

Canadair Regional Jet 100/200 - Lighting

1. INTRODUCTION

The lighting system provides interior and exterior illumination of the aircraft and consists of:

- Flight Compartment Lighting
- Passenger Compartment Lighting
- Service and Maintenance Lighting
- External Lighting
- Emergency Lighting.

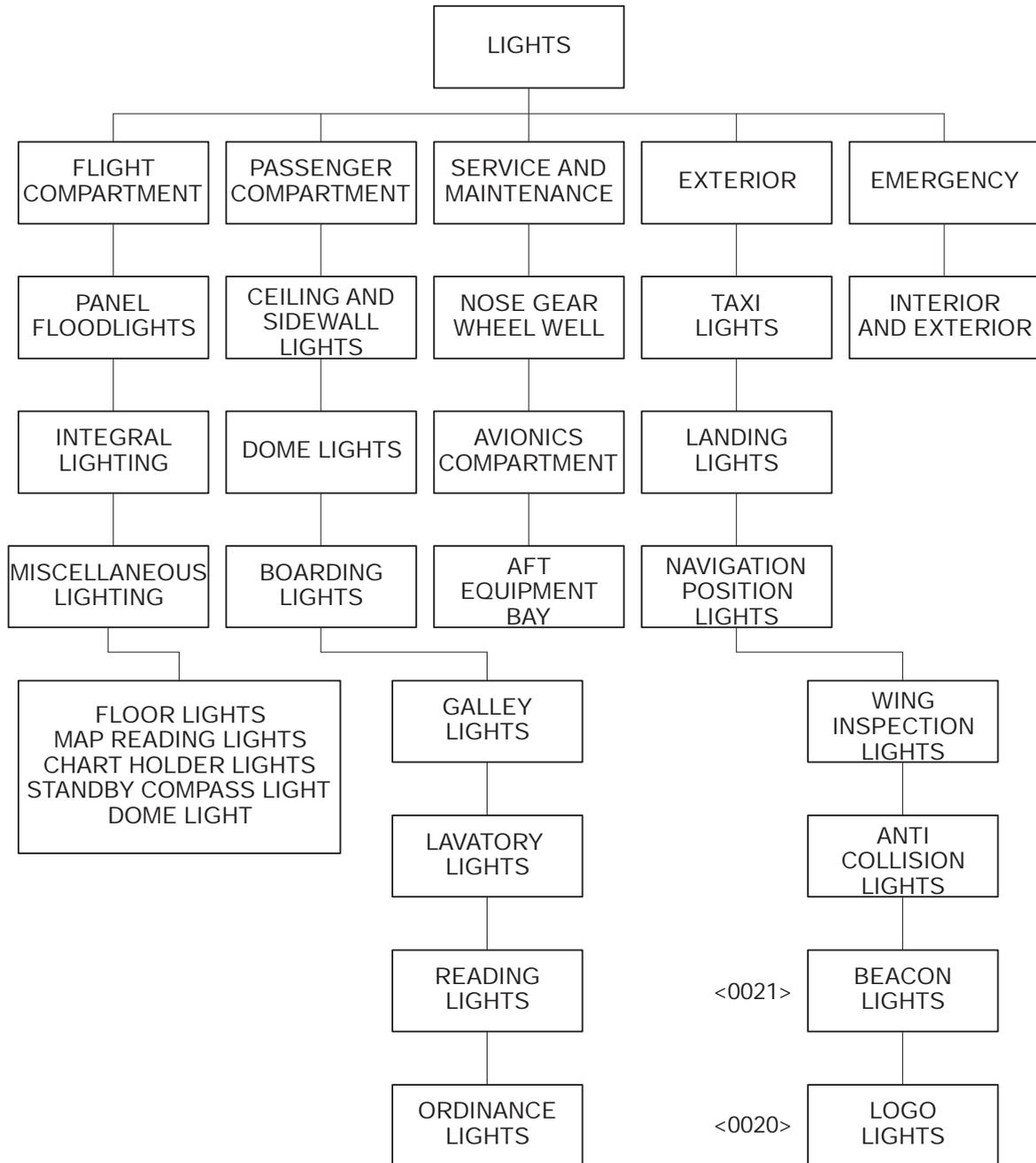
Lighting control panels for the flight compartment, passenger signs and external lighting are located in the cockpit where they are clearly visible and readily accessible to the pilot and copilot. Passenger compartment lights are controlled from the flight attendant's panel in the forward cabin.

Emergency lighting is controlled from the cockpit and may also be controlled from the flight attendant's panel. When armed, the emergency lighting systems come on automatically if essential electrical power is lost.

Service and maintenance lighting is provided for the avionics compartment, baggage compartment, aft equipment compartment and in the landing gear wheel wells. Controls for the lights are located in the area that they illuminate.

Lighting system messages are displayed on the engine indication and crew alerting system (EICAS) displays.

Canadair Regional Jet 100/200 - Lighting



General Lighting Systems <MST>
Figure 17-10-1

Canadair Regional Jet 100/200 - Lighting

1. FLIGHT COMPARTMENT LIGHTING

General illumination of the flight compartment area is provided by dome lights and floor lights. Instrument and control panel lighting is provided by flood lights and integral lighting. Map and reading lights are provided for miscellaneous lighting requirements.

Control panels for the flight compartment lights are located on the overhead panel, on the pilot and copilot side panels and on the center pedestal. Each panel controls the lighting adjacent to the panels location. The controls provide dimming for electronic displays, integral panel lighting and panel flood lighting. Dimming is not provided for floor lighting.

A cockpit dome light is located in the flight compartment overhead entrance area and is controlled by a DOME LIGHT switch on the MISC LTS panel.

Effectivity:

- Airplanes 7003 to 7990 incorporating SB 601R-33-018

Two cockpit dome lights are located in the flight compartment overhead entrance area and are selected on by a DOME LIGHT switch on the MISC LTS panel.

Floor lighting illuminates the floor area between the rudder pedals and the seat of each pilot. Floor lighting is controlled by a switch on the pilot and copilot side panels.

Panel integral lighting with dimming controls supply all the edge lighting for the instrument panels and control panels. The integral lights illuminate the panel names and switch positions to make them more visible for the flight crew.

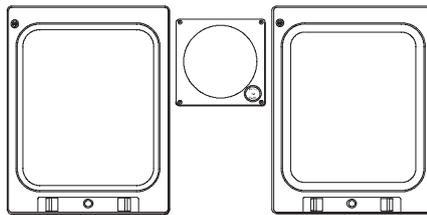
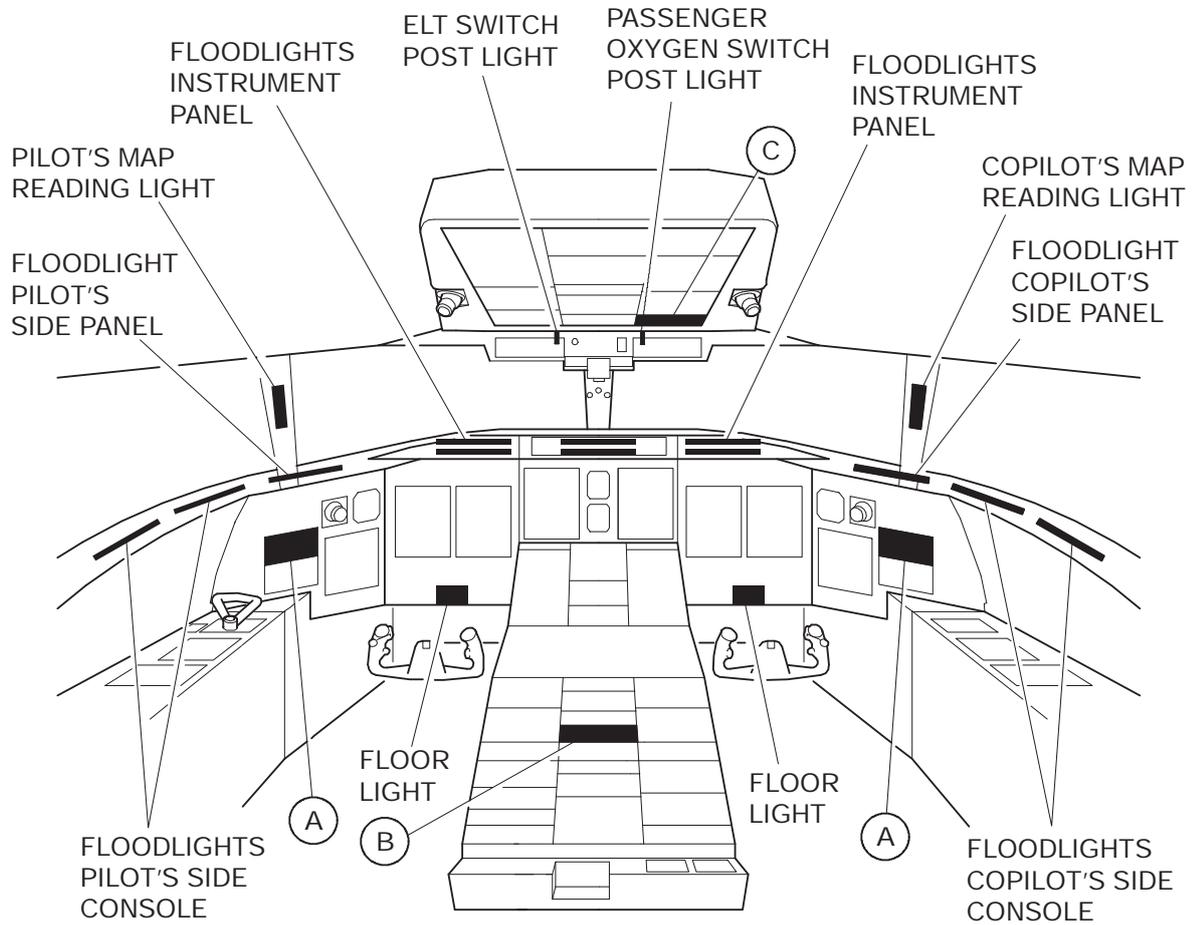
Cockpit flood lights are operated by dimmer knobs on the pilot and copilot side panels and on the center pedestal lighting panel. The pilots dimmer knob controls the flood lights on the left side of the flight compartment. The copilots dimmer knob controls the flood lights on the right side of the flight compartment. The dimmer knob on the center pedestal controls the flood lights for the center instrument panel.

A map light is mounted on each side window post to light the pilot and copilot lap areas. An observers map light, mounted at the cockpit entrance, pivots and swivels for use by any crew member. Light intensity is controlled by a button at the top of the light head and the circular illumination area is controlled by a lever at the bottom of the light head.

When AC power is not available the following will be illuminated by the battery bus:

- Fuel control panel
- Bleed air control panel
- APU control panel
- Electrical power panel
- Fire detection panel
- Engine start and ignition control panel
- Integral lighting and Floor lighting.

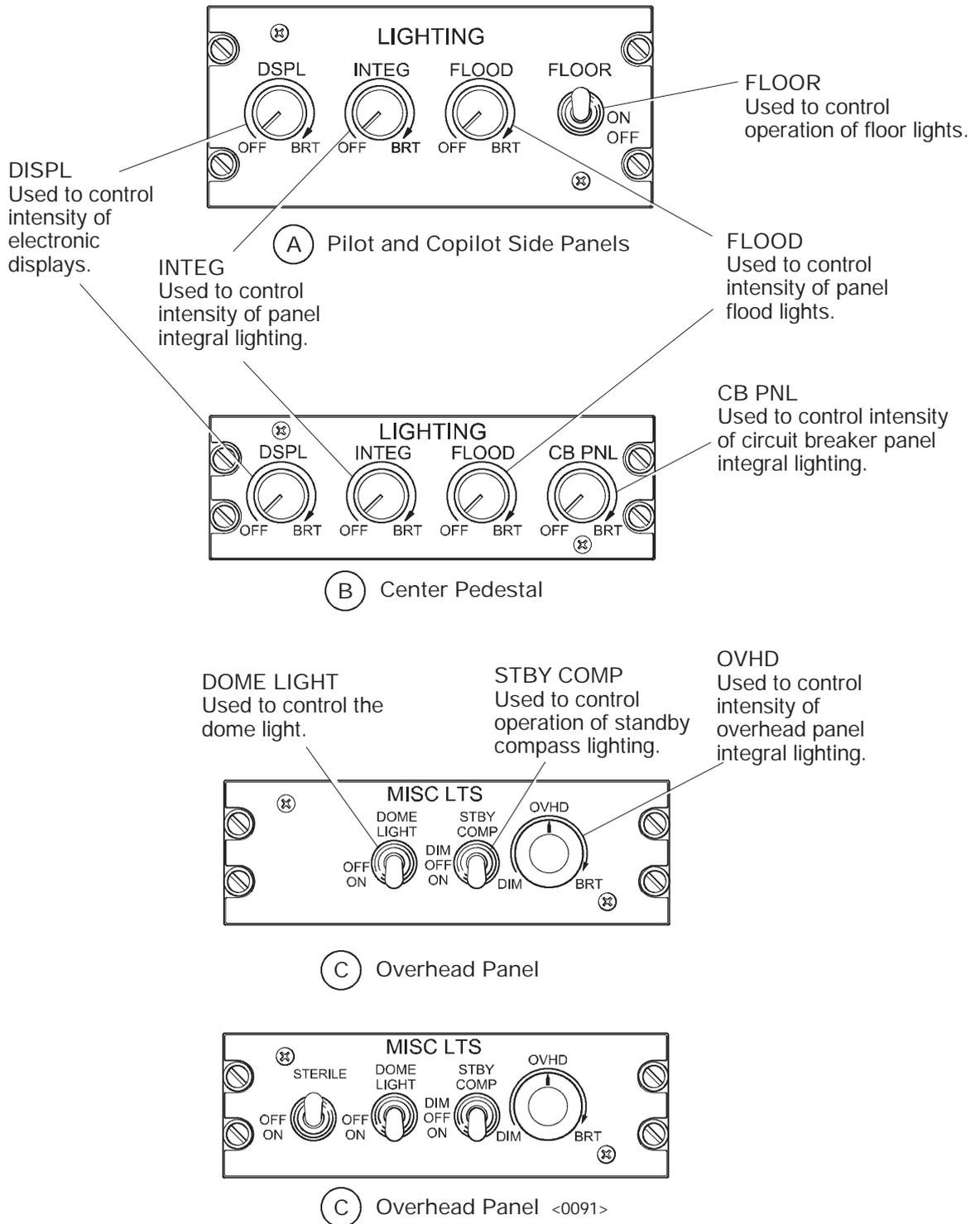
Canadair Regional Jet 100/200 - Lighting



<0083>

Flight Compartment Lighting <MST>
Figure 17-20-1 Sheet 1

Canadair Regional Jet 100/200 - Lighting

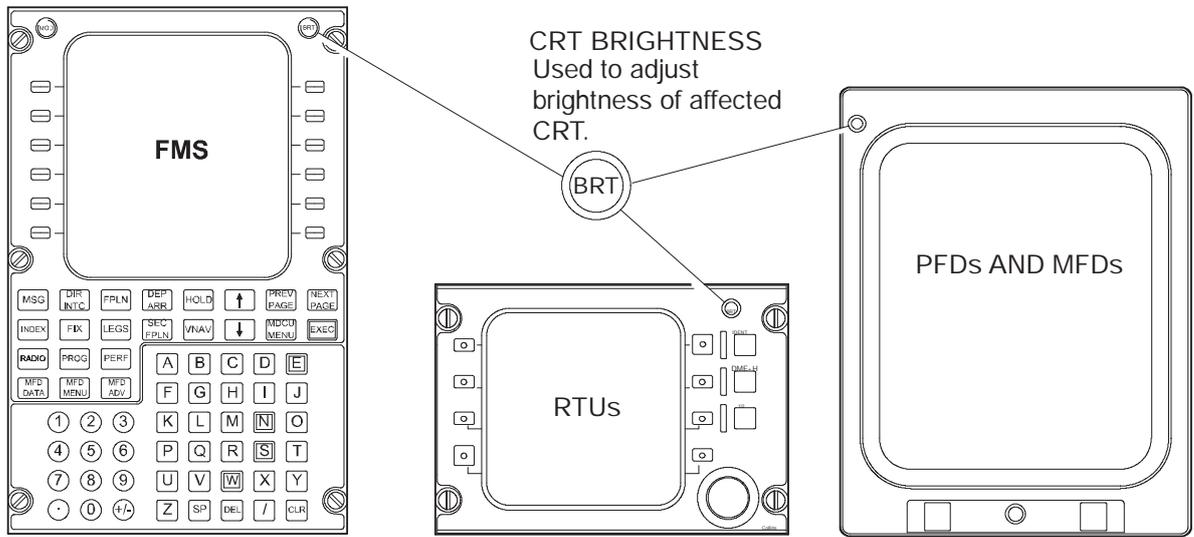


Flight Compartment Lighting <MST>
Figure 17-20-1 Sheet 2

2. CRT LIGHTING ADJUSTMENT

Two separate control selections are used to adjust CRT display lighting intensity. In the upper left corner of each display unit, a BRT (recessed) adjustment knob is used to set the minimum lighting intensity for the associated screen. After adjusting the BRT knob to a minimum level, the pilot can select the desirable level of lighting for the EFIS and EICAS displays by using the DSPL knob located on the associated lighting panel. The RTU's also have brightness adjusting knobs in the upper right corner.

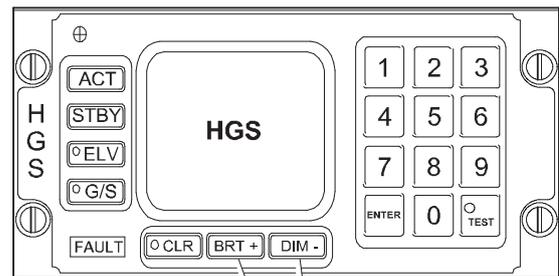
Canadair Regional Jet 100/200 - Lighting



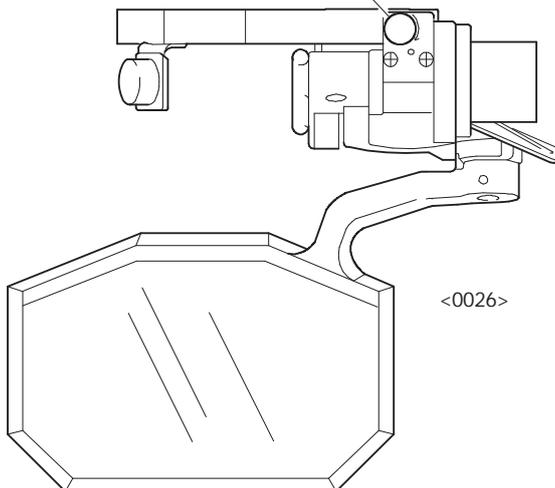
<0024, 0050>

Combiner Brightness Control
Used to adjust brightness
of holographic image.

- Push in for automatic control.
- Pull out and rotate clockwise for manual control.



<0026>



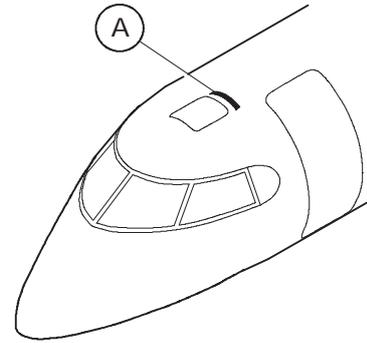
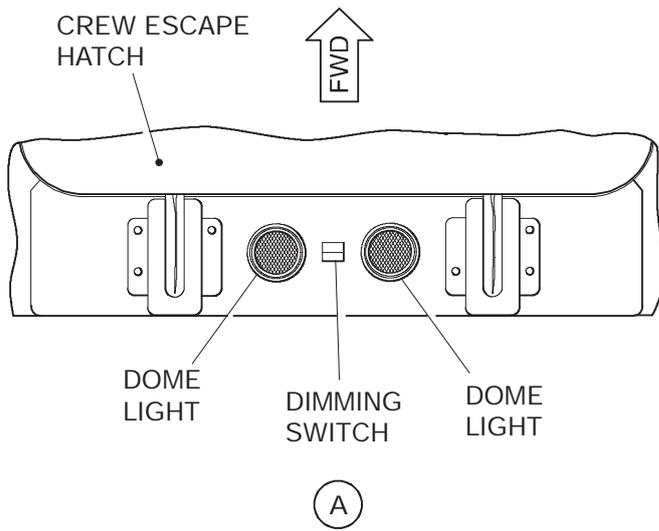
BRT+ and DIM - Keys
(momentary action)
Used to adjust
brightness of CRT.

CRT, RTU, and FMS Lighting <MST>
Figure 17-20-2

Canadair Regional Jet 100/200 - Lighting

Effectivity:

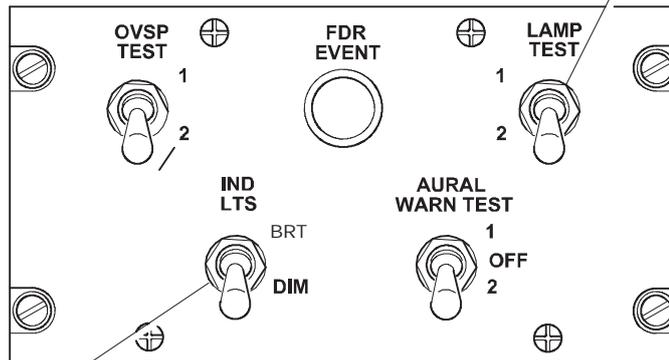
Airplanes 7003 thru 7990 incorporating
the following Service Bulletin:
SB 601R-33-018, Installation of New Cockpit Dome Lights.



Flight Compartment Area Lighting
Figure 17-20-3

Canadair Regional Jet 100/200 - Lighting

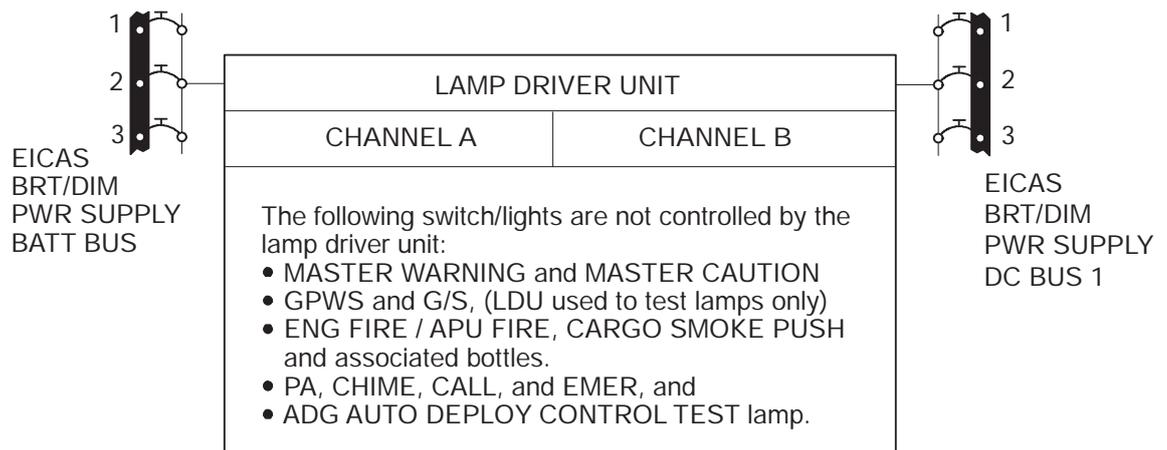
Lamp Test Toggle Switch (maintenance function)
 Used by maintenance personnel to test flight compartment indicator lamps in overhead and center pedestal panels.
 1. Tests all lamps on lamp driver unit channel 1.
 2. Tests all lamps on lamp driver unit channel 2.



Indicator Lights Toggle Switch
 Used to set indicator lamp intensity.
 • DIM - Selects intermediate brightness level for indicator lights (night operation). Switch has no effect on EFIS and EICAS displays.
 • BRT - Selects maximum brightness level for indicator lights (day operation).

NOTE
 Lamps come on at intensity selected by IND LTS selector switch.

Center Pedestal



Indicator Intensity and Test
 Figure 17-20-4

Canadair Regional Jet 100/200 - Lighting

A. System Circuit Breakers

| SYSTEM | SUB-SYSTEM | CB NAME | BUS BAR | CB PANEL | CB LOCATION | NOTES |
|-----------------------------------|------------------------|-------------------------|----------|----------|-------------|-------|
| Flight Compartment Lighting | Floods | INST FLOOD LTG | DC ESS | 4 | C1 | |
| | Integral Lighting | INTEG LTS PLT PNLS | AC ESS | 3 | B12 | |
| | | INTEG LTS C/PLT PNLS | AC BUS 2 | 2 | C12 | |
| | | INTEG LTS CTR PNLS | AC ESS | 3 | B13 | |
| | | CB PNL INT LTS | | | B11 | |
| | Overhead Panel | INST LTS O/H PNL | DC BAT | 1 | P6 | |
| | | | AC BUS 2 | 2 | C13 | |
| | Floor | CKPT FLOOR | DC BUS 1 | 1 | G7 | |
| | Standby Instruments | STBY INSTR LT/VIB | DC BAT | 1 | P2 | |
| | Chart Holder | CHRT HLDR | DC SERV | 2 | U6 | |
| | Map Lights | PLT MAP | DC BAT | 1 | P3 | |
| | | C/PLT MAP | DC BUS 2 | 2 | G7 | |
| | | OBS MAP | DC BAT | 1 | P4 | |
| | Dome Light | DOMES | DC SERV | 2 | T4 | |

1. PASSENGER COMPARTMENT LIGHTING

Passenger compartment lighting is supplied by ceiling and sidewall fluorescent lights. Entrance lighting consists of fluorescent lights in the entrance ceiling panels and three incandescent lights in the stairs of the passenger door. Ceiling, sidewall and entrance lighting is controlled from the forward flight attendant's panel.

Two fluorescent dome lights are installed in the cabin ceiling next to the wardrobe. The lights are controlled by a DOME rocker switch on the forward flight attendants panel.

Two reading lights are installed in each passenger service unit (PSU). They supply personal lighting for passenger use and can be controlled independently. The passenger reading lights can be tested and reset using switches on the forward flight attendants panel.

Lighted NO SMOKING and FASTEN SEAT BELTS ordinance signs are installed in each PSU, in the lavatories, and in the main entrance. The lavatories also have return to seat symbols. Control of the ordinance signs is provided on the PASS SIGNS overhead panel in the flight compartment.

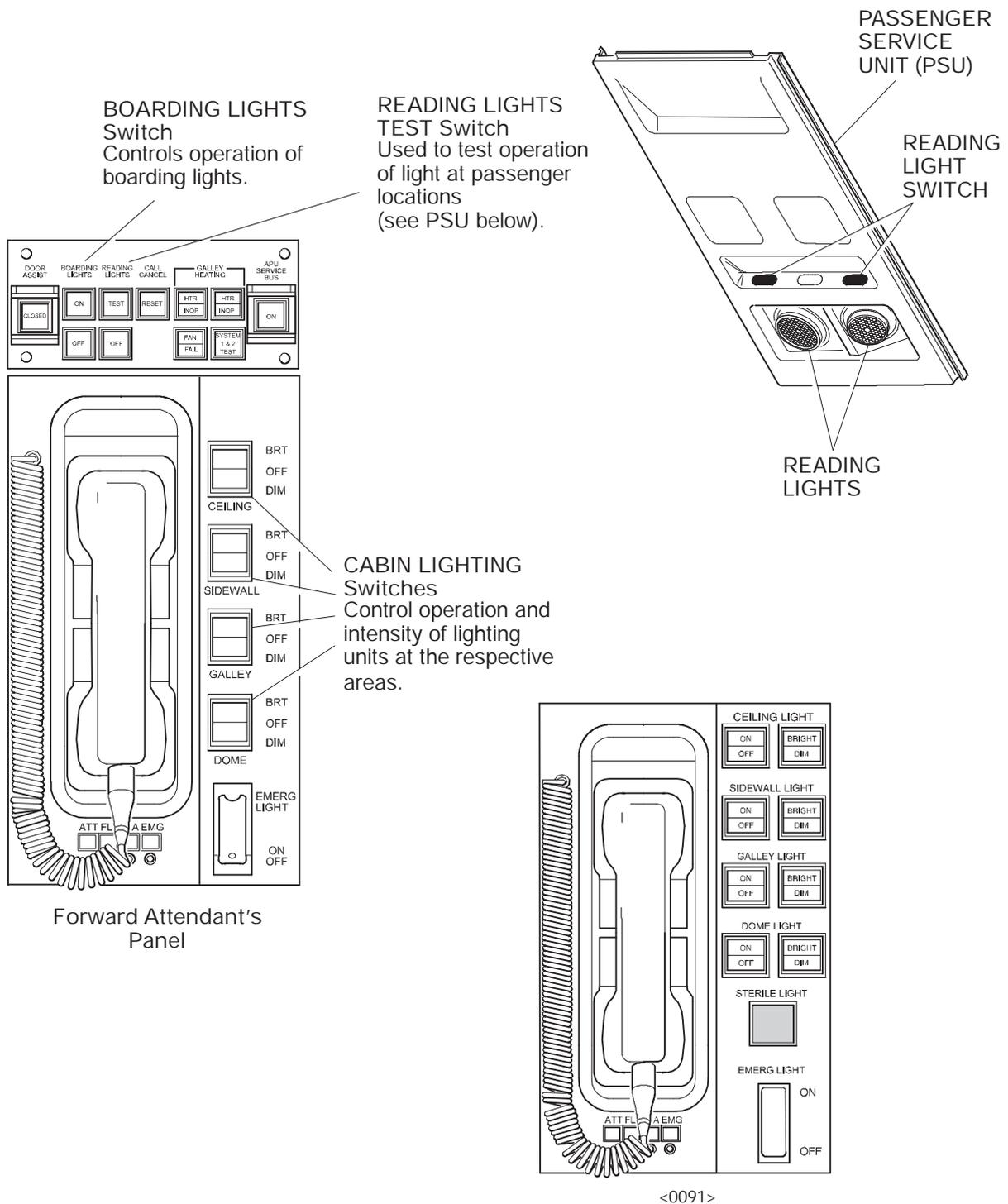
The lavatory is illuminated by a dome light and four fluorescent vanity lights that come on dim when aircraft power is applied. With the lavatory door locked, the lights will come on bright.

Galley lighting is provided by fluorescent lights in the galley ceiling panel. The lights are controlled by a rocker switch on the flight attendants panel.

Lights in the wardrobe and stowage compartments are controlled by micro-switches in the doors, so that the lights come on when the door is opened.

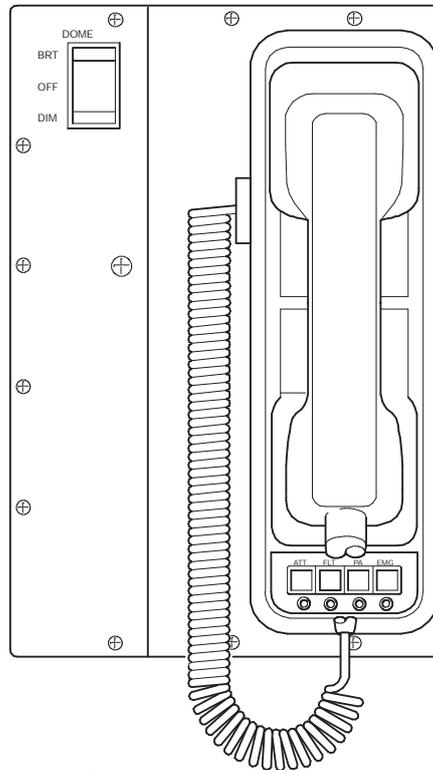
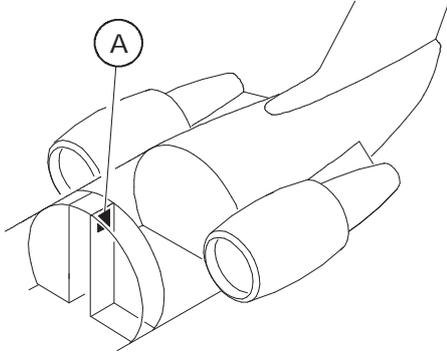
A sterile light, on the forward attendant's panel, is controlled by a switch on the MISC LTS panel in the flight compartment. The light comes on to inform the Flight Attendant that the pilot's do not want to be disturbed. <0091>

Canadair Regional Jet 100/200 - Lighting



Cabin Compartment Lighting – Controls <MST>
Figure 17-30-1 Sheet 1

Canadair Regional Jet 100/200 - Lighting



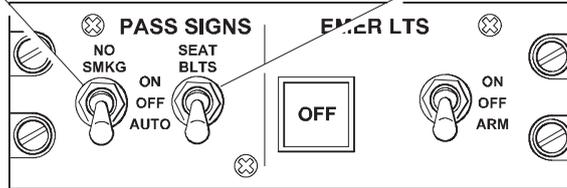
(A) AFT ATTENDANT'S PANEL

Cabin Compartment Lighting – Controls
Figure 17-30-1 Sheet 2

Canadair Regional Jet 100/200 - Lighting

NO SMOKING Switch

- AUTO - The corresponding signs located throughout the cabin come on when the landing gear is extended or cabin altitude is greater than 10,000 feet.
- OFF - Turns off all NO SMOKING signs.
- ON - Turns on all NO SMOKING signs.



Seat Belts Switch

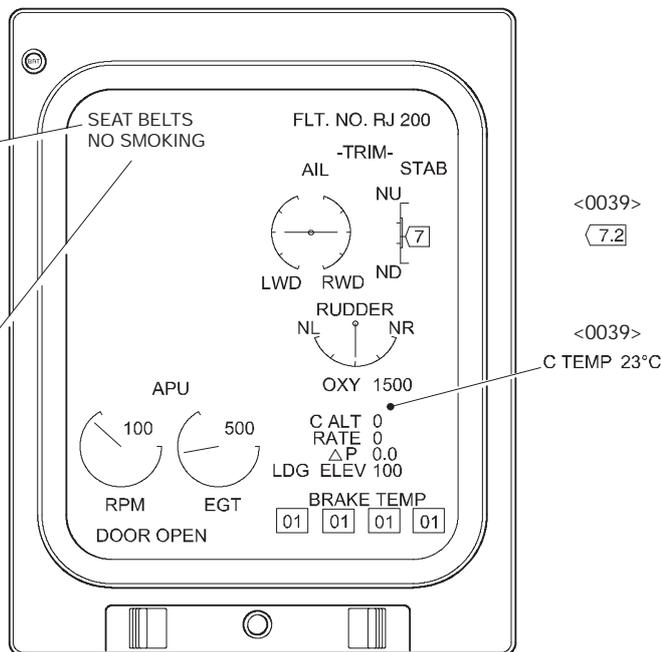
- AUTO - The corresponding signs throughout the cabin come on when cabin altitude is greater than 10,000 feet, when landing gear is extended or when flaps are greater than 0 degrees.
- OFF - Turns off the SEAT BELTS sign and RETURN TO SEAT sign in the lavatory.
- ON - Turns on the SEAT BELTS sign and RETURN TO SEAT sign in the lavatory.



(Typical) Passenger Compartment Ordinance Sign

SEAT BELTS Status (white)
Indicates that the SEAT BELTS sign has been selected ON, automatically or manually.

NO SMOKING Status (white)
Indicates that the NO SMOKING sign has been selected ON, automatically or manually.



Status Page

Passenger Signs <MST>
Figure 17-30-2

Canadair Regional Jet 100/200 - Lighting

A. System Circuit Breakers

| SYSTEM | SUB-SYSTEM | CB NAME | BUS BAR | CB PANEL | CB LOCATION | NOTES |
|--------------------------------|--------------------------|-------------------------|--------------|----------|-------------|---------|
| Passenger Compartment Lighting | Cabin Lighting | CABIN LIGHTING UPWASH | DC SERVICE | 2 | T1 | Left |
| | | CABIN LIGHTING DOWNWASH | | | T2 | Right |
| | | | | | T3 | Left |
| | | | | | T4 | Right |
| | Passenger Signs | PASS SIGNS | DC BAT | 1 | M11 | |
| | | | DC BUS 1 | | L1 | |
| | Passenger Reading Lights | L CABIN READING LTS | DC UTIL 1 | 1 | L5 | Fwd |
| | | | | | L6 | Mid Fwd |
| | | | | | L7 | Mid Aft |
| | | | | | L8 | Aft |
| | | R CABIN READING LTS | DC BUS 2 | 2 | L5 | Fwd |
| | | | | | L6 | Mid Fwd |
| | | | | | L7 | Mid Aft |
| | | | | | L8 | Aft |
| | Galley Lights | GALLEY DOME | DC SERVICE | | U3 | |
| | Boarding Lights/Stairs | BOARD | MAIN BAT DIR | 5 | A14 | |
| DC SERVICE | | | 2 | T4 | <0055> | |
| Lavatory Lights | TOILET | AC SERVICE | | | U2 | |
| | | | | S2 | | |
| Sterile Light | CAB UTILITY LIGHTS | DC BAT | 1 | P5 | <0091> | |

1. SERVICE AND MAINTENANCE LIGHTING

Service lighting is provided for the cargo compartment and external cargo loading area. Maintenance lighting is provided for the landing gear bays, APU compartment, aft equipment compartment and the underfloor avionics compartment.<0046>

A. Service Lighting

The cargo compartment loading area light is installed under the left engine pylon and is angled to illuminate the loading area and the ground immediately below the cargo door. The light is controlled by the same switch as the cargo compartment lights.<0046>

Two service lights illuminate the cargo compartment. The aft cargo compartment lights are controlled by a switch mounted in the cargo compartment just to the left of the cargo door. Illumination of the lights requires a weight-on-wheels signal to ensure that the lights remain off when the aircraft is in flight.

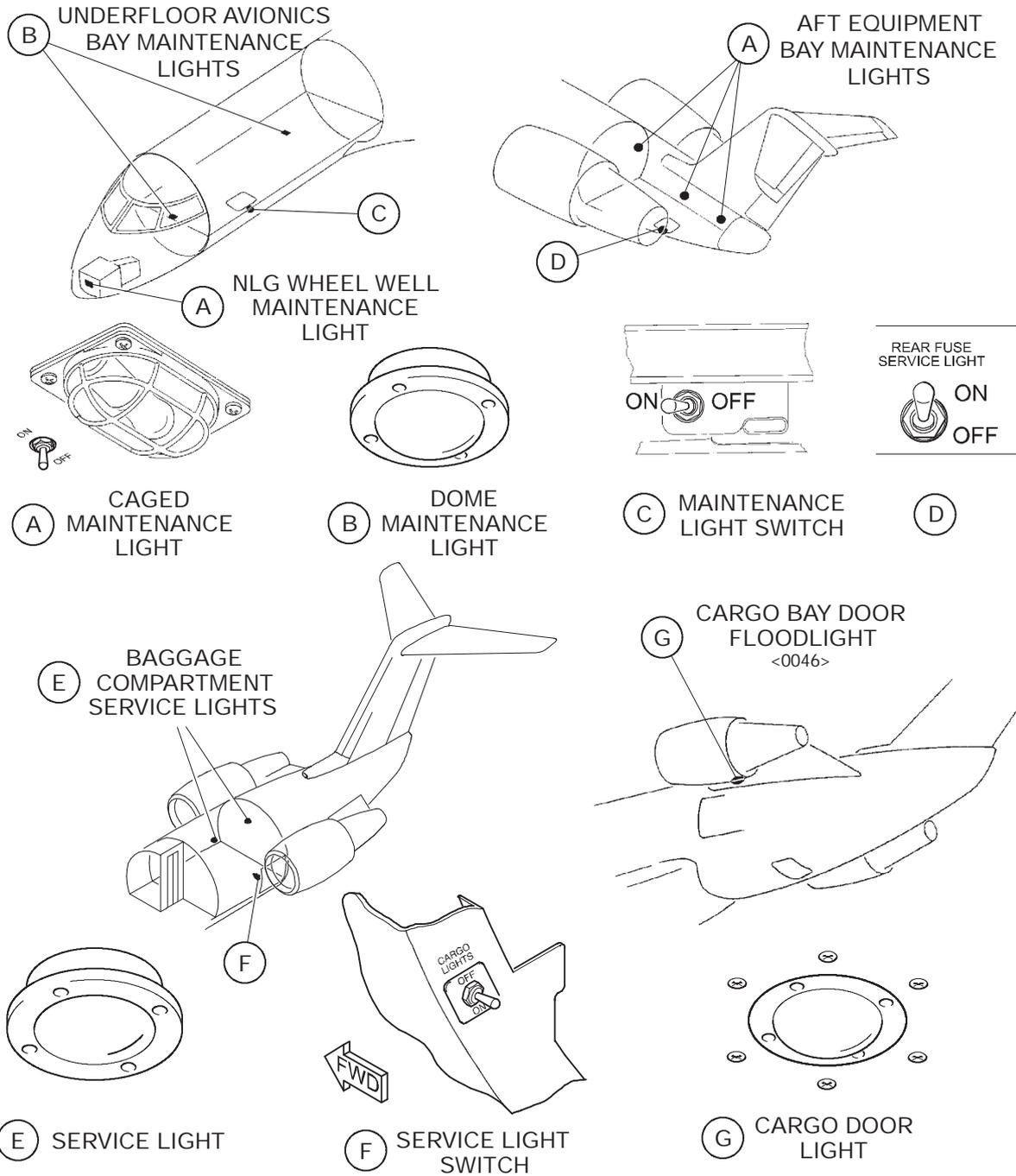
B. Maintenance Lighting

Two maintenance lights are installed in the underfloor avionics compartment. The lights are controlled by a switch located in the compartment just to the left of the avionics door.

Three maintenance lights are installed in the aft equipment compartment. The lights are controlled by a switch located in the compartment just to the left of the compartment door.

A single maintenance light is installed in the nose wheel well with the control switch beside it.

Canadair Regional Jet 100/200 - Lighting



Service Compartment Lighting <MST>
Figure 17-40-1

Canadair Regional Jet 100/200 - Lighting

C. System Circuit Breakers

| SYSTEM | SUB-SYSTEM | CB NAME | BUS BAR | CB PANEL | CB LOCATION | NOTES |
|-------------|------------------------------|--------------|--------------------------------------|----------|------------------------|--------|
| Service | Baggage Compartment Lighting | SERV LIGHTS | | 5 | A13 | |
| | | | | 2 | T3 | <0055> |
| Maintenance | Avionics Bay | MAINT LIGHTS | MAIN BAT DIR (DC BUS 1 <0055>) | 5 | A15 (G10 <0055>) | |
| | NLG Wheel Well | | | | | |
| | Aft Equip Bay | | | | | |

1. EXTERNAL LIGHTING

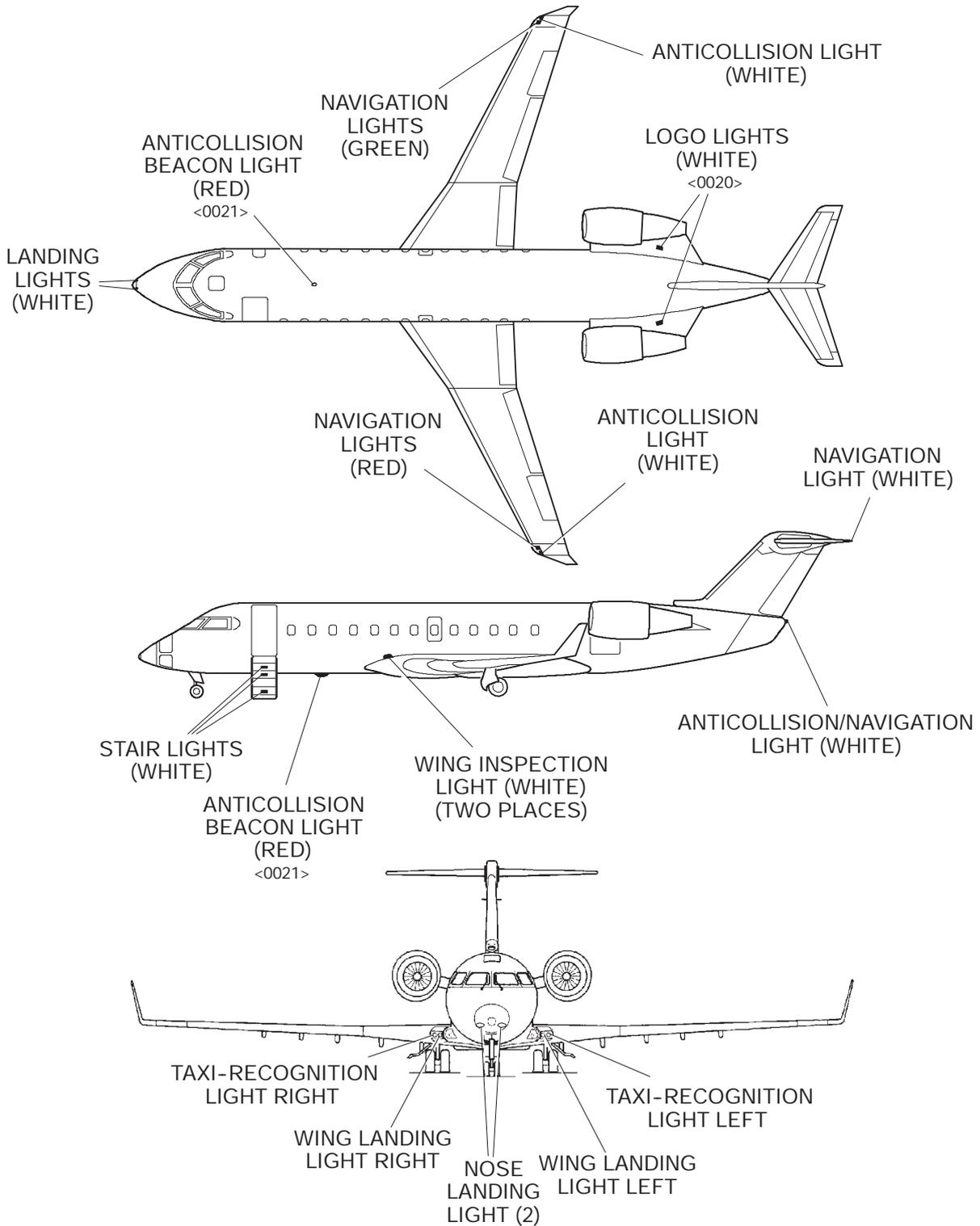
External lighting consists of landing, taxi, navigation, anti-collision strobe and wing inspection lights. Control of the landing and taxi lights is provided by switches on the LANDING LTS panel located on the overhead panel. All other external lighting is controlled by switches on the EXTERNAL LTS panel, also located on the overhead panel.

External lighting consists of landing, taxi, navigation, anti-collision strobe, logo, and wing inspection lights. Control of the landing and taxi lights is provided by switches on the LANDING LTS panel located on the overhead panel. All other external lighting is controlled by switches on the EXTERNAL LTS panel, also located on the overhead panel. <0020>

External lighting consists of landing, taxi, navigation, beacon, anti-collision strobe and wing inspection lights. Control of the landing and taxi lights is provided by switches on the LANDING LTS panel located on the overhead panel. All other external lighting is controlled by switches on the EXTERNAL LTS panel, also located on the overhead panel. <0021>

External lighting consists of landing, taxi, navigation, beacon, anti-collision strobe, logo and wing inspection lights. Control of the landing and taxi lights is provided by switches on the LANDING LTS panel located on the overhead panel. All other external lighting is controlled by switches on the EXTERNAL LTS panel, also located on the overhead panel. <0020><0021>

Canadair Regional Jet 100/200 - Lighting



External Lighting <MST>
Figure 17-50-1

Canadair Regional Jet 100/200 - Lighting

A. Landing and Taxi Lighting

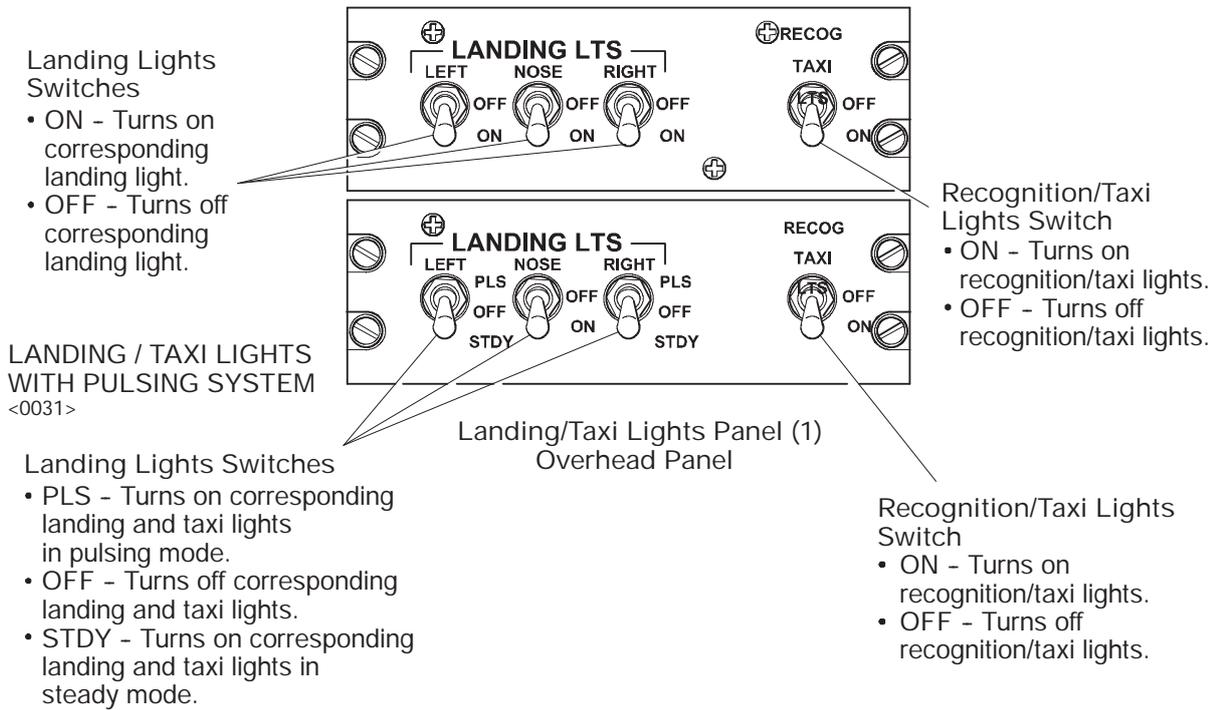
One landing light is installed in the leading edge of each wing and two landing lights are installed on the nose radome. The taxi lights are installed outboard of the wing landing lights, in the same wing compartments. The taxi lights also serve as recognition lights.

The nose landing lights are designed to illuminate the ground during landing and take-off. Activation requires a gear downlock signal to prevent the lights from being on when the landing gear is retracted.

The wing landing lights and taxi lights are high intensity discharge lamps. The landing lights are controlled by the LEFT, RIGHT and NOSE landing light switches on the LANDING LTS panel. The taxi lights are controlled, separately from the landing lights, by the RECOG/TAXI LTS switch on the same panel.

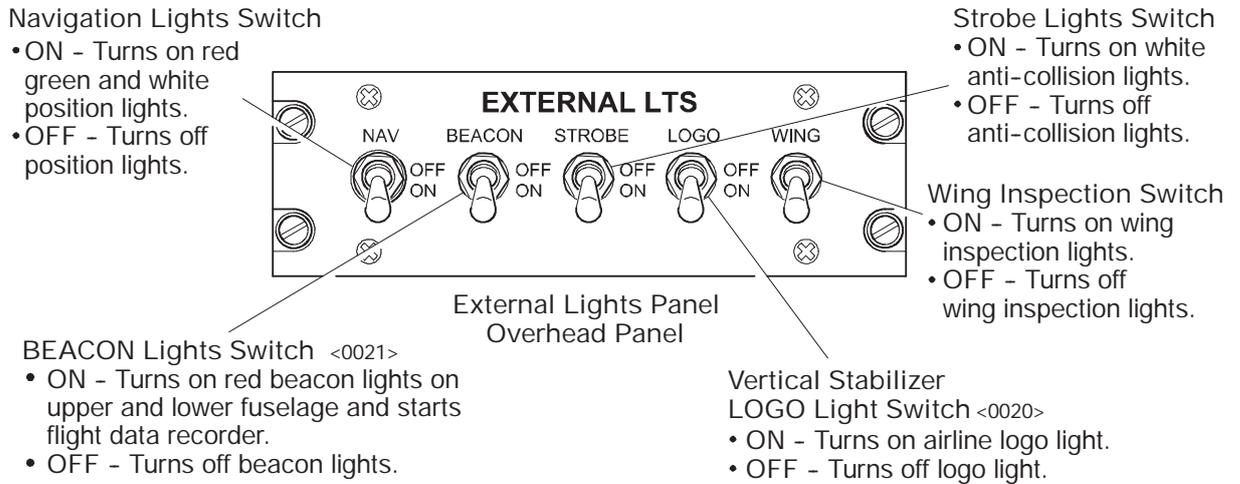
The landing/taxi lights pulsing system is used to enhance the aircraft flight path recognition quality. By pulsing alternately the intensity of the landing/taxi lights, an illusion of exaggerated motion is created, which can be readily recognized, increasing collision avoidance. <0031>

Canadair Regional Jet 100/200 - Lighting



Landing/ Taxi Lights <MST>
Figure 17-50-2

Canadair Regional Jet 100/200 - Lighting



External Lights Panel <MST>
Figure 17-50-3

Canadair Regional Jet 100/200 - Lighting

B. Navigation Lighting

A dual navigation light system is installed in the aircraft for additional dispatch reliability. The navigation lights consists of two red lights in the left wing tip, two green lights in the right wing tip, one white light on the aft end of the vertical stabilizer and one white light on the aft end of the tail cone. The lights provide visual tracking and orientation of the aircraft in relation to an observer. The navigation lights are controlled by a NAV switch on the EXTERNAL LTS panel.

C. Beacon Lights <0021>

Two red beacon lights are installed on the aircraft to permit the aircraft to be seen from a distance. One light is installed on the top of the fuselage and one light is installed on the bottom of the fuselage. The lights are controlled by a BEACON switch on the EXTERNAL LTS panel. The lights are also used during ground operations to provide indication that the aircraft is powered and may have engines running.

D. Anti-Collision Strobe Lights

There are three white anti-collision strobe lights on the aircraft. One light is installed in each wing tip and one is installed on the aft end of the tail cone next to the navigation light. They are synchronous lights that flash continuously. The light are controlled by a STROBE switch on the EXTERNAL LTS panel.

E. Logo Lighting <0020>

A white logo light is installed on the upper surface of each engine pylon to illuminate the airline logo on each side of the vertical stabilizer. The lights are controlled by a LOGO switch on the EXTERNAL LTS panel.

F. Wing Inspection Lighting

A white wing inspection light is installed on each side of the fuselage just forward of the wing. The lights are controlled by a WING switch on the EXTERNAL LTS panel. The light allows the pilots to monitor the wing leading edges for ice accumulation.

Canadair Regional Jet 100/200 - Lighting

G. System Circuit Breakers

| SYSTEM | SUB-SYSTEM | CB NAME | BUS BAR | CB PANEL | CB LOCATION | NOTES |
|-------------------|-----------------------|---------------------|-------------|----------|-------------|-------|
| External Lighting | Landing/Taxi Lights | LDG/TAXI LTS R WING | AC BUS 2 | 2 | C15 | |
| | | LDG/TAXI LTS L WING | AC BUS 1 | 1 | C15 | |
| | | PULSE LTS <0031> | | | | |
| | Nose Landing Lights | LDG/TAXI LTS R NOSE | AC BUS 2 | 2 | C14 | |
| | | LDG/TAXI LTS L NOSE | AC BUS 1 | 1 | C14 | |
| | Navigation Lights | NAV | DC SERV BUS | 2 | U1 | |
| | | NAV LTS | AC BUS 1 | 1 | C13 | |
| | Anti-Collision Lights | REAR A/COLL | DC BUS 1 | 1 | G8 | |
| | | WING A/COLL | DC BUS 2 | | | |
| | Beacon Lights <0021> | BEACON LTS | DC SERV BUS | 2 | U7 | |
| | Logo Lights <0020> | LOGO LTS | AC SERV BUS | | S5 | |
| | Wing Inspection | WING INSP | DC BUS 1 | 1 | G9 | |

1. EMERGENCY LIGHTING

Emergency lighting consists of internal and external lighting that is provided for the passengers and crew in the event of an emergency evacuation from the aircraft.

External emergency lights provides illumination of the overwing evacuation exit paths and exterior areas around the passenger door and the service door.

Internal emergency lighting provides emergency lighting to the passenger cabin, emergency exits and interior exit paths. The internal emergency lights include lighted exit signs near the emergency exits at floor level, at eye level and on the ceiling. There are ceiling flood lights installed along the length of the passenger compartment and floor-level flood lights at the passenger and service doors. Electroluminescent green lights, installed along the floor next to the right side passenger seats, provide illuminated escape path routing to the emergency exits. The electroluminescent lights have orange overlays at the emergency exits.

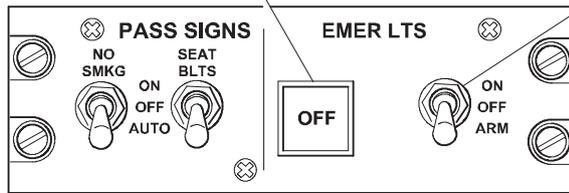
Electrical power for all emergency lighting is supplied by four self-contained battery packs. Each battery pack contains 6 nickel-cadmium batteries (providing 7.2 volts DC) that are designed to illuminate all emergency light systems for approximately 15 minutes. The battery packs are supplied with a trickle charge from the DC essential bus.

Emergency lighting is controlled by a cockpit switch on the EMERG LTS panel (located on the overhead panel) or by a guarded EMERG LIGHTS switch on the forward flight attendant's panel. The emergency lights can be manually turned on using either switch. With the cockpit switch in the ARM position, the emergency lights will come on automatically whenever DC essential power is lost.

Canadair Regional Jet 100/200 - Lighting

Emergency Lights
 OFF Light (amber)
 Comes on to indicate that
 the emergency lighting
 system has been selected off.

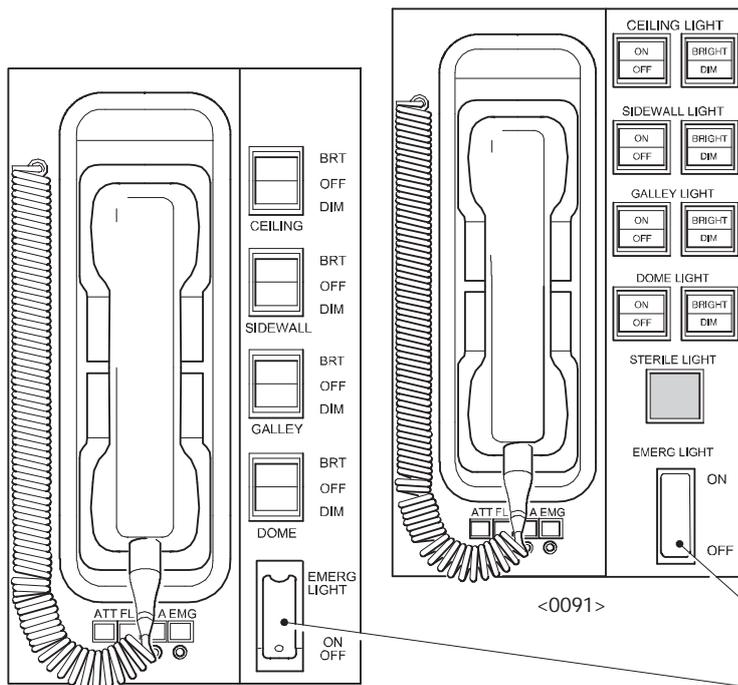
- Battery pack is off
- Lights are off.



Emergency Lights Panel (1)
 Overhead Panel

Emergency Lights Switch
 Controls operation of
 emergency lighting
 system. Attendants
 switches have priority.

- ON - Turns on all emergency lights.
- OFF - Prevents actuation of emergency lights system when airplane electrical power is lost or is turned off.
- ARM - All interior and exterior emergency lights come on automatically if DC ESS power fails or is turned off.



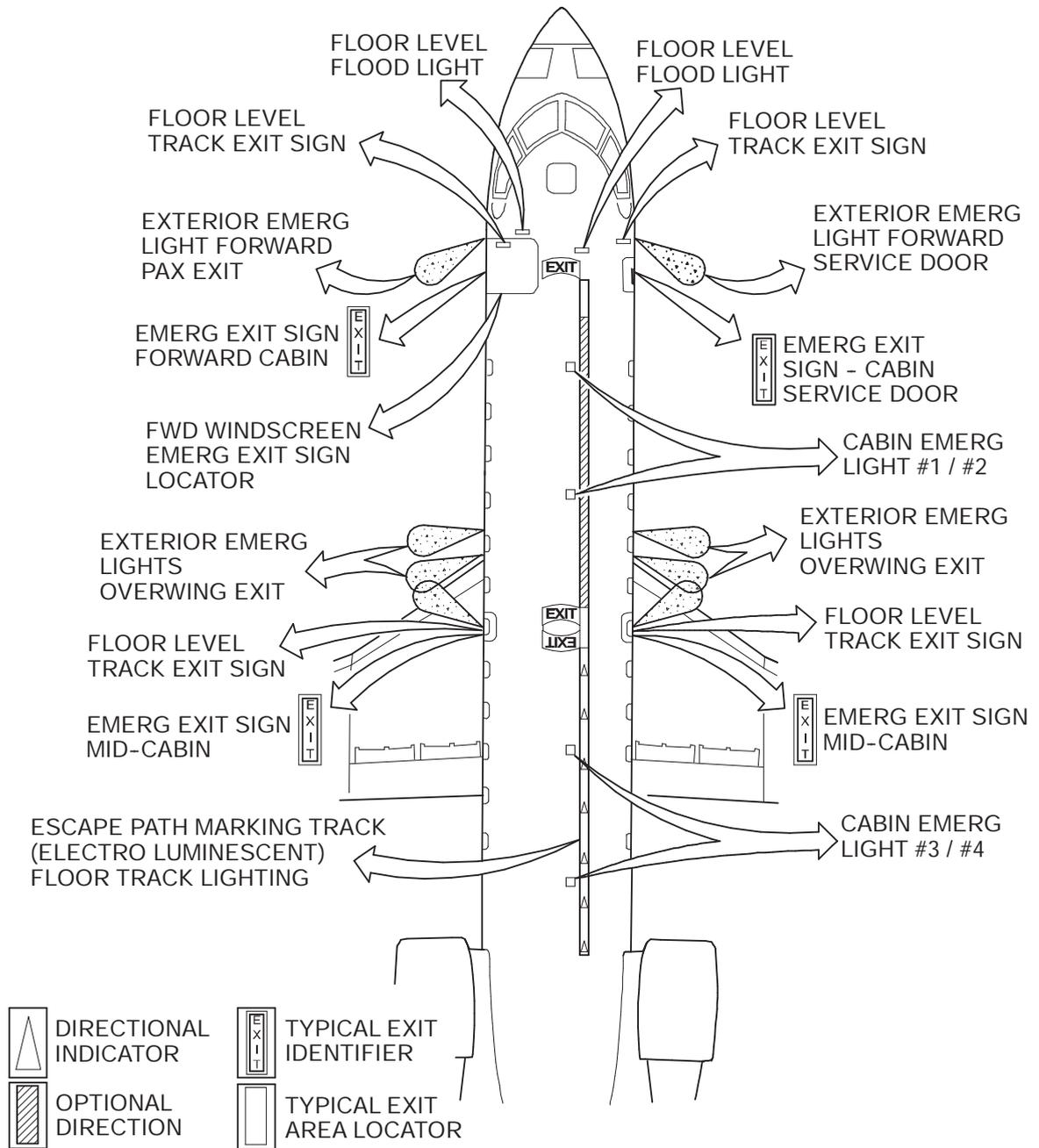
Forward Attendant's
 Panel

Emergency Lights Switch
 (guarded)
 Controls operation of
 emergency lighting

- ON - Turns on all emergency lights, overrides flight compartment OFF selection.
- OFF - Prevents actuation of emergency lights system when airplane electrical power is lost or is turned off.

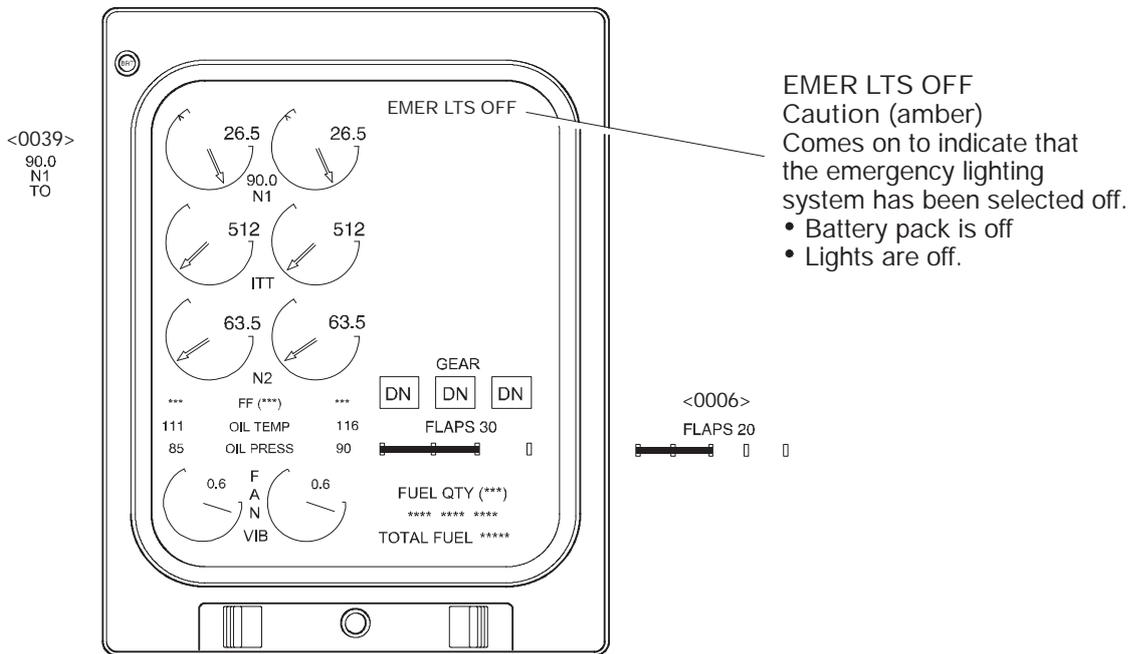
Emergency Lighting Controls <MST>
 Figure 17-60-1

Canadair Regional Jet 100/200 - Lighting

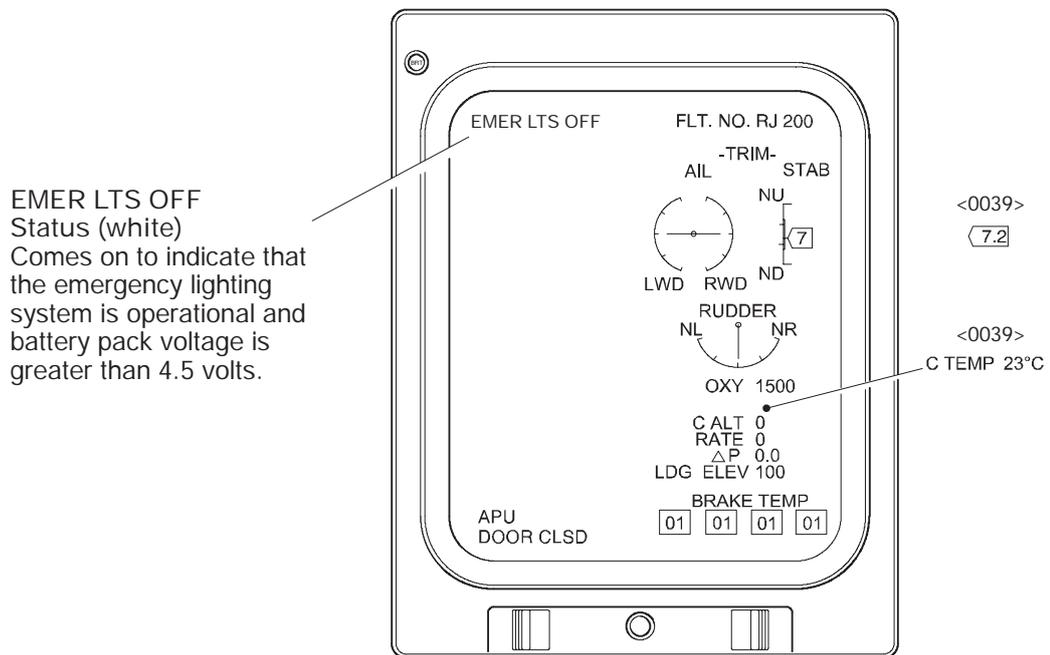


Emergency Lighting
Figure 17-60-2

Canadair Regional Jet 100/200 - Lighting



Primary Page



Status Page

Emergency Lighting EICAS Messages <MST>
Figure 17-60-3

Canadair Regional Jet 100/200 - Lighting

A. System Circuit Breakers

| SYSTEM | SUB-SYSTEM | CB NAME | BUS BAR | CB PANEL | CB LOCATION | NOTES |
|--------------------|------------------|-----------|------------|----------|-------------|-------|
| Emergency Lighting | Emergency Lights | EMERG LTS | DC ESS BUS | 4 | C2 | |