

12.14 (ATA 33) LIGHTS

12.14.1 Introduction

The aeroplane has interior, exterior, and emergency lights. There are approach and flare lights just outboard of each nacelle. Position lights are located on the wing tips. The bullet fairing has an aft position light and an upper anti collision light. A lower anti collision light and a red recognition light are located on the fuselage.

12.14.2 General

Interior lighting is supplied for the:

- Flight deck
- Passenger compartment
- Baggage compartments
- Service areas.

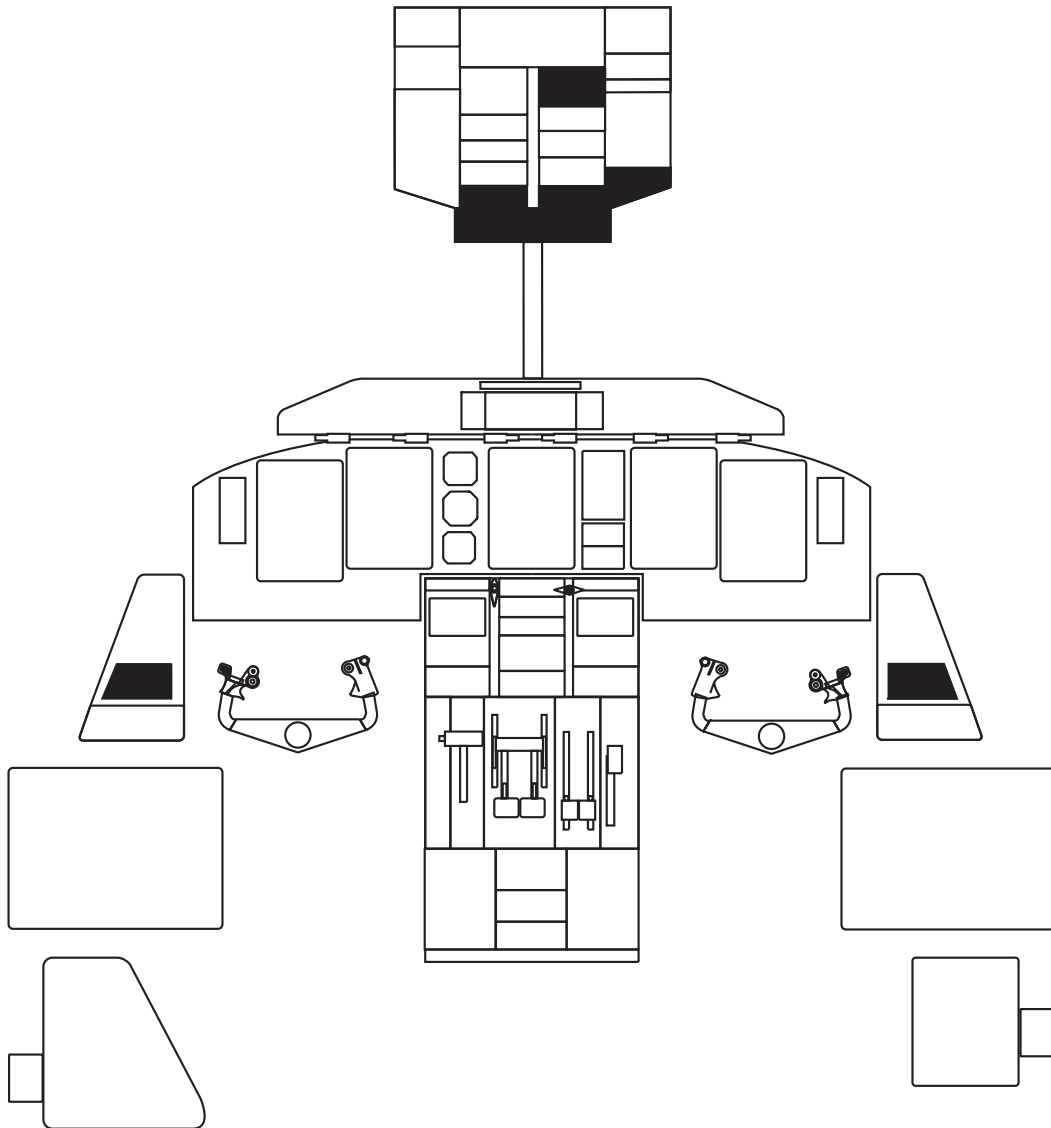
Exterior lights include:

- Approach
- Flare
- Taxi
- Position
- Recognition and Anti collision
- Engine and Wing inspection
- Logo.

Emergency lighting includes:

- Ceiling lights
- Reflective floor markings
- Locator signs
- Exit signs
- An egress light for each passenger exit.

12.14.3 Controls and Indications - Lights



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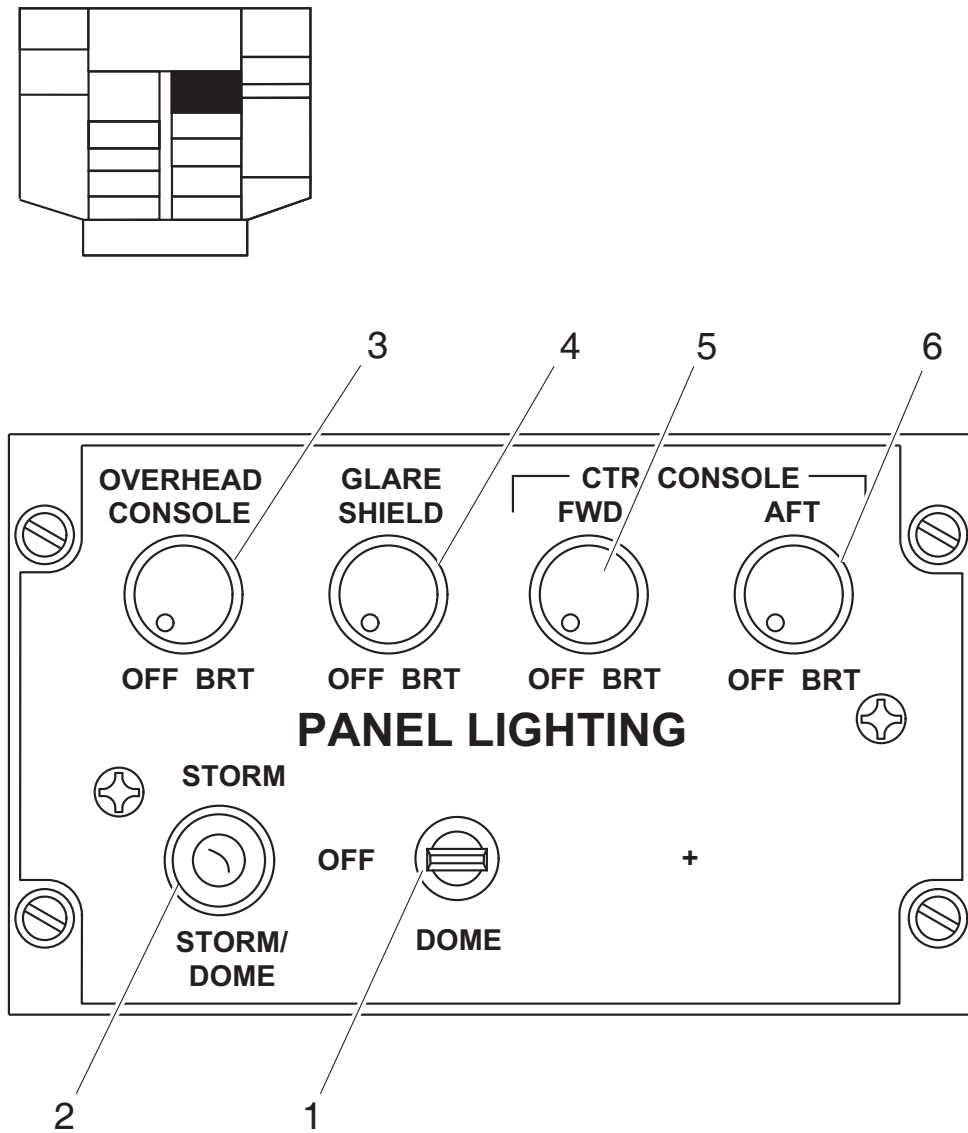


Figure 12.14-1 Panel Lighting Control Panel

PANEL LIGHTING CONTROL PANEL CALLOUTS

1. DOME LIGHT SWITCH (two position)

DOME - flight deck dome lights come on

- power from BATTERY PWR bus

- battery master does not have to be set to **BATTERY MASTER**

OFF - dome lights off

2. STORM/DOME LIGHT SWITCH (three position)

STORM - storm lights come on

STORM/DOME - both storm and dome lights come on

- power from L SECONDARY bus

OFF - storm lights off

- dome lights off

3. OVERHEAD CONSOLE KNOB (rotary action)

OFF - overhead console lights off

ROTATE - changes overhead console light intensity

BRT - overhead console lights at maximum brightness

4. GLARESHIELD KNOB (rotary action)

OFF - glareshield lights off

ROTATE - changes glareshield light intensity

BRT - glareshield lights at maximum brightness

- also controls both clock lights

5. FWD CTR CONSOLE KNOB (rotary action)

OFF - forward centre console lights off

ROTATE - changes forward centre console light intensity

BRT - forward centre console lights at maximum brightness

6. AFT CTR CONSOLE KNOB (rotary action)

OFF - aft centre console lights off

ROTATE - changes aft centre console light intensity

BRT - aft centre console lights at maximum brightness

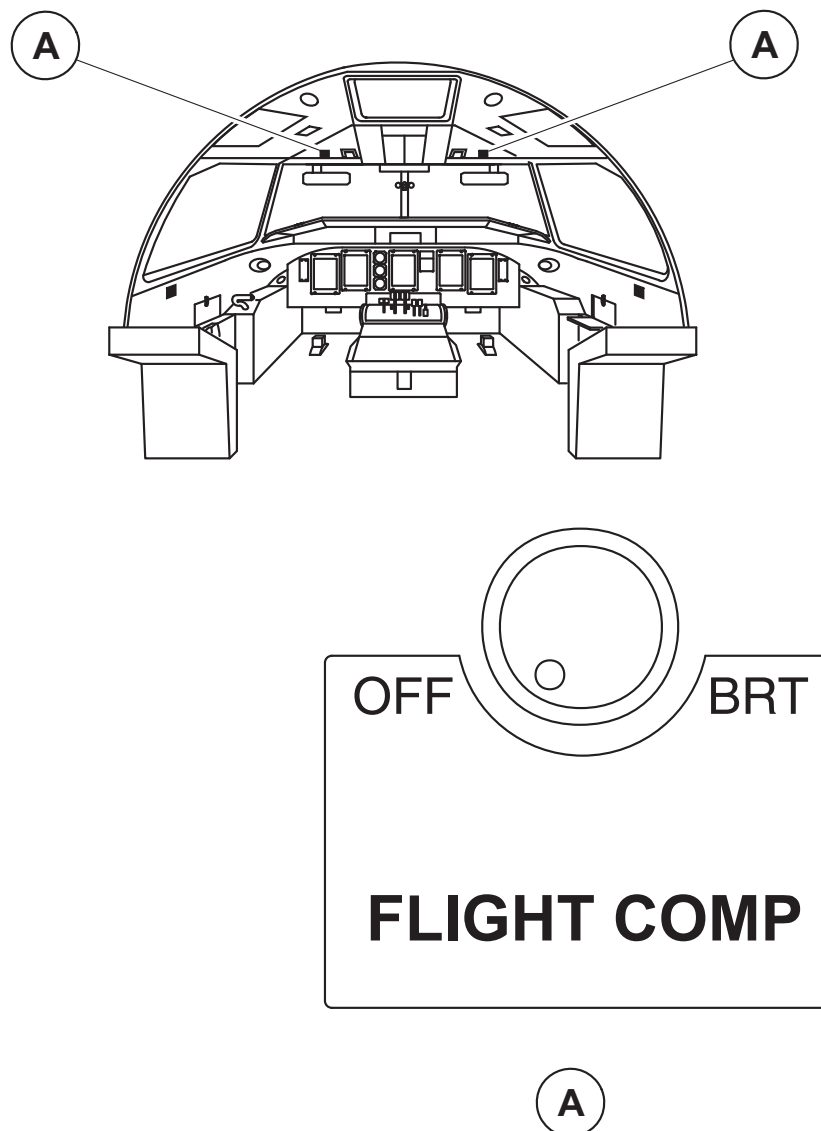


Figure 12.14-2 Utility Lights Dimming Knob

UTILITY LIGHTS DIMMING KNOB CALLOUTS

1. FLIGHT COMP UTILITY LIGHT KNOB (rotary action)

OFF - related utility light off

ROTATE - changes related utility light intensity

BRT - related utility light at maximum brightness

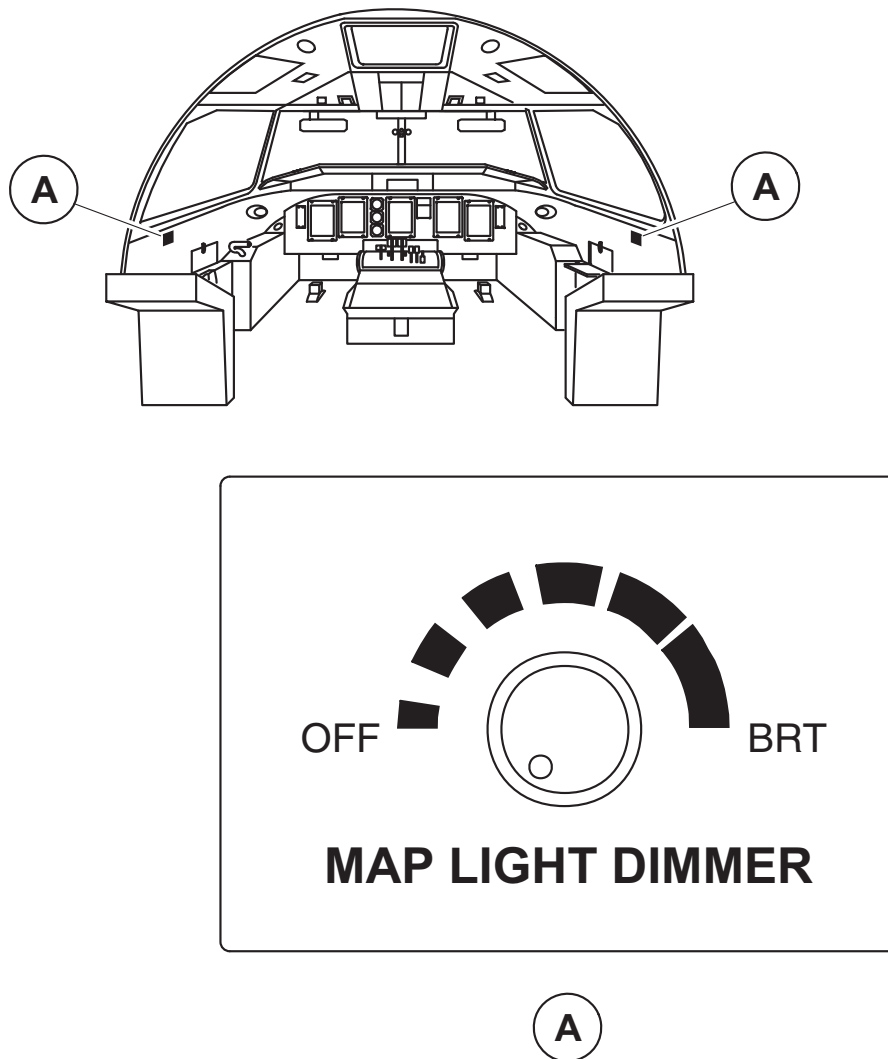


Figure 12.14-3 Map Light Dimming Knob

MAP LIGHT DIMMING KNOB CALLOUTS

1. MAP LIGHT DIMMER KNOB (rotary action)

OFF - related map light off

ROTATE - changes related map light intensity

BRT - related map light at maximum brightness

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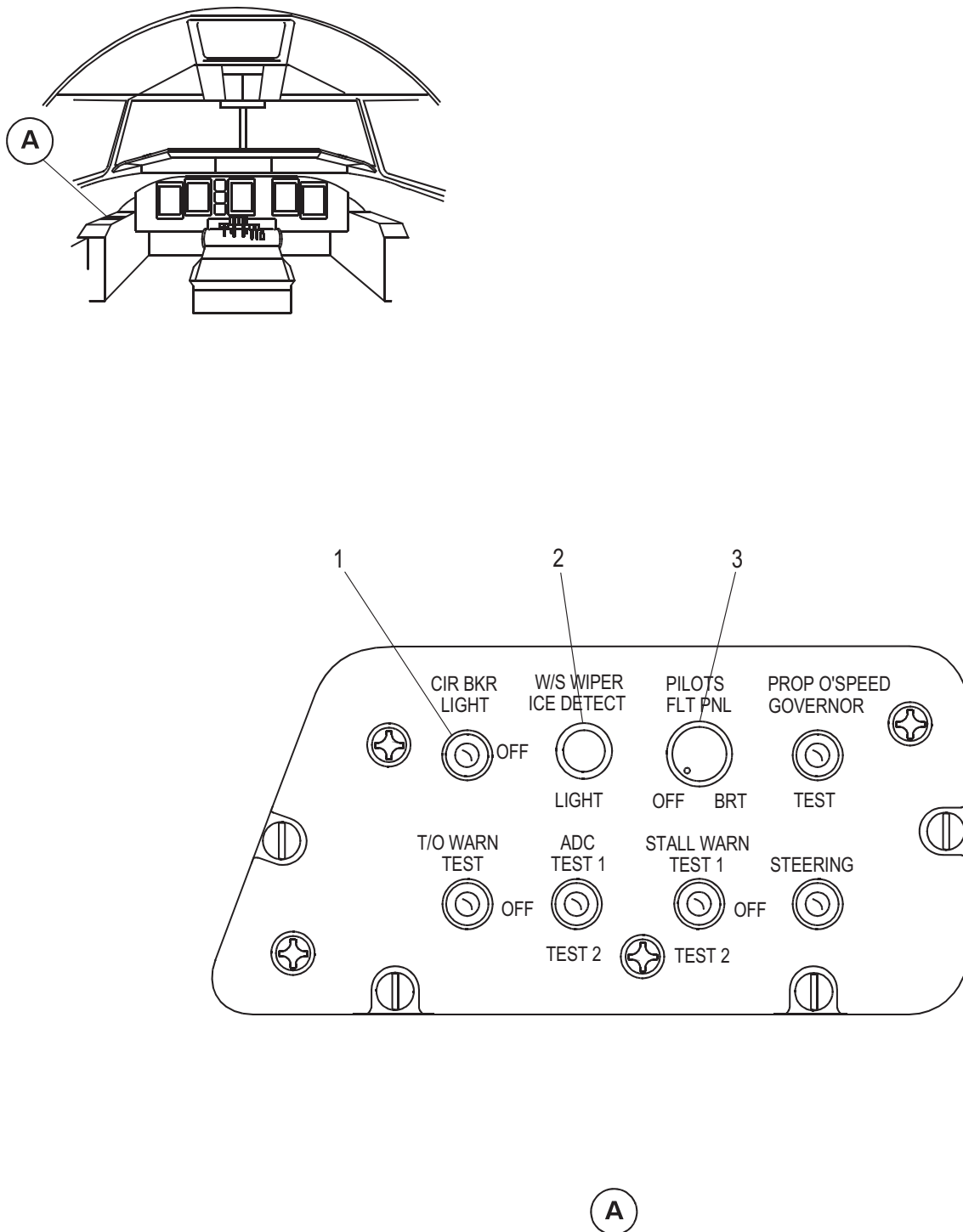


Figure 12.14-4 Pilot's Side Panel Light Switches

PILOT'S SIDE PANEL CALLOUTS PERTAINING TO LIGHTS

1. CIR BKR LIGHT SWITCH (two position)

CIR BKR LIGHT - pilot's circuit breaker lights comes on

OFF - pilot's circuit breaker light off

2. W/S WIPER ICE DETECT PUSHBUTTON (momentary action)

PUSH - windshield wiper ice detection light, above glareshield, shines on the pilot's windshield wiper spigot

3. PILOTS FLT PNL KNOB (rotary action)

OFF - pilot's side console, ICP1, and Standby Instruments lights off

ROTATE - changes pilot's side console, ICP1 and Standby Instruments lights intensity

BRT - pilot's side panel console, ICP1 and Standby Instruments lights at maximum brightness

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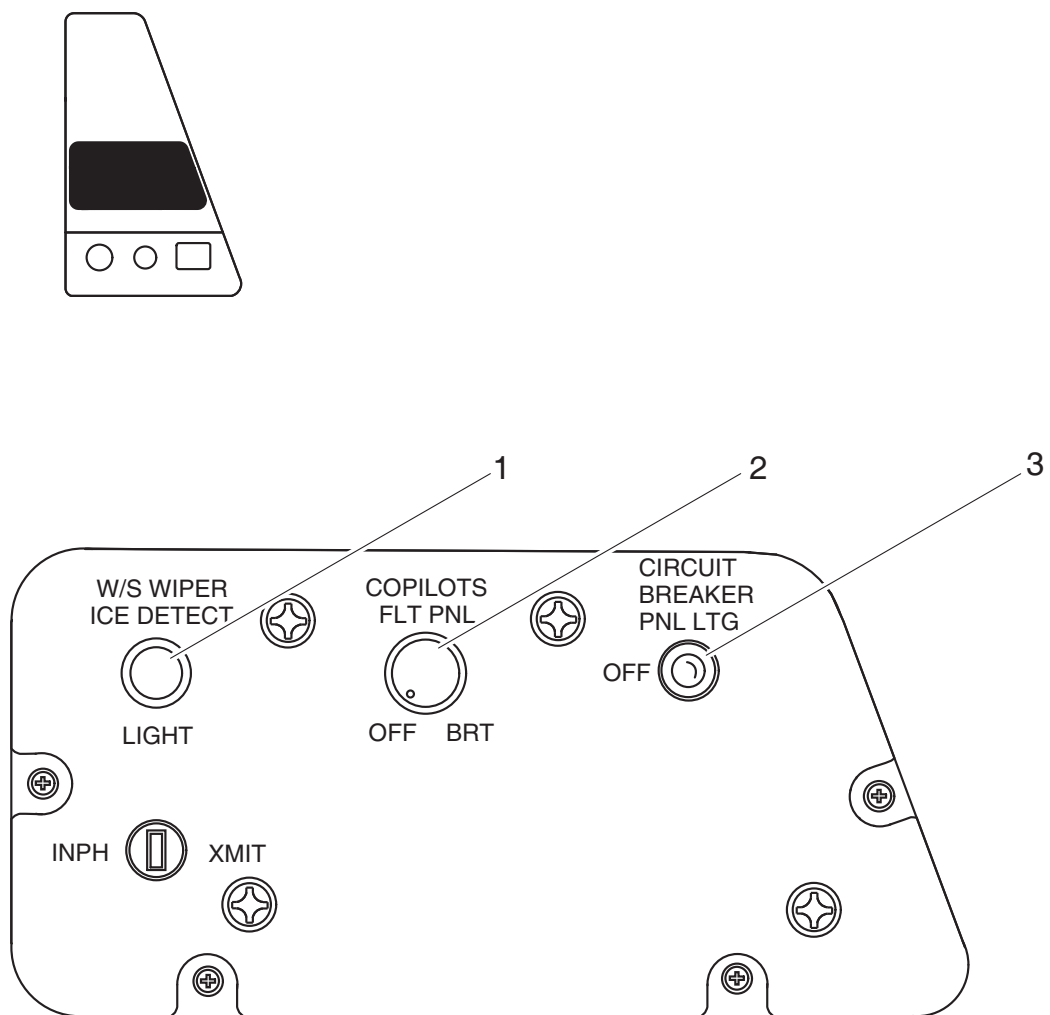


Figure 12.14-5 Copilot's Side Panel Light Switches

COPILOT'S SIDE PANEL CALLOUTS PERTAINING TO LIGHTS

1. W/S WIPER ICE DETECT PUSHBUTTON (momentary action)

PUSH - windshield wiper ice detection light, above glareshield, shines on the copilot's windshield wiper spigot

2. COPILOTS FLT PNL KNOB (rotary action)

OFF - copilot's side console, ICP2, Landing Gear selector panel, and GPWS/Hydraulic control panel lights off

ROTATE - changes copilot's side console ICP2, Landing Gear selector panel, and GPWS/Hydraulic control panel lights intensity

BRT - copilot's side console ICP2, Landing Gear selector panel, and GPWS/Hydraulic control panel lights at maximum brightness

3. CIRCUIT BREAKER PNL LTG SWITCH (two position)

CIRCUIT BREAKER PNL LTG - copilot's circuit breaker lights comes on

OFF - copilot's circuit breaker light off

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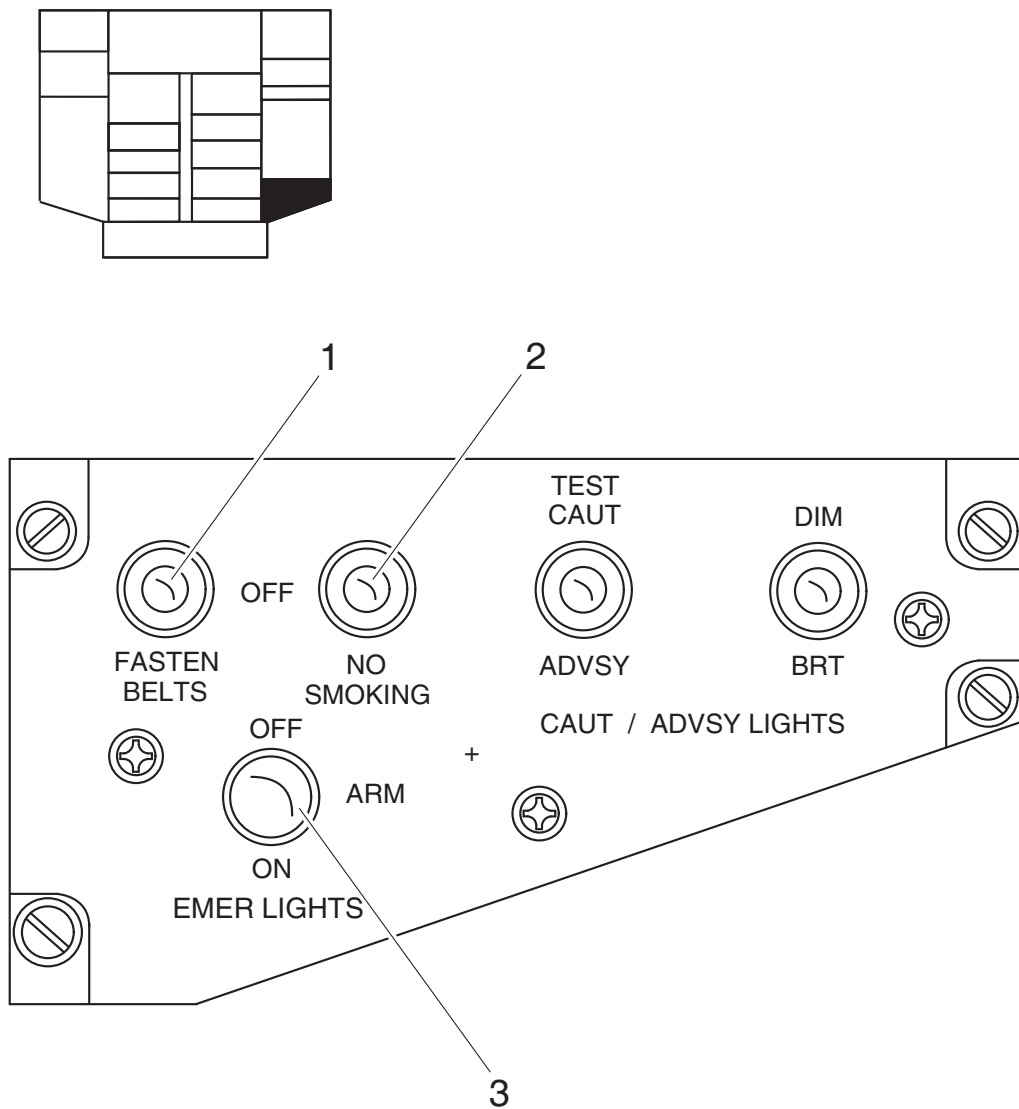


Figure 12.14-6 Interior Lighting Control Panel

EMER LIGHTS PANEL CALLOUTS

1. FASTEN BELTS SWITCH (two position)

FASTEN BELTS - fasten seat belts passenger signs come on

- low tone sounds over the PA speakers
- RETURN TO SEAT sign in the lavatory comes on

OFF - fasten seat belts passenger signs go off

2. NO SMOKING SWITCH (two position)

NO SMOKING - no smoking passenger signs come on

- low tone sounds over the PA speakers
- no smoking signs also come on when landing gear selector is set to the **DN** position

OFF - no smoking passenger signs goes off if the gear selector is not set to the **DN** position

3. EMER LIGHTS SWITCH (three position, lever locked)

ON - emergency lights come on if emergency battery pack are charged

- lights powered from the emergency battery packs
- aeroplane battery power not required

ARM - emergency lights armed

- emergency lights will automatically come on if the L MAIN 28 VDC bus fails or is selected off (removed)

OFF - emergency lights go off if the flight attendant's EMERGENCY LIGHTS switch is in the NORM position

- EMER LTS DISARMED caution light comes on
- emergency lights will come on if the cabin attendant's EMERGENCY LIGHTS switch is set to the ON position
- emergency lights battery packs will charge if there is power to the L ESSENTIAL 28 VDC bus

CAUTION

The EMER LIGHTS toggle switch must be set to OFF and the cabin attendant's EMERGENCY LIGHTS switch to NORM to disarm all the emergency lights battery packs, before switching off aeroplane electrical power.

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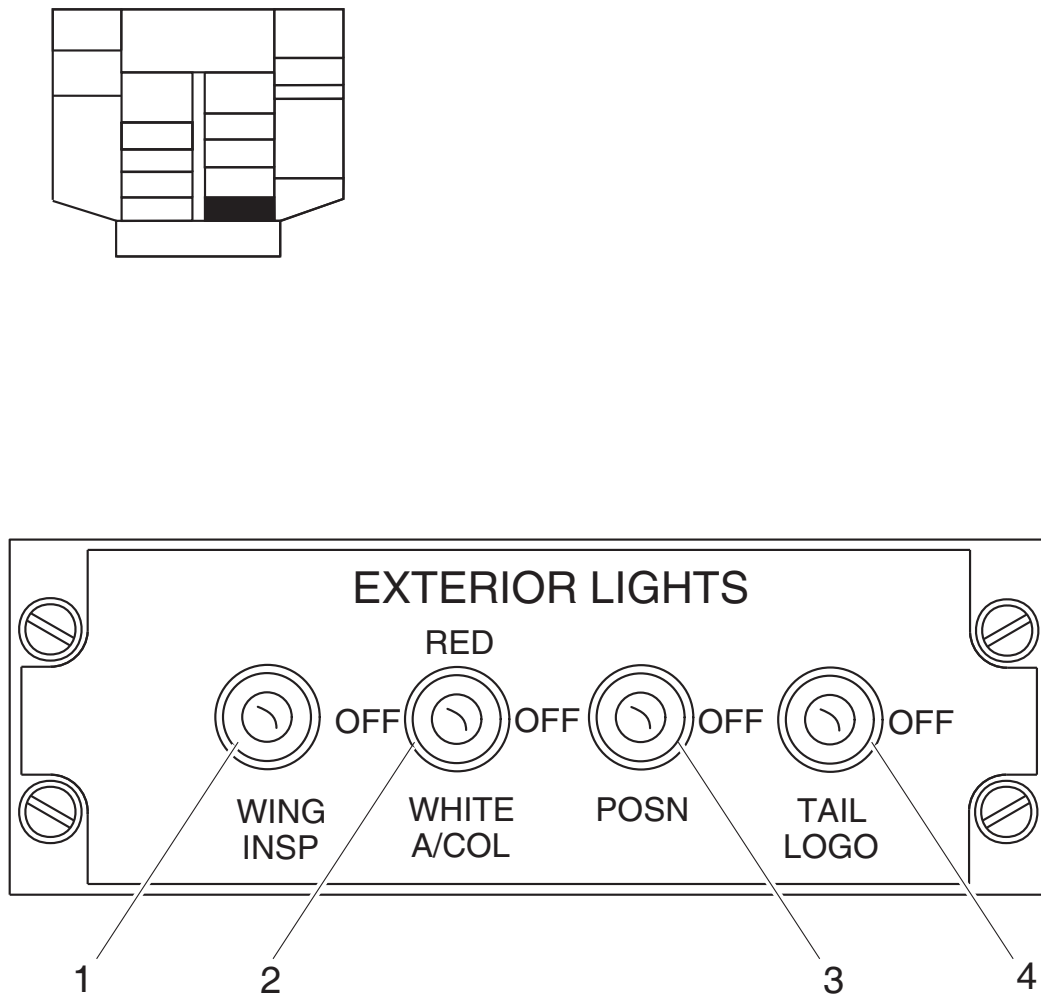


Figure 12.14-7 Exterior Lights Panel (Right)

EXTERIOR LIGHTS PANEL (RIGHT) CALLOUTS

1. WING INSPECTION LIGHT SWITCH (two position)

WING INSP - both wing inspection lights and both engine intake inspection lights come on

OFF - wing and engine inspection lights off

2. ANTI COLLISION LIGHT SWITCH (three position)

RED - single red recognition light comes on

- flight data recorder starts to record

WHITE A/COL - upper and lower white anti-collision lights come on

- flight data recorder starts to record
- each anti-collision light has two flash elements (in a single assembly)
- the secondary elements can be selected by a related toggle switch in the aft fuselage equipment bay

OFF - upper and lower anti collision lights off

- red recognition light off
- flight data recorder stops recording if aeroplane on ground with at least one engine not operating

3. POSITION LIGHT SWITCH (two position)

POSN - aft and wing tip position lights come on

- primary and secondary position lights come on, then secondary lights go off if the primary lights are functional

OFF - position lights off

4. TAIL LOGO LIGHT SWITCH (two position)

TAIL LOGO - logo lights come on

OFF - both logo lights off

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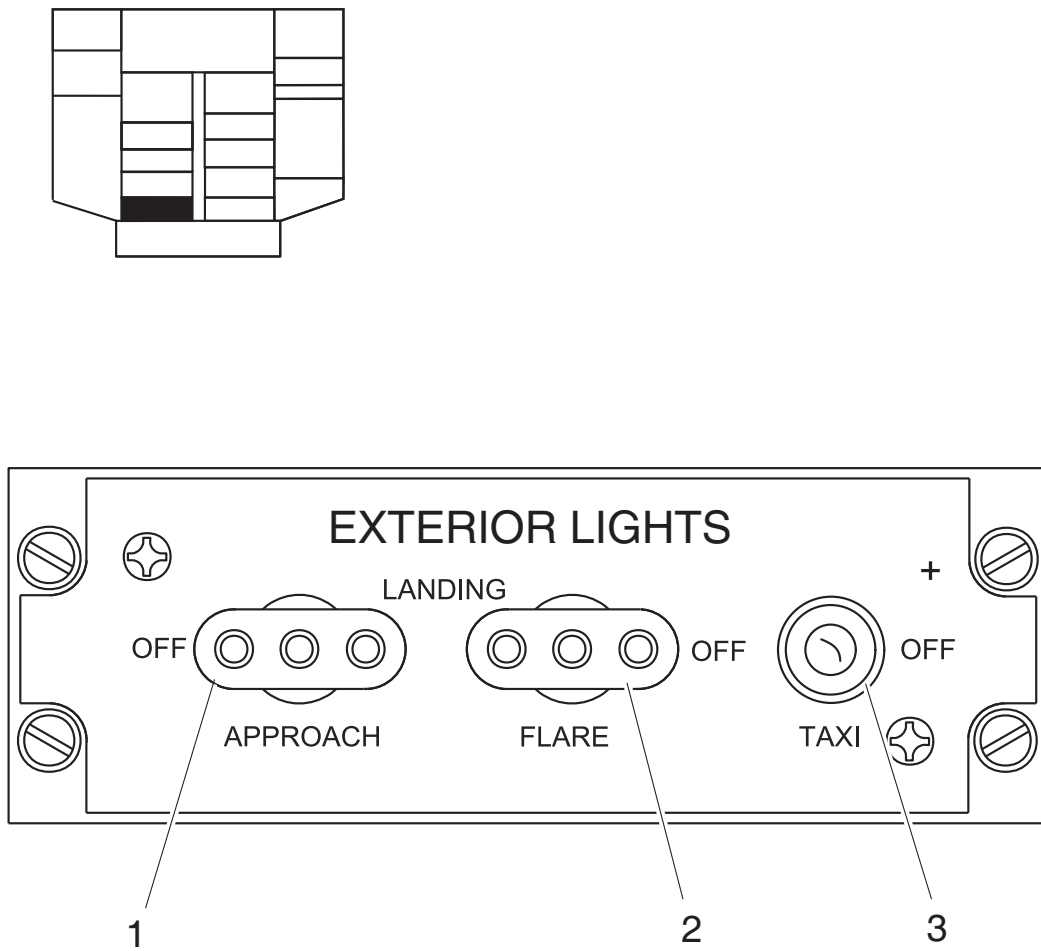


Figure 12.14-8 Exterior Lights Panel (Left)

EXTERIOR LIGHTS PANEL (LEFT) CALLOUTS

1. APPROACH LIGHT SWITCH (two position)

APPROACH - left and right approach lights come on

- lights located outboard of flare lights and angled inward

OFF - approach lights off

2. FLARE LIGHT SWITCH (two position)

FLARE - left and right flare lights come on

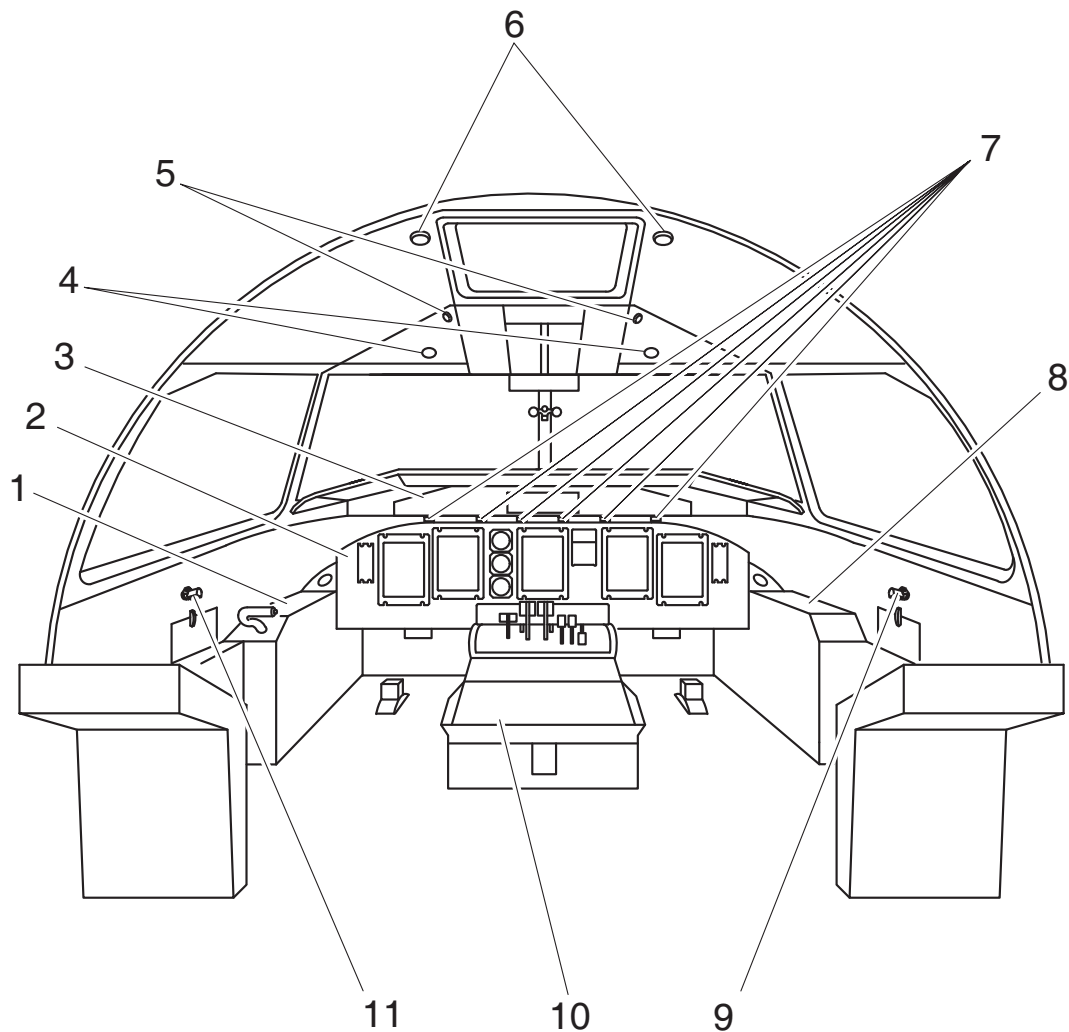
- lights located just outboard of nacelles and angled downward

OFF - flare lights off

3. TAXI LIGHT SWITCH (two position)

TAXI - taxi light comes on if the nosewheel is in the down position on the ground or airborne

OFF - taxi light off



LEGEND

1. Pilot's Side Console Panel.
2. Instrument Panel.
3. Glareshield.
4. Utility Lights On/Off/Dimming Knob.
5. Utility Lights.
6. Dome Lights.
7. Storm Lights.
8. Copilot's Side Console Panel.
9. Copilot's Map Light and On/Off/Dimming Knob.
10. Center Console.
11. Pilot's Map Light and On/Off/Dimming Knob.

Figure 12.14-9 Flight Deck Lights

12.14.4 Interior Lighting

12.14.4.1 Flight Deck Lighting

The flight deck lights (Figure 12.14-9) include:

- Dome lights
- Storm lights
- Panel and Instrument lights
- Pilot's and Copilot's Side Panel lights
- Pilot's and Copilot's Utility lights
- Pilot's and Copilot's Map lights
- Windshield Wiper Ice Detection lights
- Observer's Reading light
- Circuit Breaker Panel lights

Dome Lights

The dome lights are on the left and right sides of the ceiling, just forward of the flight deck door. The dome lights are controlled by the DOME or STORM switch on the PANEL LIGHTING panel.

Storm Lights

Eight storm lights are located on the lower edge of the GLARESHIELD panel. The storm lights are controlled by a three position STORM LIGHTS switch, on the PANEL LIGHTING panel. The storm lights supply brilliant flight deck lighting to compensate for loss of night vision during lightning flashes.

Panel and Instrument Lights

Flight deck panel and instrument integral lighting is supplied by variable intensity 5 VDC lighting circuits. Panel lighting is supplied by disc shaped lamp assemblies embedded in Plexiglas.

There are panel lights for the:

- Overhead Console
- Glareshield
- Forward Centre Console
- Aft Center Console

Panel lighting is controlled by knobs on the PANEL LIGHTING panel with an on-off switch at the extreme counterclockwise position. The clock light is controlled by the GLARESHIELD knob. The standby compass light is controlled by the CAUT/ADVSY LIGHTS DIM BRT toggle switch.

Pilot's and Copilot's Side Panel Lighting

The pilot's side console, ICP1, and Standby Instruments are controlled by the PILOTS FLT PNL knob. The copilot's side console, ICP2, Landing Gear selector panel, and GPWS/Hydraulic control panel lights are controlled by the COPILOTS FLT PNL knob.

Pilot's and Copilot's Utility Lights

Two swivel ball utility lights supply incandescent spot lighting for the pilot and copilot. The utility lights are located on the flight deck ceiling, one above each pilot. Both utility lights are directionally adjustable on fixed mountings, and are controlled by an adjacent knob.

Observer's Utility Light

The observer's utility light is on the overhead ceiling panel on the flight deck threshold. It is controlled by a related knob adjacent to the light.

Pilot's and Copilot's Map Lights

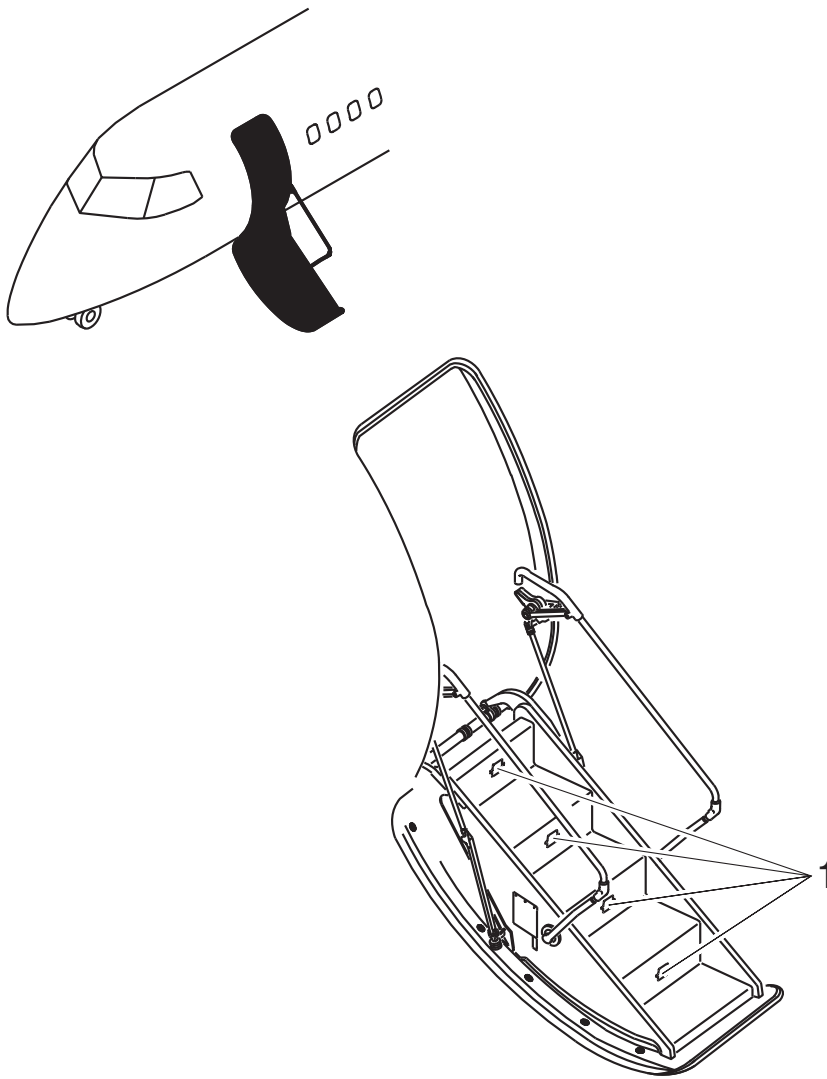
The pilot and copilot's map lights supply spot lighting and are located below the related side windows. Each map light is controlled by a related knob adjacent to the map light.

Windshield Wiper Ice Detection Lights

Lights on the top outboard side of the GLARESHIELD panel supply lighting for the ice detection spigots, located on the wiper arms. Each windshield spigot light is controlled by separate push-buttons on the pilot's or copilot's side panel.

Circuit Breaker Panel Lights

Circuit breaker panel lighting is supplied by two white floodlights, which are located above the left and right flight compartment side windows. The avionics and variable frequency AC circuit breaker panels also have lights above them. The two left circuit breaker lights are controlled by a toggle switch on the pilot's side panel. The two right circuit breaker lights are controlled by a toggle switch on the copilot's side panel.



LEGEND

1. Airstair Door Lights.

Figure 12.14-10 Forward Passenger Door Step Lights

- Forward passenger door steps and Boarding
- Cabin overhead
- Cabin sidewall
- Reading
- Information signs
- Lavatory
- Galley
- Wardrobe
- Baggage Compartments

Passenger Door Lights and Boarding Lights

There are four forward passenger door lights on the risers of the steps of the forward passenger door (Figure 12.14-10). The airstair door lights are powered from the left main bus. There are two boarding lights, a lower threshold and a forward boarding light. The boarding lights are powered from the Battery bus. The lights are controlled by a related membrane switch on the forward cabin attendant's control panel (Figure 12.14-11).

Cabin Overhead Lights

Cabin overhead lighting is supplied from overhead lighting panels, which extend the length of the passenger compartment. Cabin ceiling lighting is supplied from 21 florescent lights. The cabin overhead lights are controlled by the CABIN OVERHD membrane switch on the forward cabin attendant's panel (Figure 12.14-11). Dimming of the cabin overhead lighting is done by a DIM OVERHD membrane switch (Figure 12.14-11).

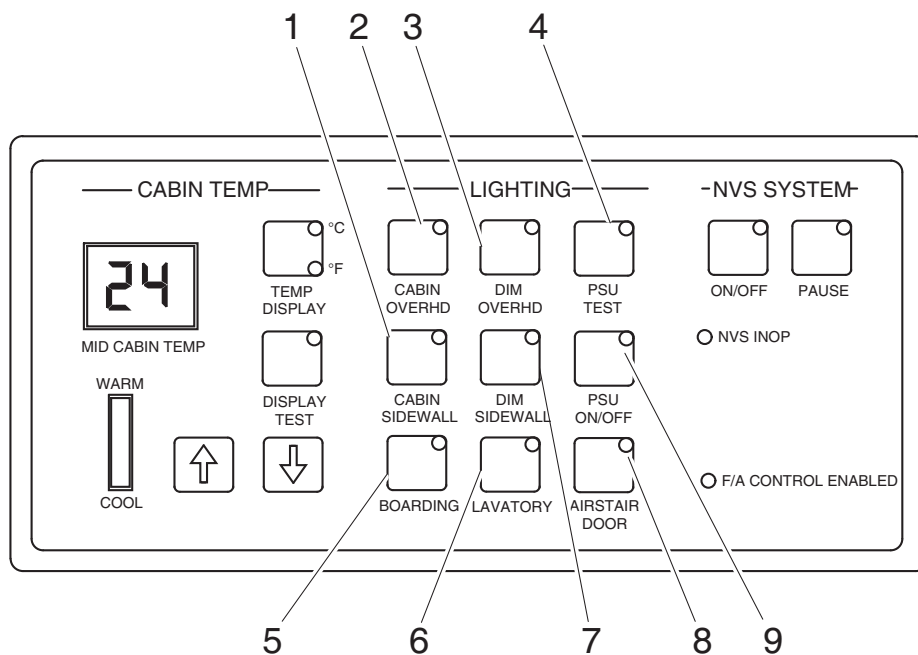
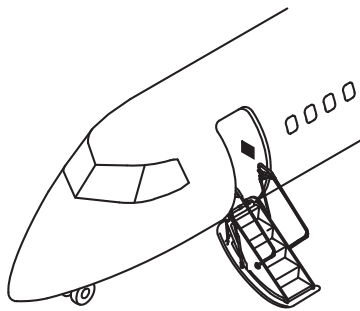
Sidewall Lights

Cabin sidewall lights are located under the valance at the edge of the cabin ceiling and extend the length of the passenger compartment on both sides. Cabin sidewall lighting is supplied from 21 florescent lights. The sidewall lights are controlled by the CABIN SIDEWALL membrane switch on the forward flight attendant's panel (Figure 12.14-11). Dimming of the cabin overhead lighting is done by a DIM OVERHD membrane switch (Figure 12.14-11).

Single Dimmer Control

A single dimmer control is located on the C/A lighting control panel to allow dimming of all the main cabin lights.

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LEGEND

1. Cabin Sidewall Lighting Switch.
2. Cabin Overhead Lighting Switch.
3. Overhead Lighting Dimming Switch
4. Passenger Service Units (PSU) Test Switch.
5. Boarding Lights Switch.
6. Lavatory Light Switch.
7. Sidewall Lighting Dimming Switch
8. Airstair Steps Lighting Switch.
9. PSU Power Switch.

Passenger Reading Lights

Two passenger reading lights are installed in each Passenger Service Unit (PSU). The reading lights are controlled by a pushbutton adjacent to each light, if the PSU ON/OFF membrane switch, on the forward cabin attendant panel, is on (Figure 12.14-11).

Passenger Information Signs

Passenger information signs are located at the front of the passenger compartment and on each PSU. The passenger information signs include the NO SMOKING and FASTEN SEAT BELTS signs.

A low tone chime sounds on the PA when the signs come on. A RETURN TO SEAT sign, located in the lavatory compartment, also comes on with the FASTEN SEAT BELTS signs. The NO SMOKING signs come on when the gear selector is moved to the DN position.

Lavatory Compartment Lights

The lavatory lighting is supplied from an overhead light panel with two lamps and two florescent tube lights. A LAVATORY LTS membrane switch on the forward cabin attendant's panel (Figure 12.14-11) energizes the lamps and arms the florescent lights.

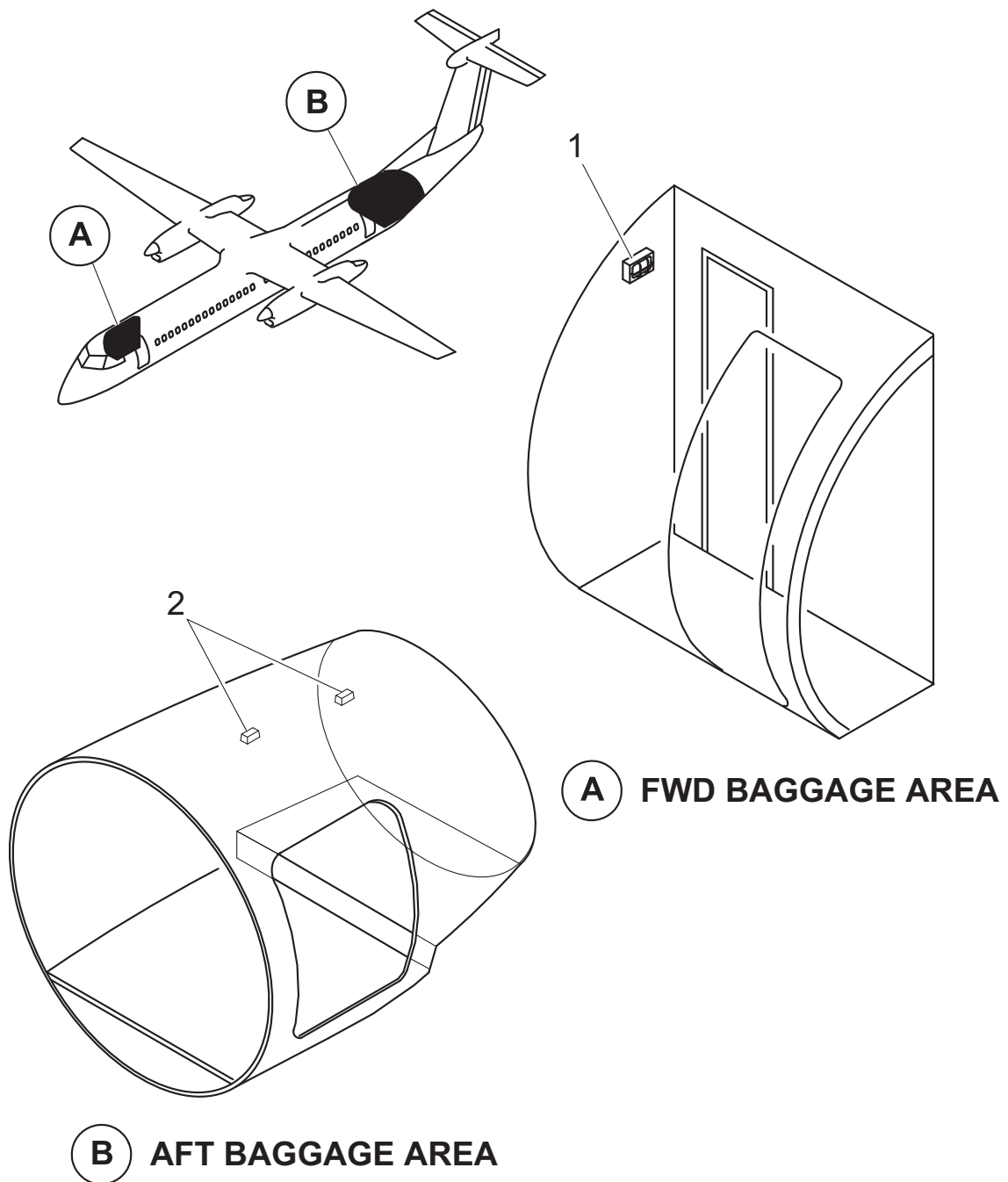
When the lavatory latch is moved to the OCCUPIED position, and the LAVATORY LTS switch is on, the two florescent lights come on. The OCCUPIED sign, located above the flight attendant's seat, also comes on when the lavatory latch is shut.

Wardrobe Lights

Incandescent lighting of the wardrobe interior is by a light on the wardrobe ceiling. The light comes on when the wardrobe door is opened.

Galley Lights

The galley lights are installed above the work surface and overhead in the galley area. The light switches are located on the galley control panel.



LEGEND

- 1. FWD Baggage Compartment Dome Light.
- 2. Aft Baggage Compartment Dome Lights.

Figure 12.14-12 Aft Baggage Compartment Light

12.14.4.3 Baggage Compartment Lights

The forward baggage compartment has one dome light (Figure 12.14-12). The light comes on automatically when either the forward baggage compartment internal or external door is unlocked.

The aft baggage compartment has two dome lights (Figure 12.14-12). The lights come on automatically when the aft baggage compartment door is unlocked.

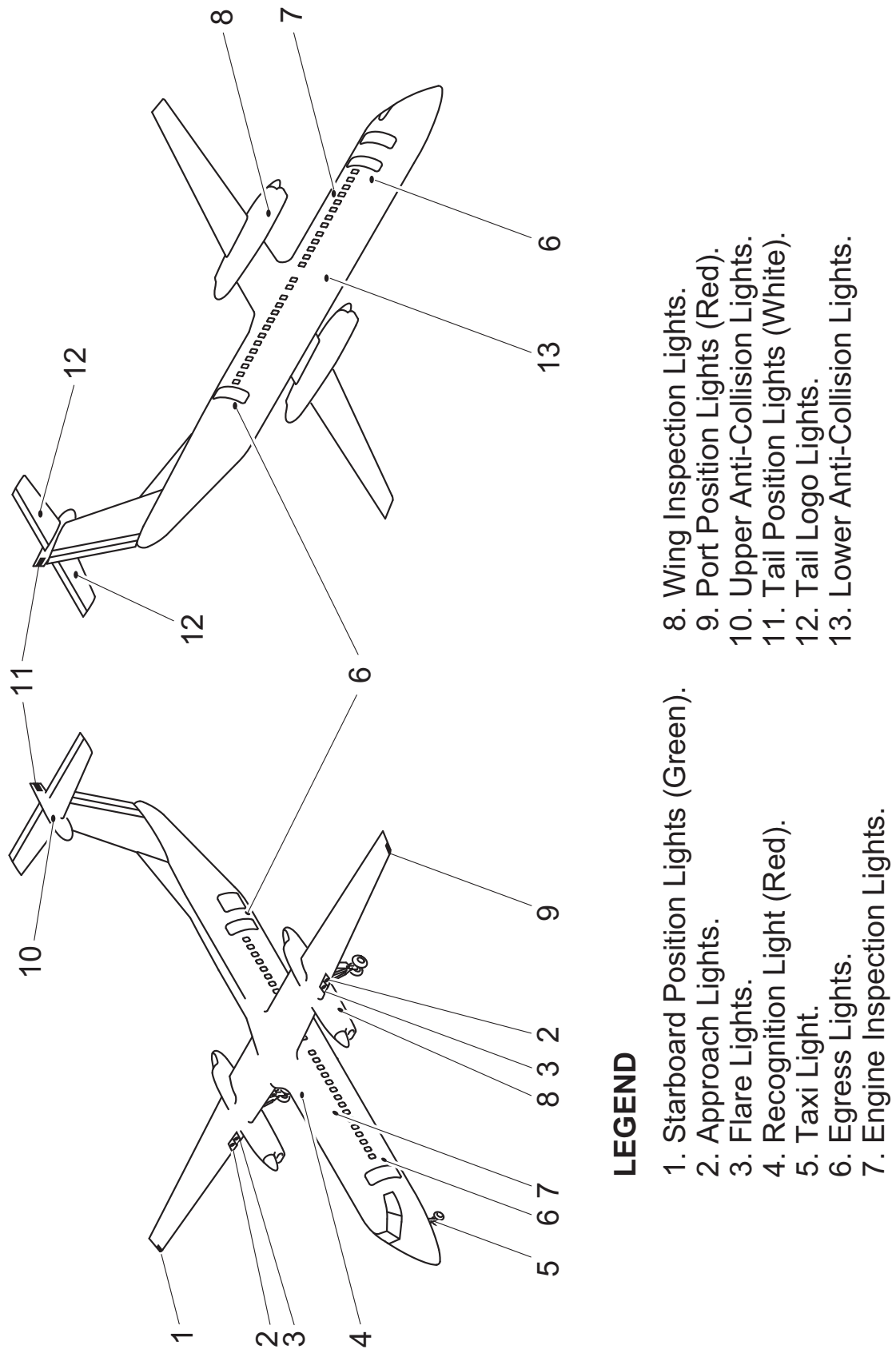


Figure 12.14-13 Aeroplane Exterior Lights

12.14.5.1 Landing Lights

Two landing lights are located on the leading edge of each wing, adjacent to and outboard of the engine nacelles (Figure 12.14-13, 12.14-14). The two outboard most lights are approach lights, and the inboard lights are flare lights. The approach lights supply lighting for the approach. The flare lights are angled downward to light the runway during the flare.

12.14.5.2 Taxi Light

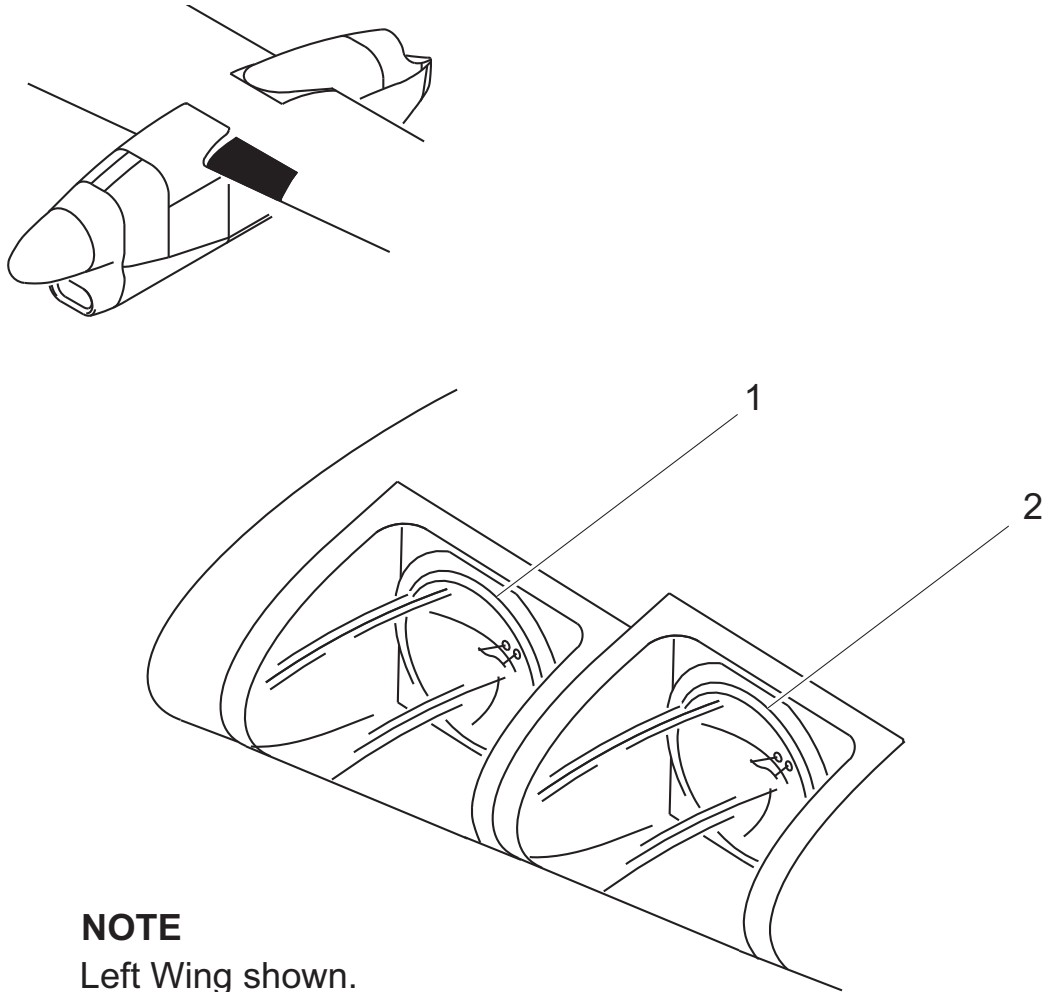
The taxi light is located on the steerable section of the nose landing gear (Figure 12.14-13) so that it shines in the direction the nose gear is pointing. The taxi light will not come on if the landing gear is not locked down.

12.14.5.3 Position Lights

Two green position lights (primary and secondary) are located in the transparent right wing tip, and two red position lights (primary and secondary) are located in the transparent left wing tip (Figure 12.14-15). Two white (primary and secondary) position lights are located at the aft end of the vertical stabilizer bullet fairing (Figure 12.14-16).

Both wing and AFT position lights are controlled by the POSN switch on the right EXTERIOR LIGHTS panel. When the switch is set to the POSN, all the position lights come on. Approximately one second later the secondary lights, controlled through an electronic switch unit, go off but stay armed. If a primary light goes off, the related armed secondary light will come on.

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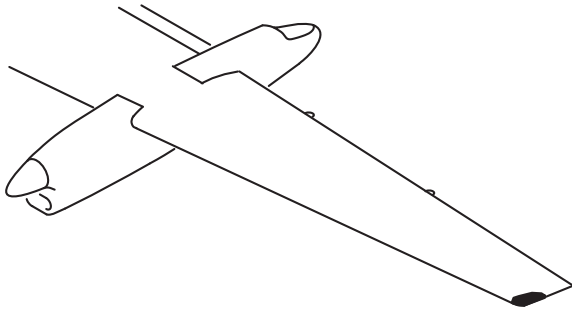
NOTE

Left Wing shown.
Right Wing similar.

LEGEND

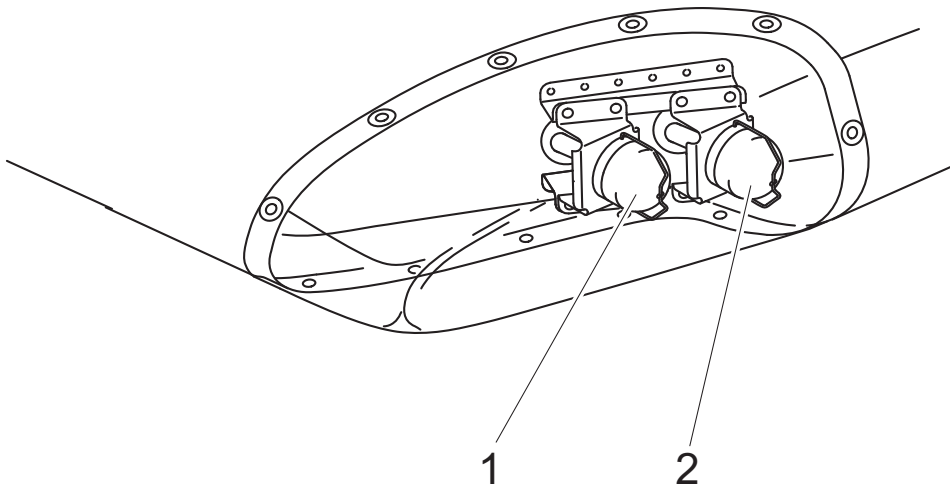
- 1. Flare Light.
- 2. Approach Light.

Dash8 - Q400 - Lighting System



NOTE

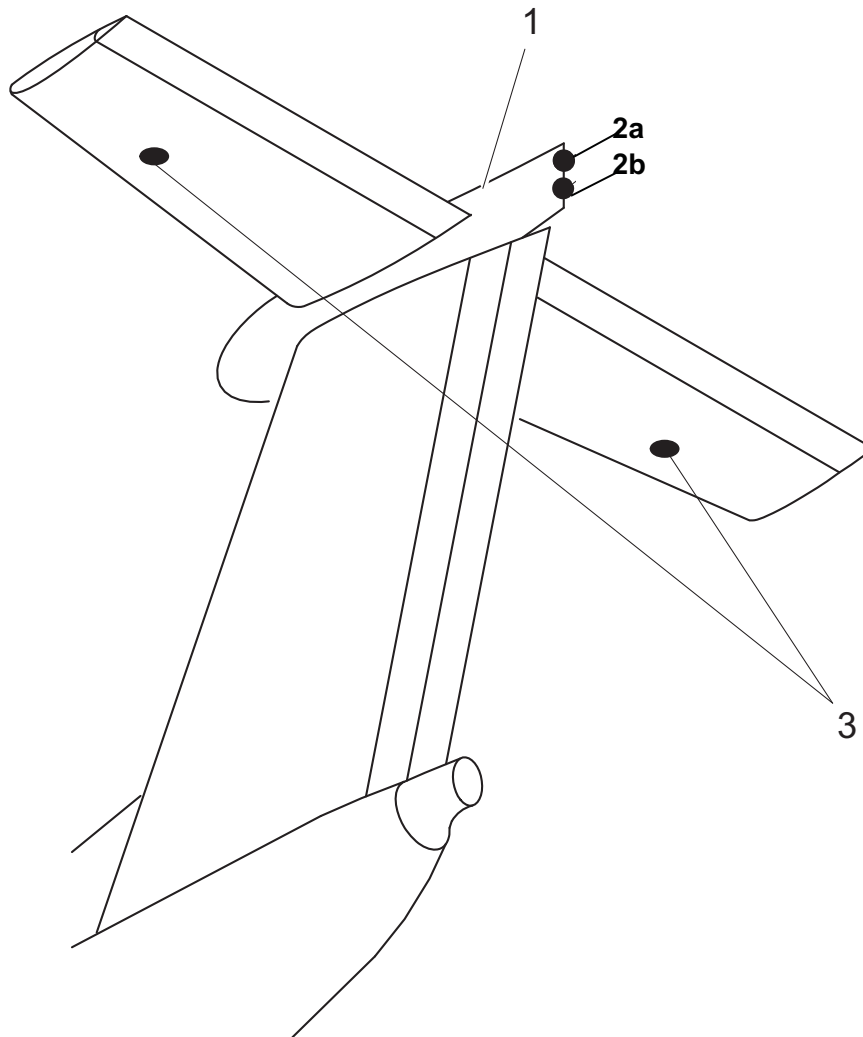
Left component shown.
Right component similar.



LEGEND

- 1. Primary Light.
- 2. Secondary Light.

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Legend

- 1 Bullet Fairings
- 2a Aft Primary Position Light (White)
- 2b Aft Secondary Position Light (White)
- 3 Logo Light

12.14.5.4 Recognition Lights

A red recognition light is located on the top fuselage centerline, just forward of the wings (Figure 12.14-17). The recognition light is controlled by the three position A/COL switch on the right EXTERIOR LIGHTS panel.

12.14.5.5 Anti Collision Lights

There is an upper and a lower white anti-collision light on the aeroplane. The upper anti collision light is located on the top of the vertical stabilizer bullet fairing (Figure 12.14-17). The lower anti collision light is located on the bottom of the center fuselage (Figure 12.14-17).

Both anti collision lights have primary and secondary elements. The primary elements are normally set for use. Any secondary element can be set for use by a rotary switch in the aft fuselage equipment bay, with UPPER, or LOWER positions.

The anti-collision lights are controlled by the A/COL switch on the right EXTERIOR LIGHTS panel.

12.14.5.6 Wing Inspection Lights

One halogen wing inspection light is located on the outboard side of each nacelle. The wing inspection lights supply lighting for inspection of the outboard wing leading edges.

12.14.5.7 Engine Inspection Lights

One incandescent engine inspection light is located on each side of the fuselage. The engine inspection lights supply lighting for inspection of the engine, nacelle, spinner, and inboard wing leading edges.

12.14.5.8 Logo Lights

White logo lights are installed flush with the bottom left and right horizontal stabilizers. The logo lights supply lighting for the logo on the vertical stabilizer.

LEGEND

- 1. Red Recognition Light.
- 2. Upper Anti-Collision Lights.
- 3. Lower Anti-Collision Lights.

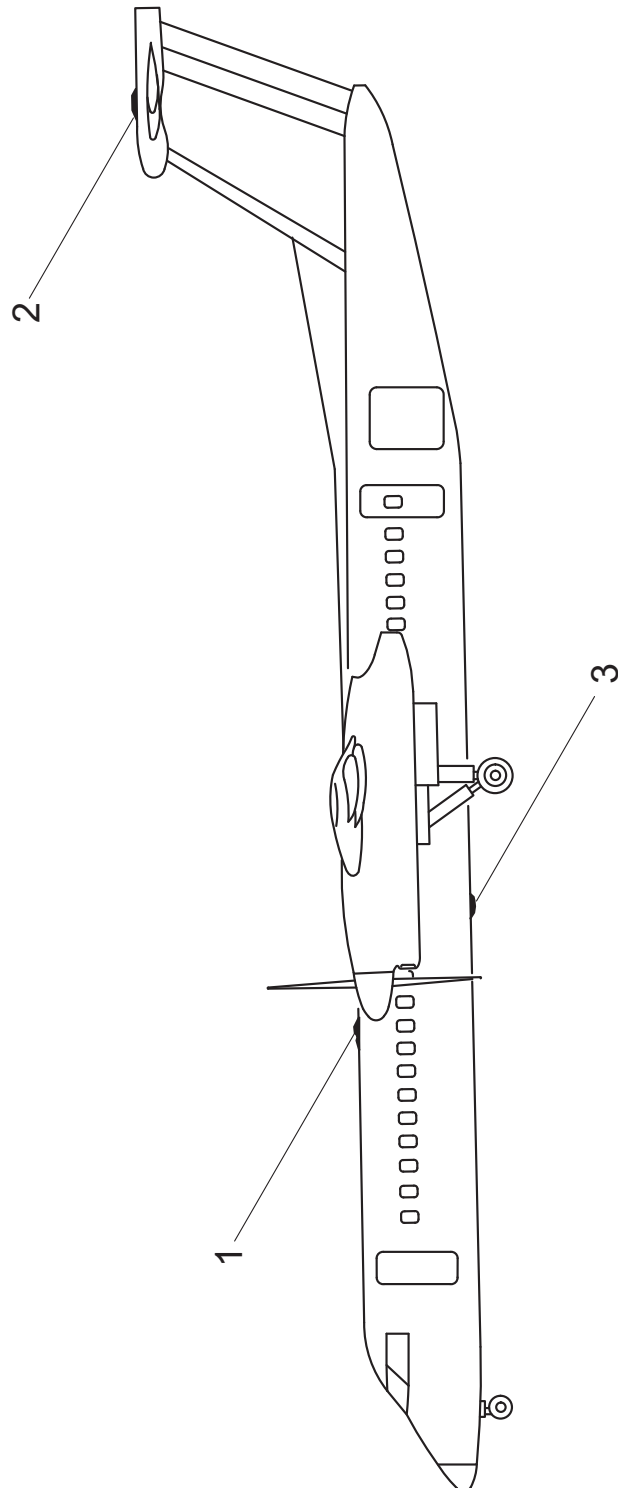


Figure 12.14-17 Upper and Lower Anti Collision and Red Recognition Lights

12.14.6 Emergency Lighting

The emergency lights supply interior and exterior lighting for use in emergency situations, or if there is a 28 VDC L MAIN bus failure.

The emergency lighting system is powered by four Emergency Power Supply Units. The Emergency Power Supply Units are self-contained 6.4 V Ni-Cad battery packs, located above the passenger compartment near Aeroplane exits. The units supply power to ceiling lights, egress lights, emergency markers, emergency identifiers, and emergency locators (Figure 12.14-18).

Passenger compartment ceiling lights supply emergency lighting for the main passenger aisle.

Exterior emergency egress lights are located by each emergency exit. The emergency egress lights are used for lighting the exterior area of the aeroplane just outside the emergency exits. The four emergency egress lights are powered by three of the four battery packs.

The Emergency Locators, Identifiers, and Markers are lighted EXIT signs that help locate the emergency exits (Figure 12.14-19). Reflective tape is used for the passenger compartment floor markings (Figure 12.14-20).

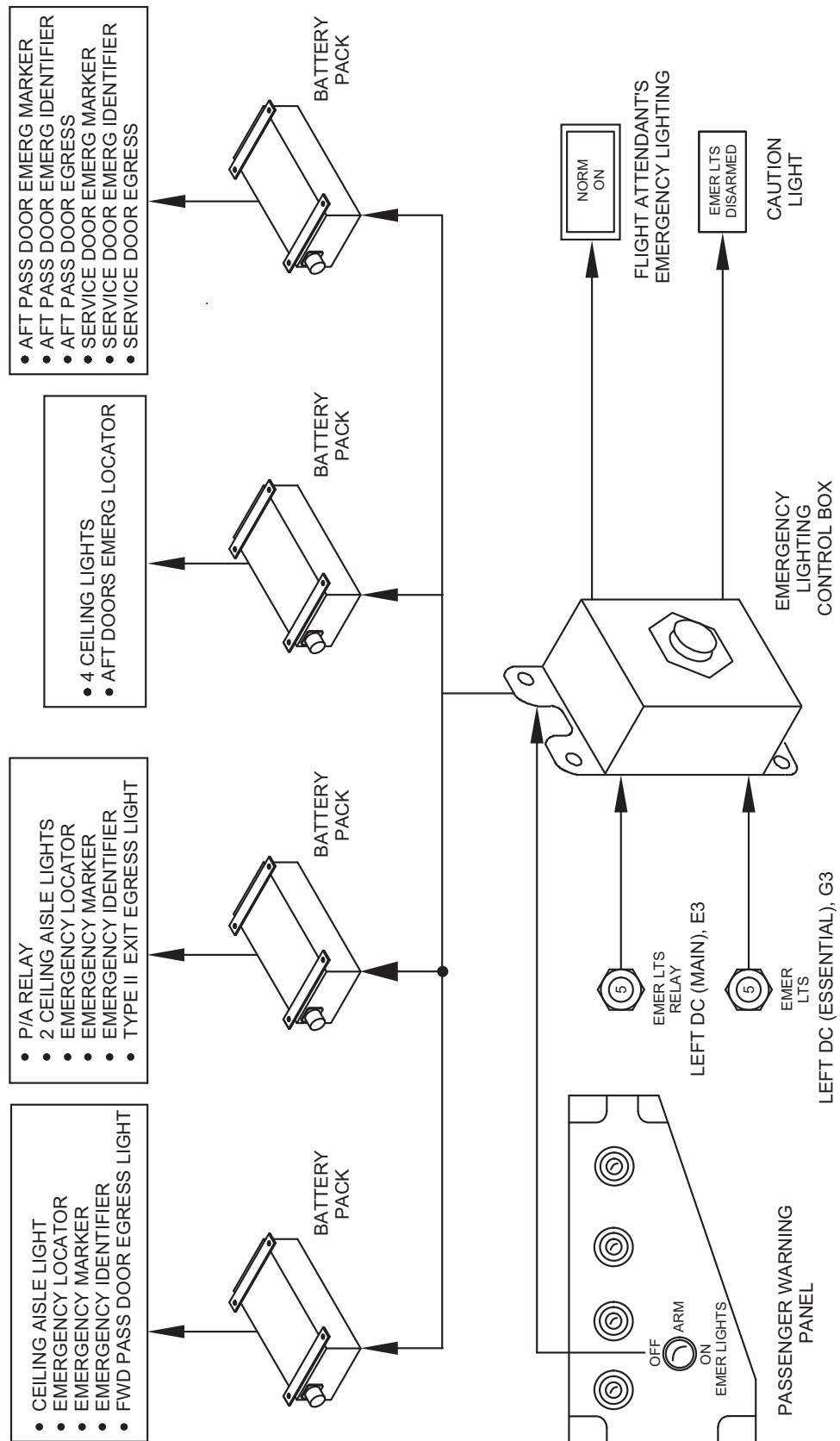
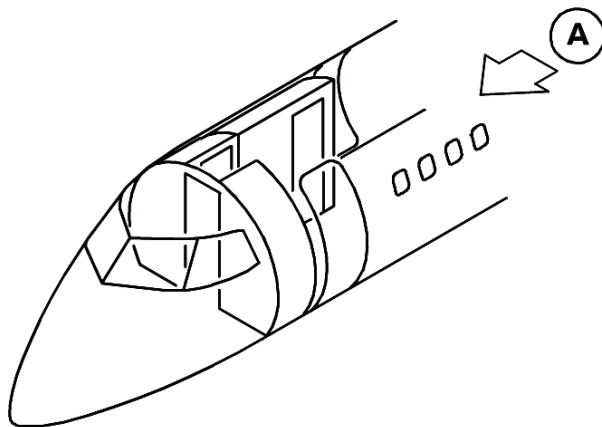


Figure 12.14-18 Emergency Lighting Schematic

Forward Cabin Emergency Exit Locators, Identifiers and Markers



LEGEND

1. Forward passenger door identifier.
2. Forward passenger door emergency marker.
3. Forward passenger door locator.
4. Type II/III door locator.
5. Type II/III door emergency marker.
6. Type II/III door identifier.
7. Type II/III door identifier.

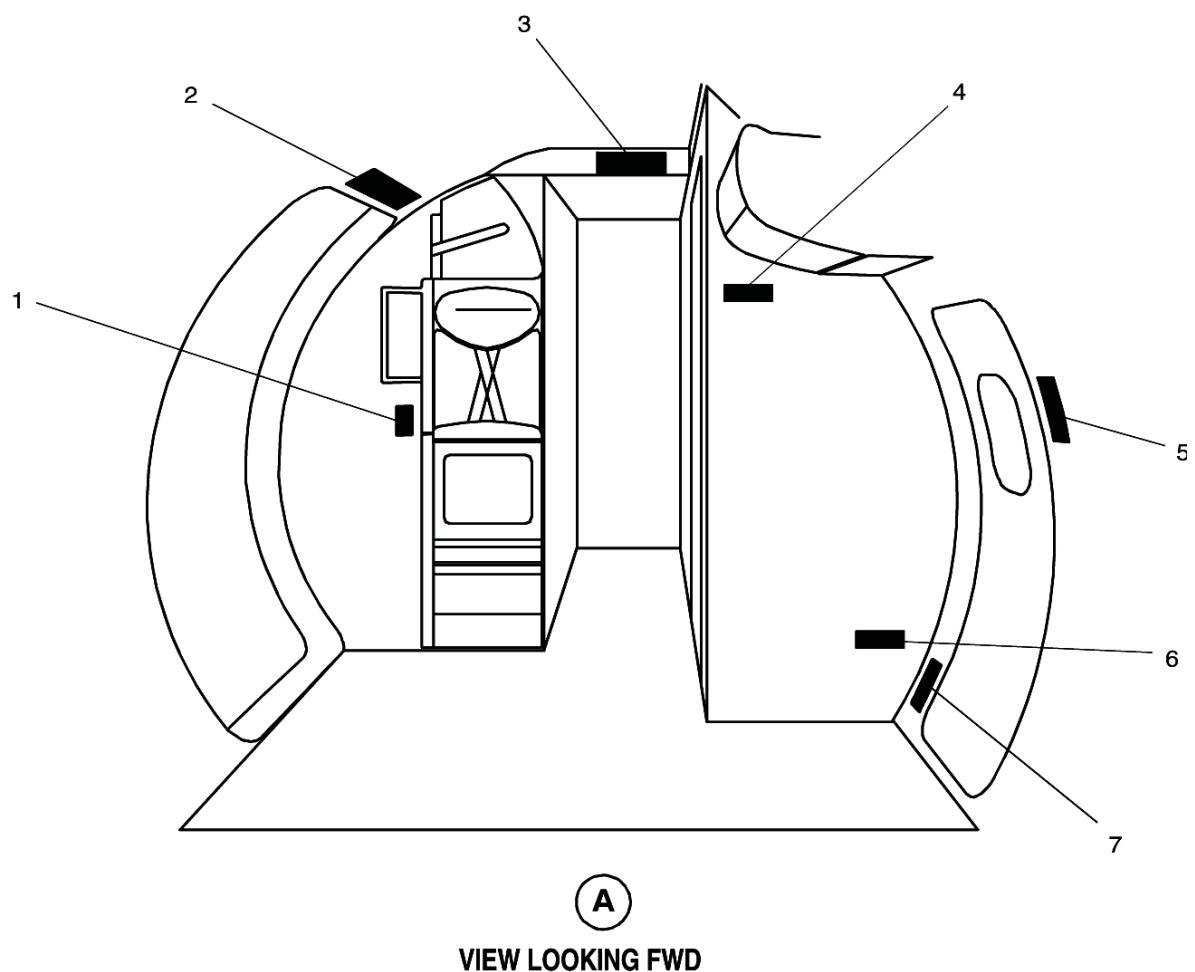
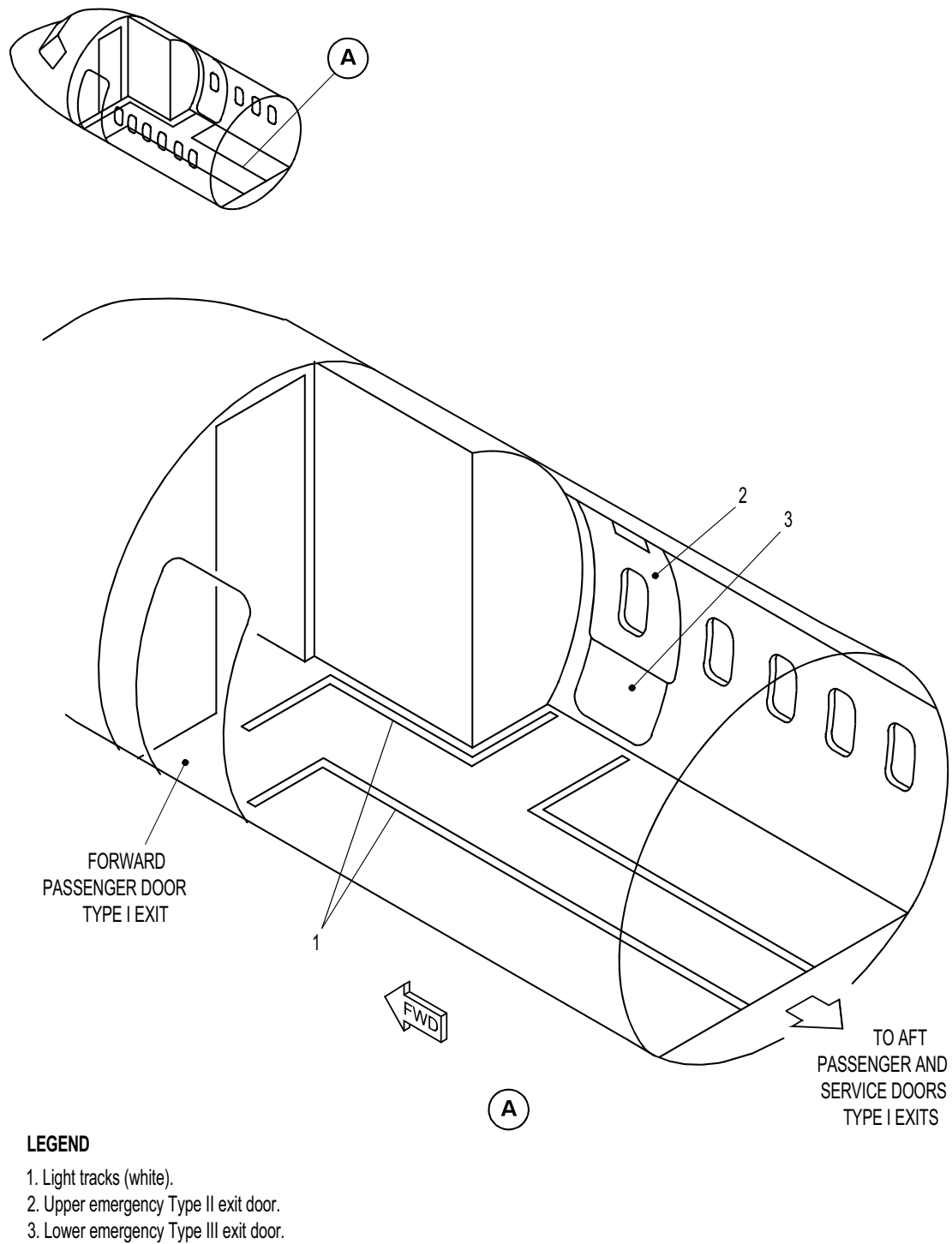


Figure.14-19 Emergency Exit Signs and Locators.

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Figure 12.14-20 Cabin Floor Markings

Aft Cabin Emergency Exit Locators

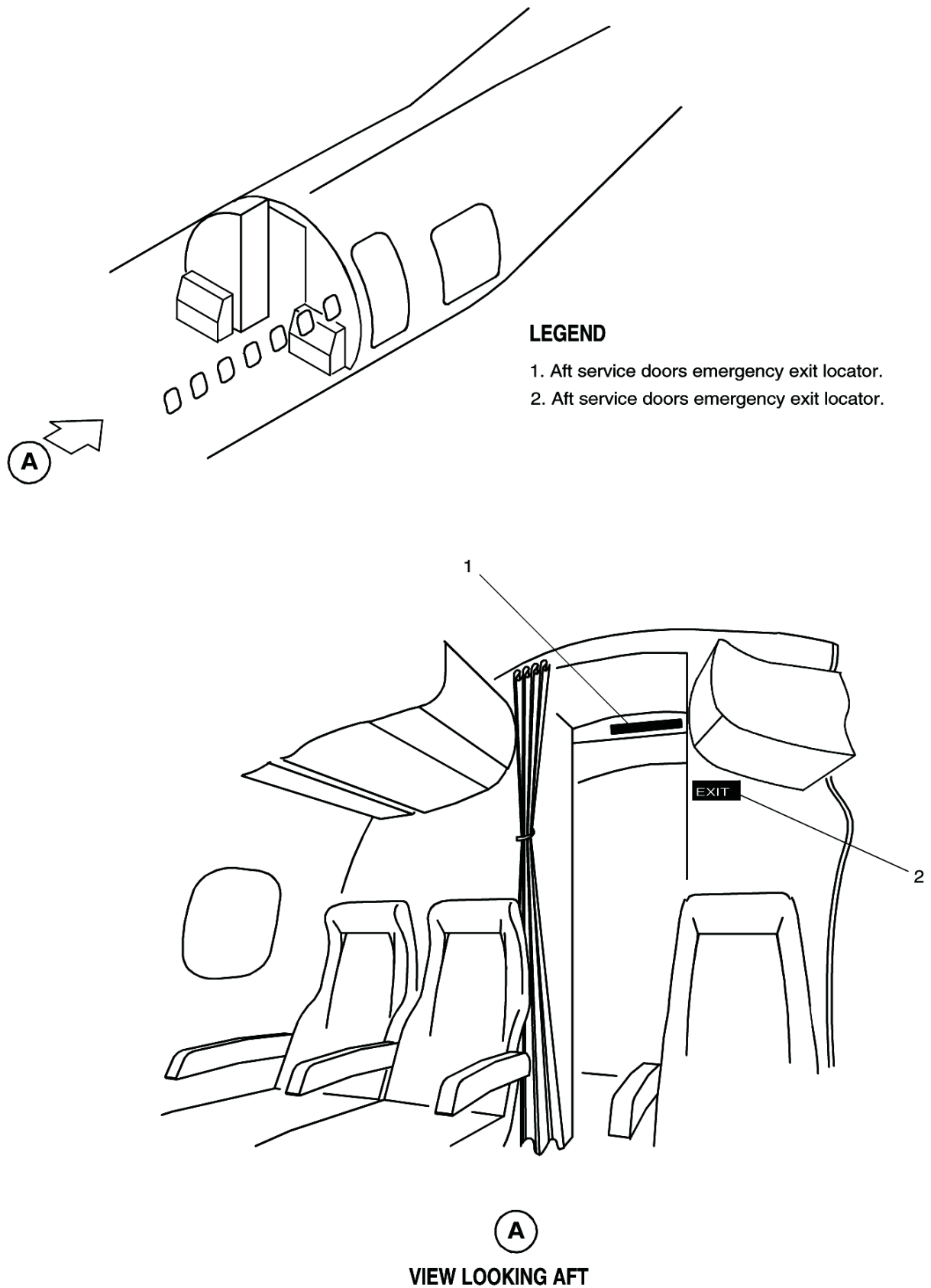


Figure 12.14-19A Emergency Exit Signs and Locations

Aft Service Doors Emergency Exit Identifiers and Markers

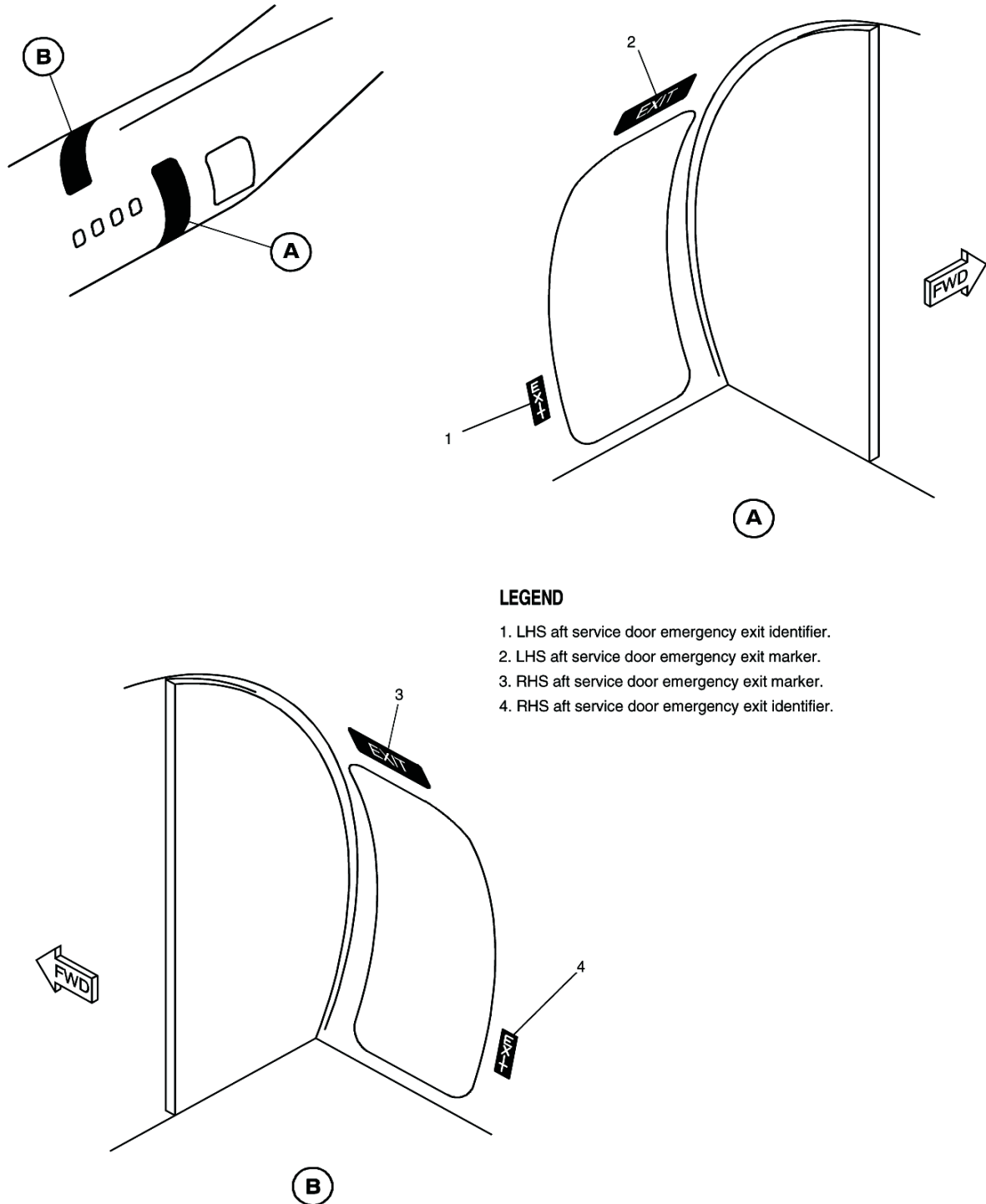


Figure 12.14-19B Emergency Exit Signs and Locators