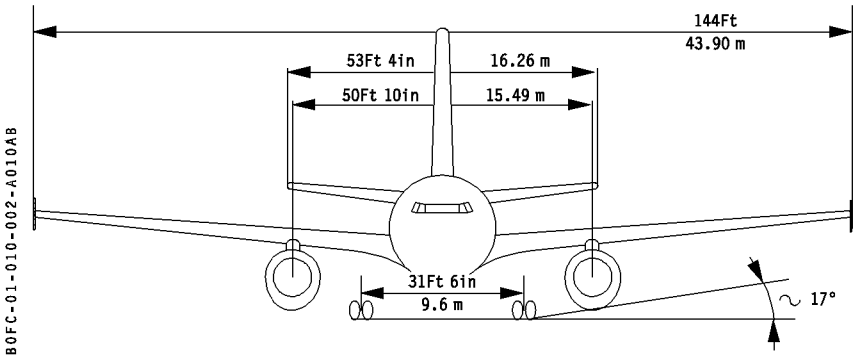
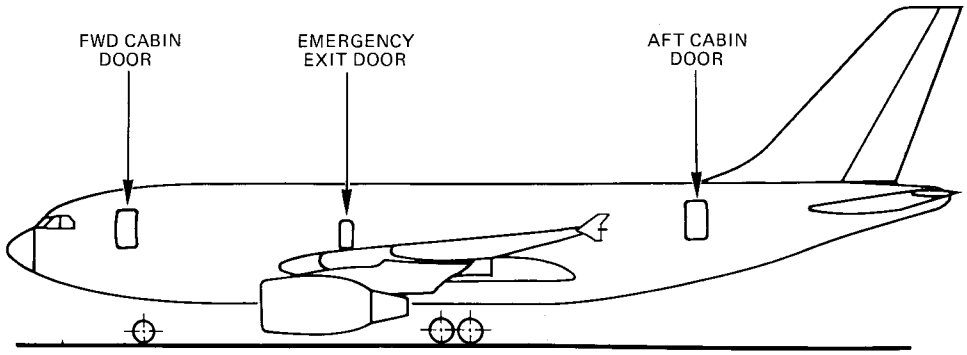
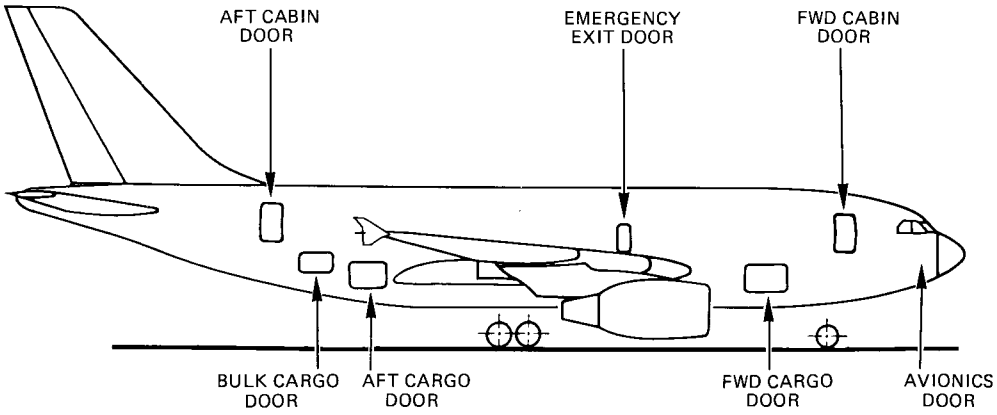
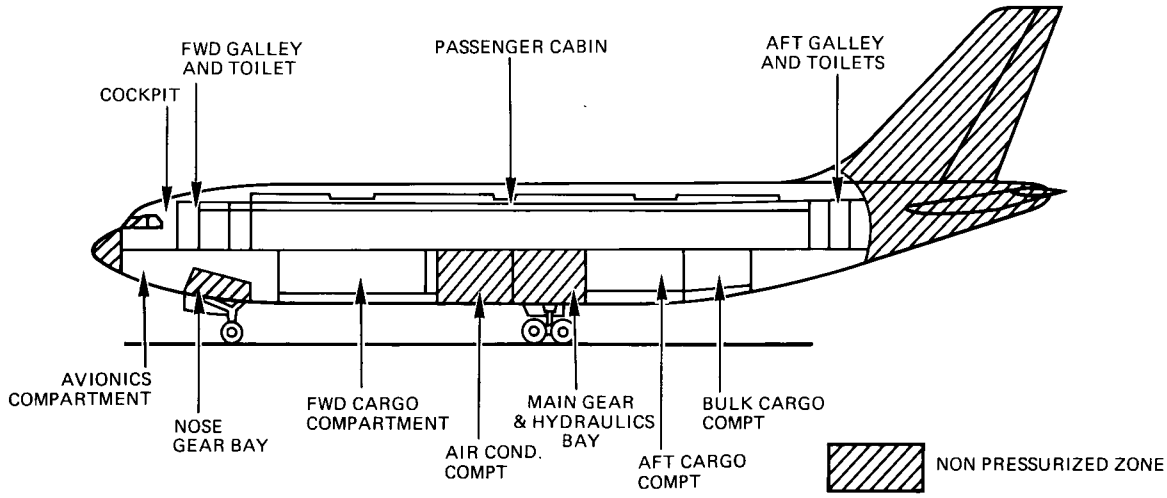


Mod. : 4863

PW Eng. : All







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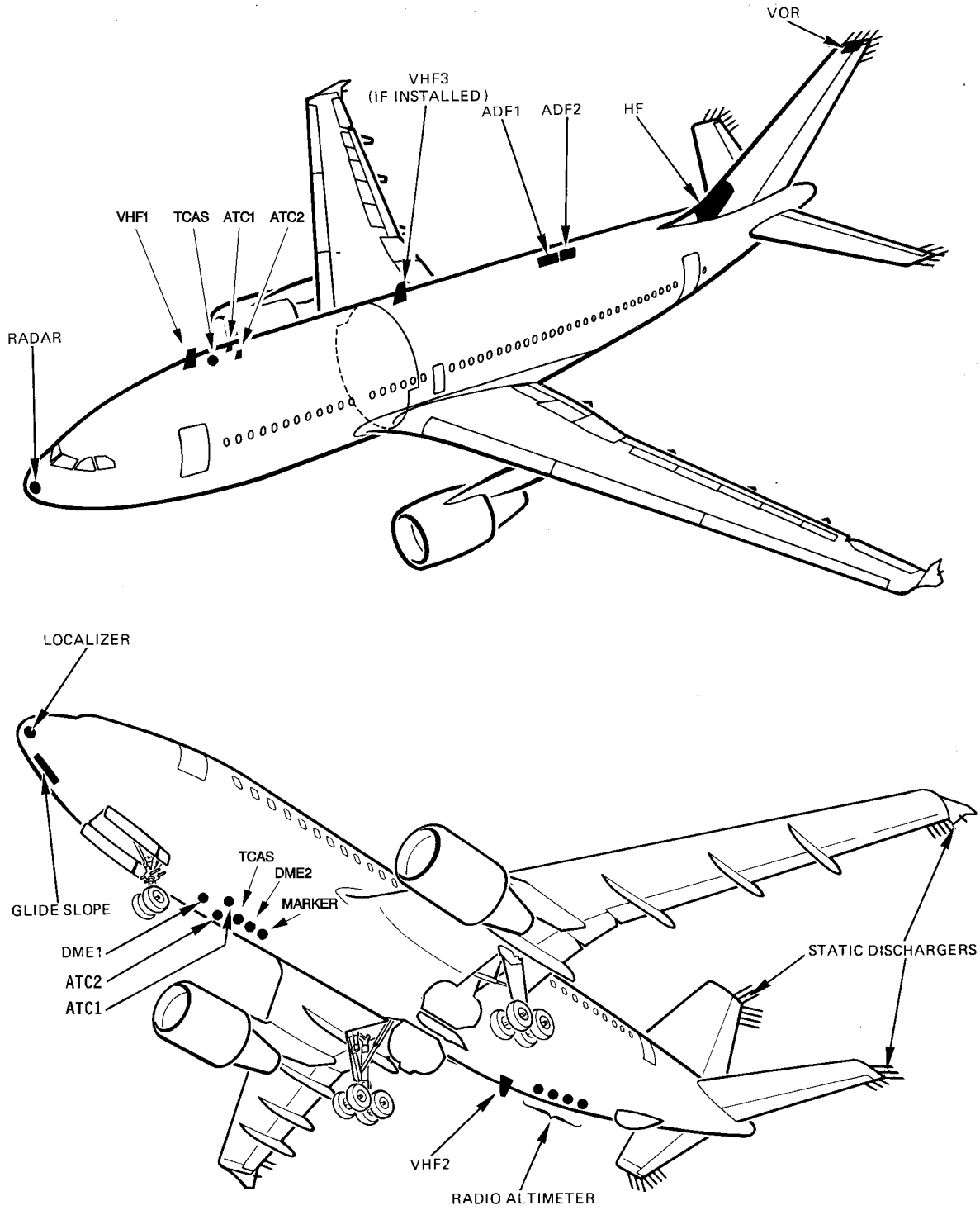
Mod. : 4863

ANTENNAS LOCATION



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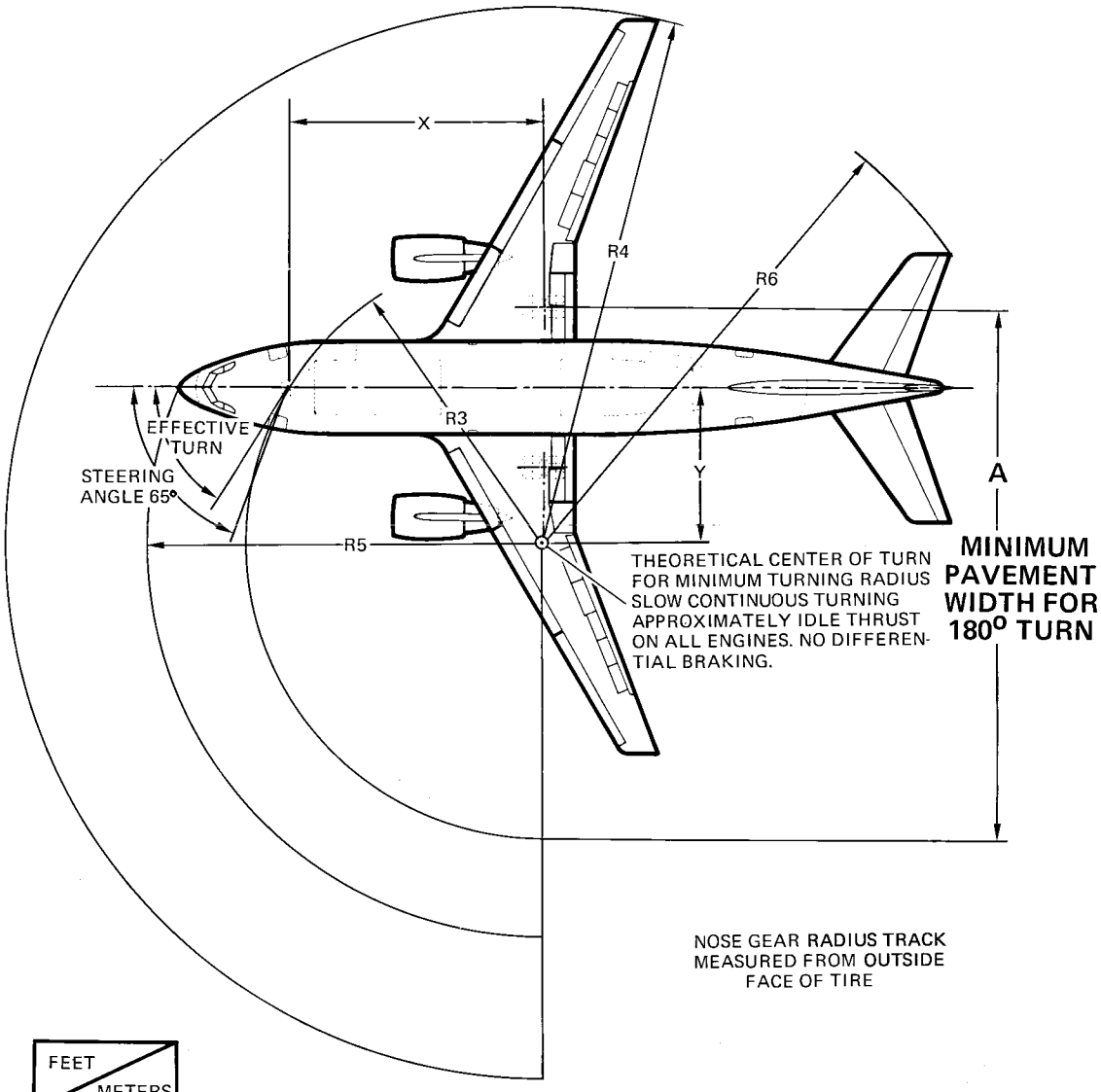
MINIMUM TURNING RADIUS



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A/C CG	EFFECTIVE TURN ANG	X	Y	A	R3	R4	R5	R6
FWD 18 %	60°2	50.89 15.51	28.77 8.77	105.42 32.13	58.63 17.87	103.25 31.47	77.37 23.58	97.77 29.80
AFT 35 %	55°8	50.89 15.51	34.16 10.41	**113.69** **34.65**	61.52 18.75	108.17 32.97	79.53 24.24	100.92 30.76

Vers. : All

Eng. : All

GENERAL

All aircraft and systems controls, required for the conduct of flight, are arranged in such a way that the crew positions are forward facing and all crew members can monitor instruments and systems.

The concentration of the systems controls on the overhead panel was achieved by extensive employment of pushbutton type switches, directly installed in the systems synoptic.

Status and failure indications are integrated into the pushbutton switches. Pushbutton switch positions and illuminated indications are based on a general concept with the « light out » condition for normal continuous operation as the basic rule.

Few exceptions excluded, the illumination of a light indicates a failure condition or an abnormal pushbutton switch selection. Whenever possible the failure warning is integrated into that pushbutton switch which has to be operated for corrective action.

If the failure warning is not integrated into the pushbutton switch, the warning is adjacent to the pushbutton switch for corrective action.

The installations on the lateral panel are intended for ground use and maintenance action only.

For the comfort, convenience and safety of the crew, various furnishings are fitted in the cockpit as shown in the figure EQUIPMENT AND STORAGES.

PRINCIPLES FOR PUSHBUTTON SWITCHES WITH INTEGRATED INDICATIONS

COLOR OF LIGHT	INDICATION
No light illuminated, except flow bars	Normal basic operation.
BLUE	Temporarily required system in normal operation.
GREEN	Back-up or alternate system selected.
WHITE	P/B Switch selection other than normal basic operation.
AMBER	Caution indication.
RED	Alert indication.

POSITION	BASIC FUNCTION
In (pressed)	ON, AUTO, NORM, OPEN
Out (released)	OFF, MAN, ALTN, SHUT

Note : Some pushbuttons or lights are provided with two dots which indicate there is no bulb in corresponding part.

SEATS

– The Captain and F/O seats are mounted each on a base secured to the floor on each side of the center pedestal.

They are mechanically or electrically adjustable to a different extent :
. Horizontal (longitude-lateral)
. Vertical
. Backrest reclining
. Thigh support

– Operation of the mechanical controls overrides the electrical function.

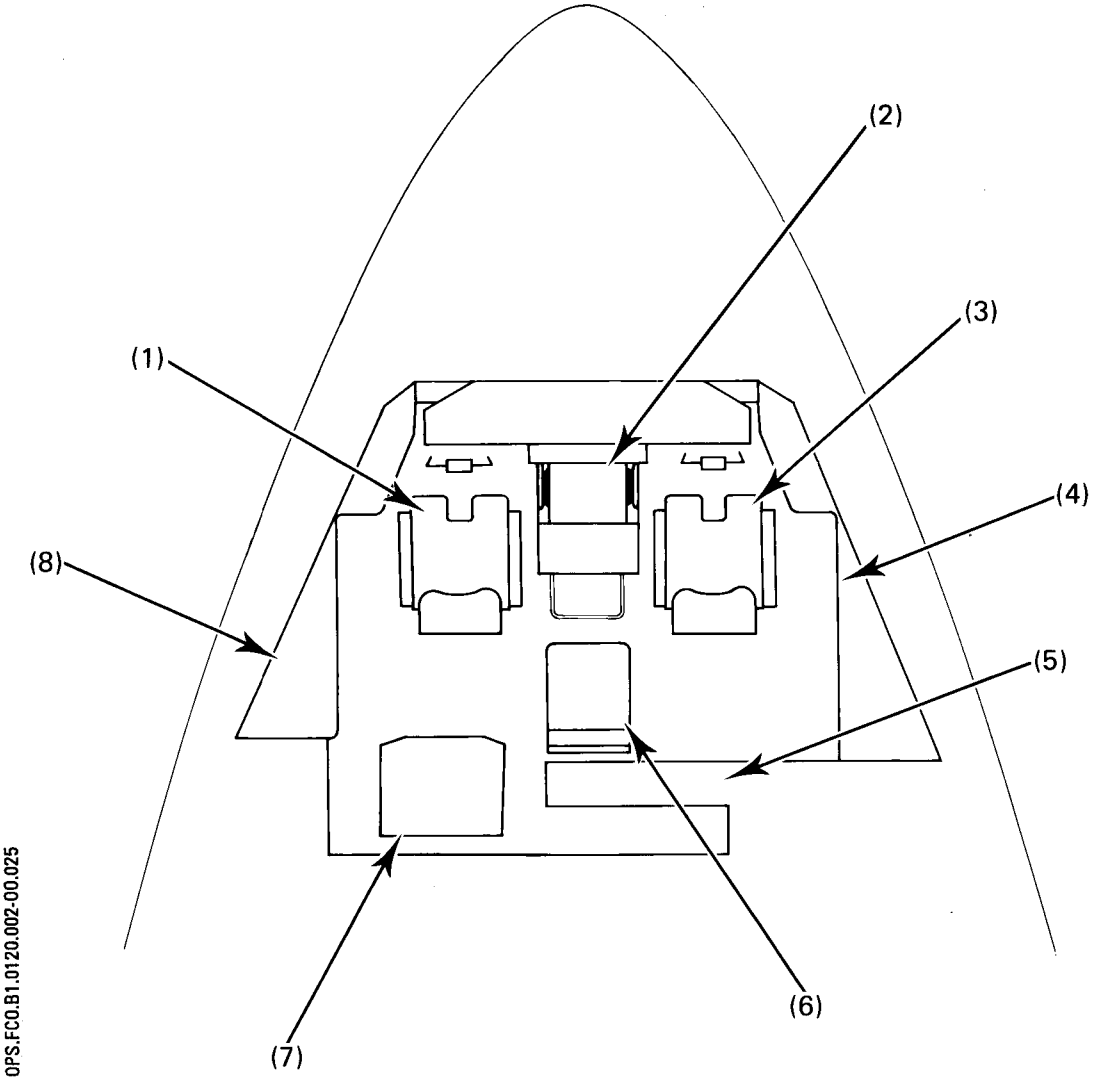
– The crew seats are equipped with adjustable folding armrests. The inboard and outboard armrests of Captain and F/O seats fold behind the backrests. R

– The third occupant seat is a folding seat attached on the rear panel behind the center pedestal.

– The crew seats, except the folding seat, are equipped with full harness including an inertial reel with locking handle for the shoulder harness. The folding seats are equipped with static lap belt.

Mod. : 4803

COCKPIT LAYOUT



(1) Captain Seat

(2) Center Pedestal

(3) F/O Seat

(4) RH Lateral Console

(5) Maintenance Panel

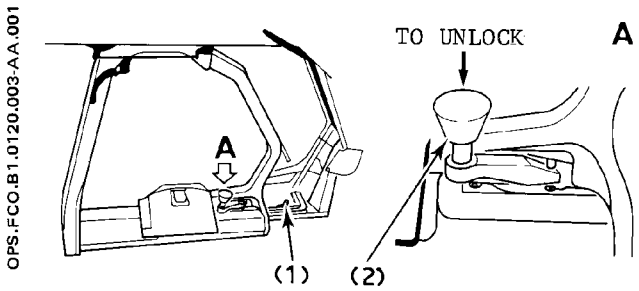
(6) Third Occupant Folding Seat

(7) Avionics Compartment Access Hatch

(8) LH Lateral Console

Mod. : 4803

A. SLIDING WINDOW



(1) Unlocking Pin

- **Front position** :
  Between closed and one-third open position, the window is free to move in the forward and aft directions.
  Forward movement of window is prevented when window is more than one third open.
- **Aft position**:
  Window open lock is disengaged for window closing.

(2) Control Handle

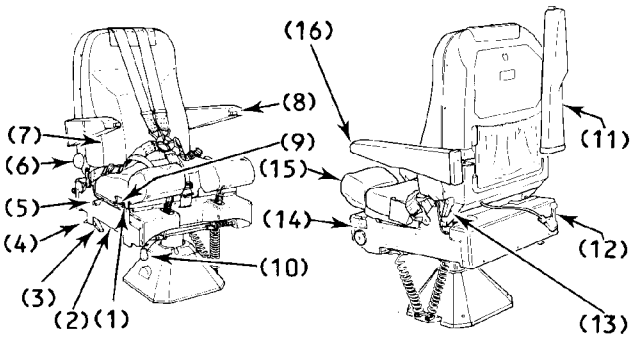
- **Pressed** :
  Handle unlocked for window opening.
- **Pulling** :
  Window is opened.
- **Pushing** :
  Window is closed.

Operation

When the window is closed and locked, the handle is in the front position. Pressing the handle unlocks it and allows to pull it rearward. By this action the handle pivots inward then rearward. The window unlocks and slides inward and rearward. After approximately one third of the window travel the open lock engages, preventing forward movement of window.

Before closure, when the window is more than one third of travel open, the unlocking pin, which is embedded in the window sill, must be set to the aft position to unlock the window for forward travel. Pushing the control handle then closes the window. When passing the one third open position the unlocking pin automatically trips to the front position. When reaching the end of the window travel, pushing the handle further forward results in pivoting of handle lever inward, then forward. By this action the window is moved outward and is locked. At the end of the lever travel the handle lock will engage.

B. CAPTAIN AND F/O SEATS



The captain and f/o seats movements, are achieved by means of mechanical or electrical controls.

To mechanically adjust a seat, lift the respective control handle. This unlocks the seat and it may be moved to the desired position. Releasing the control handle returns it to the springloaded locked position. To lower an armrest pull the armsrest control forward for unlocking and move armrest downward. Release armrest control when desired position is reached, it returns to the springloaded locked position.

For electrical adjustment press respective adjustment control switch in the desired direction. Release switch when the desired position is reached. The switch will return to the springloaded neutral position.

(1) Horizontal adjustment electrical control.

(2) Horizontal adjustment position indicator.

(3) Horizontal adjustment mechanical control.

(4) Vertical adjustment mechanical control.

(5) Tilting backrest control.

(6) Lower lateral cushion vertical position control.

(7) Adjustable lower lateral cushion.

(8) Armrest vertical adjustment control.

(9) Vertical adjustment electrical control.

(10) Thigh rest position and compression adjustment.

(11) Folding and stowable inboard armrest.

(12) Inertial reel locking control.

(13) Lower lateral cushion horizontal position control.

(14) Vertical adjustment indicator.

(15) Retractable thigh rests.

(16) Folding and stowable outboard armrest. R

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Mod. : 4803

CABIN DOORS

Four type « A » (two abreast) outward and forward opening plug-type doors are provided, two on each side of the fuselage. They are normally manually operated, with hydraulic damping towards the end of the opening travel.

In an emergency, the doors are opened (from the inside only) pneumatically and an escape slide installed on the door is automatically released and inflated (if armed). If opened under emergency conditions, the door cannot be closed without some maintenance action.
Opening the door from the outside disarms the escape slide release mechanisms.

The pneumatic opening system is « one-shot », requiring maintenance action after use.

EMERGENCY EXITS

- Cockpit

The two sliding windows in the cockpit are designed as emergency exits for the flight crew. Three centrifugally braked descent devices are installed above each window.

- Cabin

On each side of the cabin a type « 1 » or « 3 » outward opening emergency exit door is provided for use in case of emergency evacuation in addition to the regular cabin doors. They are also equipped with escape slides.

CARGO COMPARTMENT DOORS

Three cargo compartment doors are located on the right side of the fuselage below the cabin floor.

The FWD and AFT cargo doors are dimensioned to suit standard A1 and A2 containers and open outwards and upwards. These two main cargo doors are hydraulically operated by the YELLOW hydraulic system. Locking and unlocking is performed mechanically.

For normal operation hydraulic pressure is provided by yellow electrical pump operation. In case of pump failure the system may be pressurized by a handpump installed in the RH main gear and hydraulics bay. The handpump lever is stowed on the aft wall close to the pump. Both doors can be opened from the exterior only.

The BULK cargo door is smaller than the main cargo doors. It opens inward and upward. The door is operated mechanically from both sides, the interior and the exterior.

Note : For cargo doors operation and controls refer to CARGO LOADING MANUAL.

AVIONICS COMPARTMENT ACCESS

An inward opening, manually operated, hinged door gives external access to the avionics compartment in the lower fuselage forward of the nose landing gear bay. A ladder is stowed inside the compartment adjacent to this door, which may be operated from the interior as well as the exterior.

This compartment is also accessible from the cockpit through a hatch in the floor behind the Captain seat. A ladder is fixed in the avionics compartment for access from the cockpit.

INTERNAL DOORS

- Cockpit

A hinged door separates the cockpit and the passenger compartment. It is provided with a locking latch and an eye level viewing lens. In case of emergency it can be forced open in either direction.

- Cargo Compartments

Man-sized doors are provided between the FWD cargo compartment and the avionics compartment and between the AFT cargo compartment and the BULK cargo compartment.

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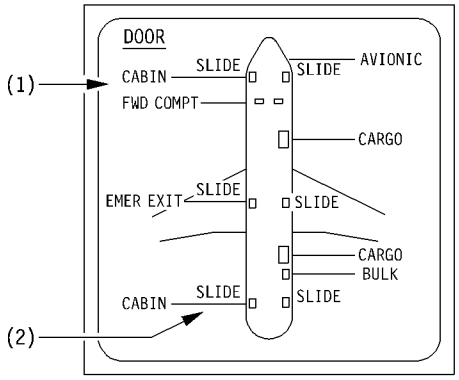
SYSTEM DISPLAY

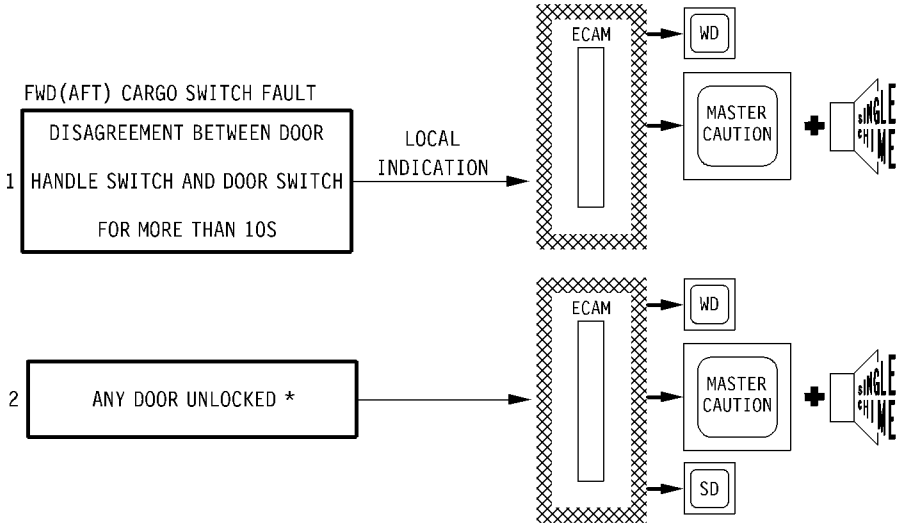


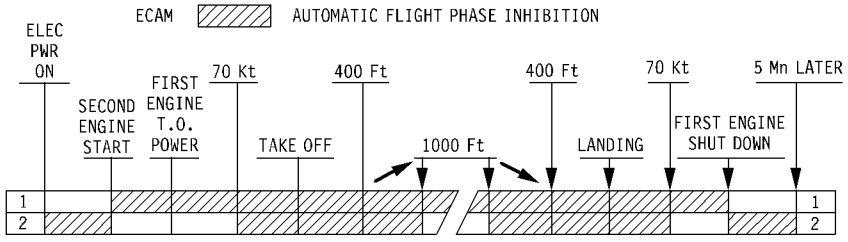
(1) Door Locked/Not Locked Indication

- **Door Locked** : The associated rectangle perimeter is green and the name of the door is displayed white.
- **Door Not Locked** : The associated rectangle surface and the name of the door are amber.

(2) Emergency Escape Slide Selection Indication

- **SLIDE** : The white indication appears when emergency escape slide is not disarmed.





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* THIS WARNING CAN APPEAR INDEPENDENTLY OF INHIBITION PHASE WHEN T.O. CONFIG TEST PUSHBUTTON IS PRESSED.

Mod. : 5051 + 5448 + 5725

GENERAL

For aircraft lighting different systems are installed.

Controlled from the cockpit :
- Cockpit Lighting
- Annunciators lighting
- Cabin SIGNS Lighting
- Emergency Lighting
- EXTERIOR Lighting

Controlled from the pursers panel :

- Cabin Lighting
- Emergency Lighting

COCKPIT LIGHTING

The cockpit is provided with integral instrument lighting and instrument panel lightplates.

For illumination of instrument panels fluorescent tubes and incandescent spot lights are installed. Work surfaces and side consoles are illuminated by incandescent spot lights and flood lights.

The intensity of all panel lighting can be adjusted. A STORM switch is provided to override the intensity selection. For general cockpit illumination dimmable DOME lights are installed. When electrical power is supplied by batteries, only one DOME light will illuminate.

The avionics compartment is provided with an individual lighting system. If in automatic mode it illuminates on the ground and extinguishes during flight.

ANNUNCIATOR LIGHTING

All the annunciator lights in the cockpit can be adjusted depending on ANN LT « TEST/BRT/DIM » switch position on the overhead panel.

Lights dimming is ensured by an electronic box.

- On instruments panel dimming depends on cockpit luminosity measured by a photo cell.
- On overhead panel and pedestal the lights are dimmed to a fixed level.

An annunciator light test is provided to verify cockpit annunciator bulbes operating.
The test can be made by selecting TEST position on ANN LT « TEST/BRT/DIM » switch and by visually checking all lights illumination.

It also can be made automatically by depressing, AUTO TEST pb switch.
The test is ensured by an electronic box located in lateral panel which illuminates in a predetermined order the light to detect the faulty bulbes.

CABIN SIGNS LIGHTING

Throughout the cabin FASTEN YOUR SEAT BELTS signs illuminate if the SEAT BELTS switch is selected to ON or in the event of an excessive depressurization. The RETURN TO YOUR SEAT signs in the lavatories illuminate with the FASTEN YOUR SEAT BELTS signs. The NO SMOKING and the EXIT signs throughout the cabin illuminate if the NO SMOKING switch is selected to ON or, if AUTO is selected when the landing gear is extended. In the event of an excessive depressurization the NO SMOKING and the EXIT signs illuminate regardless of switch position. R

Illumination of any cabin sign is accompanied by a low tone chime in the cabin.

CABIN LIGHTING

For normal cabin lighting fluorescent lights, lighting strips and passenger reading lights are installed.

Cabin lighting control is from the pursers panel. For the event of normal cabin lighting failure a minimum lighting system is provided for cabin and lavatories. (Refer to Emergency Lighting).

EXTERIOR LIGHTING

The exterior lighting includes the following systems : STROBE, BEACON, RWY TURN OFF, NAV and LOGO, NOSE, LAND, WING.

- Two (or three) STROBE lights are installed in each wing tip. Theyflash white and are used as supplemental recognition lights. R
- BEACON lights are two red anticollision lights, one on the upper and one on the lower center fuselage.
- RWY TURN OFF lights are located on each side of the fuselage nose section. They are used during ground operation for lateral area illumination.
- NAV lights are located on each wing tip. The red (LH) and the green (RH) lights in the leading edge and the white lights in the trailing edge contain two bulbes each. LOGO lights are installed in the upper surface of each horizontal stabilizer to illuminate the company logo on the vertical stabilizer.
- NOSE lights are two reflectors attached to the nose gear strut. Dual filaments permit the selection of high intensity for takeoff and low intensity for taxiing.

– LAND lights are located below each wing, installed in a flap fairing. They illuminate only when fully extended.
– WING lights are provided on both sides of the fuselage. On each side two reflectors are installed, one to illuminate the engine air intake, the other to illuminate the wing leading edge. They are used primarily to detect ice accretion.

EMERGENCY LIGHTING

The emergency lighting includes EXIT signs, cabin ceiling lights and escape slide lighting. The electrical power
R supply is 28 VDC from the DC ESS BUS or, 6 VDC from integral batteries in emergency power supply units.

The batteries are charged from the 115 VAC NORM BUS. The battery capacity provides approximately 12 minutes of light illumination.

EXIT signs and cabin ceiling lights automatically illuminate :

– when the NO SMOKING switch is selected ON or AUTO with the landing gear extended.

or

– if the EMER EXIT LT selector is selected to ON

or

– automatically if the EMER EXIT LT selector is at ARM
R and the 28 VDC DC NORM BUS power supply fails,

or

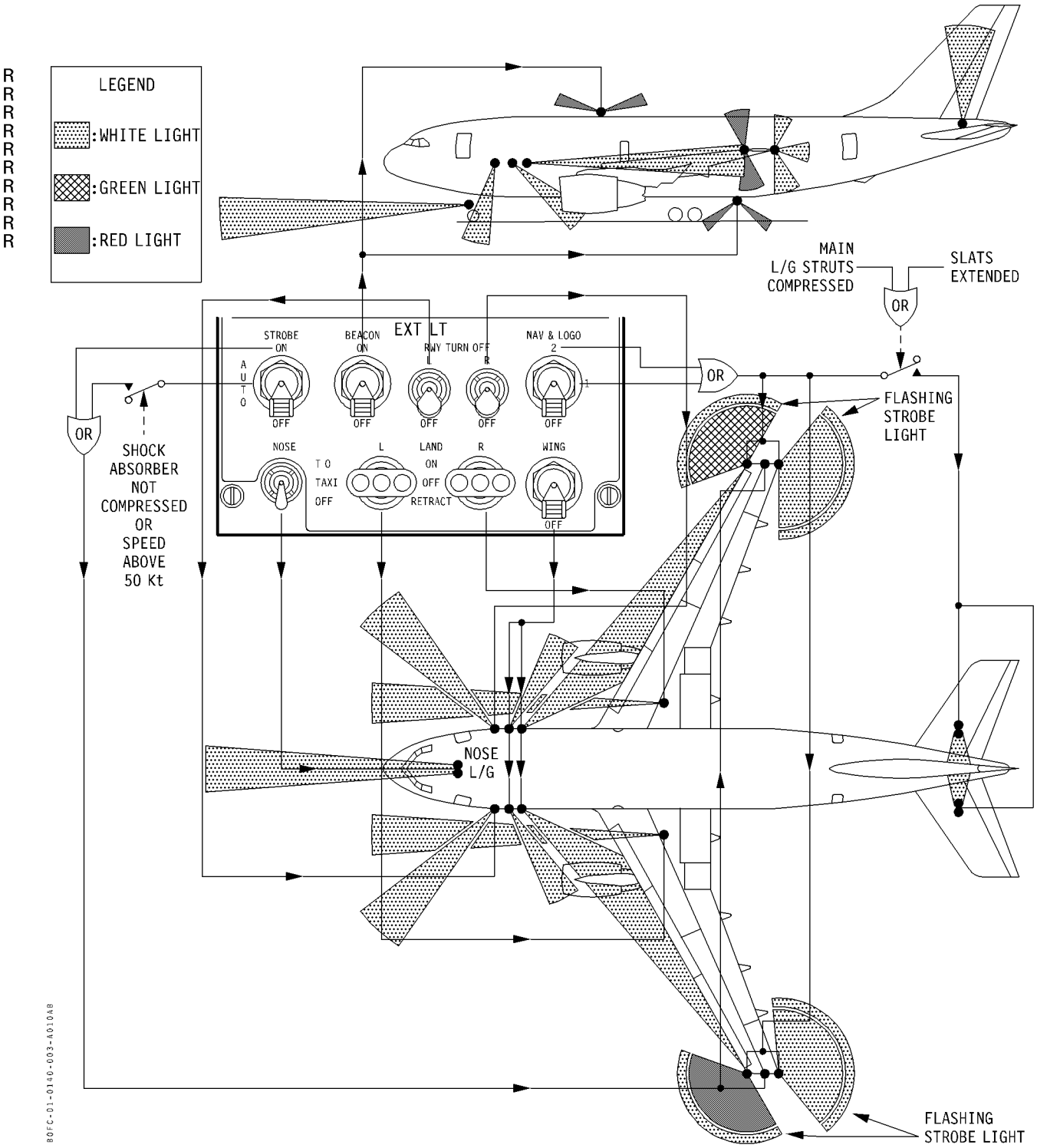
– if the EMER pushbutton on the pursers panel is pressed.

or

– in case of excessive cabin decompression

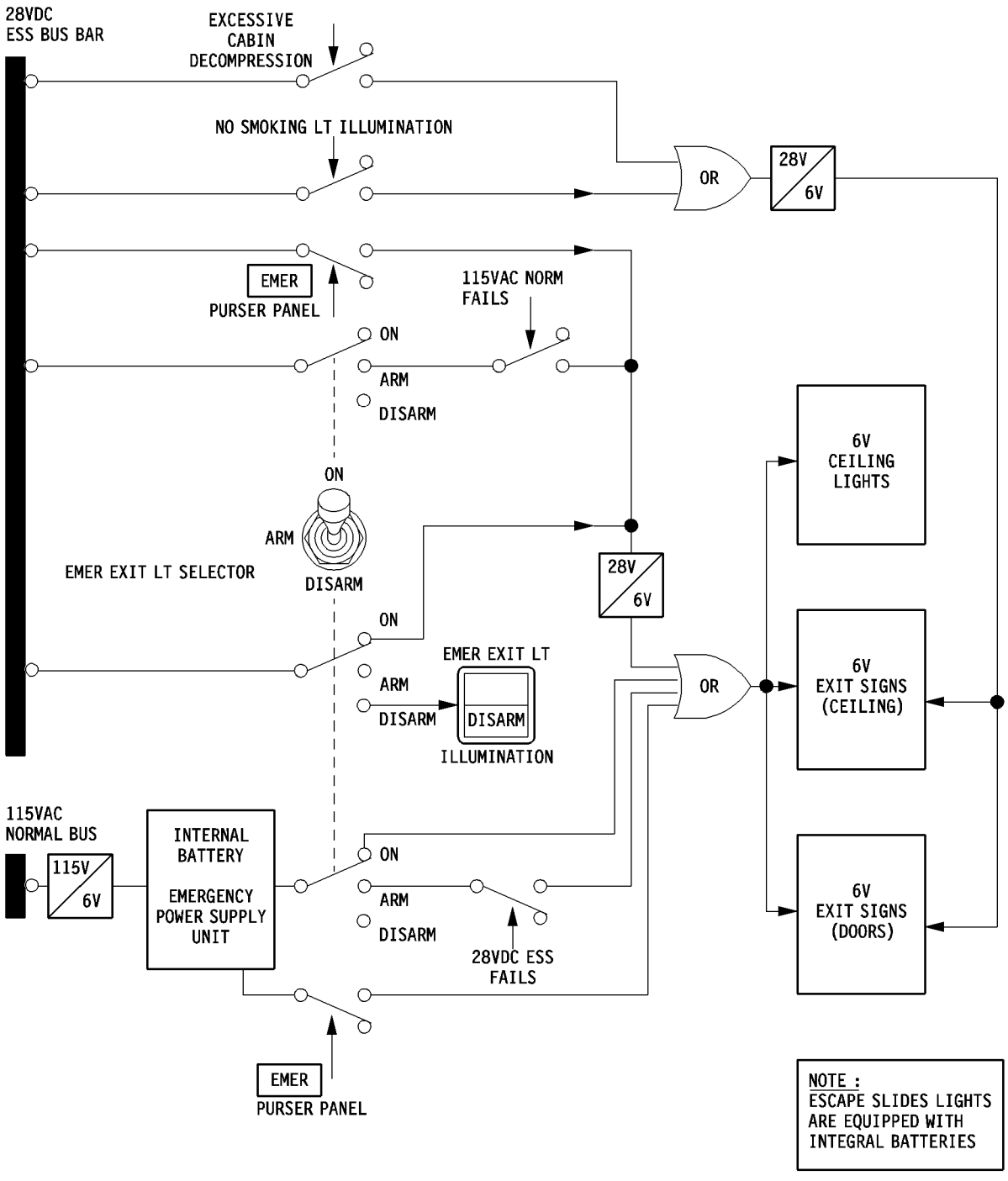
The escape slide lights are equipped with an integral lighting system. The escape slide lights illuminate automatically when the slide is deployed.

EXTERIOR LIGHTING

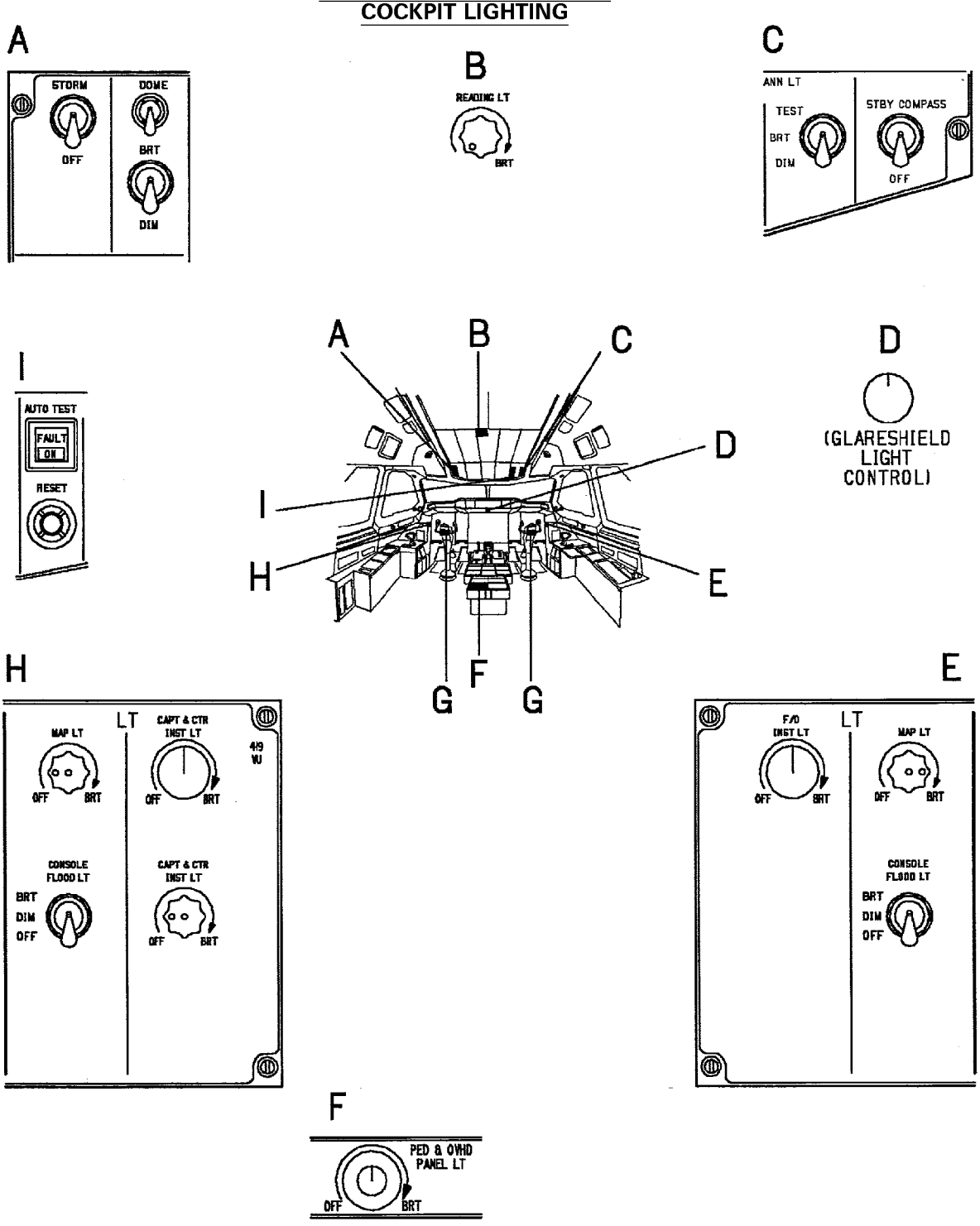


Mod. : 3004

EMERGENCY LIGHTING



LOCATION OF CONTROLS I
COCKPIT LIGHTING



R
R

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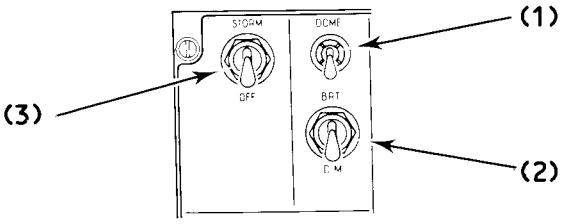
Mod. : 4803

A. COCKPIT LT PANEL



FB1.0140.006-AA.020.6A

(1) DOME Switch

- **DOME** :
  All dome lights are illuminated.
- **Off** :
  All dome lights are off.

(2) DIM Switch

- **BRT** :
  Dome lights are on with maximum intensity.
- **DIM** :
  Dome lights are dimmed.

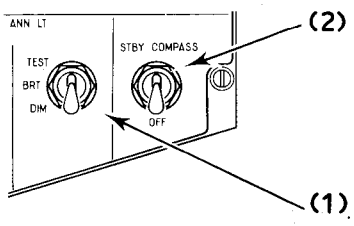
(3) STORM Switch

- **STORM** :
  Fluorescent tubes and flood lights are on with maximum intensity
- **OFF** :
R Fluorescent tubes are off. Flood lights are on and intensity is controlled from flood rheostat.

B. OVERHEAD PANEL READING LT KNOB

The Knob selects activation and intensity of the overhead panel reading light.
All others reading lights in the flight compartment are controlled and regulated by rotation of the spot light.

C. ANN LT and STBY COMPASS PANEL



FB1.0140.006-AA.020.6C

Mod. : 4803

(1) ANN LT Selector

- **TEST** :
  All cockpit annunciator lights will come on bright.
  The windshear warning (if installed) is triggered. R
- **BRT** :
  Annunciator lights are illuminate bright.
- **DIM** :
  Annunciator lights brightness :
  - on Captain, F/O and center instrument panel is controlled by photo cells,
  - on overhead panel, center pedestal and glareshield is dimmed,

(2) STBY COMPASS Switch

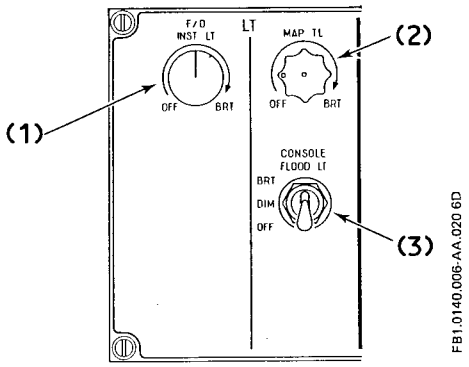
- **STBY COMPASS** :
  Integral lighting of standby compass comes on.
- **OFF** :
  Lighting is off

D. GLARESHIELD LIGHTING CONTROL

(1) Glareshield Lighting knob

Knob rotation controls the windows and pb switches integrated lighting of the glareshield panel.

E. F/O LT PANEL



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(1) F/O INST LT Knob

Instrument integral lighting intensity on F/O instrument panel is controlled from OFF to BRT.

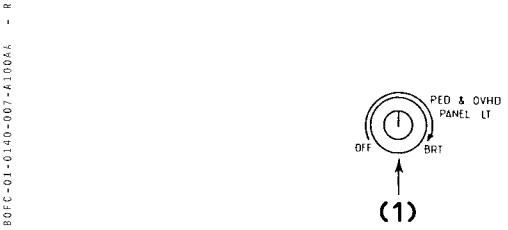
(2) MAP LT Knob

- **OFF** : Map table light is off.
- **BRT** : Map table light is on and regulated in intensity.

(3) CONSOLE FLOOD LT Switch

- **BRT** : F/O console lights illuminate with maximum intensity.
- **DIM** : Console lights are dimmed.
- **OFF** : Console lights are off.

F. PED and OVHD PANEL LT CONTROL :



BOFC-01-0140-007-A100AA - R

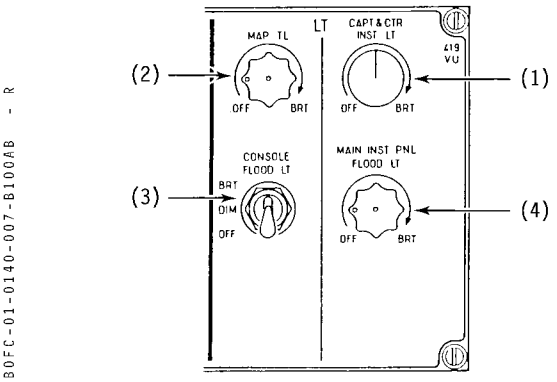
R **(1) PED & OVHD PANEL LT knob**

Center panel and overhead panel integral instrument lighting intensity is controlled from OFF to BRT.

G. CHART HOLDER

CAPT and F/O chart holder lights are controlled by knob located on the chart holder.

R H. CAPTAIN AND CENTER LIGHT PANEL



BOFC-01-0140-007-B100AB - R

R **(1) CAPT and CTR INST LT knob**

Instrument integral lighting intensity on CAPT and CTR instrument panels is controlled from OFF to BRT.

(2) MAP LT Knob

- **OFF** : Map table light is off.
- **BRT** : Map table light is on and regulated in intensity.

(3) CONSOLE FLOOD LT switch

R
- **BRT** : Captain console lights illuminate with maximum intensity.
- **DIM** : Console lights are dimmed.
- **OFF** : Console lights are off.

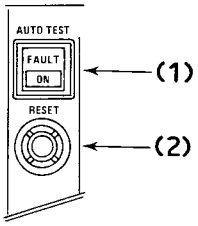
R **(4) MAIN INST PNL FLOOD LT knob**

R
- **OFF** : Main instrument panel lights are extinguished.

R
- **BRT** : Main instrument panel lights are illuminated and regulated in intensity.

Mod. : 4803

I. AUTO TEST PANEL



BOFC-01-0140-007-C100AA - R

The annunciator light test is used to verify cockpit annunciator bulbes operating.

(1) AUTO TEST pushbutton switch R

- **Normal** (Released-out) : Automatic test is not operating.
- **ON** (Pressed in and magnetically held) : The ON light illuminates white.
  The automatic test sequence is in progress. All lights are illuminated and extinguished in a predeterminated order.

  The ON light extinguishes and the switch pops out at the end of the sequence if there is no faulty bulb.
- **FAULT** (Pressed in) : During the test sequence, if there is a faulty bulb, the FAULT light illuminates amber, the test sequence stops and all the lights around the faulty one flash.

Note : During the test sequence all digital displays indicate « 888... » (except FQI digital displays during refueling).
Following light bulbs cannot be automatically tested. During the test sequence these lights illumination have to be visually checked :

- *OVERHEAD PANEL : Mode selector units*
  fire handles
  Inertial system display unit
  Fuel quantity indicator LO LVL lights
  ENG TRIM
- *MAIN INSTRUMENT PANEL : Altimeters* R
  L/G control lever
  TRP mode selector keys.
  Slats/Flaps position indicator
- *GLARESHIELD : Flight control unit* R
  EFIS control panel
  AUTO LAND Lights

– *PEDESTAL : FMC - Control display units*
ECAM CTL panel
ATC control unit
VHF control unit
ADF1 control unit

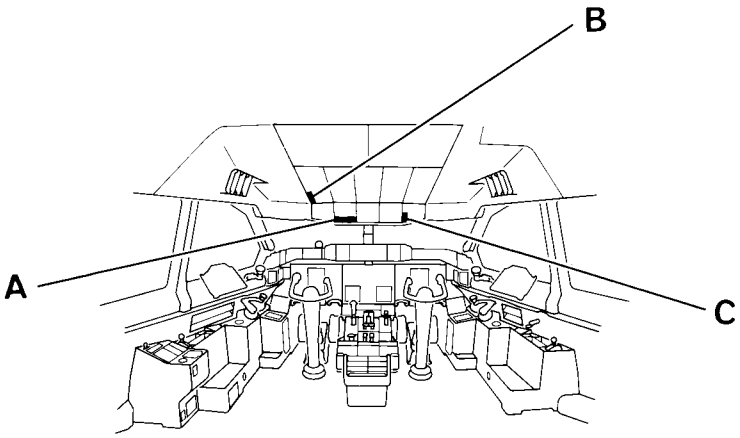
R *Note : This test triggers the windshear warning if*
R *installed.*

(2) RESET Pushbutton

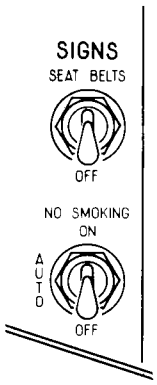
When pressed after a sequence interruption due to a faulty bulb detection, the automatic sequence re-starts.

Mod. : 4803 + 5051

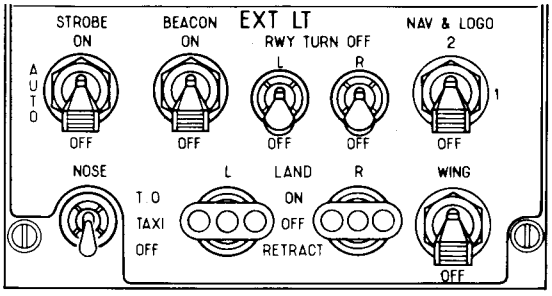
LOCATION OF CONTROLS II
EXTERIOR AND CABIN SIGN LIGHTING



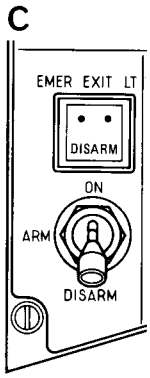
B



A

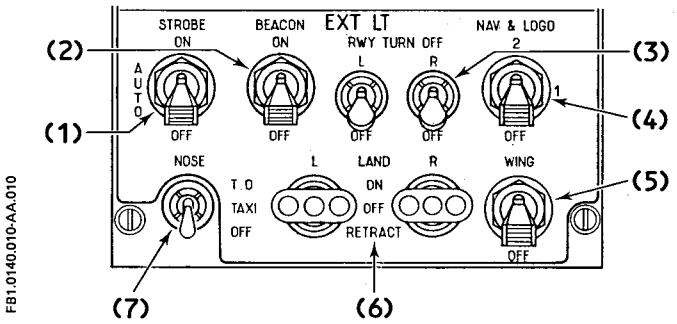


C



OPS.FCO.B1.0140.009-00.001

A. EXT LT PANEL :



(1) STROBE Selector

- **ON** : Strobe lights, two on the leading and one on the trailing edge of each wingtip, flash white.
- **AUTO** : Strobe lights are automatically switched on when the shock absorber is not compressed or when the speed is above 50 kt.
- **OFF** : All lights are off.

(2) BEACON Switch

- **ON** : Two anticollision lights, one on top and one on the bottom of the center fuselage flash.
- **OFF** : All lights are off.

(3) L and R RWY TURN OFF Switches

R Each RWY TURN OFF light, left and right, is controlled by an individual switch.

- **ON** : Two lights, one on each side of the forward fuselage, are activated to illuminate sideways, especially taxiway intersections for turning off.
- **OFF** : Lights are off.

(4) NAV and LOGO Selector

- **1** : Circuit for first set of navigation and logo lights is activated.

R One colored navigation light in the leading edge of each wingtip and one white light in the trailing edge,

R are steadily illuminated.
On each horizontal stabilizer a light is activated to illuminate the logo on each side of the vertical stabilizer when the main landing gear struts are compressed or slats are extended.

- **2** : Circuit for second set of navigation and logo lights is activated.
- **OFF** : All lights are off.

(5) WING Switch

- **ON** : On each side of the fuselage two lights are activated to illuminate the wing leading edge and the engine air intake.
- **OFF** : Lights are off.

(6) L and R LAND Selectors

Each landing light, left and right, is controlled by an individual selector.

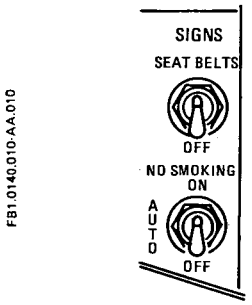
- **ON** : The related landing light is extended and comes on automatically when fully extended.
- **OFF** : The related landing light is extended but off.
- **RETRACT** : The related light is retracted and off.

(7) NOSE Selector

- **T.O.** : Two lights attached to the nose gear strut come on at high intensity.
- **TAXI** : Lights come on at low intensity.
- **OFF** : Lights are off.

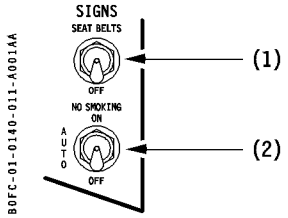
Note : Lights automatically go off, when the landing gear is retracted.

B. SIGNS PANEL :



Note : RETURN TO YOUR SEAT, NO SMOKING and EXIT signs throughout the cabin and lavatories illuminate automatically regardless of switch positions when cabin altitude exceeds 11,300 ± 500 Ft and MAN PRESS is not selected on the CABIN PRESS PANEL. R R R

Mod. : 3004



(1) SEAT BELTS Switch

- **ON**

  FASTEN YOUR SEAT BELTS signs in cabin and RETURN
R TO YOUR SEAT signs in lavatories illuminate associated with low tone gong upon illumination.

- **OFF**

  Signs are off. Low tone gong sounds upon extinction.

(2) NO SMOKING Selector

- **ON**

R NO SMOKING and EXIT signs in cabin illuminate associated with low tone gong upon illumination.

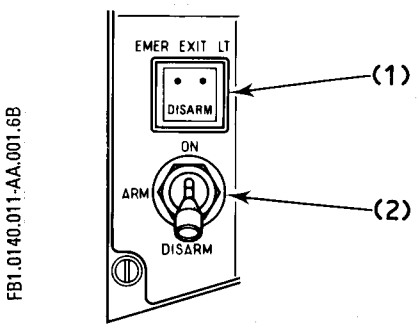
- **AUTO**

R NO SMOKING and EXIT signs in cabin illuminate when
R landing gear is extended and extinguish when landing gear is retracted. Low tone gong sounds upon illumination and extinction of the lights.

- **OFF**

  Signs are off. Low gong sounds upon extinction.

C. EMER EXIT LT PANEL



(1) DISARM Light

- **DISARM**

R Light illuminates amber, when the EMER EXIT LT selector is selected DISARM.
R If EMERG pushbutton switch on pursers panel is pressed
R the DISARM light extinguishes.

(2) EMER EXIT LT Selector

The selector is locked in each position. Before moving it must be slightly pulled.

- **ON**

  Ceiling lights, EXIT signs and floor path markings are illuminated.

- **ARM**

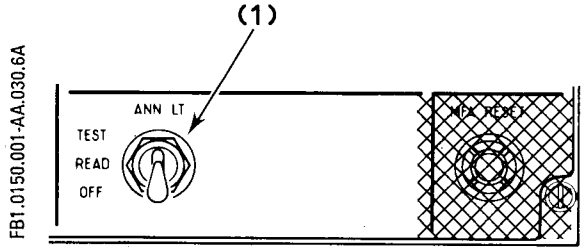
  Ceiling lights, EXIT signs and floor path markings will illuminate automatically if either AC normal bus or DC ESS bus are lost.

- **DISARM**

  Automatic illumination of ceiling lights, EXIT signs and floor path markings following power failure is deactivated.

Note : The ceiling lights, EXIT signs and floor path markings can be illuminated independently from the purser panel.

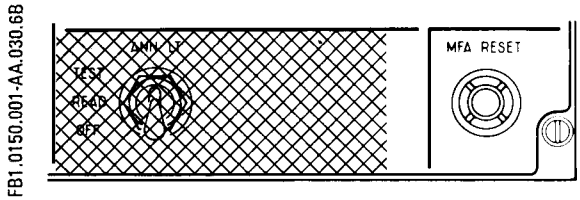
A. ANN LT PANEL :



(1) ANN LT Selector

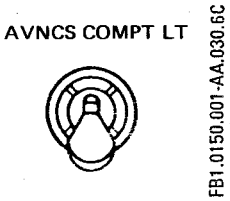
- **TEST** : All annunciator lights come on on lateral panel.
- **READ** : When activated, annunciator lights come on.
- **OFF** : All annunciator lights are off.

B. MFA's RESET P/B SWITCH



When the MFA's RESET pb switch are pressed, all Memorized Fault Annunciators for each system included in the corresponding section of the lateral panel go off.

C. AVNCS COMPT LT SWITCH



The switch is situated near the avionics compartment access patch. It controls the avionics compartment lighting.

Mod. : 4803