

DC-10

FLIGHT CREW OPERATING MANUAL

CHAPTER 1

AIRPLANE GENERAL

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AIRCRAFT GENERAL

INTRODUCTION

The sweptwing DC-10 Series 40 aircraft is a long range tri-jet designed for the transportation of passengers and cargo. Three interchangeable Pratt & Whitney JT9D, high-bypass ratio turbofan engines are used for propulsion.

DESIGN FEATURES

GENERAL

Fuselage

The wide-bodied fuselage is of semi-monocoque metal construction. All areas are pressurized except the nose radome, wheelwells, wing center section, and aft fuselage. The fuselage is divided lengthwise into an upper-floor level and a lower-floor level. The galley and lavatory compartments are located on the upper-floor level. The cargo and accessory compartments are located on the lower-floor level. Two main aisles are provided on the upper floor. Eight passenger entrance/exit doors are installed.

Cabin windows are double pane construction. Either pane is capable of carrying full pressurization.

Wing

The cantilevered wing consists of a primary box structure with a leading and trailing edge secondary structure. The box is of two-spar construction containing integral, between-spar fuel tanks. This

primary box also carries the main landing gear supporting structure, engine pylons, full span leading edge slats, spoilers, and trailing edge ailerons and flaps. Rupture-resistant fuel tanks and lines are provided in case of landing gear and/or flap breakaway.

Tail

The tail is of metal construction and includes an adjustable horizontal stabilizer, right and left two-section elevators, a tail-engine pylon, a fixed vertical stabilizer, and a two-section (four-segment) rudder. The adjustable horizontal stabilizer is pivoted at the trailing edge and uses hydraulic powered motors to change the angle-of-incidence.

SYSTEMS

Air Conditioning and Pressurization

The air conditioning and pressurization systems provide heating, cooling, dehumidification, and pressurization for the cockpit, passenger cabin, galley, cabin cargo compartments, and avionics compartment. Temperature control is automatic or manual. Pressurization control has automatic, semi-automatic, standby, and manual modes of operation. The air conditioning system is capable of maintaining a comfortable environment, while on the ground, using only the onboard auxiliary power unit.

Automatic Flight

The automatic flight capability includes automatic control (full or partial) of the aircraft during

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takeoff, climb, cruise, descent, and landing. The system is designed for all-weather operation with a CAT III landing capability. The total system includes a flight director, an autothrottle/speed control system, and an autopilot.

Auxiliary Power Unit

The onboard gas-turbine powered APU is a self-contained source of pneumatic and electrical power on the ground, and electrical power in flight. The unit may be started or shut down from the cockpit, and normally is completely automatic in operation. The unit may be shut down from the ground panel.

Communication

The aircraft is equipped with air-to-ground and air-to-air voice communication systems. Cockpit/cabin, ground service interphone, passenger address, and voice recorder systems also are provided. Cabin attendant, pilot, mechanic, and passenger call systems are installed in the aircraft. A separate passenger entertainment system also is provided.

Electrical

The electrical system is normally powered by an ac generator mounted on each engine. It may also be powered by an external ac source or by the onboard auxiliary power unit. Portions of the system may be powered by the aircraft battery and/or an air driven generator. DC power is normally provided through transformer/rectifiers, but may also be provided by a battery. Protective circuitry with automatic corrective action is standard equipment.

Emergency Equipment

Emergency equipment is provided for the flight crew and passengers. It includes emergency and first aid oxygen, portable fire extinguishers, emergency lighting, first aid kits, evacuation slides, a crash axe, and flotation gear. Portable megaphones, and crash locator radio (beacon) transmitters also are provided.

Fire Protection

The fire protection system provides detection, visual/aural warning, and extinguishing capability for each engine nacelle area and for the auxiliary power unit compartment. Visual overheat indication is also provided for the avionics compartment. Visual smoke and fire detection and extinguishing capabilities are provided for the cargo compartment.

Flight Controls

Primary flight controls consist of inboard and outboard ailerons; two two-section elevators; and a two-section (four segment) rudder. Secondary flight controls consist of lift-augmenting leading edge slats, spoilers (lateral control/speed brake/ground spoilers), inboard and outboard flaps, and a dual-rate movable horizontal stabilizer. The flight control system is a fully powered system utilizing power from three independent hydraulic systems.

Flight Instruments

The flight instruments and associated components provide altitude, airspeed, overspeed, attitude, and temperature data plus flight data recording. Included are the pitot-static system, the central air data computers, the altitude, airspeed, and vertical speed indicators, the gyrosyn compass system and the RMI/HSI indicators, and the attitude director indicators.

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Fuel System

Fuel is carried in three integral wing tanks and in the auxiliary tank. Direct tank-to-engine feed is normally used. The system also has the capability of tank-to-tank transfer, fuel dumping, and any-tank to any-engine crossfeed. In normal operation, each engine receives fuel from its respective main tank. The auxiliary power unit normally receives fuel from tank number two. Fueling, defueling, manifold drain, and fuel tank venting are provided. The system permits one-man, single-point refueling and is spillproof and siphonproof.

Hydraulic Power

Three continuously pressurized hydraulic systems are provided, each powered by two engine-driven pumps with intersystems motor pump backup. Two electric auxiliary pumps are installed in system three. Emergency hydraulic power is available from an electric auxiliary pump powered by an air driven generator.

Ice and Rain Protection

The ice and rain protection systems provide all-weather flight capability. Thermal heating is provided for anti-icing the outboard wing slats, VHF-1 antenna, and for the nose cowl inlet area of each engine. Electric heaters provide anti-icing for pitot tubes, static ports, angle-of-attack vane, total air temperature probe, and exterior windshields. Electric heaters also are used for defogging the windshields and clearview windows. Rain protection is provided for the windshields by electric wipers and a chemical rain repellent system.

Landing Gear

The landing gear, nosewheel steering, brakes, and antiskid systems are basically

conventional. All systems are hydraulically powered. A manual, free-fall alternate gear extension capability is provided.

Navigation Systems

The navigation equipment includes the VOR/ILS, ADF, DME, radio altitude, and marker beacon systems; the weather radar, the clock, and (as desired) INS equipment.

Pneumatics

The pneumatic system distributes and controls pneumatic pressure for air conditioning, pressurization, anti-icing, heating, ventilation, water pressurization, and engine starting. Pneumatic pressure is supplied from either an external source, the APU, or the engines.

Power Plant

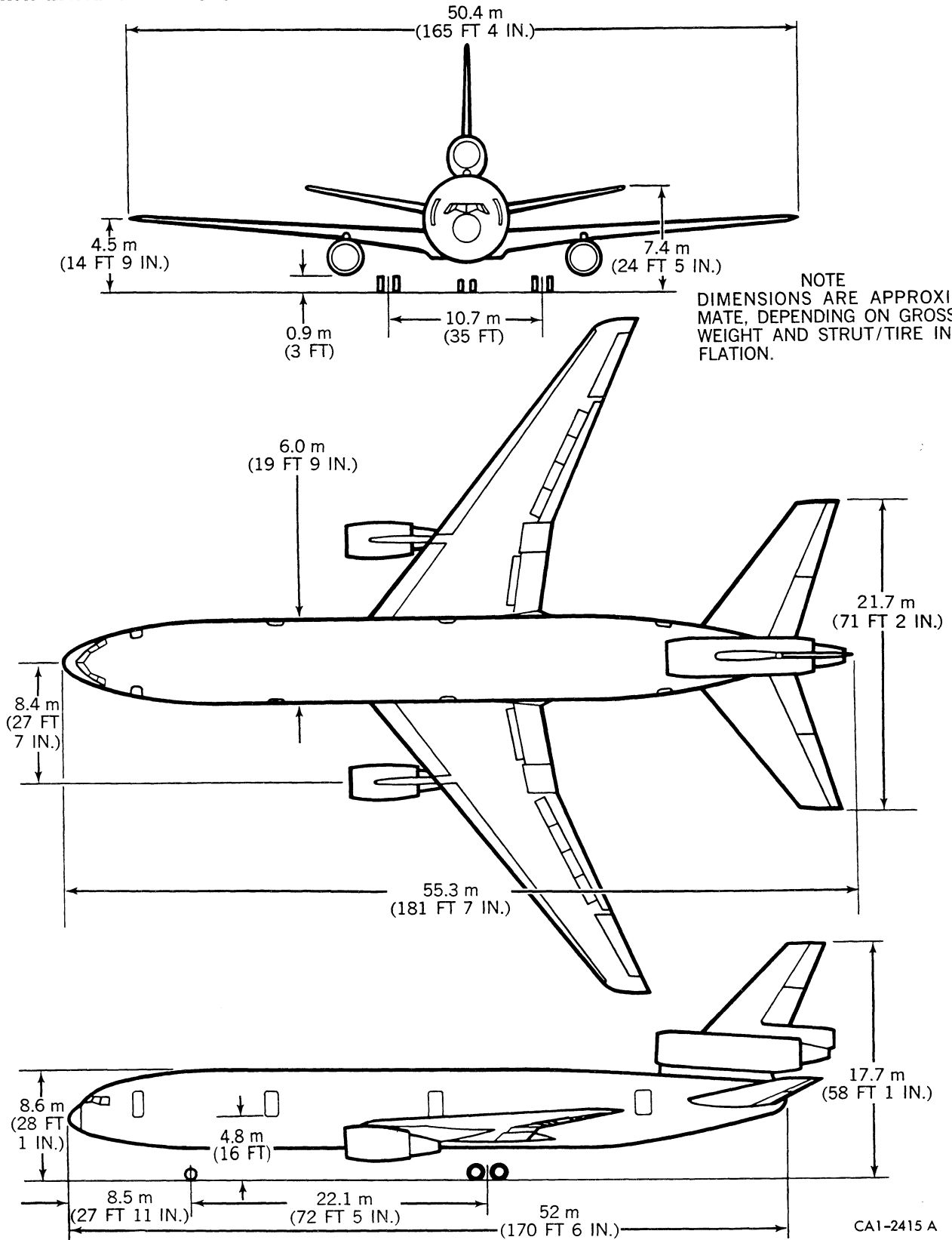
The aircraft is powered by three Pratt & Whitney JT9D dual-rotor, high bypass ratio turbofan engines. The engines incorporate a front fan and booster stage comprising the low pressure compressor section, a high pressure compressor with variable pitch stators, annular combustors, and high and low pressure turbines.

Water and Waste Systems

Separate systems are provided for potable water and waste service. The potable water system includes provisions for filling, storage, quantity indication, temperature control, distribution, and overboard drainage. The waste system includes provisions for storage, priming, rinsing, flushing, and drainage.

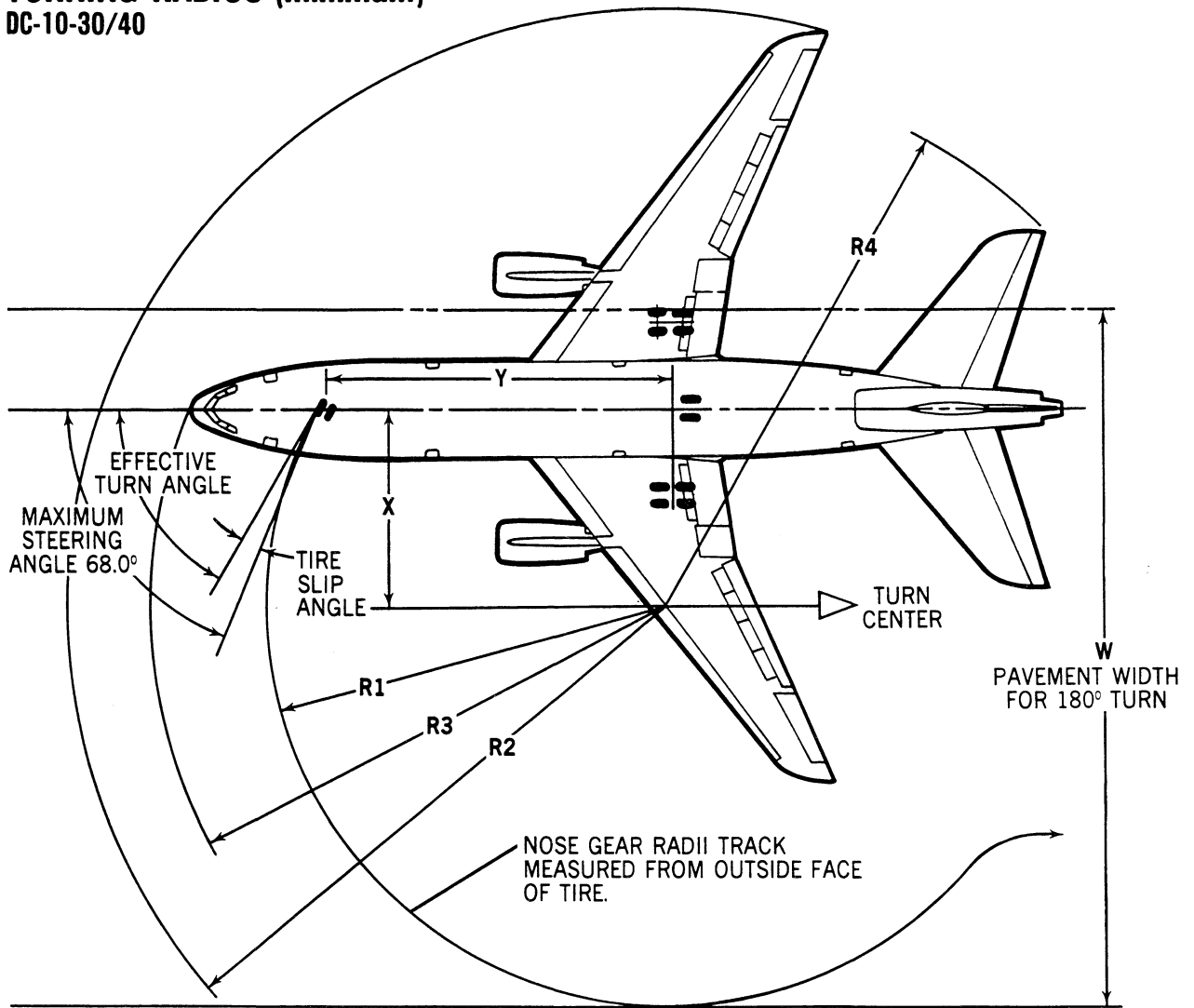
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AIRPLANE DIMENSIONS



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TURNING RADIUS (minimum) DC-10-30/40



1 MINIMUM RADIUS TURN RECOMMENDED FOR NORMAL, ROUTINE OPERATIONS.
TIGHTER TURNS CAN BE MADE OCCASIONALLY USING A COMBINATION OF MAXIMUM STEERING, ASYMETRICAL THRUST AND LIGHT INTERMITTENT BRAKING.

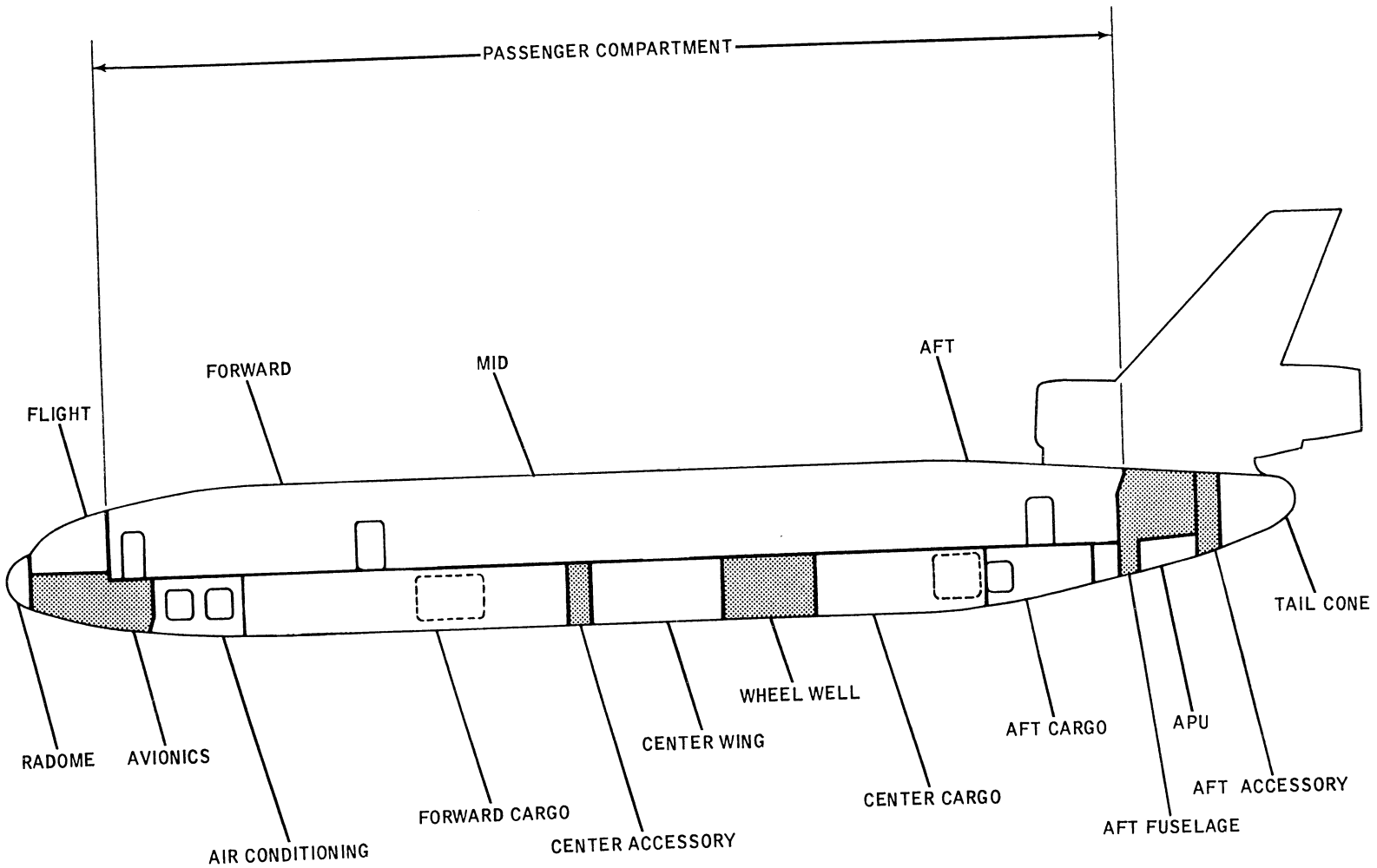
2 MAXIMUM STEERING SYMMETRICAL THRUST AND NO DIFFERENTIAL BRAKING
SLOW CONTINUOUS TURN
AFT CENTER OF GRAVITY
MAX GROSS WEIGHT

3 MAXIMUM STEERING ASYMETRICAL THRUST AND LIGHT INTERMITTENT DIFFERENTIAL BRAKING
SLOW CONTINUOUS TURN
AFT CENTER OF GRAVITY
MAX GROSS WEIGHT

TYPE OF TURN	EFFECTIVE TURN ANGLE	TIRE SLIP ANGLE	X	Y	W	R1	R2	R3	R4
1	—	—	42.7 FT	72.9 FT	149.5 FT	85.2 FT	130.5 FT	109.6 FT	109.8 FT
2	62.9°	5.1°	37.2 FT	72.9 FT	141.4 FT	83.5 FT	125.3 FT	107.5 FT	105.9 FT
3	66.9°	1.1°	27.6 FT	72.9 FT	128.5 FT	79.8 FT	116.1 FT	104.7 FT	99.5 FT

CA1-8520

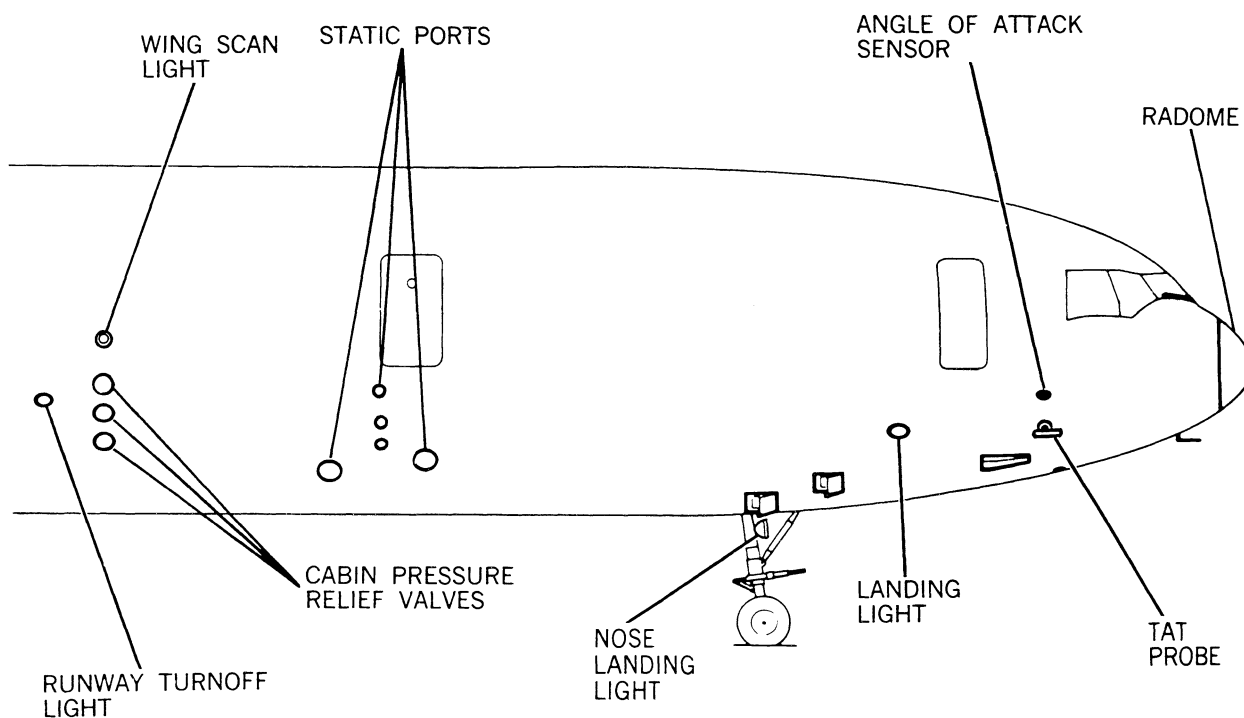
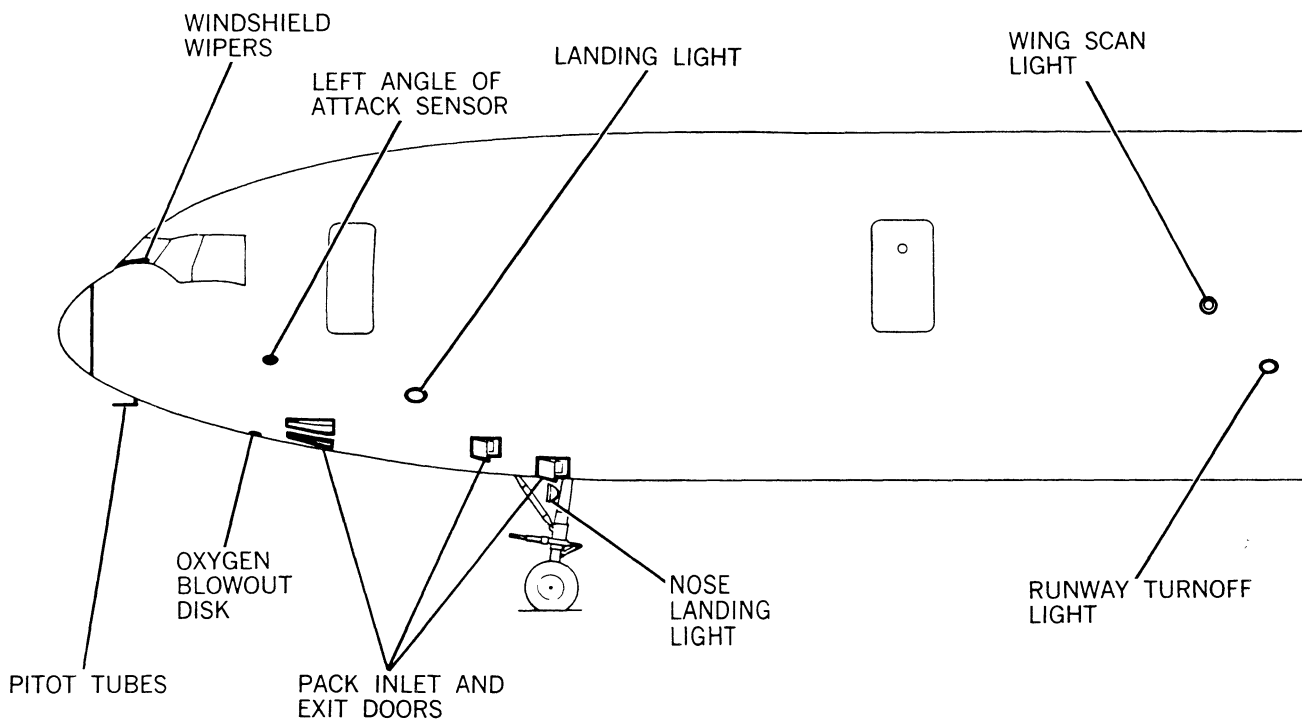
COMPARTMENT DIAGRAM



CA1-6304

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MISCELLANEOUS EXTERNAL ITEMS



CA1-4467

JL
May 1/76

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COCKPIT

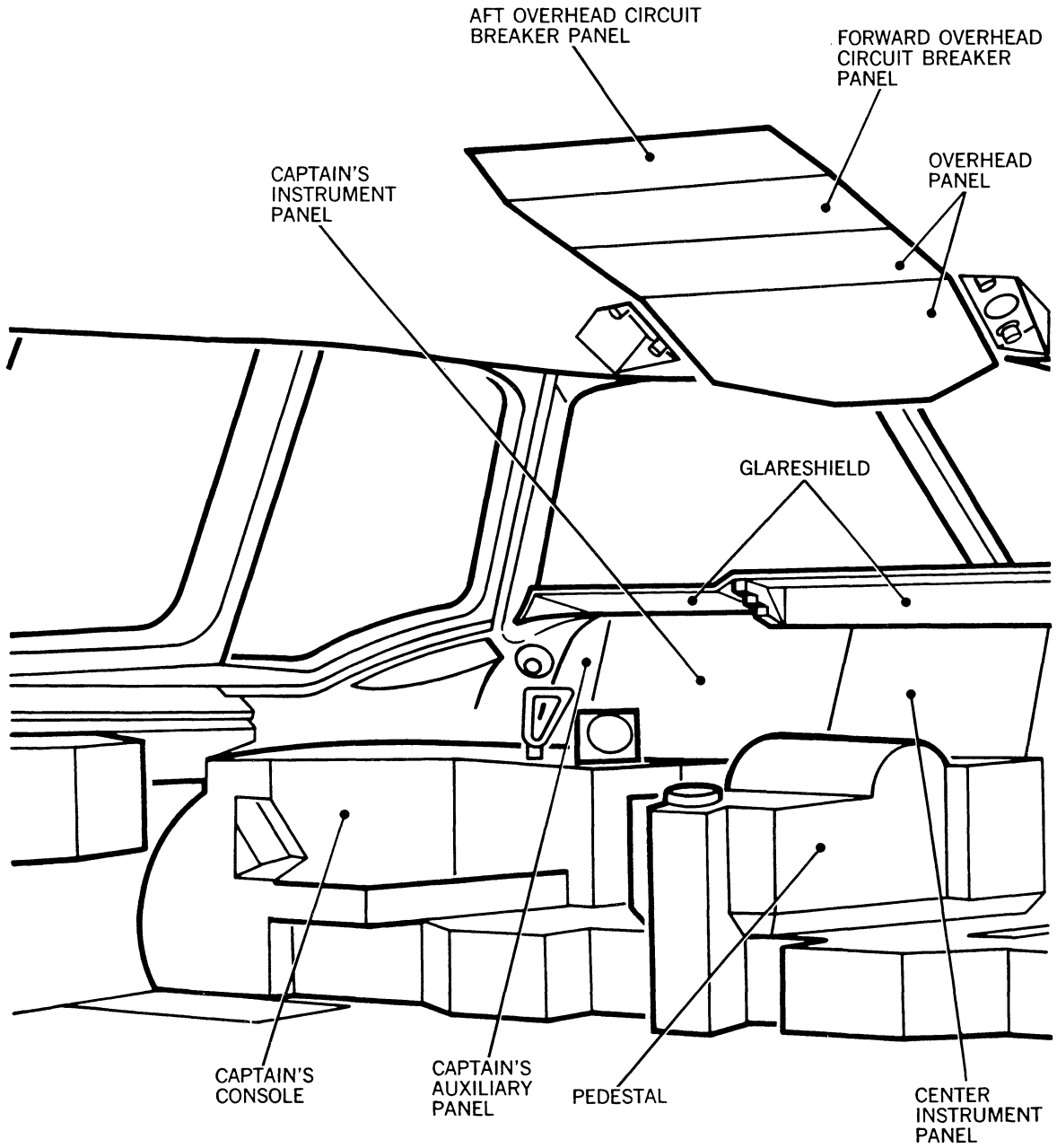
The cockpit is arranged in a conventional manner, the Captain's seat on the left, the Copilot's seat on the right, and the Flight Engineer's station facing outboard behind the Copilot's seat.

Seating, communications facilities, and oxygen outlets are provided for a First and Second Observer behind the Captain's station. Storage facilities for loose equipment are provided at each station in addition to storage areas in the coatroom.

All controls and indicators in the cockpit are illustrated in this section. The illustrations are arranged on foldout pages with an apron so that they may be extended and used as a reference in conjunction with the Controls and Indicators illustrations in the other chapters of this volume without having to remove the illustration from the book.

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FLIGHT COMPARTMENT Captain's Station



CA1-6A

01-20-02

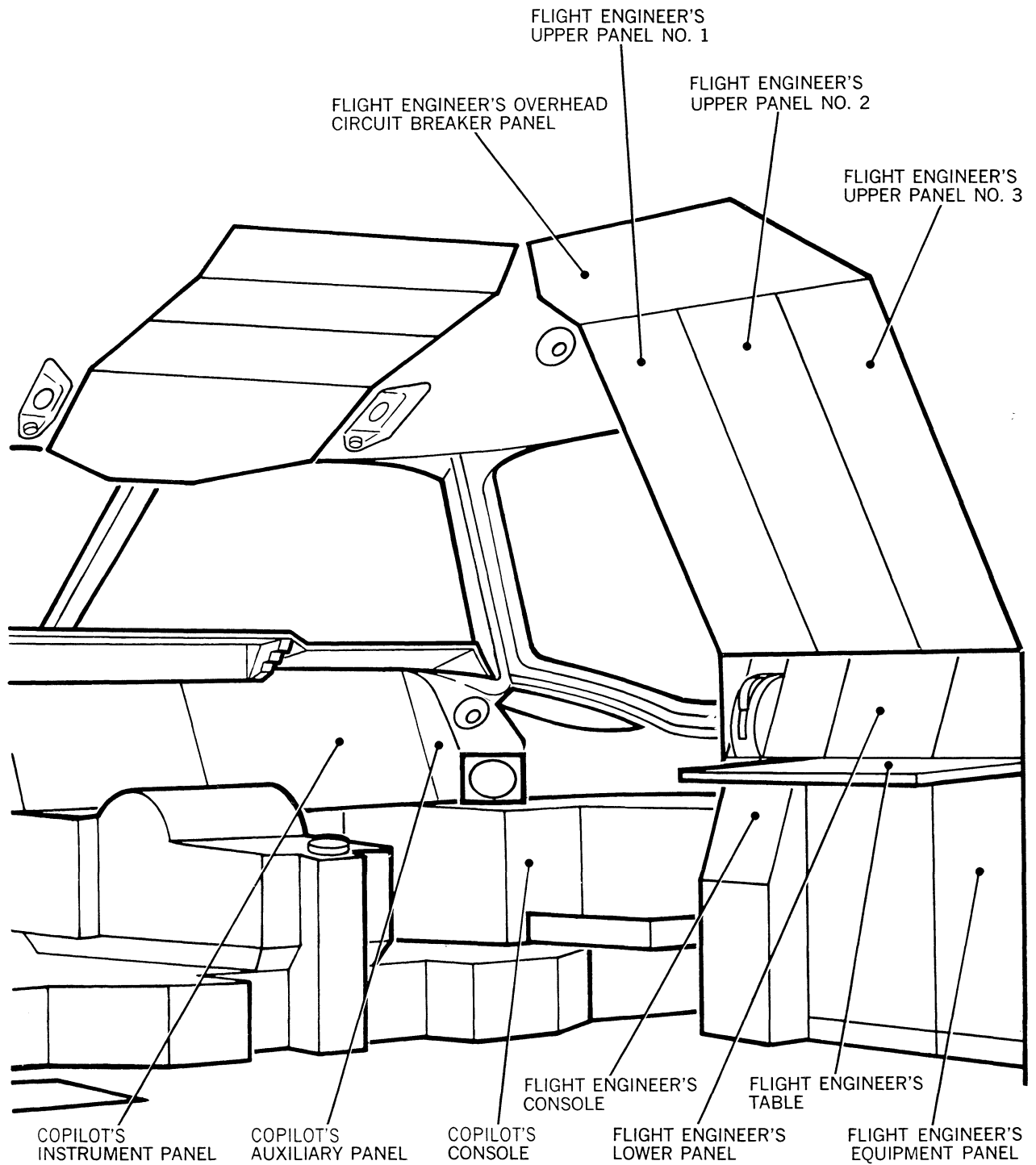
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JL
Aug 1/87

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FLIGHT COMPARTMENT Copilot's and Flight Engineer's Station



CA1-4468

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May 1/76

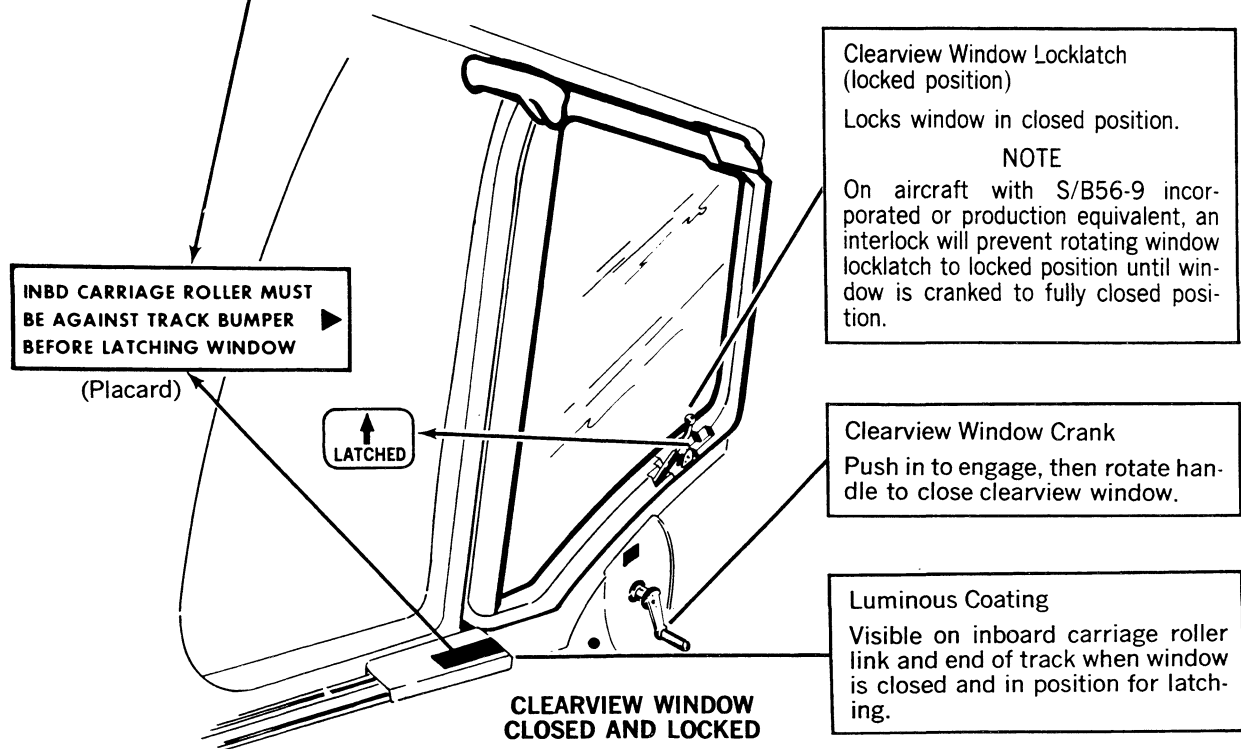
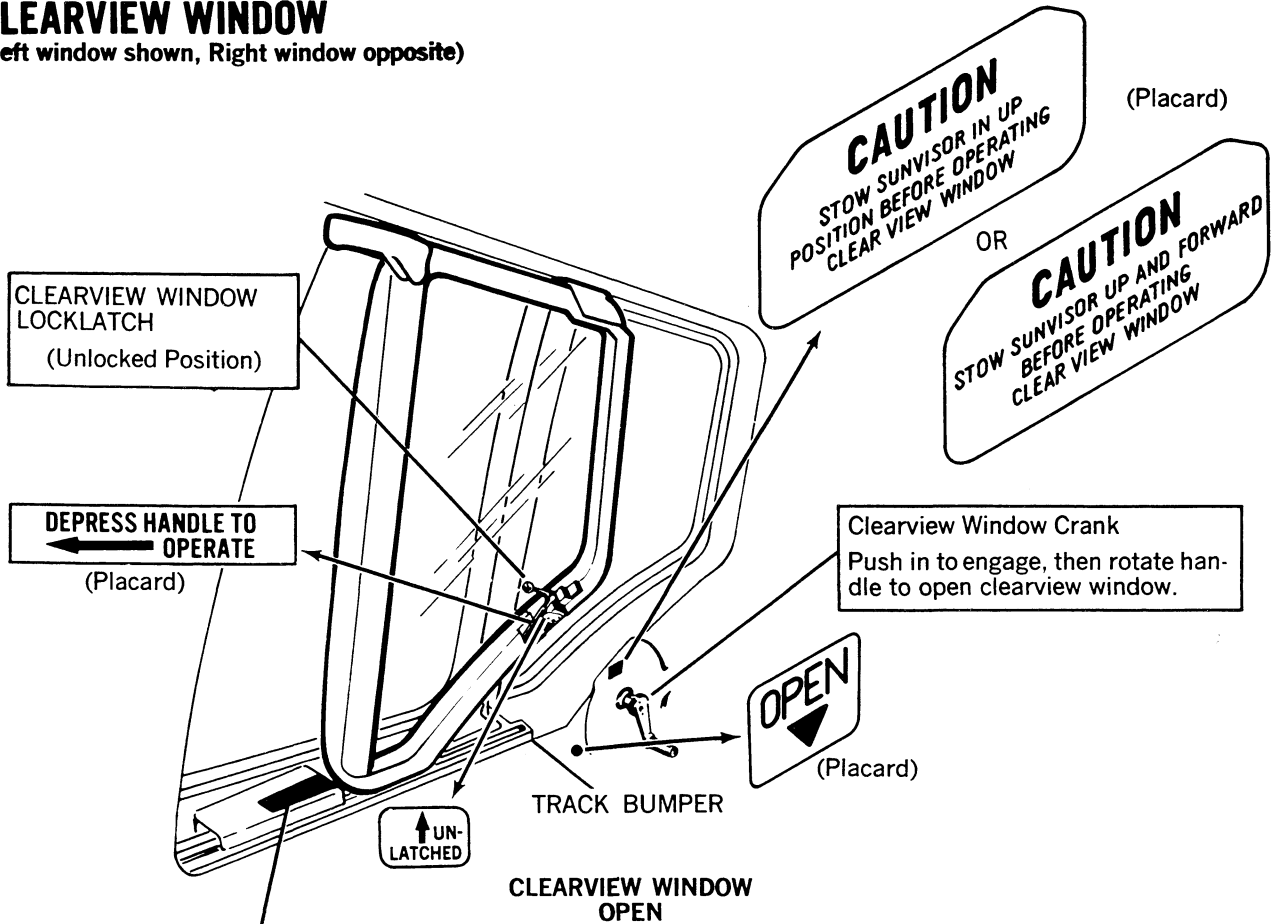
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01-20-03

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CLEARVIEW WINDOW

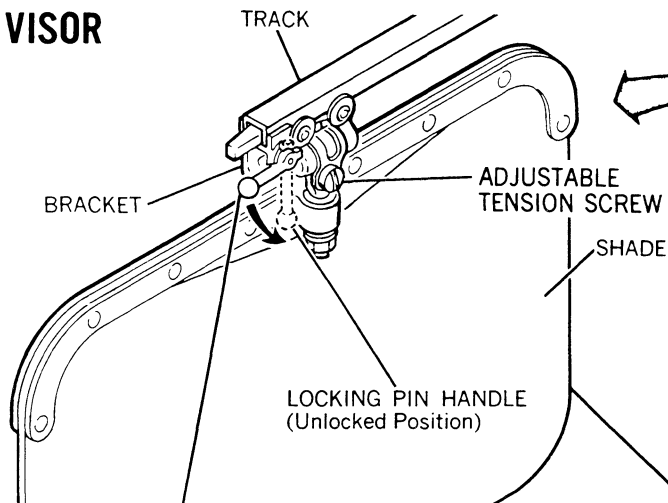
(Left window shown, Right window opposite)



CA1-8558

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SUN VISOR



LOCKING PIN HANDLE (Locked Position)
Spring-loaded to lock position. Turning handle down releases lock and allows visor to be moved to desired location.

Visor is moved by turning and holding locking pin handle down, grasping the bracket at top of shade and sliding visor to the desired location. Releasing locking pin locks visor in place.

Visor should be moved forward of the forward edge of clearview window and then raised to the stowed position before opening the clearview window. This allows the clearview window to be opened without damaging the visor.

NOTE

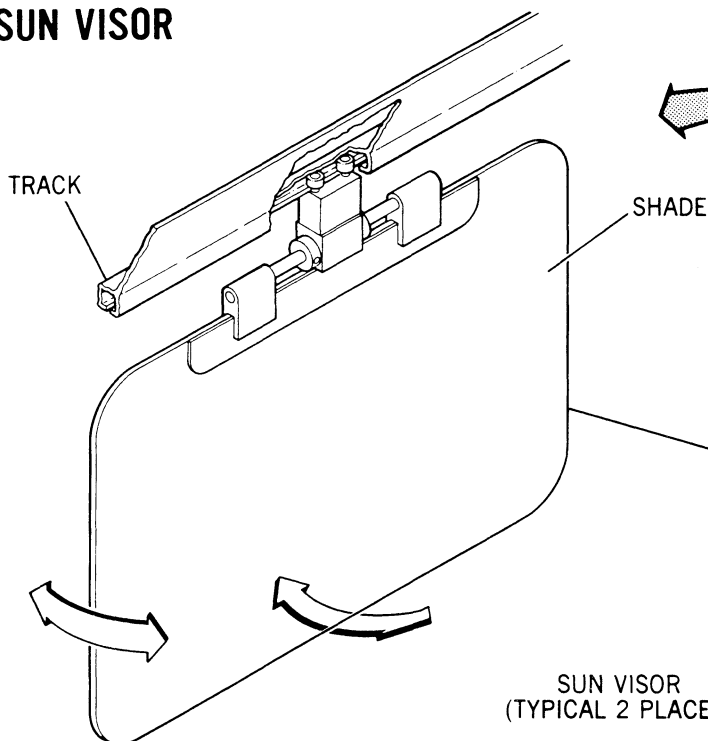
Do not move visor by holding lower edge of shade as damage may result due to the leverage applied to the bracket and resultant binding in the track. The adjustable tension screw immediately above the shade should be tightened only to the degree necessary to hold shade in desired horizontal position.

SUN VISOR
(TYPICAL 2 PLACES)

CA1-5868

Effective on airplanes with Adjustable Tension Screw type sun visor.

SUN VISOR



Visor is moved by grasping the slide block at top of shade and sliding visor to the desired location.

Visor should be moved forward of the forward edge of clearview window and then raised to the stowed position before opening the clearview window. This allows the clearview window to be opened without damaging the visor.

NOTE

Do not move visor by holding lower edge of shade as damage may result due to the leverage applied to the bracket and resultant binding in the track.

SUN VISOR
(TYPICAL 2 PLACES)

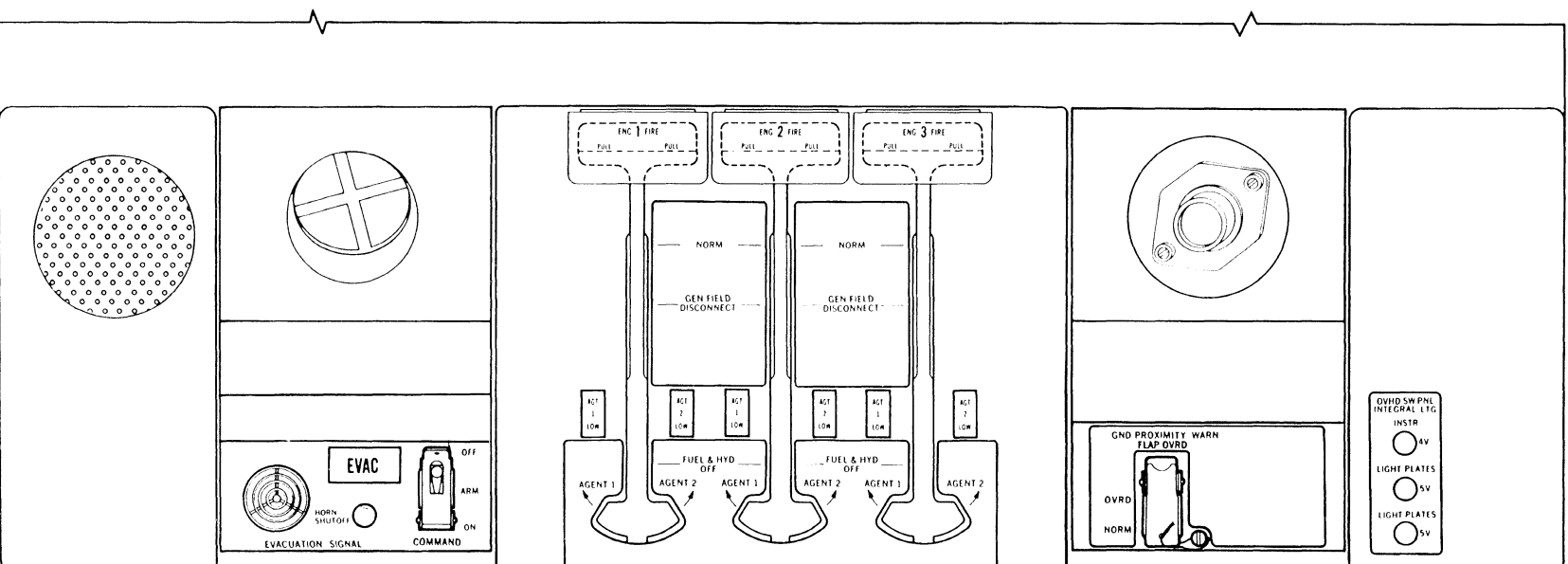
CA1-7581

JL
Aug 1/81

Effective on airplanes without Adjustable Tension Screw type sun visor.

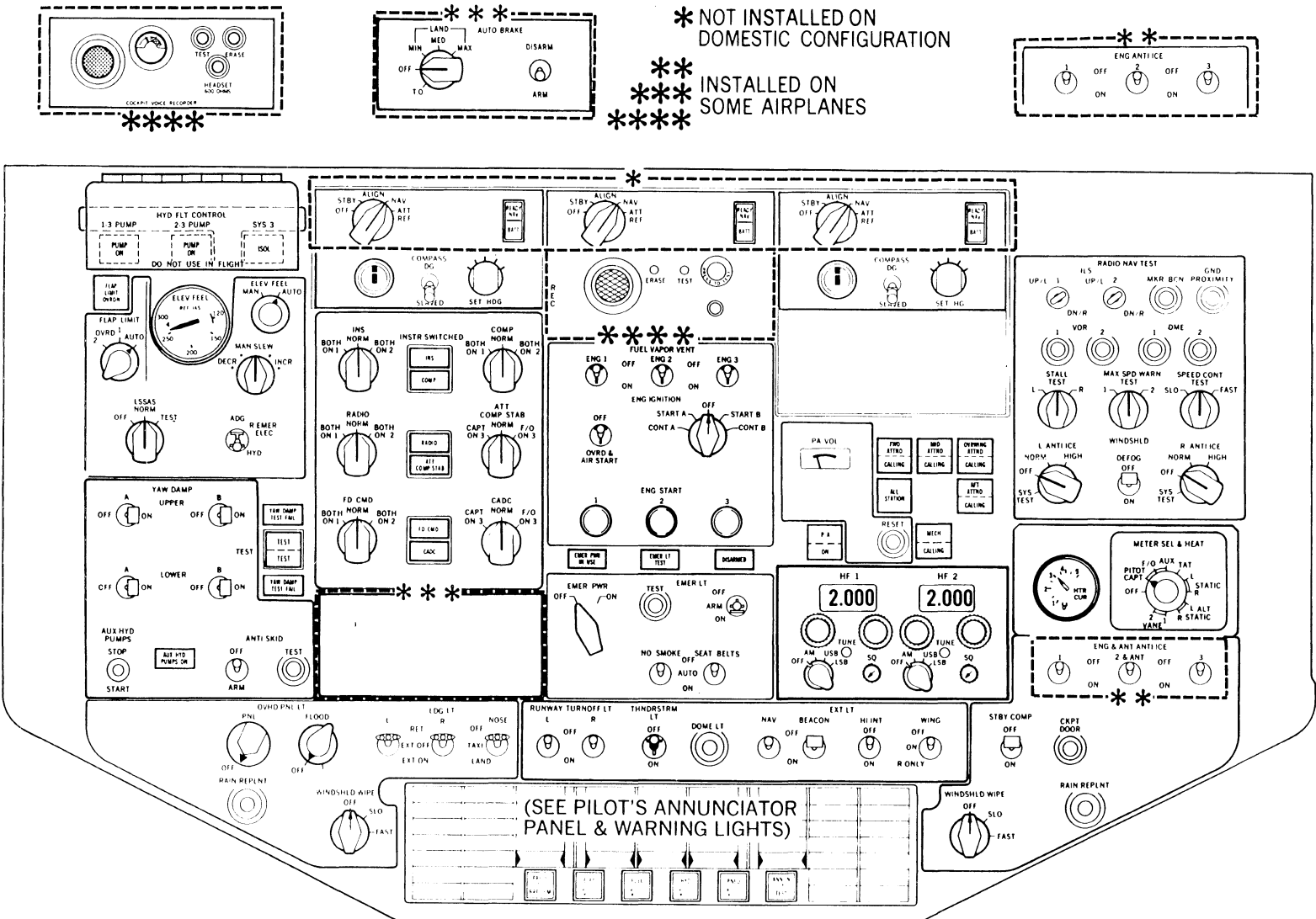
01-20-05/06

AFT OVERHEAD PANEL



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FORWARD OVERHEAD PANEL



JL
Jun 1/97

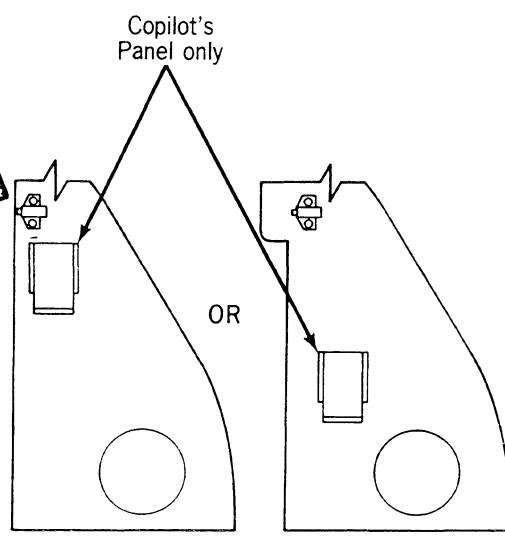
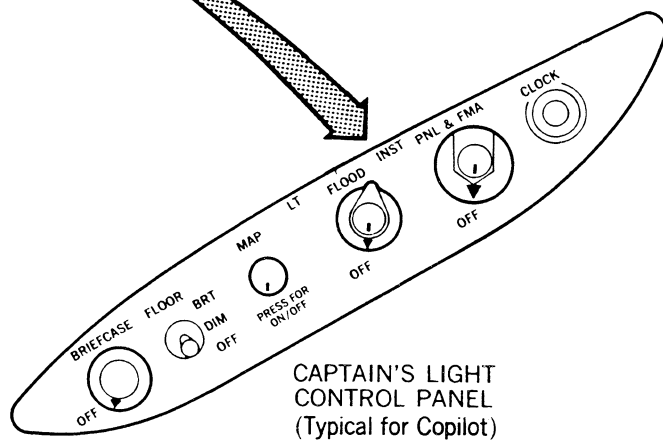
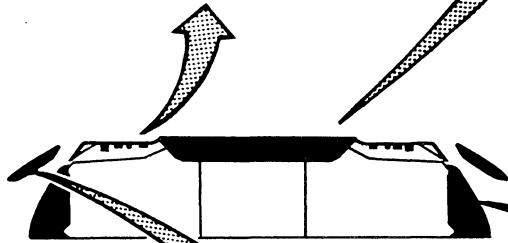
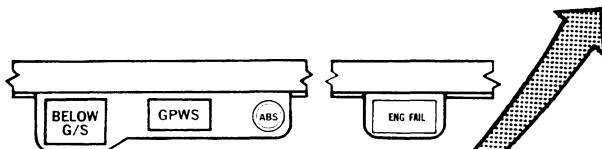
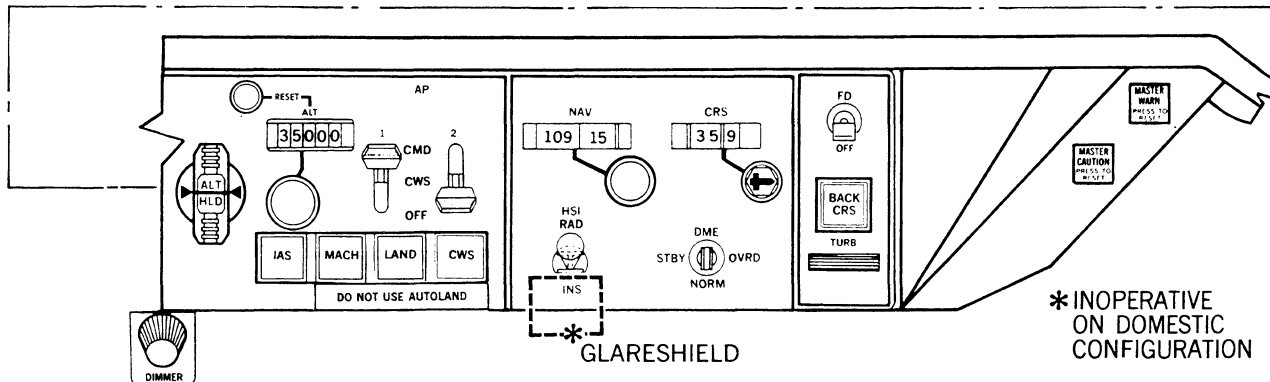
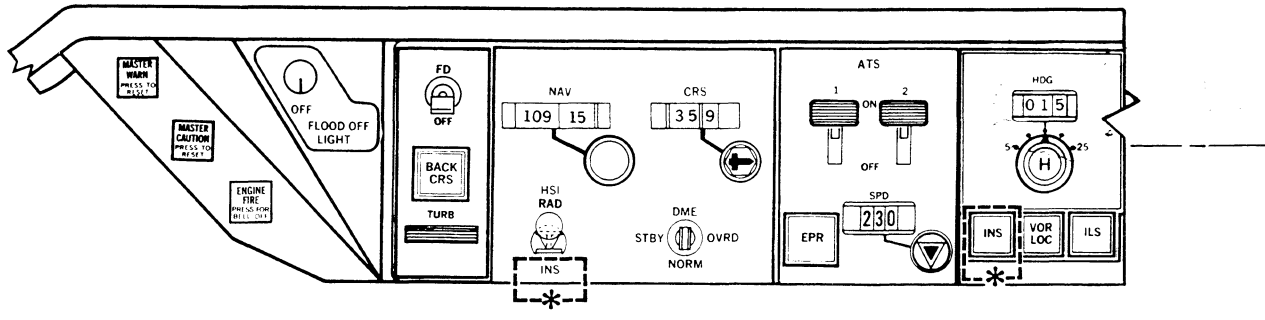
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GLARESHIELD, AUXILIARY AND LIGHT CONTROL PANELS



CAPTAIN'S LIGHT CONTROL PANEL
(Typical for Copilot)

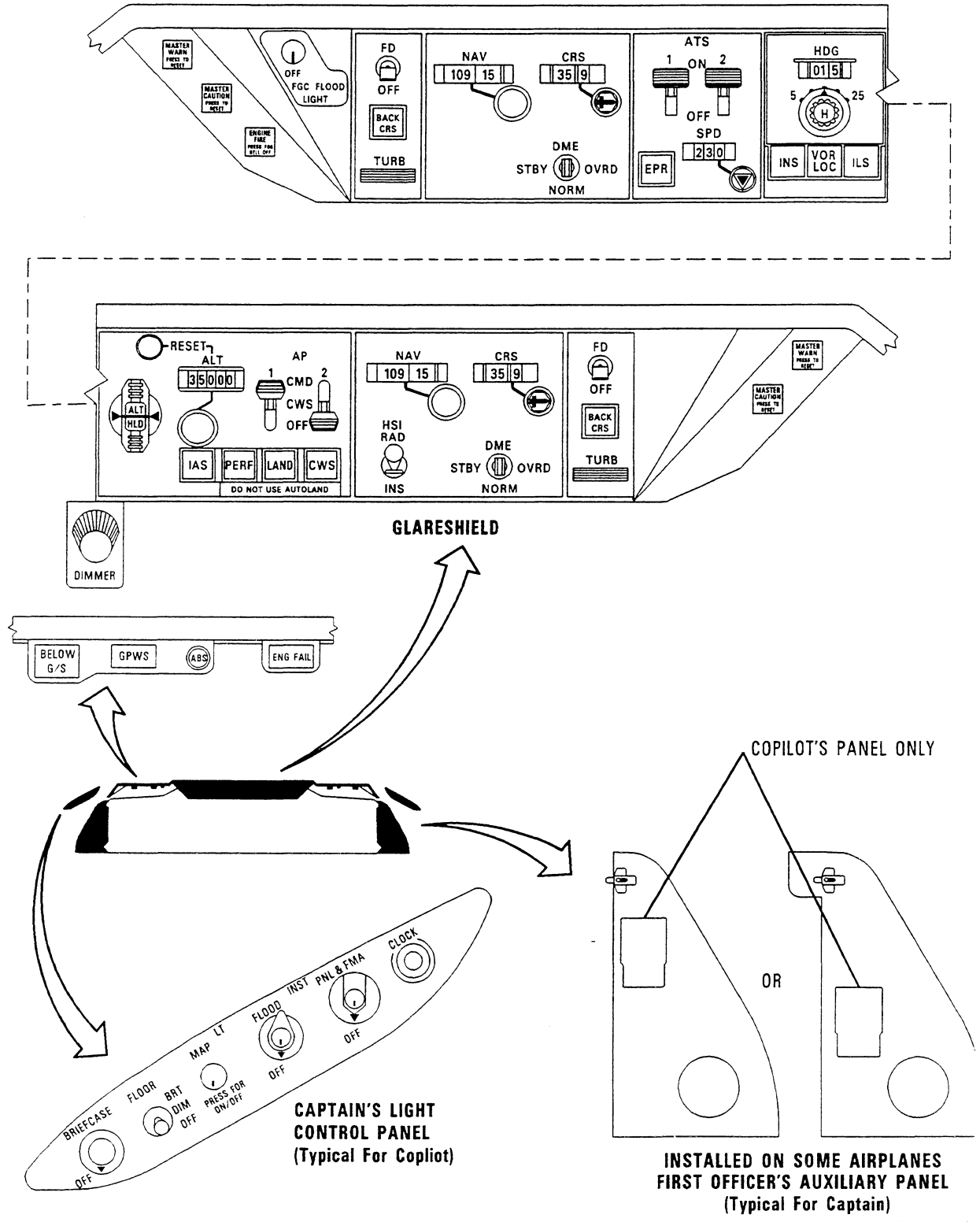
INSTALLED ON SOME AIRPLANES
FIRST OFFICER'S AUXILIARY PANEL
(Typical for Captain)

CA1-4035E

DO NOT LAND AUTOMATICALLY WITH SPARE ENGINE POD placard installed on Domestic configuration airplanes during Spare Engine Transport

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GLARESHIELD, AUXILIARY AND LIGHT CONTROL PANELS

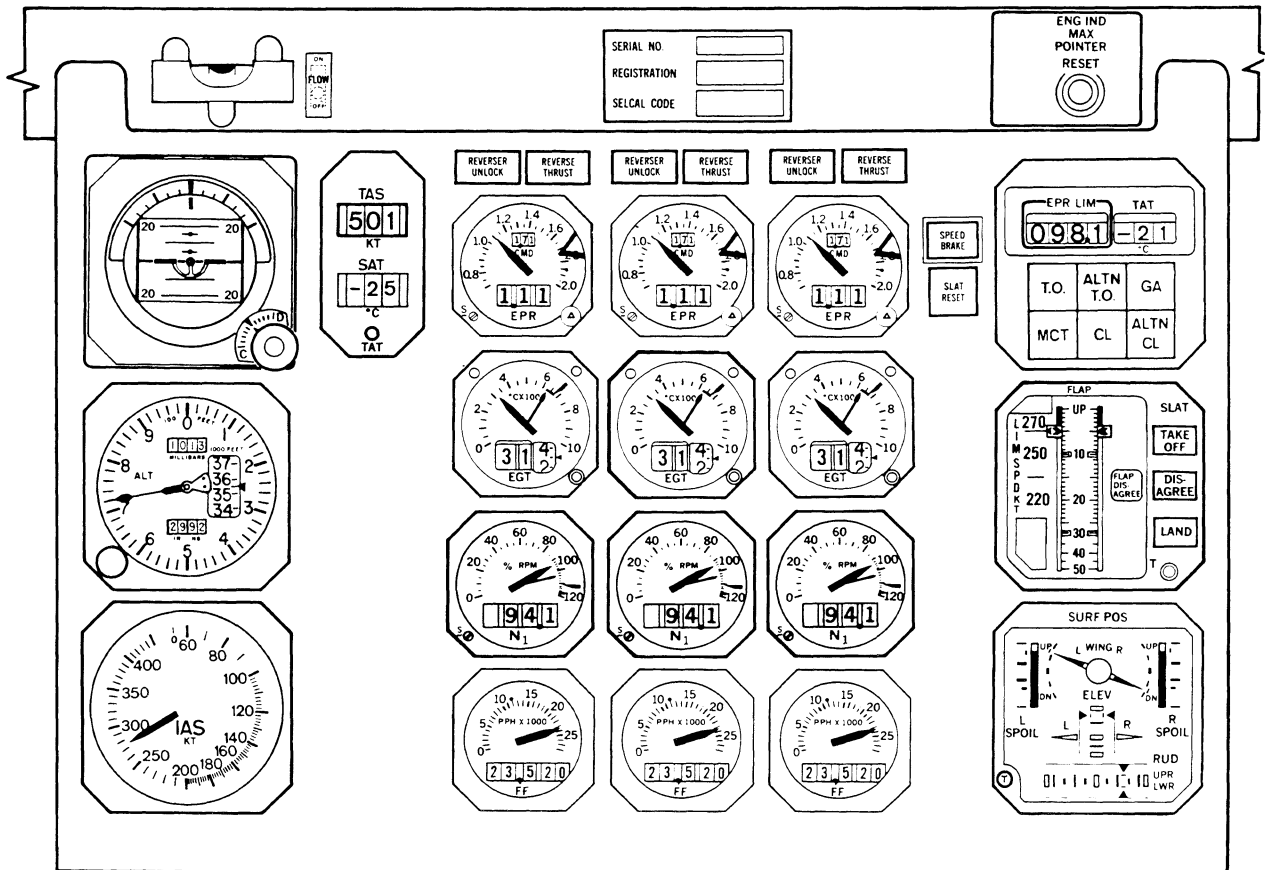


CA1-8811A

EFFECTIVE ON AIRPLANES WITH PMS INSTALLED.

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CENTER INSTRUMENT PANEL



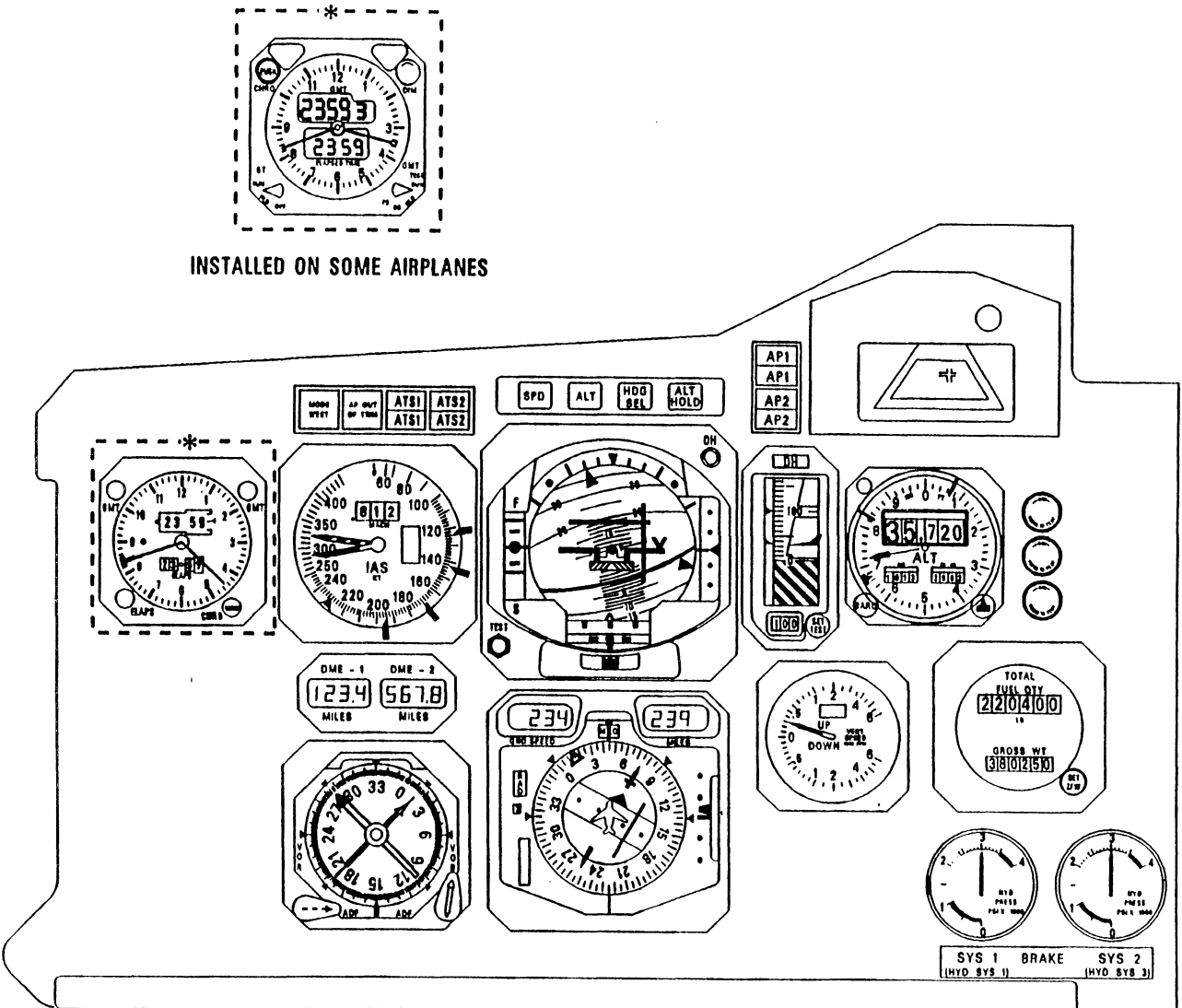
CA1-4036 E

JL
Feb 1/82

01-22-03/04

DC-10 FLIGHT CREW OPERATING MANUAL

CAPTAIN'S INSTRUMENT PANEL



INSTALLED ON SOME AIRPLANES

JL
Jun 1/96

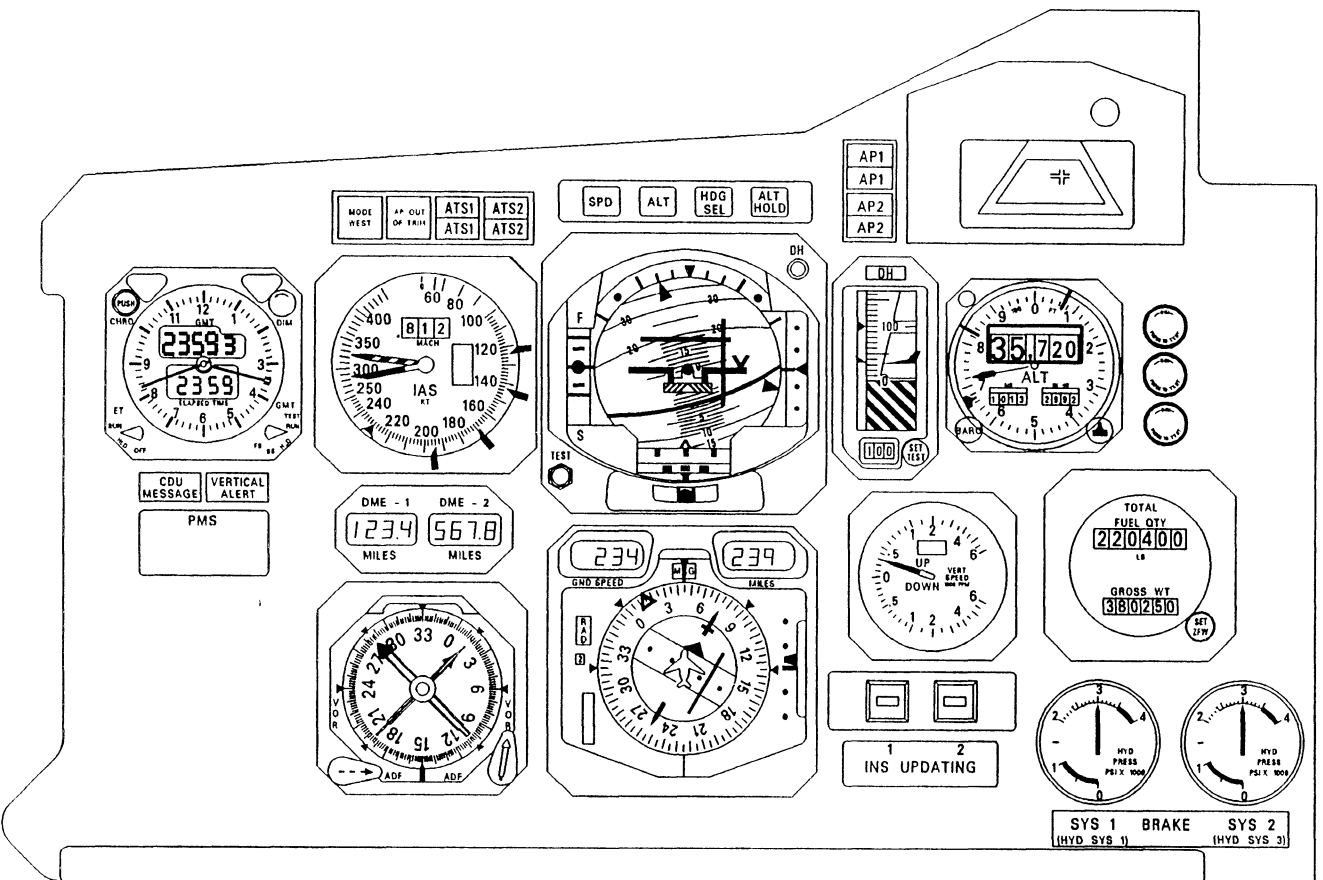
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01-22-05/06

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CAPTAIN'S INSTRUMENT PANEL



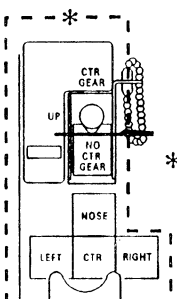
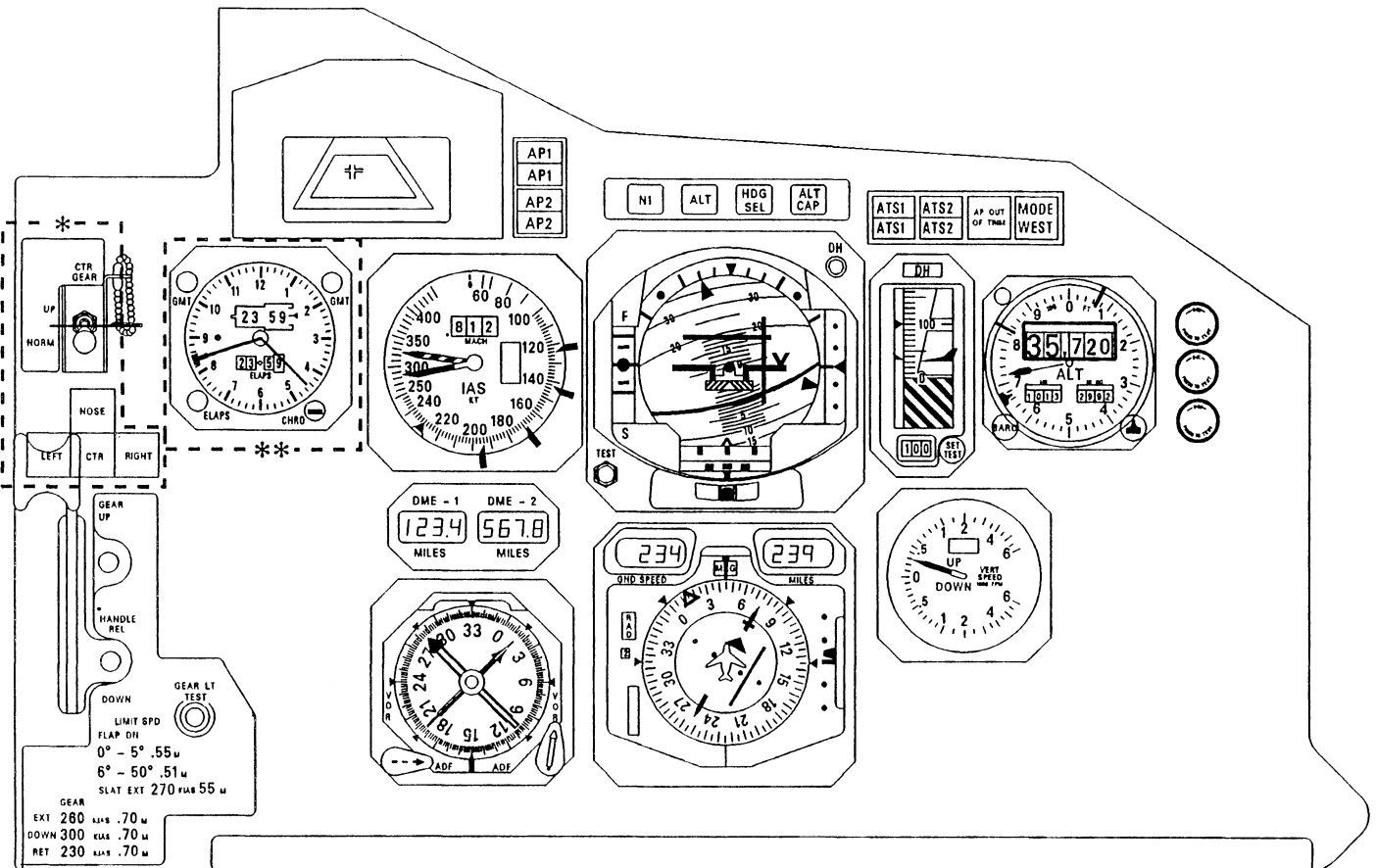
CHANGE: Editorial.

CA1-9363B

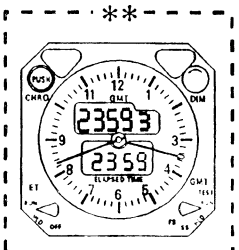
Effective on airplanes with PMS and INS updating installed.

DC-10 FLIGHT CREW OPERATING MANUAL

COPLOT'S INSTRUMENT PANEL



* EFFECTIVE ON DOMESTIC CONFIGURATION



INSTALLED ON SOME AIRPLANES

Effective on airplanes with roller-mounted instrument panels.

CA1-9364A

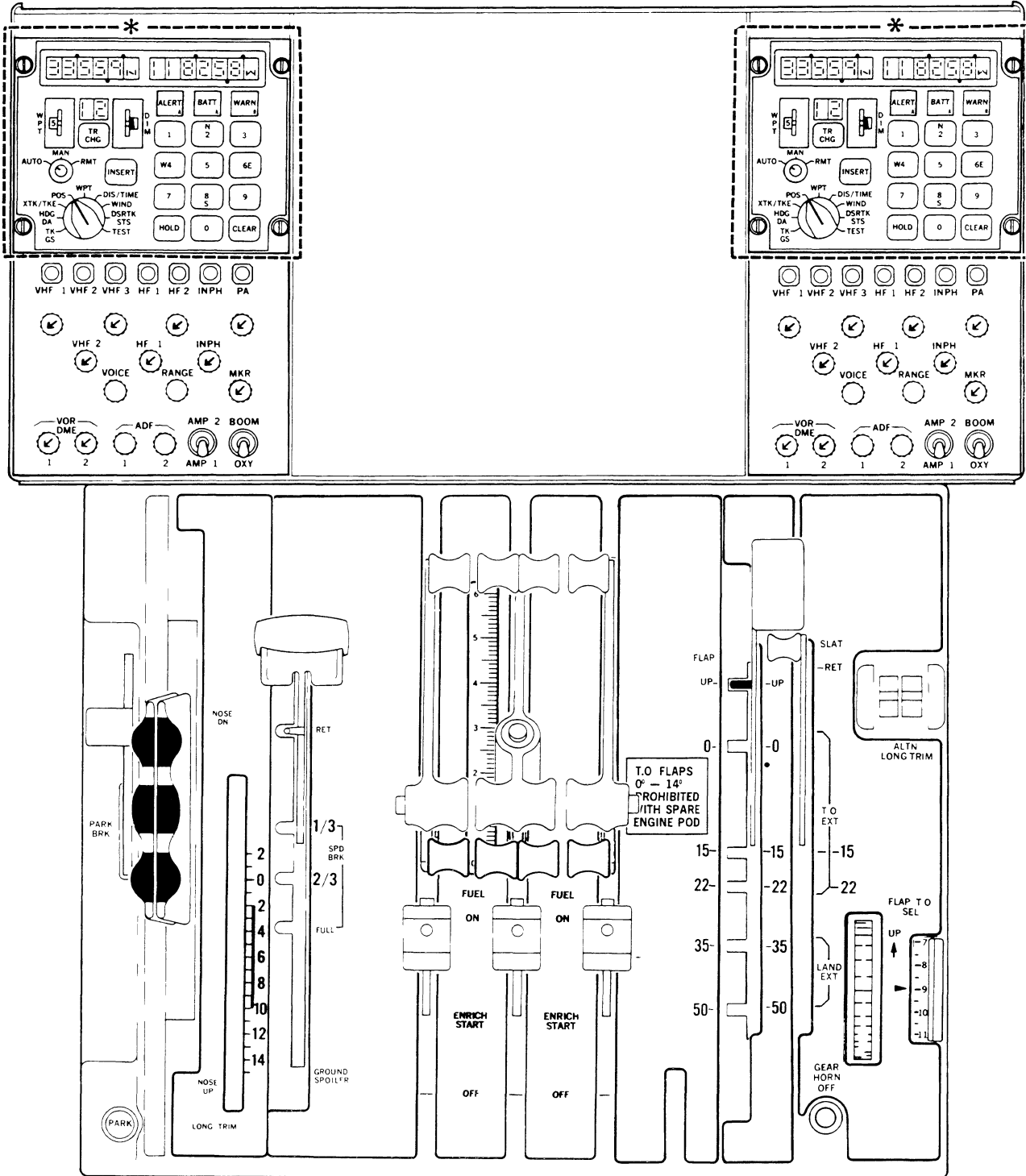
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01-22-07/03

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PEDESTAL (FORWARD)



* NOT INSTALLED ON DOMESTIC CONFIGURATION

CA1-4048 C

T. O. FLAPS 0°-14° PROHIBITED WITH SPARE ENGINE POD placard installed on Domestic configuration airplanes during Spare Engine Transport.

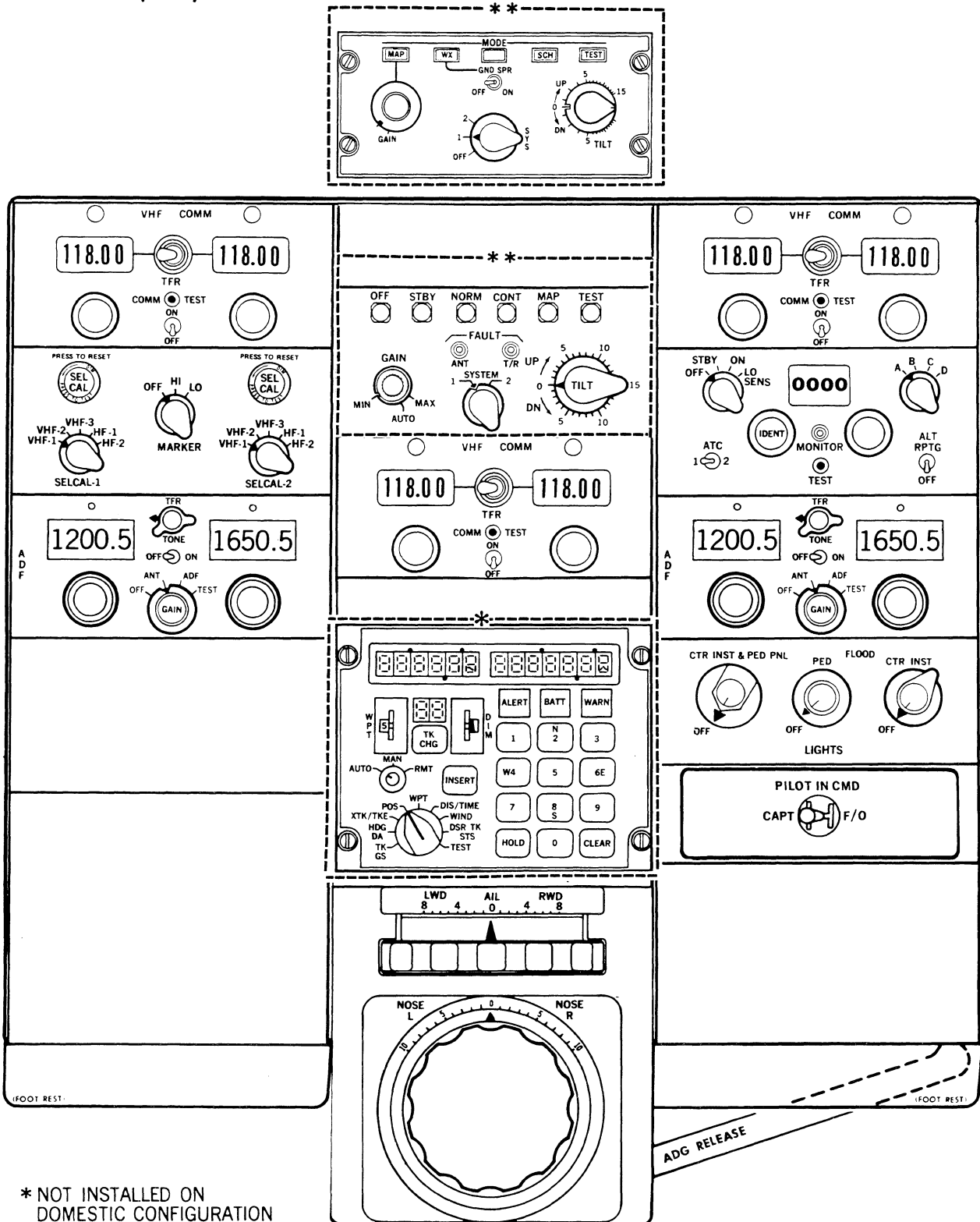
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Feb 1/79

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01-24-01/02

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PEDESTAL (AFT)



* NOT INSTALLED ON DOMESTIC CONFIGURATION

**INSTALLED ON SOME AIRCRAFT

CA1-4049 A

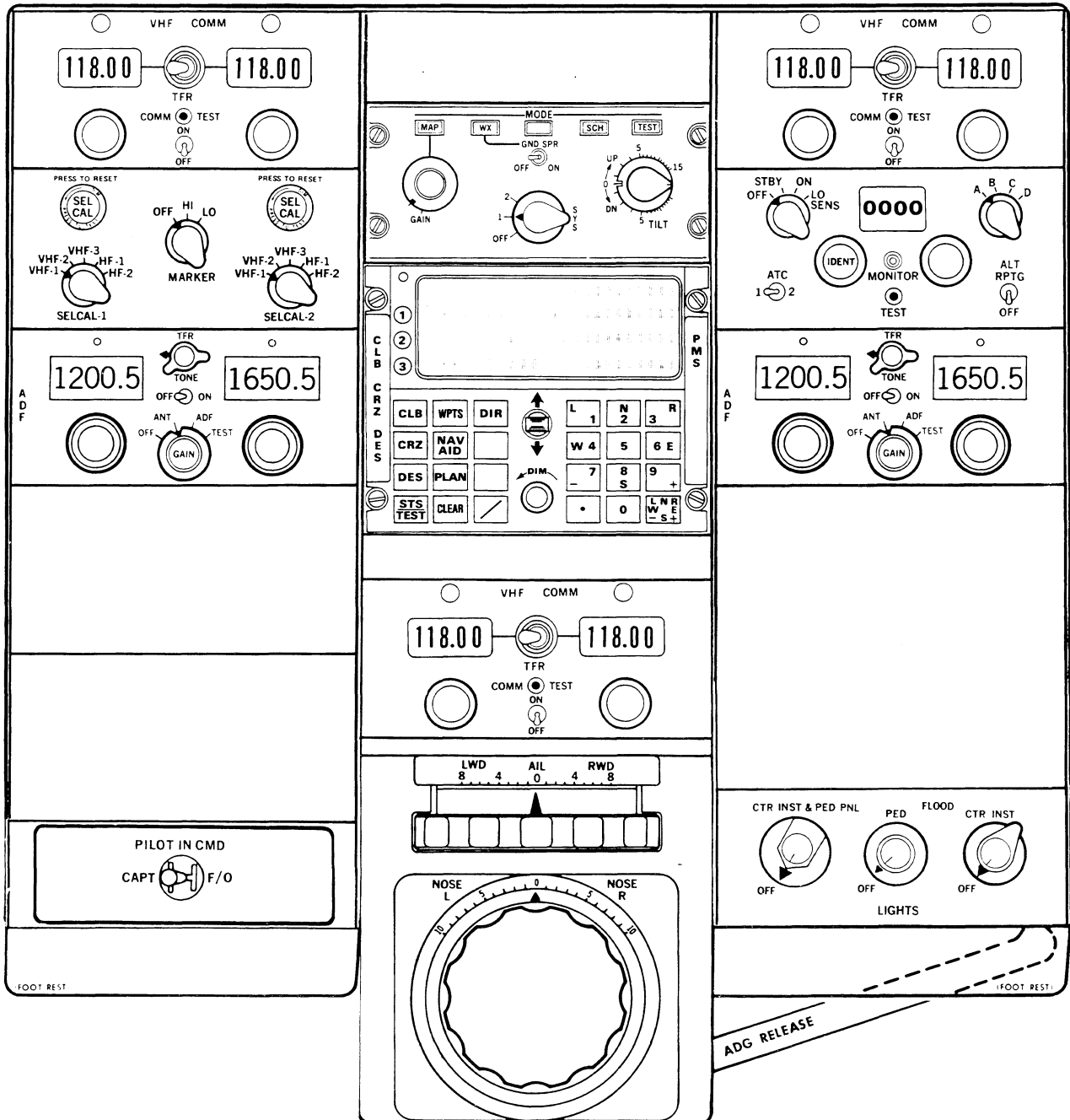
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Feb 1/82

01-24-03/04

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PEDESTAL (AFT)

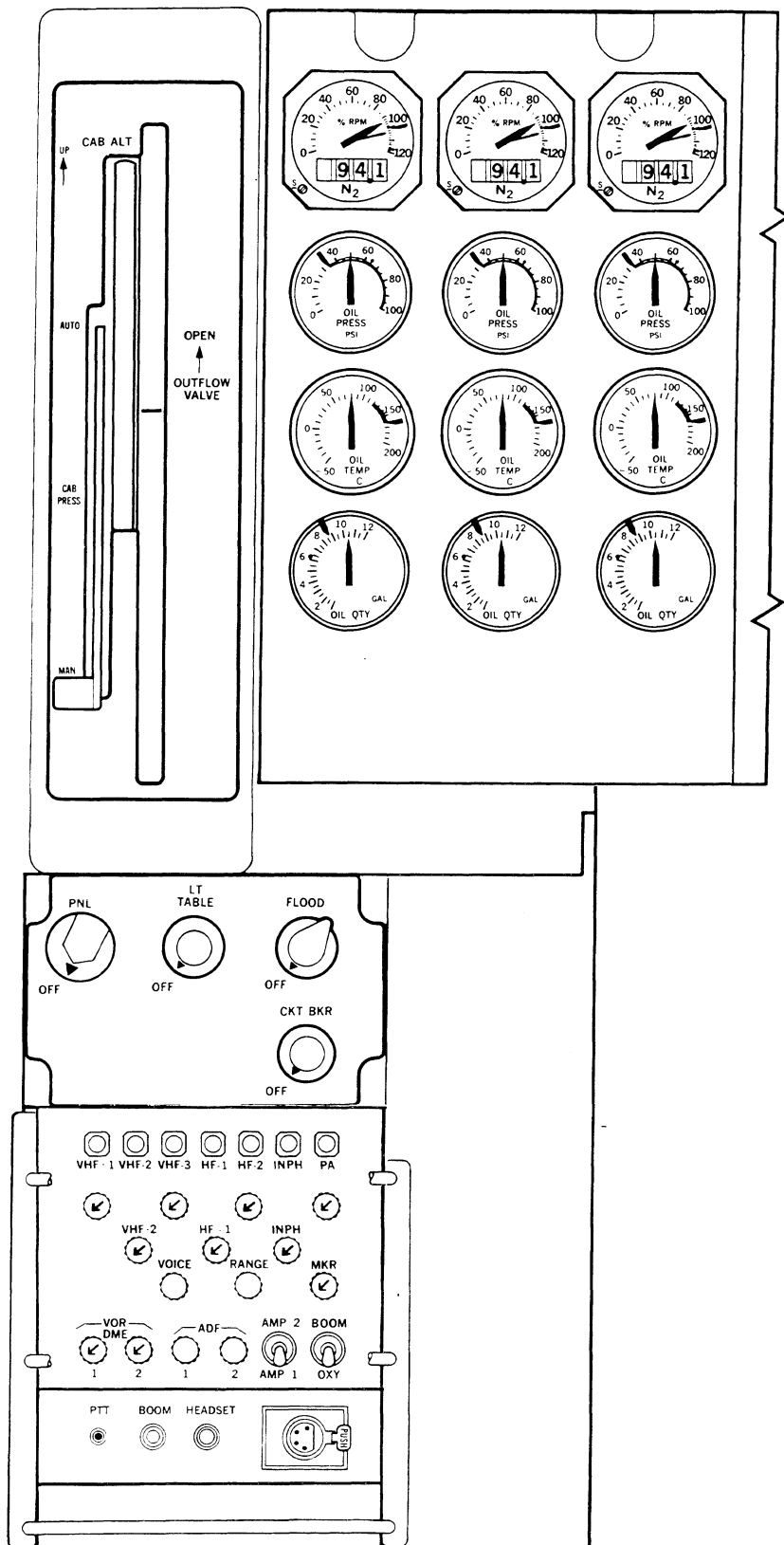


CA1-8721

EFFECTIVE ON AIRPLANES WITH PMS INSTALLED.

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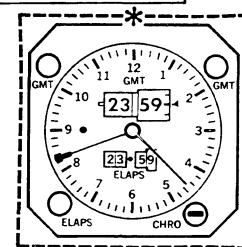
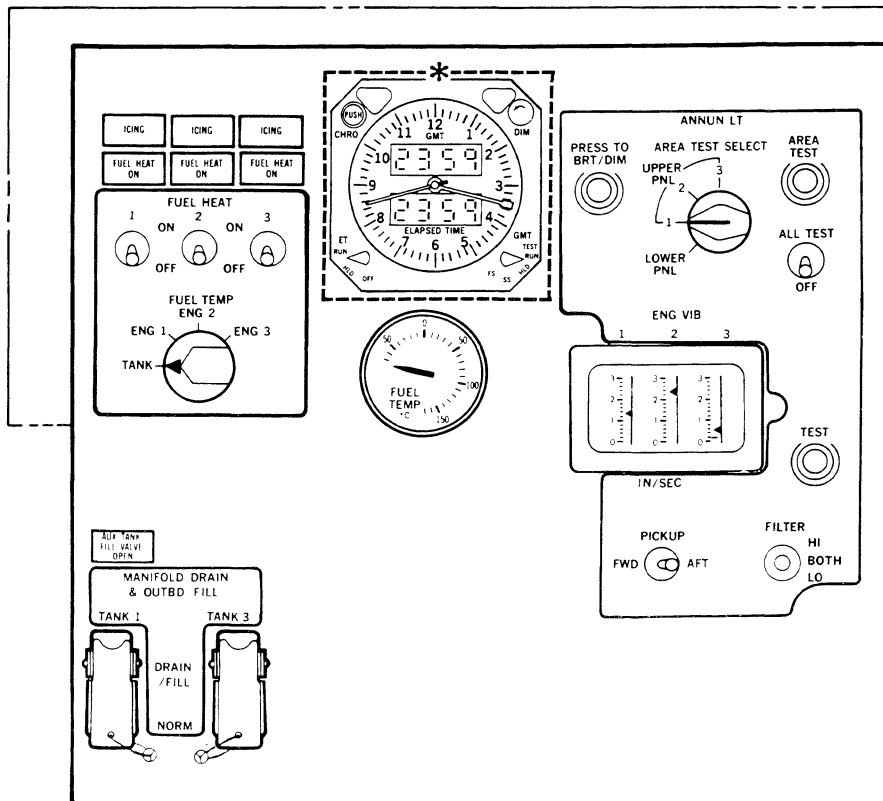
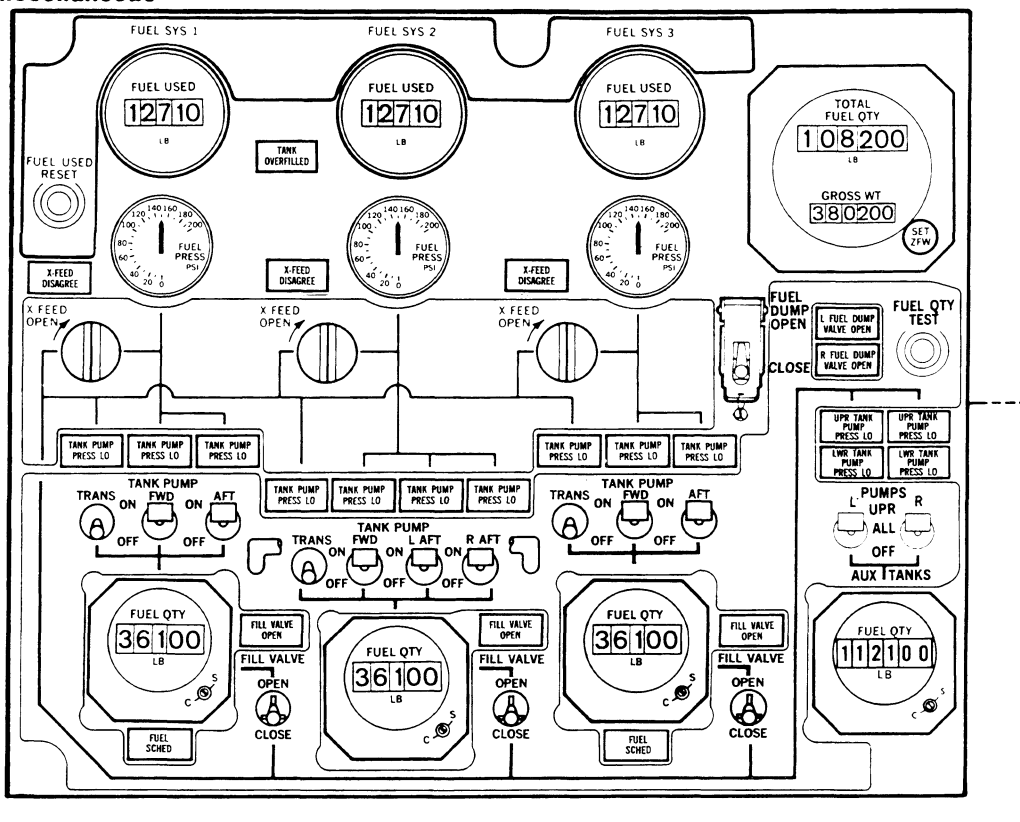
FLIGHT ENGINEER'S LOWER INSTRUMENT PANEL



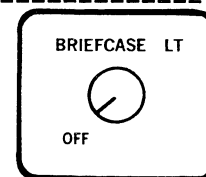
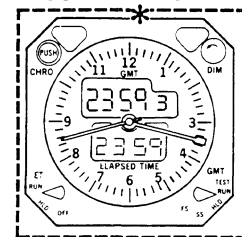
CA1-4050 B

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FLIGHT ENGINEER'S LOWER INSTRUMENT PANEL Fuel and Miscellaneous



INSTALLED ON SOME AIRPLANES

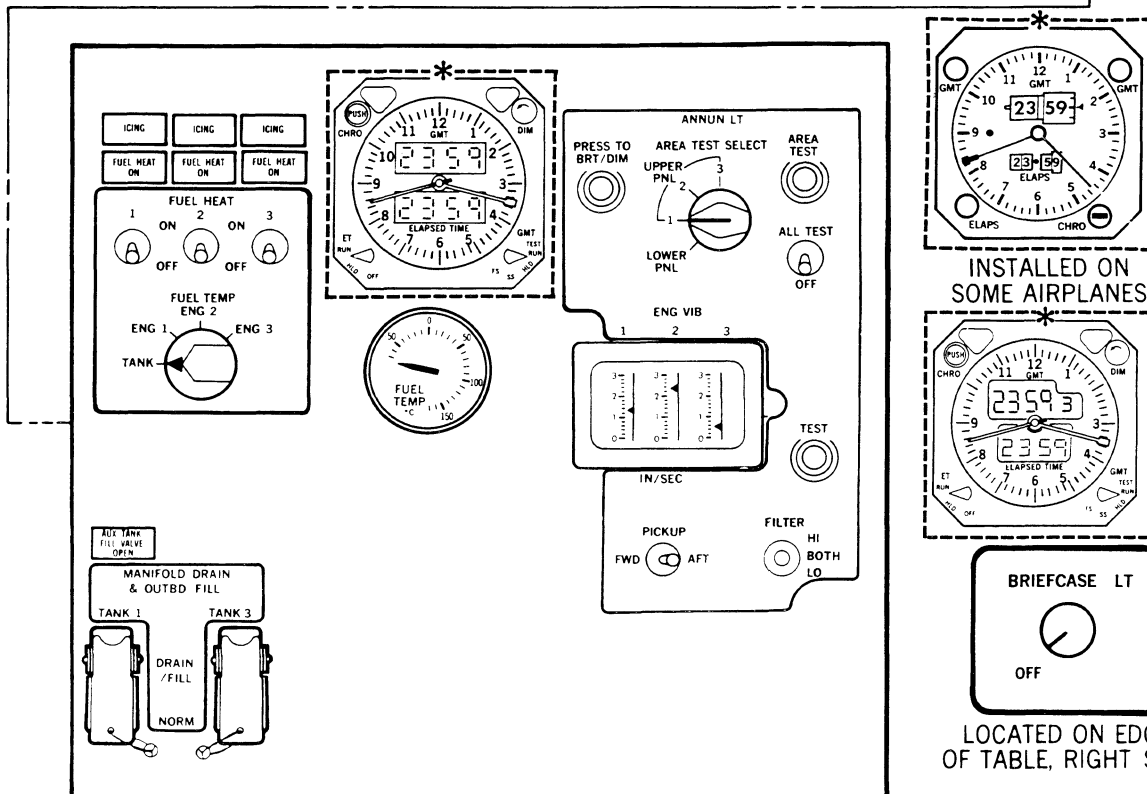
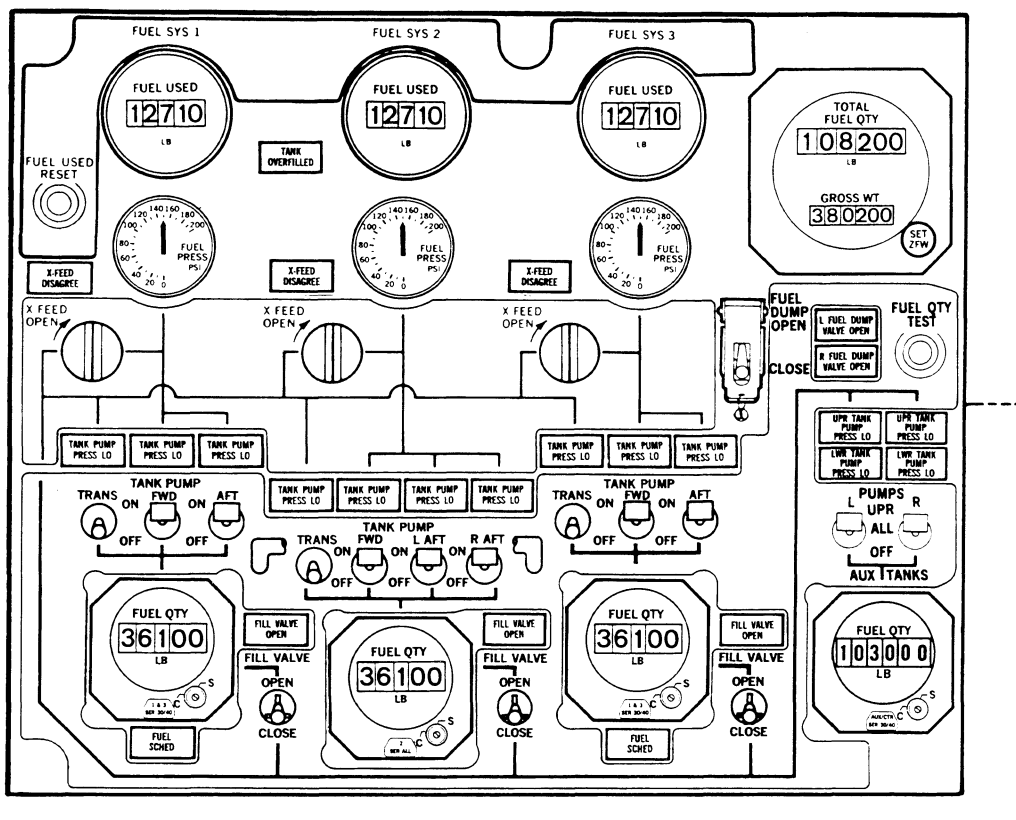


LOCATED ON EDGE OF TABLE, RIGHT SIDE

CA1-4051 D

DC-10 FLIGHT CREW OPERATING MANUAL

FLIGHT ENGINEER'S LOWER INSTRUMENT PANEL Fuel and Miscellaneous



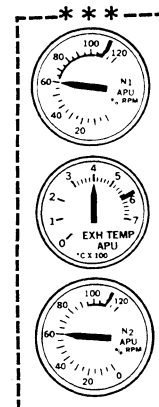
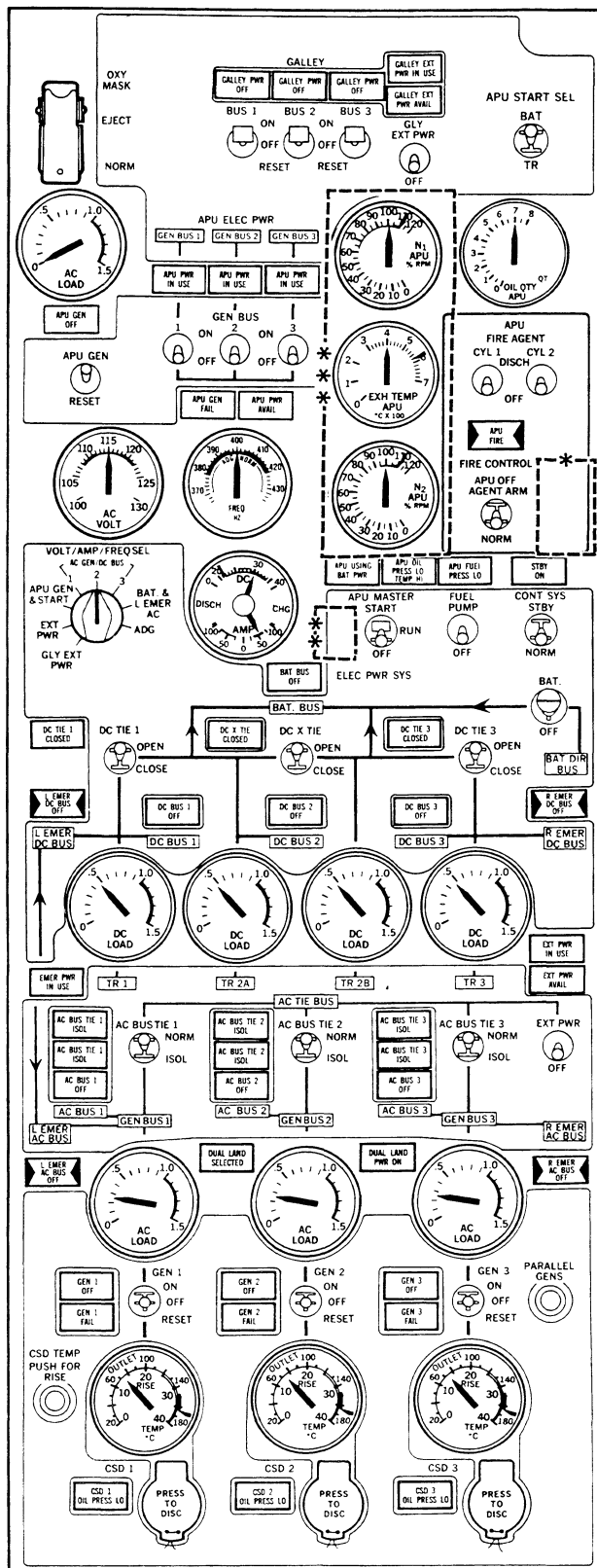
CA1-8154

Effective for aircraft with decal or dial face identification on fuel quantity gages.

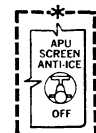
JL
Nov 1/81

01-26-04A/04I

FLIGHT ENGINEER'S UPPER INSTRUMENT PANEL NO.1



INSTALLED ON SOME AIRPLANES



INSTALLED ON SOME AIRPLANES



INSTALLED ON SOME AIRPLANES

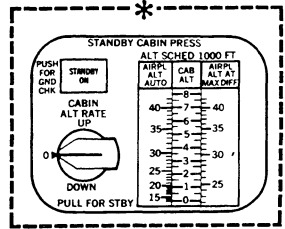
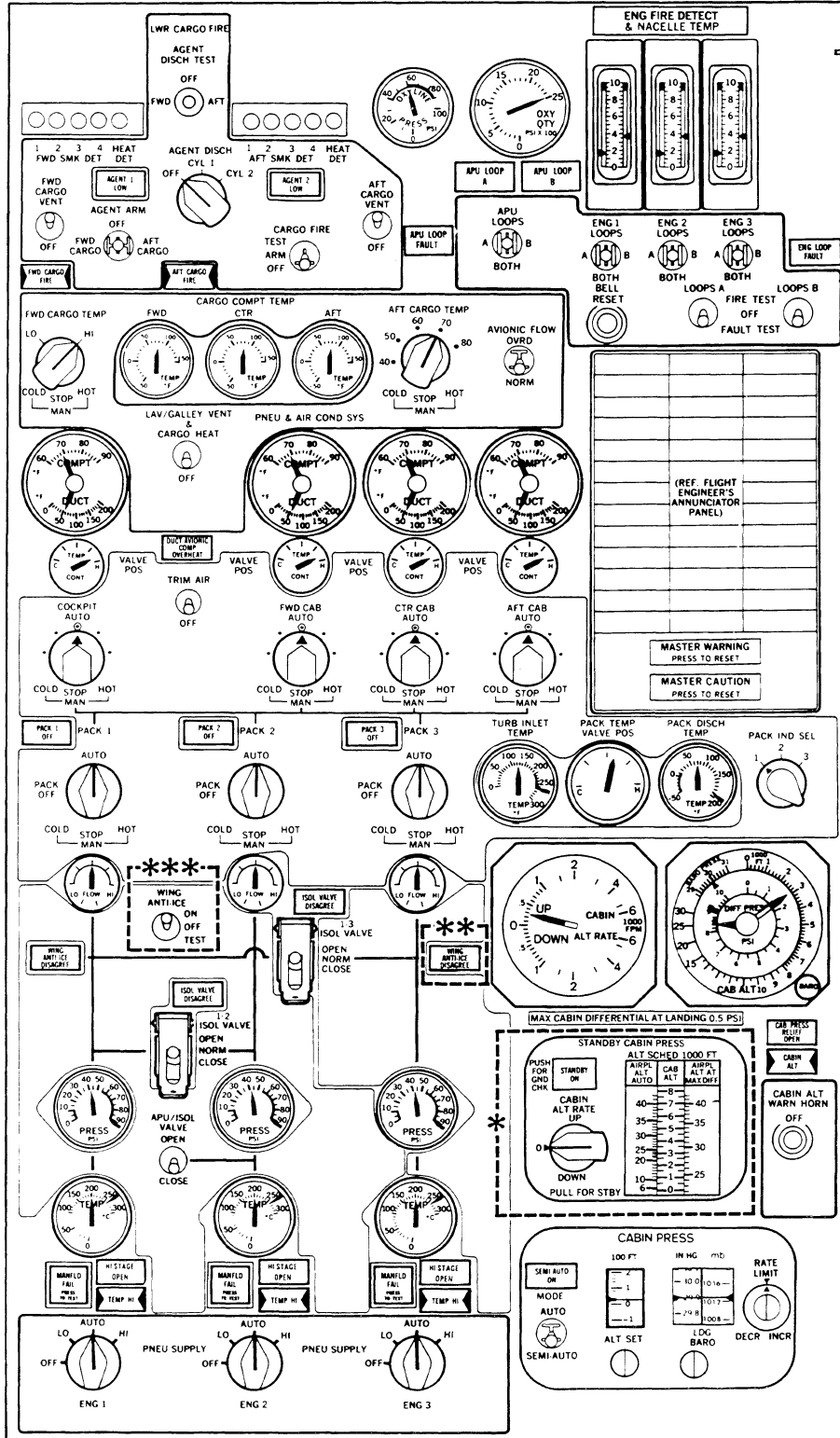
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JL
Aug 1/79

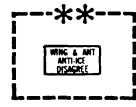
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DC-10 FLIGHT CREW OPERATING MANUAL

FLIGHT ENGINEER'S UPPER INSTRUMENT PANEL NO. 2



INSTALLED ON SOME AIRPLANES



INSTALLED ON SOME AIRPLANES

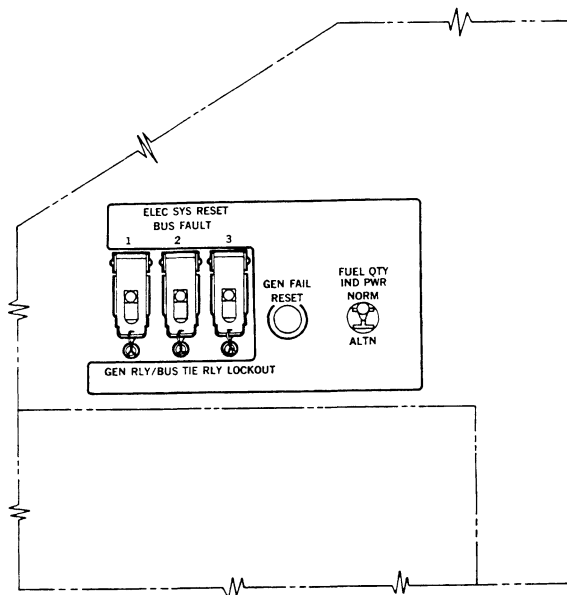
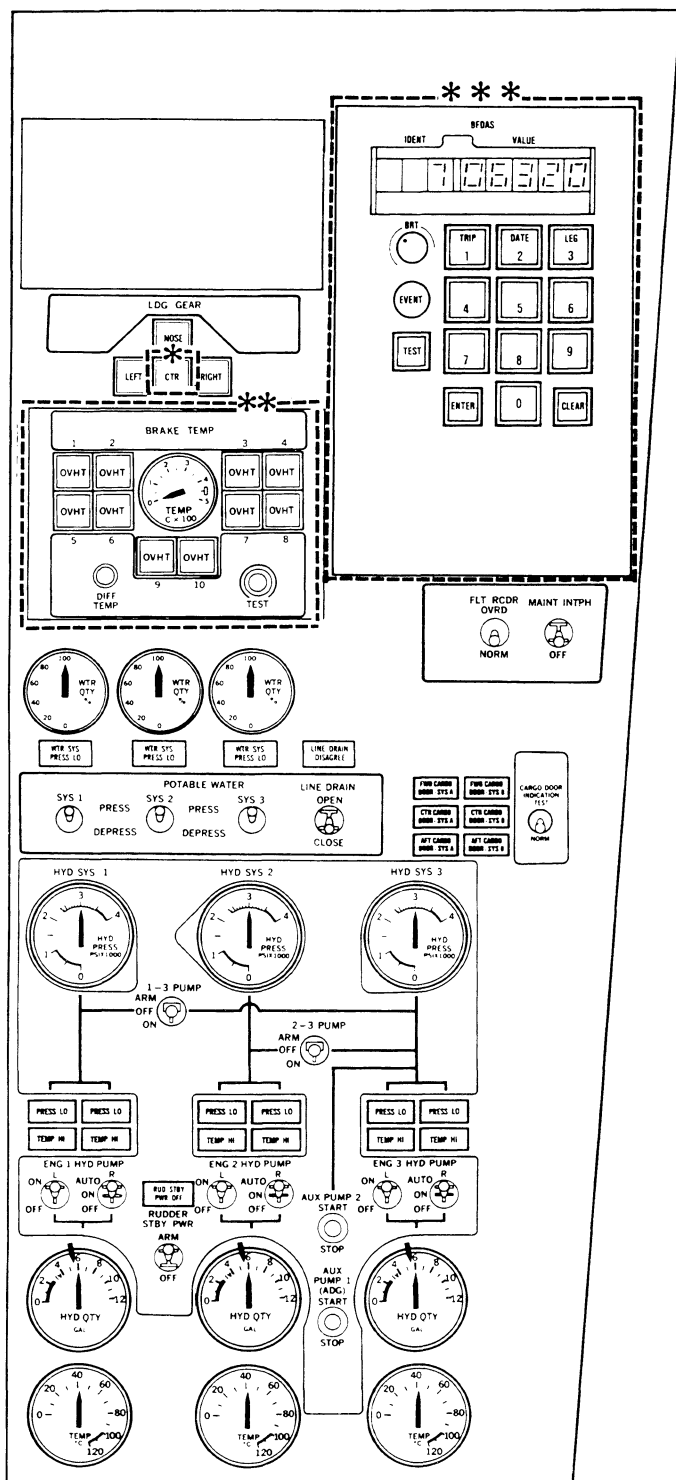


INSTALLED ON SOME AIRPLANES

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DC-10 FLIGHT CREW OPERATING MANUAL

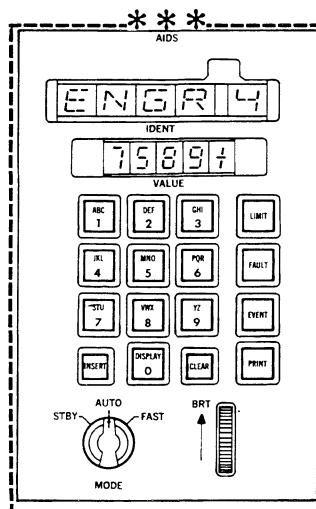
FLIGHT ENGINEER'S UPPER INSTRUMENT PANEL NO. 3



UPPER MAIN C. B. PANEL

* INOPERATIVE
ON DOMESTIC
CONFIGURATION

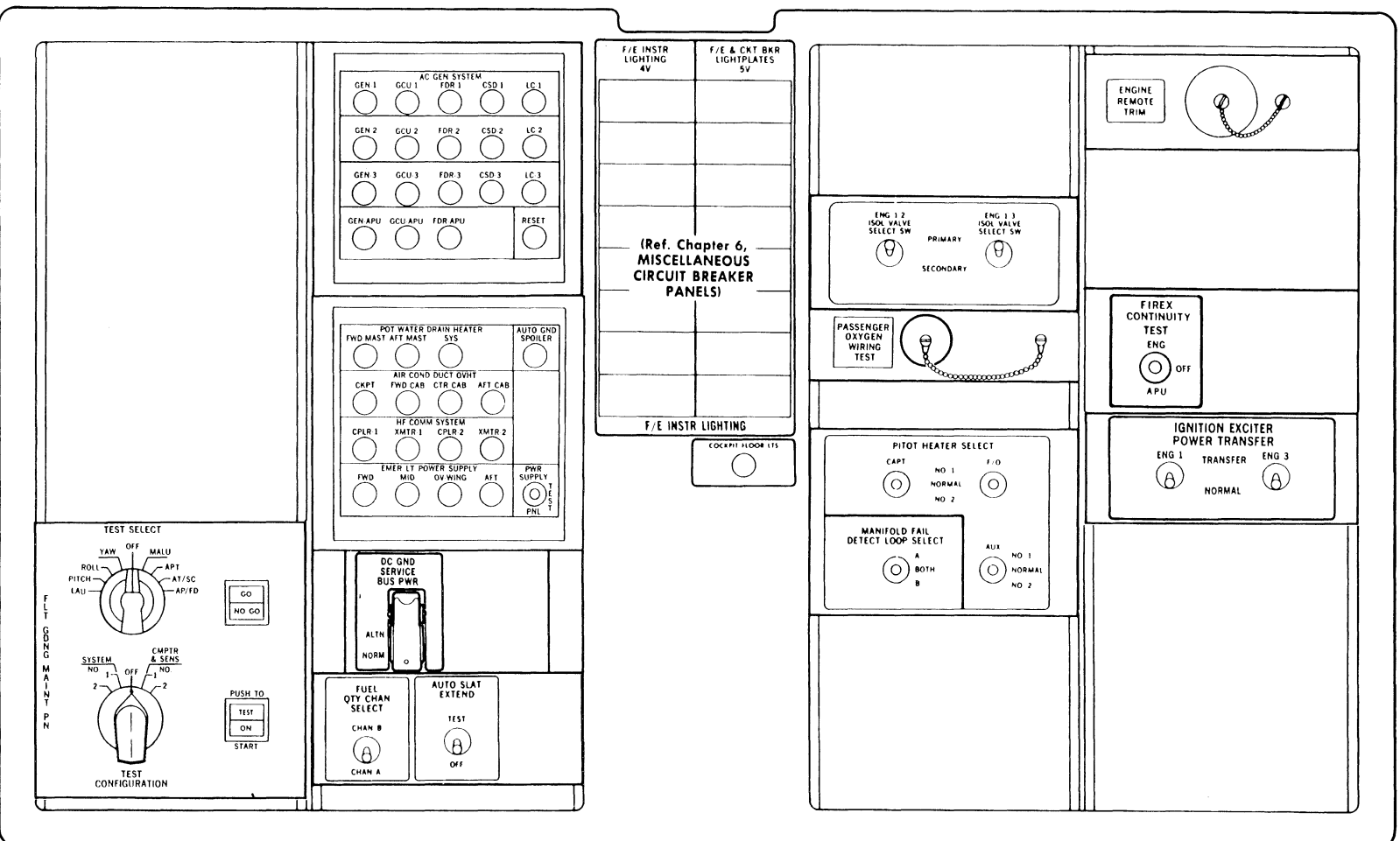
** INSTALLED ONLY
ON DOMESTIC
CONFIGURATION



INSTALLED ON
SOME AIRPLANES

CA1-4054D

FLIGHT ENGINEER'S EQUIPMENT PANEL



CA1-4055 A

DC GND SERVICE BUS PWR Switch and IGNITION EXCITER POWER TRANSFER Switches installed on some airplanes.

JL
 Feb 1/75

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01-26-11/12

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FLIGHT CREW OPERATING MANUAL

DOORS

GENERAL

Eight cabin doors, a cockpit door, a door for each lavatory, and three lower cargo doors are provided. The cabin doors can be operated electrically, pneumatically or manually. The cockpit and lavatory doors are operated manually. The lower cargo doors can be operated electrically or manually.

DESCRIPTION

Cockpit Door

The cockpit door has built-in ventilation, pressure differential relief, and smoke isolation features. The door is manually operated by a standard doorknob. A key is normally required to open the door from the cabin side; however, if electrical power is available and the cockpit is occupied, the door lock may be released electromagnetically by a push-button on the overhead panel. The door can be opened from inside the cockpit at any time by rotating the doorknob. A cabin viewer is installed in the door to provide the flight crew with a view of the cabin area.

Lavatory Doors

The lavatory doors are manually operated from inside lavatory, by using a sliding bolt lock. The position of the lock is indicated by a VACANT/OCCUPIED sign on cabin side of door. Each door can be unlocked from the cabin side by using an external unlocking knob concealed behind

the hinged LAVATORY sign. Lifting the bottom edge of the hinged LAVATORY sign exposes the unlocking knob.

Cabin Doors

Eight cabin doors, four on each side of aircraft, are used for normal passage and all have emergency opening and escape features.

NOTE

For emergency operation of the cabin doors refer to Emergency Exits in Chapter 7.

Each cabin door is a plug type and opens by moving inward and then sliding upward into the ceiling. Each door has interior and exterior controls for normal opening and closing. The six aft (mid, overwing, and aft) cabin doors have identical interior controls, placarding and operating procedures. The two forward cabin doors are not identical to the six aft doors and have different interior controls, placarding, and operating procedures.

The interior controls for normal operation of the doors consist of the slide arming lever located on the structure adjacent to the door and two door control switch-lights on the cabin attendant's console. The escape slide must be disarmed before the switch-lights can be used to open or close the door. When the escape slide is disarmed the corresponding cabin door light on the Flight Engineer's panel and the two switch-lights on the adjacent cabin attendant's console will come on.

The exterior controls placarding and operating procedures are identical for all cabin doors. The exterior controls for each door are located in a recess in the fuselage forward of the door and consist

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FLIGHT CREW OPERATING MANUAL

of a door control handle, a door control switch, and an auxiliary handle. The door control handle is used to arm and disarm the escape slide. The door control switch is used to open and close the door. All cabin doors can be manually lowered from the outside to the closed position (by free falling) using the door control handle and the auxiliary handle.

The left forward cabin door can be opened and closed from the outside with no electrical power on the aircraft. A socket drive fitting may be operated manually or by a drill motor. This feature is normally used by maintenance.

Barrier straps, one for each door, are secured across open doorways as a safety precaution when a ramp or stairway is not in place. The straps should be disconnected at both ends from the door jamb fittings before closing the doors. Stowage for the straps is provided in the overhead stowage racks.

Lower Cargo Doors

Three external doors are provided for access to the lower cargo compartment. The forward and center doors are located in the lower right side of the fuselage; the aft door is located in the lower left side of the fuselage. Bulk or containerized cargo can be loaded through the forward and center cargo doors; bulk cargo only can be loaded through the aft door. The doors vary in size but are identical in operation. They are electrically operated but can be operated manually when no electrical power is available. An electrical control panel is installed

in the fuselage forward of each door. Each door has a vent door which vents fuselage pressure overboard if the cargo door is not properly locked. Limit switches control the sequencing of the electrically operated door mechanisms and also provide a visual warning on the Flight Engineer's panel when the door is not properly closed and locked. An emergency call switch on the door provides a visual warning in the flight compartment if actuated by personnel inadvertently locked in a cargo compartment. A backup test system also is provided to check the integrity of the cargo door electrical warning system. The test switch is installed on the Flight Engineer's upper instrument panel.

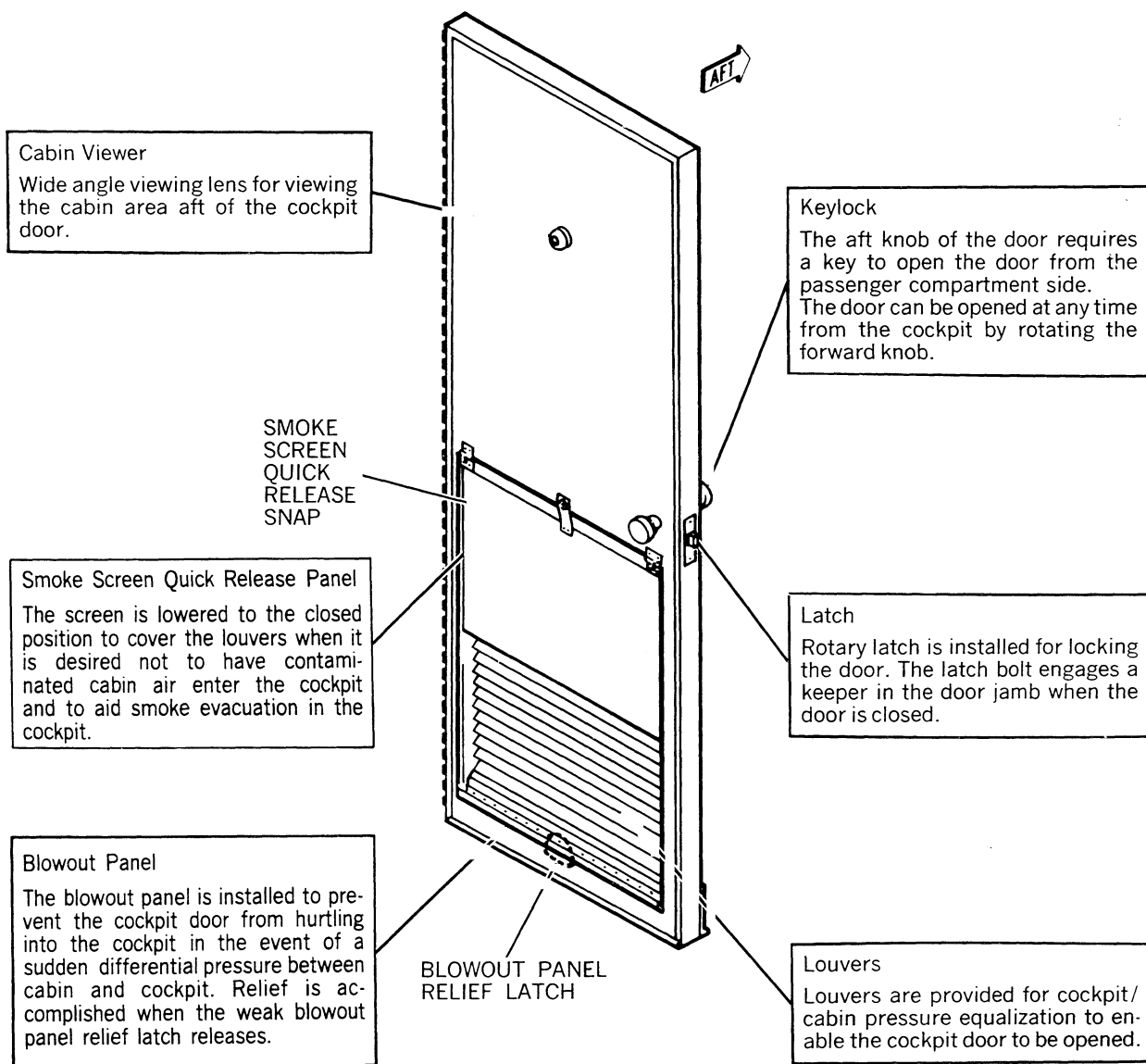
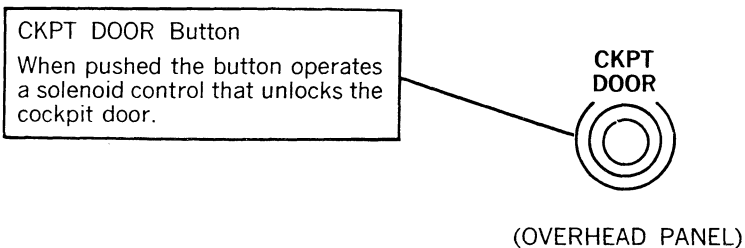
The doors are hinged at the top and open out and up. The doors are opened, closed, and latched by actuating mechanisms in the doors. External drive fittings also are provided for actuating the operating and latching mechanisms manually. Viewing ports near the bottom of the doors permit checking the position of the latching mechanism lockpin.

CONTROLS AND INDICATORS

The controls, indicators, and annunciator lights are on the Overhead Panel, Flight Engineer's Upper Panels No. 2 and No. 3 and adjacent to or on each door. Illustrations of the control panels are in another section of this chapter. Individual controls and indicators also are illustrated and described in this section.

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DOORS Cockpit Door



CA1-185 A

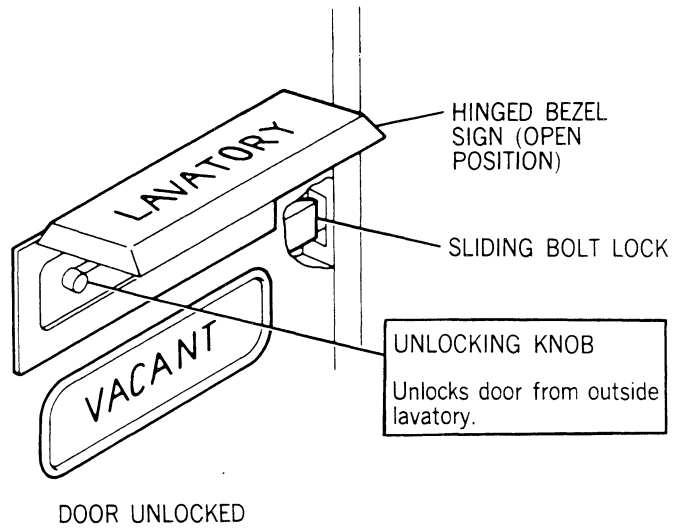
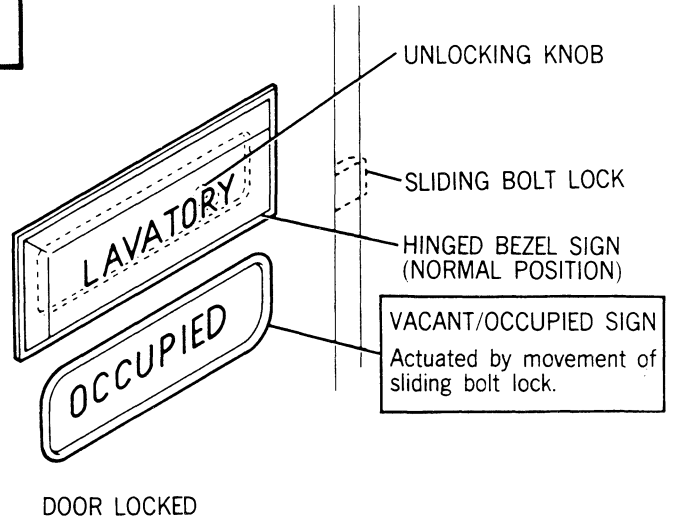
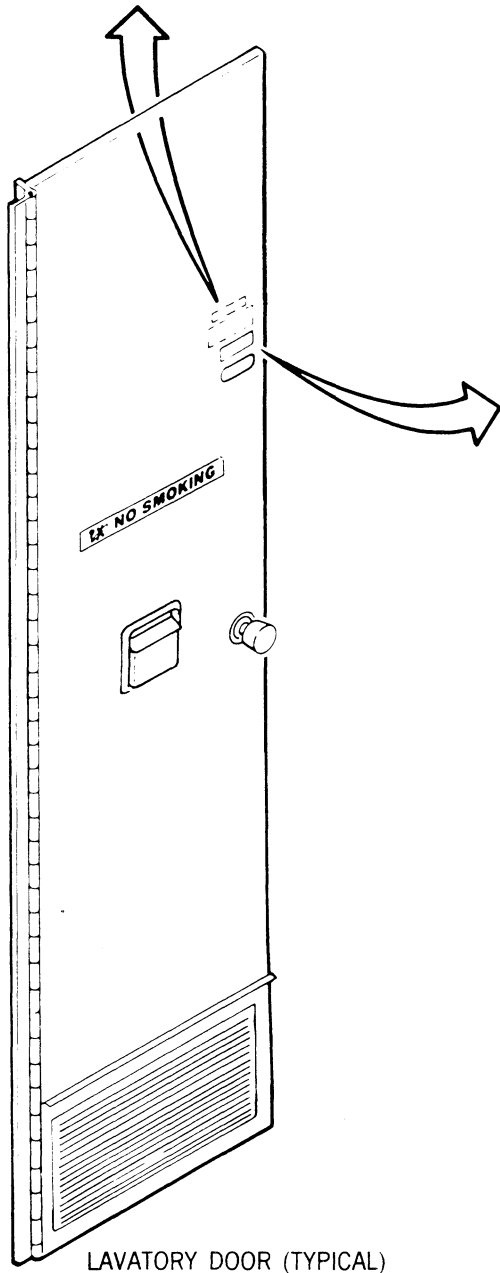
DC-10 FLIGHT CREW OPERATING MANUAL

DOORS - Lavatory Door

CLOSE AND LATCH DOOR
FOR TAKEOFF AND LANDING

←
 LOCKED - PLEASE LOCK DOOR - UNLOCKED
 NO SMOKING

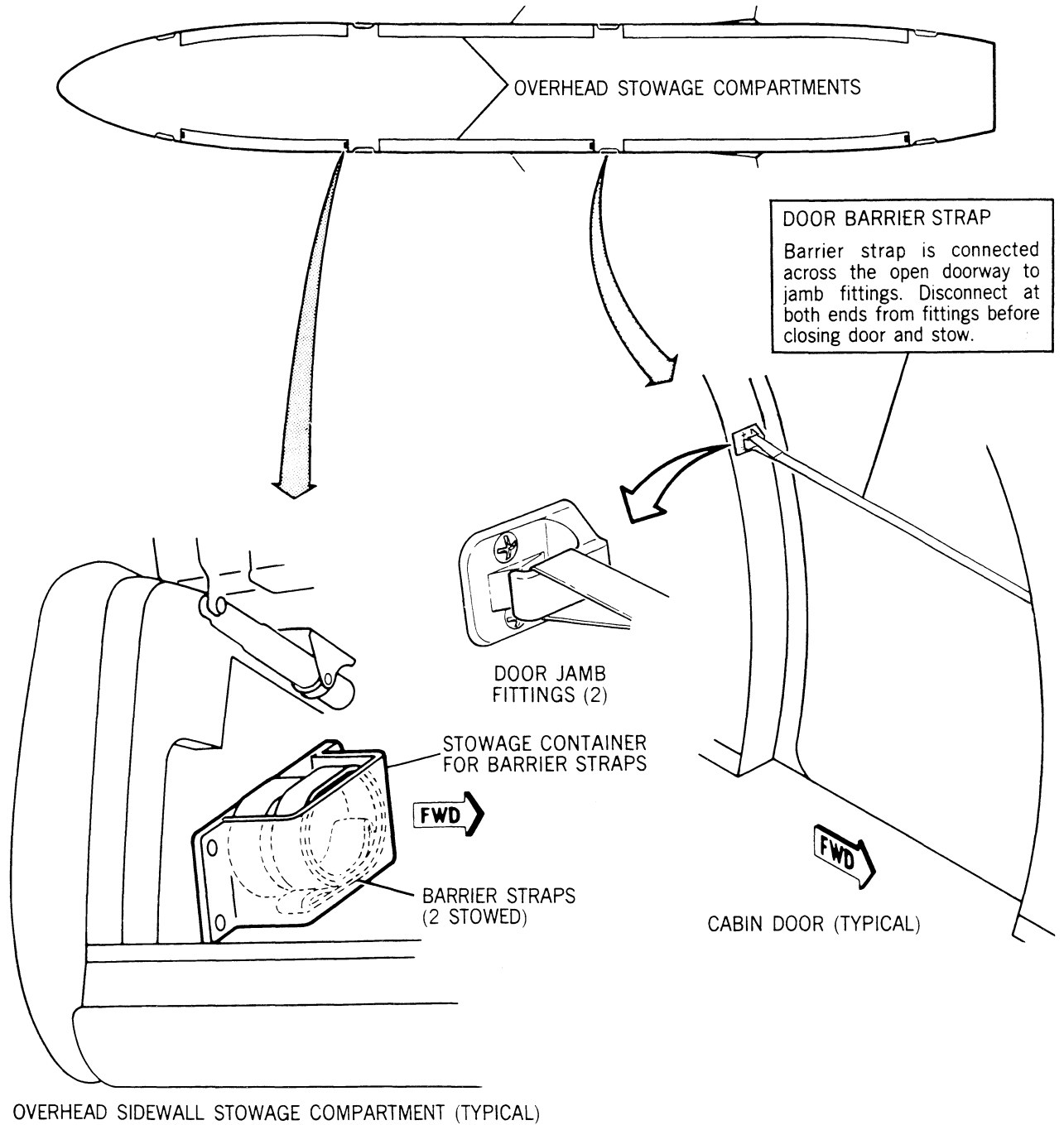
(DOOR INNER SURFACE)



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DC-10 FLIGHT CREW OPERATING MANUAL

DOORS – Cabin Door Barrier Straps



CA1-4293 A

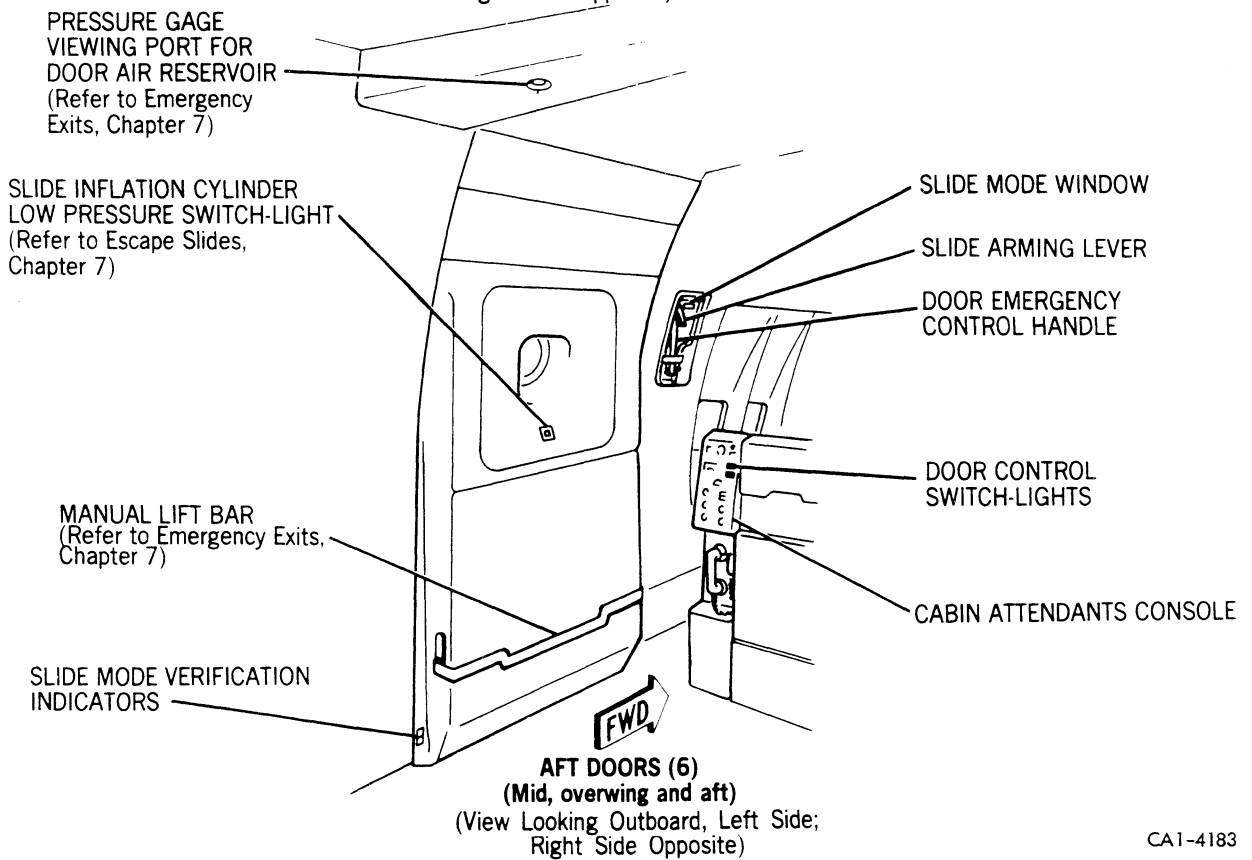
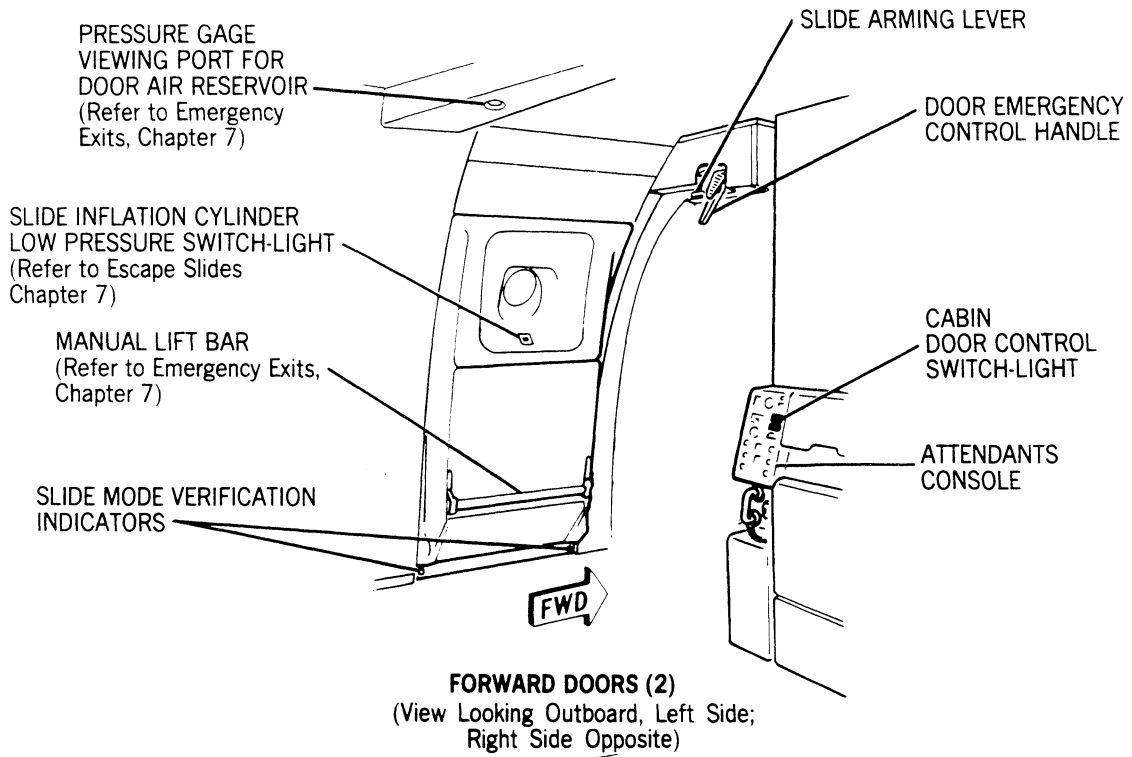
JL
Nov 1/78

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DC-10 FLIGHT CREW OPERATING MANUAL

DOORS - Cabin



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DC-10 FLIGHT CREW OPERATING MANUAL

DOORS - Cabin Door Interior Controls Two Forward Cabin Doors

Slide Arming Lever

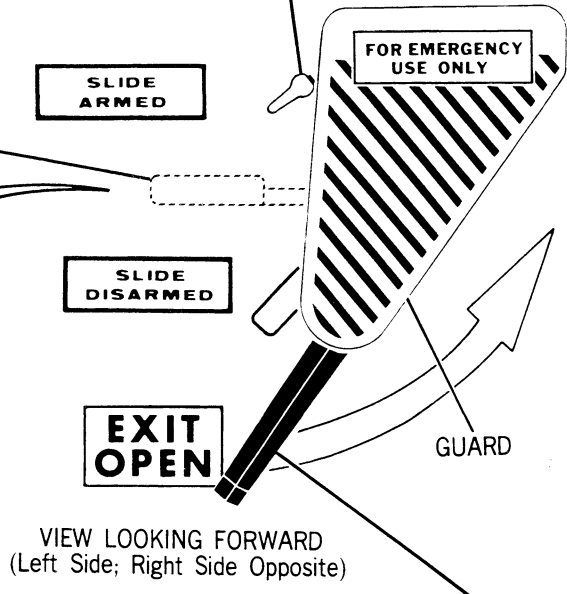
SLIDE ARMED — When moved to SLIDE ARMED, escape slide is armed and door will be pneumatically powered. ARMED placard will appear in slide mode verification indicator.

SLIDE DISARMED — When moved to SLIDE DISARMED, escape slide is disarmed and door will be electrically powered. ARMED placard will disappear from view in slide mode verification indicator and corresponding CABIN DOOR annunciation light on F/E's panel and door control switch-lights at adjacent cabin attendant's console will come on.

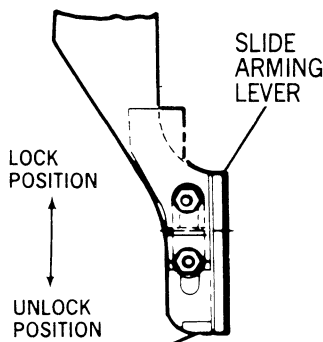
NOTE

An interlock mechanism locks slide arming mechanism in disarmed position when door is open.

Locking Pawl Reset Lever
For operation of lever refer to Emergency Exits in Chapter 7.



Door Emergency Control Handle (Red)
For Operation of handle refer to Emergency Exits in Chapter 7.



Door Control Switch-Lights

To Open — Move slide arming lever to **SLIDE DISARMED**.

NOTE

Switch-lights will come on, indicating corresponding escape slide is disarmed and electrical power is available to door.

- Lift plastic cover on up arrow switch-light and push and hold switch-light until door is opened.

To Close — Lift plastic cover on down arrow switch-light and push and hold switch-light until door is closed.

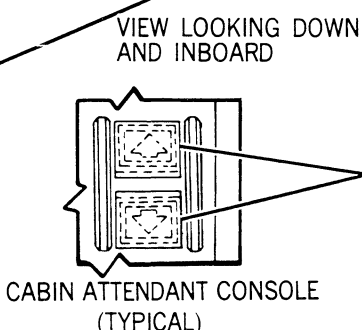
- Move slide arming lever to **SLIDE ARMED**.

NOTES

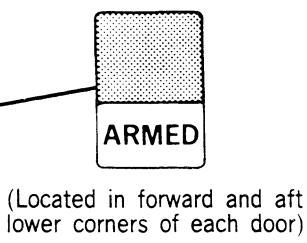
If switch-light is released while door is opening or closing, door movement will stop.

If either switch-light sticks in depressed position, door movement can be stopped by holding opposite switch-light in depressed position.

Slide Arming Lever Latch
With Slide Arming Lever in disarmed position. Sliding latch inboard locks lever in disarmed position. Sliding latch outboard unlocks lever.



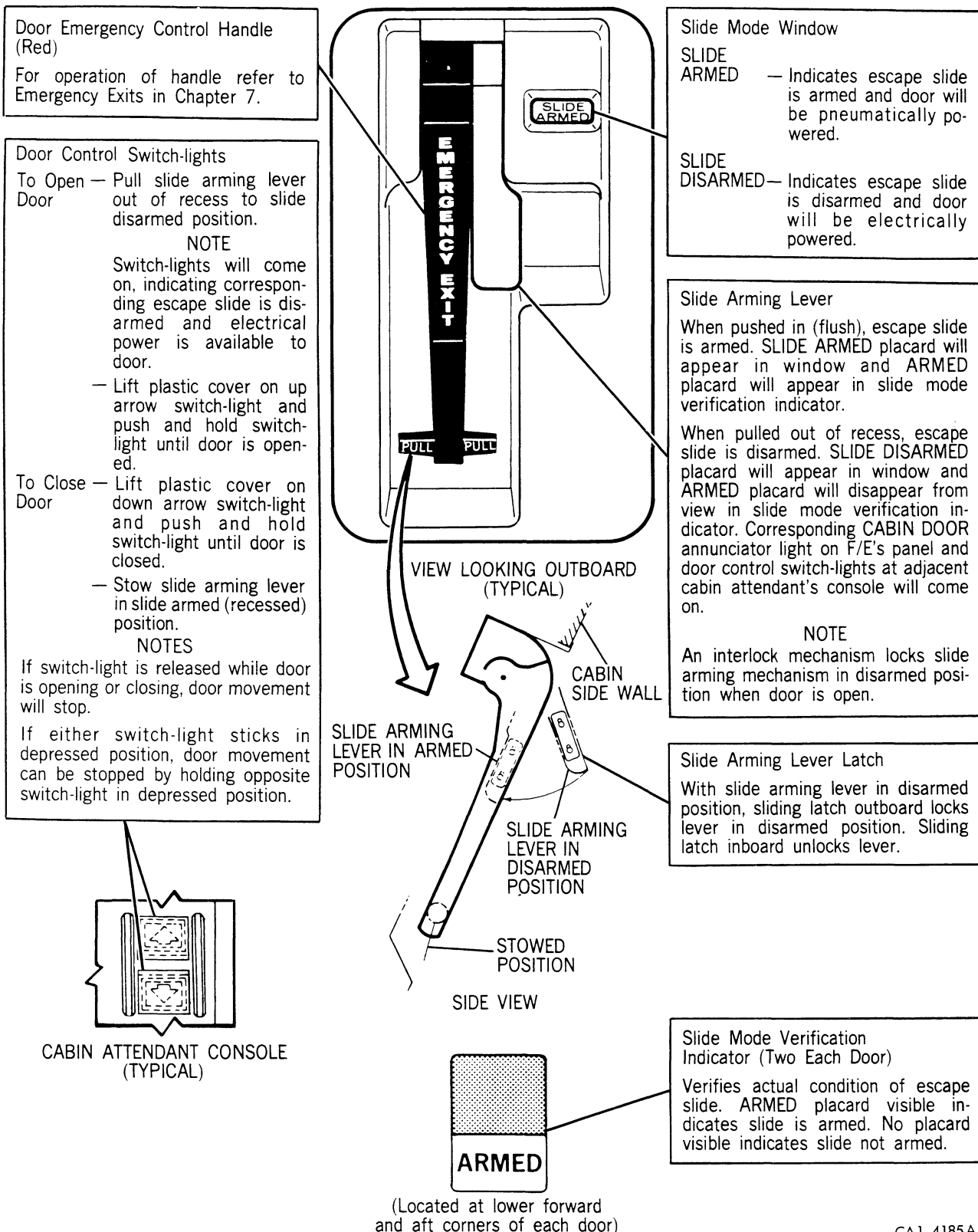
Slide Mode Verification Indicator (Two Each Door)
Verifies actual condition of escape slide. ARMED placard visible indicates slide is armed. No placard visible indicates slide not armed.



CA1-4184 A

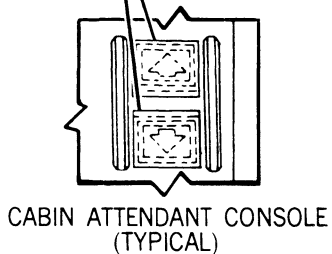
DC-10 FLIGHT CREW OPERATING MANUAL

DOORS-Cabin Door Interior Controls Six Aft (Mid Overwing, and Aft) Cabin Doors



Door Emergency Control Handle (Red)
For operation of handle refer to Emergency Exits in Chapter 7.

Door Control Switch-lights
To Open — Pull slide arming lever out of recess to slide disarmed position.
NOTE
Switch-lights will come on, indicating corresponding escape slide is disarmed and electrical power is available to door.
— Lift plastic cover on up arrow switch-light and push and hold switch-light until door is opened.
To Close — Lift plastic cover on down arrow switch-light and push and hold switch-light until door is closed.
— Stow slide arming lever in slide armed (recessed) position.
NOTES
If switch-light is released while door is opening or closing, door movement will stop.
If either switch-light sticks in depressed position, door movement can be stopped by holding opposite switch-light in depressed position.



Slide Mode Window
SLIDE ARMED — Indicates escape slide is armed and door will be pneumatically powered.
SLIDE DISARMED — Indicates escape slide is disarmed and door will be electrically powered.

Slide Arming Lever
When pushed in (flush), escape slide is armed. **SLIDE ARMED** placard will appear in window and **ARMED** placard will appear in slide mode verification indicator.
When pulled out of recess, escape slide is disarmed. **SLIDE DISARMED** placard will appear in window and **ARMED** placard will disappear from view in slide mode verification indicator. Corresponding **CABIN DOOR** annunciator light on F/E's panel and door control switch-lights at adjacent cabin attendant's console will come on.
NOTE
An interlock mechanism locks slide arming mechanism in disarmed position when door is open.

Slide Arming Lever Latch
With slide arming lever in disarmed position, sliding latch outboard locks lever in disarmed position. Sliding latch inboard unlocks lever.

Slide Mode Verification Indicator (Two Each Door)
Verifies actual condition of escape slide. **ARMED** placard visible indicates slide is armed. No placard visible indicates slide not armed.

(Located at lower forward and aft corners of each door)

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FLIGHT CREW OPERATING MANUAL

DOORS – Cabin Door Exterior Controls

Auxiliary Handle
 Handle is spring-loaded to recessed position and is used to close door by free falling. (Normally used by maintenance.)

MANUAL DRIVE

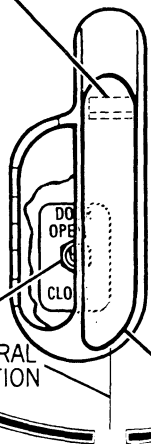
1. PULL HANDLE OUT
2. ROTATE HANDLE TO FREE FALL
3. INSERT 1/4" SQUARE DRIVE INTO SOCKET AND ROTATE AS INDICATED
4. MAXIMUM OPERATING TORQUE = 100 IN. LBS. AT 500 RPM



Socket Drive Fitting (Left Forward Door Only)
 The socket drive fitting is provided for opening and closing door if electrical power is not available. (Normally used by maintenance.)

EMERGENCY

FREE FALL



(Typical 8 Doors)

Door Control Switch
 Switch is spring-loaded to center-off and is used to open and close door electrically.

NOTE

If switch is released while door is opening or closing, door movement will stop.

Door Control Handle

NOTE

For emergency operation of handle refer to Emergency Exits in Chapter 7.

Pulling handle out of recess in fuselage disarms escape slide and provides access to door control switch and auxiliary handle.

NOTE

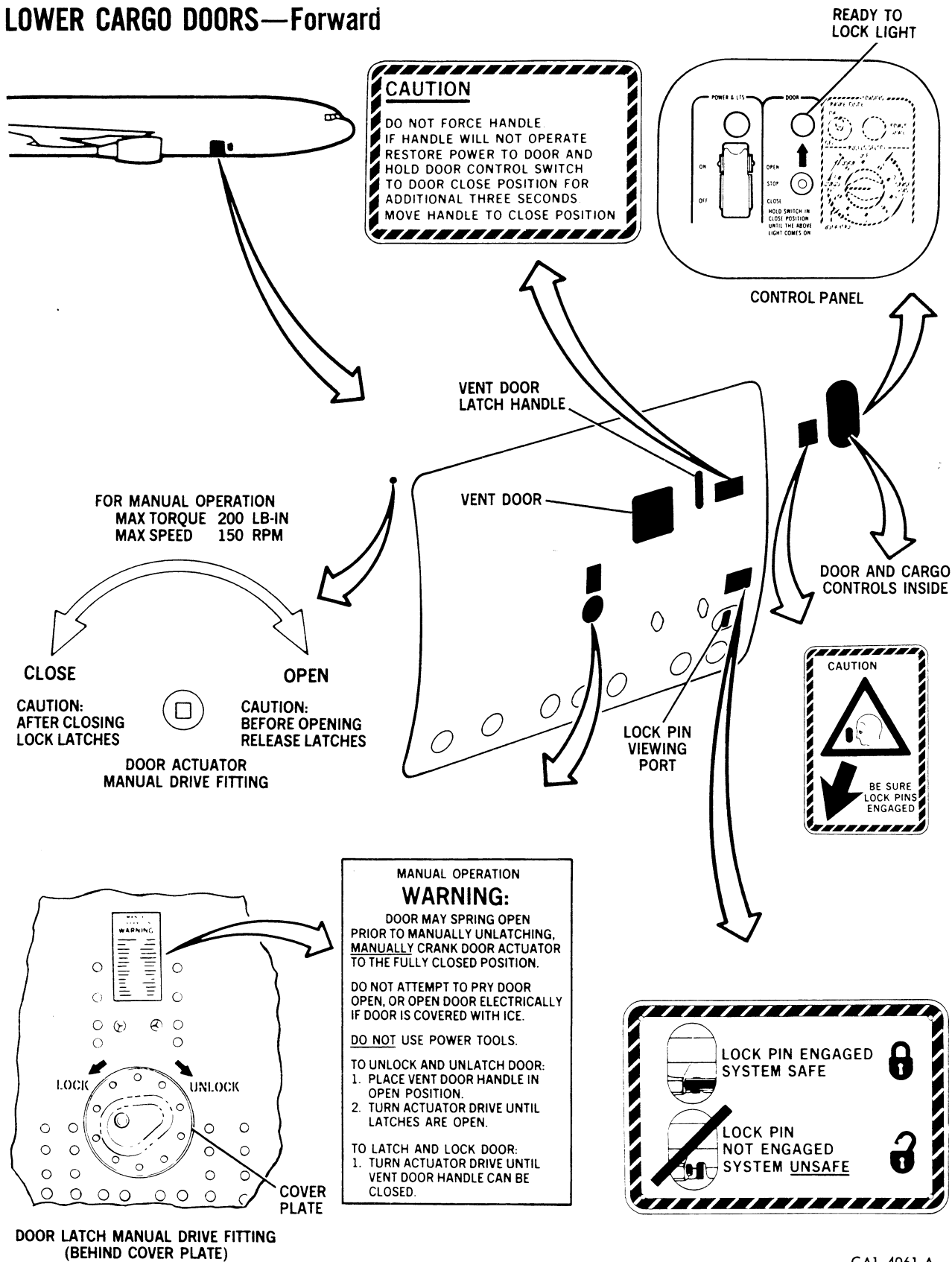
An interlock mechanism locks slide arming mechanism in disarmed position when door is open.

Door Operation		
<p>To Open Door</p> <ul style="list-style-type: none"> — Pull door control handle out of recess to disarm escape slide. — Move door control switch to OPEN and hold until door is opened. 	<p>To Free Fall Door</p> <ul style="list-style-type: none"> — Rotate door control handle to FREE FALL and hold. — Pull auxiliary handle out and down and hold. — After door descends to floor level, personnel in cabin manually push door outboard to closed position and hold. <p style="text-align: center;">NOTE</p> <p>Forward door may require assistance to free fall.</p>	<ul style="list-style-type: none"> — When door is closed, release auxiliary handle — Release door control handle. Handle returns to neutral position locking door closed. — Stow door control handle in recess (flush) to arm escape slide.
<p>To Close Door</p> <ul style="list-style-type: none"> — Move door control switch to CLOSE and hold until door is closed. — Stow door control handle in recess (flush) to arm escape slide. 		

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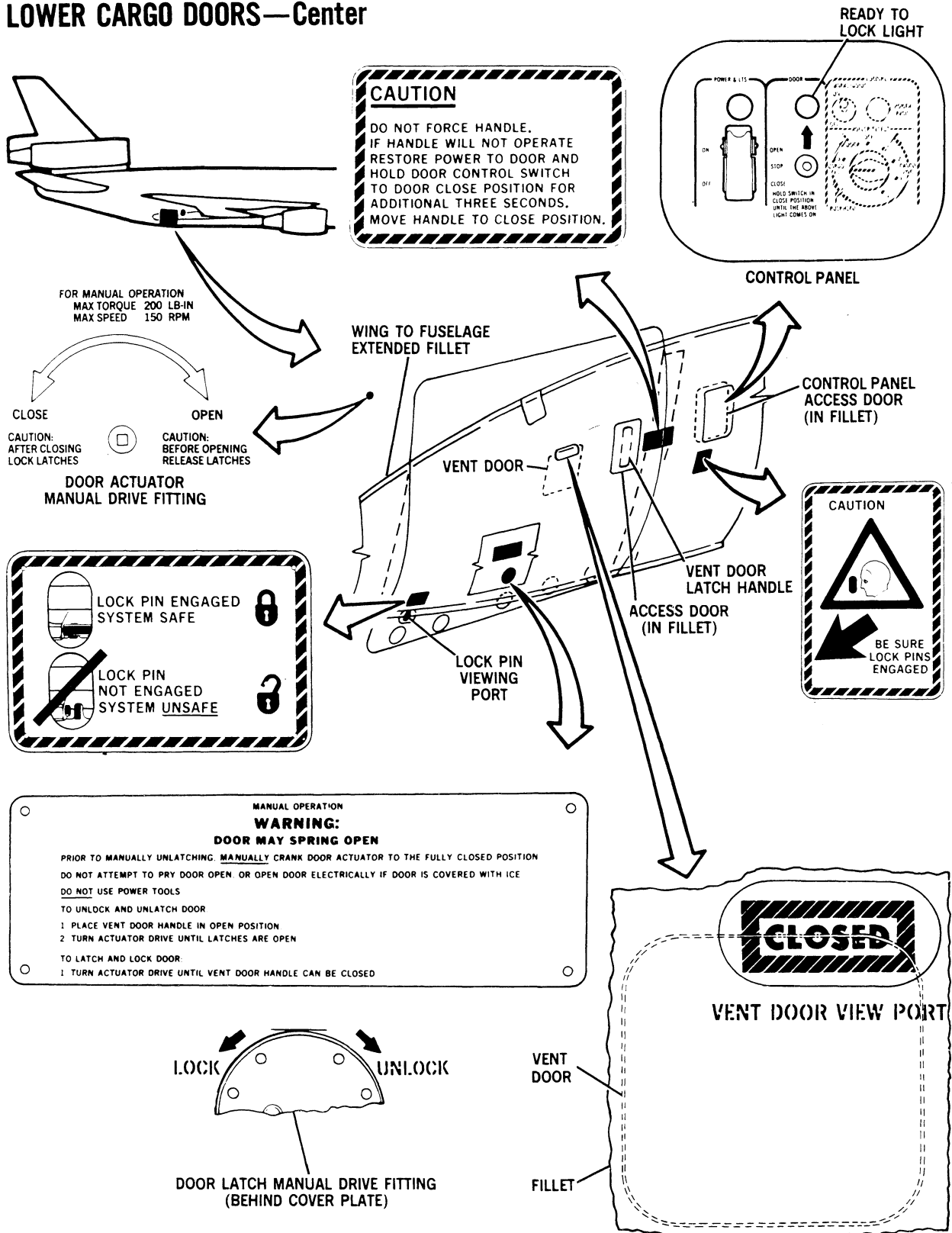
LOWER CARGO DOORS—Forward



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DC-10 FLIGHT CREW OPERATING MANUAL

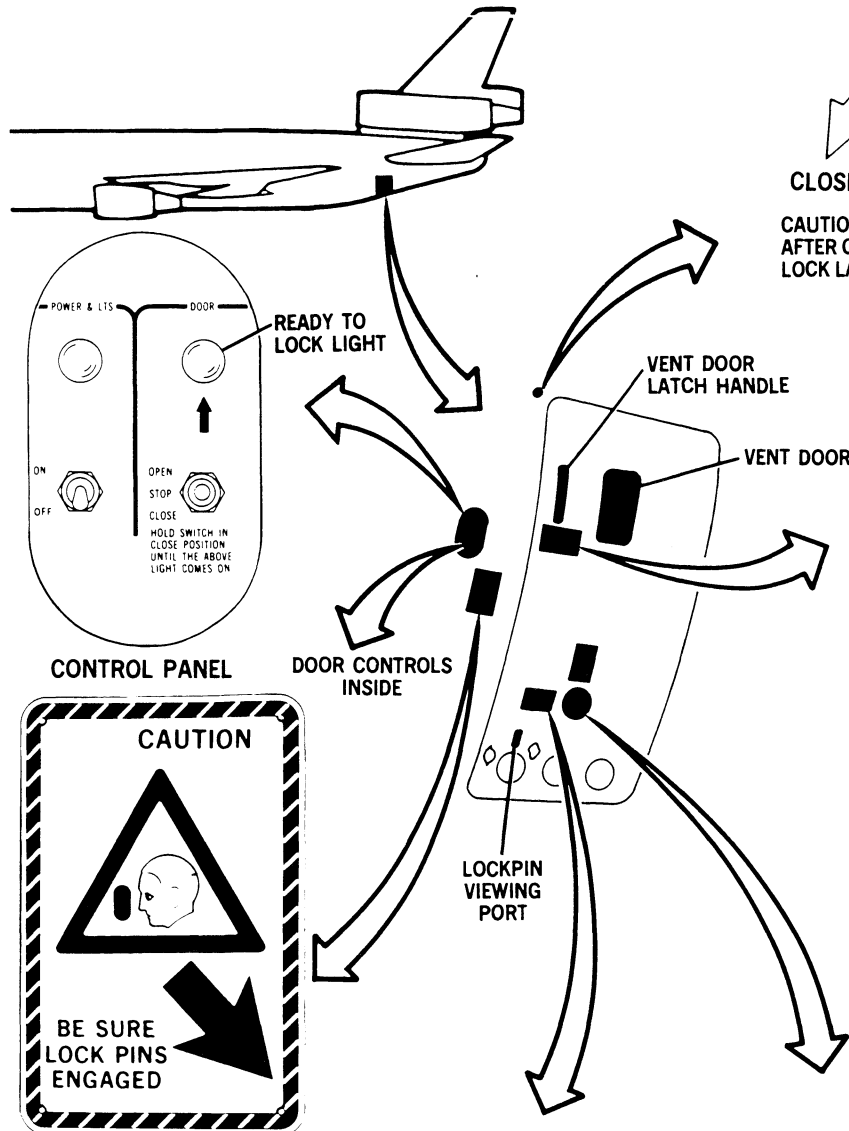
LOWER CARGO DOORS—Center



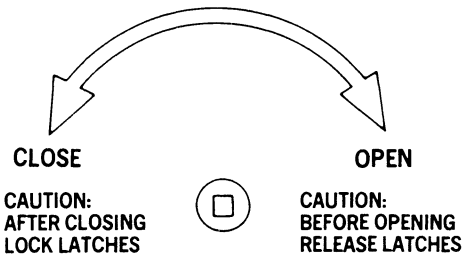
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DC-10 FLIGHT CREW OPERATING MANUAL

LOWER CARGO DOORS—Aft



FOR MANUAL OPERATION
MAX TORQUE 200 LB-IN
MAX SPEED 150 RPM



DOOR ACTUATOR
MANUAL DRIVE FITTING

CAUTION

DO NOT FORCE HANDLE
IF HANDLE WILL NOT OPERATE
RESTORE POWER TO DOOR AND
HOLD DOOR CONTROL SWITCH
TO DOOR CLOSE POSITION FOR
ADDITIONAL THREE SECONDS.
MOVE HANDLE TO CLOSE POSITION.

CAUTION

**BE SURE
LOCK PINS
ENGAGED**

**MANUAL OPERATION
WARNING:**

DOOR MAY SPRING OPEN
PRIOR TO MANUALLY UNLATCHING,
MANUALLY CRANK DOOR ACTUATOR
TO THE FULLY CLOSED POSITION.

DO NOT ATTEMPT TO PRY DOOR
OPEN, OR OPEN DOOR ELECTRICALLY
IF DOOR IS COVERED WITH ICE.

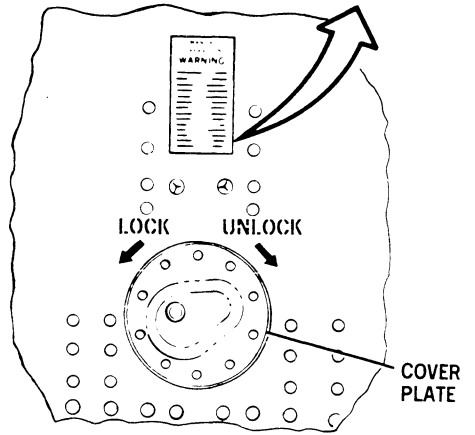
DO NOT USE POWER TOOLS.

TO UNLOCK AND UNLATCH DOOR:
1. PLACE VENT DOOR HANDLE IN
OPEN POSITION.
2. TURN ACTUATOR DRIVE UNTIL
LATCHES ARE OPEN.

TO LATCH AND LOCK DOOR:
1. TURN ACTUATOR DRIVE UNTIL
VENT DOOR HANDLE CAN BE
CLOSED.

**LOCK PIN ENGAGED
SYSTEM SAFE**

**LOCK PIN
NOT ENGAGED
SYSTEM UNSAFE**

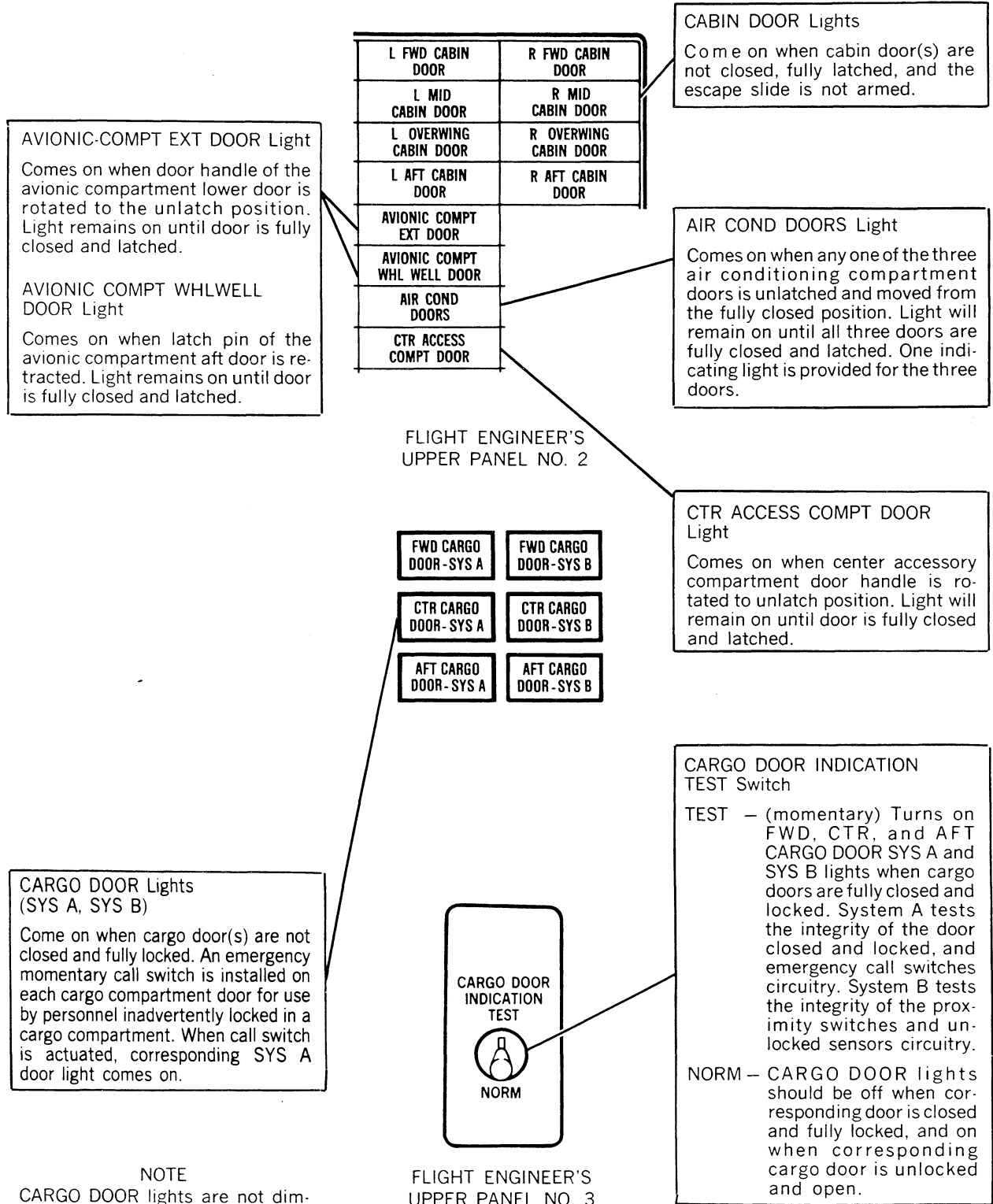


DOOR LATCH MANUAL DRIVE FITTING
(BEHIND COVER PLATE)

CA1-5168 A

DC-10 FLIGHT CREW OPERATING MANUAL

DOORS - ANNUNCIATOR LIGHTS AND CARGO DOOR WARNING TEST SYSTEM



NOTE

CARGO DOOR lights are not dim-able and do not turn on MASTER CAUTION system.

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FLIGHT CREW OPERATING MANUAL

LIGHTING

GENERAL

The normal aircraft lighting systems comprise the cockpit, passenger cabin and galley, and exterior systems. The latter category includes only those exterior lights which are controlled from the cockpit. Within each major subsystem the general illumination, supplementary, and standby lighting systems are discussed, if applicable. A description of the emergency evacuation lights may be found in Chapter 7.

DESCRIPTION

Interior Lighting

Cockpit Lighting - Cockpit illumination is provided by primary, secondary, thunderstorm, and standby lighting systems. The primary system consists of integrally lighted instruments and light-plates with individual control circuits to provide a continuous control of the illumination from maximum light intensity to OFF. Fluorescent lamps are used in a dome light for general illumination of the cockpit. For the secondary system, a combination of fluorescent and incandescent lamp floodlights are used for the main instrument panels and the Flight Engineer's worktable. Incandescent floodlights are used for the overhead panel, the pedestal, and the Flight Engineer's instrument panels. Individual controls are used for the floodlights to vary the illumination level from maximum light intensity to off. A thunderstorm switching circuit is installed to override all instrument, floodlight and dome light controls and provide a high intensity illumination. Supplementary map, briefcase, chart holder, worktable, and floorlights are provided for crew utilization as required. A standby lighting system is

provided which automatically turns on selected white floodlights of the secondary lighting system if normal electrical power fails to supply dc bus three. The standby system will provide the following operation: (1) The center instrument panel incandescent floodlights will be energized only and will illuminate the standby horizon, altimeter, and airspeed indicators. With the incandescent floodlight control in the full OFF position, the center instrument panel will be illuminated with a preset light intensity. With a clockwise rotation of this control the preset illumination level can be increased to maximum light intensity. With the EMER PWR switch in the ON position, the incandescent floodlights for the Captain and First Officer's instrument panels will be energized with their respective incandescent floodlight knobs in the full OFF position, and will provide illumination at a preset light intensity. A clockwise rotation of the respective control will allow illumination level to be increased to maximum light intensity. (2) The left incandescent floodlights for the overhead panel and the Flight Engineer's upper and lower panels will be operated at a preset light intensity. In the event of a total loss of electrical power, the battery switch must be at BAT for the standby lights to operate.

Cabin Lighting - Illumination in the cabin is provided by two general types of lighting. The portion of the cabin between the drop ceilings is illuminated by direct overhead and indirect sidewall (mood) lighting. The areas under the drop ceilings are illuminated by direct ceiling floodlights on the cross-aisles and over each main cabin door. Individually controlled reading lights are provided for each seat position. Additionally there are threshold boarding lights in each entryway. In the event of cabin depressurization, the overhead lighting in all cabin sections is automatically actuated.

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FLIGHT CREW OPERATING MANUAL

Exterior Lighting

The exterior lighting consists of landing, ground operating, anti-collision, scan, high intensity, and position lighting systems. There are four landing lights, one located on each side of the forward fuselage and two on the nose gear. Two ground flood/runway turnoff lights, located on each side of the fuselage near the wing root, may be used to supplement the nose gear landing lights during taxi operations or for general area illumination. Two anti-collision beacons, one located on top and one on the bottom of the center fuselage are provided. Scan lights for the wing and number one and three engine nacelles are located on each side of the fuselage forward of the wing. Position lighting consists of a non-standard arrangement of lights on each wing tip. Dual red and dual green lights are mounted on each tip in the standard

manner, but the white position lights are mounted two on the trailing edge of each wing tip, rather than on the tail. This wingtip arrangement still provides standard left/right and fore/aft orientation to an external observer. In addition, each wing tip has three sequentially flashing high intensity lights which may be separately controlled from the cockpit.

CONTROLS AND INDICATORS

Controls and indicators are on the Overhead Panel, the Captain's and Copilot's Light Control Panels, Flight Engineer's Lower Panel, and the Pedestal. Illustrations of the panels are in another section of this chapter. Individual controls and indicators also are illustrated and described in another section of this chapter.

DC-10 FLIGHT CREW OPERATING MANUAL

INTERIOR LIGHTING - Controls and Indicators Cockpit Lighting

NO SMOKE & SEAT BELTS Sign Switches

ON — Turns on the respective signs and sounds a chime in the cabin.

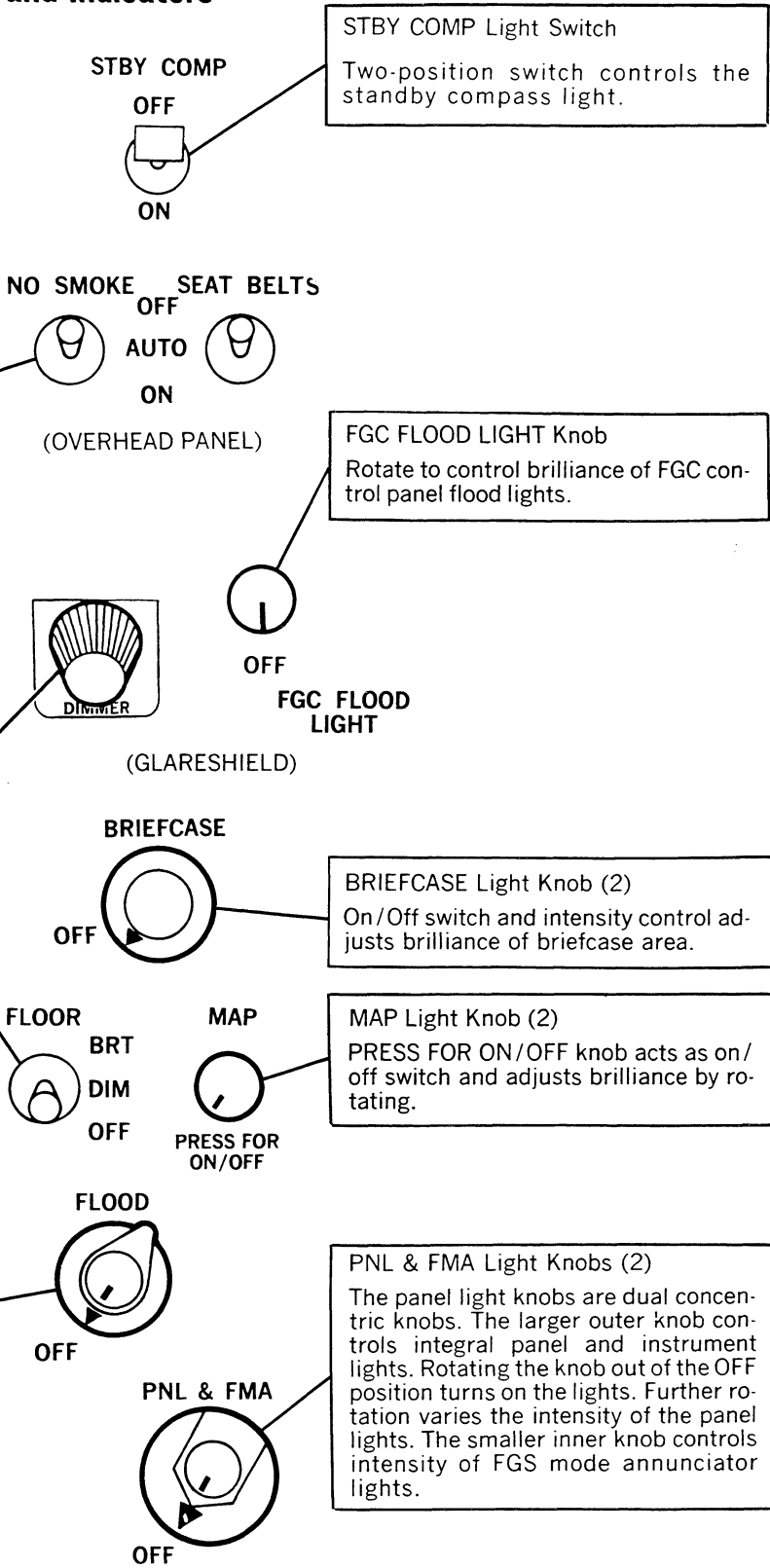
AUTO — The NO SMOKING and FASTEN SEAT BELT signs will come on and a chime will sound in the cabin when cabin decompression occurs (Cabin altitude exceeds 10,000 feet).

OFF — The RETURN TO CABIN and FASTEN SEAT BELT signs will come on and a chime will sound in the cabin when the flap handle is out of the UP position or the landing gear handle is in the DOWN position. The NO SMOKING signs will come on and a chime will sound in the cabin when landing gear handle is in the DOWN position.

FGC Panel Light Intensity Control
Rotate to control brilliance of FGC control panel backlighting.

FLOOR Light Switch (2)
Three-position switch operates cockpit floor lights as required. Switch positions are self-explanatory.

FLOOD Light Knobs (2)
The flood knobs are dual concentric knobs. The large outer knob is an on/off switch and controls the fluorescent lights. The smaller inner knob controls the incandescent lights.



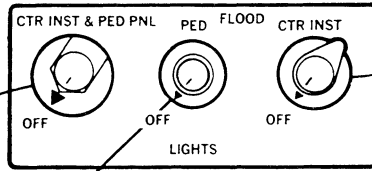
CAPTAIN'S AND COPILOT'S LIGHT CONTROL PANELS

CA1-4395

DC-10 FLIGHT CREW OPERATING MANUAL

INTERIOR LIGHTING - Controls and Indicators Cockpit Lighting

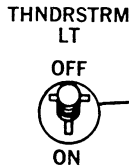
CTR INST & PED PNL Light Knobs
Dual knobs permit separate control of center instrument panel and pedestal integral lights.



CTR INST FLOOD Light Knobs
Dual knobs for control of the center instrument panel flood lights. Large outer knob, with the index indicator marking, is an on/off switch and controls the fluorescent lights. Small inner knob controls the incandescent lights.

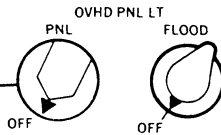
PED FLOOD Light Knob
On/off switch and intensity control for pedestal flood light. Large outer knob adjusts F/E's map light for use when F/E is facing forward.

(PEDESTAL)



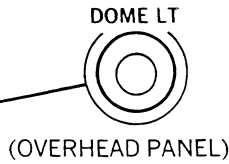
THNDRSTRM LT Switch
ON — All instrument and control panel floodlights, and the flight compartment dome lights come on at full intensity, overriding all individual controls.

OVHD PNL LT PNL Knob
On/off switch and intensity control for integral panel lights.



OVHD PNL LT FLOOD Knob
On/Off switch and intensity control for overhead panel flood lights.

DOME LT Button (2)
On/off push button switch operates dome lights on cockpit ceiling.

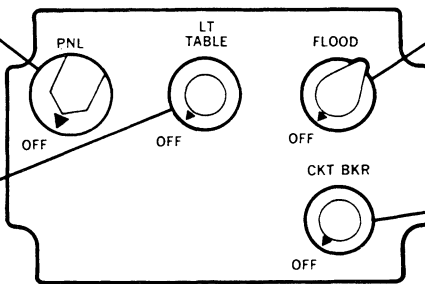


BRIEFCASE LT Button
On/off push button switch operates briefcase area light.



PNL LT Knob
On/off switch and intensity control for integral panel and instrument lights.

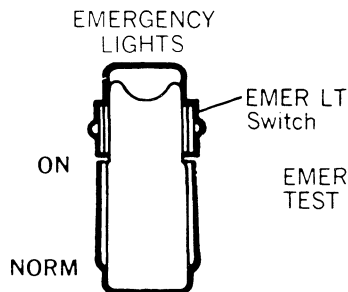
(FLIGHT ENGINEER'S WORK TABLE)



FLOOD LT Knob
On/off switch and intensity control for F/E's flood lights.

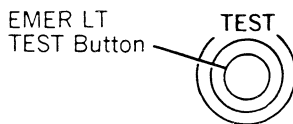
TABLE LT Knob
On/Off switch and intensity control for table light.

CKT BKR LT Knob
On/off switch and intensity control for integral lighting of the fwd and aft overhead, F/E's overhead, upper main, and lower main circuit breaker panels.

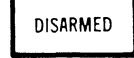
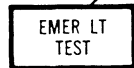


(FORWARD CABIN ATTENDANT'S STATION)

For description refer to Emergency Equipment Chapter.

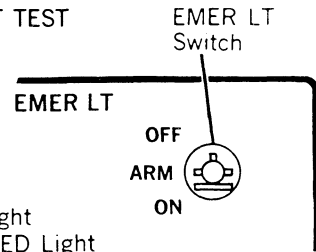


(FLIGHT ENGINEER'S LOWER PANEL)



(OVERHEAD PANEL)

For description refer to Emergency Equipment Chapter.

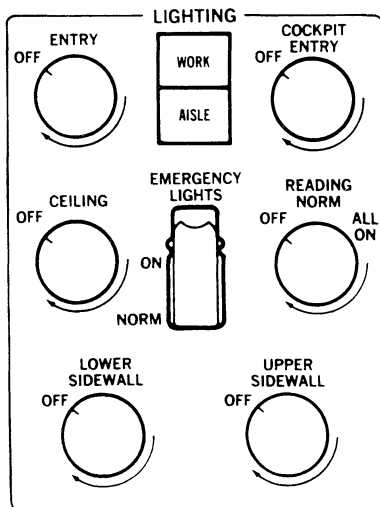
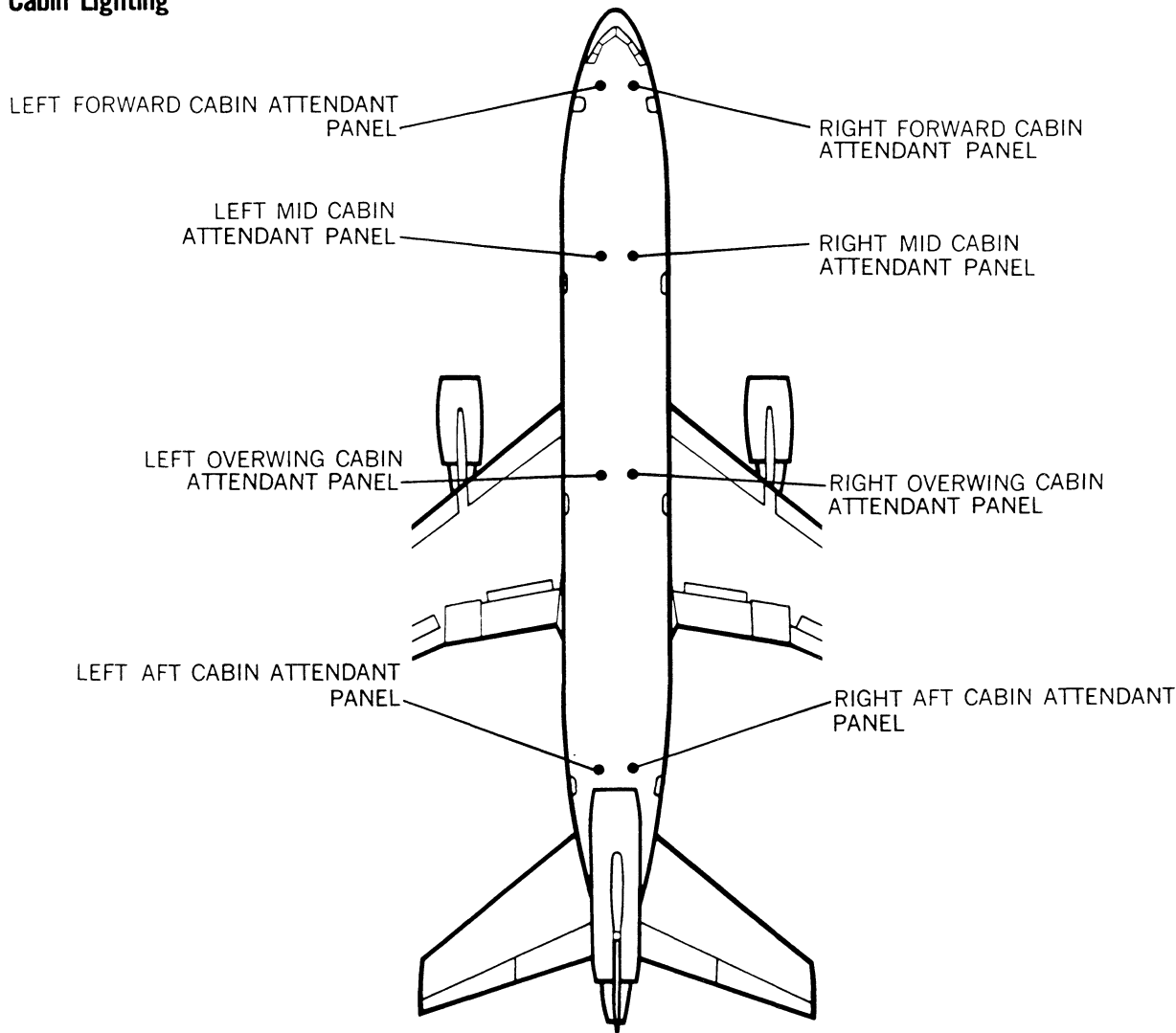


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DC-10 FLIGHT CREW OPERATING MANUAL

INTERIOR LIGHTING - Controls & Indicators

Cabin Lighting

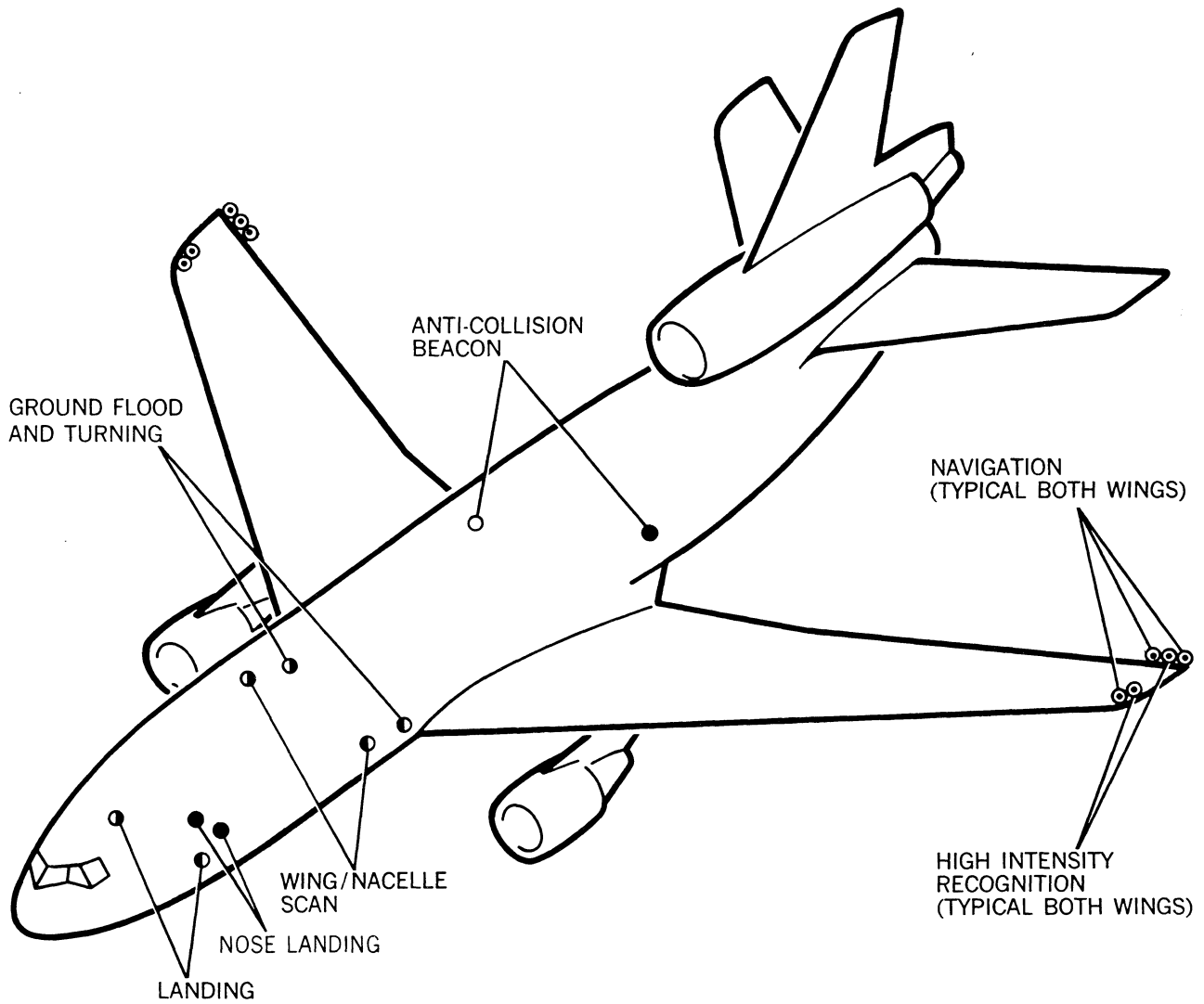


FORWARD LEFT CABIN ATTENDANT PANEL (TYPICAL)

CA1-837

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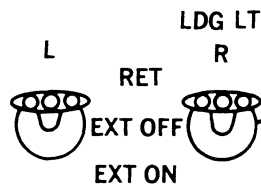
EXTERIOR LIGHTING



CA1-4469

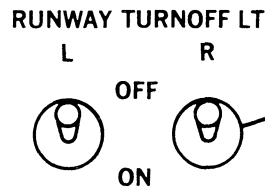
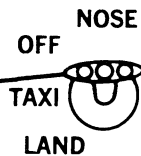
DC-10 FLIGHT CREW OPERATING MANUAL

EXTERIOR LIGHTING - Controls & Indicators



LDG LT Switch (L, R)
RET — Light is off and retracted flush with fuselage.
EXT OFF — Unit is extended, light is off.
EXT ON — Unit is extended, light is on. Requires about 10 seconds to extend.

LDG LT Switch (NOSE)
TAXI — Lamps are on with less than full intensity for ground operations.
LAND — Lamps are on at full intensity for landing.
NOTE
 The nose gear landing lights will come on only when the landing gear control handle is in the DOWN position.



RUNWAY TURNOFF LT Switch (L,R)
 The runway turnoff lights may be used during all ground operations to supplement the available lights.
ON — Lights are on. May also be used for ground servicing.

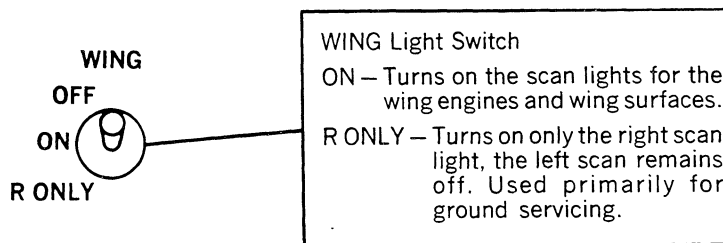
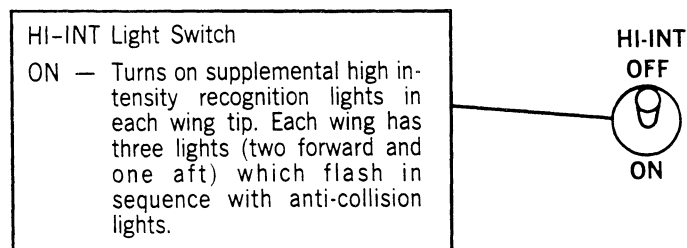
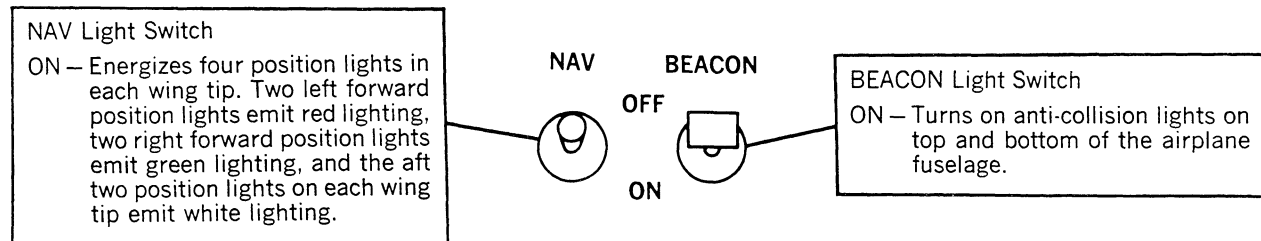
OVERHEAD PANEL

CA1-192 A

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FLIGHT CREW OPERATING MANUAL

EXTERIOR LIGHTING - Controls & Indicators



OVERHEAD PANEL

CA1-193 A

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FLIGHT CREW OPERATING MANUAL

SEATS

GENERAL

The cockpit contains seats for a Captain, Copilot, Flight Engineer, and a First and Second Observer. The Flight Engineer's seat is located behind the First Officer's station and the Observers' seats are located behind the Captain's station. All seats, except the Second Observer's seat, have electrical and/or manual adjustments. If the electrical control or power of a seat fails, full movement of the seat is possible thru manual operation. All seats are equipped with belts and dual shoulder harnesses with inertia reels. All seats except the Second Observer's seat are equipped with a crotch belt.

DESCRIPTION

Seats for the Captain and Copilot are power operated by two electric motors to provide vertical and horizontal adjustments. The recline, lumbar support, armrest, and thigh support controls are manually operated.

Copilot's seat has a recline limit switch which inhibits outboard movement of the seat whenever the backrest is reclined more than one notch from the upright position. The seat indicator incorporates two numerical index scales; one scale representing the vertical position of the seat and the other the horizontal. By

means of individual exit control switches, the Captain's and Copilot's seat may be moved to the full aft and outboard positions to facilitate exit.

The Pilot Eye Locator consists of optical painted white lines on the glareshield. An illustration and the operation of the white line optical locator is shown in this section.

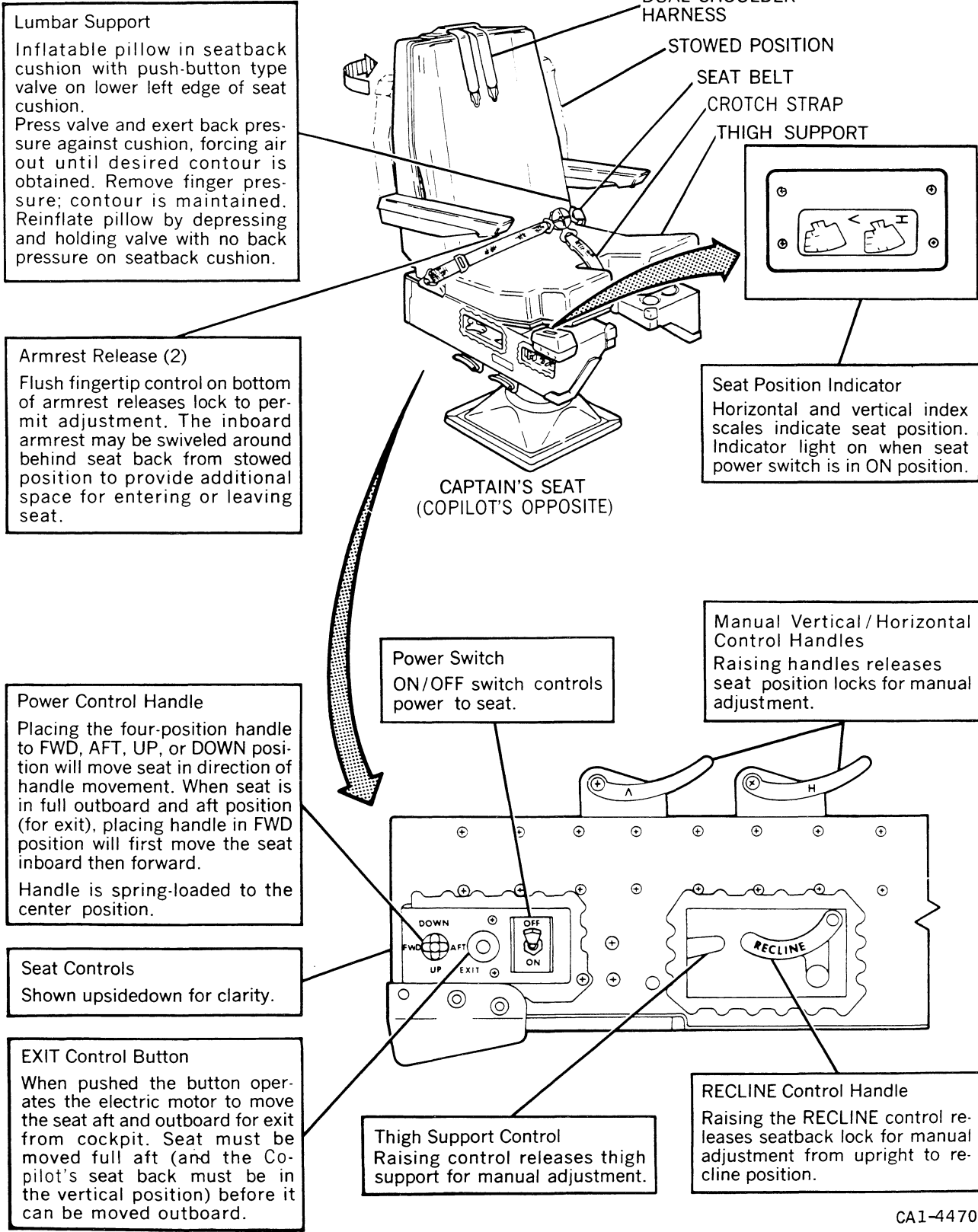
The Flight Engineer's seat also is power operated to provide vertical and horizontal adjustments. The recline, lumbar support, armrest, and swivel controls are manually operated. The swivel control permits adjustment between forward and outboard facing positions. When facing forward, the seat can be raised higher vertically than when facing outboard.

On power-operated seats, placing the power ON/OFF switch to OFF after adjusting the seat for takeoff or landing prevents seat movement (runaway seat) if an electrical short should occur in the seat wiring.

The First Observer's seat has manual adjustments only. These adjustments provide vertical, forward, aft, lumbar support and swivel movement. The backrest is fixed and cannot be adjusted. The Second Observer's seat is a folding nonadjustable type bolted directly to the floor structure.

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CAPTAIN'S AND COPILOT'S SEATS



Lumbar Support
Inflatable pillow in seatback cushion with push-button type valve on lower left edge of seat cushion.
Press valve and exert back pressure against cushion, forcing air out until desired contour is obtained. Remove finger pressure; contour is maintained. Reinflate pillow by depressing and holding valve with no back pressure on seatback cushion.

Armrest Release (2)
Flush fingertip control on bottom of armrest releases lock to permit adjustment. The inboard armrest may be swiveled around behind seat back from stowed position to provide additional space for entering or leaving seat.

Power Control Handle
Placing the four-position handle to FWD, AFT, UP, or DOWN position will move seat in direction of handle movement. When seat is in full outboard and aft position (for exit), placing handle in FWD position will first move the seat inboard then forward.
Handle is spring-loaded to the center position.

Seat Controls
Shown upsidedown for clarity.

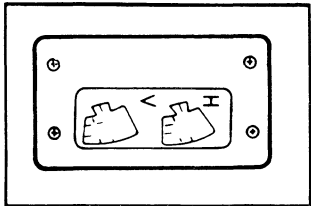
EXIT Control Button
When pushed the button operates the electric motor to move the seat aft and outboard for exit from cockpit. Seat must be moved full aft (and the Copilot's seat back must be in the vertical position) before it can be moved outboard.

Power Switch
ON/OFF switch controls power to seat.

Manual Vertical/Horizontal Control Handles
Raising handles releases seat position locks for manual adjustment.

Thigh Support Control
Raising control releases thigh support for manual adjustment.

RECLINE Control Handle
Raising the RECLINE control releases seatback lock for manual adjustment from upright to recline position.

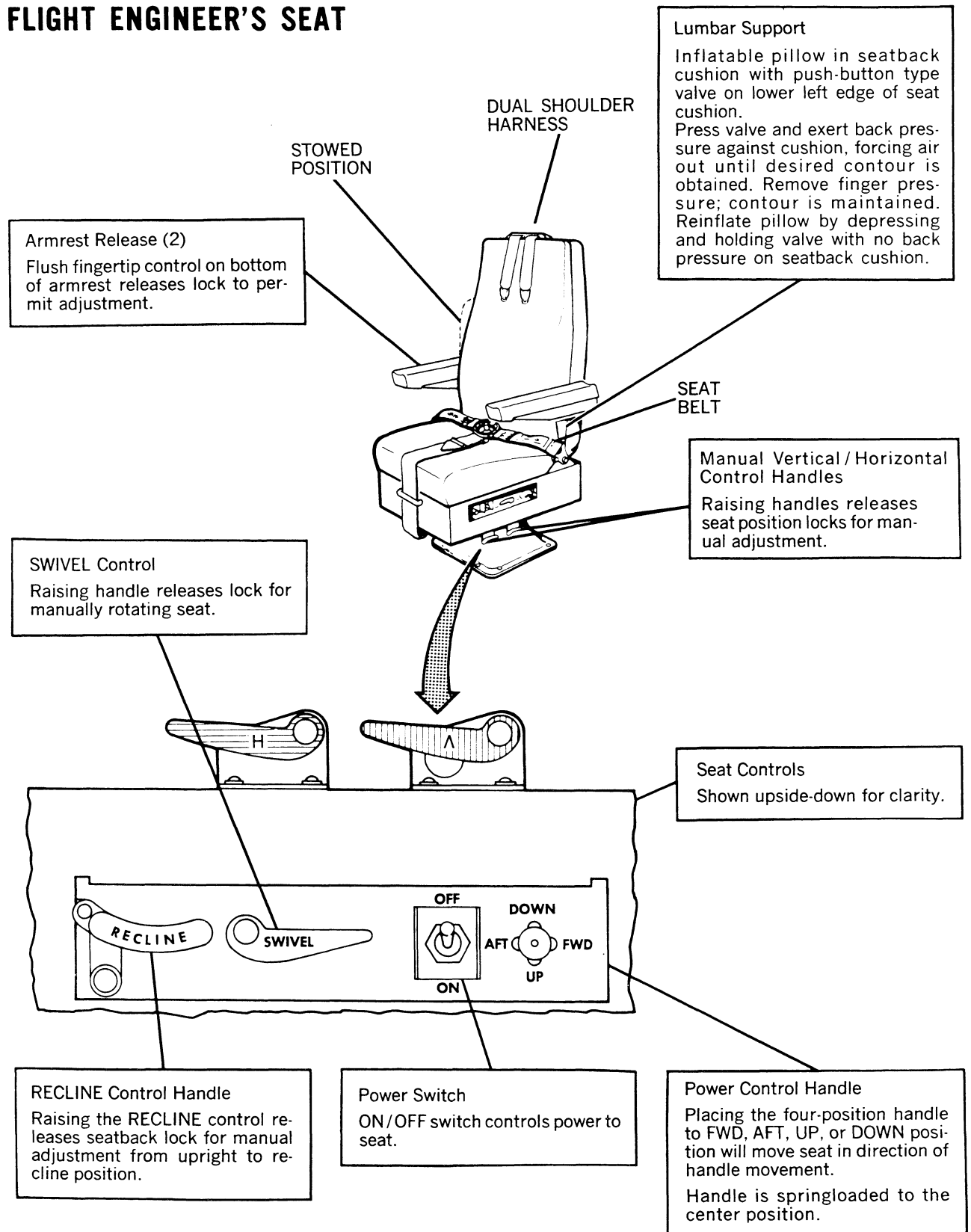


Seat Position Indicator
Horizontal and vertical index scales indicate seat position. Indicator light on when seat power switch is in ON position.

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FLIGHT ENGINEER'S SEAT



CA1-3824A

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OBSERVER'S SEATS

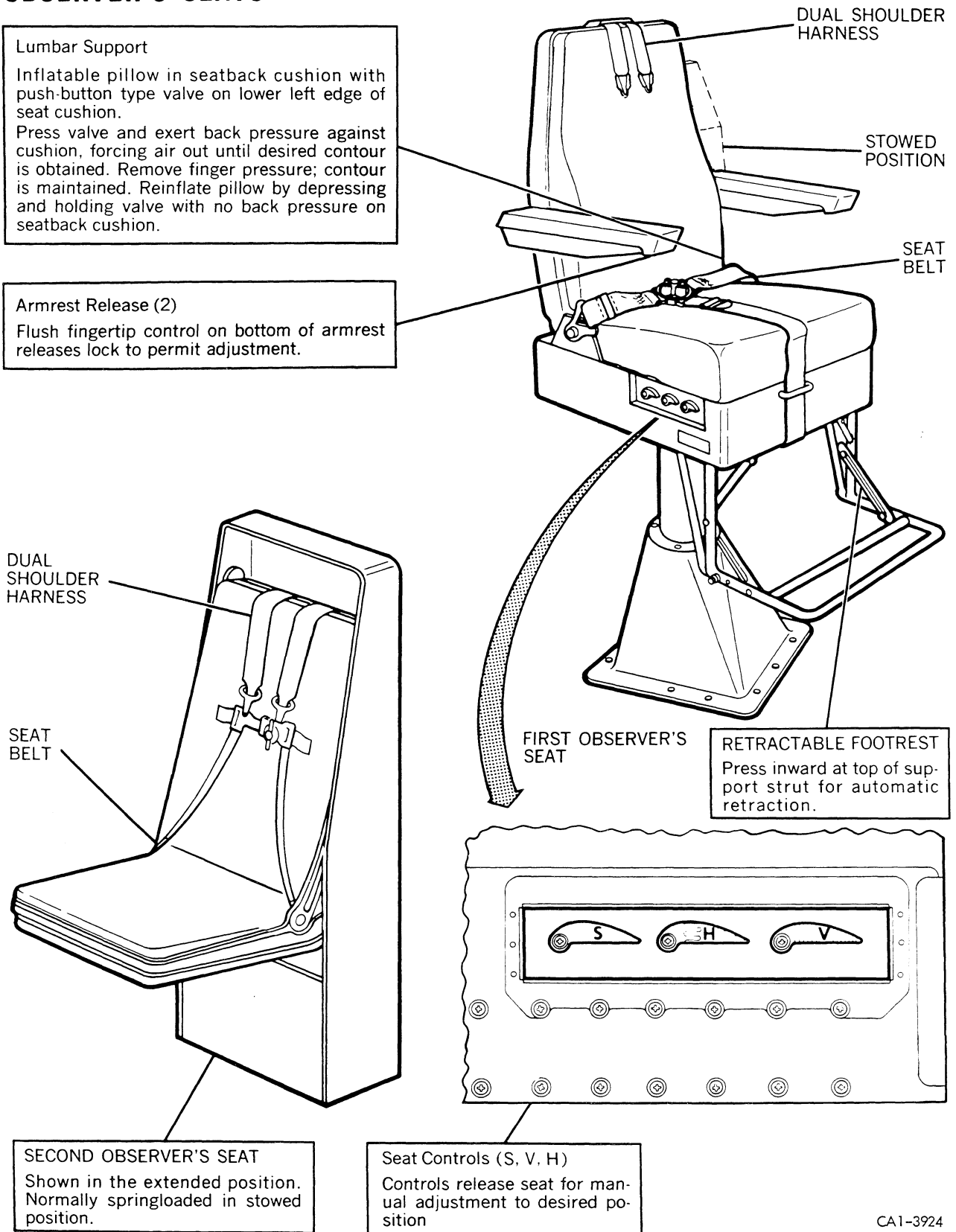
Lumbar Support

Inflatable pillow in seatback cushion with push-button type valve on lower left edge of seat cushion.

Press valve and exert back pressure against cushion, forcing air out until desired contour is obtained. Remove finger pressure; contour is maintained. Reinflate pillow by depressing and holding valve with no back pressure on seatback cushion.

Armrest Release (2)

Flush fingertip control on bottom of armrest releases lock to permit adjustment.



SECOND OBSERVER'S SEAT
Shown in the extended position. Normally springloaded in stowed position.

Seat Controls (S, V, H)
Controls release seat for manual adjustment to desired position

CA1-3924

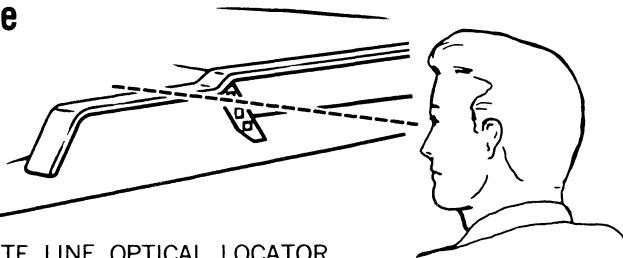
DC-10 FLIGHT CREW OPERATING MANUAL

PILOT EYE LOCATOR — Optical White Line

(Left Side Shown — Right Side Opposite)

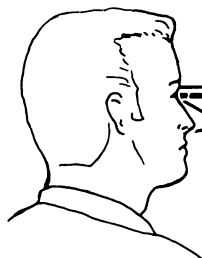
VERTICAL SEAT POSITION SIGHTING.

Adjust seat vertically so that pilot's line of sight is tangential to top flat surface of glareshield.



WHITE LINE OPTICAL LOCATOR
(PAINTED ON GLARESHIELD)

FORE AND AFT
SEAT POSITION



FORE AND AFT SEAT POSITION SIGHTING

Sight across to the small white line under the opposite pilot's glareshield. Adjust fore and aft seat position until white line appears to touch sloping edge of glareshield. Readjust seat elevation as required to maintain line of sight tangential to top flat surface of glareshield.

TANGENT POINT
(GUSSET PADDING
AND WHITE LINE)

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FLIGHT CREW OPERATING MANUAL

WARNING AND CAUTION SYSTEMS

GENERAL

The warning and caution systems provide aural, visual, and tactile indications to warn of unsafe operating conditions or aircraft configurations, and systems malfunctions. Warnings of fire or overheating, unsafe landing gear conditions, altitude advisory indications, slats extended above placarded limit speeds, autopilot disengage, loss of cooling airflow thru inertial navigation unit, and excessive cabin altitude are both visual and aural. Stabilizer motion, overspeed, and takeoff configuration warnings are aural only. Stall warning is provided by stick shaker only, with no accompanying visual or aural indications.

DESCRIPTION

Central Aural Warning System

Aural warnings (except APU fire) are generated in a central control unit which provides warning discrimination by means of varying the pitch, duration, and repetitive frequency of the aural signal. The aural warnings can be tested for all conditions except cabin altitude, and altitude advisory. Once sounded, the aural warnings can be silenced by operating the appropriate silencing switch or returning the aircraft to the correct configuration for the condition indicated. Detailed information regarding the operation and testing of each of the central aural warning system functions are covered in the description and controls and indicators sections of each of those chapters dealing with the applicable systems.

APU Fire Warning Horn

Aural warning for APU fire is provided by an exterior horn, common to both systems, located just aft of the left wheel well. Provisions are made for silencing

the horn and for re-arming the circuitry for subsequent warnings.

Visual Warning and Caution System

Visual warning and caution indications are provided in the engine fire and fuel control handles and by annunciator lights. Where practical, individual lights are located adjacent to, or in the controls or indicators for the respective system. Lights pertaining to systems with controls or indicators in more than one area are located on annunciator panels for the Forward Overhead Panel and Flight Engineer's Upper Instrument Panel No. 2. The red MASTER WARN lights come on to indicate a condition that requires immediate attention. The amber MASTER CAUTION lights come on to indicate a condition that requires less than immediate attention.

Master warning and master caution lights come on concurrently with their respective individual warning and caution lights at the respective crew stations. Additionally, the Captain's and Copilot's MASTER WARN or MASTER CAUTION lights will come on whenever certain selected warning or caution lights come on at the Flight Engineer's station. Pushing either of the pilots' MASTER WARN or MASTER CAUTION lights will turn the respective lights off at both stations and reset the system for subsequent indications. The flight engineer's MASTER WARNING or MASTER CAUTION lights can be reset only from the flight engineer's station and do not reset the pilots' lights. The individual warning or caution lights will remain on until the condition has been corrected. During dual land mode, the MASTER WARN and MASTER CAUTION lights are inhibited at 100 feet radio altitude. Certain individual caution lights are

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FLIGHT CREW OPERATING MANUAL

considered advisory and do not cause the MASTER CAUTION lights to come on.

Summary lights and cue lights on the pilots' annunciator panel provide indications of warnings or cautions associated with the various aircraft systems. The summary lights are not resettable and will remain on until the condition is corrected. The cue lights may be reset and, when pushed, will also turn off the pilots' MASTER CAUTION lights. Annunciator light brilliance is controlled by PRESS TO BRT/DIM buttons on the Overhead Panel and on the Flight Engineer's panel. The buttons affect all annunciator lights at the respective crew station except:

- MASTER WARNING lights.
- MASTER CAUTION lights.
- First 8 lights in column 2 and 3 of the Flight Engineer annunciator panel (includes all door lights).

Tactile Warning System

The dual stall warning system actuates a stick shaker to warn of an impending stall. No visual stall warning is provided.

Ground Proximity Warning System

For detailed description of ground proximity warning system, refer to Navigation Systems Chapter.

CONTROLS AND INDICATORS

Controls and indicators are on the Flight Engineer's Upper Panel No. 1, Upper Panel No. 2, Upper Panel No. 3, the Pilot's Instrument Panels, Overhead Panel, the Pedestal, and the Glareshield. Illustrations of the panels are in another section of this chapter. Individual controls and indicators are illustrated and described elsewhere in this section.

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FLIGHT CREW OPERATING MANUAL

AURAL WARNING AND CAUTION SYSTEM PARTICULARS SHEET 1

WARNING INDICATED	AURAL WARNING CHARACTERISTIC	VISUAL INDICATION	CONDITION INDICATED	DEACTIVATE	TEST
APU FIRE	Extremely loud exterior horn.	APU FIRE Light (F/E), APU FIRE Light (summary), MASTER WARN Lights.	Fire or overheat in APU compartment.	HORN Switch on APU GND CONT Panel, or APU FIRE CONTROL Switch.	LOOPS TEST Switch (no aural warning in test).
CABIN ALTITUDE	Intermittent car horn sound (identical to takeoff warning).	CABIN ALT Lights.	Cabin altitude has exceeded allowable limit.	Press CABIN ALT WARN HORN Button.	None
ENGINE FIRE	Intermittent, bell-like ringing sound.	ENG FIRE Handle, Fuel Lever, ENGINE FIRE Light, and respective LOOPS A and B Lights.	Fire or overheat in engine nacelle.	Press ENGINE FIRE Light or pull ENG FIRE Handle.	LOOPS TEST Switches.
LANDING GEAR (Throttles)	Continuous car horn sound.	Red lights for any gear not down and locked.	Any gear not down and locked and any throttle retarded to IDLE and air speed is less than 215 knots.	Gear horn off button, provided flaps are in an approach config. (less than 28.5°).	(1) GEAR LT TEST Button (no aural warning). (2) GEAR Handle when pulled out (visual and aural warning).
LANDING GEAR (Flaps)	Continuous car horn sound.	None unless unsafe gear condition exists.	Any gear not down and locked and flaps extended 28.5° or more.	Extend gear.	None
OVERSPEED	Chicken-like clucking sound (identical to slats extended and slat handle extend warning).	None	Airspeed above V_{MO}/M_{MO}	Correct overspeed condition.	MAX SPD WARN Test Switch.
STABILIZER IN MOTION	Continuous deep pitched air horn sound.	(Stabilizer LONG TRIM indicator may be crosschecked).	Horizontal stabilizer in motion (no warning until continuous movement exceeds one degree).	Warning silenced when stabilizer is stopped.	Operate longitudinal trim controls.
STALL WARNING	None	None	Airspeed approaching stall condition for flap/slat configuration.	Correct stall condition.	STALL TEST Switch.
	Tactile warning by stick shaker. Both columns will vibrate simultaneously.				
AUTOPILOT DISENGAGE	Warbling horn sound.	Flashing red AP Light for associated system.	Autopilot disengaged.	Press AP Light or Autopilot release button.	None

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FLIGHT CREW OPERATING MANUAL

AURAL WARNING AND CAUTION SYSTEM PARTICULARS SHEET 2

WARNING INDICATED	AURAL WARNING CHARACTERISTIC	VISUAL INDICATION	CONDITION INDICATED	DEACTIVATE	TEST
SLATS EXTENDED WARNING	Chicken-like clucking sound (identical to overspeed and slat handle extend warning).	Slat TAKEOFF Light.	Slats extended above placarded slat extend limit speed.	Slow to below placarded slat extend limit speed and retract slats.	None
SLAT HANDLE EXTEND WARNING (Effective on airplanes with SB 31-37 incorporated or production equivalent.)	Chicken-like clucking sound (identical to slats extended and overspeed warning).	Flap/Slat handle not in UP/RET.	Flap/Slat handle moved from UP/RET above slat extend limit speed.	Move flap/slat handle to UP/RET. Slow to below placarded slat extend speed before extending slats.	None
TAKEOFF WARNING	Intermittent car horn sound (identical to cabin altitude warning).	None	Slats not in T.O. EXT range. Flaps are in landing range. Spoiler handle not fully forward. Stabilizer setting not in green band.	Correct control setting(s).	Configure to any of noted conditions and advance throttle 1 or 2.
		PARK BRAKE ON Light.	Parking brake is not released; ground shift mechanism is in ground mode and either throttle 1 or 2 is advanced for takeoff.	Release parking brake.	None
ALTITUDE ADVISORY	Dual airhorn sound of 2-second total duration.	Steady altitude advisory light on altimeters. Stays on until within 250 feet of selected altitude.	Airplane at capture threshold relative to selected altitude (750 feet or greater).	Steady light - Select new altitude. Flashing Light - Push altitude RESET button.	Selection of altitude above field elevation and rotation of Baro Set Knob to 750 feet and 250 feet of selected altitude.
	None	Flashing Altitude Advisory light on altimeters.	Deviation occurs from capture threshold prior to reaching 250 feet of selected altitude.		
	None	None	Maintain selected altitude within ± 250 feet.		
	None	Flashing Altitude Advisory light on altimeters.	Deviation of more than ± 250 feet after selected altitude capture.		

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FLIGHT CREW OPERATING MANUAL

AURAL WARNING AND CAUTION SYSTEM PARTICULARS SHEET 3

WARNING INDICATED	AURAL WARNING CHARACTERISTIC	VISUAL INDICATION	CONDITION INDICATED	DEACTIVATE	TEST
DECISION HEIGHT (DH)	Continuous horn sound of increasing amplitude.	DH light comes on when decision height is reached.	Airplane at 50 feet above and descending to decision height (DH). Sound stops when DH is reached.	DH Light - Press to turn off.	SET/TEST knob.
INS WARNING (on ground)	Loud intermittent exterior horn.	Applicable system INS FLOW OFF Light on. (Pilot Overhead Annunciator Panel)	(1) Loss of cooling airflow thru INS unit. (2) INS operating on battery power with AC power removed.	Turn off applicable INS systems.	None
PASSENGER EMERGENCY EVACUATION	High pitched intermittent warbling sound.	Flashing red light cockpit overhead and applicable attendant's panels.	EVACUATION SIGNAL command switch ON, or in ARM with cabin attendant's EVAC switch on.	(1) EVACUATION SIGNAL command switch OFF and cabin attendant's EVAC switch off. (Pulling horn shutoff button only silences individual horn at applicable stations.)	None
	Cabin attendant's chime in cockpit.	Flashing red light cockpit overhead panel.	EVACUATION SIGNAL command switch OFF and cabin attendant's EVAC switch on.	Cabin attendant's EVAC switch off.	None
GROUND PROXIMITY WARNING	Whooping sound and vocal command - PULL UP.	Flashing red GPWS Light on glareshield.	(1) After takeoff, between 50 and 700 feet, sink rate greater than 100 FPM with gear up or flaps up. (2) During cruise or landing, gear up below 500 feet or flaps up and combination of radio height and sink rate below 500 feet. (3) Excessive sink rate below 2450 feet. (4) Excessive terrain closure rate below 1800 feet. (5) Excessive deviation below the glideslope at radio altitudes below 1000 feet.	(1) Increase climb rate. (2) Extend gear. (3) Reduce rate of descent. (4) Pull up. (5) Correct deviation.	GND PROXIMITY Test Button.
	Vocal warning - GLIDESLOPE.	Amber BELOW G/S Light on glareshield.			

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AURAL WARNING AND CAUTION SYSTEM PARTICULARS SHEET 4

INSTRUMENT MARKINGS

Four colors are used in the instrument markings. These reflect the latest operating limitations and take the form of arcs and radials. The colors used and their meanings are as follows:

RED	Warning, danger, maximum limit, minimum limit
YELLOW	Caution, abnormal
WHITE OR GREEN	Continuous, normal range

Careful attention should be given to the instrument markings, because of the precautions and limitations they represent.

PILOTS' ANNUNCIATOR PANEL AND WARNING LIGHTS

Annunciator Panel
Contains summary lights, cue lights, and caution and advisory lights not located with the controls or indicators for the associated systems.

MASTER CAUTION Light (2)
Both lights come on whenever certain, selected individual caution lights on either Pilots' or Flight Engineer's panels come on. Pushing either light will turn off the Captain's and Copilot's MASTER CAUTION lights and reset the system for subsequent indications.

MASTER CAUTION
PRESS TO RESET

(GLARESHIELD)

MASTER WARN Light (2)
Both lights come on whenever certain, selected individual warning lights on either Pilot's or Flight Engineer's panels come on. Pushing either light will turn off the Captain's and Copilot's MASTER WARN lights and reset the system for subsequent indications.

MASTER WARN
PRESS TO RESET

(GLARESHIELD)

ENGINE FIRE
PRESS FOR BELL OFF

ENGINE FIRE LIGHT (GLARESHIELD)
(For description of above light refer to Fire Protection Chapter.)

SELECT FLAP LIMIT OVRD	PARK BRAKE ON	AUTO BRAKE		ENG 1 OIL PRESS LO	ENG 2 OIL PRESS LO	ENG 3 OIL PRESS LO		L WINDSHIELD ANTI-ICE INOP	R WINDSHIELD ANTI-ICE INOP	AUTO SPOILER DO NOT USE
SELECT ELEV FEEL MAN	ANTI-SKID CTR FAIL	BRAKE OVHT		ENG 1 OIL STRAINER CLOG	ENG 2 OIL STRAINER CLOG	ENG 3 OIL STRAINER CLOG		INS 1 FLOW OFF	INS 3 FLOW OFF	INS 2 FLOW OFF
	ANTI-SKID L INBD FAIL	ANTI-SKID R INBD FAIL		ENG 1 ANTI-ICE VALVE OPEN	ENG 2 ANTI-ICE VALVE OPEN	ENG 3 ANTI-ICE VALVE OPEN		ENG 2 ANTI-ICE COWL DUCT FAIL	PITOT HEAT INOP	
UPPER YAW DAMP INOP	ANTI-SKID L OUTBD FAIL	ANTI-SKID R OUTBD FAIL		ENG 1 ANTI-ICE COWL DISAGREE	ENG 2 ANTI-ICE COWL DISAGREE	ENG 3 ANTI-ICE COWL DISAGREE		ANT ANTI-ICE DISAGREE		
LOWER YAW DAMP INOP		EMER BUS OFF		PNEU MANFLD FAIL	CABIN ALT	PNEU TEMP HI		APU FIRE	CARGO FIRE	
		PRESS TO BRT/DIM		ELEC PRESS TO RESET	FUEL PRESS TO RESET	HYD PRESS TO RESET		PNEU PRESS TO RESET	ANNUN LT TEST	

OVERHEAD PANEL

PRESS TO BRT/DIM Switch
When pushed will select the annunciator lights bright mode if dimmed, or the dim mode if on bright. Does not dim the MASTER WARN or MASTER CAUTION lights.

Cue Lights (4)
Light comes on whenever caution light on the Flight Engineer's panel in the associated system comes on. These lights are resettable. When pushed to reset, will also turn off the MASTER CAUTION light.

ANNUN LT TEST Switch
Pushing the switch will turn on all lights on the annunciator panel and selected lights on the overhead and instrument panels.

Summary Lights (6)
Light comes on whenever warning light in the associated system comes on. These lights are not resettable.

ANT ANTI-ICE DISAGREE light installed on airplanes with SB30-47 incorporated or production equivalent.

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FLIGHT CREW OPERATING MANUAL

FLIGHT ENGINEER'S ANNUNCIATOR PANEL

FLT RECORDER OFF	L FWD CABIN DOOR	R FWD CABIN DOOR
AVIONIC FLOW OFF	L MID CABIN DOOR	R MID CABIN DOOR
AIR COND TRIM AIR PRESS HI	L OVERWING CABIN DOOR	R OVERWING CABIN DOOR
CTR ACCESS COMPT FLOW OFF	L AFT CABIN DOOR	R AFT CABIN DOOR
USE ENG PNEU SUPPLY	AVIONIC COMPT EXT DOOR	DC GND SERVICE BUS OFF
FWD CARGO FLOW OFF	AVIONIC COMPT WHL WELL DOOR	
AFT CARGO FLOW OFF	AIR COND DOORS	
HYD FILTER PRESS HI	CTR ACCESS COMPT DOOR	
WING ANTI-ICE SW ON	GPWS FAIL	
APU FUEL PUMP SW ON	1-3/2-3 PUMP VALVE OPEN	* HYD SYS 3 ELEV OFF
APU/ISOL VALVE OPEN	ELEV FEEL CHANNEL INOP	WTR DRAIN HEAT LOW
AUX HYD PUMP 2 ON	FLAP LIMIT CHANNEL INOP	APU ANTI-ICE ON
AUX HYD PUMP 1 ON	APU DOOR OPEN	

MASTER WARNING
PRESS TO RESET

MASTER CAUTION
PRESS TO RESET

ANNUNCIATOR PANEL
Contains caution and advisory lights not located adjacent to the controls or indicators for the associated system.

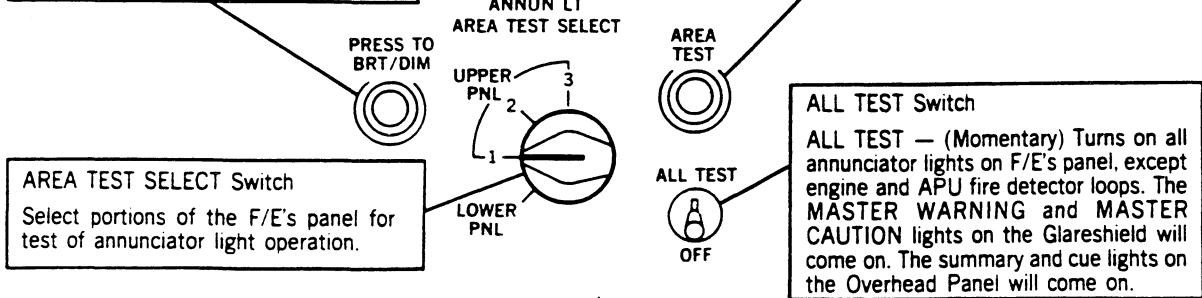
MASTER WARNING Light
Comes on whenever any individual warning light comes on except for certain warnings associated with flight control and guidance systems and the landing gear.
Pushing the light will turn off the light and reset the system for subsequent indications.
NOTE
When the F/E's MASTER WARNING light comes on, the pilots' MASTER WARNING lights also come on.

MASTER CAUTION Light
Comes on whenever certain selected caution lights come on.
Pushing the light will turn off the light and reset the system for subsequent indications.
NOTE
When the F/E's MASTER CAUTION light comes on, the pilots' MASTER CAUTION lights also come on. When the pilots' MASTER CAUTION lights come on, the F/E's MASTER CAUTION light may not come on depending on the source of the individual warning.

(FLIGHT ENGINEER'S PANEL NO. 2)

PRESS TO BRT/DIM Button
When pushed will select the annunciator lights bright mode if dimmed, or the dim mode if on bright.
Does not dim the MASTER WARNING, MASTER CAUTION, DC GND SERVICE BUS OFF, or DOORS lights.

AREA TEST Button
When pushed will turn on all annunciator lights on the area of the F/E's panel that has been selected for test.



AREA TEST SELECT Switch
Select portions of the F/E's panel for test of annunciator light operation.

ALL TEST Switch
ALL TEST — (Momentary) Turns on all annunciator lights on F/E's panel, except engine and APU fire detector loops. The MASTER WARNING and MASTER CAUTION lights on the Glareshield will come on. The summary and cue lights on the Overhead Panel will come on.

FLIGHT ENGINEER'S LOWER PANEL

* HYD SYS 3 ELEV OFF light installed with SB 29-128.

CA1-9315A

*HYD SYS 3 ELEV OFF light installed with SB 29-128.
APU ANTI-ICE ON, 1-3/2-3 PUMP VALVE OPEN
lights not installed on some aircraft.

JL
Jul 15/94

DC-10

FLIGHT CREW OPERATING MANUAL

ADDITIONAL ANNUNCIATOR LIGHT INFORMATION

1. Pushing the ANNUN LT TEST Switch — WILL NOT turn on the following lights.

ENG FIRE Handles (3).
YAW DAMP TEST Lights group.
PA, ATTEND CALLING, MECH CALLING Lights.
ENGINE FIRE — Glareshield Light.
Flight Guidance Panel Lights.
Flight Guidance Mode Annunciation Lights.
Marker Beacon Lights.
Slat Position Indicating Lights.
Thrust Rating Computer Lights.
EGT Caution Light (on each EGT Gage).
GPWS Lights (Glareshield).
BELOW G/S Lights (Glareshield).
Radio Altimeter DH Lights.
Fuel Lever Lights.

2. All Red Lights will turn on the Red MASTER WARN Lights (2) except the following:

Landing Gear Unsafe (Red Lights).
ATS and Autopilots Lights.
ENGINE FIRE Lights.
GPWS Lights.

3. The following lights will turn on the MASTER CAUTION Lights (3).

FLIGHT ENGINEER

Hydraulic PRESS LO (6) Hydraulic TEMP HI (6).
TANK PUMP PRESS LO (14).
APU GEN OFF (1).
CSD OIL PRESS LO (3).
GEN OFF (3).
AC BUS OFF (3).
DC BUS OFF (3).
USE ENG PNEU SUPPLY (1).
RUD STBY PWR OFF (1).
HYD SYS 3 ELEV OFF (1).

PILOTS

SELECT FLAP LIMIT OVRD (1).
SELECT ELEV FEEL MAN (1).
UPPER YAW DAMP INOP (1).
LOWER YAW DAMP INOP (1).
ENG OIL PRESS LO (3).
ENG OIL STRAINER CLOG (3).
PITOT HEAT INOP (1).

All other amber lights will not turn on the MASTER CAUTION Lights.