

CHAPTER

33

Lights

CHAPTER 33
LIGHTS

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LIGHTS - FLIGHT COMPARTMENT - INTRODUCTION

Purpose

These are the four types of flight compartment lights:

- Instrument and panel lights
- Miscellaneous lights
- Flight crew lights
- Master dim and test.

The instrument and panel lights are for the flight compartment controls and panel indications.

The miscellaneous lights supply general lighting to the flight compartment. These are the miscellaneous lights:

- Panel and control stand flood lights
- Circuit breaker panel lights
- Standby compass light
- Dome lights.

The flight crew lights supply light for specific tasks. These are the flight crew lights:

- Reading lights
- Map lights
- Flight kit lights
- Chart lights.

The master dim and test system controls the light for the system annunciator and indicator lights.

General Description

The dome lights supply general lighting for the flight compartment. The glareshield supplies background lighting for the pilots.

Each instrument and instrument panel has lighting. The control stand gets light from an overhead floodlight.

The circuit breaker panels get light from floodlights.

There are lights for the standby compass and map lighting.

The master dim and test switch can do these functions:

- Test the indicator and panel lights
- Cause the indicator and panel lights to come on in the bright or dim mode.

The spare lamps for the lights in the flight compartment are above the right number three window.

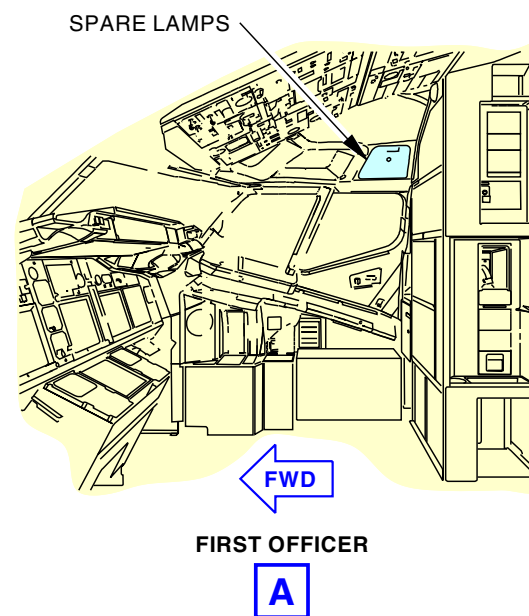
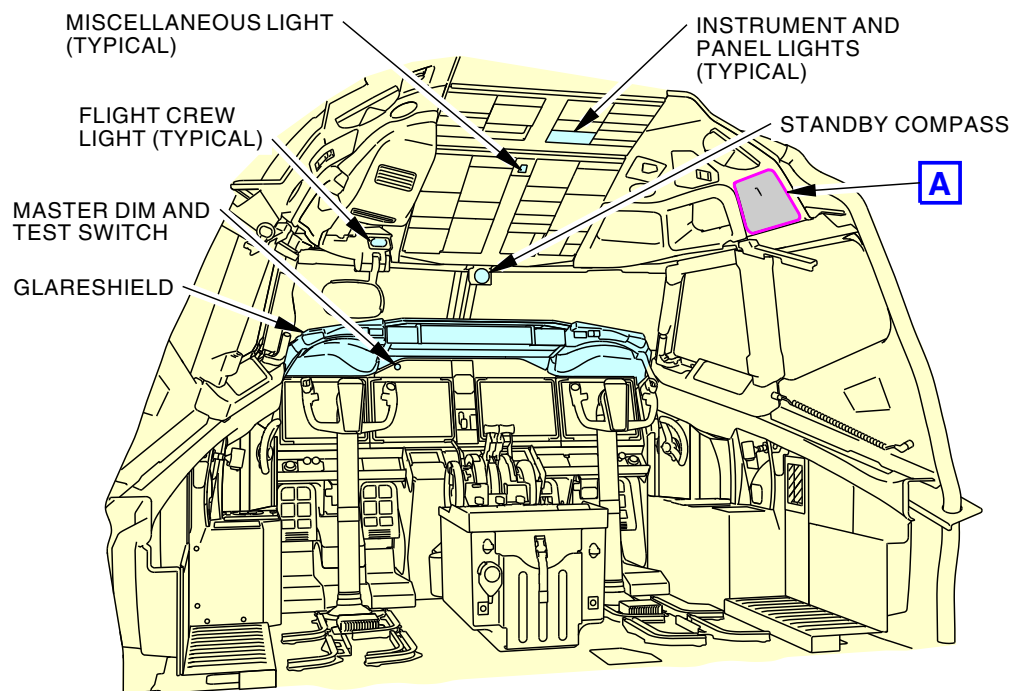
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LIGHTS - FLIGHT COMPARTMENT - INTRODUCTION



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LIGHTS - FLIGHT COMPARTMENT - INTRODUCTION

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LIGHTS - INSTRUMENT AND PANEL LIGHTS - INTRODUCTION

Purpose

Instrument and panel lights supply light to the switches, selectors, and indicators on panels in the flight compartment.

These are the types of panel lights in the flight compartment:

- Light plates
- Indicators
- Instrument lights
- Lighted push-button switches.

General Description

Light plates supply the background light for the panels in the flight compartment.

Indicator lights show the flight or maintenance crew the status of an airplane system.

Lighted push-button switches supply control inputs to, or information for their associated systems.

Instrument lights supply light to the face of the instruments.

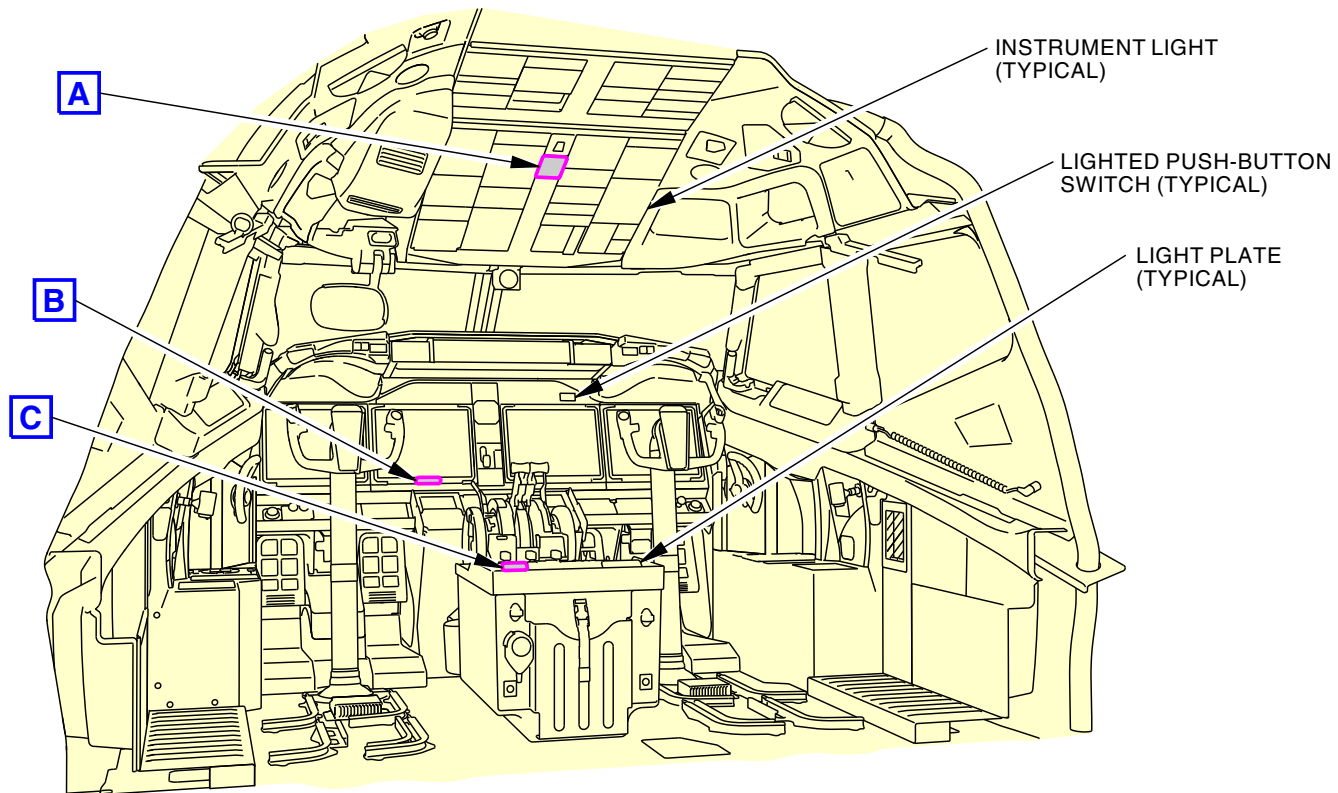
Functional Description

Electrical power for the instrument and panel lights comes from the 28v ac transfer buses 1 or 2.

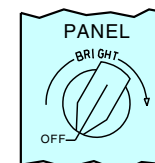
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LIGHTS - INSTRUMENT AND PANEL LIGHTS - INTRODUCTION

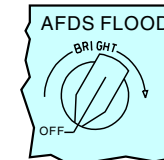


FLIGHT COMPARTMENT



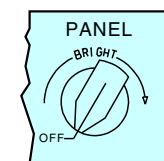
P5

A



P1

B



P8

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LIGHTS - INSTRUMENT AND PANEL LIGHTS - INTRODUCTION

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**LIGHTS - INSTRUMENT AND PANEL LIGHTS - PANEL P1/P2/P7 - FUNCTIONAL DESCRIPTION****Operation**

The OFF-BRIGHT control for P1, P2, and P7 instrument and panel lights adjusts the intensity of the lamps.

Functional Description

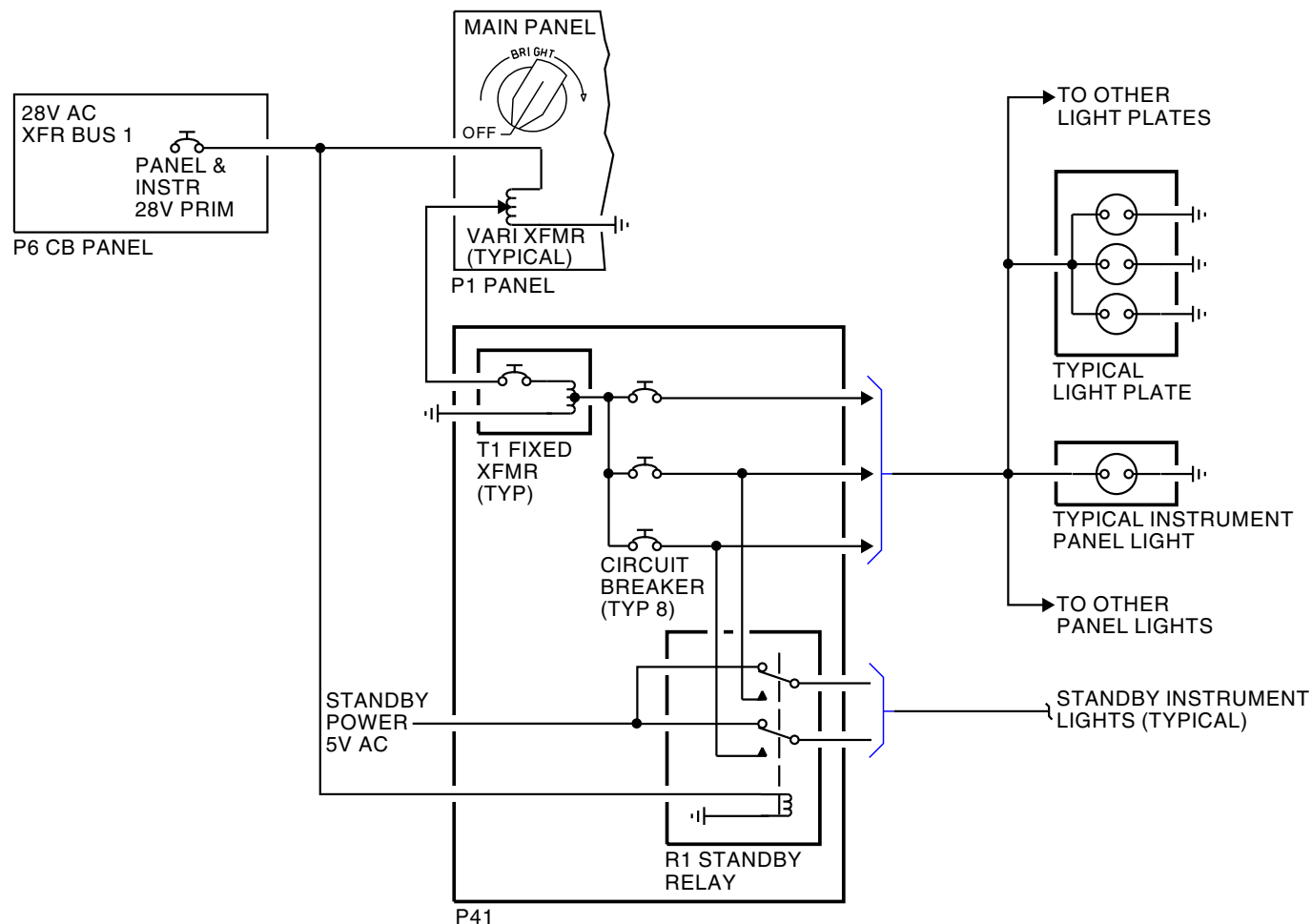
The OFF-BRIGHT control is a variable transformer. The control knob turns to adjust the voltage available to the fixed transformers in the captain's lighting module (P41).

The lighting module's fixed transformer supplies a maximum of 5v ac to the circuit breakers on the P41 panel. The 0-5v ac voltage from the circuit breakers makes the P1, P2, and P7 instrument and panel lights come on.

Instruments that are necessary for flight safety connect to the standby light system. When power is not available from transfer bus 1, the lights get power from the standby bus. When relay R1 does not energize, the standby bus connects to the standby transformer, T2 in P42. The standby transformer supplies the 5v ac to the lights that are connected to the system.

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LIGHTS - INSTRUMENT AND PANEL LIGHTS - PANEL P1/P2/P7 - FUNCTIONAL DESCRIPTION


NOTE:

CAPT SYSTEM IS SHOWN, F/O IS EQUIVALENT.

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LIGHTS - INSTRUMENT AND PANEL LIGHTS - PANEL P1/P2/P7 - FUNCTIONAL DESCRIPTION

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LIGHTS - INSTRUMENT AND PANEL LIGHTS - LIGHTPLATES

Purpose

The lightplates supply light to these components:

- Panel decals
- Instrument lights
- Panel switches.

Physical Description

The lamps are a part of the lightplates. The back of the lightplates have an electrical connector on a printed circuit board. The incandescent lamps are in a parallel circuit. The lightplate continues to supply light if one lamp has a failure.

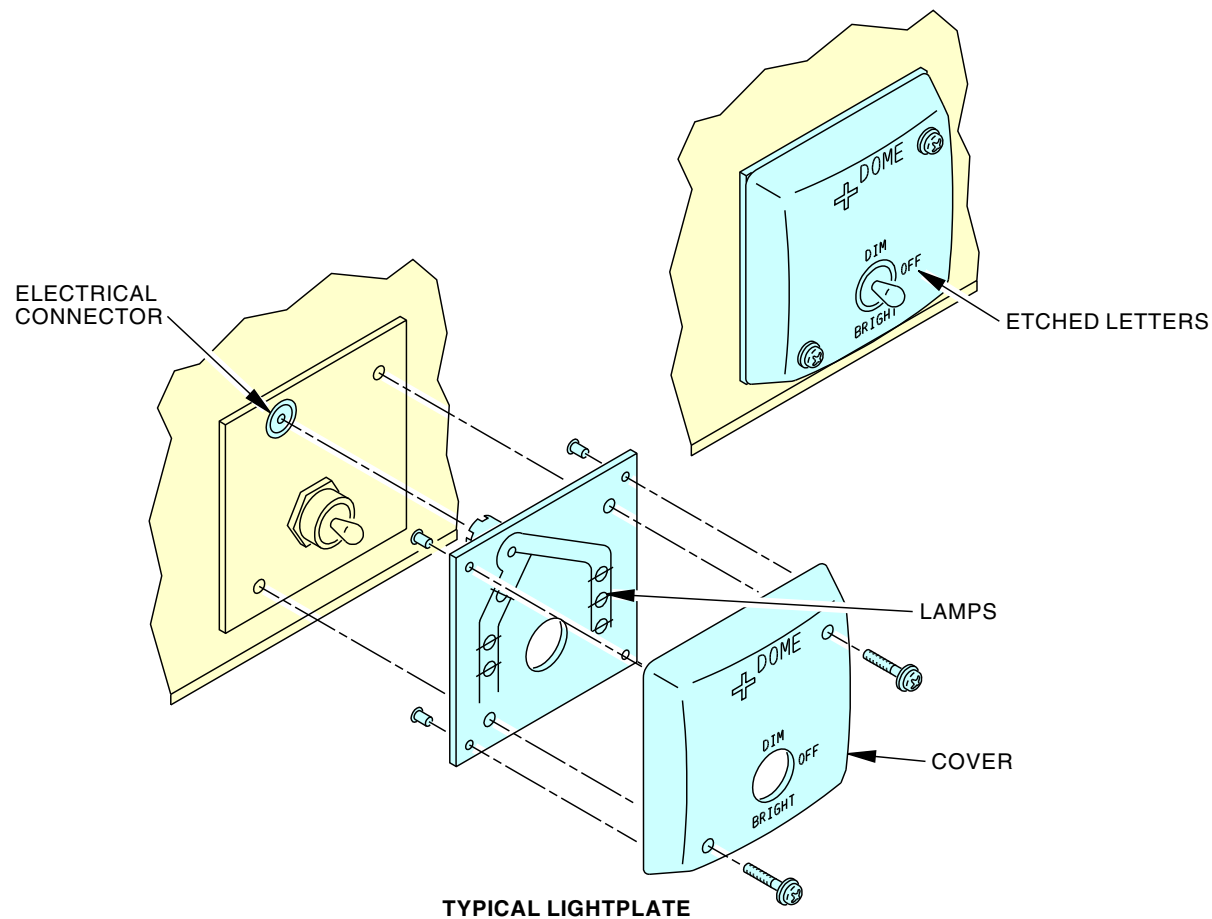
The front of the lightplates have etched letters and openings for selector switches and indicator lights. These openings let the lamps on the circuit board to supply light to the front of the panels.

Location

There are integral panel lights in the lightplates on these panels:

- P1 captain instrument panel
- P2 center instrument panel
- P3 first officer instrument panel
- P5 overhead panels
- P7 lightshield panel
- P8 aft electronics panel
- P21 left sidewall panel
- P23 right sidewall panel.

LIGHTS - INSTRUMENT AND PANEL LIGHTS - LIGHTPLATES



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LIGHTS - INSTRUMENT AND PANEL LIGHTS - LIGHTPLATES

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**LIGHTS - INSTRUMENT AND PANEL LIGHTS - INDICATOR LIGHTS****Purpose**

The indicator lights show the flight or maintenance crew the condition of an airplane system.

Location

Many airplane systems have indicator lights in the flight compartment. Indicator lights are on these panels:

- Instrument panels
- Overhead panels
- Electronics (aisle stand) panels.

Physical Description

The indicator lights use incandescent lamps to supply light. Each indicator light has these components:

- Terminal assembly
- Sleeve
- Body and contact assembly
- lamps
- Cap assembly
- Mounting screws.

Functional Description

The two types of indicator light assemblies receive either a ground or power. The indicator lamps that have a ground come on when an electrical ground is on the output terminal. The indicator lamps that receive power, come on when a positive 16/28v dc is applied to the output terminal.

Each type of indicator light assembly has a press-to-test switch circuit. This does a test of the lamp.

The lens of each indicator light assembly is colored. The lens color means:

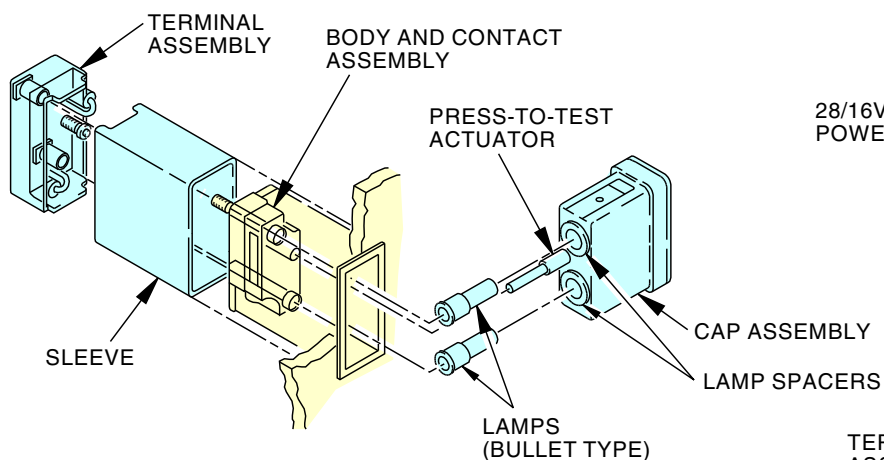
- Red - warning

- Amber - caution
- Blue - position
- Green - power on
- White - information.

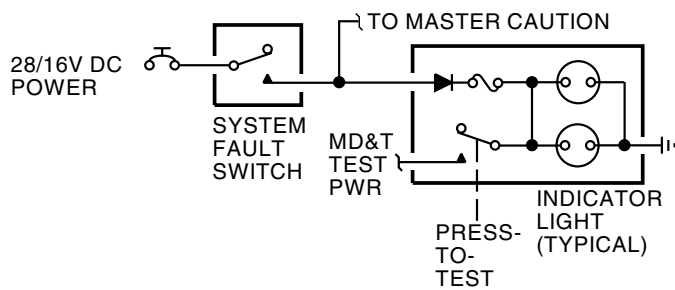
There are two types of lamps used for the indicator lights. Make sure that the replacement lamp has the correct part number. Use of the wrong lamp can damage the lens cover.

EFFECTIVITY	
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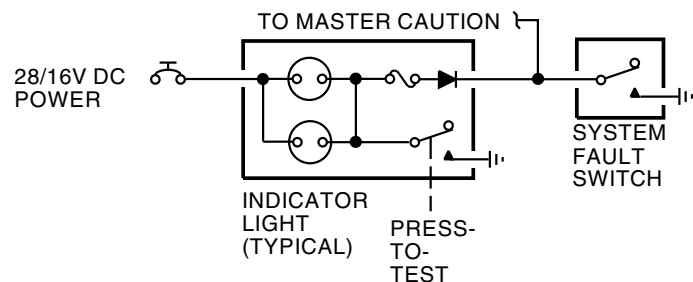
LIGHTS - INSTRUMENT AND PANEL LIGHTS - INDICATOR LIGHTS



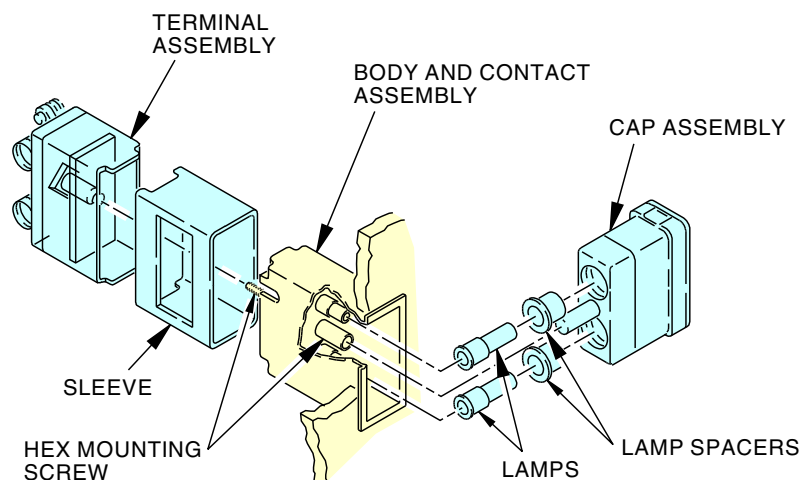
INDICATOR LIGHT WITH PHILLIPS MOUNTING SCREWS (TYPICAL)



POWER TYPE INDICATOR



GROUND TYPE INDICATOR



INDICATOR LIGHT WITH A HEX MOUNTING SCREW (TYPICAL)

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LIGHTS - INSTRUMENT AND PANEL LIGHTS - INDICATOR LIGHTS

**LIGHTS - INSTRUMENT AND PANEL LIGHTS - LIGHTED PUSH-BUTTON SWITCHES****Purpose**

The lighted push-button switches supply control inputs to their systems. They can also supply information on system condition.

Location

Many airplane systems have lighted push-button switches in the flight compartment. Lighted push-button switches are on these panels:

- Instrument panels
- Overhead panels
- Electronics (aisle stand) panels.

Physical Description

The lighted push-button switches use incandescent lamps to give light. Each lighted push-button switch has these components:

- Lens cap
- Master module
- Diode/fuse card
- Housing
- Sleeve.

FUNCTIONAL DESCRIPTION

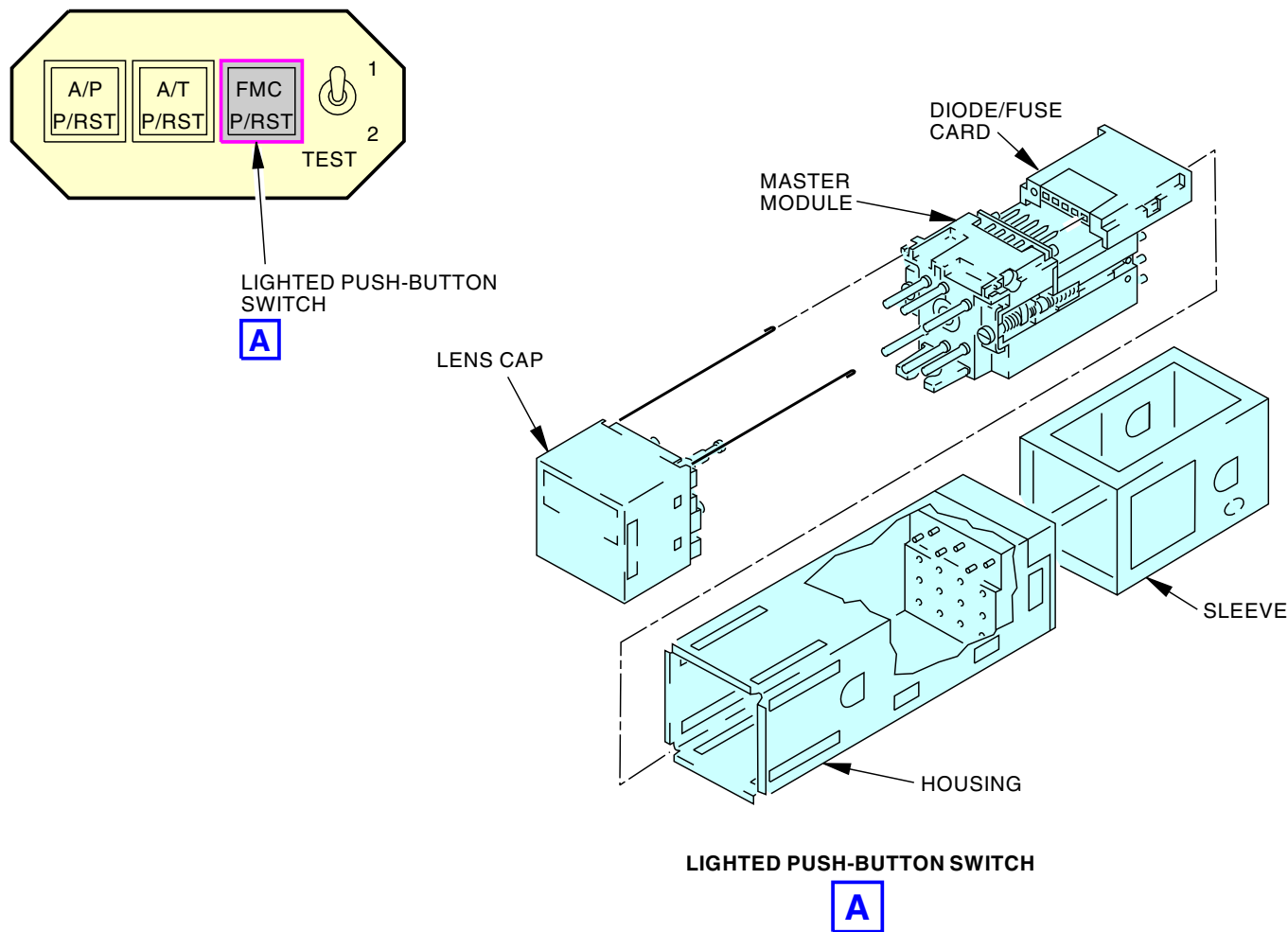
Each push-button switch contains four independent switch circuits. Each switch circuit contains these type of components:

- Normally open contact
- Normally closed contact
- Common wiper.

The two types of lighted push-button switches are momentary and alternate. The momentary switch changes condition when you push the cap assembly. It changes back to its original condition when you remove the pressure. The alternate switch changes condition when you push the cap assembly. It stays in that condition until you push it again. The master module in the switch body sets the type of switch.

The power to operate the lighted push-button switches may come from different sources. Use the Wiring Diagram Manual to find the correct source of power.

LIGHTS - INSTRUMENT AND PANEL LIGHTS - LIGHTED PUSH-BUTTON SWITCHES



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LIGHTS - INSTRUMENT AND PANEL LIGHTS - LIGHTED PUSH-BUTTON SWITCHES

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**LIGHTS - INSTRUMENT AND PANEL LIGHTS - MASTER WARNING AND CAUTION LIGHTS****Purpose**

The system status information is on the flight compartment panels. The master warning and caution lights provide a central location for information for the crew about alarms and faults for various systems.

Location

The master warning and caution lights are on the P7 glareshield panel.

General Description

The two MASTER CAUTION lights are amber. They both come on whenever one of the annunciator lights comes on. The lights are push-to-reset. This makes the MASTER CAUTION and annunciator light go out.

The annunciators are two amber blocks of six lights each. Each light shows the system that has the fault. Push either annunciator for a test of all annunciators and the MASTER CAUTION lights.

If a fault is detected, the particular annunciator and the two MASTER CAUTION lights come on. The lights go out by a push of either of the MASTER CAUTION lights. This must be done as soon as possible to prevent excessive heat on the lenses.

Push either annunciator block to recall the light for the system that has the fault.

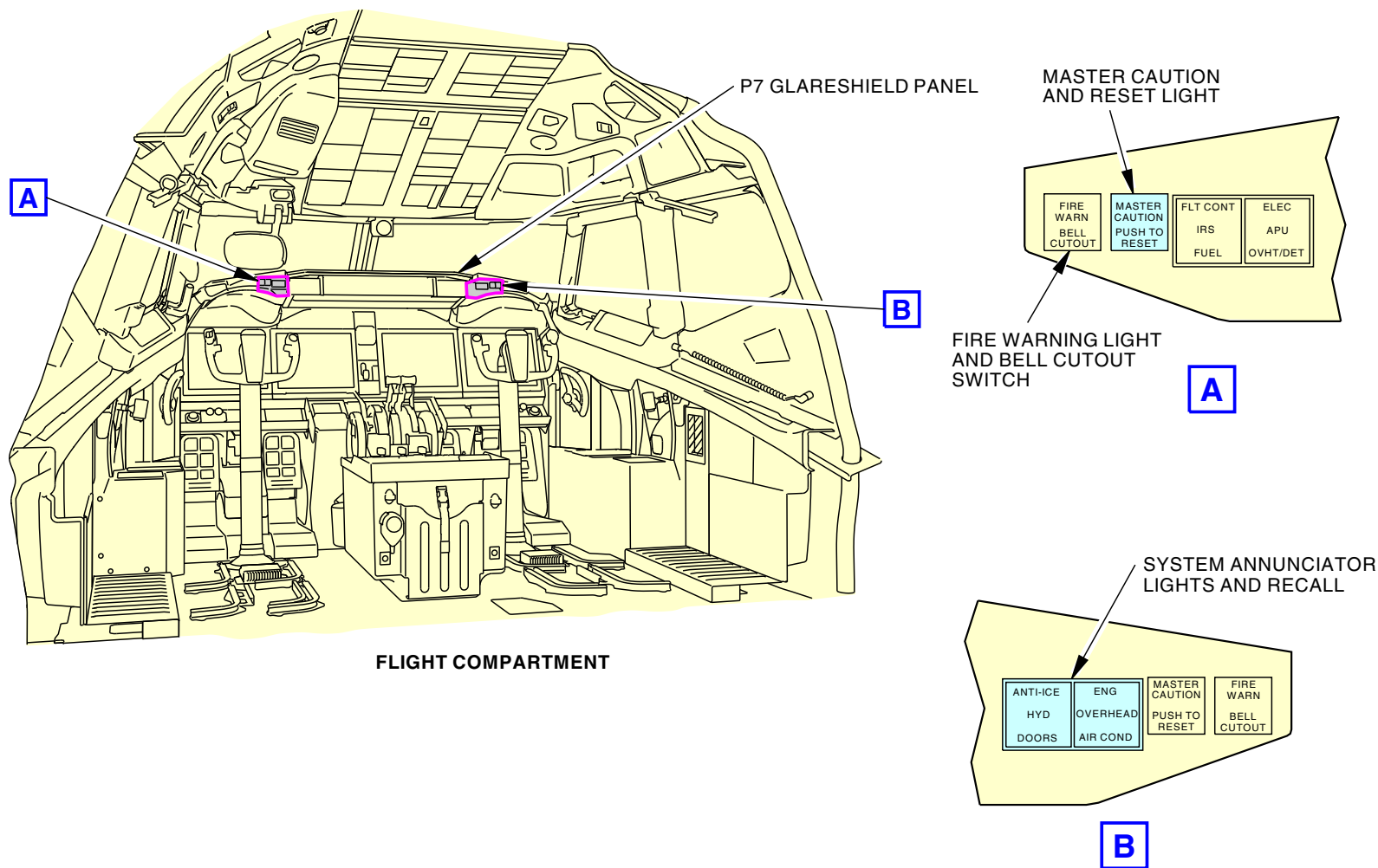
See the chapters and sections in AMM PART I for each annunciator function.

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LIGHTS - INSTRUMENT AND PANEL LIGHTS - MASTER WARNING AND CAUTION LIGHTS



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LIGHTS - INSTRUMENT AND PANEL LIGHTS - MASTER WARNING AND CAUTION LIGHTS

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SIA ALL	EFFECTIVITY

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ECCN 9E991 BOEING PROPRIETARY - See title page for details

**LIGHTS - INSTRUMENT AND PANEL LIGHTS - CAPTAIN INSTRUMENT PANEL - FUNCTIONAL DESCRIPTION****Purpose**

The captain instrument panel lights provide the illumination for the instruments and panels in front of the captain.

Functional Description

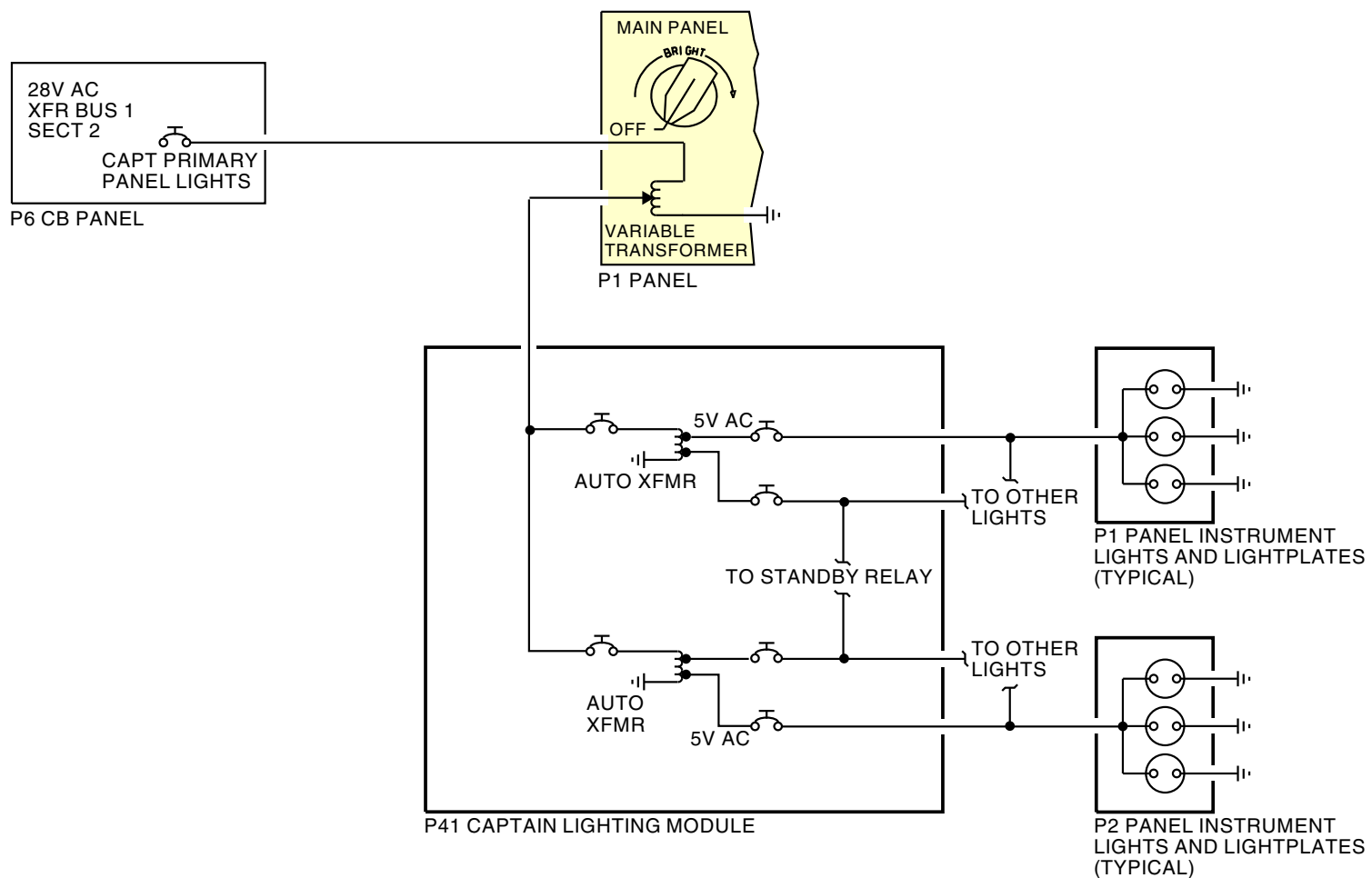
You control the intensity of instrument and panel illumination by the main panel variable transformer on the P1 panel. Turn the transformer knob clockwise to give brighter lights. Turn the transformer knob all the way counterclockwise to turn the lights off.

Power from the variable transformer goes to the auto transformer in the P41 captain lighting panel. From the auto transformer, 0 - 5v ac goes to the instrument and panel lights on P1 and P2 panels.

Circuit breakers on the P41 panel provide protection for the system.

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LIGHTS - INSTRUMENT AND PANEL LIGHTS - CAPTAIN INSTRUMENT PANEL - FUNCTIONAL DESCRIPTION



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LIGHTS - INSTRUMENT AND PANEL LIGHTS - CAPTAIN INSTRUMENT PANEL - FUNCTIONAL DESCRIPTION

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EFFECTIVITY

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ECCN 9E991 BOEING PROPRIETARY - See title page for details

**LIGHTS - INSTRUMENT AND PANEL LIGHTS - FIRST OFFICER INSTRUMENT PANEL - FUNCTIONAL DESCRIPTION****Purpose**

The first officer instrument panel lights provide the illumination for the instruments and panels in front of the first officer.

Functional Description

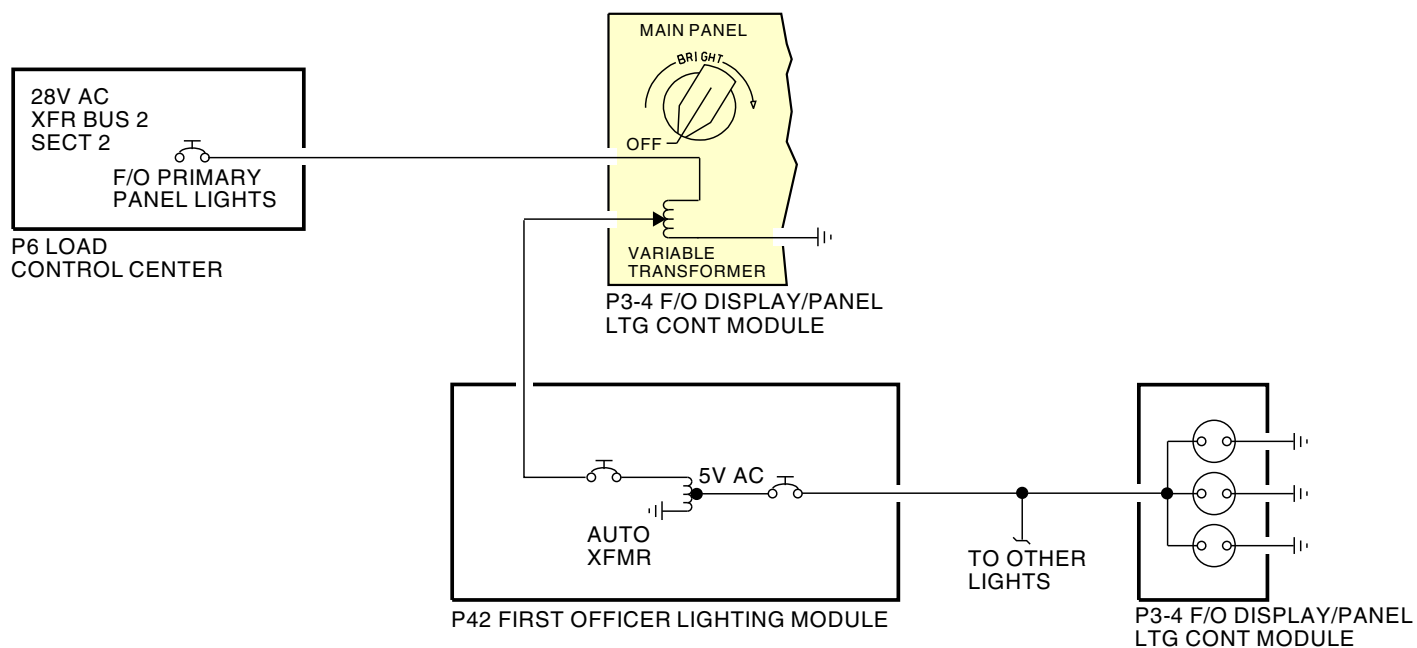
You control the intensity of instrument and panel illumination by the main panel variable transformer on the P1 panel. Turn the transformer knob clockwise to give brighter lights. Turn the transformer knob all the way counterclockwise to turn the lights off.

Power from the variable transformer goes to the auto transformer in the P42 first officer lighting panel. From the auto transformer, 0 - 5v ac goes to the instrument and panel lights on P3 panel.

Circuit breakers on P42 panel provide protection for the system.

SIA ALL	EFFECTIVITY
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LIGHTS - INSTRUMENT AND PANEL LIGHTS - FIRST OFFICER INSTRUMENT PANEL - FUNCTIONAL DESCRIPTION



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LIGHTS - INSTRUMENT AND PANEL LIGHTS - FIRST OFFICER INSTRUMENT PANEL - FUNCTIONAL DESCRIPTION

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SIA ALL EFFECTIVITY

D633AM102-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

**LIGHTS - INSTRUMENT AND PANEL LIGHTS - STANDBY INSTRUMENT PANEL LIGHTS - FUNCTIONAL DESCRIPTION****Purpose**

The standby instrument panel lights provide the illumination for the instruments and panels when normal power supply is not available.

Functional Description

The instrument and panel lights for the captain and first officer are from the 28v ac transfer busses.

Relays R1 in the P41 and P42 panels are energized.

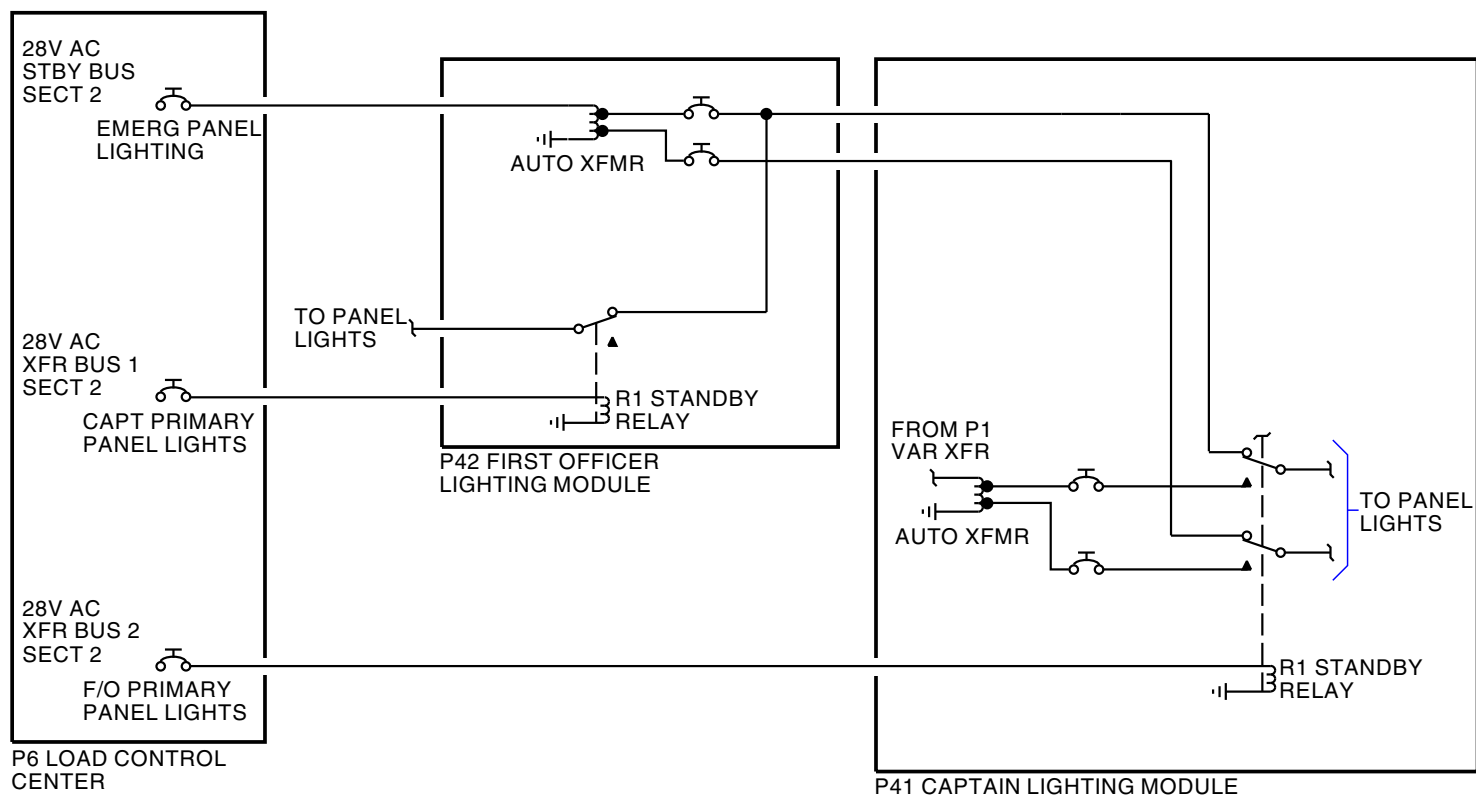
Relay R386 in P41 panel and relay R237 in P42 panel are energized.

When 28v ac power from transfer bus is not present, the relays deenergize. This connects the 28v ac standby bus to the auto transformer in the P42 panel. From the auto transformer, 5v ac goes to the instrument and panel lights on P1, P2, and P3 panels.

Circuit breakers on the P41 and P42 panels provide protection for the system.

SIA ALL	EFFECTIVITY

LIGHTS - INSTRUMENT AND PANEL LIGHTS - STANDBY INSTRUMENT PANEL LIGHTS - FUNCTIONAL DESCRIPTION



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LIGHTS - INSTRUMENT AND PANEL LIGHTS - STANDBY INSTRUMENT PANEL LIGHTS - FUNCTIONAL DESCRIPTION

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SIA ALL	EFFECTIVITY
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ECCN 9E991 BOEING PROPRIETARY - See title page for details

33-11-00

**LIGHTS - INSTRUMENT AND PANEL LIGHTS - CONTROL STAND - FUNCTIONAL DESCRIPTION****Purpose**

The control stand panel lights provide the illumination for the instruments and panels for the flight crew.

Functional Description

You control the intensity of instrument and panel illumination by the panel variable transformer on the P8 panel. Turn the transformer knob clockwise to give brighter lights. Turn the transformer knob all the way counterclockwise to turn the lights off.

Power from the variable transformer goes to the auto transformer in the J19 junction box.

Power from the variable transformer goes to the auto transformer in the P8 panel.

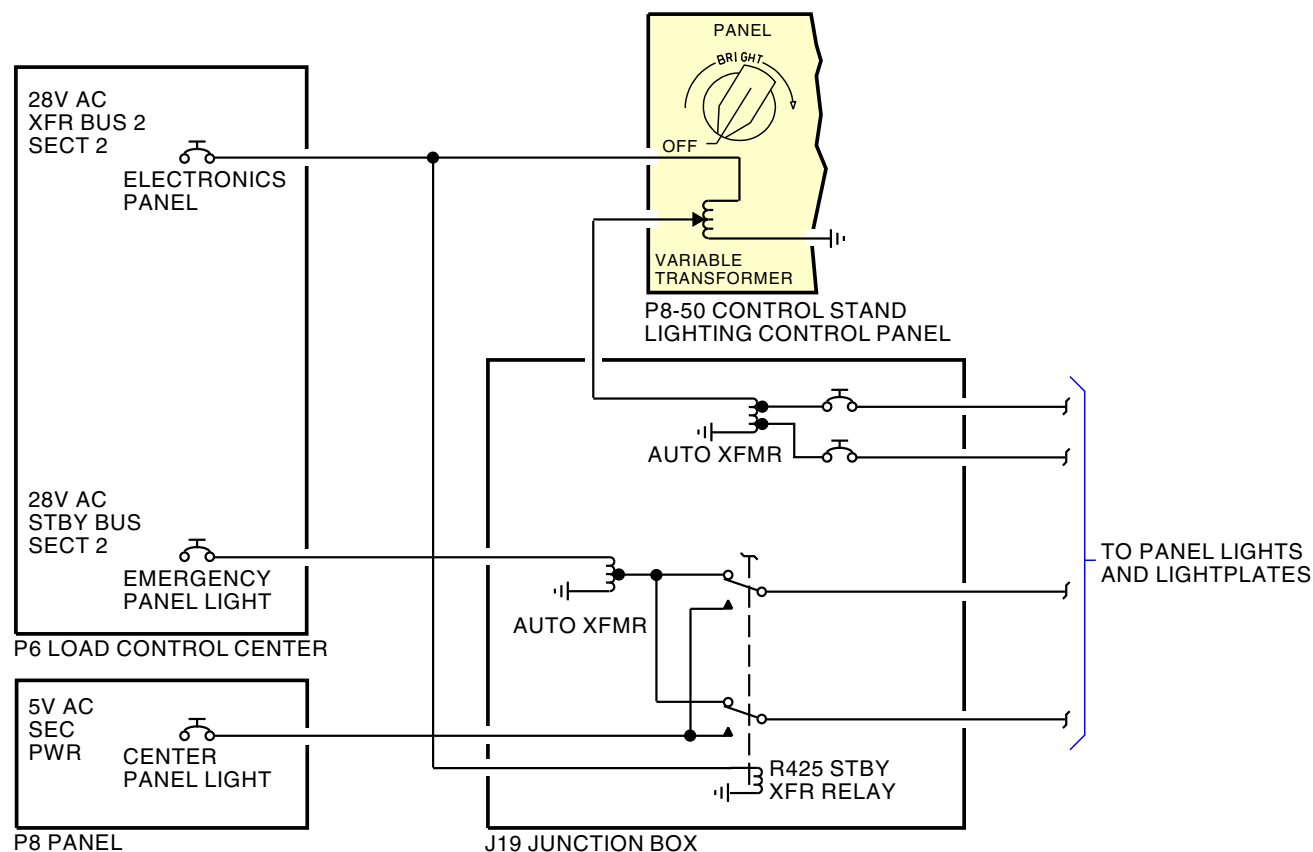
From the auto transformer, 0 - 5v ac goes to the instrument and panel lights on P8 panel.

Relay R425 is normally energized. When normal 28v ac power is not present, the relay deenergizes. This connects the 28v ac standby bus to the instrument and panel lights on P8 panel.

Circuit breakers on the panels provide protection for the system.

SIA ALL	EFFECTIVITY
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LIGHTS - INSTRUMENT AND PANEL LIGHTS - CONTROL STAND - FUNCTIONAL DESCRIPTION



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LIGHTS - INSTRUMENT AND PANEL LIGHTS - CONTROL STAND - FUNCTIONAL DESCRIPTION

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SIA ALL	EFFECTIVITY
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ECCN 9E991 BOEING PROPRIETARY - See title page for details

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**LIGHTS - INSTRUMENT AND PANEL LIGHTS - OVERHEAD PANEL - FUNCTIONAL DESCRIPTION****Purpose**

The overhead panel lights provide the illumination for the instruments and panels for the flight crew.

Functional Description

You control the intensity of instrument and panel illumination by the panel variable transformer on the P5 panel. Turn the transformer knob clockwise to give brighter lights. Turn the transformer knob all the way counterclockwise to turn the lights off.

Power from the variable transformer goes to the auto transformer in the P6 circuit breaker panel. From the auto transformer, 0 - 5v ac goes to the instrument and panel lights on P5 panel.

Circuit breakers on P6 panel provide protection for the system.

SIA ALL	EFFECTIVITY
	D633AM102-SIA



The diagram illustrates the electrical wiring for the P5 Overhead Panel Instrument Lights and Lightplates. It shows the following components and connections:

- P6 LOAD CONTROL CENTER:** The main power source on the left, providing 28V AC, 5V AC, and an AUTO XFMR (Automatic Transformer).
- OVERHEAD PANEL LIGHTS:** A branch from the 28V AC line.
- P5 OVERHEAD PANEL:** A yellow-shaded area containing a **VARIABLE TRANSFORMER** and a **BRIGHT** control knob. It is connected to the 28V AC line and the AUTO XFMR.
- P5 OVERHEAD PANEL INSTRUMENT LIGHTS AND LIGHTPLATES (TYPICAL):** Two identical units on the right, each with three instrument lights. They are connected to the 5V AC line and the AUTO XFMR.
- TO OTHER LIGHTS:** A connection point for the 28V AC line leading to other lighting fixtures.

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LIGHTS - INSTRUMENT AND PANEL LIGHTS - OVERHEAD PANEL - FUNCTIONAL DESCRIPTION

EFFECTIVITY	
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ECCN 9E991 BOEING PROPRIETARY - See title page for details

**LIGHTS - INSTRUMENT AND PANEL LIGHTS - STANDBY LIGHTING - FUNCTIONAL DESCRIPTION****Purpose**

Standby lights supply light to instruments that are necessary for flight safety.

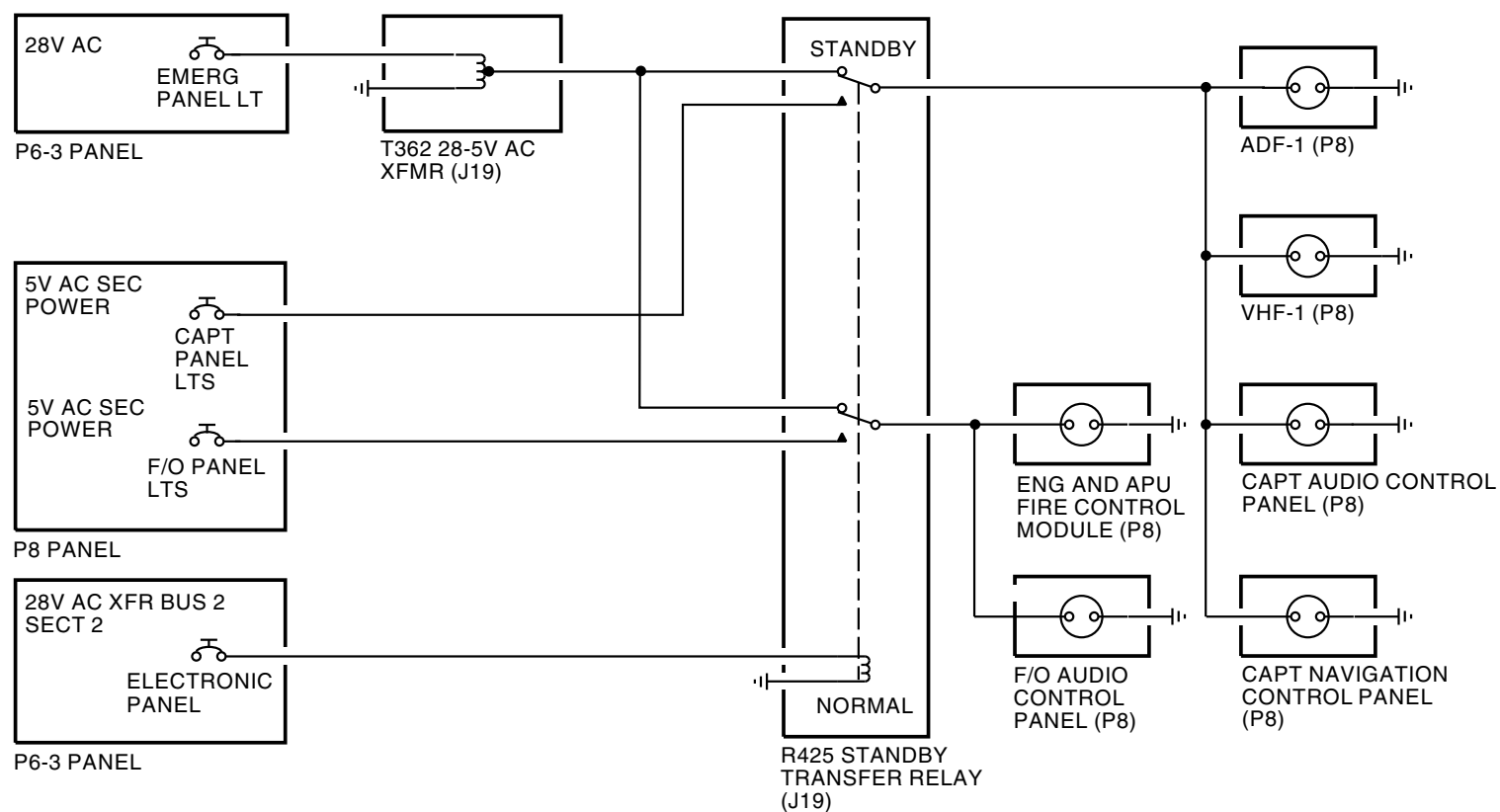
The diagram below shows the standby circuit for systems on the P8 panel. Please refer to your wiring diagrams for other lights on the standby system.

Functional Description

When transfer bus 2 cannot supply power to the lights, the lights get power from the standby bus. When relay R425 cannot energize, the standby bus connects to the standby transformer, T362. The standby transformer supplies the 5v ac to the lights for the system.

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LIGHTS - INSTRUMENT AND PANEL LIGHTS - STANDBY LIGHTING - FUNCTIONAL DESCRIPTION



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LIGHTS - INSTRUMENT AND PANEL LIGHTS - STANDBY LIGHTING - FUNCTIONAL DESCRIPTION

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SIA ALL EFFECTIVITY

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ECCN 9E991 BOEING PROPRIETARY - See title page for details



LIGHTS - INSTRUMENT AND PANEL LIGHTS - PANEL P3/P5/P8 - FUNCTIONAL DESCRIPTION

Operation

The OFF-BRIGHT control for the control stand (P8 panel), main panel (P3 panel) instrument and panel lights (P5 panel) adjusts the intensity the lamps.

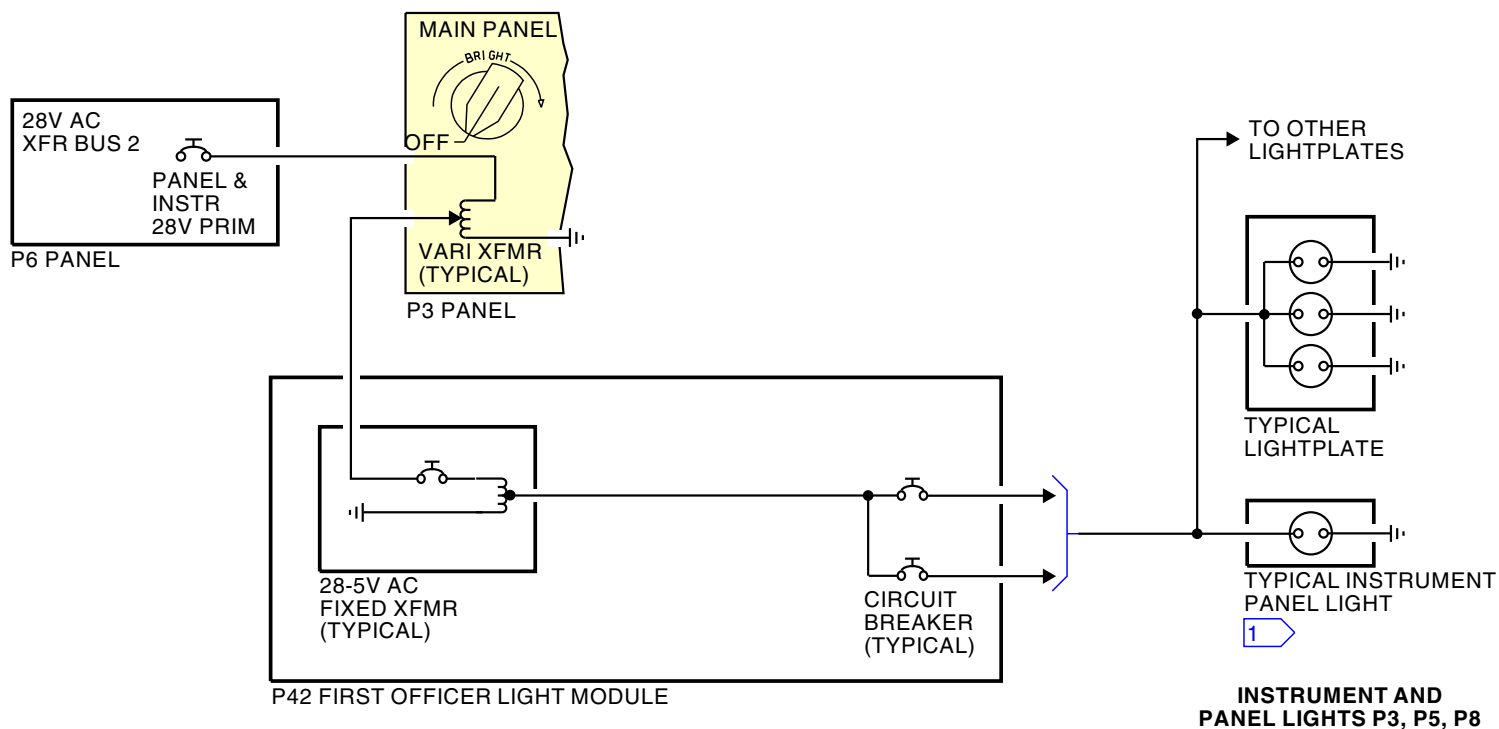
Functional Description

The OFF-BRIGHT control is a variable transformer. The control knob turns to change the voltage available to two fixed transformers. These transformers are in the J19 junction box.

The two fixed transformers supply a maximum of 5v ac to the circuit breakers on the P42 panel. The 0-5v ac voltage from the circuit breakers causes the instrument and panel lights on the P5 panel to come on.

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LIGHTS - INSTRUMENT AND PANEL LIGHTS - PANEL P3/P5/P8 - FUNCTIONAL DESCRIPTION



1 FUNCTIONAL OPERATION OF THE LIGHTPLATES AND INSTRUMENT LIGHTS ARE THE SAME FOR EVERY PANEL IN THE FLIGHT COMPARTMENT.

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LIGHTS - INSTRUMENT AND PANEL LIGHTS - PANEL P3/P5/P8 - FUNCTIONAL DESCRIPTION

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LIGHTS - MISCELLANEOUS LIGHTS - INTRODUCTION

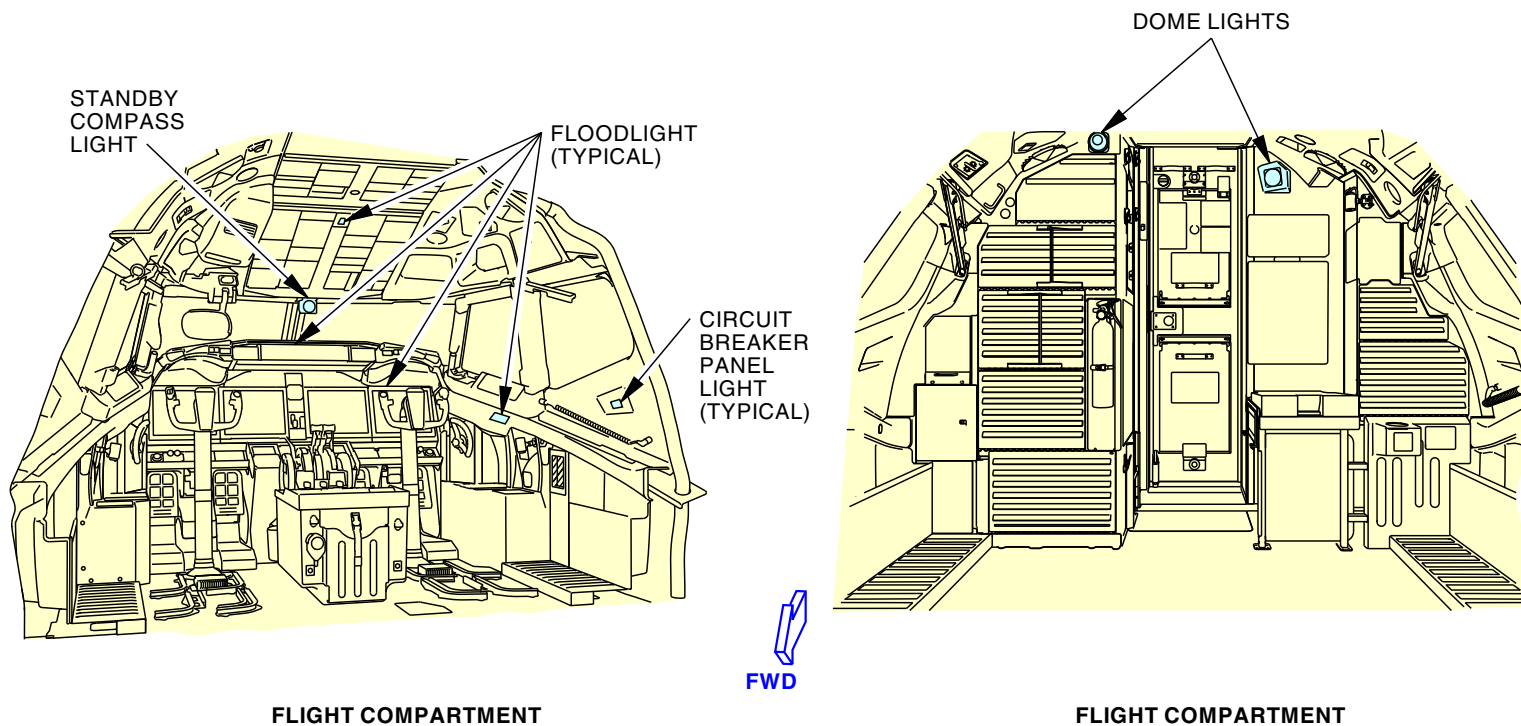
Purpose

The flight compartment miscellaneous lights supply light to specified areas in the flight compartment. These are the flight compartment miscellaneous lights:

- Standby compass light
- Circuit breaker panel lights
- Dome lights
- Floodlights.

SIA ALL	EFFECTIVITY
	D633AM102-SIA

LIGHTS - MISCELLANEOUS LIGHTS - INTRODUCTION



LIGHTS - MISCELLANEOUS LIGHTS - INTRODUCTION

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**LIGHTS - MISCELLANEOUS LIGHTS - STANDBY COMPASS LIGHT****Purpose**

The standby compass light supplies light to the standby compass card.

Location

The standby compass light is part of the standby compass. It is forward of the P5 panel.

Operation

A three-position switch controls the standby compass light. The switch has these positions:

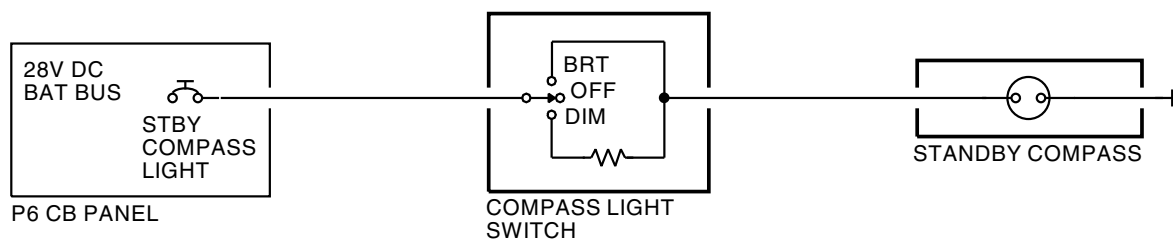
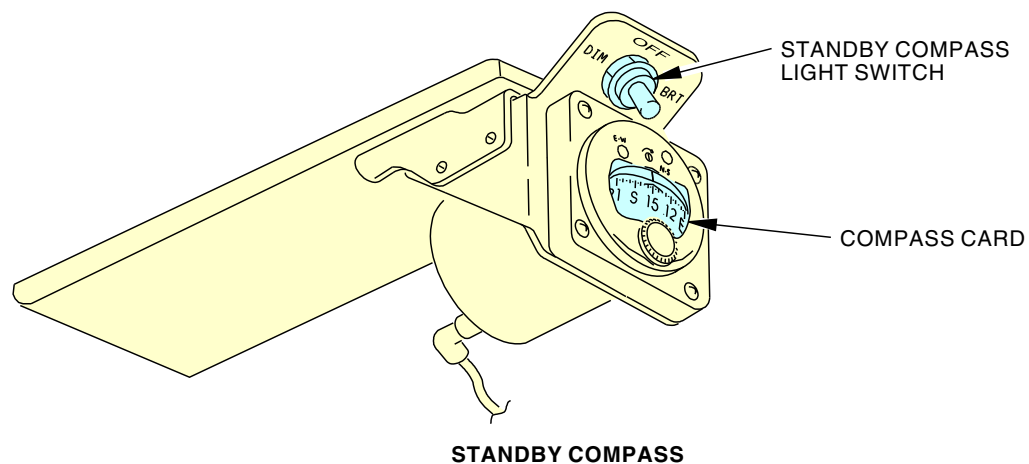
- OFF - no power to the light
- DIM - light on in the dim mode
- BRT - light on in the bright mode.

Functional Description

Power to the standby compass light comes from the 28v dc battery bus. When the standby compass light switch is in the BRT position, 28v dc goes to the lamp. When the switch is in the DIM position, a resistor decreases power to the lamp. When the switch is in the OFF position, there is no power to the lamp.

EFFECTIVITY	
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LIGHTS - MISCELLANEOUS LIGHTS - STANDBY COMPASS LIGHT



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LIGHTS - MISCELLANEOUS LIGHTS - STANDBY COMPASS LIGHT

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SIA ALL	EFFECTIVITY
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**LIGHTS - MISCELLANEOUS LIGHTS - CIRCUIT BREAKER PANEL LIGHTS****Purpose**

The P6 and P18 circuit breaker panels receive light from the circuit breaker panel lights.

Location

There are five circuit breaker panel lights in the flight compartment. These lights are on the sidewalls, the ceiling and the floor. The control for the circuit breaker panel lights is on the P5 forward overhead panel.

Operation

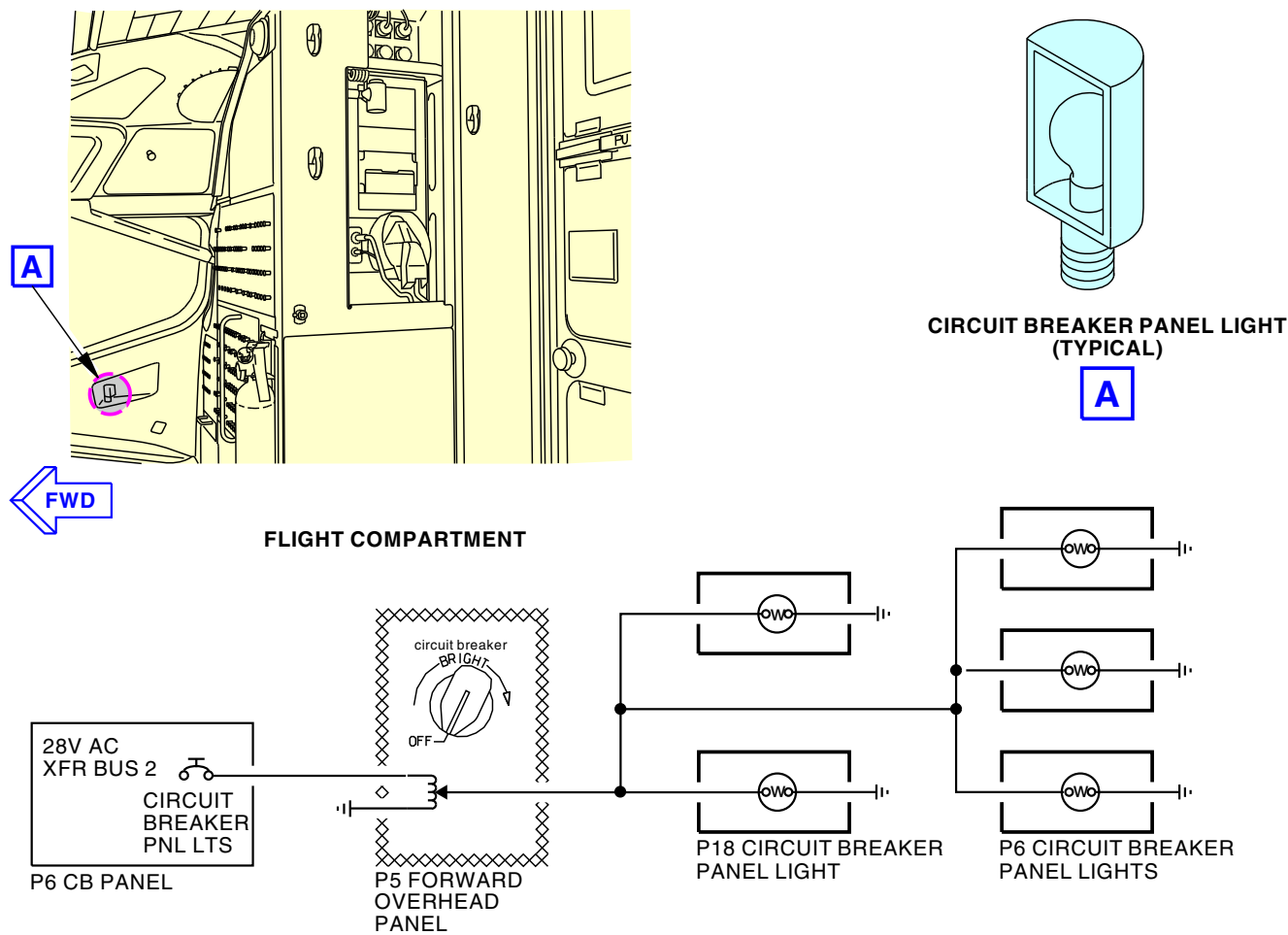
You use the OFF-BRIGHT control on the P5 panel to adjust the intensity of the circuit breaker lamps.

Functional Description

The circuit breaker panel lights get 28v ac power through a variable transformer. You rotate the control to change the power to the circuit breaker panel lights.

SIA ALL	EFFECTIVITY
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LIGHTS - MISCELLANEOUS LIGHTS - CIRCUIT BREAKER PANEL LIGHTS



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LIGHTS - MISCELLANEOUS LIGHTS - CIRCUIT BREAKER PANEL LIGHTS

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**LIGHTS - MISCELLANEOUS LIGHTS - DOME LIGHTS****Purpose**

The dome lights supply light to all of the flight compartment.

location

There are two dome lights. One is on the P6 panel. The other light is on the P18 panel.

Physical Description

Each light has these components:

- Lamp
- Screws (4)
- Lens
- Lens retainer.

Operation

A three position switch on the P5 panel controls the dome lights. The switch has these three positions:

- OFF - no power to the light
- DIM - light on in the dim mode
- BRIGHT - light on in the bright mode.

Functional Description

Power to the dome light is from the 28v dc battery bus. With the dome light switch in the BRIGHT position, 28v dc goes to the lamp. With the switch in the DIM position, a resistor decreases power to the lamp. With the switch in the OFF position, there is no power to the lamp.

The dome light on the P18 panel is a dual lamp assembly. One lamp is an emergency light for the flight compartment. It comes on with the emergency light system.

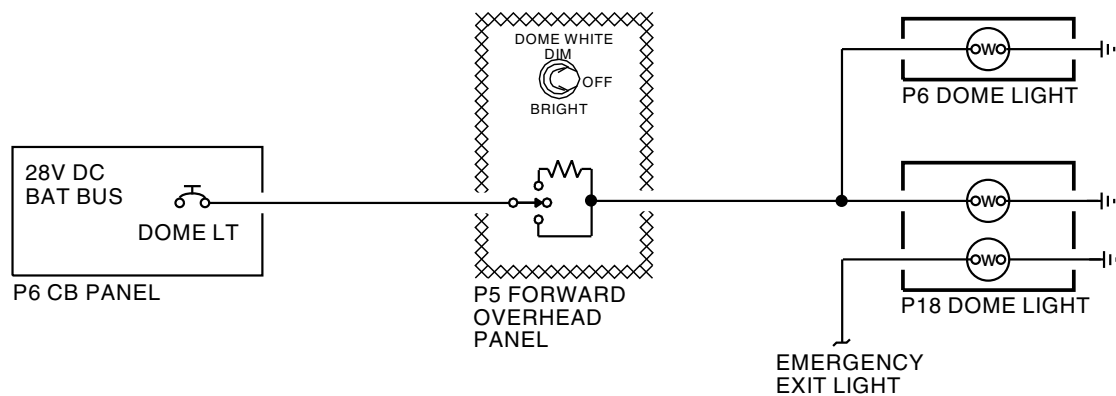
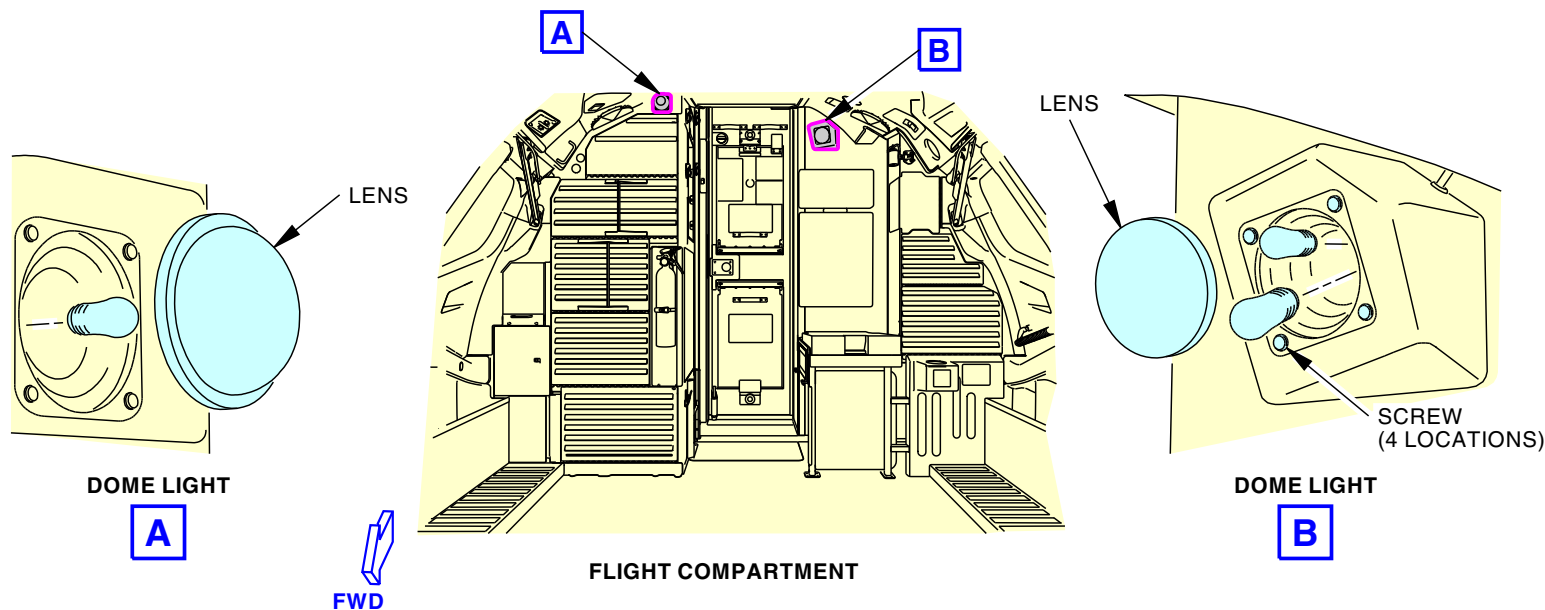
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EFFECTIVITY	
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ECCN 9E991 BOEING PROPRIETARY - See title page for details

LIGHTS - MISCELLANEOUS LIGHTS - DOME LIGHTS



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LIGHTS - MISCELLANEOUS LIGHTS - DOME LIGHTS

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LIGHTS - MISCELLANEOUS LIGHTS - FLOODLIGHTS

Purpose

The floodlights supply light to these panels:

- P1 Captain Instrument Panel
- P2 Center Instrument Panel
- P3 First Officer Instrument Panel
- P7 Glareshield Panel
- P8 Aft Electronics Panel
- P9 Forward Electronics Panel
- P21 Captain's Oxygen Mask Stowage Panel
- P23 First Officer's Oxygen Mask Stowage Panel

Location

The floodlights for the P1, P2, P3, and P7 panels are above the panels. The control switch for these flood lights are on the P1 and P3 panels.

The floodlight for the P8 and P9 panels is above the aisle stand on the P5 panel. The control switch is on the aft left section of the P8 panel.

Physical Description

These are the two types of floodlights:

- Strip floodlights
- Spot floodlights.

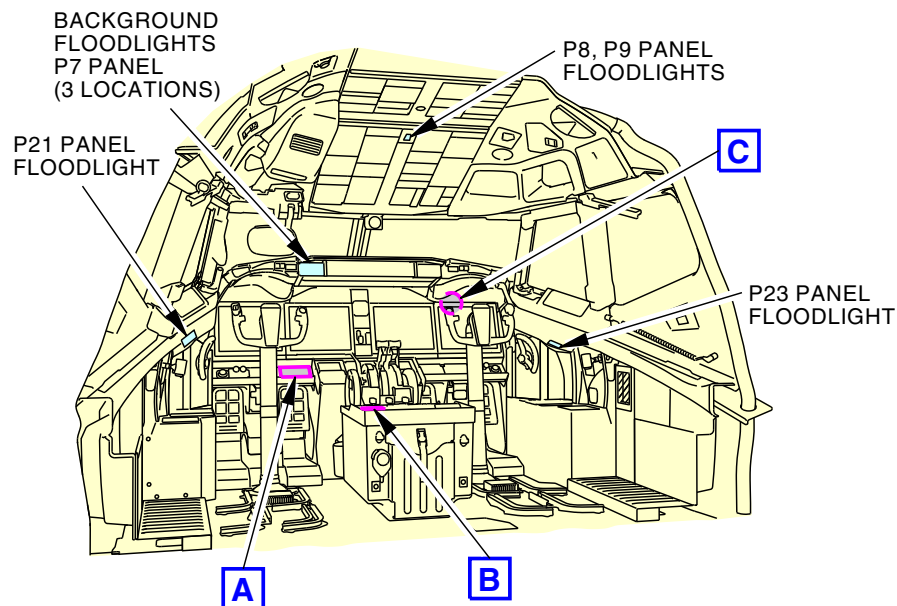
The strip floodlight has many incandescent lights attached to a lens. Each spot floodlight is an incandescent bulb.

Operation

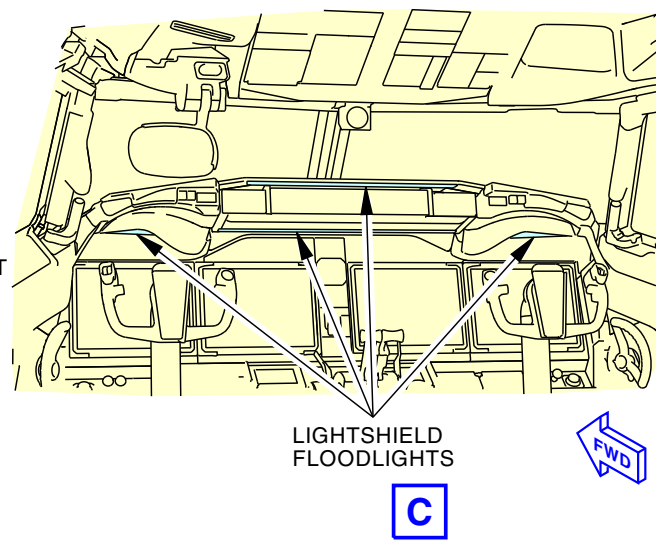
You can use the OFF-BRIGHT controls to adjust the intensity of the lamps.

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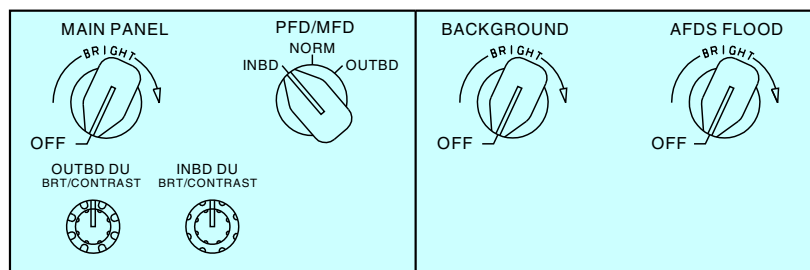
LIGHTS - MISCELLANEOUS LIGHTS - FLOODLIGHTS



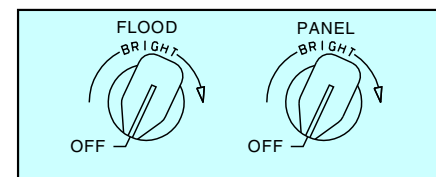
FLIGHT COMPARTMENT



LIGHTSHIELD FLOODLIGHTS



LIGHT CONTROL PANELS (TYPICAL)



LIGHT CONTROL PANEL (P8)

B

A

LIGHTS - MISCELLANEOUS LIGHTS - FLOODLIGHTS

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**LIGHTS - MISCELLANEOUS LIGHTS - FLOOD LIGHTS - FUNCTIONAL DESCRIPTION****Functional Description**

The floodlights can operate in two modes, normal and standby. Not all floodlights can operate in the standby mode.

You control the AFDS (glare shield P7) control panel floodlights with the glare shield bright/dim control. The panel floodlights receive power from the 115v ac transfer bus. These lights do not operate in the standby mode.

You operate the control stand floodlight from the floodlight control switch on the P8 panel. The control stand floodlight does not operate in the standby mode.

Normal Mode

In the normal mode, you can adjust the intensity from the floodlight. In the standby mode, the light intensity cannot change.

When the 115v ac transfer bus has power, the K1 standby relay energizes. This connects the main panel bright/dim control to the main panel floodlight dimmer control unit. When you push and turn this control on the P1 panel, it adjusts the resistance to the main panel floodlight dimmer control unit. This unit uses the input to adjust the light from the three main panel floodlights for the captain (P1), first officer (P3), and the center (P2) panels.

Standby Mode

When the 115v ac transfer bus does not have power, the standby relay de-energizes. In the standby mode, the resistance to the main panel floodlight dimmer control unit is set by the standby resistors. In this mode, the intensity cannot be adjusted. The light from the glare shield floodlights also cannot be adjusted.

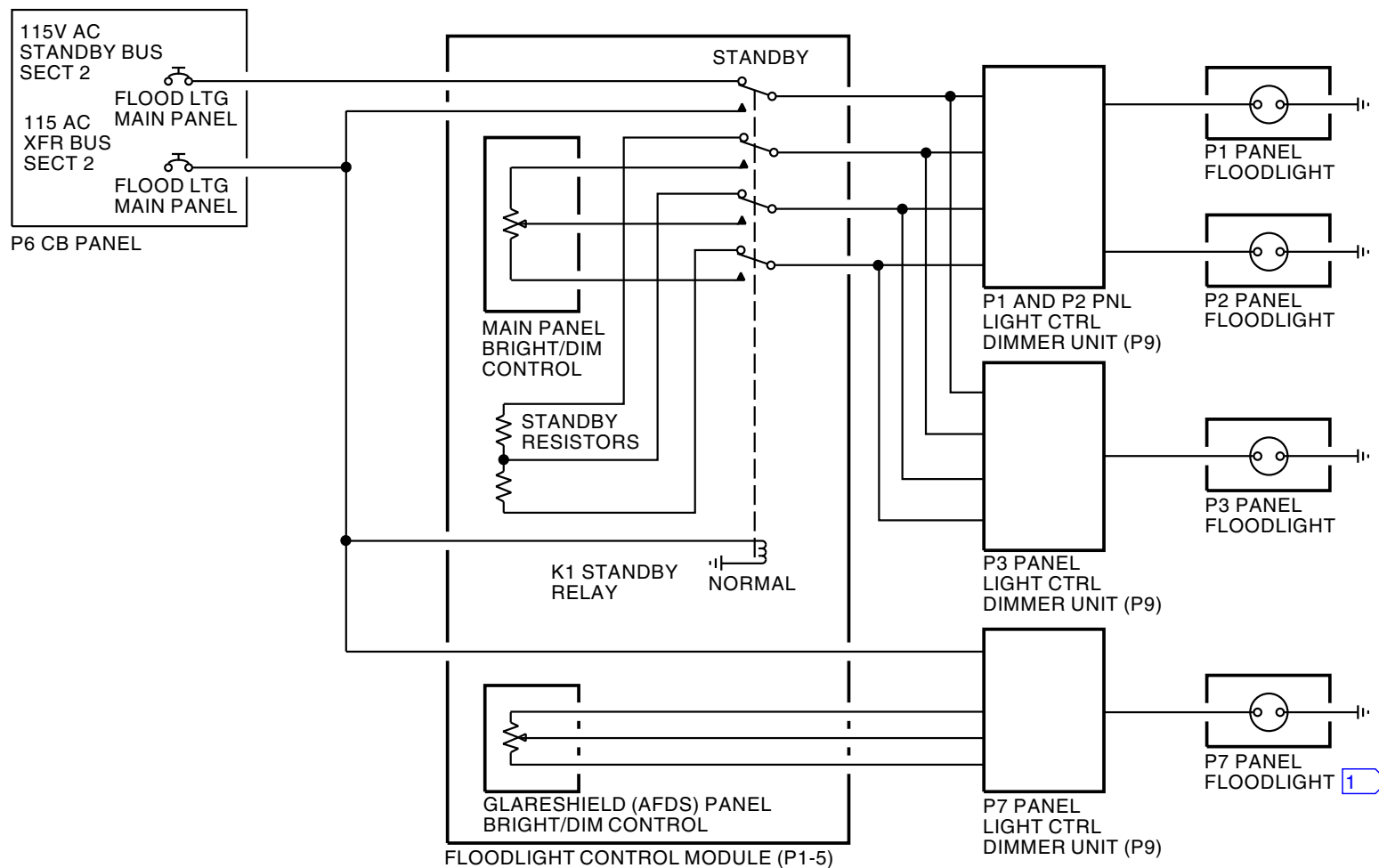
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EFFECTIVITY	
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LIGHTS - MISCELLANEOUS LIGHTS - FLOOD LIGHTS - FUNCTIONAL DESCRIPTION



1 CONTROL STAND FLOODLIGHT IS EQUIVALENT

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LIGHTS - MISCELLANEOUS LIGHTS - FLOOD LIGHTS - FUNCTIONAL DESCRIPTION

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EFFECTIVITY

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LIGHTS - FLIGHT CREW LIGHTS - INTRODUCTION

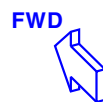
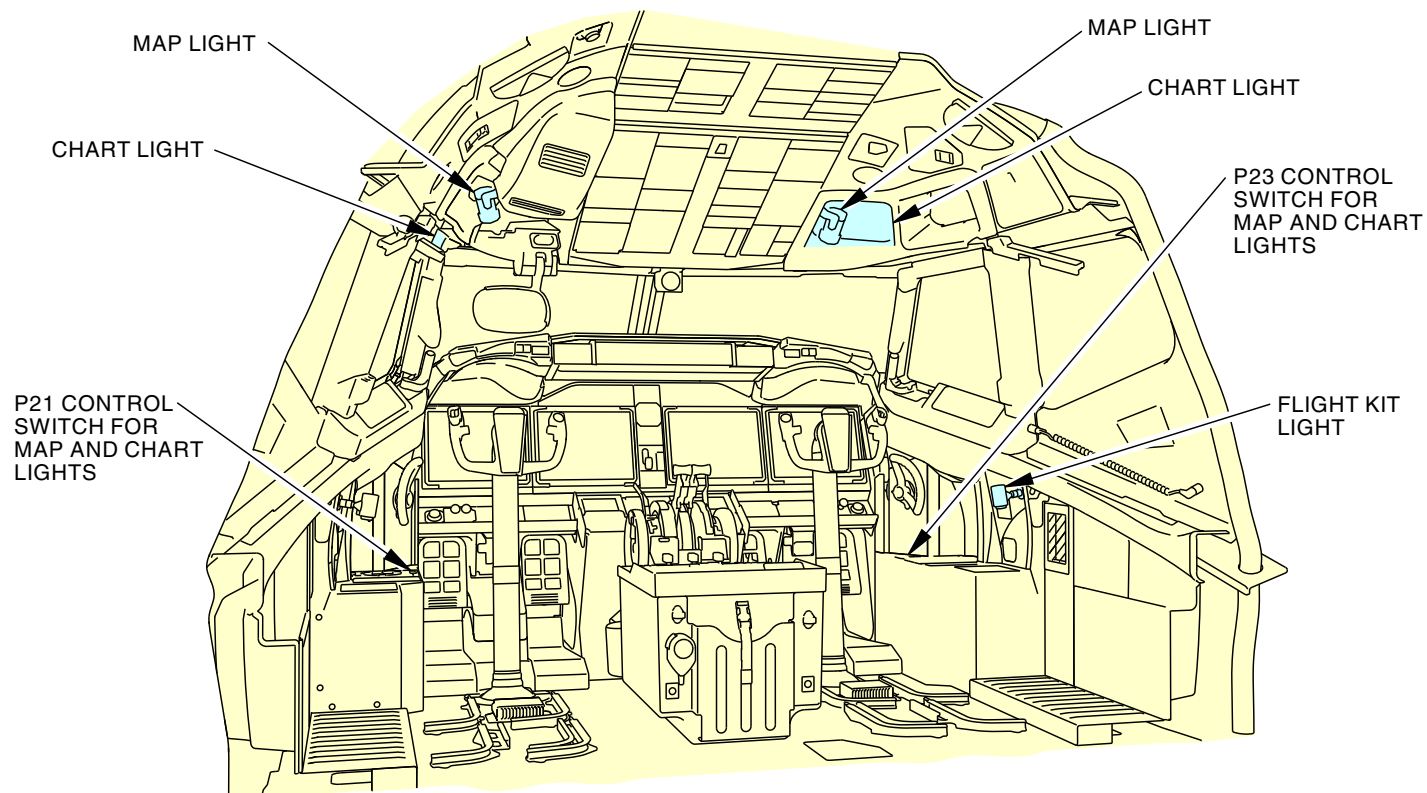
Purpose

The flight crew lights are reading lights for the flight crew. The lights are adjustable. These are the flight compartment reading lights:

- Flight kit light (2)
- Map light (2)
- Chart light (2)
- Observer reading lights.

SIA ALL	EFFECTIVITY
	D633AM102-SIA

LIGHTS - FLIGHT CREW LIGHTS - INTRODUCTION



LIGHTS - FLIGHT CREW LIGHTS - INTRODUCTION

2369694 S00061520099_V1

33-17-00-001

SIA ALL	EFFECTIVITY
	D633AM102-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

33-17-00

**LIGHTS - FLIGHT CREW LIGHTS - FLIGHT KIT LIGHTS****Purpose**

The flight kit lights give a mobile light source in the flight deck.

location

These are the locations of the flight kit lights in the flight compartment:

- P21 panel (captain) flight kit light
- P23 panel (first officer) flight kit light.

Physical Description

The flight kit light has these components:

- Light control
- Housing
- Lamp
- Lens
- Retaining ring
- Cord
- Base.

The lens cap can make the light white or red. The light disconnects from the base. The cord is 100 in. (254 cm) long when extended to the full length.

Operation

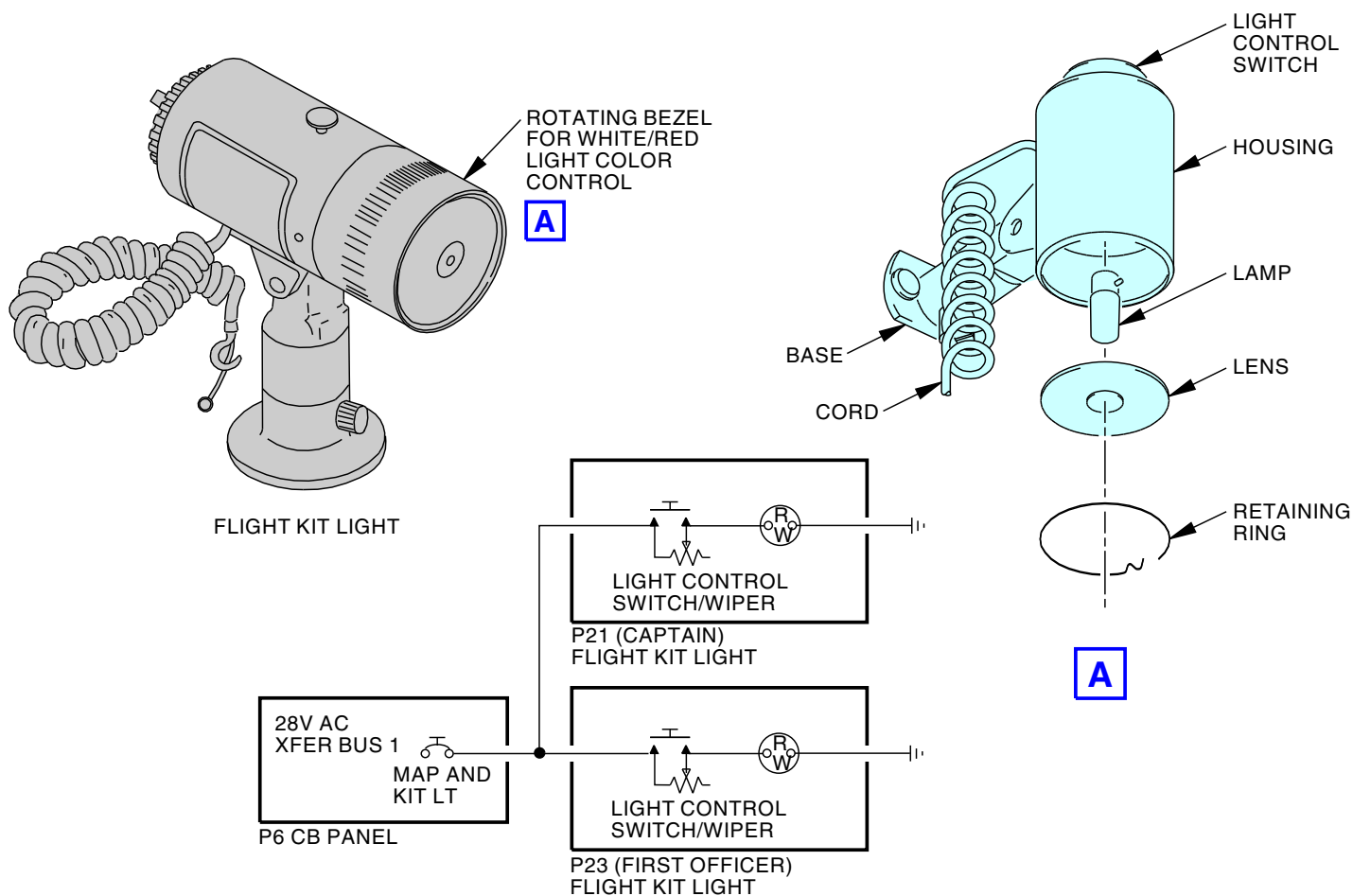
You turn the light control to make the light come on and to adjust the light intensity. When you push the light control, the light comes on until you release the control.

Functional Description

For the light to come on, a switch closes and sends power to the light. A wiper arm adjusts the quantity of power to the lamp. The light has a push to operate function. This makes the light stay on when you push the switch.

EFFECTIVITY	
SIA ALL	

LIGHTS - FLIGHT CREW LIGHTS - FLIGHT KIT LIGHTS



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LIGHTS - FLIGHT CREW LIGHTS - FLIGHT KIT LIGHTS

33-17-00

SIA ALL	EFFECTIVITY
	D633AM102-SIA

**LIGHTS - FLIGHT CREW LIGHTS - MAP LIGHTS****Purpose**

The map lights supply adjustable light for the captain and first officer.

Location

There are two map lights in the flight compartment. There is one above the captain and the first officer seats. They are adjacent to the No. 4 windows.

There are pull-up and rotate controls for the map light on these panels:

- P21 (captain) map light module
- P23 (first officer) map light module.

Physical Description

Each light has an upper and lower half. The lamp is a bayonet-style lamp.

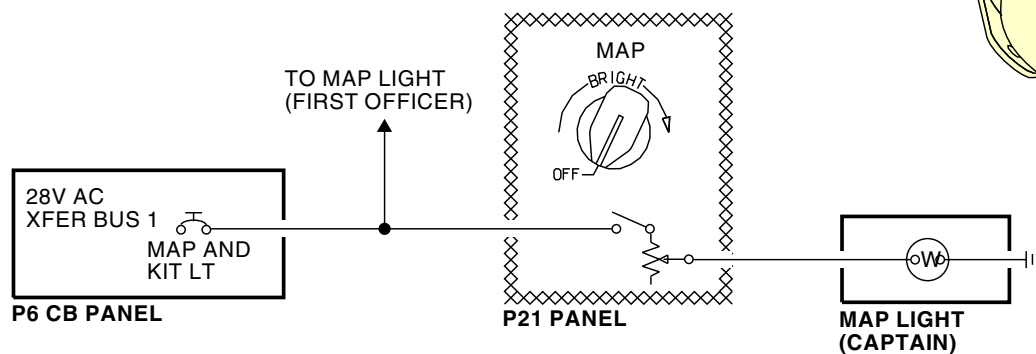
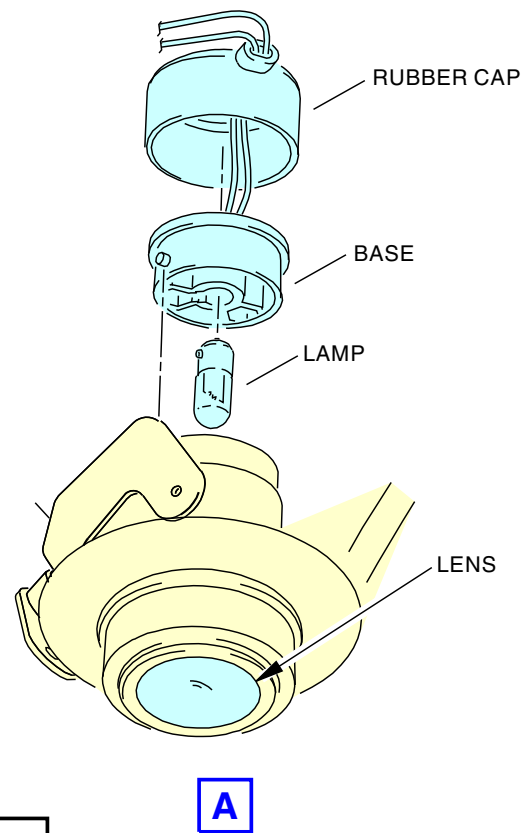
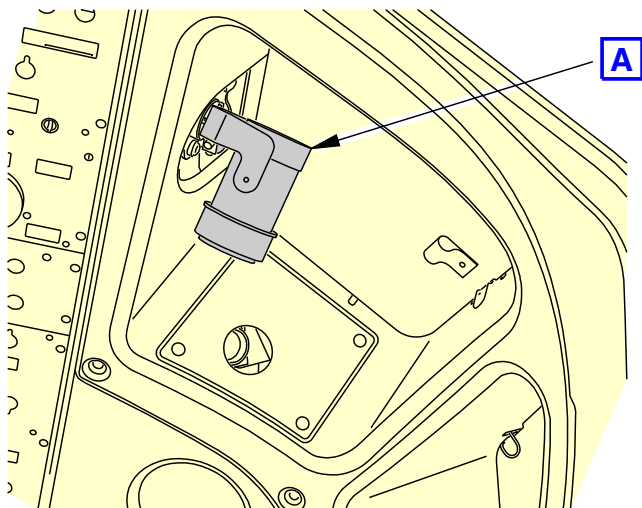
Operation

The light comes on when you pull the switch up. You turn the control switch to adjust the map light intensity. You turn the bezel to adjust the area of the light.

You can control the adjustment and diameter of light. You can also point the light.

SIA ALL	EFFECTIVITY
	D633AM102-SIA

LIGHTS - FLIGHT CREW LIGHTS - MAP LIGHTS



2369696 S00061520103_V1

LIGHTS - FLIGHT CREW LIGHTS - MAP LIGHTS

33-17-00-003

SIA ALL	EFFECTIVITY
	D633AM102-SIA

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33-17-00



LIGHTS - FLIGHT CREW LIGHTS - CHART LIGHTS

Purpose

The chart light supplies light to the clip board area.

Location

There are two chart lights, one for the captain and one for the first officer. They are above the No. 4 windows.

There are pull-up and turn controls for the chart light on these Panels:

- P21 (captain) chart light
- P23 (first officer) chart light.

Physical Description

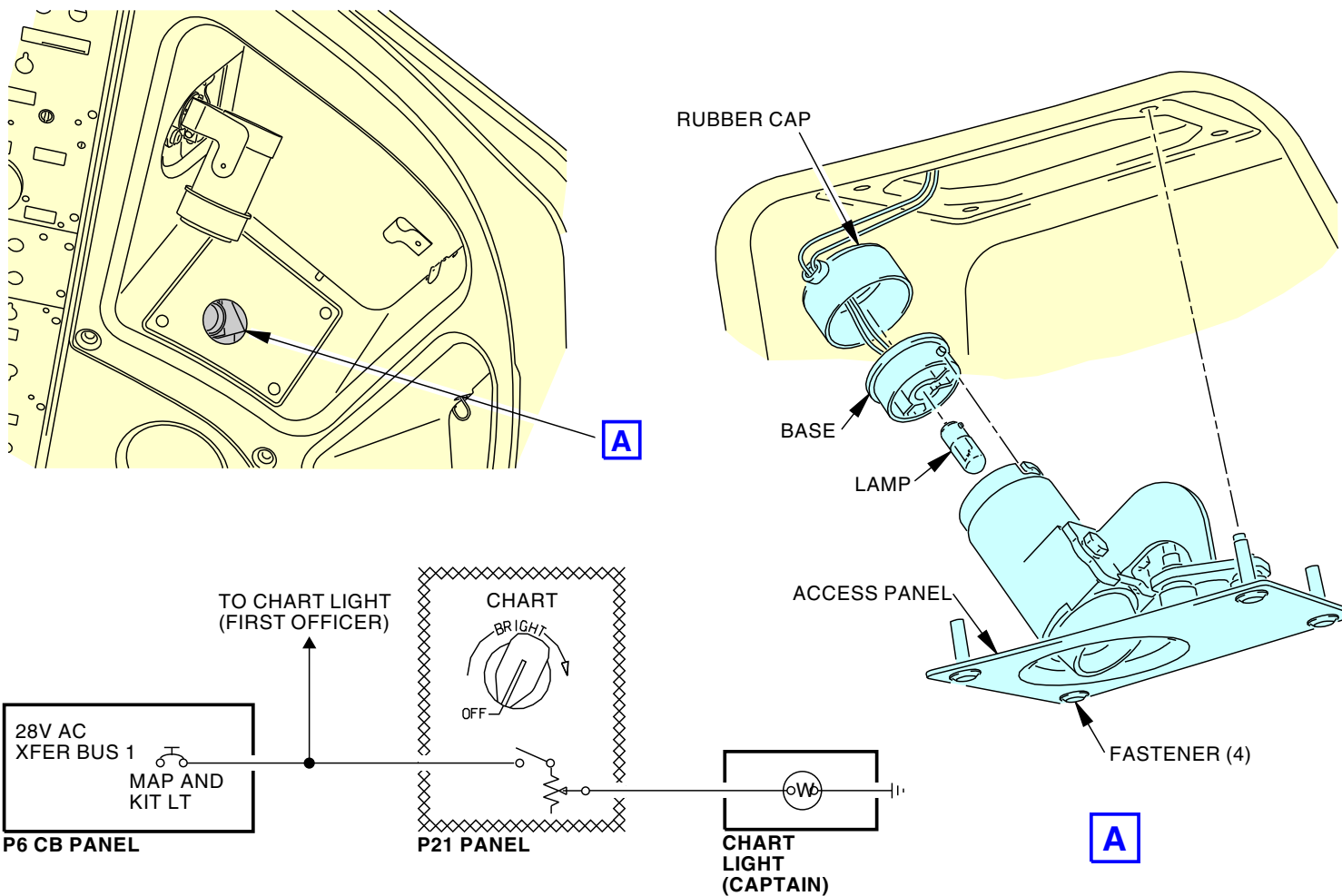
Each light has an upper and lower half. The lamp is a bayonet-style lamp.

Operation

You use the CHART light controls to make the chart light come on and go off. The controls are on the P21 and P23 panels.

SIA ALL	EFFECTIVITY
	D633AM102-SIA

LIGHTS - FLIGHT CREW LIGHTS - CHART LIGHTS



2369697 S00061520105_V1

LIGHTS - FLIGHT CREW LIGHTS - CHART LIGHTS

33-17-00-004

SIA ALL	EFFECTIVITY
	D633AM102-SIA

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LIGHTS - FLIGHT CREW LIGHTS - OBSERVER READING LIGHTS

Purpose

The observer reading light supplies light to the first observer position.

Location

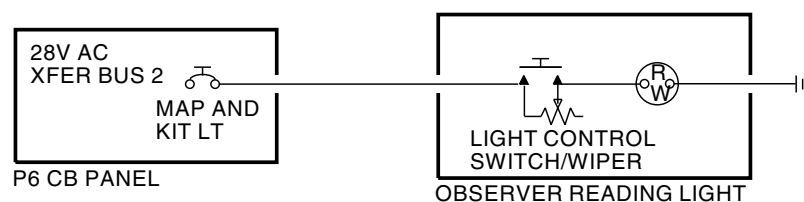
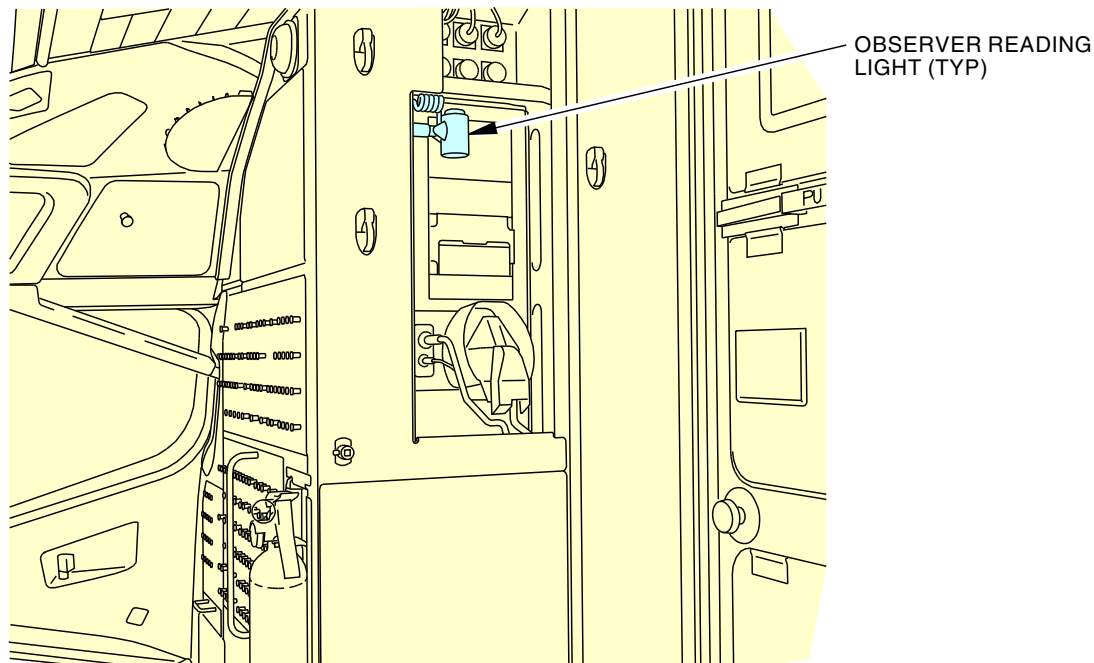
The observer reading light is on the P6 Panel

Operation

You turn the light control to make the light come on and to adjust the light intensity. When you push the light control, the light comes on until you release the control.

SIA ALL	EFFECTIVITY
	D633AM102-SIA

LIGHTS - FLIGHT CREW LIGHTS - OBSERVER READING LIGHTS



2369698 S00061520107_V1

LIGHTS - FLIGHT CREW LIGHTS - OBSERVER READING LIGHTS

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D633AM102-SIA

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LIGHTS - MASTER DIM AND TEST - INTRODUCTION

Purpose

The Master Dim and Test System controls the light for the system annunciator, indicator, and push-button lights. The master dim and test system (MD&T) controls the two-position (bright/dim) lights, and the test function for the annunciators. This system is used to manually change the lights of annunciators and indicators that are for warning alerts and non-warning status advisories. There are switches that have position indication and annunciation parts. For these switches, the MD&T system controls only the annunciator part of the switch, while the position indication is controlled by the variable dimming of the bright/dim system.

The MD&T switch is identified as LIGHTS. The three positions are BRT, DIM, and TEST. The BRT position is usually for daytime operation. DIM position is usually for nighttime operation. And the TEST position, lights come on for all items in the bright condition. The test position allows the pilot to make sure that all annunciators, indicators, and segmented LCD and LED displays are operating correctly.

The DSP altitude and valve displays go full bright, constant not dimmable luminance, when MD&T is in BRT position. The DSP altitude and valve displays operate normally in the DIM position.

Some LRUs do not use the MD&T voltage to power their annunciators, but use an internal power source and circuitry to light the annunciators appropriately. These LRUs are designed to use the voltage input from the MD&T system as a signal input only.

When the blue indicators in the overhead instrument panel are activated, they go DIM until the system agrees a connection has been made then they go to a brighter state. These indicators are not tied to MD&T

Location

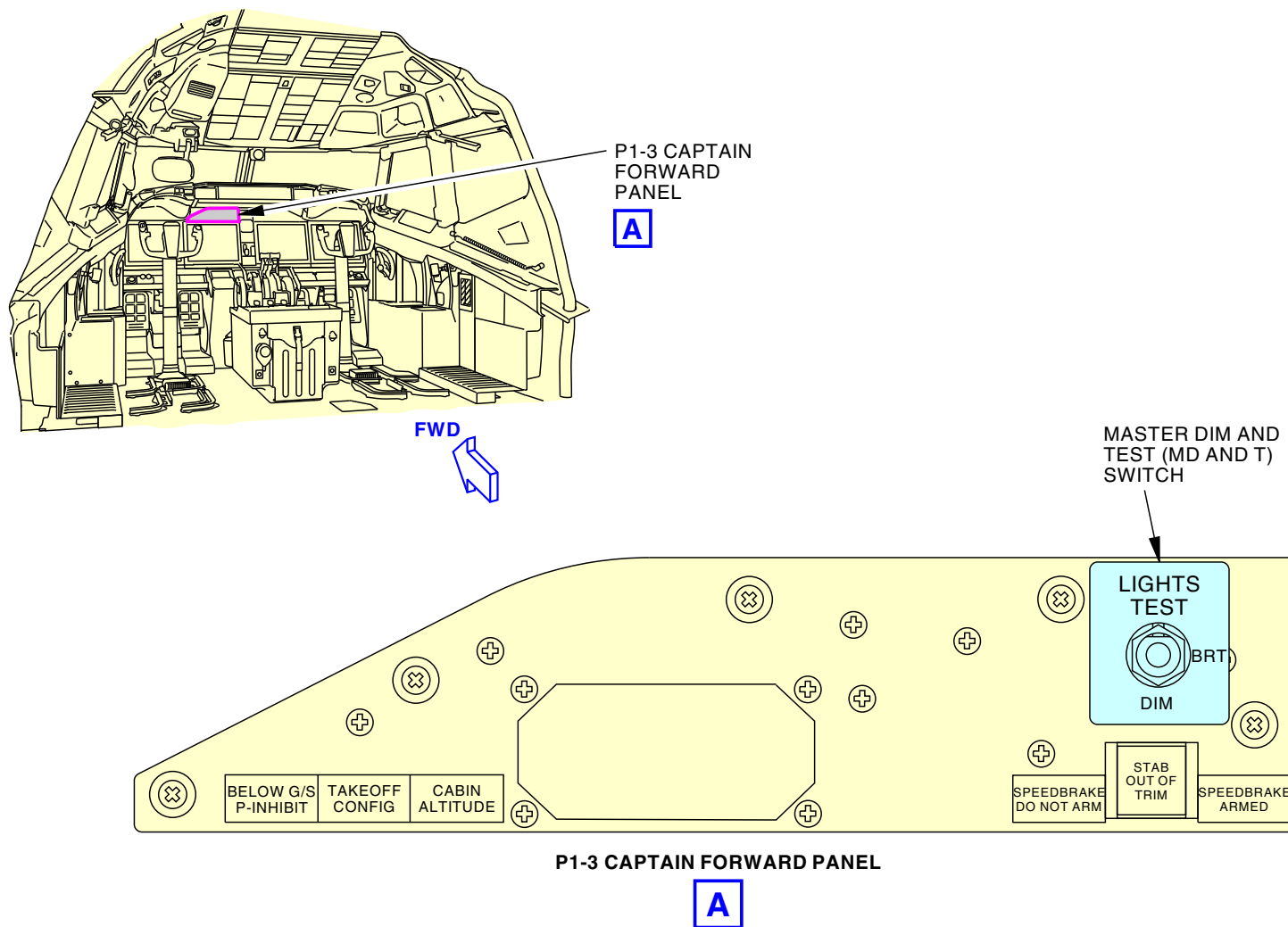
A MD&T (LIGHTS) switch is on the P1-3 Captain Forward Panel. The annunciation and dimming module is in the P6 circuit breaker panel together with relays and modules for the master dim and test system.

Interface

The MD&T system controls the bright, dim, and test of lights in the P1, P2, P3, P5, P7, P8, and P9 panels in the flight compartment.

EFFECTIVITY	
SIA ALL	

LIGHTS - MASTER DIM AND TEST - INTRODUCTION



2369699 S00061520111_V1

LIGHTS - MASTER DIM AND TEST - INTRODUCTION

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EFFECTIVITY	
SIA ALL	

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D633AM102-SIA

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**LIGHTS - MASTER DIM AND TEST - FUNCTIONAL DESCRIPTION****Functional Description**

The flight compartment indicating lights are on various panels. The lights are one of these two types:

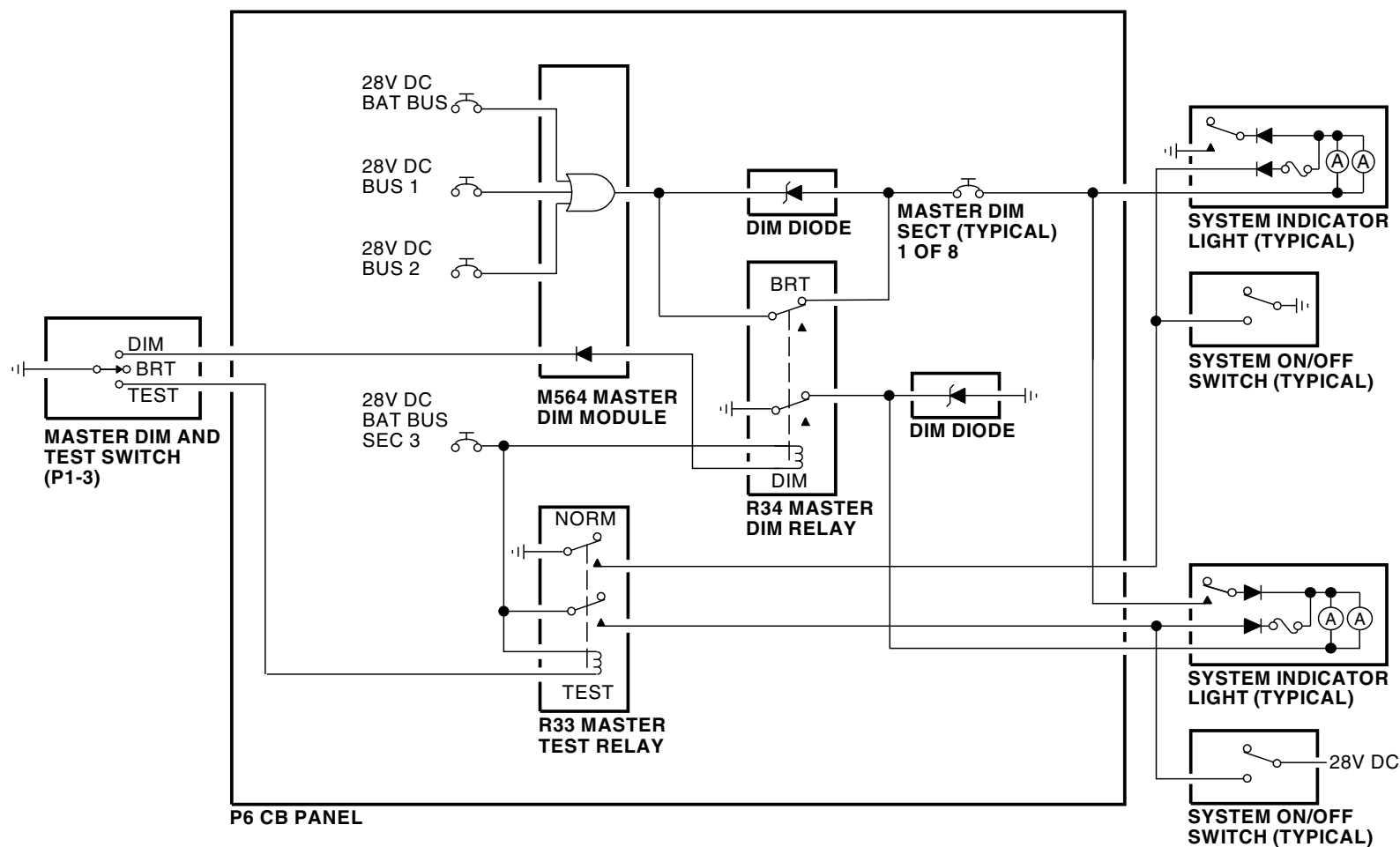
- Ground seeking
- Power seeking.

The ground seeking light has power and the ground is connected by the action of the system the light monitors. The power seeking light has ground and the power is connected by the action of the system the light monitors.

The indicating lights (red, amber, blue, and green) are press-to-test. The lights can be bright or dim by the master dim and test (MD&T) switch on the P1-3 panel. When the MD&T switch is in the bright (BRT) position, relays R33 and R34 are de-energized. Power for the ground seeking lights and ground for the power seeking lights goes through relay R33. When the MD&T switch is in the DIM position, relay R34 energizes and power and ground goes through the zener diodes. In the TEST position, relay R33 energizes. This supplies power and ground to make all of the indicating lights come on bright.

SIA ALL	EFFECTIVITY
	D633AM102-SIA

LIGHTS - MASTER DIM AND TEST - FUNCTIONAL DESCRIPTION



2369700 S00061520113_V1

LIGHTS - MASTER DIM AND TEST - FUNCTIONAL DESCRIPTION

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LIGHTS - PASSENGER COMPARTMENT - INTRODUCTION

Purpose

The lights in the passenger compartment supply these functions:

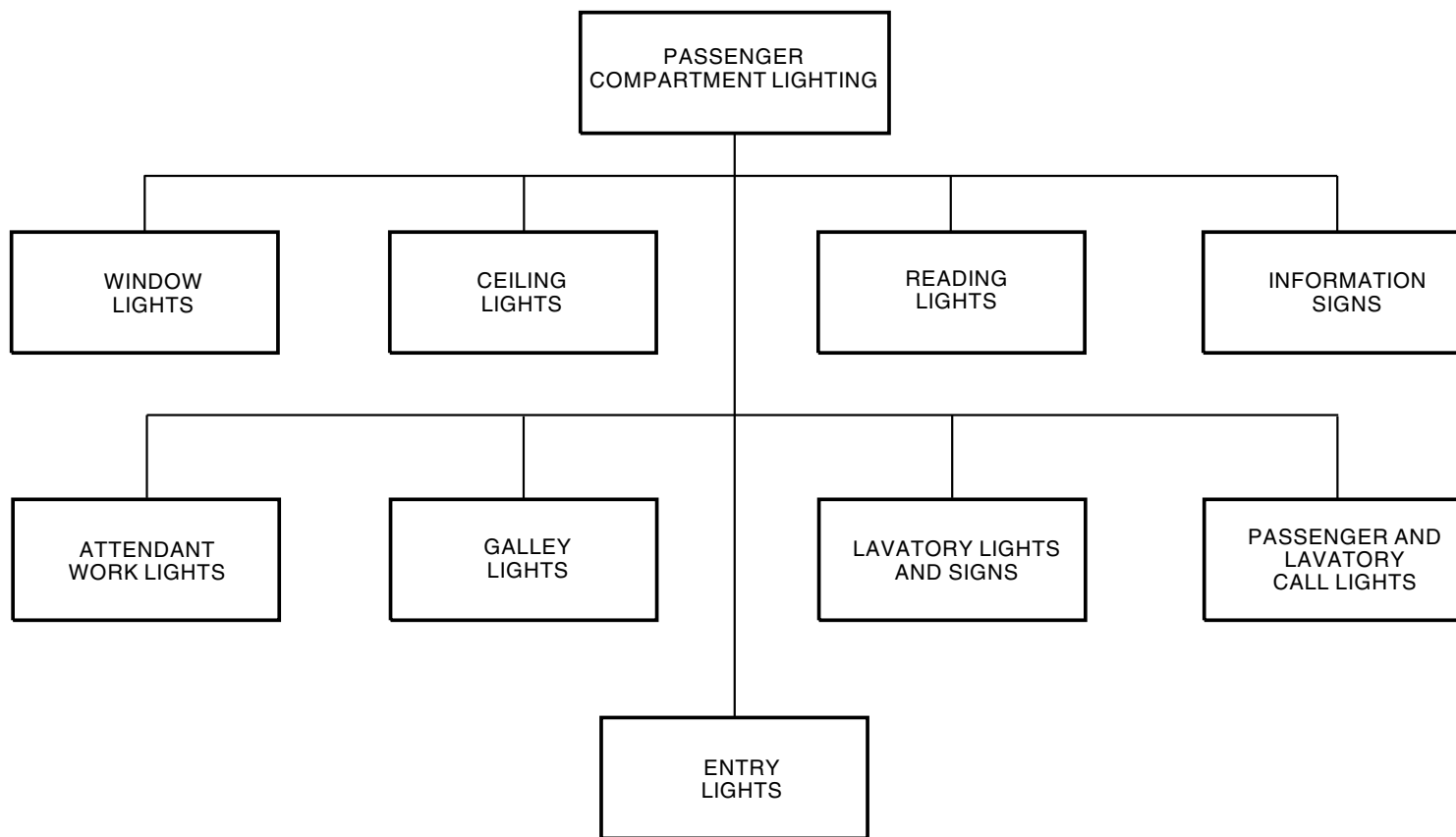
- General light in the passenger cabin
- Reading lights
- Information lights for the passengers and attendants
- Lights in the lavatories
- Lights in the galleys.

The light system also lets the passenger call the attendants for aid.

The passenger compartment lights has these subsystems:

- Window lights
- Ceiling lights
- Reading lights
- Passenger signs
- Lavatory lights and signs
- Passenger and lavatory call lights
- Attendant work lights
- Galley lights
- Entry lights.

LIGHTS - PASSENGER COMPARTMENT - INTRODUCTION



2369701 S00061520117_V1

LIGHTS - PASSENGER COMPARTMENT - INTRODUCTION

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SIA ALL

EFFECTIVITY

D633AM102-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details



LIGHTS - PASSENGER COMPARTMENT - CONTROLS

Purpose

You control these passenger cabin lights from the forward and aft attendant panels:

- Ceiling
- Window
- Entry
- Work
- Emergency (aft panel only).

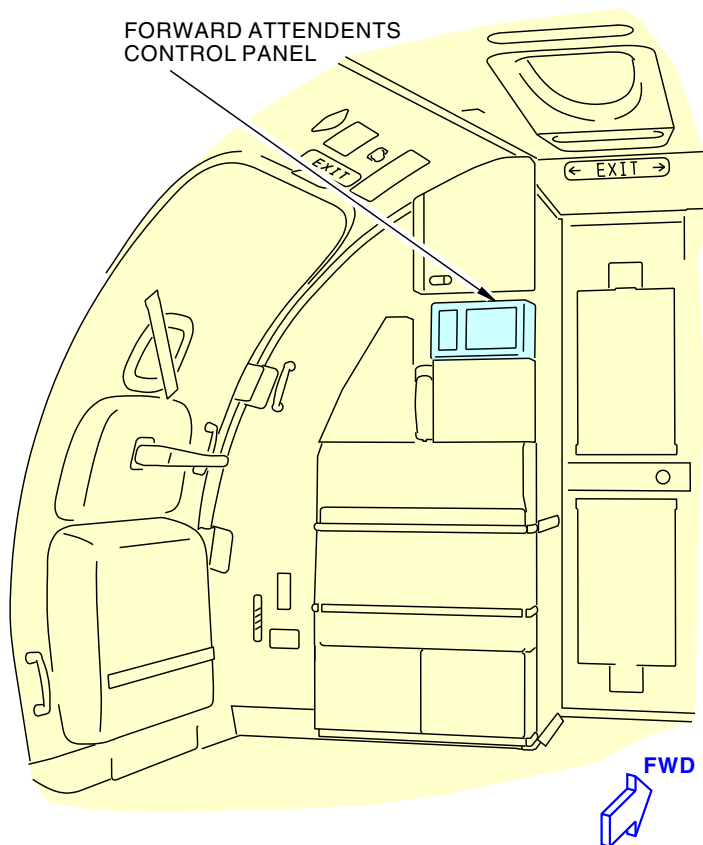
Location

The P13 forward attendant panel is on the forward lavatory wall.

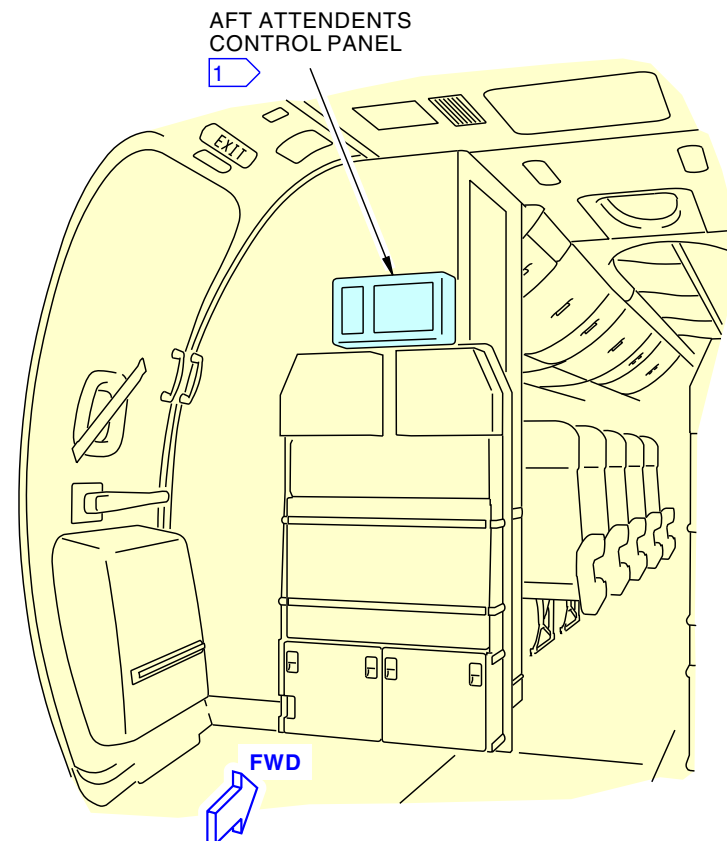
The P14 aft attendant panel is on the aft lavatory wall.

EFFECTIVITY	
SIA ALL	

LIGHTS - PASSENGER COMPARTMENT - CONTROLS



FORWARD ATTENDANTS STATION



AFT ATTENDANTS STATION

1 IF INSTALLED ON THE AFT ATTENDANTS STATION

2369702 S00061520119_V2

LIGHTS - PASSENGER COMPARTMENT - CONTROLS

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SIA ALL

EFFECTIVITY

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**LIGHTS - PASSENGER COMPARTMENT - FUNCTIONAL DESCRIPTION****Functional Description**

The attendant control panel (ACP) controls the passenger cabin lights. The ACP Lighting display has these sections:

- Passenger Seating Area
- Forward Entry Area
- Aft Entry Area
- General Lighting Layout

The Passenger Seating Area, Forward Entry Area, and Aft Entry Area buttons set the passenger cabin light intensity and color. The General Lighting Layout shows the current condition of passenger cabin light intensity and color.

The ACP controls the color and intensity to these passenger cabin lights:

- Cove lights
- Ceiling wash lights
- Window lights

The ACP controls the intensity to these passenger cabin lights:

- Direct lights
- Ceiling bin lights
- Ceiling center overhead stowage (COS) lights (if installed)

The ACP RS-485 interface controls the signal between the ACP and the lights through four signal ports. The lights are connected as follows:

Port 1:

- Forward direct lights
- Forward/mid cove lights
- Left window lights

Port 2:

- Left ceiling wash lights

- Left ceiling bin lights
- Left center overhead stowage lights (if installed)

Port 3:

- Right ceiling bin lights
- Right center overhead stowage lights (if installed)
- Right ceiling wash lights

Port 4:

- Right window lights
- Aft cove lights
- Aft direct lights

Each passenger cabin light assembly has data for the light interface address and light color. The configuration database (CDB) sets the light interface address. The lighting database (LDB) sets the light color. When you touch the ACP-to-LRU button on the ACP Maintenance display, the button changes to blue color and the ACP sends CDB and LDB data signals to each port. Within each port, each light assembly receives the signals, then sends the signals to the next light assembly. When this operation is done, the ACP-to-LRU button changes back to its usual black color and this occurs:

- The cove lights, ceiling wash lights, and window lights change to green color.
- The direct lights, ceiling bin lights, and COS lights (if installed) change to orange color.

The Lamp Test button on the ACP Maintenance display turns on all passenger cabin lights. When you touch the Lamp Test button, the button turns to blue color and all passenger cabin lights come on. You touch the Lamp Test button to set the passenger cabin lights back to their usual condition and the Lamp Test button changes to its usual black color.

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EFFECTIVITY
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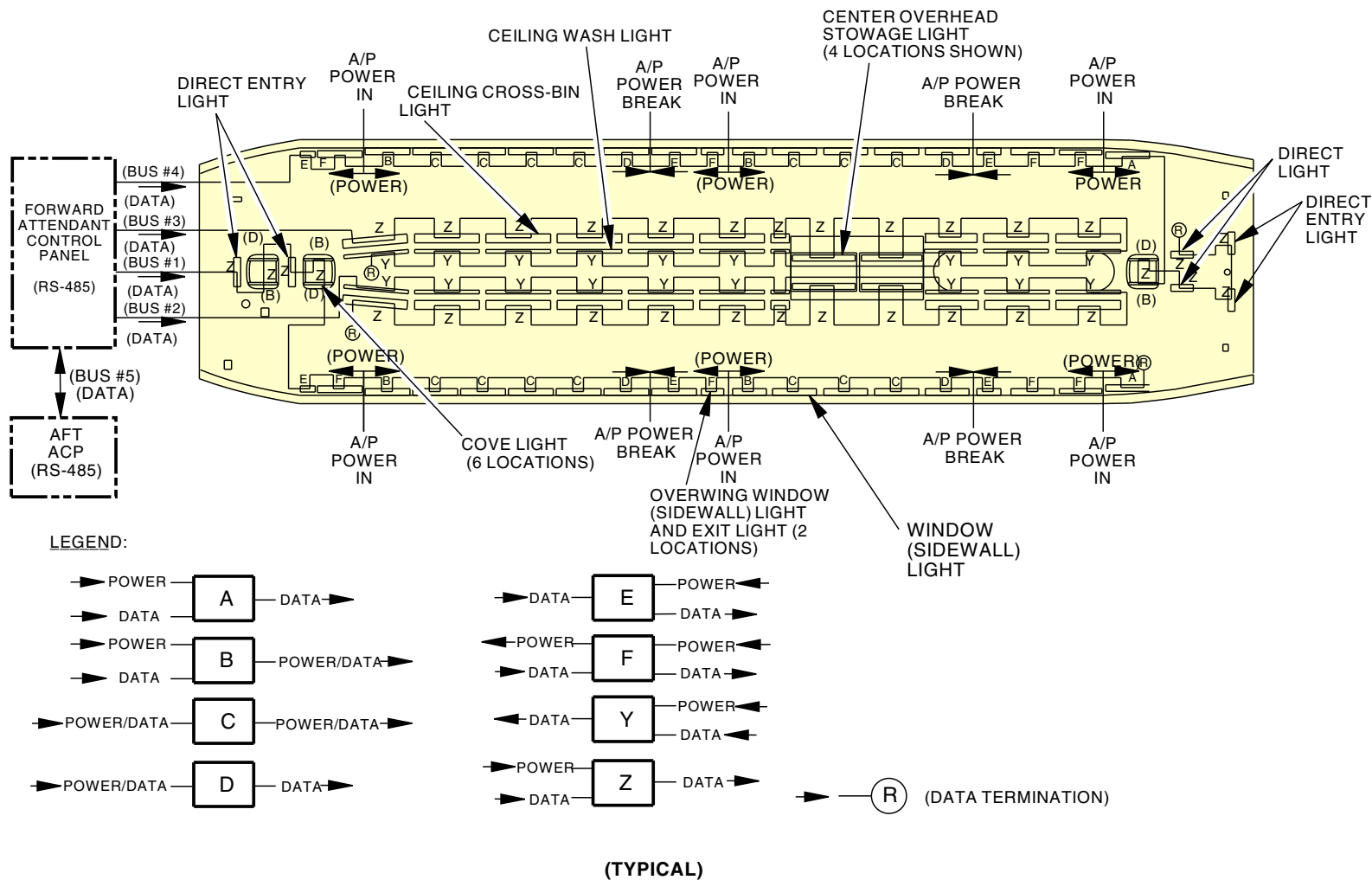
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**LIGHTS - PASSENGER COMPARTMENT - FUNCTIONAL DESCRIPTION**

The ACP has the capability to select custom or standard lighting scenes. These scenes can be set for the forward zone or aft zone individually or both zones as one combined zone. These lighting scenes can be customized, with the exception of the white bright scene, and uploaded to the ACP by using the configuration database generator (CDG) tool. The CDG can be used to generate new scene databases, tailor operator logos, or create maintenance passwords.

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LIGHTS - PASSENGER COMPARTMENT - FUNCTIONAL DESCRIPTION



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PASSENGER COMPARTMENT - FUNCTIONAL DESCRIPTION

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33-21-00

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LIGHTS - WINDOW LIGHTS - INTRODUCTION

Purpose

The window lights supply lighting to the areas below the stowage bins in the passenger compartment.

Physical Description

The window lights use LED light assemblies. The LED light assembly has a processor, power supply, transceivers, and LED lights.

The window lights have these components:

- LED light assembly
- Lens.

The window lights are connected in series to the attendant control panel (ACP) RS-485 data bus. When the window light internal data transceiver is inoperative, the window lights that follow in series may not change to the correct intensity and color.

- The left window light data bus is connected in series to the forward direct light and forward cove light data bus at ACP signal port 1.
- The right window data bus is connected in series to the aft direct light and aft cove light data bus at ACP signal port 4.

There are three 115V AC power break-in points above the sidewall panels on each side of the airplane: STA 419, STA 616, and STA 866. At each power break-in point, two set of window lights are connected to the 115V AC. Each set of window lights can have up to six window lights connected in series to the 115V AC. When the window light internal power supply is inoperative at the start of the power break-in point, up to six adjacent window lights may not get power.

Location

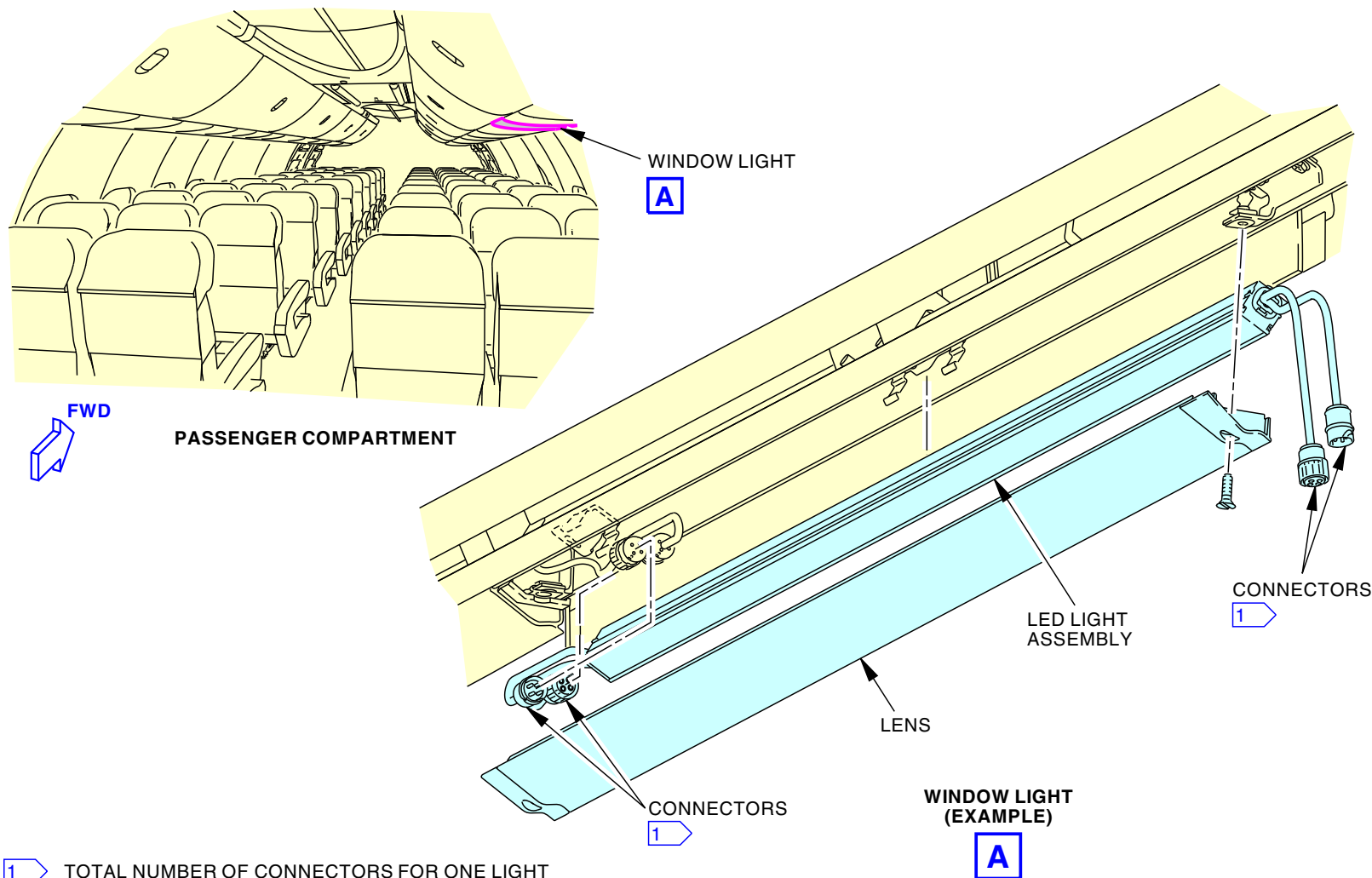
The window lights are on the extrusion between the PSU and the sidewall panel above the windows

33-21-00

EFFECTIVITY	
SIA ALL	

D633AM102-SIA

LIGHTS - WINDOW LIGHTS - INTRODUCTION



1 TOTAL NUMBER OF CONNECTORS FOR ONE LIGHT ASSEMBLY IS VARIED FROM TWO TO FOUR.

2369706 S00061520127_V1

LIGHTS - WINDOW LIGHTS - INTRODUCTION

33-21-00

**LIGHTS - WINDOW LIGHTS - FUNCTIONAL DESCRIPTION****Operation**

The attendant control panel (ACP) controls the window light intensity and color

Functional Description

When you set the cabin/utility switch on the P5-13 panel to the ON position, this occurs:

- Relay R427 energizes.
- 115V AC goes to the window light internal power supply.

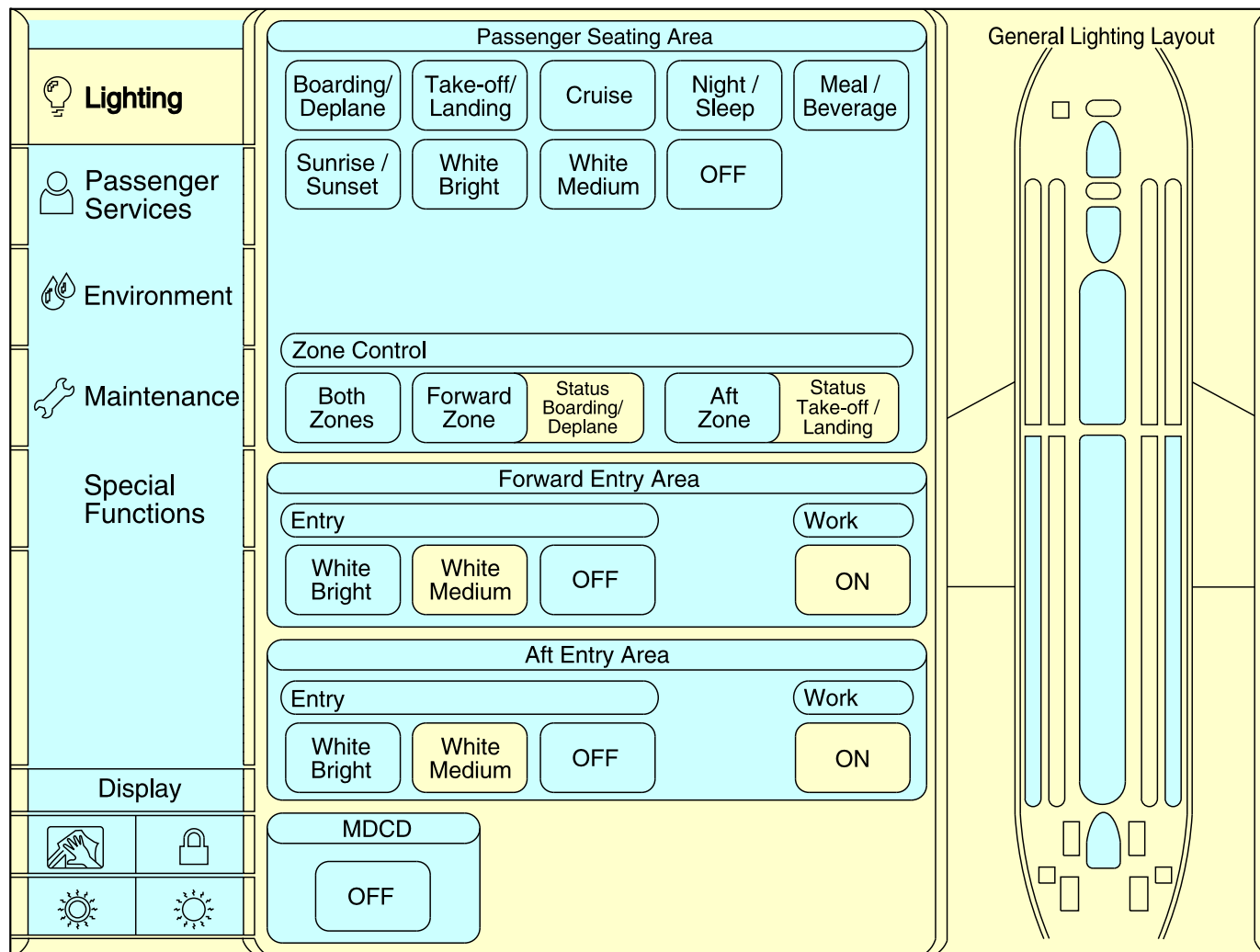
When you touch the scene button below the Passenger Seating Area section on the ACP Lighting display, the ACP sends intensity and color signals to the window lights. The window lights change intensity and color to the preset condition.

When you touch the BOTH ZONES button below the Passenger Seating Area section on the ACP Lighting display, the ACP can set the scene of both the forward and aft zones. When you touch either the FORWARD ZONE or AFT ZONE button below the Passenger Seating Area section on the ACP Lighting display, the ACP can set the scene of the selected zone.

When you touch the OFF button, only the window light internal LED lights go off. The window light internal power supply stays connected to the 115V AC.

SIA ALL	EFFECTIVITY

LIGHTS - WINDOW LIGHTS - FUNCTIONAL DESCRIPTION



2549440 S0000606841_V1

LIGHTS - PASSENGER COMPARTMENT - CONTROLS

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EFFECTIVITY

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LIGHTS - CEILING LIGHTS - INTRODUCTION

Purpose

The ceiling lights supply lighting to the areas above the stowage bins and the aisle in the passenger compartment.

The cove lights and direct lights are located at the forward and aft entry.

Physical Description

The ceiling lights use LED light assemblies. The LED light assembly has a processor, power supply, transceivers, and LED lights.

The ceiling lights include:

- Ceiling center overhead stowage (COS) lights (if installed)
- Ceiling bin lights
- Ceiling wash lights
- Cove Lights
- Direct Lights

The ceiling bin light and ceiling wash light are one light assembly.

The ceiling lights are connected in series to the attendant control panel (ACP) RS-485 data bus. When the ceiling light internal data transceiver is inoperative, the ceiling lights that follow in series may not change to the correct intensity and color.

- The forward direct light and forward cove light data bus is connected in series to the left window light data bus at ACP signal port 1.
- The left ceiling bin light, left ceiling wash light, and left COS light (if installed) data bus is connected in series at ACP signal port 2.
- The right ceiling bin light, right ceiling wash light, and right COS light (if installed) data bus is connected in series at ACP signal port 3.
- The aft direct light and aft cove light data bus is connected in series to the right window light data bus at ACP signal port 4.

Location

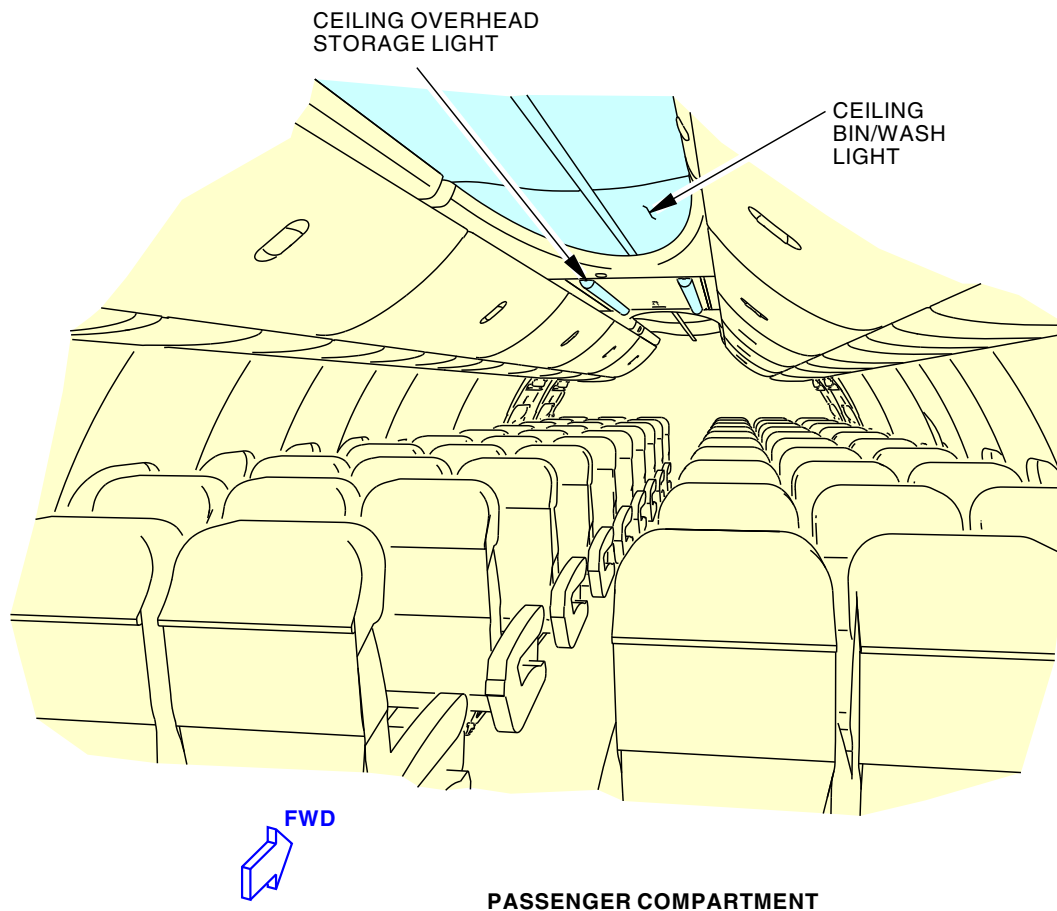
The ceiling bin lights and ceiling wash lights are on top of the stowage bins.

The COS lights (if installed) are located at the center overhead stowage door.

33-22-00

EFFECTIVITY	
SIA ALL	

LIGHTS - CEILING LIGHTS - INTRODUCTION

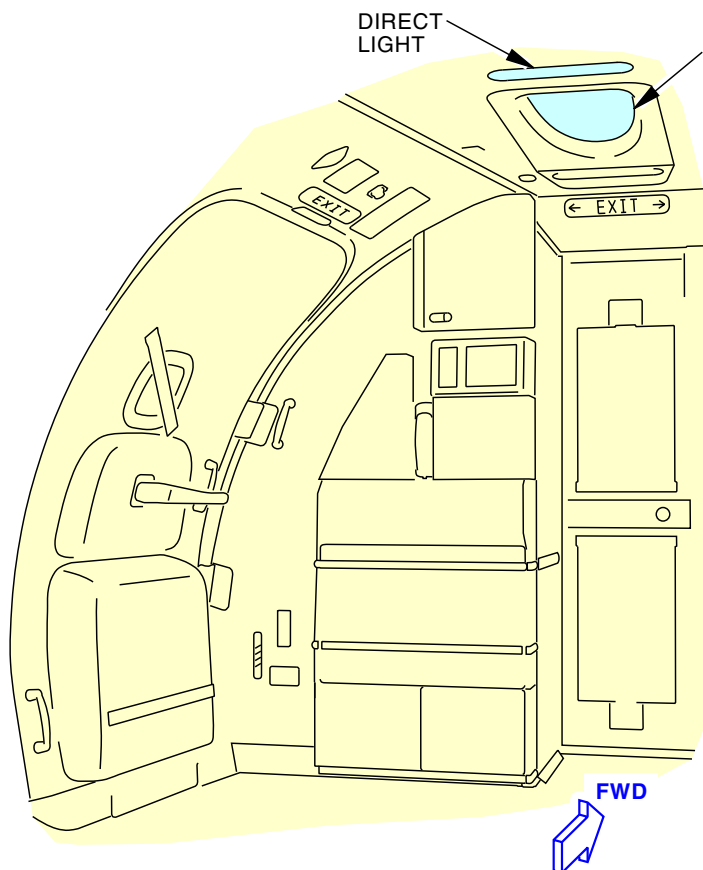


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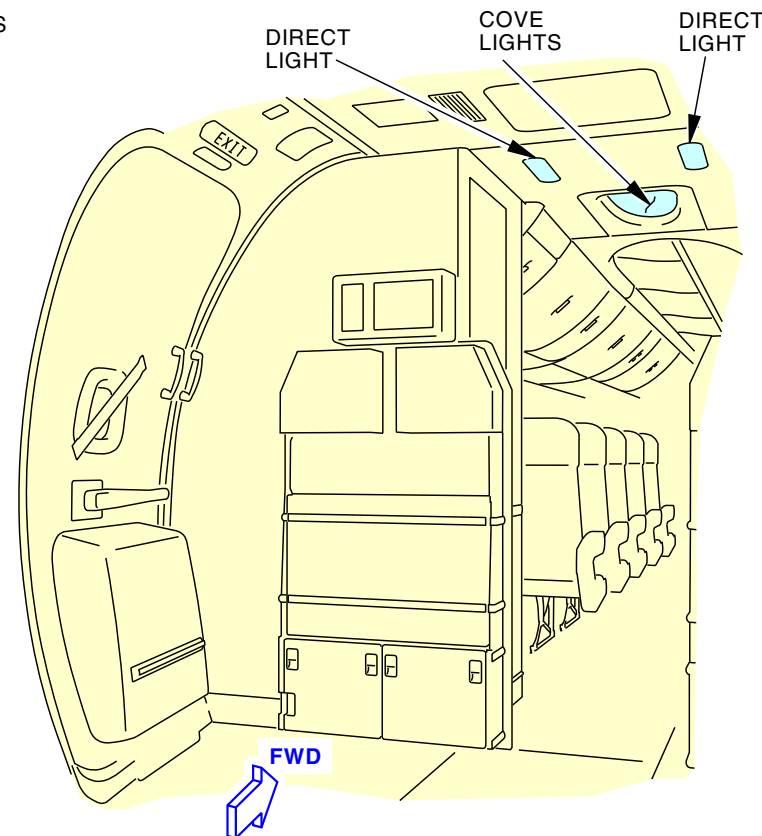
LIGHTS - CEILING LIGHTS - INTRODUCTION

33-22-00

LIGHTS - CEILING LIGHTS - INTRODUCTION



FORWARD ATTENDANTS STATION



AFT ATTENDANTS STATION

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LIGHTS - CEILING LIGHTS - INTRODUCTION

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ECCN 9E991 BOEING PROPRIETARY - See title page for details

**LIGHTS - CEILING LIGHTS - FUNCTIONAL DESCRIPTION****Operation**

The attendant control panel (ACP) controls the ceiling light intensity and color

Functional Description

When you set the cabin/utility switch on the P5-13 panel, this occurs:

- Light relays R120, R394, and R427 energize.
- 115V AC goes to the light internal power supply.

When you touch the scene button below the Passenger Seating Area section on the ACP Lighting display, the ACP sends intensity and color signals to the ceiling lights.

When you touch the BOTH ZONES button below the Passenger Seating Area section on the ACP Lighting display, the ACP can set the scene of both the forward and aft zones. When you touch either the FORWARD ZONE or AFT ZONE button below the Passenger Seating Area section on the ACP Lighting display, the ACP can set the scene of the selected zone.

These ceiling lights change intensity and color to the preset condition:

- Cove lights
- Ceiling wash lights

The color for these ceiling lights does not change. These ceiling lights change intensity to the preset condition:

- Direct lights
- Ceiling bin lights
- Ceiling center overhead stowage (COS) lights (if installed)

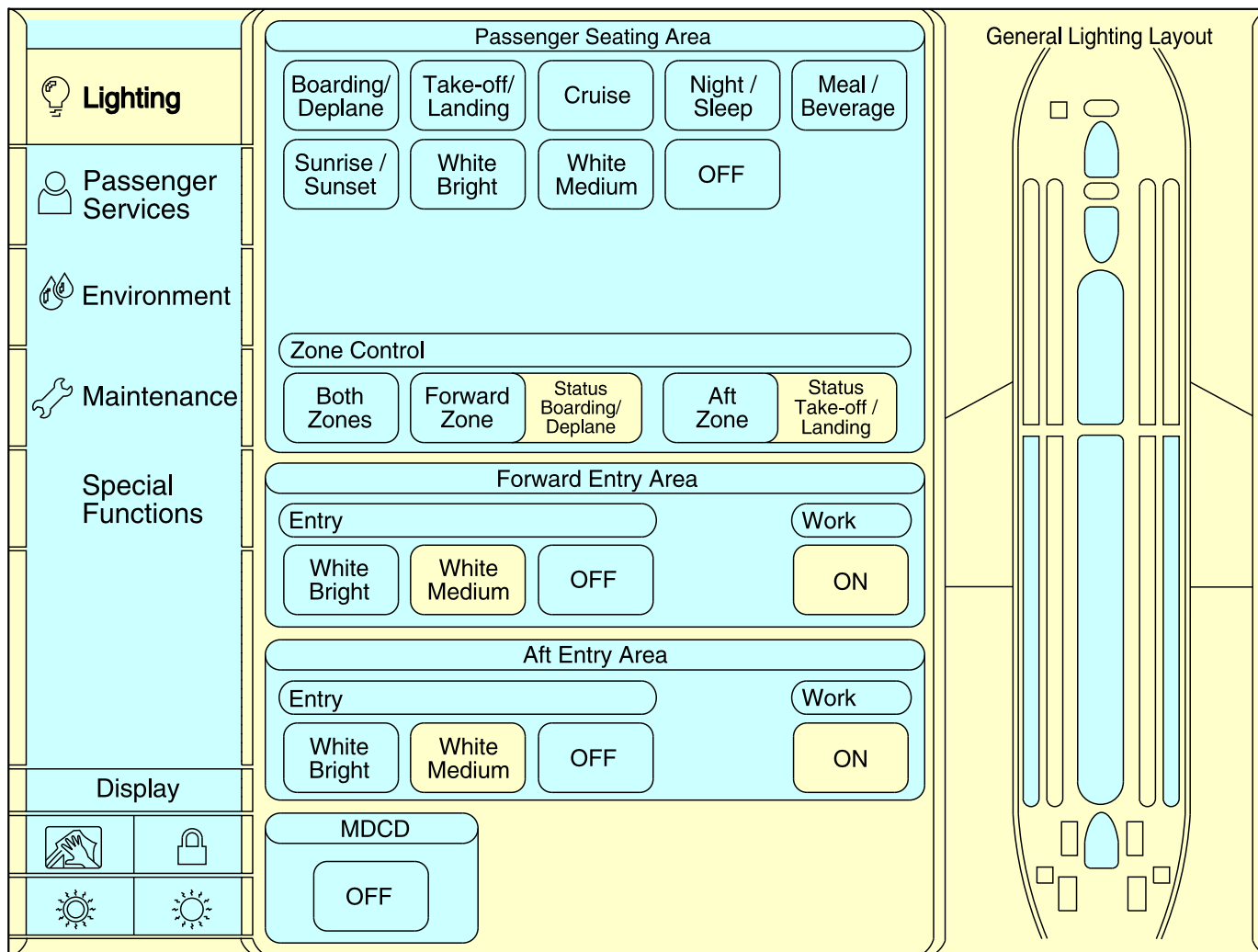
When you touch the OFF button, only the ceiling light internal LED lights go off. Ceiling light internal power supply stays connected to the 115V AC.

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LIGHTS - CEILING LIGHTS - FUNCTIONAL DESCRIPTION



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LIGHTS - PASSENGER COMPARTMENT - CONTROLS

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EFFECTIVITY

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ECCN 9E991 BOEING PROPRIETARY - See title page for details



LIGHTS - READING LIGHTS - INTRODUCTION

Purpose

The reading lights supply lighting locally for each passenger seat.

Physical Description

A reading light has these parts:

- LED light assembly
- Lock/unlock lever

Location

The reading lights are in the Passenger Service Unit (PSU).

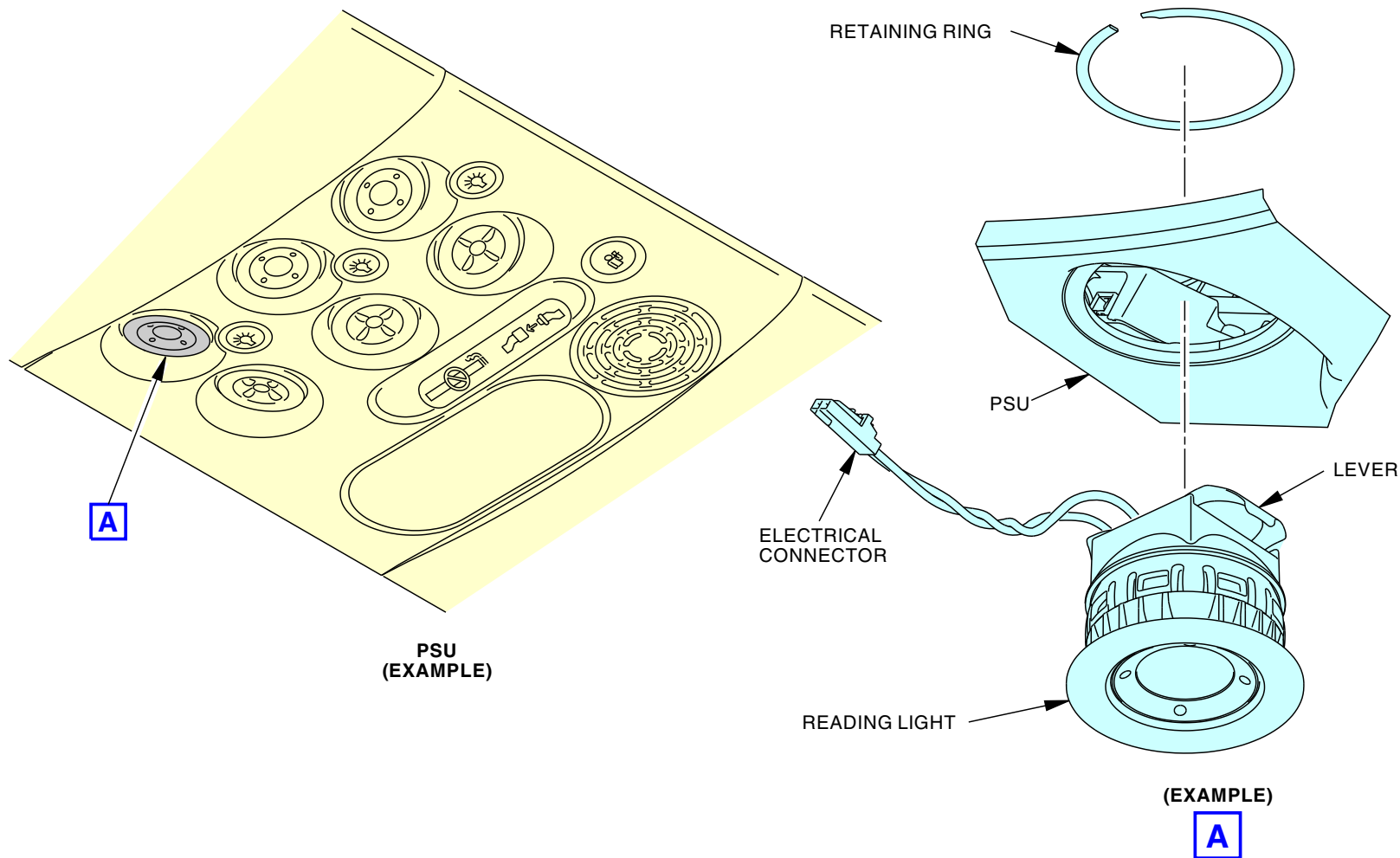
Operation

To operate the reading light, use the switch on the PSU. Then adjust the direction of the light beam as necessary. Use the lever to lock or unlock the light in its position. To lock or unlock the reading light, do these steps:

- Lower the PSU
- Move the lever to the lock or unlock position as necessary

SIA ALL	EFFECTIVITY

LIGHTS - READING LIGHTS - INTRODUCTION



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LIGHTS - READING LIGHTS - INTRODUCTION

33-23-00



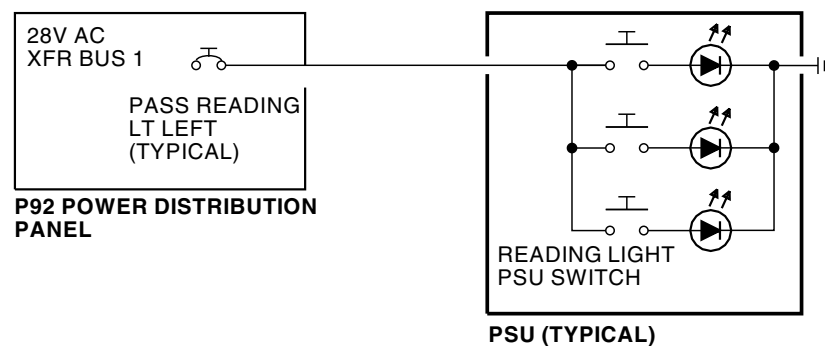
LIGHTS - READING LIGHTS - FUNCTIONAL DESCRIPTION

Functional Description

Momentarily push the reading light switch on the Passenger Service Unit (PSU) to connect 28V AC to the reading light. The lights are in a parallel circuit. The loss of one light will not affect the other lights.

SIA ALL	EFFECTIVITY
	D633AM102-SIA

LIGHTS - READING LIGHTS - FUNCTIONAL DESCRIPTION



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LIGHTS - READING LIGHTS - FUNCTIONAL DESCRIPTION

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D633AM102-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

**LIGHTS - PASSENGER SIGNS - INTRODUCTION****Purpose**

The passenger signs give these indications to the passengers and attendants:

SIA ALL; AIRPLANES WITH PERMANENTLY ILLUMINATED NO SMOKING SIGNS

- Lighted NO SMOKING signs

SIA ALL

- FASTEN SEAT BELT
- RETURN TO SEAT.

Physical Description

The passenger sign lights use LED light assemblies at the passenger service units and lavatories and incandescent lamps at other locations.

Location

The possible locations for the NO SMOKING/FASTEN SEAT BELT (NSFSB) signs are:

- Passenger service units (PSU)
- Galley

The RETURN TO SEAT signs are in the lavatories.

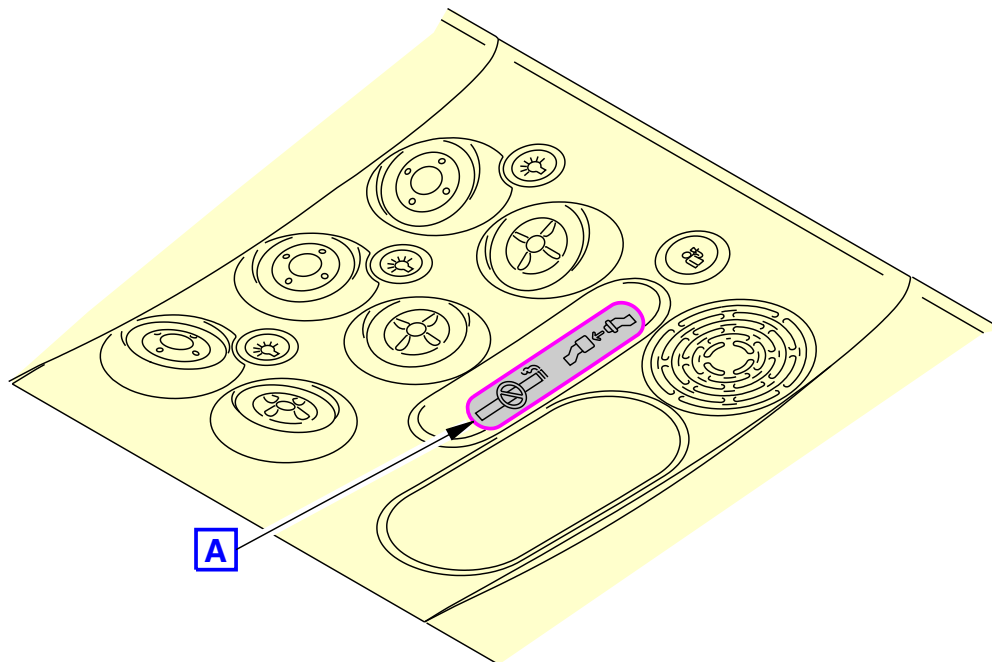
33-25-00

EFFECTIVITY	
SIA ALL	

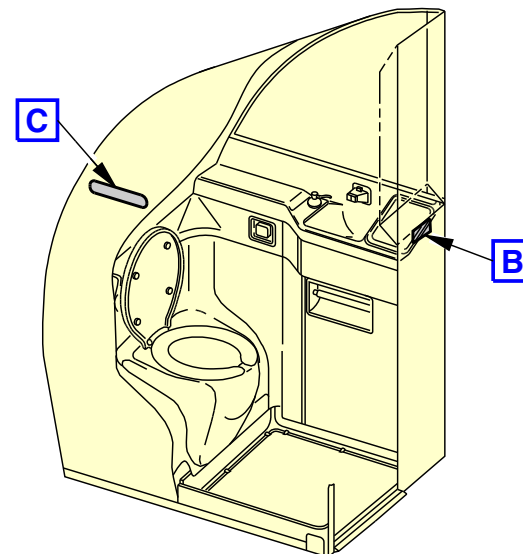
D633AM102-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

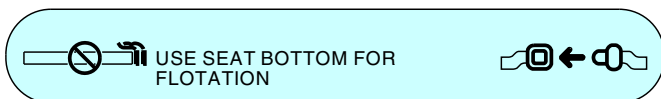
LIGHTS - PASSENGER SIGNS - INTRODUCTION



PASSENGER SERVICE UNIT



LAVATORY



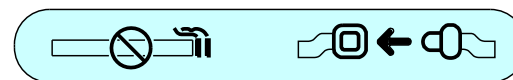
PASSENGER SIGN
(TYPICAL)

A



PASSENGER SIGN
(TYPICAL)

B



PASSENGER SIGN
(TYPICAL)

C

NOTE:

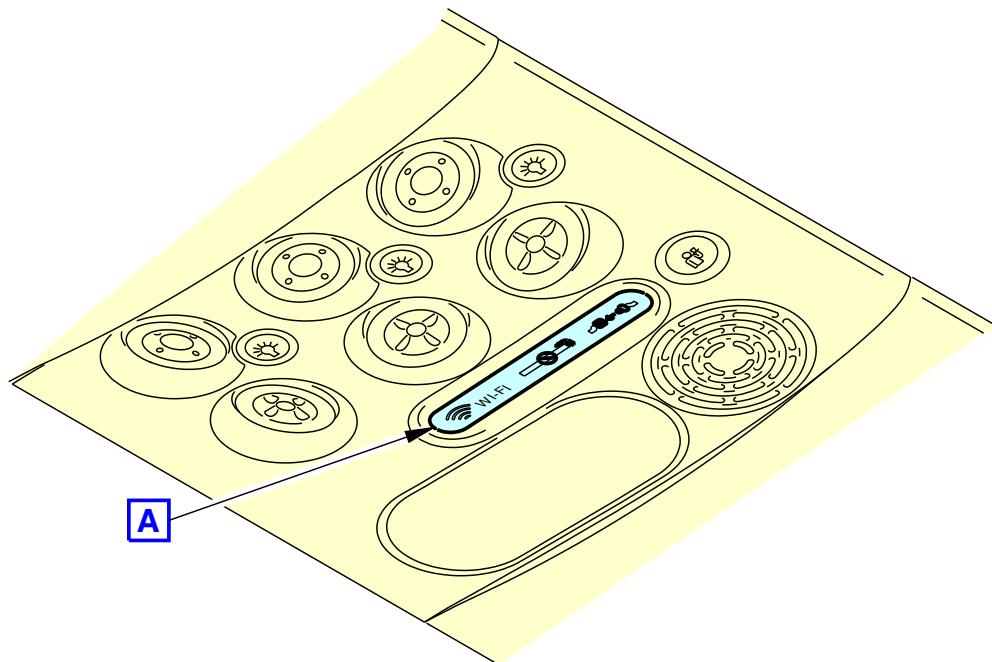
1 IF INSTALLED IN LAVATORY A

2369711 S00061520144_V2

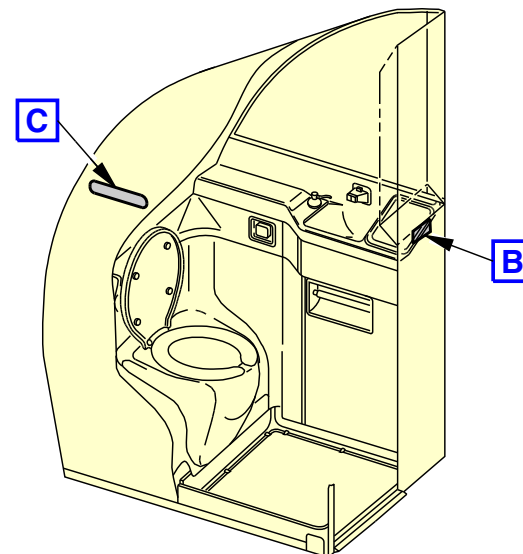
LIGHTS - PASSENGER SIGNS - INTRODUCTION

33-25-00

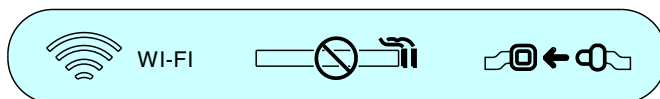
LIGHTS - PASSENGER SIGNS - INTRODUCTION



PASSENGER SERVICE UNIT



LAVATORY



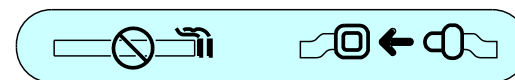
PASSENGER SIGN
(TYPICAL)

A



PASSENGER SIGN
(TYPICAL)

B



PASSENGER SIGN
(TYPICAL)

C

NOTE:

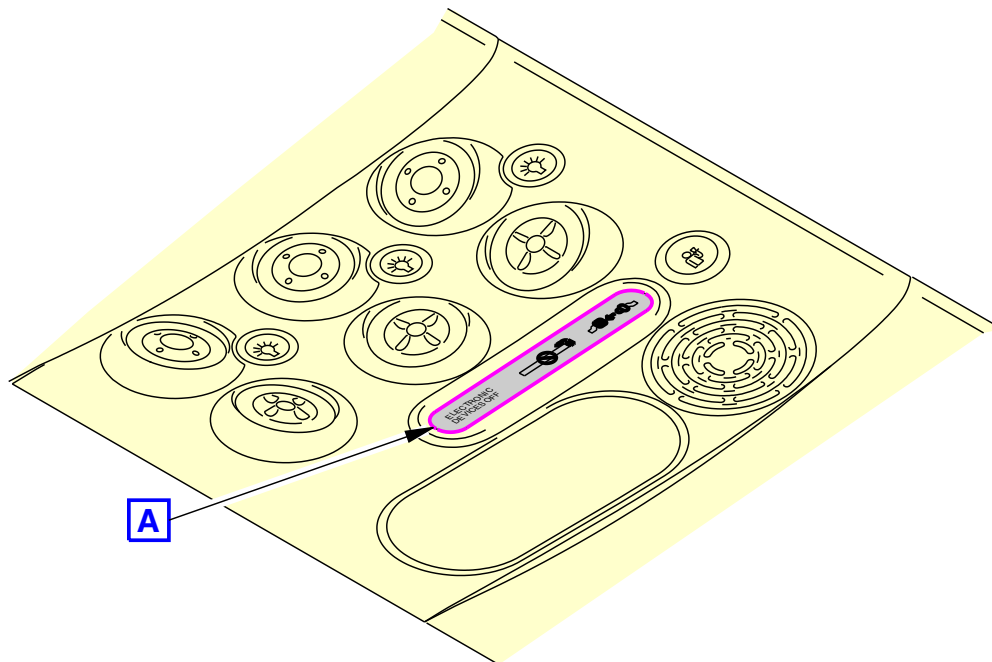
1 IF INSTALLED IN LAVATORY A

2805878 S0000643773_V1

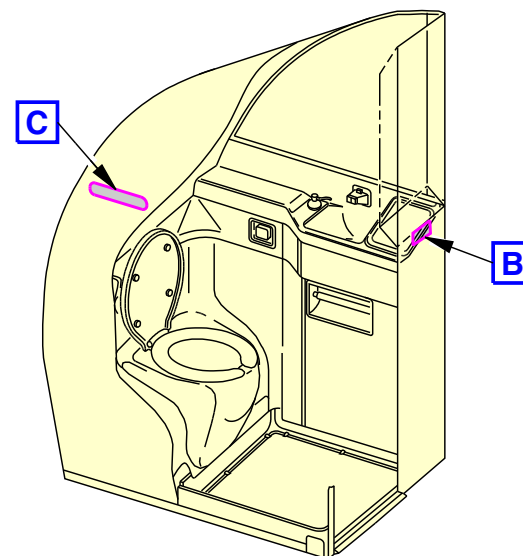
LIGHTS - PASSENGER SIGNS - INTRODUCTION

33-25-00

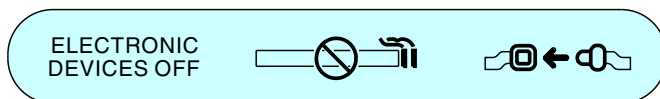
LIGHTS - PASSENGER SIGNS - INTRODUCTION



PASSENGER SERVICE UNIT



LAVATORY



PASSENGER SIGN
(TYPICAL)

A



PASSENGER SIGN
(TYPICAL)

B



PASSENGER SIGN
(TYPICAL)

C ¹

NOTE:

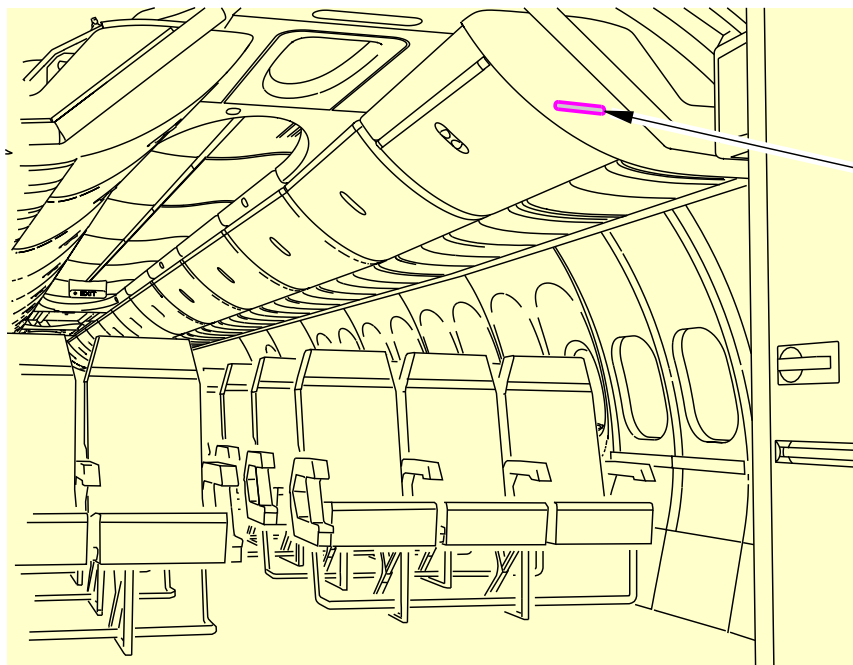
¹ IF INSTALLED IN LAVATORY A

2820483 S0000651902_V1

LIGHTS - PASSENGER SIGNS - INTRODUCTION

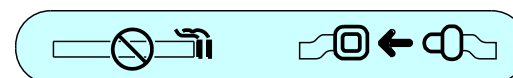
33-25-00

LIGHTS - PASSENGER SIGNS - INTRODUCTION



D

PASSENGER COMPARTMENT



PASSENGER SIGN
(TYPICAL)

D **2**

NOTE:

2

IF INSTALLED ON THE FORWARD LEFT
END BIN CAP

2791331 S0000635356_V1

LIGHTS - PASSENGER SIGNS - INTRODUCTION

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D633AM102-SIA

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**LIGHTS - PASSENGER SIGNS - FUNCTIONAL DESCRIPTION****Operation**

The NO SMOKING signs are permanently illuminated. The NO SMOKING signs are on when power is on.

A three-position toggle switch on the flight compartment overhead panel controls the passenger signs. This switch is the FASTEN SEAT BELT switch. When the switch is in the ON position, all the passenger signs come on.

When the FASTEN SEAT BELT switch is in the OFF position, the FASTEN SEAT BELT and RETURN TO SEAT signs are off.

When the FASTEN SEAT BELT switch is in the AUTO position and the trailing edge flaps limit switch is in the NOT UP position, these indications occur:

- FASTEN SEAT BELT signs
- RETURN TO SEAT signs

When the FASTEN SEAT BELT switch is in the AUTO position and the landing gear lever switch is in the GEAR DOWN position, these indications occur:

- FASTEN SEAT BELT signs
- RETURN TO SEAT signs

Interface

The passenger oxygen system has an interface with the passenger sign system. When the FASTEN SEAT BELT switch is in the AUTO position and the oxygen indication relay energizes, this indication occurs:

- FASTEN SEAT BELT signs

Functional Description

When you move the FASTEN SEAT BELT switch to the ON position, 28v dc energizes relay R26. Transfer bus 1 and 2 then supplies 28v ac to operate the passenger sign lights.

When the FASTEN SEAT BELT switch is in the AUTO position, these indications occur:

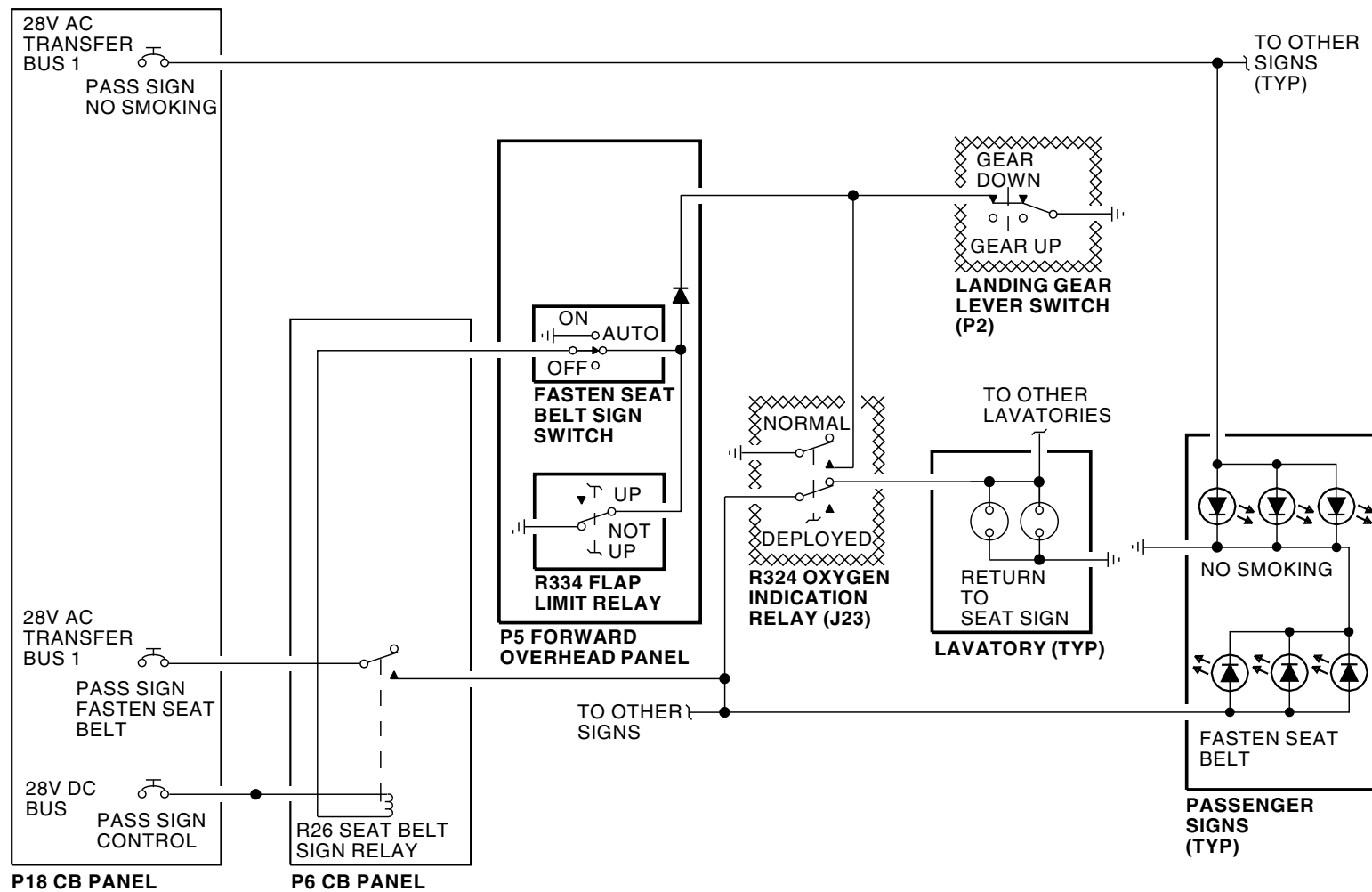
- Relay R25 energizes if the landing gear is in the down position, or when the oxygen indication relay energizes
- Relay R26 energizes if the landing gear is in the down position, or when the oxygen indication relay energizes
- Relay R26 energizes if the trailing edge flap limit switch is in the NOT UP position.

33-25-00**SIA ALL****EFFECTIVITY**

D633AM102-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LIGHTS - PASSENGER SIGNS - FUNCTIONAL DESCRIPTION



2547965 S0000606250_V1

LIGHTS - PASSENGER SIGNS - FUNCTIONAL DESCRIPTION

33-25-00-002

SIA ALL	EFFECTIVITY
	D633AM102-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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D633AM102-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details



LIGHTS - ATTENDANT WORK LIGHTS - INTRODUCTION

Purpose

The attendant work lights supply light to the attendant work stations.

Location

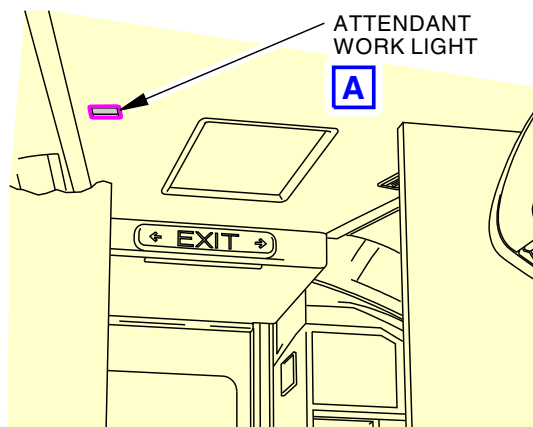
The attendant lights are in the ceiling above the attendant stations. There is one work light for each attendant station. The work light control switch is on the related attendant panel.

Physical Description

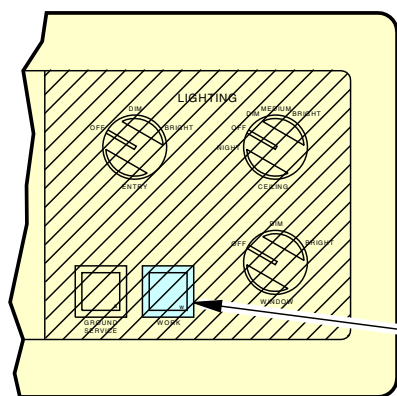
The attendant work lights are incandescent. The attendant work lights have a lens and a lamp.

SIA ALL	EFFECTIVITY
	D633AM102-SIA

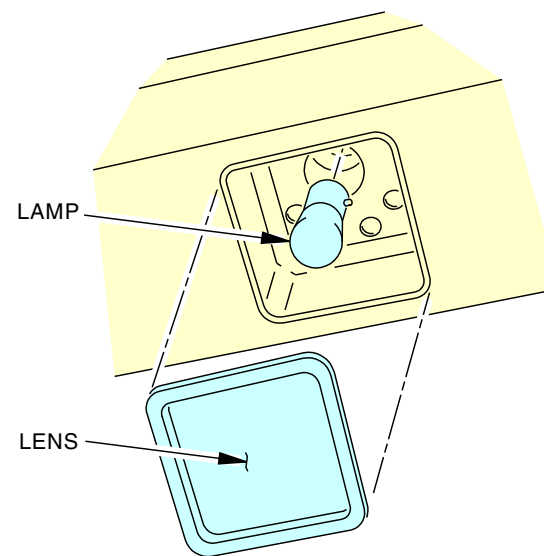
LIGHTS - ATTENDANT WORK LIGHTS - INTRODUCTION



FORWARD ATTENDANT STATION



FORWARD ATTENDANT PANEL



ATTENDANT WORK LIGHT (TYPICAL)

A

2369713 S00061520150_V1

LIGHTS - ATTENDANT WORK LIGHTS - INTRODUCTION



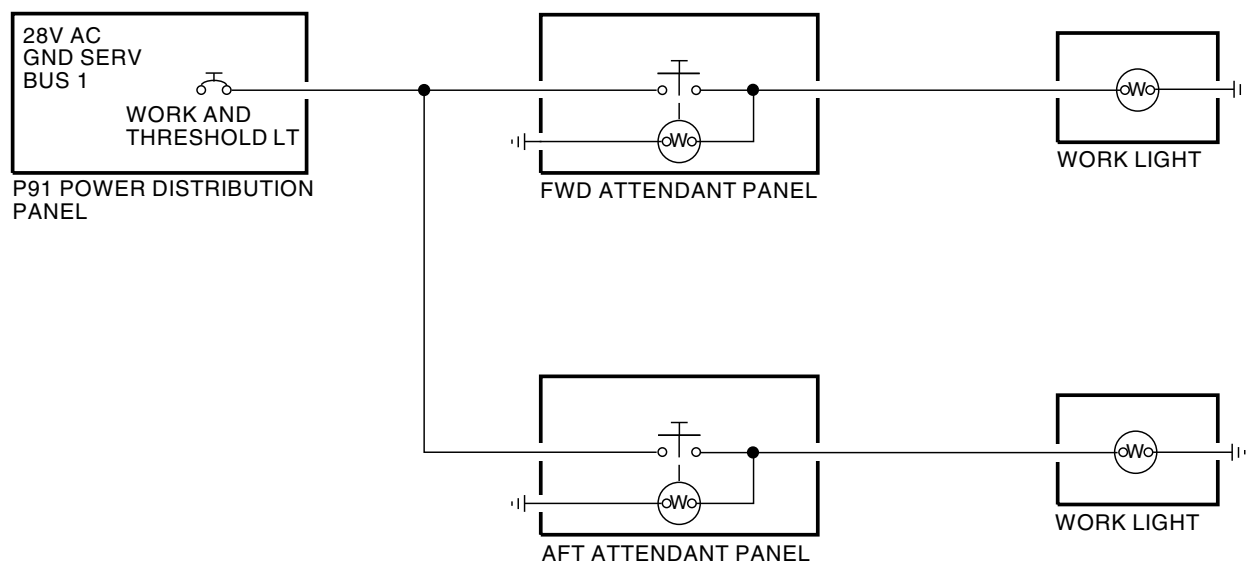
LIGHTS - ATTENDANT WORK LIGHTS - FUNCTIONAL DESCRIPTION

Functional Description

When you put the attendant work light switch to ON, 28V AC from the ground service bus causes the light in the switch and attendant work light to come on.

SIA ALL	EFFECTIVITY
	D633AM102-SIA

LIGHTS - ATTENDANT WORK LIGHTS - FUNCTIONAL DESCRIPTION



2369714 S00061520152_V1

LIGHTS - ATTENDANT WORK LIGHTS - FUNCTIONAL DESCRIPTION

33-26-00

SIA ALL	EFFECTIVITY
	D633AM102-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details



LIGHTS - GALLEY LIGHTS - INTRODUCTION

Purpose

The galley light supplies light to the forward galley area.

Physical Description

The galley light has these components:

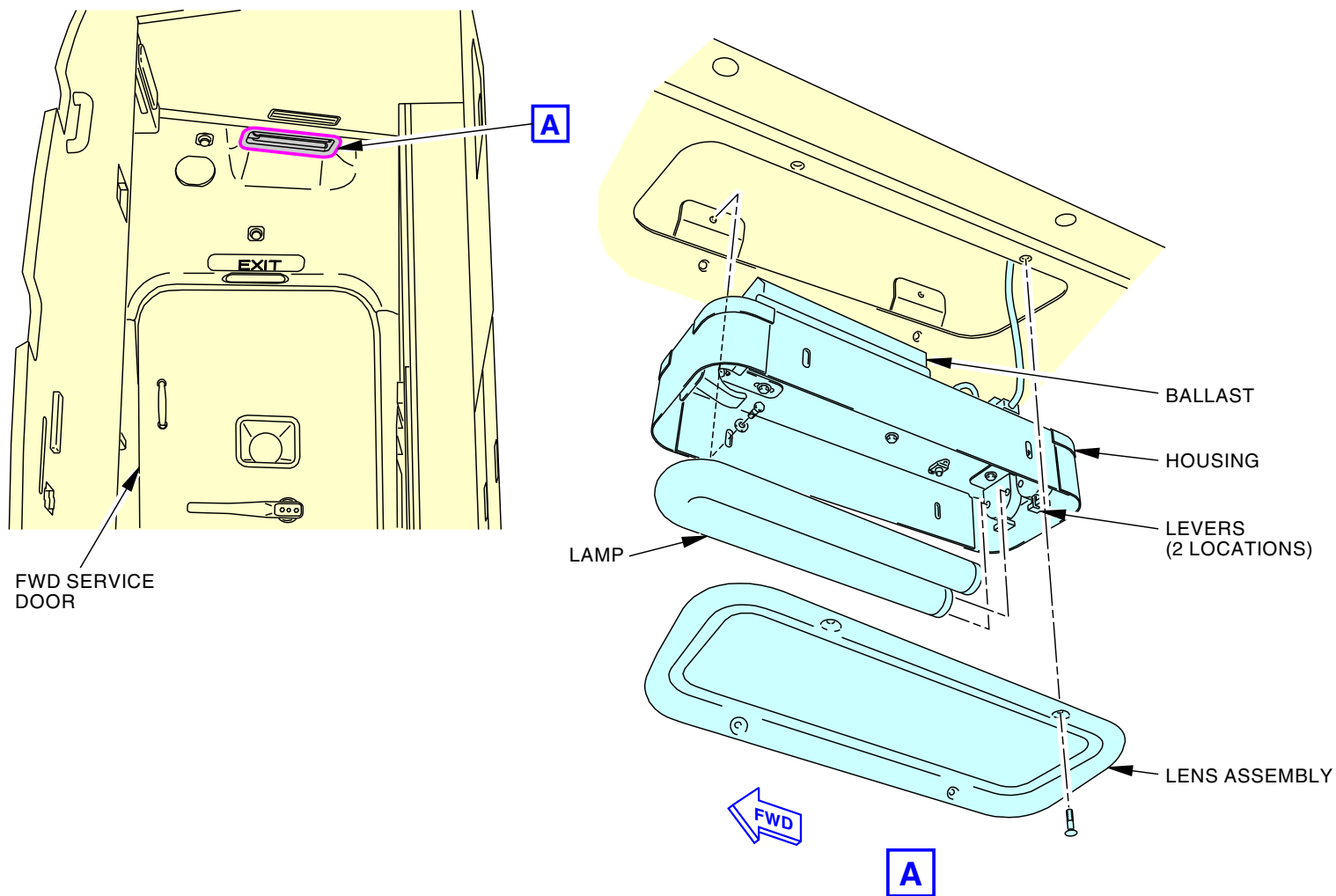
- Fluorescent lamp
- Lens
- Housing
- Ballast

Location

The galley light is above the forward service entry door.

SIA ALL	EFFECTIVITY
D633AM102-SIA	

LIGHTS - GALLEY LIGHTS - INTRODUCTION



2369715 S00061520154_V1

LIGHTS - GALLEY LIGHTS - INTRODUCTION

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33-26-00-003

SIA ALL

EFFECTIVITY

D633AM102-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details



LIGHTS - GALLEY LIGHTS - FUNCTIONAL DESCRIPTION

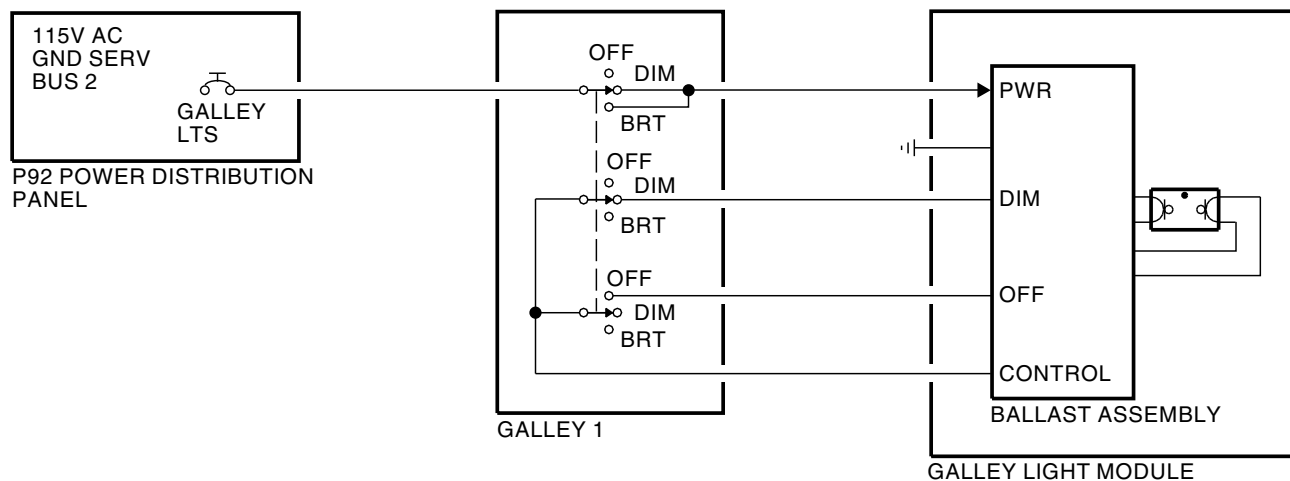
Functional Description

When the galley light switch moves from the OFF position, logic circuits in the ballast assembly set these conditions:

- Continuity between CONTROL and DIM causes the dim mode
- Continuity between CONTROL and OFF causes the off mode
- No continuity between CONTROL and either DIM or OFF causes the bright mode

SIA ALL	EFFECTIVITY
	D633AM102-SIA

LIGHTS - GALLEY LIGHTS - FUNCTIONAL DESCRIPTION



2369716 S00061520156_V1

LIGHTS - GALLEY LIGHTS - FUNCTIONAL DESCRIPTION

33-26-00-004

SIA ALL	EFFECTIVITY
	D633AM102-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

33-26-00



LIGHTS - LAVATORY LIGHTS AND SIGNS - INTRODUCTION

Purpose

The lavatory lights and signs supply light and indications to the passengers while in the lavatory.

Physical Description

The mirror light has a fluorescent and incandescent lamp. It has a ballast assembly and an electrical connector.

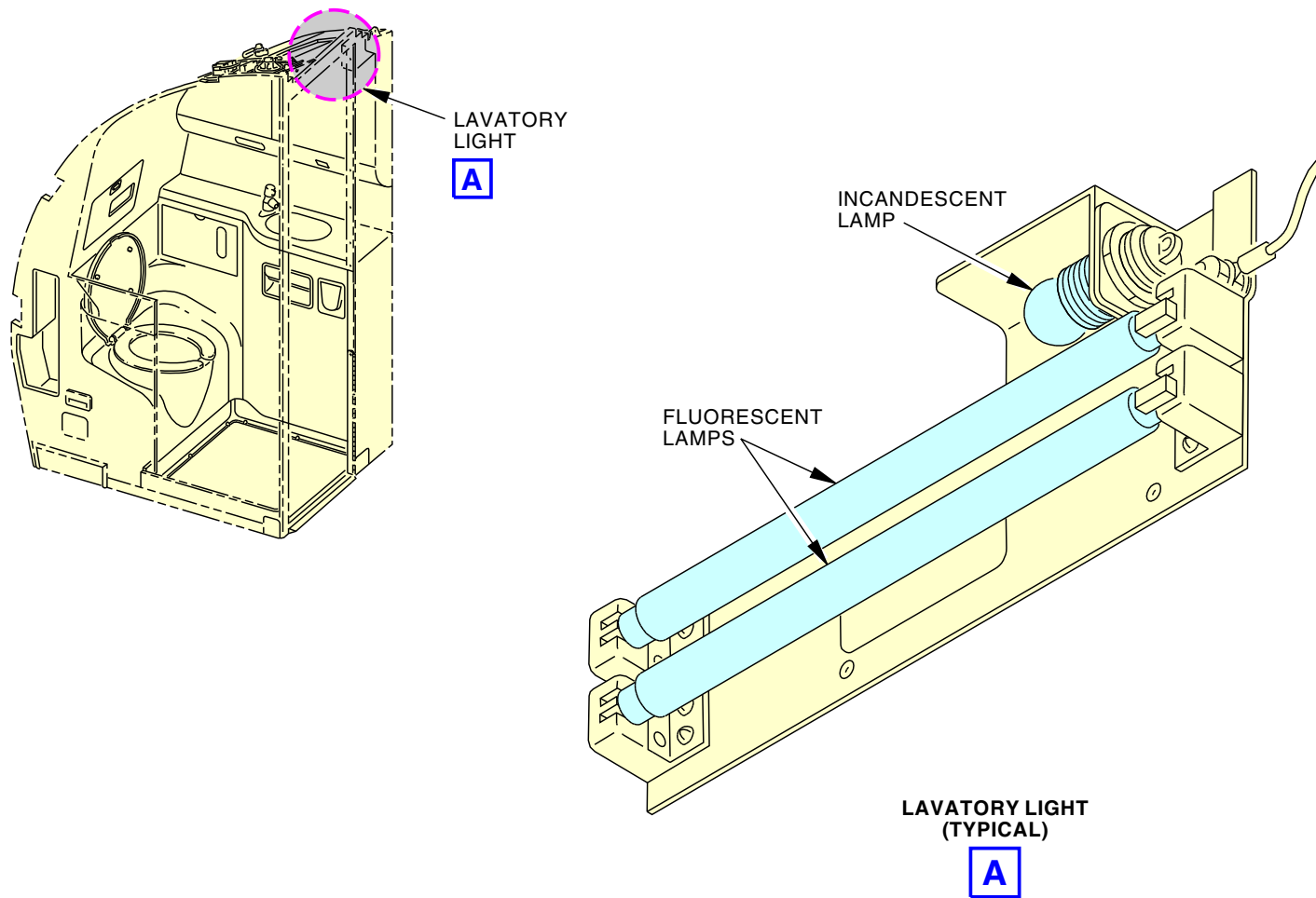
Location

The lavatory lights and controls are in these places:

- Lavatory lights are on the mirror
- Lavatory light ballast assembly is on or next to the lavatory ceiling PSU panel
- Door switch is in the door frame

EFFECTIVITY	
SIA ALL	

LIGHTS - LAVATORY LIGHTS AND SIGNS - INTRODUCTION



2369717 S00061520158_V1

LIGHTS - LAVATORY LIGHTS AND SIGNS - INTRODUCTION

33-26-00

33-26-00-005

SIA ALL

EFFECTIVITY

D633AM102-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

**LIGHTS - LAVATORY LIGHTS AND SIGNS - FUNCTIONAL DESCRIPTION****Operation**

You can operate the fluorescent mirror lights in the lavatory by the door switch. The light ballast is powered when the door switch is closed and not power when the door switch is open.

The lavatory auxiliary LED lights or incandescent lamp come on when the 28V DC bus 1 sect 1 has power.

The lavatory occupied light (OCC) light comes on when the lavatory door is locked and the 28V AC transfer bus 1 has power.

Functional Description

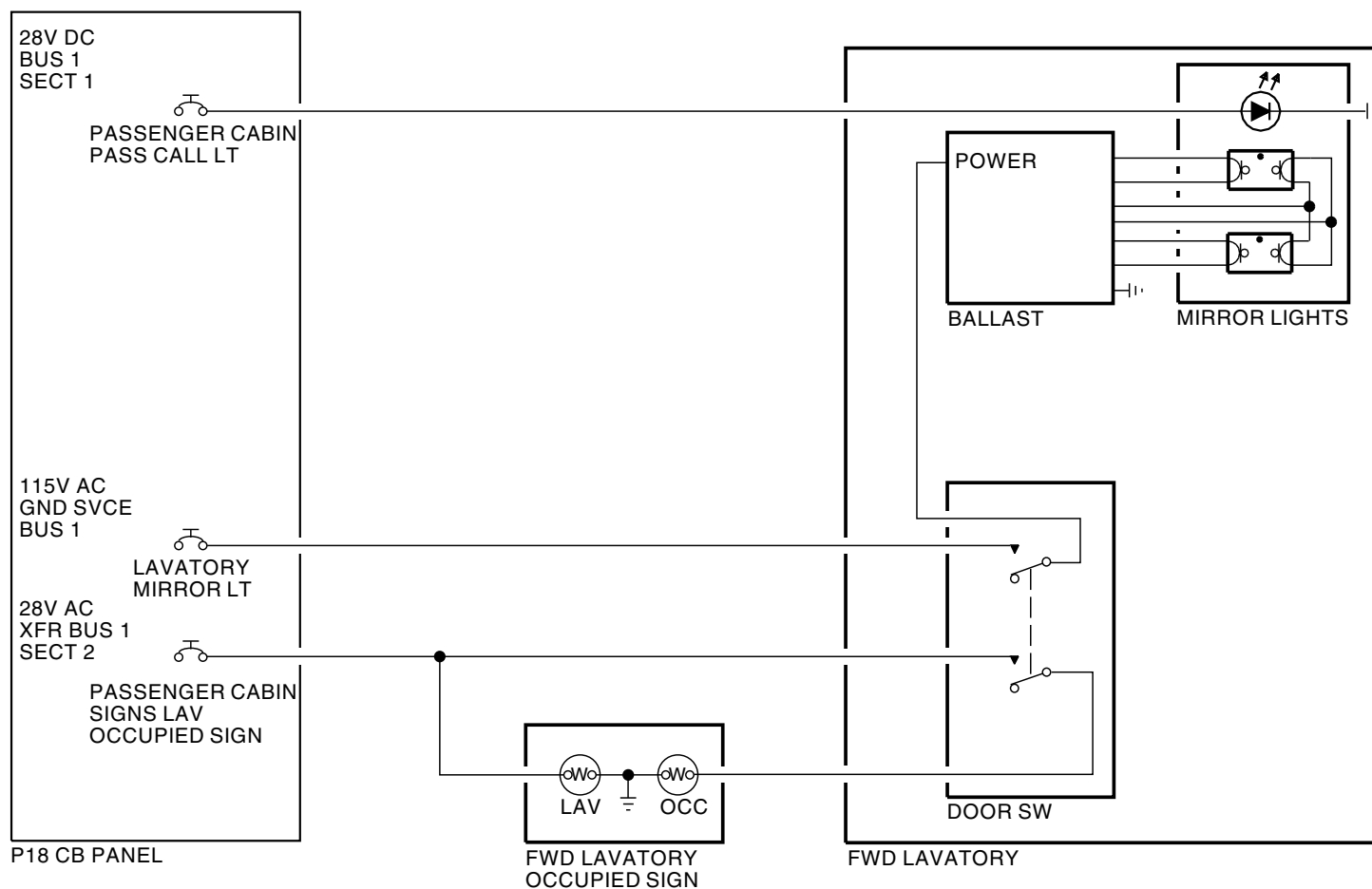
The light ballast is powered when the door switch is closed. When the door switch is open, the ballast is not powered..

Power for the lavatory light is from the 115V AC ground service bus.

Power for the lavatory auxiliary LED lights or incandescent lamp is from the 28V DC bus 1 sect 1.

SIA ALL	EFFECTIVITY
	D633AM102-SIA

LIGHTS - LAVATORY LIGHTS AND SIGNS - FUNCTIONAL DESCRIPTION



2369718 S00061520160_V1

LIGHTS - LAVATORY LIGHTS AND SIGNS - FUNCTIONAL DESCRIPTION

33-26-00

SIA ALL	EFFECTIVITY
	D633AM102-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details



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33-27-00

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ECCN 9E991 BOEING PROPRIETARY - See title page for details



LIGHTS - PASSENGER AND LAVATORY CALL LIGHTS - INTRODUCTION

Purpose

The passenger and lavatory call light tells the flight attendant when a passenger or flight crew member needs aid or assistance.

Physical Description

The lights are incandescent.

There are lens covers for the lights. The lens covers are blue, pink, and amber.

Indications

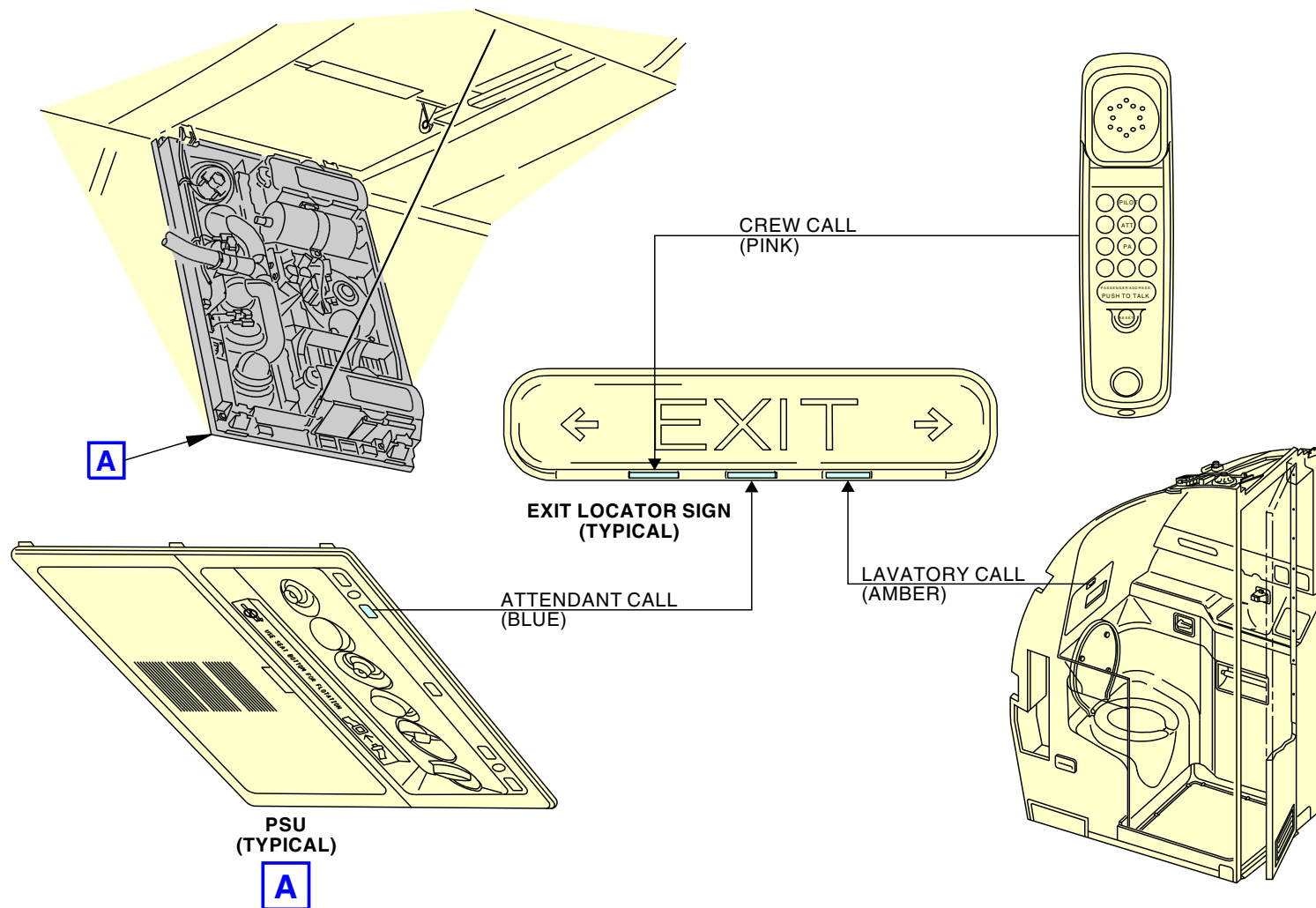
The light under the blue cover comes on when a passenger pushes the passenger call switch on the PSU. The light under the amber cover comes on when a passenger pushes the call switch in a lavatory. The light under the pink cover comes on when a crew member calls another crew member.

Location

The passenger and lavatory call lights are on the ceiling exit locator signs at the forward and aft ends of the passenger cabin.

EFFECTIVITY	
SIA ALL	

LIGHTS - PASSENGER AND LAVATORY CALL LIGHTS - INTRODUCTION



2369719 S00061520164_V1

LIGHTS - PASSENGER AND LAVATORY CALL LIGHTS - INTRODUCTION

**LIGHTS - PASSENGER AND LAVATORY CALL LIGHTS - FUNCTIONAL DESCRIPTION****Passenger Call**

When you push the attendant call button on the Passenger Service Unit (PSU), the control circuit causes these indications:

- Light under the blue lens cover on the forward or aft exit locator
- High chime sound
- PSU call light.

You must push the call light/reset switch to cause the control circuit to turn off the indications.

A two-position passenger call select switch in the PSU controls which exit locator sign gets the call from the PSU. You can set this switch with the PSU open.

Lavatory Call

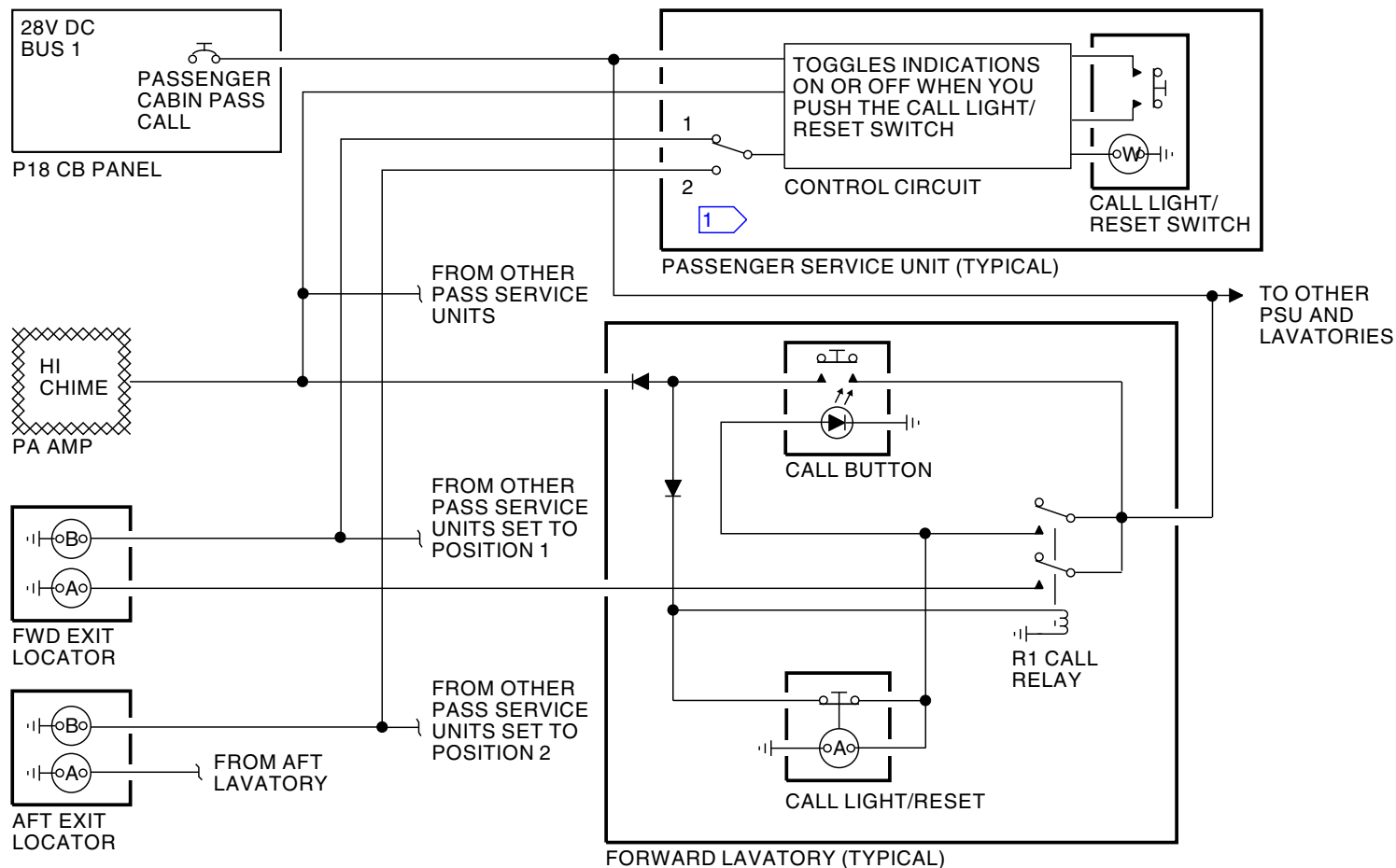
When you operate the lavatory push-on, push-off light, 28v dc causes this to occur:

- Relay R1 energizes and latches
- High chime sound
- Lavatory call light/reset switch
- Light under the amber lens cover on the forward or aft exit locator.

When you push the reset button, you remove 28v dc from relay R1 and all indications stop.

EFFECTIVITY	
SIA ALL	

LIGHTS - PASSENGER AND LAVATORY CALL LIGHTS - FUNCTIONAL DESCRIPTION



1 PASSENGER CALL SELECT SWITCH, POSITION 1 FWD EXIT LOCATOR LIGHT, POSITION 2 AFT EXIT LOCATOR LIGHT

2369720 S00061520166_V1

LIGHTS - PASSENGER AND LAVATORY CALL LIGHTS - FUNCTIONAL DESCRIPTION

33-27-00

SIA ALL	EFFECTIVITY

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33-29-00

D633AM102-SIA

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LIGHTS - ENTRY LIGHTS - INTRODUCTION

Purpose

The entry lights supply light for the airplane entry areas. The entry lights are in the forward and aft ends of the passenger cabin.

Physical Description

The entry lights have the direct entry lights and dim entry lights.

- The direct entry lights use LED light assemblies.

The direct entry lights are connected in series to the Attendant Control Panel (ACP) RS-485 data bus. When the direct entry light internal data transceiver is inoperative, the lights that follow in series may not change to the correct intensity and color.

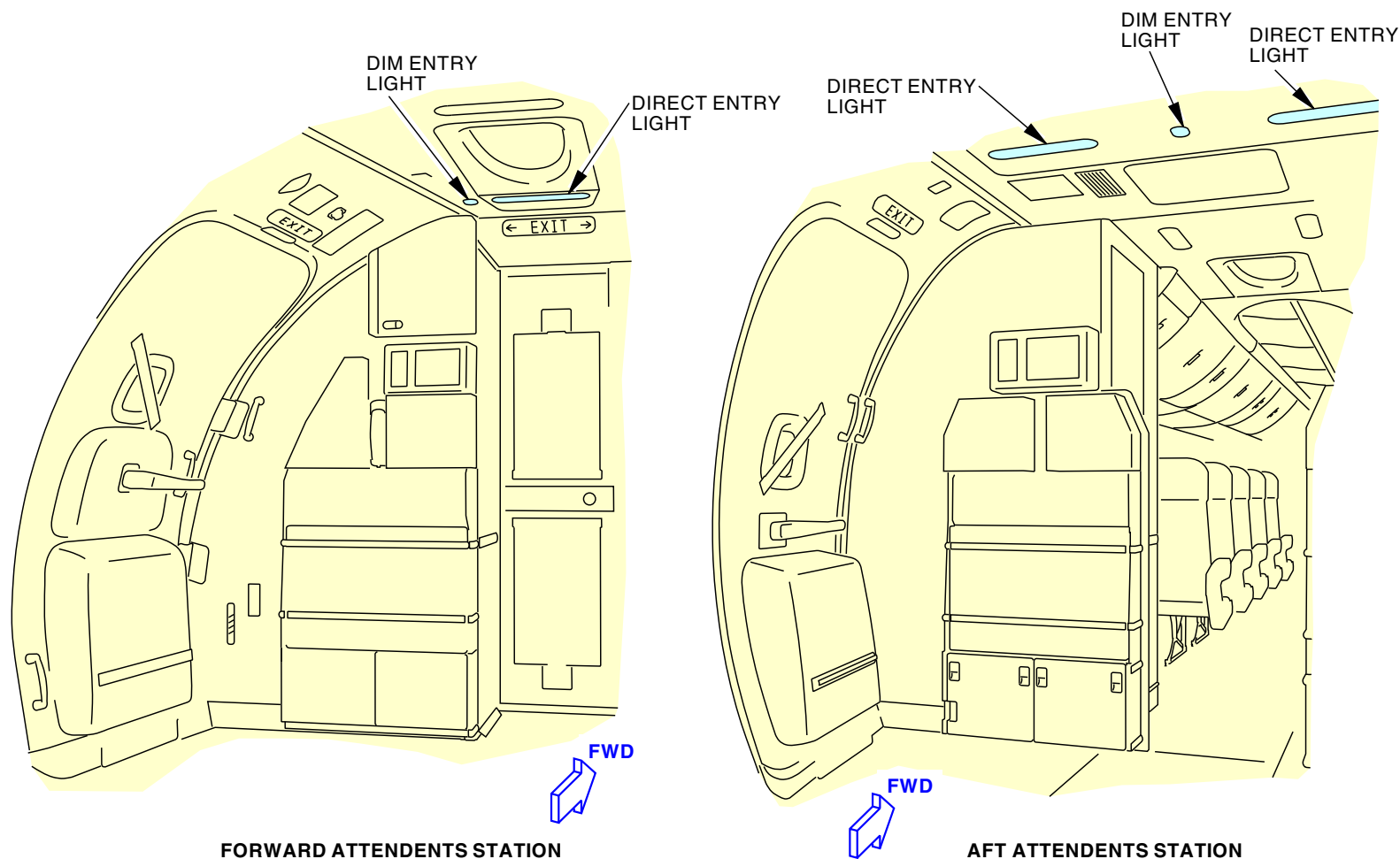
- The forward direct entry light data bus is connected in series to the left window light data bus at ACP signal port 1.
- The aft direct entry light data bus is connected in series to the right window light data bus at ACP signal port 4.

location

The entry lights are in the ceiling near the entry and service entry doors.

EFFECTIVITY	
SIA ALL	

LIGHTS - ENTRY LIGHTS - INTRODUCTION



2369721 S00061520170_V1

LIGHTS - ENTRY LIGHTS - INTRODUCTION

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SIA ALL	EFFECTIVITY
	D633AM102-SIA

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33-29-00

**LIGHTS - ENTRY LIGHTS - FUNCTIONAL DESCRIPTION****Operation**

The attendant control panel (ACP) controls the direct entry light intensity.

With external power applied, the dim entry light is on.

Functional Description

When you set the cabin/utility switch on the P5-13 panel to the ON position, this occurs:

- Relay R427 energizes.
- 115V AC goes to the light internal power supply.

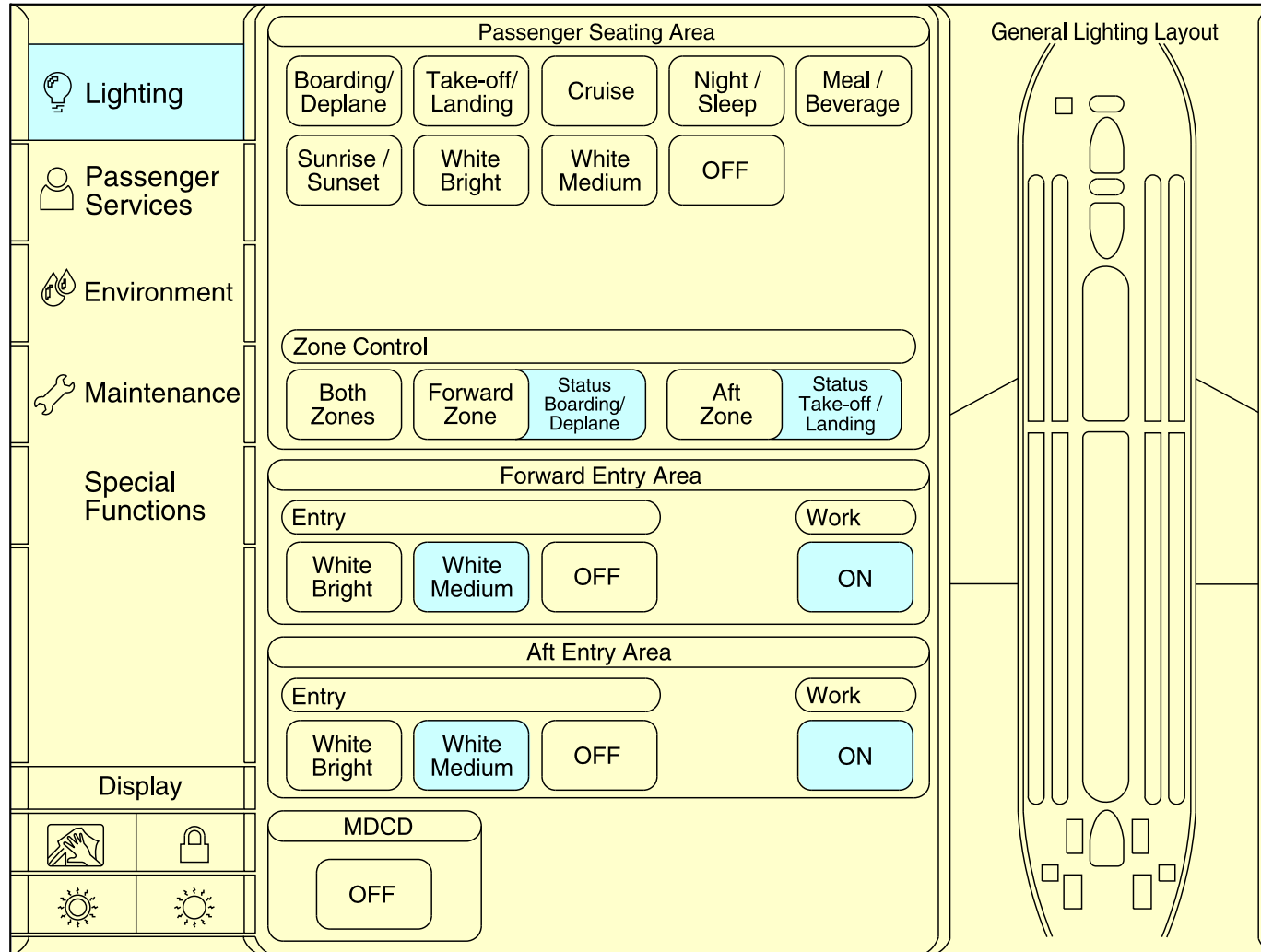
When you touch the White BRIGHT button or White MEDIUM button below the Forward Entry Area section on the ACP Lighting display, the ACP sends intensity signal to the direct entry light. The direct entry light changes intensity preset condition.

When you touch the White BRIGHT button or White MEDIUM button below the Aft Entry Area section on the ACP Lighting display, the ACP sends intensity signal to the direct entry lights. The direct entry lights change intensity preset condition.

When you touch the OFF button, only the light internal LED lights go off. The light internal power supply stays connected to the 115V AC.

SIA ALL	EFFECTIVITY
	D633AM102-SIA

LIGHTS - ENTRY LIGHTS - FUNCTIONAL DESCRIPTION



2548828 S0000606877_V1

LIGHTS - ENTRY LIGHTS - FUNCTIONAL DESCRIPTION



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D633AM102-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details



LIGHTS - CARGO AND SERVICE COMPARTMENT LIGHTS - INTRODUCTION

Purpose

The cargo and service compartment lights supply light to help maintenance personnel and ground crews.

Location

There are cargo compartments lights in the forward and aft cargo compartments.

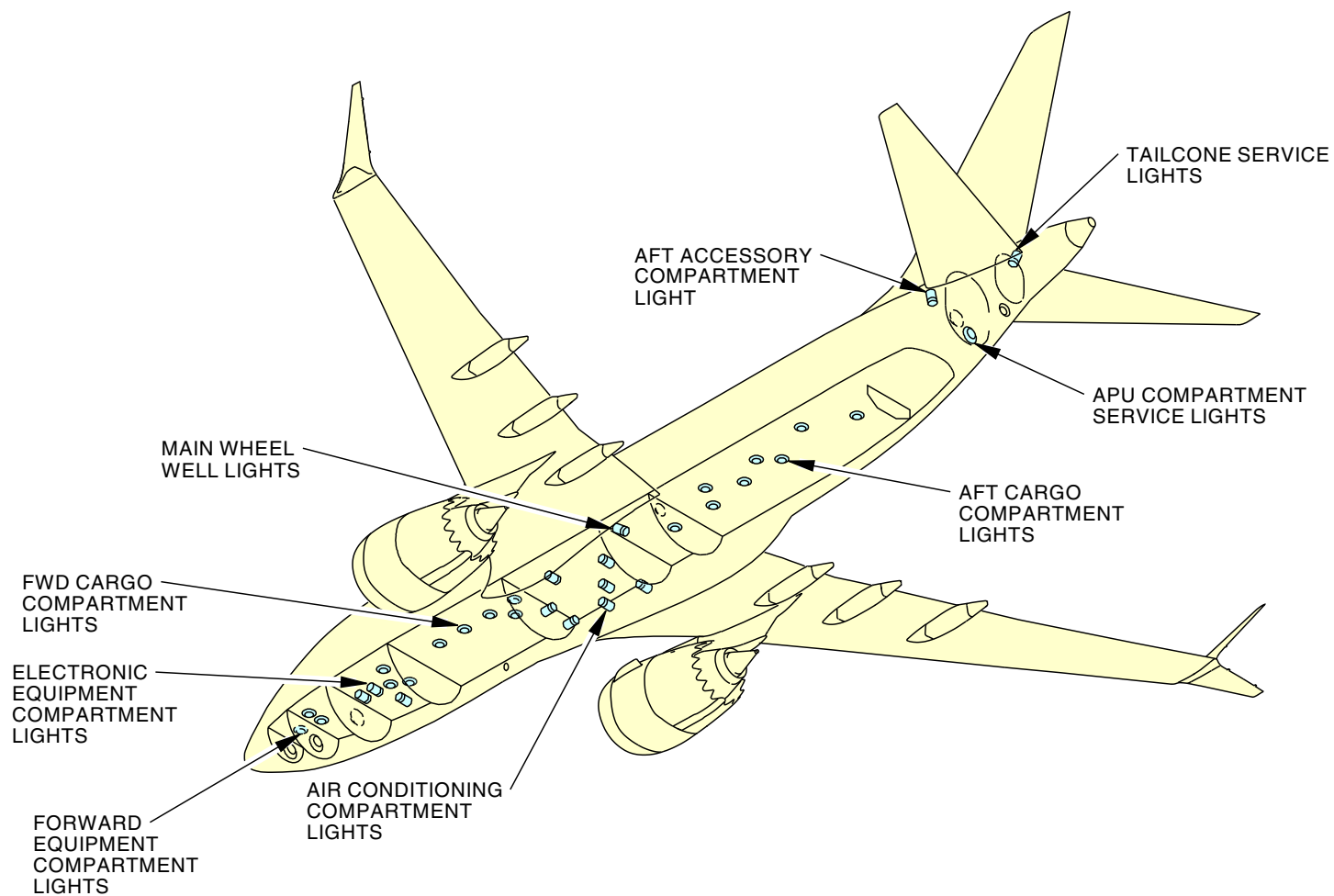
There are service lights in these areas:

- Forward equipment compartment
- Electronic equipment compartment
- Right air conditioning compartment
- Left air conditioning compartment
- Aft accessory compartment (section 48 interior)
- APU compartment
- Tail cone compartment.

There are wheel well lights in the nose and main wheel wells.

SIA ALL	EFFECTIVITY
	D633AM102-SIA

LIGHTS - CARGO AND SERVICE COMPARTMENT LIGHTS - INTRODUCTION



2369722 S00061520175_V1

LIGHTS - CARGO AND SERVICE COMPARTMENT LIGHTS - INTRODUCTION

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SIA ALL	EFFECTIVITY
	D633AM102-SIA

33-30-00



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D633AM102-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details



LIGHTS - WHEEL WELL LIGHTS - INTRODUCTION

Purpose

The wheel well lights supply lighting to the nose and main landing gear wheel wells.

Physical Description

The wheel well lights use Light Emitting Diode (LED).

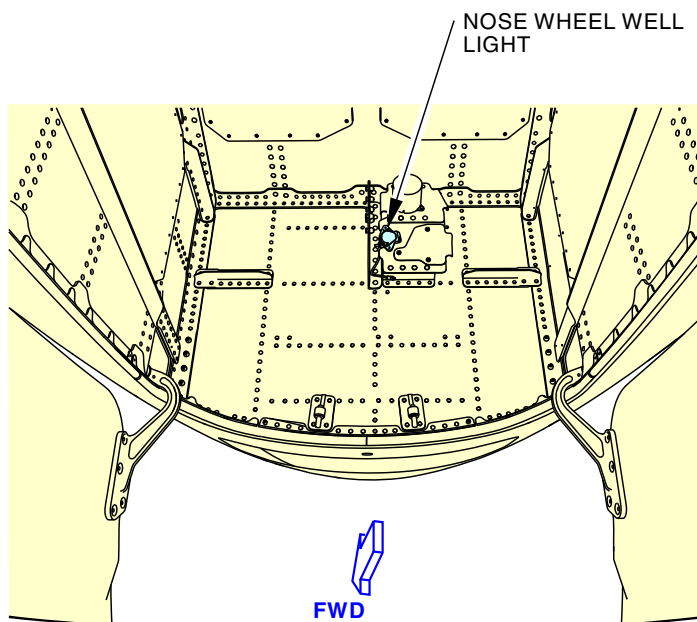
Location

There is one wheel well light in the nose gear wheel well. The nose gear wheel well light switch is on the external power receptacle panel, P19.

There are four wheel well lights in the main landing gear wheel well. The main landing gear wheel well light switch is on the outer forward bulkhead of the left main wheel well.

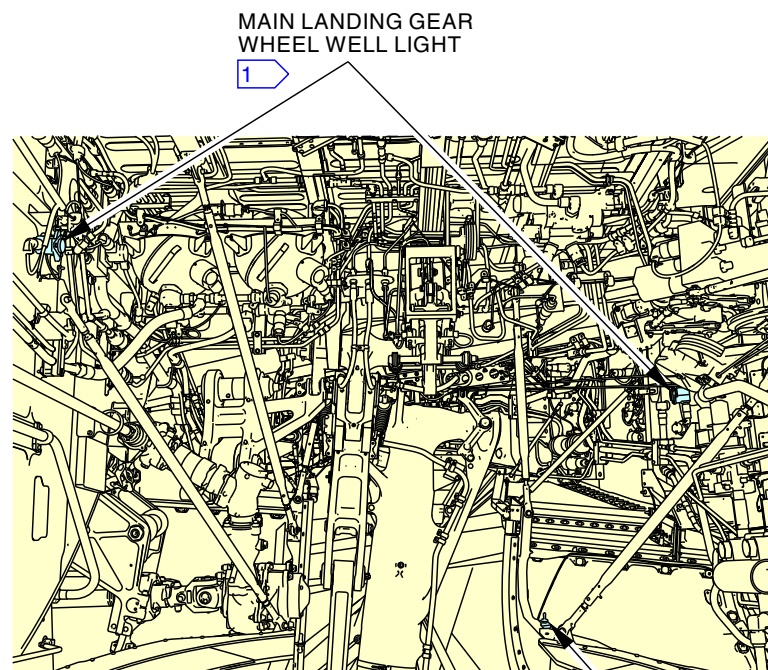
A switch on the forward overhead panel, P5, controls the wheel well lights from inside the airplane.

LIGHTS - WHEEL WELL LIGHTS - INTRODUCTION



**NOSE WHEEL WELL
(VIEW IN THE FORWARD DIRECTION)**

1 THE OTHER TWO MAIN LANDING GEAR
WHEEL WELL LIGHTS ARE LOCATED
ON THE RIGHT SIDE (NOT SHOWN)



**(MAIN LANDING GEAR WHEEL WELL)
(LEFT SIDE)**

B

2369723 S00061520179_V1

LIGHTS - WHEEL WELL LIGHTS - INTRODUCTION

33-32-00

**LIGHTS - WHEEL WELL LIGHTS - FUNCTIONAL DESCRIPTION****Operation**

The wheel well lights switch on the forward overhead panel, P5, controls the nose and main wheel well lights. When you put the switch to ON, all wheel well lights come on.

There is a two-position toggle switch in the left main wheel well. It is in the forward end of the wheel well. This switch controls four lights in the main wheel well.

The two-position toggle switch on the external power receptacle panel, P19, controls one light in the nose gear wheel well.

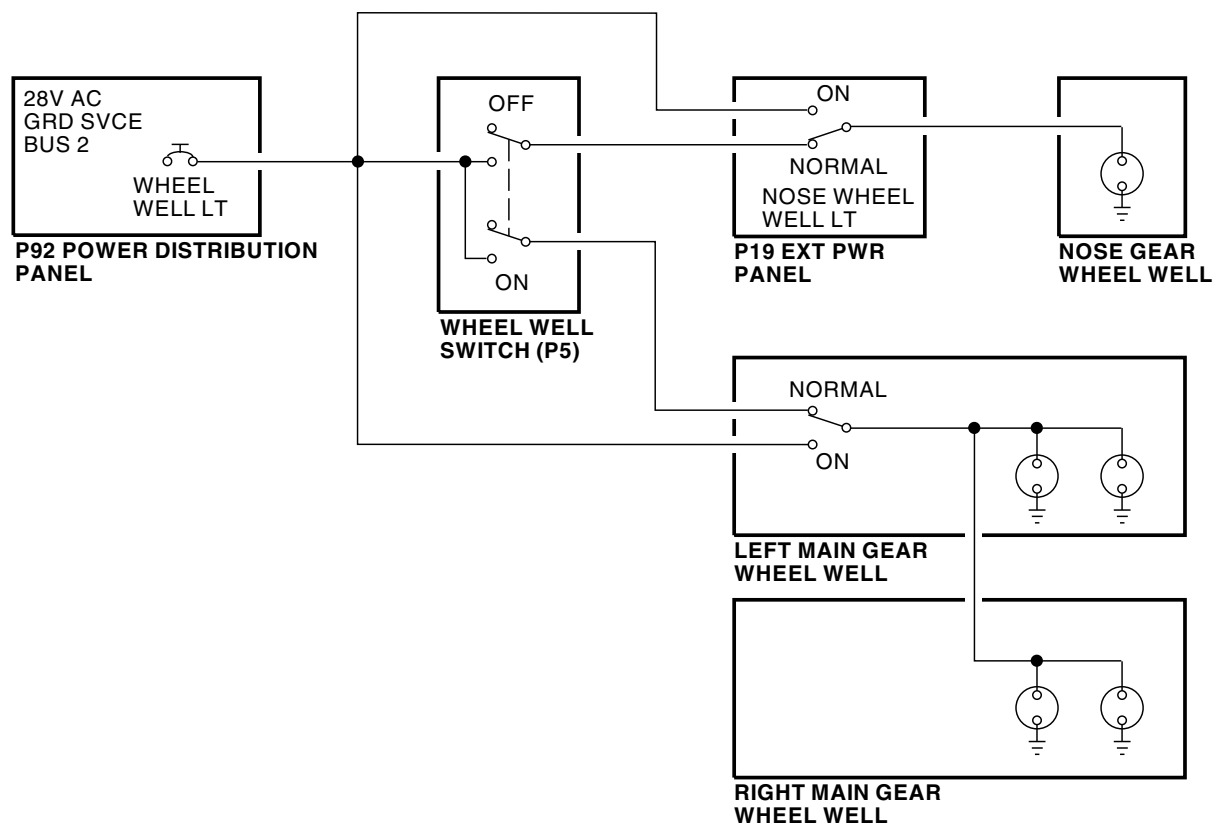
The switch you use to make the lights come on must be used to select the lights off.

Functional Description

The 28V AC ground service bus supplies electrical power for the wheel well lights. When you select the forward overhead panel, P5, wheel well switch to ON, all wheel well lights come on. When you use a switch in the wheel well, only the related wheel well lights come on.

SIA ALL	EFFECTIVITY
	D633AM102-SIA

LIGHTS - WHEEL WELL LIGHTS - FUNCTIONAL DESCRIPTION



2369724 S00061520181_V1

LIGHTS - WHEEL WELL LIGHTS - FUNCTIONAL DESCRIPTION

33-32-00

SIA ALL	EFFECTIVITY
	D633AM102-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details



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D633AM102-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

**LIGHTS - AIR CONDITIONING COMPARTMENT LIGHTS - INTRODUCTION****Purpose**

The air conditioning compartment lights supply lighting for maintenance in the left and right Environmental Control System (ECS).

Physical Description

The air conditioning compartment lighting is provided by lights from LED modules.

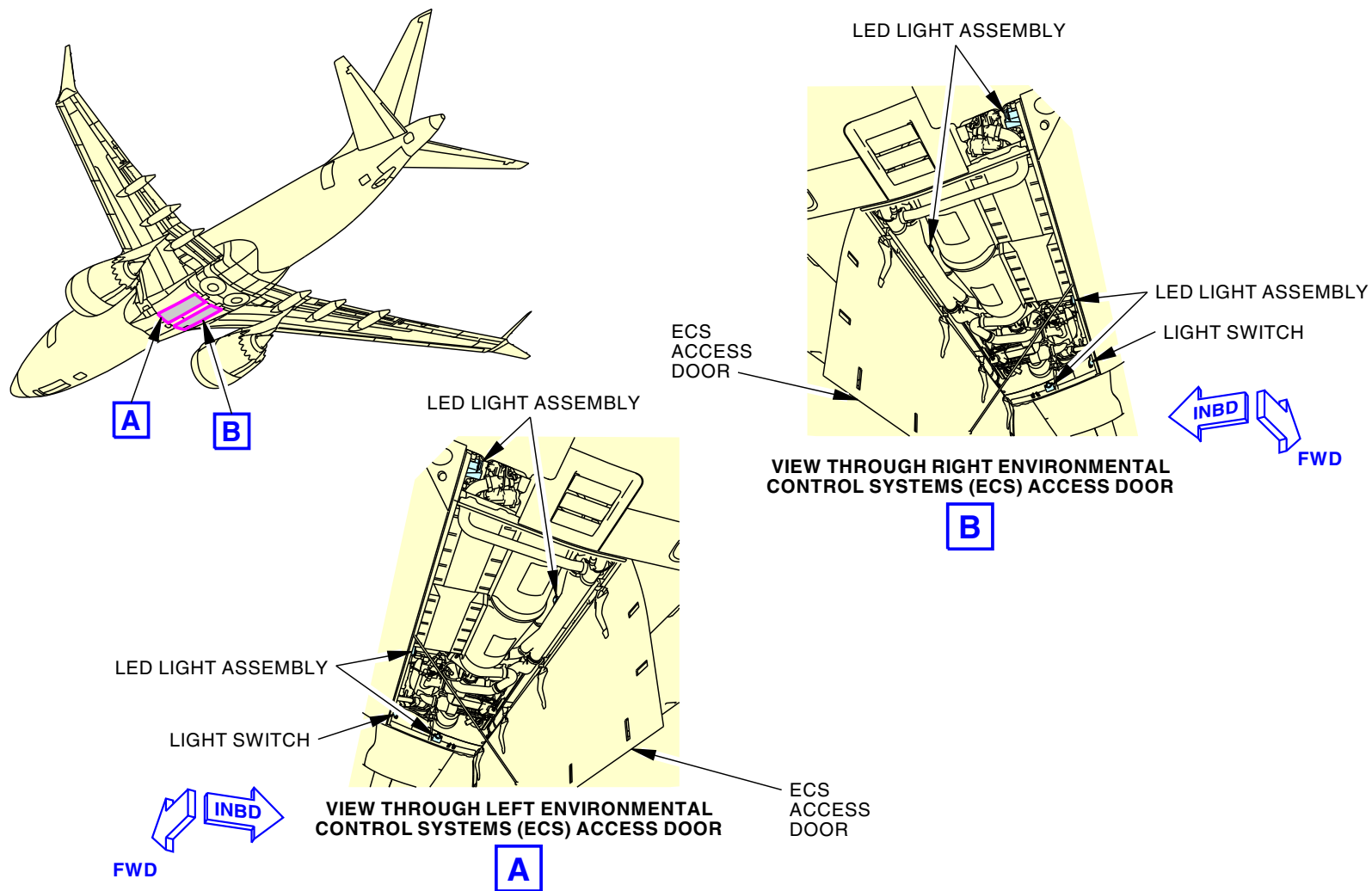
Location

There are five LED modules in the left compartment and four in the right compartment.

A control switch is on the forward outboard bulkheads of each air conditioning compartment.

EFFECTIVITY	
SIA ALL	

LIGHTS - AIR CONDITIONING COMPARTMENT LIGHTS - INTRODUCTION



2369725 S00061520185_V1

LIGHTS - AIR CONDITIONING COMPARTMENT LIGHTS - INTRODUCTION

33-33-00



LIGHTS - AIR CONDITIONING COMPARTMENT LIGHTS - FUNCTIONAL DESCRIPTION

Operation

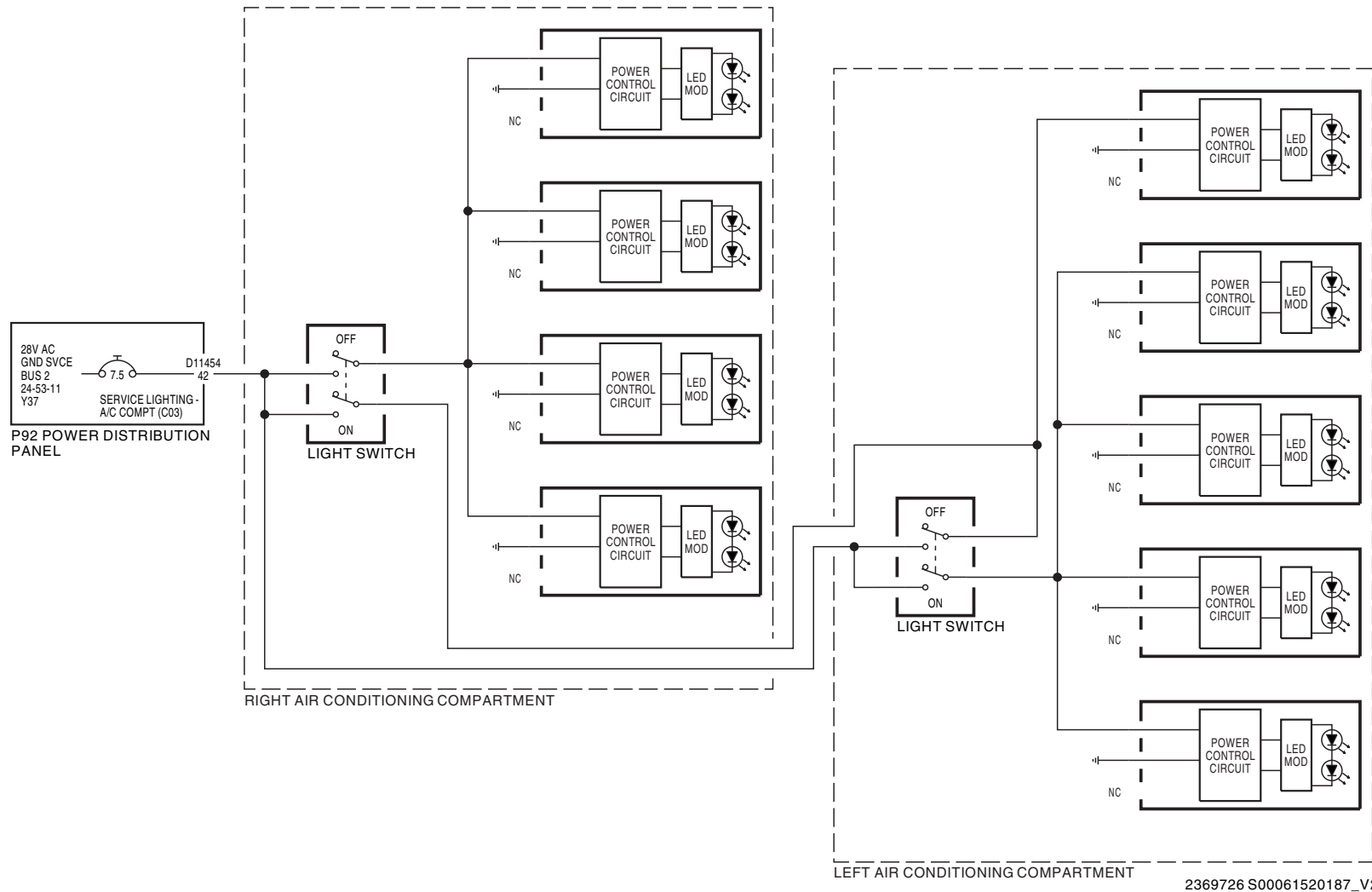
Each compartment has a two-position toggle switch that controls electrical power to the LED modules in each compartment.

Functional Description

The LED lighting modules are in a parallel circuit. The loss of a module will not effect the operation of the other LED modules in the circuit. When the control switch is in the ON position, 28v ac goes to each LED module.

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LIGHTS - AIR CONDITIONING COMPARTMENT LIGHTS - FUNCTIONAL DESCRIPTION



LIGHTS - AIR CONDITIONING COMPARTMENT LIGHTS - FUNCTIONAL DESCRIPTION

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LIGHTS - ELECTRONIC EQUIPMENT COMPARTMENT LIGHTS - INTRODUCTION

Purpose

The EE compartment lights supply light to the electronic equipment compartments for maintenance.

Physical Description

The EE compartment lights are incandescent lamps.

Location

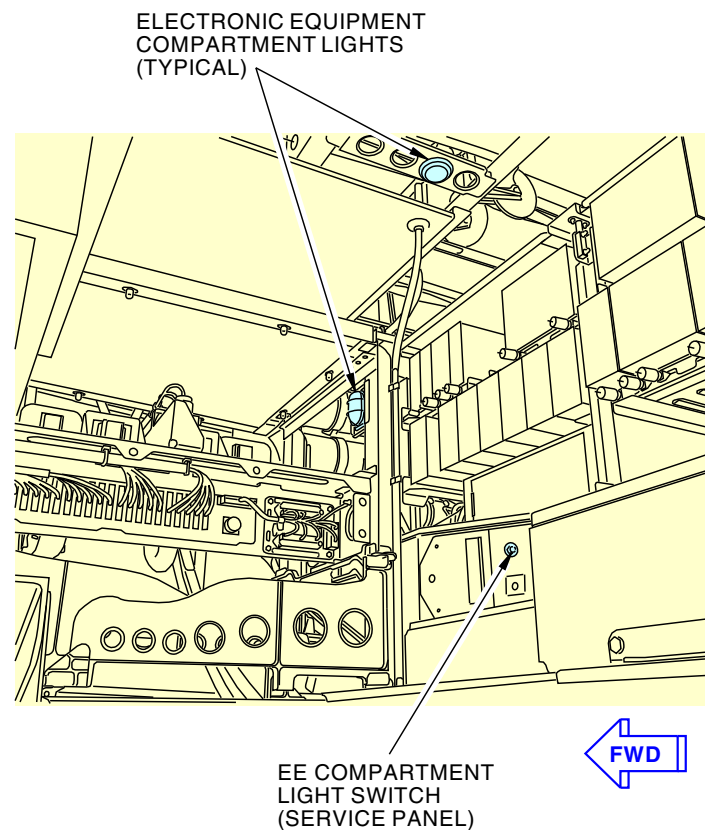
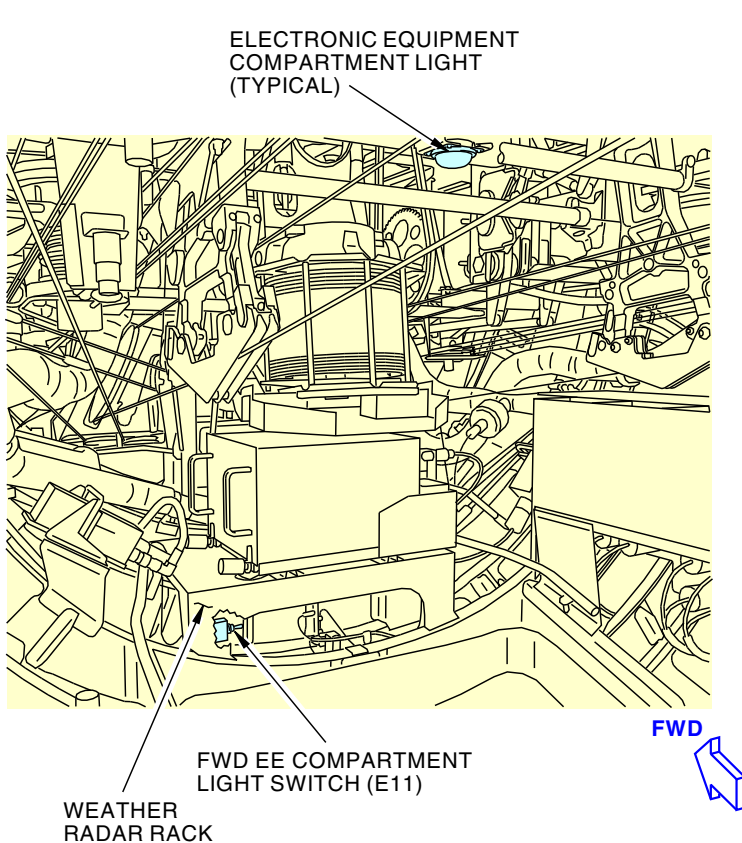
There are four incandescent lights in the EE compartment and three in the forward equipment compartment.

The EE compartment light control switch is on the service panel.

The forward equipment compartment light control switch is on the right side under the weather radar rack.

EFFECTIVITY	
SIA ALL	

LIGHTS - ELECTRONIC EQUIPMENT COMPARTMENT LIGHTS - INTRODUCTION



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LIGHTS - ELECTRONIC EQUIPMENT COMPARTMENT LIGHTS - INTRODUCTION

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**LIGHTS - ELECTRONIC EQUIPMENT COMPARTMENT LIGHTS - FUNCTIONAL DESCRIPTION****Operation**

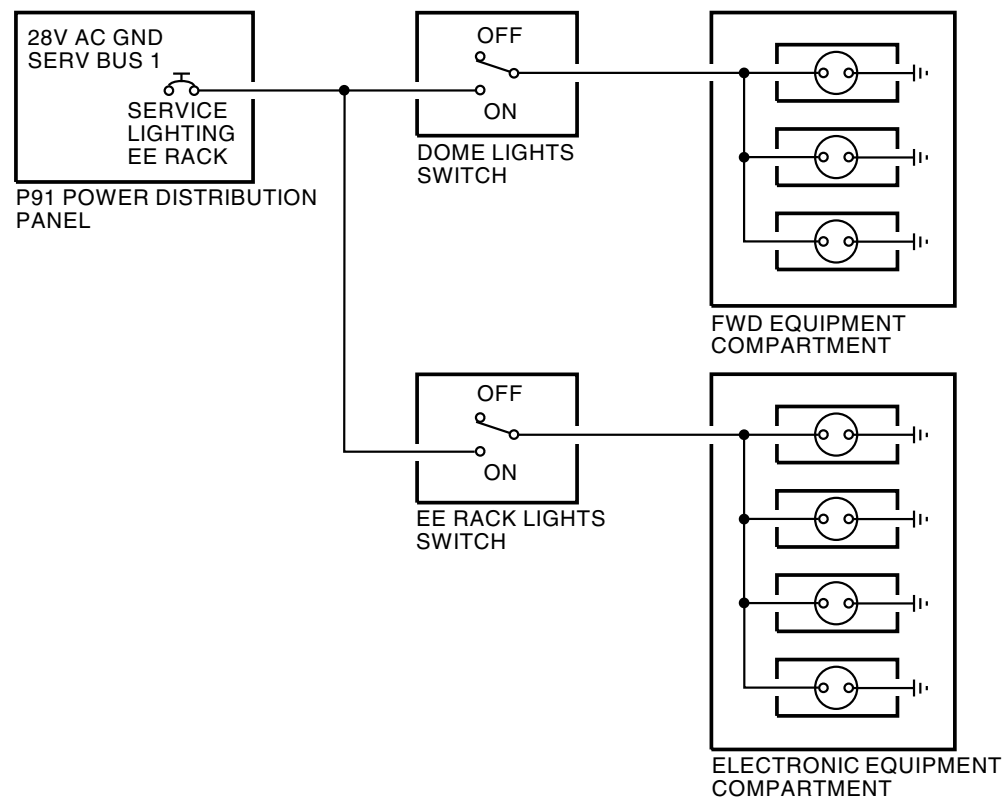
A two-position toggle switch controls the lights for the forward equipment compartment. A two-position toggle switch controls the lights for the electronic equipment compartment.

Functional Description

The incandescent lights are in a parallel circuit. The loss of a lamp will not affect the output of the other lamps in the circuit. When the two-position toggle switch is in the ON position, 28v ac goes to each incandescent lamp.

SIA ALL	EFFECTIVITY
	D633AM102-SIA

LIGHTS - ELECTRONIC EQUIPMENT COMPARTMENT LIGHTS - FUNCTIONAL DESCRIPTION



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LIGHTS - ELECTRONIC EQUIPMENT COMPARTMENT LIGHTS - FUNCTIONAL DESCRIPTION

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**LIGHTS - ACCESSORY COMPARTMENT LIGHTS - INTRODUCTION****Purpose**

The service and accessory compartment lights supply light to these areas:

- APU compartment
- Aft accessory compartment (section 48 interior)
- Tail cone compartment.

Physical Description

The aft accessory compartment has two LED light assemblies.

The APU and tail cone lights are incandescent

Location

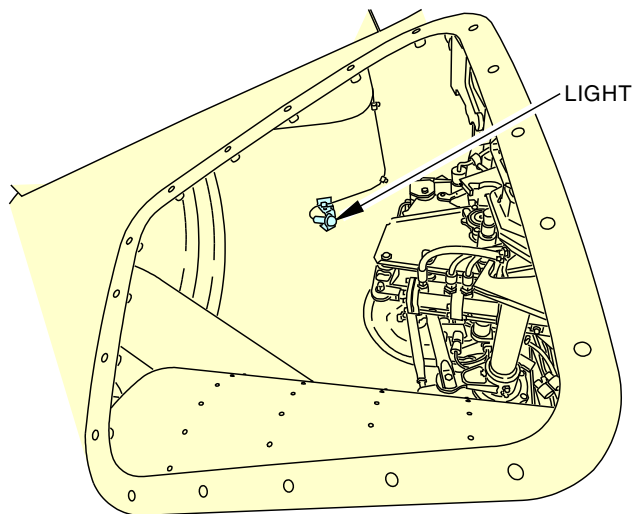
There are two lights in the aft accessory compartment. The light control switch is next to the access door.

There are two lights in the APU compartment. The light control switch is on the forward bulkhead right next to the light.

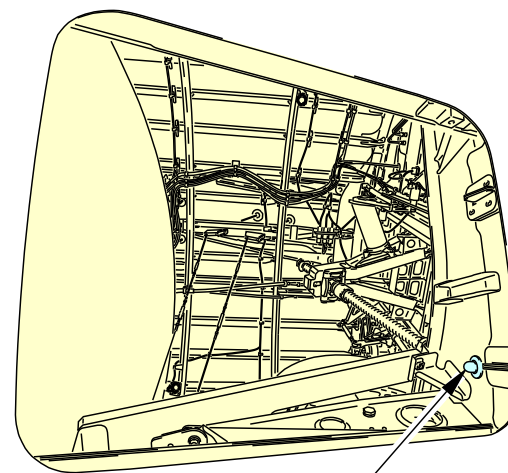
The tail cone compartment has one light. The light control switch is inside the tail cone compartment forward of the access panel in the lower right corner.

EFFECTIVITY	
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LIGHTS - ACCESSORY COMPARTMENT LIGHTS - INTRODUCTION

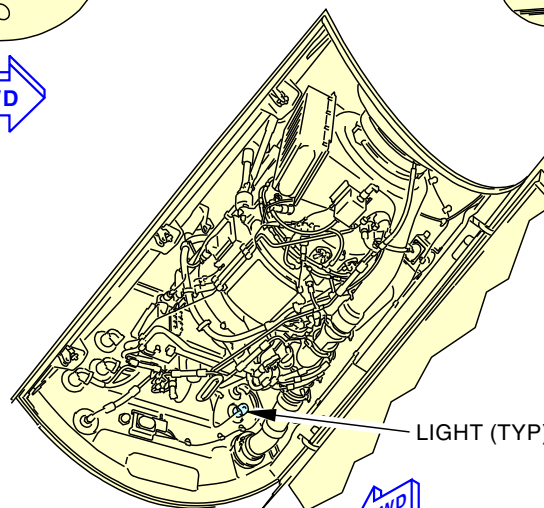


TAIL CONE COMPARTMENT LIGHT



LIGHT SWITCH

ACCESSORY COMPARTMENT LIGHT



LIGHT (TYP)

APU COMPARTMENT LIGHT



2369729 S00061520197_V1

LIGHTS - ACCESSORY COMPARTMENT LIGHTS - INTRODUCTION

**LIGHTS - ACCESSORY COMPARTMENT LIGHTS - FUNCTIONAL DESCRIPTION****Operation**

A two-position toggle switch controls the lights for the tail compartment. A two-position toggle switch controls the lights for the APU compartment.

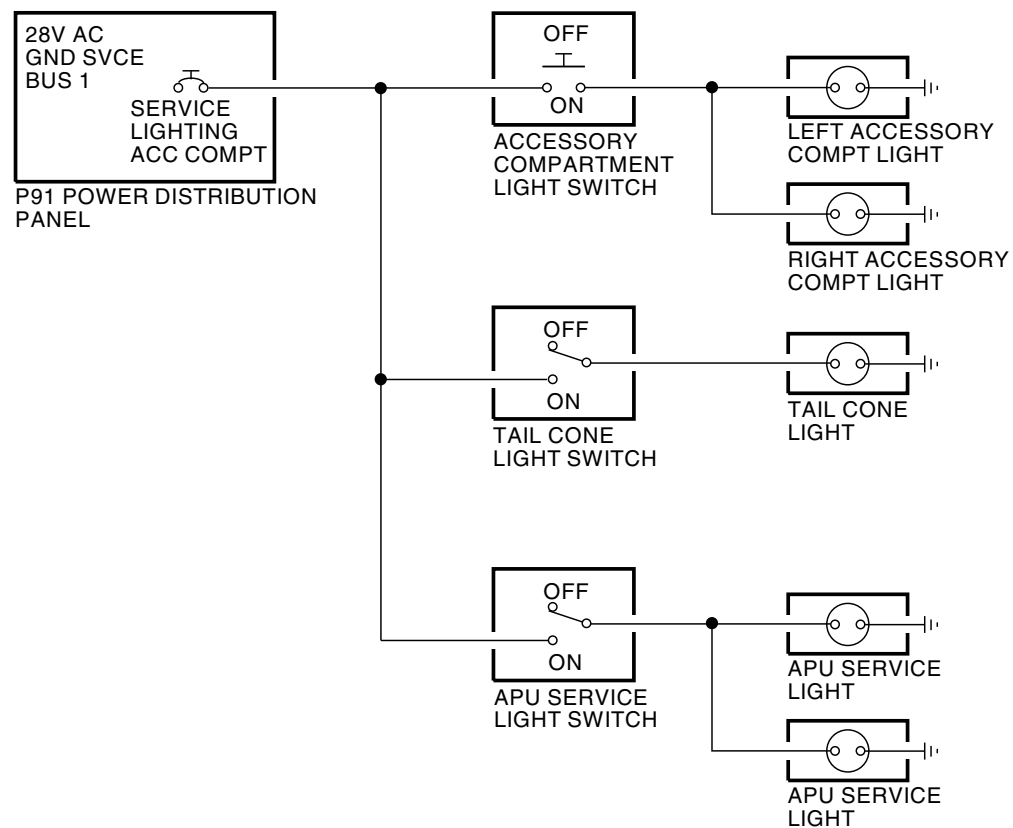
A push-to-operate switch controls the lights for the accessory compartment. You push the switch to make the light come on. Push the switch again to control the light to go off.

Functional Description

The accessory and APU compartment lights are in a parallel circuit. The loss of a lamp will not affect the operation of the other lamps in the circuit. With the switches in the ON position, 28v ac will go directly to each light.

SIA ALL	EFFECTIVITY
	D633AM102-SIA

LIGHTS - ACCESSORY COMPARTMENT LIGHTS - FUNCTIONAL DESCRIPTION



2369730 S00061520199_V1

LIGHTS - ACCESSORY COMPARTMENT LIGHTS - FUNCTIONAL DESCRIPTION

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SIA ALL EFFECTIVITY

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ECCN 9E991 BOEING PROPRIETARY - See title page for details



LIGHTS - CARGO COMPARTMENT LIGHTS - INTRODUCTION

Purpose

The cargo compartment lights supply light to the cargo compartment areas to aid the ground and maintenance crews.

Physical Description

The cargo compartment lights are LED light assemblies.

The LED light assembly consists of an aluminum light housing, polycarbonate lens (Lexan), power control circuit card, and LED circuit card as the light source.

Location

The cargo compartment lights are in these areas:

- Ceiling of cargo compartment
- Top of cargo compartment door frame.

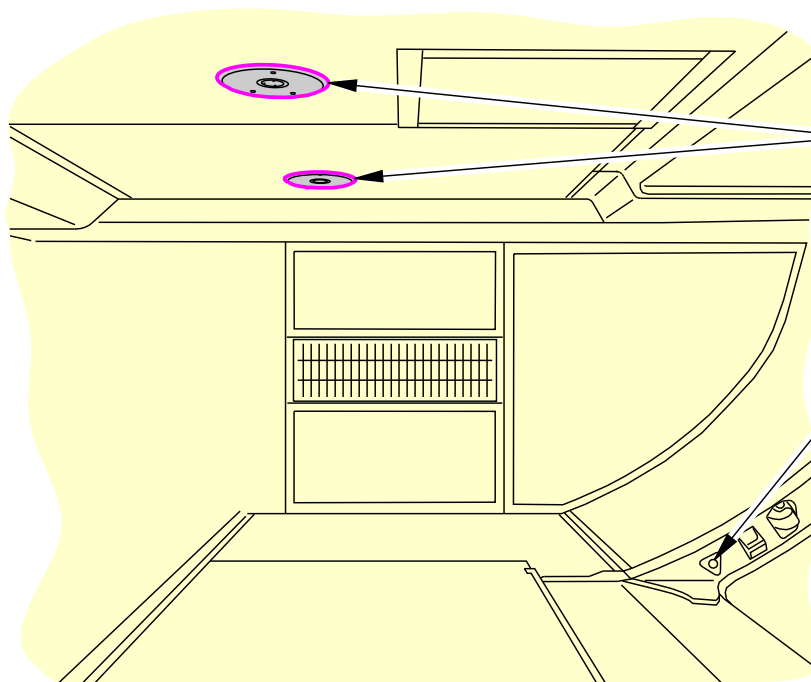
The cargo compartment light control switches are in the forward door frames.

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SIA ALL	EFFECTIVITY
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LIGHTS - CARGO COMPARTMENT LIGHTS - INTRODUCTION



CARGO COMPARTMENT LIGHTS

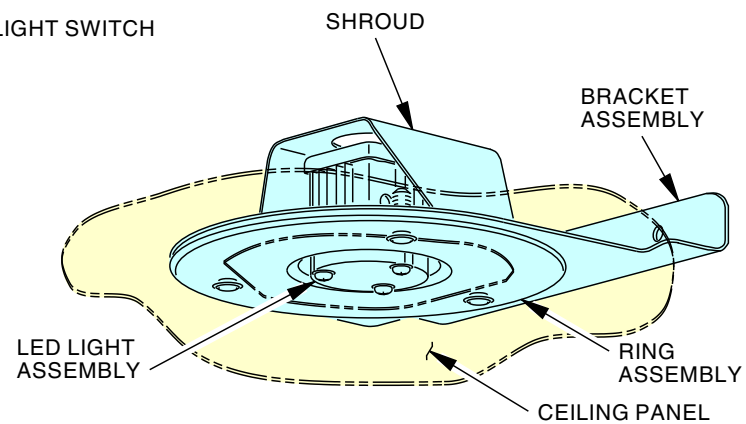
A

LIGHT SWITCH

FWD



FORWARD CARGO COMPARTMENT



CARGO COMPARTMENT LIGHT
(EXAMPLE)

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LIGHTS - CARGO COMPARTMENT LIGHTS - INTRODUCTION

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EFFECTIVITY

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**LIGHTS - CARGO COMPARTMENT LIGHTS - FUNCTIONAL DESCRIPTION****General**

The cargo lights control relay controls the cargo compartment lights. When the cargo door is open and the cargo lights switch is in the ON position, the cargo lights come on. When the cargo door is closed, the cargo lights do not come on.

Functional Description

The cargo compartment lights are in a parallel circuit. The loss of a lamp will not affect the operation of the other lamps in the circuit.

When the cargo lights control relay is not energized, 28v ac goes to the lights. The lights come on. When the cargo lights control relay is energized, 28v ac does not go to the lights. The lights are off.

If the cargo door warning switch is in the not locked position or the proximity switch electronics unit (PSEU) senses a door close failure, the cargo lights will stay off when the door is open.

EFFECTIVITY	
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FORWARD CARGO COMPARTMENT IS SHOWN, AFT CARGO COMPARTMENT IS EQUIVALENT.

LIGHTS - CARGO COMPARTMENT LIGHTS - FUNCTIONAL DESCRIPTION



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ECCN 9E991 BOEING PROPRIETARY - See title page for details



LIGHTS - EXTERIOR - INTRODUCTION

Purpose

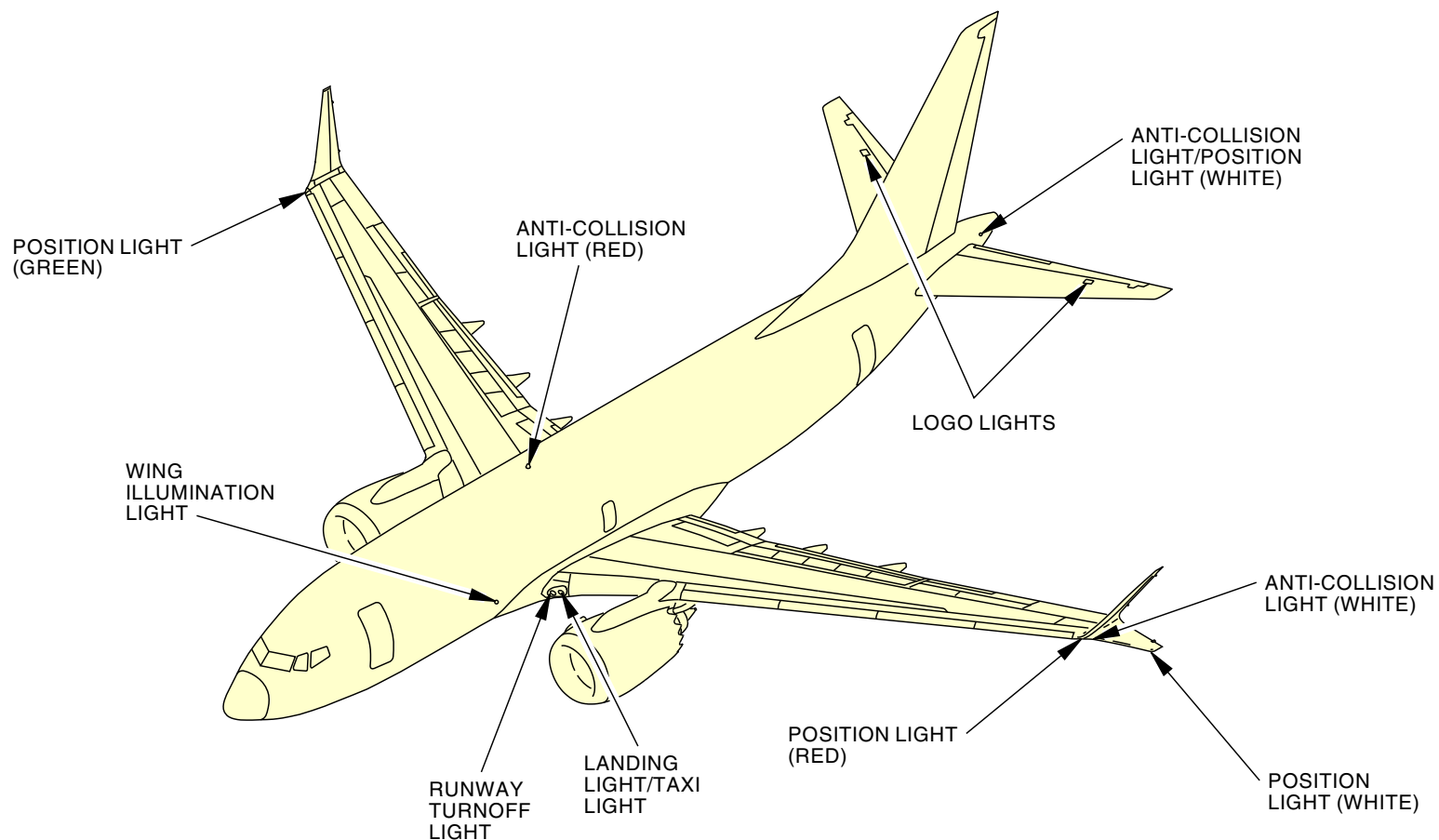
The exterior lights supply light for airplane identification, direction, and to aid in the safe operation of the airplane.

These are the exterior lights on the airplane:

- Wing illumination
- Landing lights
- White anti-collision lights
- Red anti-collision lights
- White, red and green position lights
- Taxi and runway turnoff lights
- Logo lights.

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LIGHTS - EXTERIOR - INTRODUCTION



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LIGHTS - EXTERIOR - INTRODUCTION

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SIA ALL

EFFECTIVITY

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ECCN 9E991 BOEING PROPRIETARY - See title page for details



LIGHTS - EXTERIOR - CONTROL SWITCHES

Purpose

The exterior lighting control switches control the airplane external lights.

Location

The exterior lighting control switches are in the flight compartment on the lower edge of the P5 forward overhead panel.

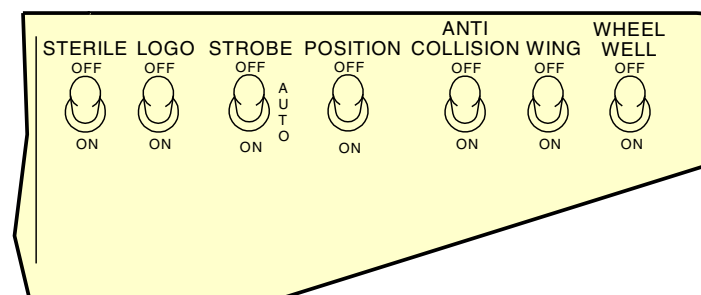
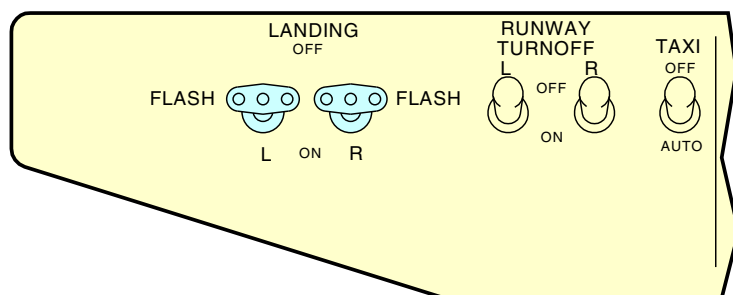
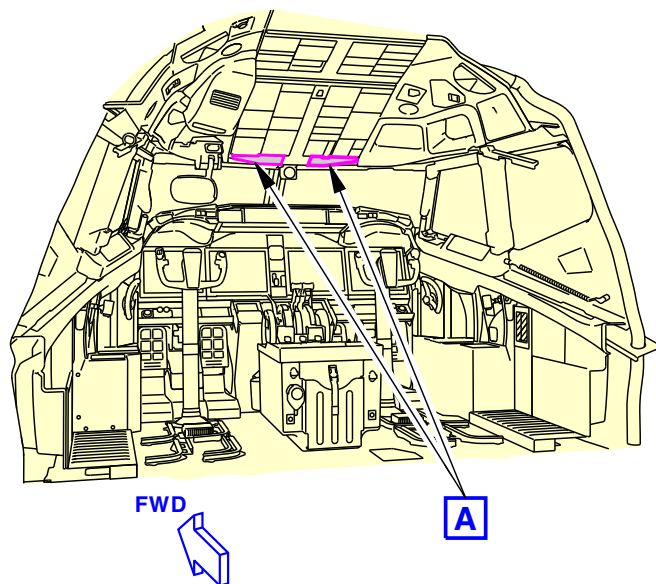
General Description

These are the switches on the P5 that control the external lights:

- Landing
- Runway turnoff
- Taxi
- Logo
- Strobe
- Position
- Anti-collision
- Wing
- Wheel well.

EFFECTIVITY	
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LIGHTS - EXTERIOR - CONTROL SWITCHES



EXTERIOR LIGHTING SWITCHES
(EXAMPLE)

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LIGHTS - EXTERIOR - CONTROL SWITCHES

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LIGHTS - WING ILLUMINATION LIGHTS - INTRODUCTION

Purpose

The wing illumination lights supply light to the leading edge of the wings. At night, this lets the pilots see when ice collects on the on the wing leading edges.

Physical Description

Each wing illumination light has these parts:

- Lens assembly with lens, reflector and captive screws

SIA ALL; AIRPLANES WITH LAMP LIGHTS

- Halogen lamp
- Lamp retainer wire spring
- Lamp socket assembly
- Transformer

SIA ALL; AIRPLANES WITH LED MODULE ASSEMBLY LIGHTS

- LED module assembly

SIA ALL

- Light housing.

Location

The wing illumination lights are on the right and left sides of the fuselage above and forward of the wings.

The control switch is on the P5 forward overhead panel.

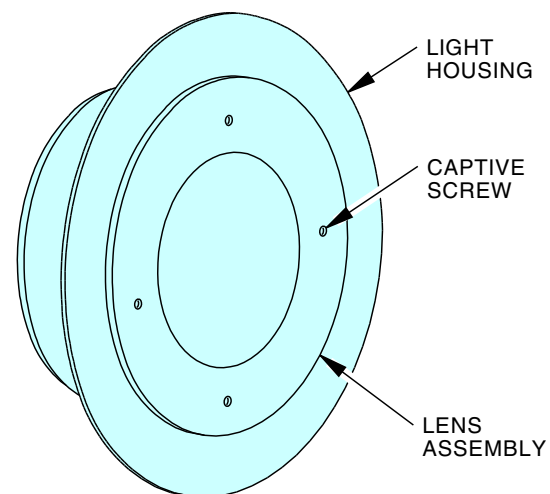
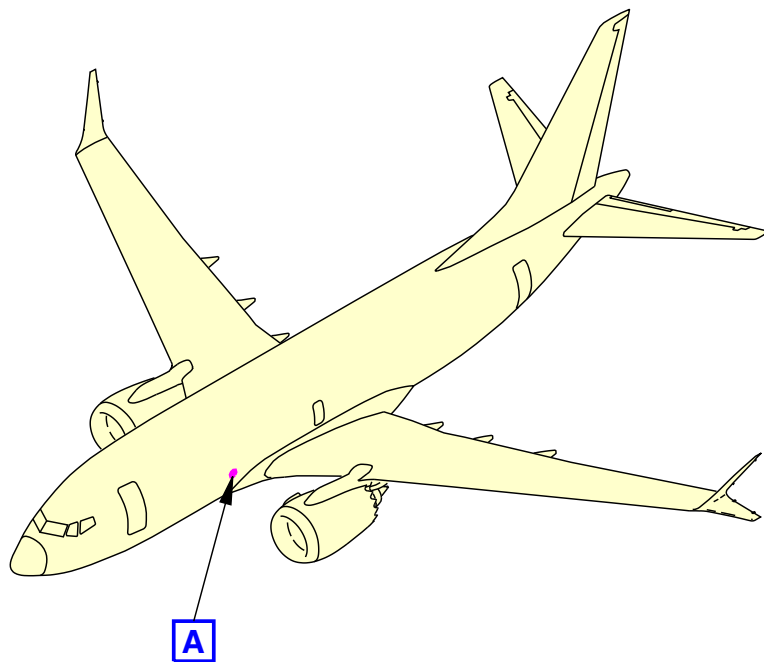
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EFFECTIVITY	
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LIGHTS - WING ILLUMINATION LIGHTS - INTRODUCTION



**WING ILLUMINATION LIGHT
(TYPICAL)**

A

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LIGHTS - WING ILLUMINATION LIGHTS - INTRODUCTION

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**LIGHTS - WING ILLUMINATION LIGHTS - FUNCTIONAL DESCRIPTION****Operation**

You use the wing illumination switch to control the right and left wing illumination lights. This switch is on the exterior lighting panel on the P5 forward overhead panel.

Functional Description

With the two-position toggle switch in the ON position, 115v AC will go to the wing illumination light.

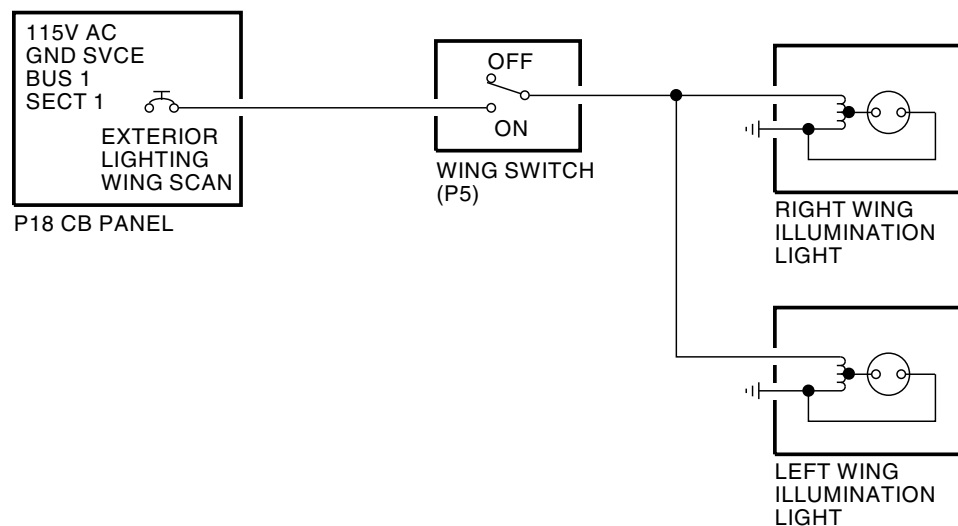
SIA ALL; AIRPLANES WITH LAMP LIGHTS

A fixed step down transformer in the light assembly decreases the voltage to 12 volts.

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	D633AM102-SIA

LIGHTS - WING ILLUMINATION LIGHTS - FUNCTIONAL DESCRIPTION



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LIGHTS - WING ILLUMINATION LIGHTS - FUNCTIONAL DESCRIPTION

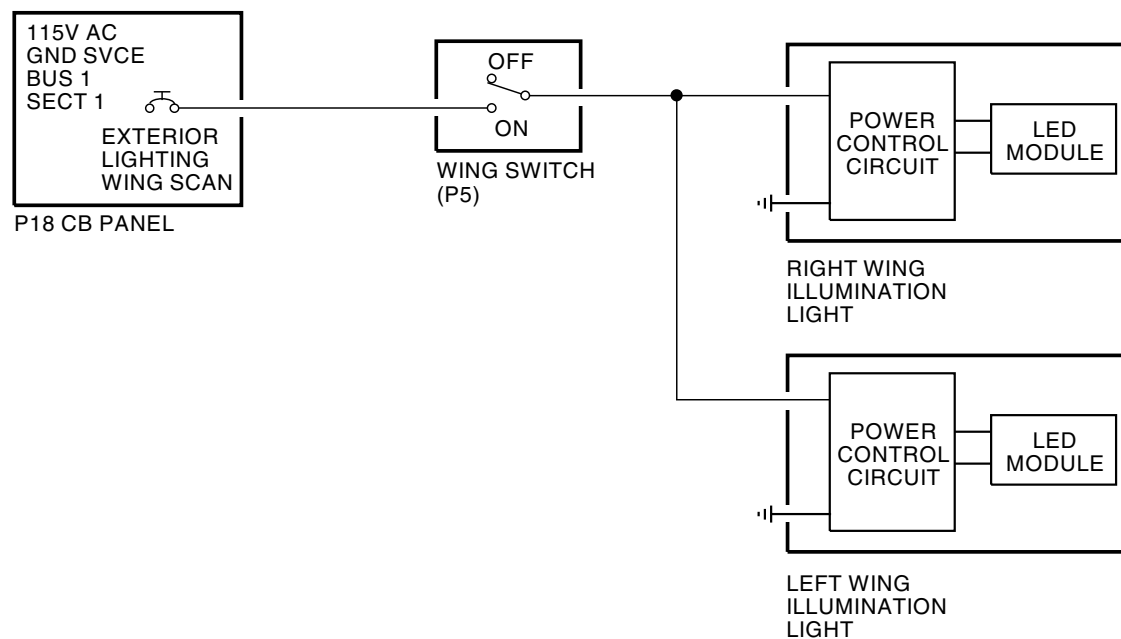
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EFFECTIVITY
SIA ALL; AIRPLANES WITH LAMP LIGHTS

D633AM102-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LIGHTS - WING ILLUMINATION LIGHTS - FUNCTIONAL DESCRIPTION



3012112 S0000785738_V1

LIGHTS - WING ILLUMINATION LIGHTS - FUNCTIONAL DESCRIPTION

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EFFECTIVITY
SIA ALL; AIRPLANES WITH LED MODULE ASSEMBLY LIGHTS

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D633AM102-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

**LIGHTS - LANDING LIGHTS - MAIN ARRAY ASSEMBLY****Purpose**

The main array assemblies let the pilots see the runway during landing, takeoff and taxi.

General Description

The Landing, Takeoff and Runway Turnoff Light (LTRTL) system uses Light Emitting Diode (LED) arrays.

The main LED arrays comprise of 1 inboard and 1 outboard LED array, operating independently for redundancy purposes.

During landing and take-off (landing mode), the main arrays operate at the highest power control level.

During taxi (taxi mode), the main arrays operate at a lower power control level than during landing.

The LTRTL system has been designed to last the life of the airplane. But, there are two variables that decrease the intensity of the LTRTL system:

- The number of LEDs that are serviceable (More LED failures = decreased intensity)
- The total serviceable hours that the LEDs have accumulated over their life (LED intensity degrades over usage time).

The main LED arrays can have multiple LED failures (up to 18) and the array will be functional and photometrically acceptable per design. If there are no hard LED failures, the main LED arrays are designed to provide acceptable runway illumination for night operations. This is over the airplane life given normal LED aging. However, various combinations of LED hard failures (how many LEDs have failed) together with operational age of the LEDs will impact overall photometric performance.

Physical Description

The main array has these parts:

- Inboard array assembly
- Outboard array assembly

- Electrical connectors

Locations

The left main array is in the left wing strakelet. The right main array is in the right wing strakelet.

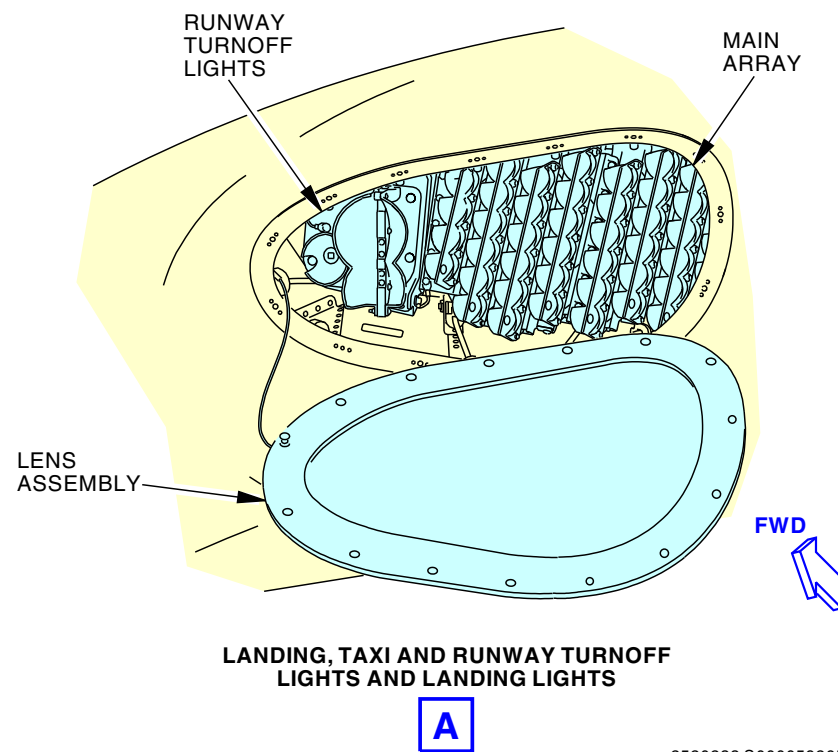
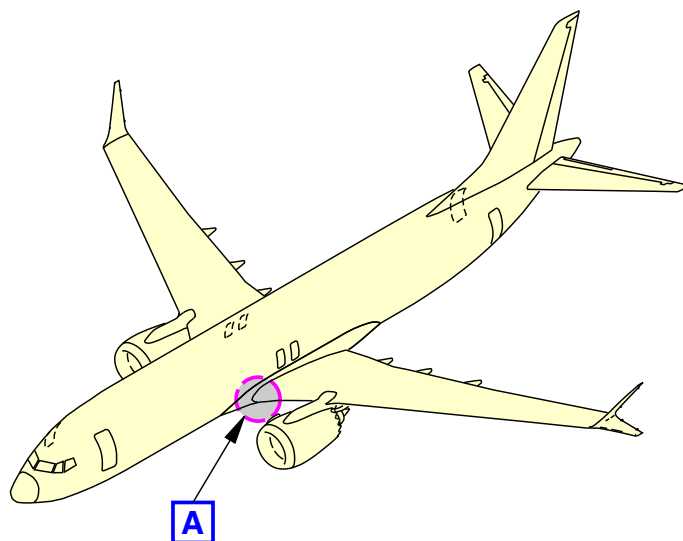
The control switch for the left main array is on the P5 panel. The control switch for the right main array is on the P5 panel.

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EFFECTIVITY	
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LIGHTS - LANDING LIGHTS - MAIN ARRAY ASSEMBLY



**LANDING, TAXI AND RUNWAY TURNOFF
LIGHTS AND LANDING LIGHTS**

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LIGHTS - LANDING LIGHTS - MAIN ARRAY ASSEMBLY

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SIA ALL	EFFECTIVITY
	D633AM102-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

**LIGHTS - LANDING LIGHTS - POWER SUPPLY****General**

The power supply gives power and control to the main array and runway turnoff light assemblies.

Physical Description

The power supply has these parts:

- Power supply module
- Electrical connectors

Locations

The left power supply is behind the left main array, in the left wing strakelet. The right power supply is behind the right main array, in the right wing strakelet.

The control switches for the left power supply are on the P5 panel. The control switches for the right power supply are on the P5 panel.

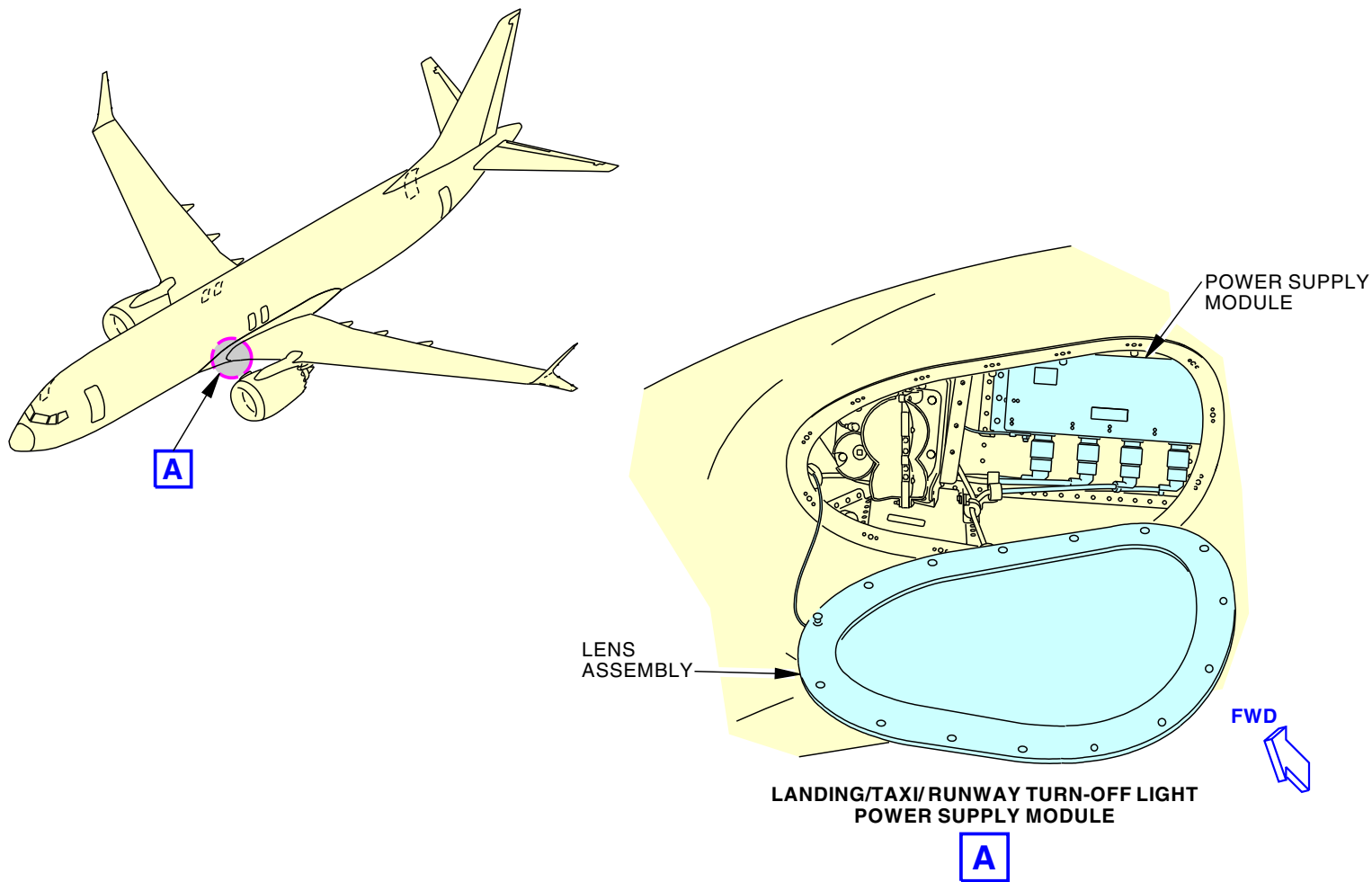
Power Information

The left power supply receives 115V ac (volts alternating current) from XFER BUS 1 SECT 1. The right power supply receives 115V ac from XFER BUS 2 SECT 1.

The left power supply controls the power to the left main array and the left runway turnoff light. The right power supply controls the power to the right main array and the right runway turnoff light.

EFFECTIVITY	
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LIGHTS - LANDING LIGHTS - POWER SUPPLY



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LIGHTS - LANDING LIGHTS - POWER SUPPLY

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**LIGHTS - LANDING LIGHTS - FUNCTIONAL DESCRIPTION****Operation**

There are 3 switches on the P5 panel to control the main arrays. One switch controls the left main array for the landing mode. One switch controls the right main array for the landing mode. One switch controls the left and right main arrays for the taxi mode.

Functional Description

The main arrays do the functions for landing and taxi.

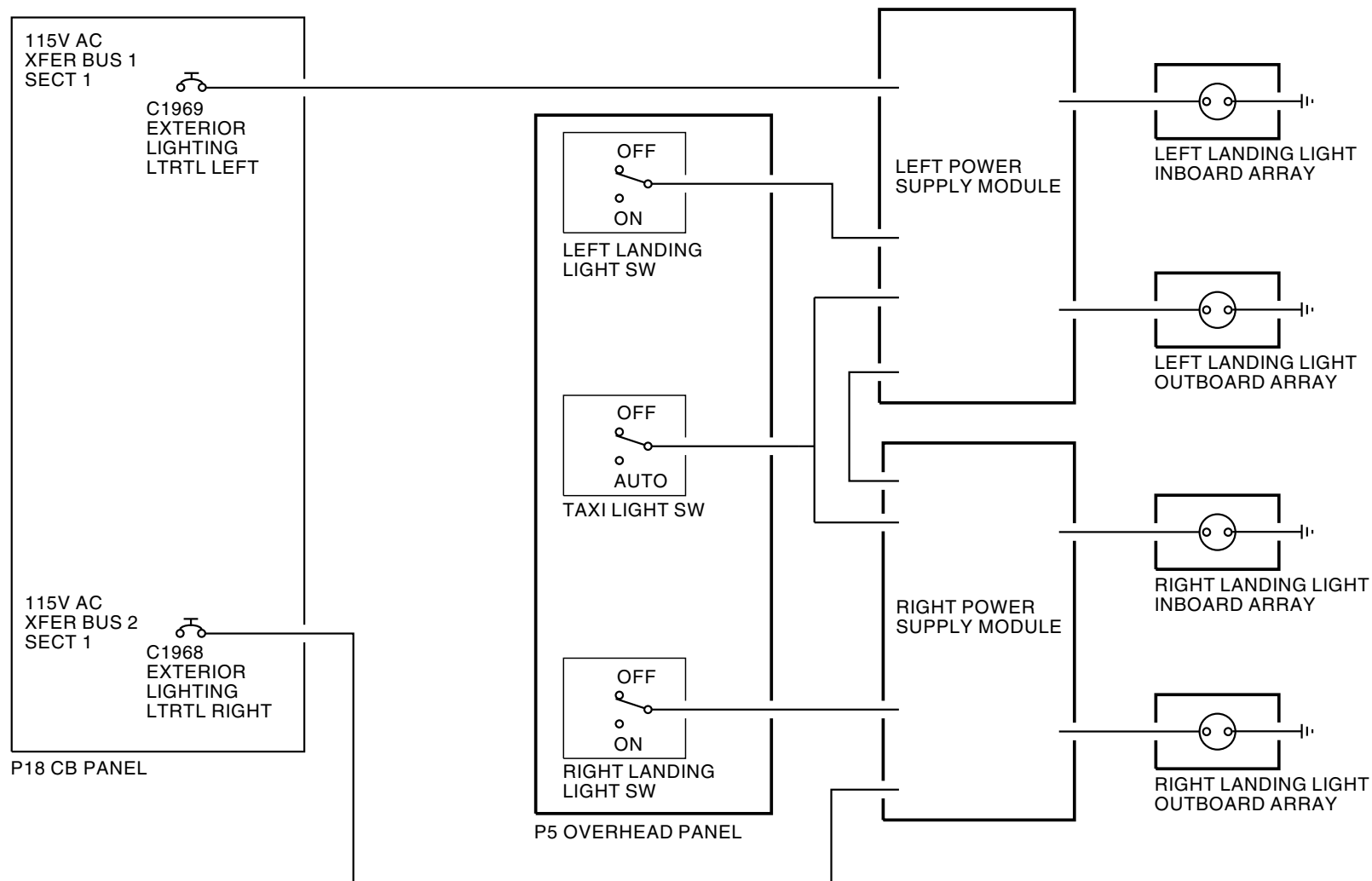
The landing mode operates the main arrays at the highest power control level.

The taxi mode operates the main arrays at a lower power control level than the landing mode.

When the left LANDING switch is in the ON position, the left power supply gives power to the left main array. When the right LANDING switch is in the ON position, the right power supply gives power to the right main array.

When the TAXI switch is in the ON or AUTO position, the left and right power supplies give power to the left and right main arrays but at a lower power control level than the landing mode.

LIGHTS - LANDING LIGHTS - FUNCTIONAL DESCRIPTION



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LIGHTS - LANDING LIGHTS - FUNCTIONAL DESCRIPTION

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EFFECTIVITY

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ECCN 9E991 BOEING PROPRIETARY - See title page for details



LIGHTS - TAXI AND RUNWAY TURNOFF LIGHTS - INTRODUCTION

Purpose

Taxi and runway turnoff lights let the pilots see the taxiway or runway during taxi.

The control switch for the taxi mode is on the P5 panel.

The control switch for the left runway turnoff light is on the P5 panel. The control switch for the right runway turnoff light is on the P5 panel.

General Description

The Landing, Takeoff and Runway Turnoff Lights (LTRTL) system uses Light Emitting Diode (LED) arrays.

The main arrays let the pilots see the taxiway or runway during landing, takeoff and taxi.

During landing and takeoff (landing mode), the main arrays operate at the highest power control level.

During taxi (taxi mode), the main arrays operate at a lower power control level than during landing.

The runway turnoff lights let the pilots see the taxiway or runway during taxi. The left runway turnoff light is pointed approximately 32 degrees left off the forward axis. The right runway turnoff light is pointed approximately 32 degrees right off the forward axis.

Physical Description

The LTRTL system has these components:

- Main array
- Runway turnoff light
- Electrical connectors
- Power supply

Location

The left main array is located in the left wing strakelet. The right main array is located in the right wing strakelet.

The left runway turnoff light is located in the left wing strakelet. It is adjacent to the left main array. The right runway turnoff light is located in the right wing strakelet. It is adjacent to the right main array.

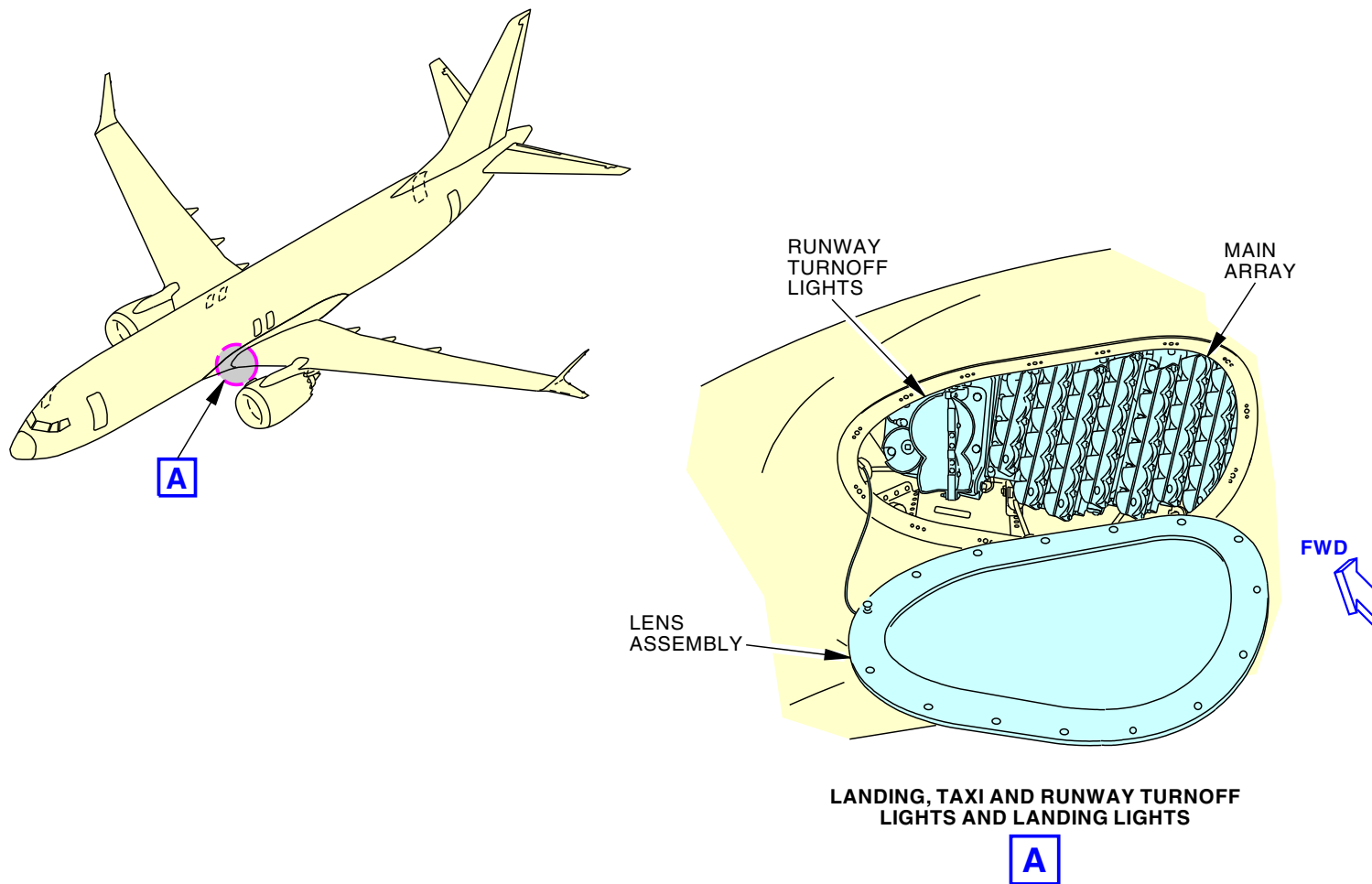
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ECCN 9E991 BOEING PROPRIETARY - See title page for details

LIGHTS - TAXI AND RUNWAY TURNOFF LIGHTS - INTRODUCTION



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LIGHTS - TAXI AND RUNWAY TURNOFF LIGHTS - INTRODUCTION

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SIA ALL

EFFECTIVITY

D633AM102-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LIGHTS - TAXI AND RUNWAY TURNOFF LIGHTS - FUNCTIONAL DESCRIPTION**Functional Description**

There are 3 switches on the P5 panel to control the main arrays and runway turnoff lights. One switch controls the main array for Taxi mode. One switch controls the left runway turnoff light. One switch controls the right runway turnoff light.

When the TAXI switch is in the ON or AUTO position, the power supplies give power to the main arrays, but at a lower power level than the landing mode.

When the left runway turnoff switch is in the ON position, the left power supply gives power to the left runway turnoff light. When the right runway turnoff switch is in the ON position, the right power supply gives power to the right runway turnoff light.

The taxi light turns off automatically when these things occur:

- Taxi light switch in AUTO
- Nose landing gear is NOT in the down and locked position.

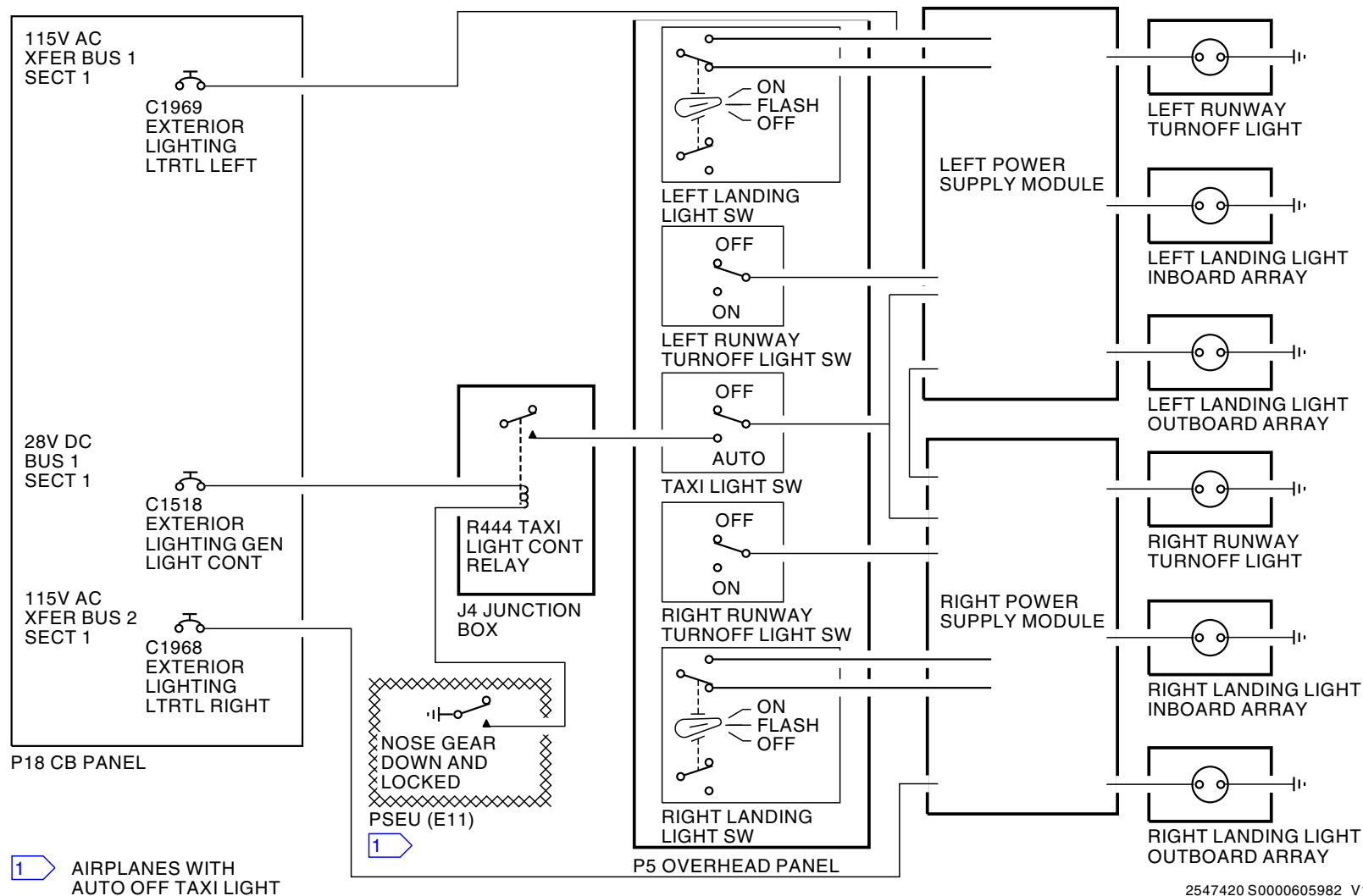


DO NOT LOOK DIRECTLY AT LIGHTS. HIGH INTENSITY OF LIGHTS CAN CAUSE EYE DAMAGE.



DO NOT OPERATE THE LIGHTS FOR MORE THAN FIVE MINUTES. ALLOW AN EQUAL AMOUNT OF TIME FOR THE LIGHTS TO BE OFF AS THEY WERE ON. THE CONTINUED OPERATION AND HEAT OF THE LIGHTS CAN DECREASE THE LIFE OF THE LAMPS.

LIGHTS - TAXI AND RUNWAY TURNOFF LIGHTS - FUNCTIONAL DESCRIPTION



LIGHTS - TAXI AND RUNWAY TURNOFF LIGHTS - FUNCTIONAL DESCRIPTION

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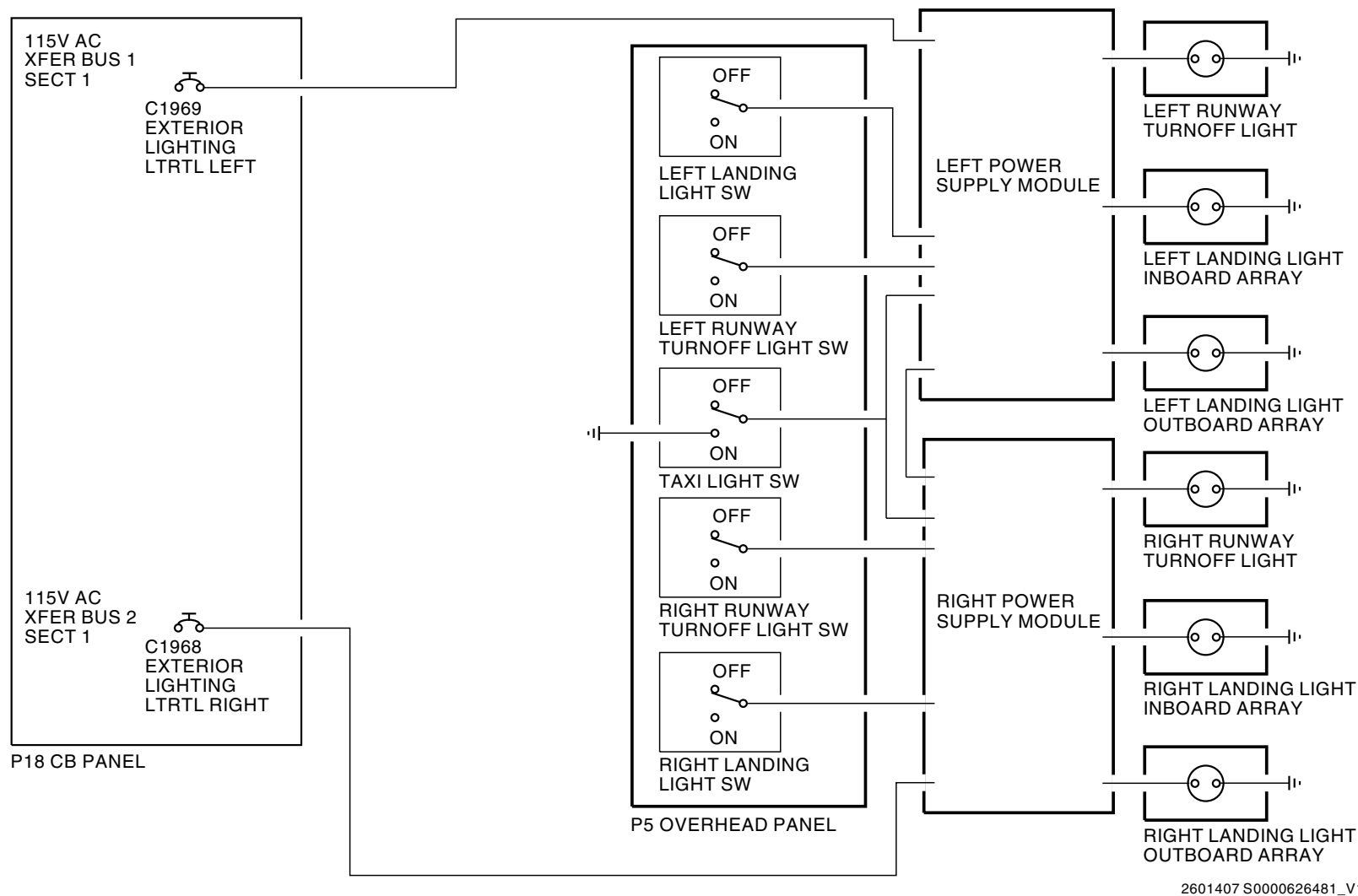
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EFFECTIVITY

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ECCN 9E991 BOEING PROPRIETARY - See title page for details

LIGHTS - TAXI AND RUNWAY TURNOFF LIGHTS - FUNCTIONAL DESCRIPTION



LIGHTS - TAXI AND RUNWAY TURNOFF LIGHTS - FUNCTIONAL DESCRIPTION

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ECCN 9E991 BOEING PROPRIETARY - See title page for details



LIGHTS - POSITION LIGHTS - INTRODUCTION

Purpose

The position lights show this information to persons in other airplanes or on the ground:

- Airplane position
- Direction
- Attitude.

Physical Description

The position lights are red, green, and white Light Emitting Diode (LED) light assemblies.

- The left forward position light is red.
- The right forward position light is green.
- The left and right aft marker lights are white.
- The tailcone position/anti-collision lights are white.

Location

There are position lights in each wing and in the tailcone.

- A forward position light is installed at the outboard leading edge of each wing at the interface between the wing and the winglet.
- An aft marker light is installed at the outboard edge of the lower blade of each winglet.
- A tailcone position/anti-collision light is installed on the left and right side of the tailcone.

The control switch for the position lights is on the P5 forward overhead panel.

Operation

You use the position lights switch on the P5 forward overhead panel to control the operation of the position lights.

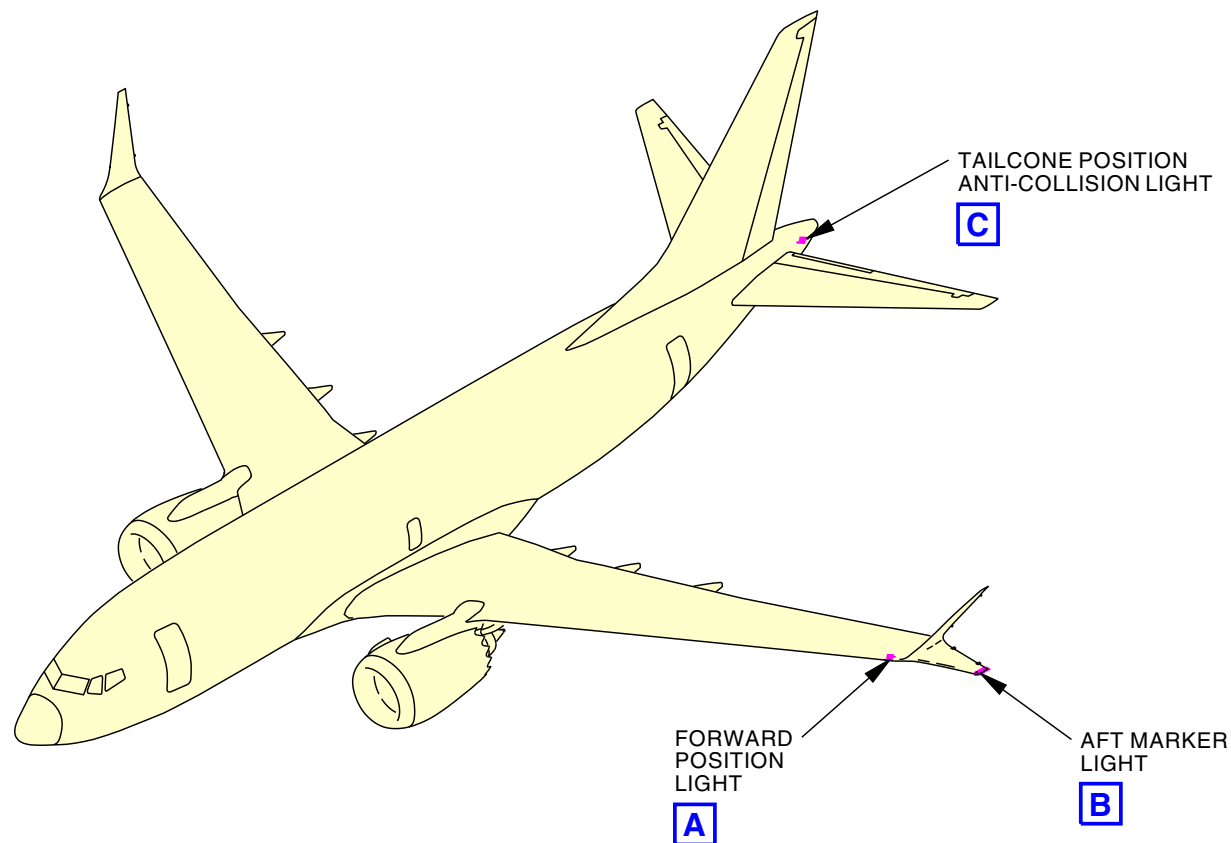
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ECCN 9E991 BOEING PROPRIETARY - See title page for details

LIGHTS - POSITION LIGHTS - INTRODUCTION



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LIGHTS - POSITION LIGHTS - INTRODUCTION

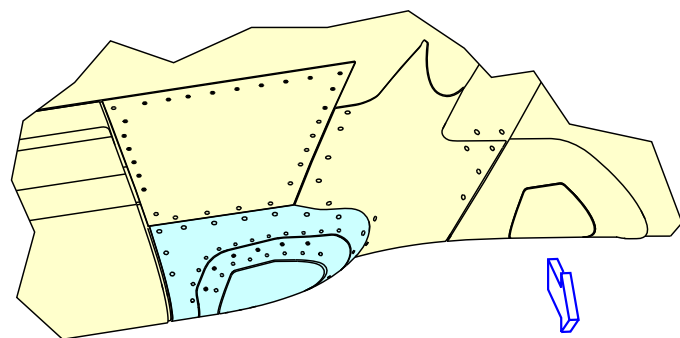
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	D633AM102-SIA

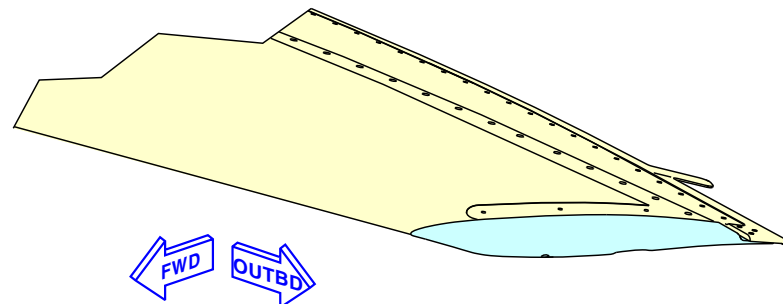
ECCN 9E991 BOEING PROPRIETARY - See title page for details

LIGHTS - POSITION LIGHTS - INTRODUCTION



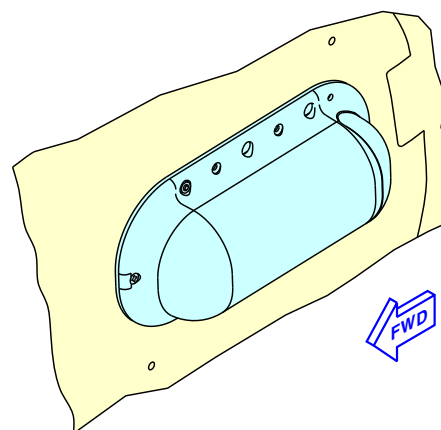
**FORWARD POSITION LIGHT
(LEFT SIDE SHOWN, RIGHT SIDE OPPOSITE)**

A



**AFT MARKER LIGHT
(LEFT SIDE SHOWN, RIGHT SIDE OPPOSITE)**

B



**TAILCONE POSITION/ANTI-COLLISION LIGHT
(LEFT SIDE SHOWN, RIGHT SIDE OPPOSITE)**

C

LIGHTS - POSITION LIGHTS - INTRODUCTION

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LIGHTS - POSITION LIGHTS - FUNCTIONAL DESCRIPTION

Functional Description

With the position lights switch in the ON position, 115v ac goes to the step down transformers. The step down transformers decrease the 115v ac to an operating voltage for the position lights.

The Light Emitting Diode (LED) light configurations have an end-of-life feature. When a light reaches its calculated end of life, the light will turn on for 3 seconds as soon as power is applied, and then turn off and remain off even with power applied. This function will repeat every time the power is reapplied.

Position Lights

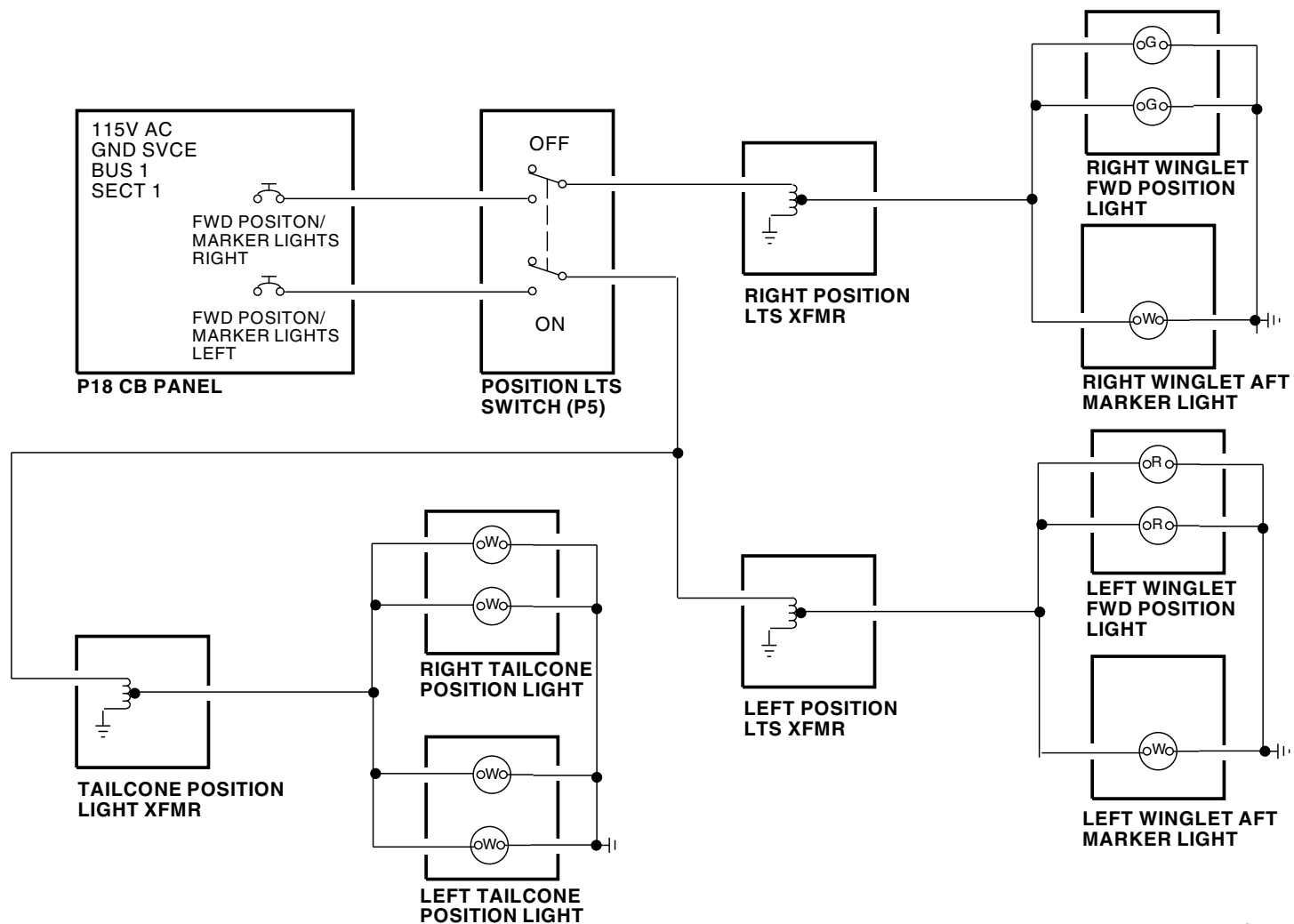
The right and left Winglet FWD Position Lights have two LED modules.

The right and left Tailcone Position Lights have one LED module with two LED light strings.

Each LED module is replaceable.

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LIGHTS - POSITION LIGHTS - FUNCTIONAL DESCRIPTION



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LIGHTS - POSITION LIGHTS - FUNCTIONAL DESCRIPTION

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LIGHTS - ANTI-COLLISION LIGHTS - INTRODUCTION

Purpose

The anti-collision lights make the airplane easier to see in the air and on the ground.

Physical Description

There are six anti-collision lights on the airplane.

SIA 001-014

- The two red anti-collision lights have a xenon flashtube with a parabolic reflector to control the emitted light.

SIA 015-999

- The two red anti-collision lights are Light Emitting Diode (LED) light assemblies.

SIA ALL

- The four white anti-collision lights are LED light assemblies.

Location

There are anti-collision lights on the fuselage, the wings, and the tailcone.

- A red anti-collision light is installed on the top and bottom of the fuselage.
- A white anti-collision light is installed in the lower blade of each winglet.
- A white tailcone position/anti-collision light is installed on the left and right side of the tailcone.

The control switches for the anti-collision lights are on the P5 forward overhead panel.

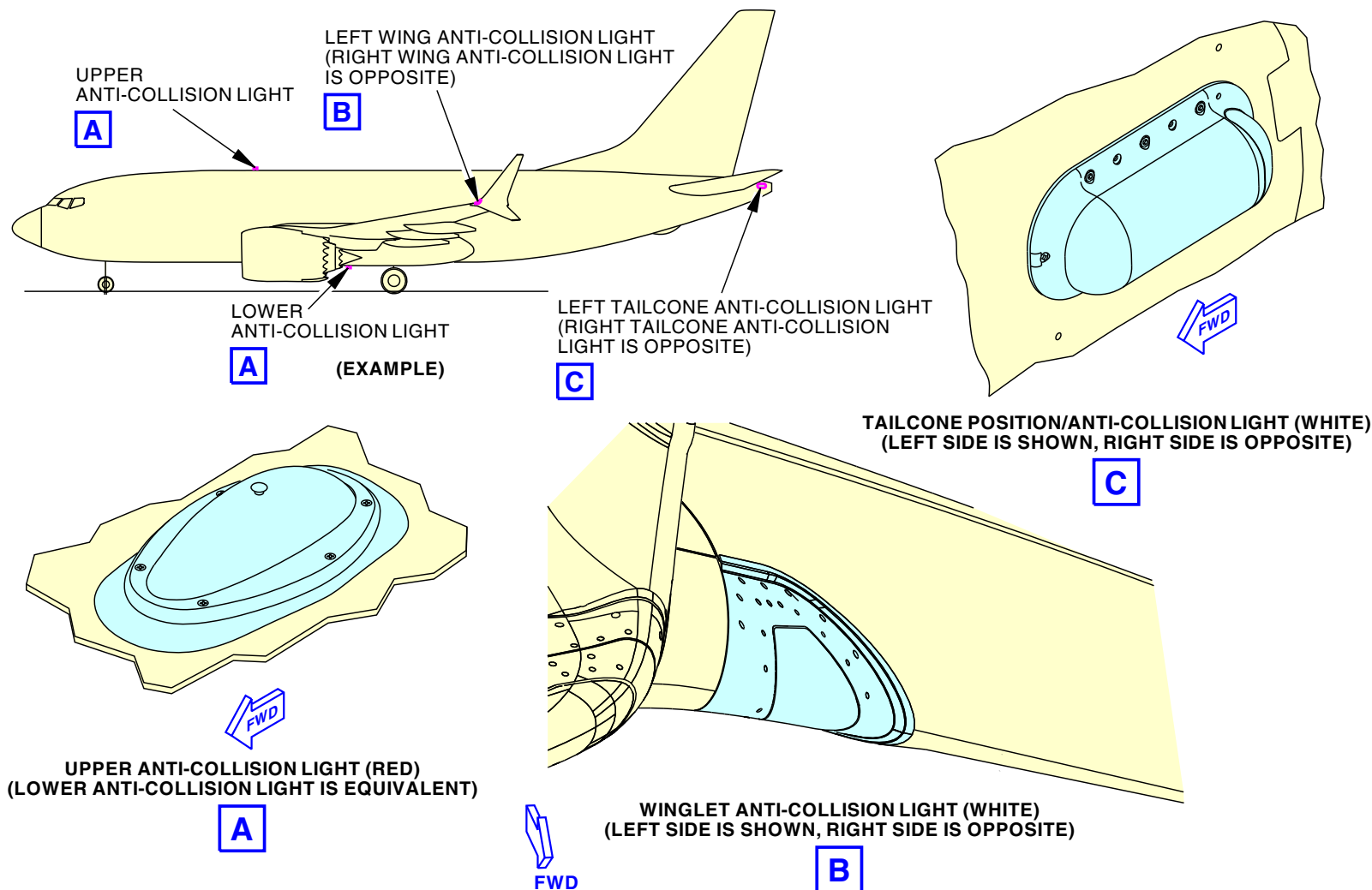
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EFFECTIVITY	
SIA ALL	

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LIGHTS - ANTI-COLLISION LIGHTS - INTRODUCTION



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LIGHTS - ANTI-COLLISION LIGHTS - INTRODUCTION

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SIA ALL	EFFECTIVITY
D633AM102-SIA	

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**LIGHTS - ANTI-COLLISION LIGHTS (WHITE) - FUNCTIONAL DESCRIPTION****Operation**

Control switches for the white anti-collision lights are on the P5 forward overhead panel. There is a control switch for the white (winglet and tailcone) anti-collision system. The white anti-collision lights flash at a rate of 42 +3/-2 times per minute. The white anti-collision lights in the same system flash at the same time.

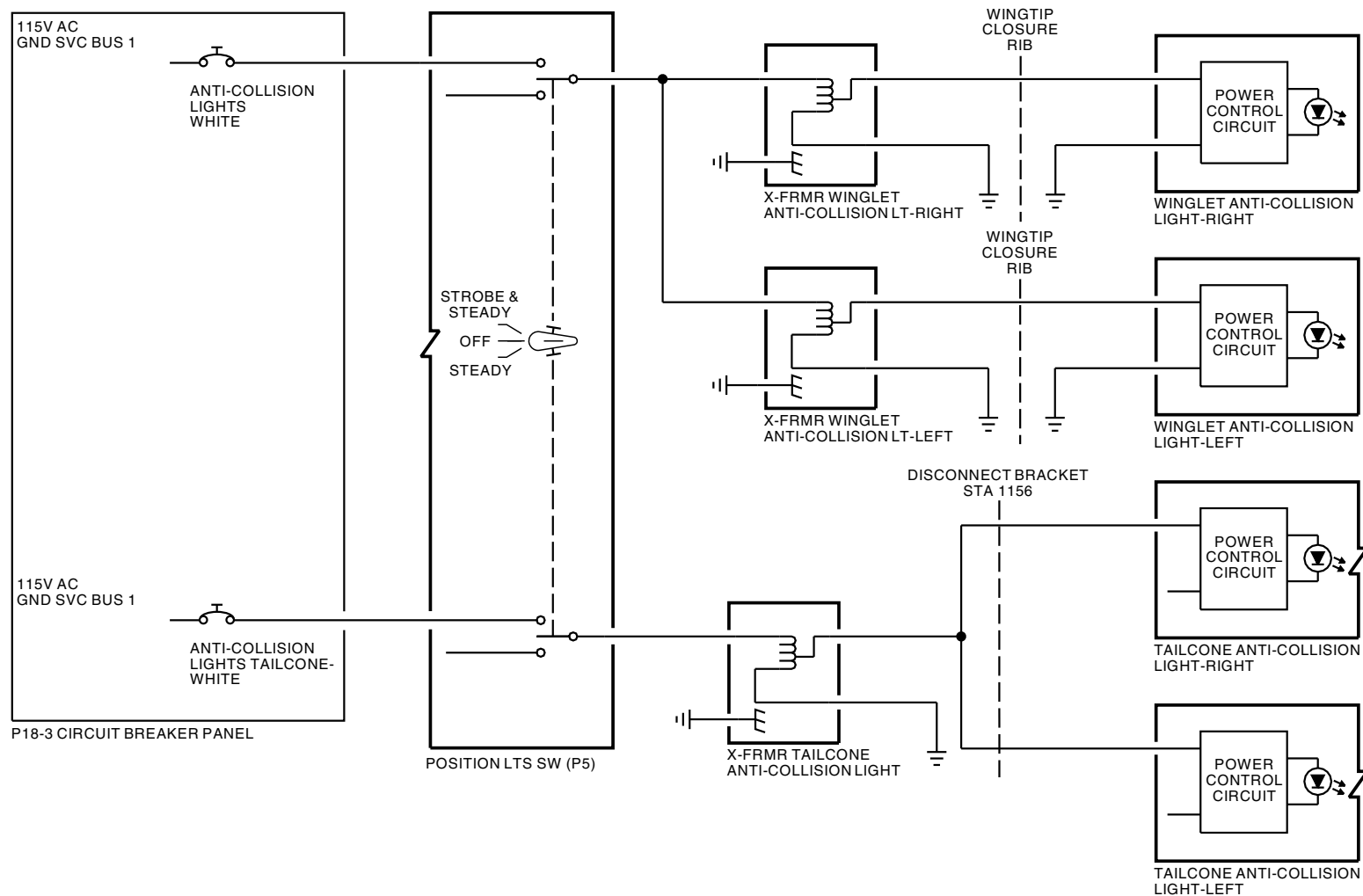
Functional Description

With the control switch in the STROBE & STEADY position, 115v ac goes to the step down transformers. The step down transformers decrease the 115v ac to an operating voltage for the position lights.

The Light Emitting Diode (LED) light configurations have an end-of-life feature. When a light reaches its calculated end of life, the light will turn on as soon as power is applied, and then turn off and remain off even with power applied. The winglet anti-collision lights will turn on for 5 seconds before they turn off. The tailcone position/anti-collision lights will turn on for 3 seconds before they turn off. This function will repeat every time the power is reapplied.

SIA ALL	EFFECTIVITY

LIGHTS - ANTI-COLLISION LIGHTS (WHITE) - FUNCTIONAL DESCRIPTION



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LIGHTS - ANTI-COLLISION LIGHTS (WHITE) - FUNCTIONAL DESCRIPTION

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SIA ALL

EFFECTIVITY

D633AM102-SIA

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**LIGHTS - ANTI-COLLISION LIGHTS (RED) - FUNCTIONAL DESCRIPTION****Operation****SIA 001-014**

The control switch for the red anti-collision lights is on the P5 forward overhead panel. The red anti-collision lights flash at a rate of 40–45 times per minute. The flash rate is controlled by the trigger pulse rate from an external power supply.

SIA 015-999

The control switch for the red anti-collision lights is on the P5 forward overhead panel. The red anti-collision lights flash at a rate of 40–45 times per minute. The flash rate is controlled by the trigger pulse rate from an internal power supply.

SIA ALL**Functional Description****SIA 001-014**

- With the control switch in the ON position, 115v ac goes to the power supplies for each anti-collision light. The power supplies supply the DC input voltage and trigger pulses to the upper and lower anti-collision lights.

SIA 015-999

- With the control switch in the ON position, 115v ac go directly to each upper and lower Light Emitting Diode (LED) Anti-Collision Lights.

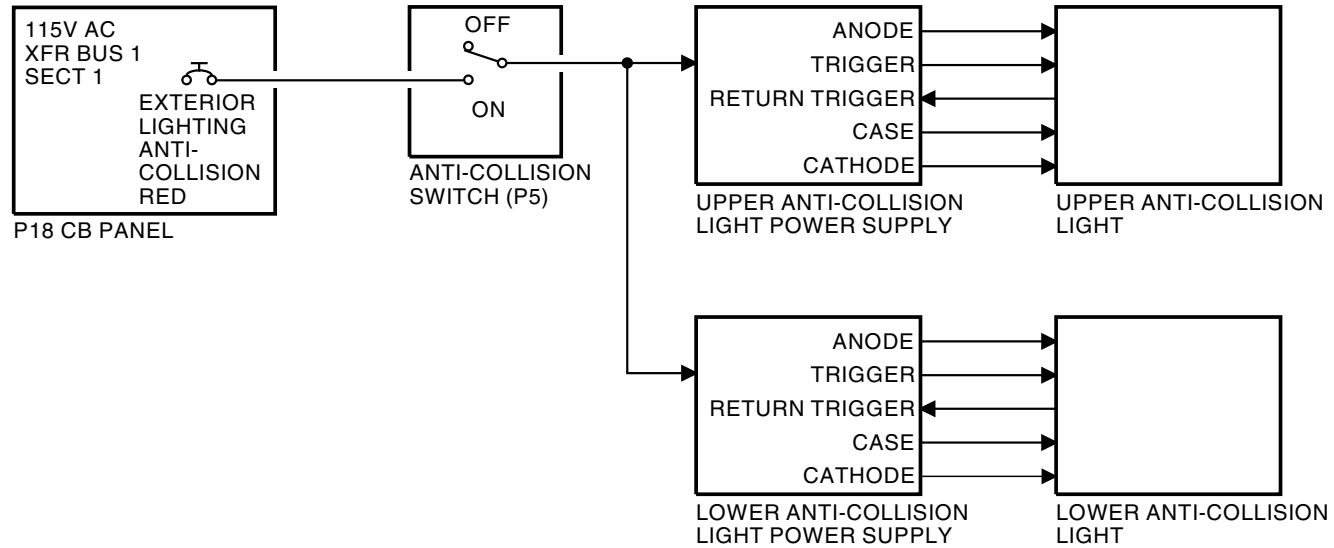
SIA ALL**33-44-00**

EFFECTIVITY	
SIA ALL	

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LIGHTS - ANTI-COLLISION LIGHTS (RED) - FUNCTIONAL DESCRIPTION



2369746 S00061520241_V1

LIGHTS - ANTI-COLLISION LIGHTS (RED) - FUNCTIONAL DESCRIPTION

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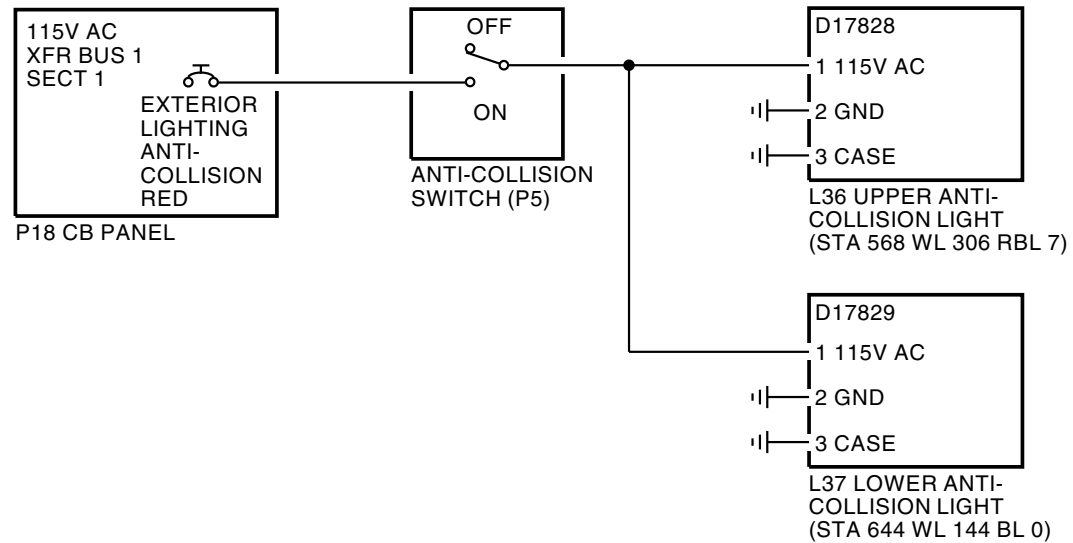
EFFECTIVITY
SIA 001-014

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D633AM102-SIA

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LIGHTS - ANTI-COLLISION LIGHTS (RED) - FUNCTIONAL DESCRIPTION



2888866 S0000687049_V2

LIGHTS - ANTI-COLLISION LIGHTS (RED) - FUNCTIONAL DESCRIPTION

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EFFECTIVITY
SIA 015-999

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LIGHTS - LOGO LIGHTS - INTRODUCTION

Purpose

The logo lights help show the airline logo or emblem on the vertical stabilizer.

Physical Description

These are the components of the lights:

- Light housing assembly
- Lens
- Lens retainer

SIA ALL; AIRPLANES WITH LAMP LIGHTS

- Halogen lamp

SIA ALL; AIRPLANES WITH LED MODULE ASSEMBLY LIGHTS

- LED module assembly

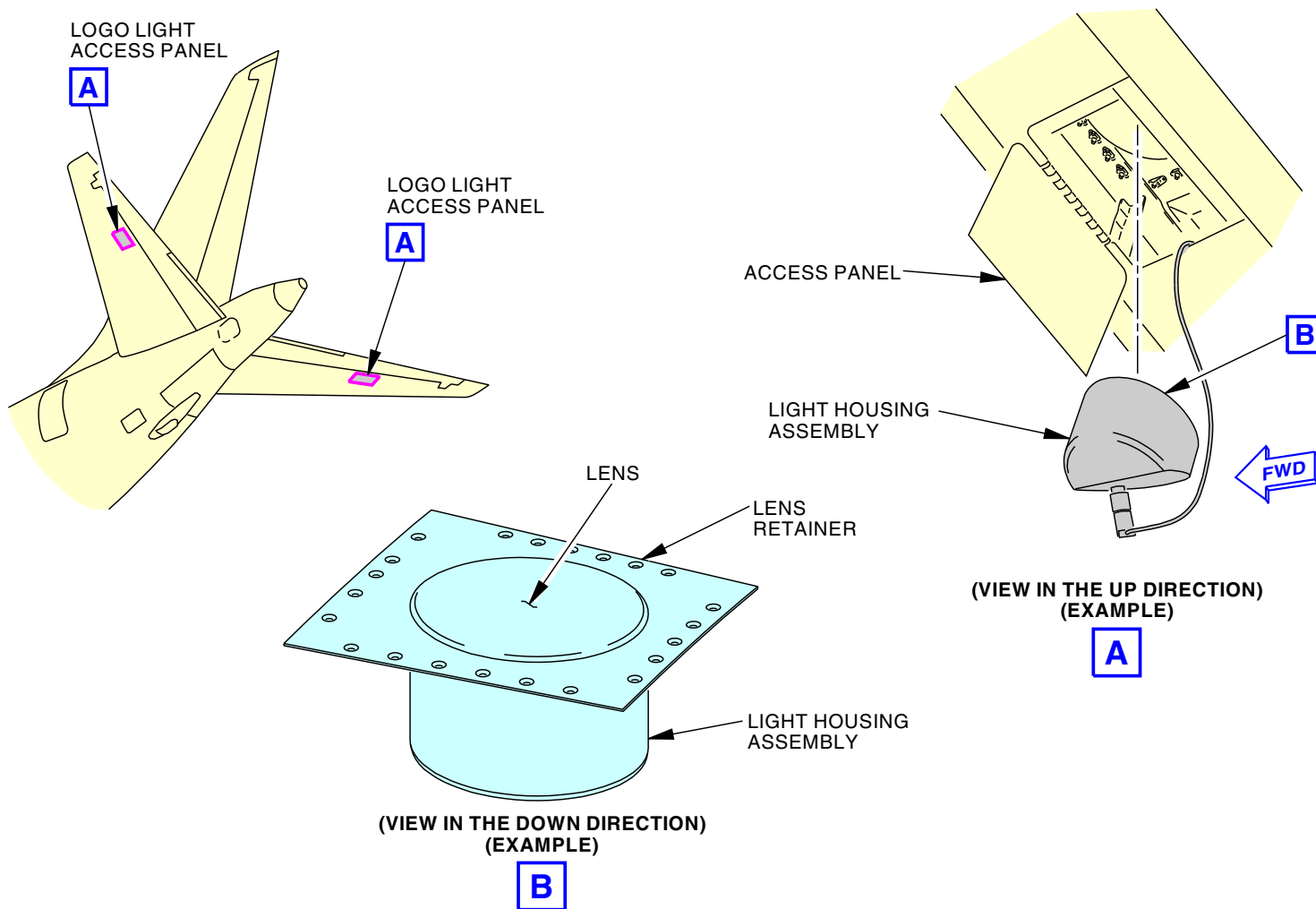
SIA ALL

Location

The lights are on the top surface of each horizontal stabilizer. They are near the leading edge.

EFFECTIVITY	
SIA ALL	

LIGHTS - LOGO LIGHTS - INTRODUCTION



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LIGHTS - LOGO LIGHTS - INTRODUCTION



LIGHTS - LOGO LIGHTS - FUNCTIONAL DESCRIPTION

Operation

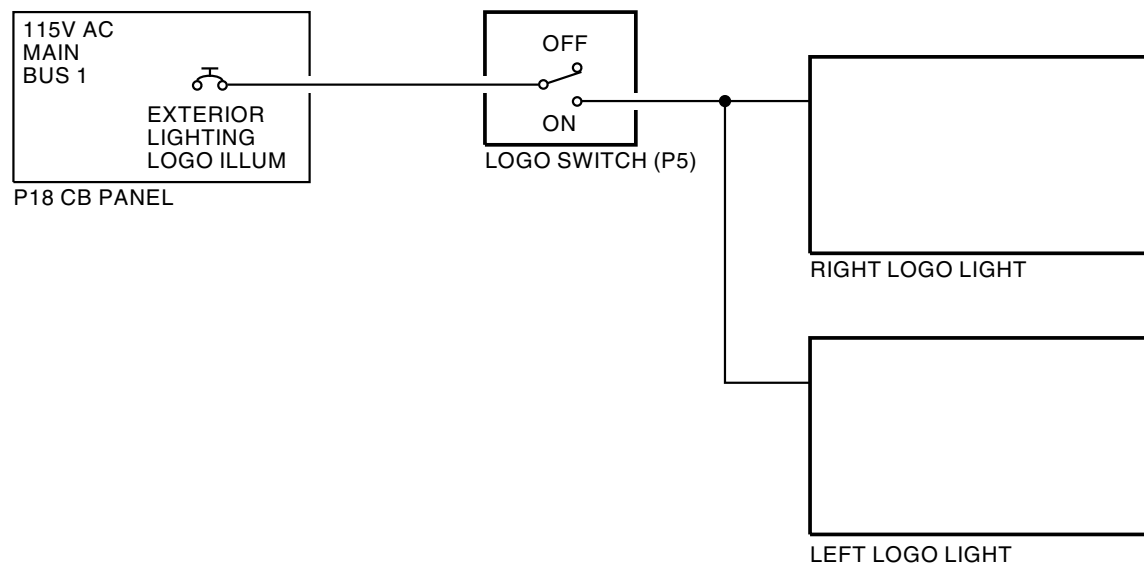
Use the logo light switch on the P5 forward overhead panel to control the logo lights operation.

Functional Description

When the logo lights switch is in the ON position, 115V AC goes to the logo light.

SIA ALL	EFFECTIVITY
	D633AM102-SIA

LIGHTS - LOGO LIGHTS - FUNCTIONAL DESCRIPTION



2369750 S00061520253_V2

LIGHTS - LOGO LIGHTS - FUNCTIONAL DESCRIPTION

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D633AM102-SIA

ECCN 9E991 BOEING PROPRIETARY - See title page for details

**LIGHTS - EMERGENCY LIGHTS - INTRODUCTION****Purpose**

The emergency lights system lights areas inside and outside of the airplane.
The emergency lights also show the exit paths.

The emergency lights operate at these times:

- When the emergency lights system is ON
- When there is a loss of airplane DC power and the P5 Forward Overhead Panel EMER EXIT LIGHTS switch is in the ARMED position

Location

Control switches are at these locations:

- P5 Forward Overhead Panel in the flight compartment
- P14 AFT Attendant Control Panel (ACP)

General Description

The emergency lights system has these components:

- Exit Signs
- Aisle Lights
- Floor Proximity Lights
- Slide Lights
- Power Supplies.

Abbreviations and Acronyms

- ac - Alternating Current
- ACP - Attendant Control Panel
- BSI - Boeing Sky Interior
- dc - Direct Current
- FWD - Forward
- LED - Light Emitting Diode
- OWE - Over Wing Exit

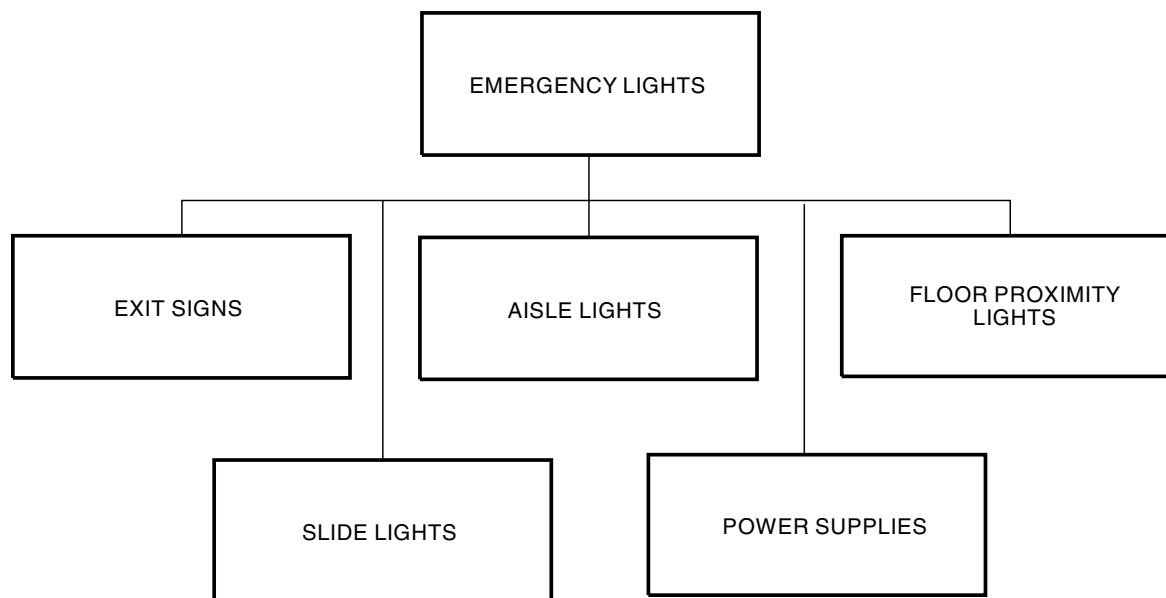
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EFFECTIVITY	
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LIGHTS - EMERGENCY LIGHTS - INTRODUCTION



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LIGHTS - EMERGENCY LIGHTS - INTRODUCTION

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LIGHTS - EMERGENCY LIGHTS - INTRODUCTION

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LIGHTS - EMERGENCY LIGHTS - EXIT SIGNS

Purpose

The exit sign lights come on to show the location of the exits.

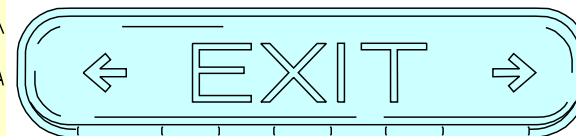
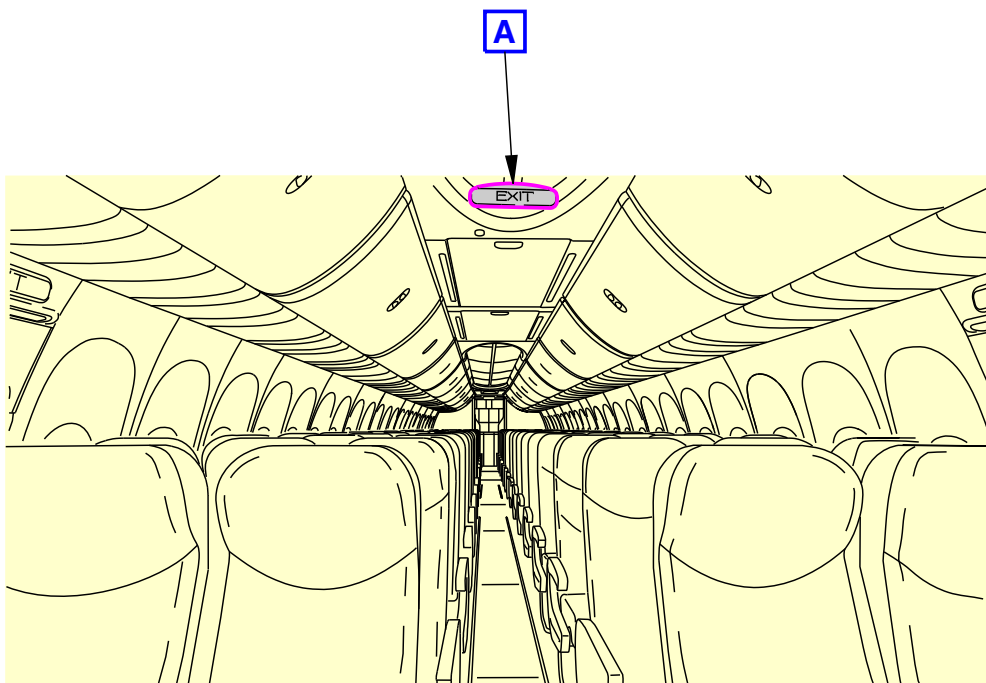
Location

Exit signs are at these places:

- Passenger door
- Service door
- Overwing hatch
- Aisle near the ceiling

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LIGHTS - EMERGENCY LIGHTS - EXIT SIGNS



EXIT SIGN
(TYPICAL)

A

PASSENGER COMPARTMENT

LIGHTS - EMERGENCY LIGHTS - EXIT SIGNS

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33-51-00



LIGHTS - EMERGENCY LIGHTS - AISLE LIGHTS

Purpose

The aisle lights supply light to the general aisle area. They help passengers and crew see in an emergency.

Physical Description

The aisle lights have these components:

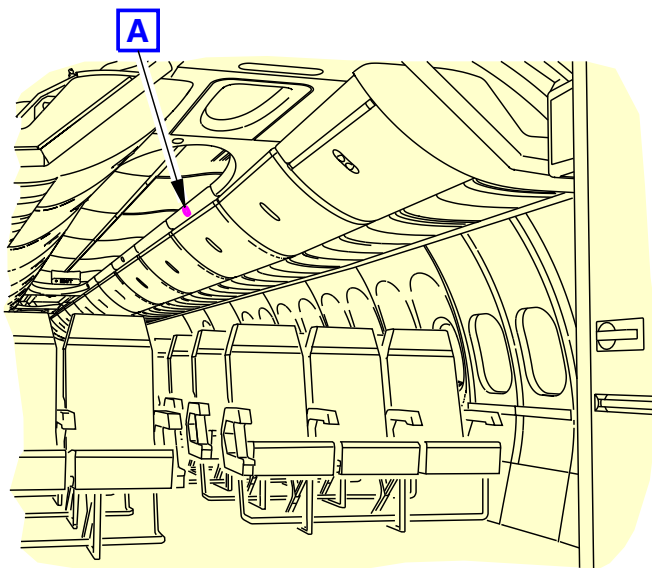
- Lens
- Emergency Aisle Light (EAL) assembly
- Electrical connector

Location

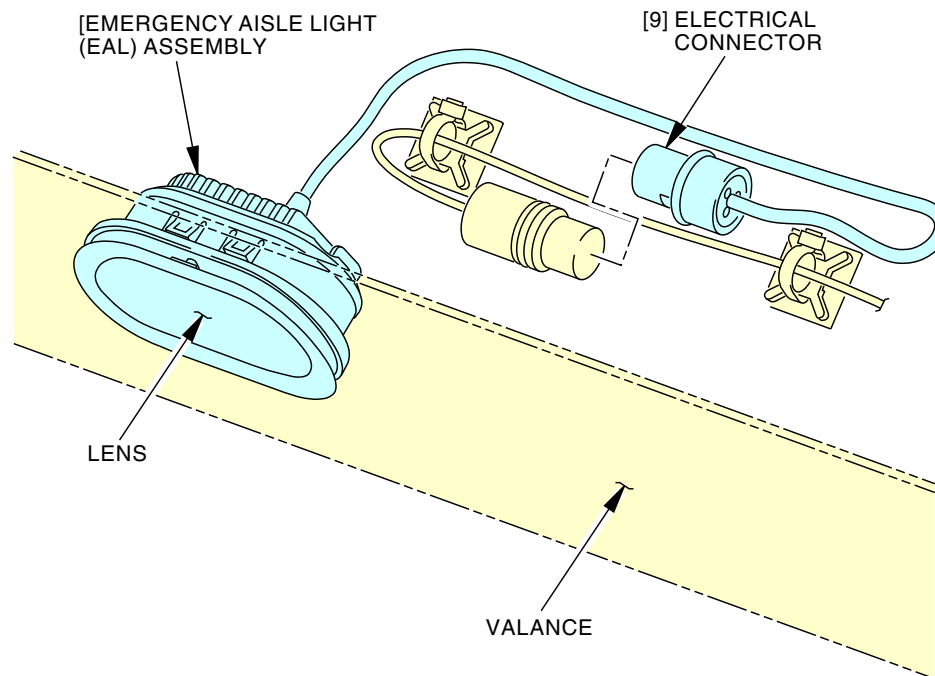
The aisle lights are in the valance throughout the passenger cabin.

EFFECTIVITY	
SIA ALL	

LIGHTS - EMERGENCY LIGHTS - AISLE LIGHTS



PASSENGER COMPARTMENT



**EMERGENCY AISLE LIGHT (EAL)
(EXAMPLE)**

A

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LIGHTS - EMERGENCY LIGHTS - AISLE LIGHTS

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LIGHTS - EMERGENCY LIGHTS - FLOOR PROXIMITY LIGHTS

Purpose

The floor proximity lighting supplies light at the floor level to show the passengers and crew the direction to all of the exits.

Physical Description

The floor proximity lighting has these components:

- Lens
- Lamps
- Photo luminescent strip
- Electrical connectors.

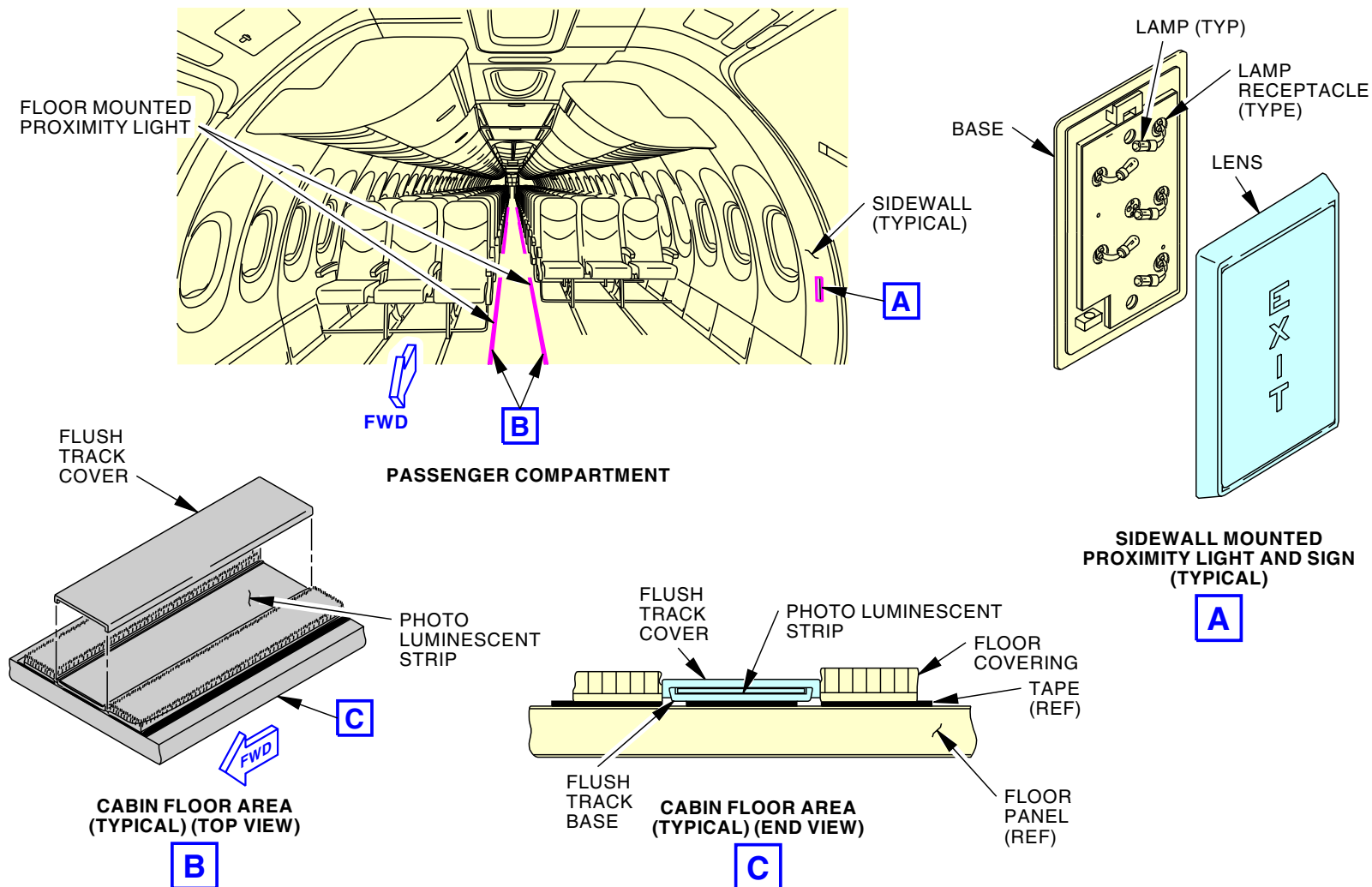
Location

The EXIT lights are mounted on the sidewall near the airplane exits.

The photo luminescent strips are on the floor, both left and right sides.

SIA ALL	EFFECTIVITY
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LIGHTS - EMERGENCY LIGHTS - FLOOR PROXIMITY LIGHTS



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LIGHTS - EMERGENCY LIGHTS - PHOTO LUMINESCENT STRIP

33-51-00-003

EFFECTIVITY	
SIA ALL	

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D633AM102-SIA

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LIGHTS - EMERGENCY LIGHTS - SLIDE LIGHTS

Purpose

The slide lights supply light to the exit areas around the airplane.

Physical Description

The slide lights have these components:

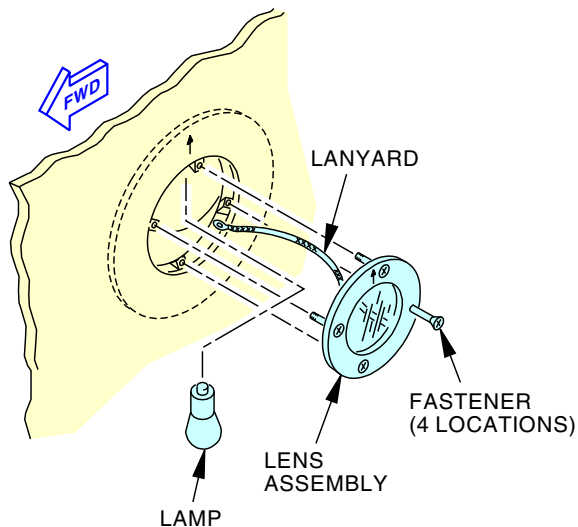
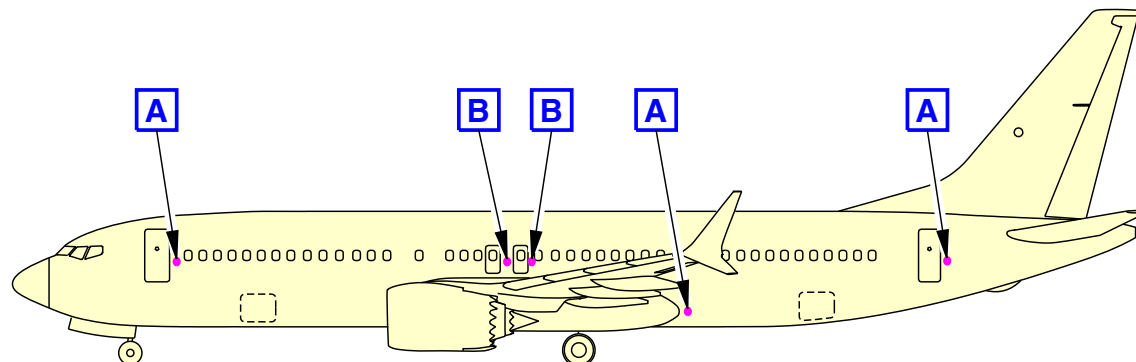
- Lens assembly
- Lamp
- Lanyard
- Mounting fasteners

Location

The lights are on the outer surface of the airplane. The lights are aft of each exit.

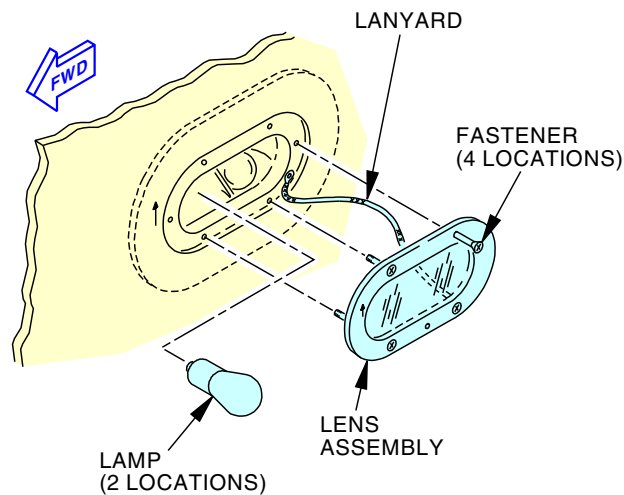
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LIGHTS - EMERGENCY LIGHTS - SLIDE LIGHTS



SLIDE LIGHT (EXAMPLE)

A



OVERWING LIGHT (EXAMPLE)

B

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LIGHTS - EMERGENCY LIGHTS - SLIDE LIGHTS

33-51-00



LIGHTS - EMERGENCY LIGHTS - POWER SUPPLIES

Purpose

The power supplies give power to internal and external emergency lights.

Physical Description

The power supplies have these components:

- Battery pack
- Test switch
- Electrical connector
- Control logic and charging circuit

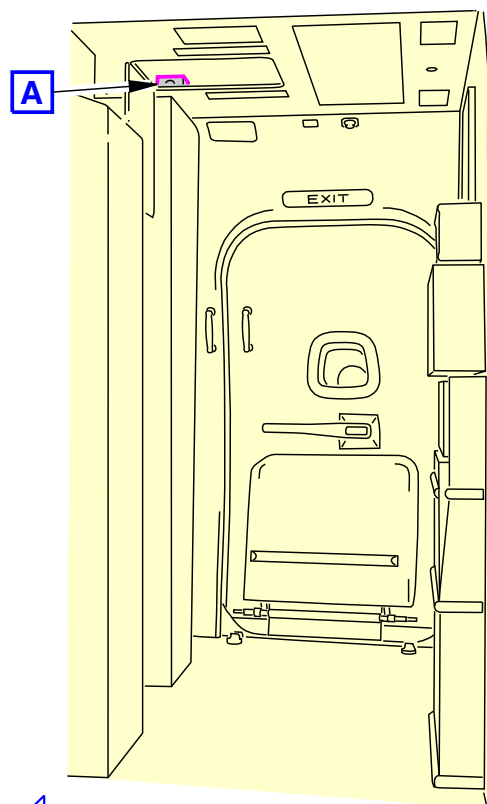
Location

The power supplies are at these locations:

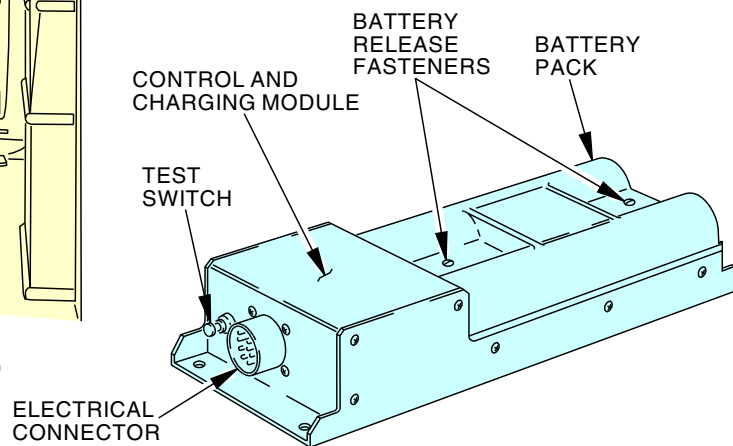
- Behind the ceiling panels at the forward entry area
- Behind the ceiling panels at the aft entry area
- On the side structure, near the floor

EFFECTIVITY	
SIA ALL	

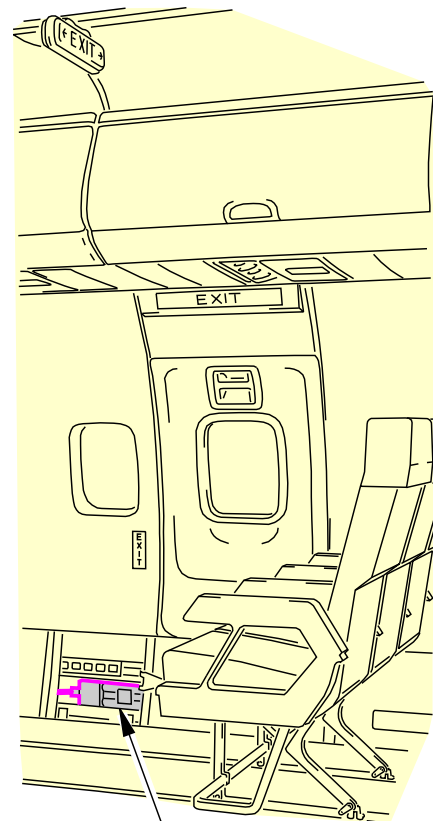
LIGHTS - EMERGENCY LIGHTS - POWER SUPPLIES



(VIEW THROUGH THE
AFT PASSENGER DOOR)



POWER SUPPLY



**OVERWING ESCAPE HATCH
(EXAMPLE)**

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LIGHTS - EMERGENCY LIGHTS - POWER SUPPLIES

**LIGHTS - EMERGENCY LIGHTS - FUNCTIONAL DESCRIPTION****Operation**

Use the emergency exit light switch on the P5 forward overhead panel or the emergency exit switch on the attendant panel. These switches control the emergency lights. The emergency exit light switch on the P5 panel has these positions:

- ON - makes emergency lights come on
- OFF - prevents automatic operation
- ARM - prepares system for automatic operation

The NOT ARMED and MASTER CAUTION lights are on when the emergency light switch on the P5 panel is in the ON or the OFF positions. The 28V DC bus 1 supplies power to these indication lights.

The emergency exit switch on the attendant panel has two positions, ON and NORMAL. The ON position makes the emergency lights come on. The NORMAL position sets automatic operation. The attendant panel switch will cause the lights to come on even if the P5 switch is OFF.

Functional Description

The power supplies use 28V DC for their charge and control logic circuits. The charge circuits charge the battery packs when these conditions occur:

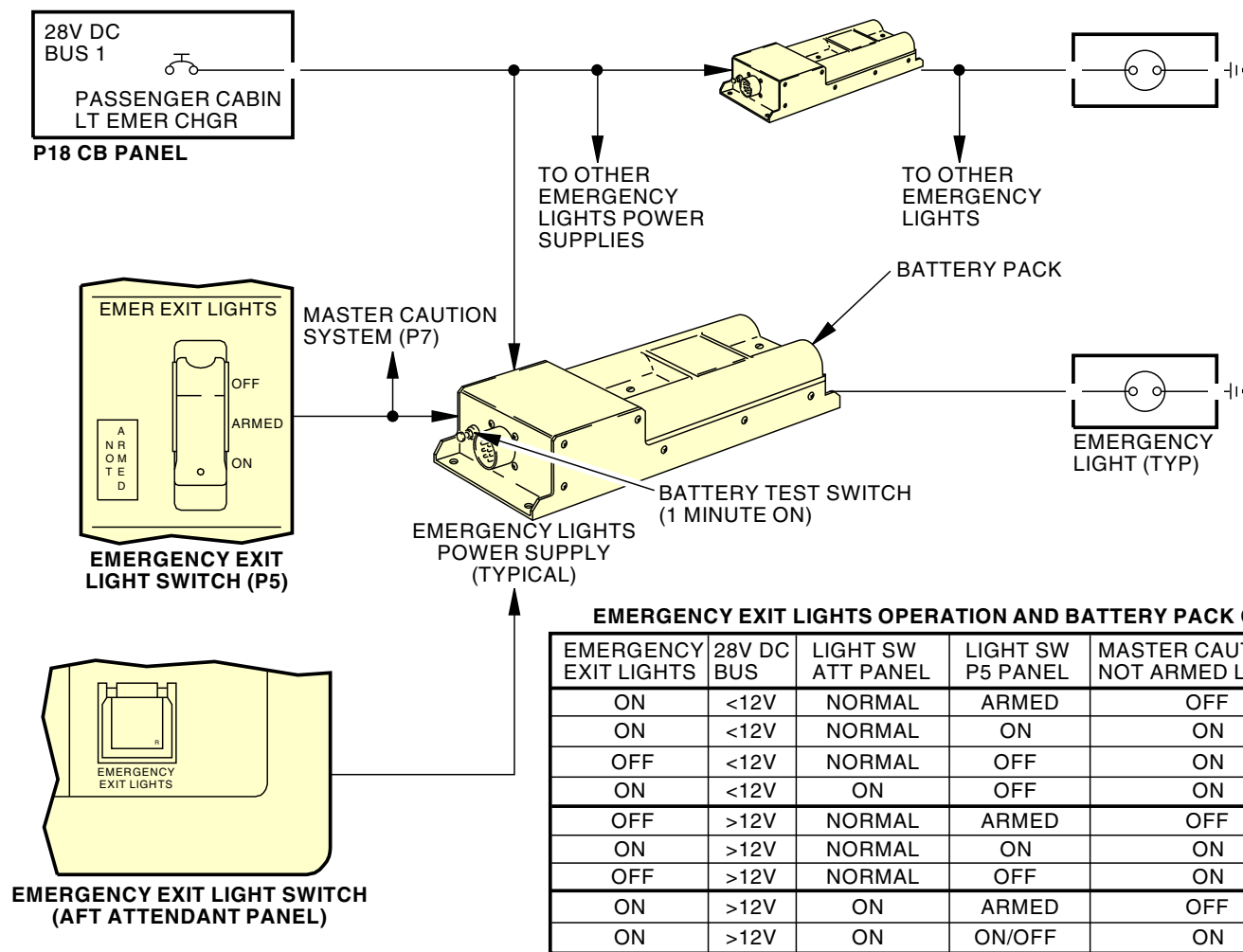
- P5 emergency exit light switch is in the OFF or ARM position
- 28V DC bus 1 has power
- Attendant panel emergency exit light switch is in the NORMAL position.

When the P5 switch is in the ARM position, the power supply makes the emergency lights come on when one of these conditions occur:

- Attendant panel emergency exit switch is in the ON position.
- 28V DC bus 1 power drops less than 12 volts.

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LIGHTS - EMERGENCY LIGHTS - FUNCTIONAL DESCRIPTION



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LIGHTS - EMERGENCY LIGHTS - FUNCTIONAL DESCRIPTION

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