

# CHAPTER 33 - LIGHTS

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## GENERAL

The lighting system provides the aircraft with lighting as required for operating both inside and outside.

The aircraft lighting system is divided into:

- Inner Lighting.
- Outer Lighting.
- Emergency Lighting.

## COCKPIT LIGHTING

Cockpit Lighting includes the cockpit surrounding lighting and both Panels and Instruments lighting.

Cockpit lighting is compatible with night-vision goggles usage (refer to NVG-COMPATIBLE LIGHTING, in this chapter).

## COCKPIT SURROUNDING LIGHTING

Cockpit surrounding lighting is given by a number of fixed lights thus enlightening cockpit common and specific zones. It also includes portable lights.

Common lighting relies on two ceiling lamps and two adjustable lamps.

Lighting of specific zones is made by means of map lamps, pedal area lights, and a reading lamp for the observer.

Portable lighting is provided by means of portable torches, laterally attached to each side console by clamps.

All circuits are powered through the CKPT LIGHT circuit breakers located at the L, R MISCELLANEOUS circuit breaker panel.

## DESCRIPTION

Main components are:

- **Ceiling Lamps:** two lamps at the cockpit, fitted with rectangular diffuser lenses to provide the cockpit with common lighting.
- **Adjustable Lamps:** two flashlights located at the cockpit, ceiling with, adjustable intensity and beam, to reinforce common cockpit lighting.
- **Map Lamps:** located at each control column map holder, thus making possible to read maps and related documents.
- **Pedal Lights:** four pedal lamps located beneath the instruments panel to light pedal areas by means of two light beams for each area.
- **Observer Reading Lamp:** a flashlight located at the cockpit bulkhead behind the pilot that can be properly focused for observer's usage.
- **Portable Lamps (Torch):** two adjustable-brightness portable lamps located at both side consoles, held in place by clamps.
- **INTERNAL LT Control Panel:** located at the cockpit overhead panel, allows cockpit surrounding lighting (ceiling lights) control.
- | - **FLIGHT DECK LT Control Panels:** located at both right and left ends of instruments central panels (C/M-1 & C/M-2), to control Pedal Lights, Map Lights and Lateral Adjustable Lights.

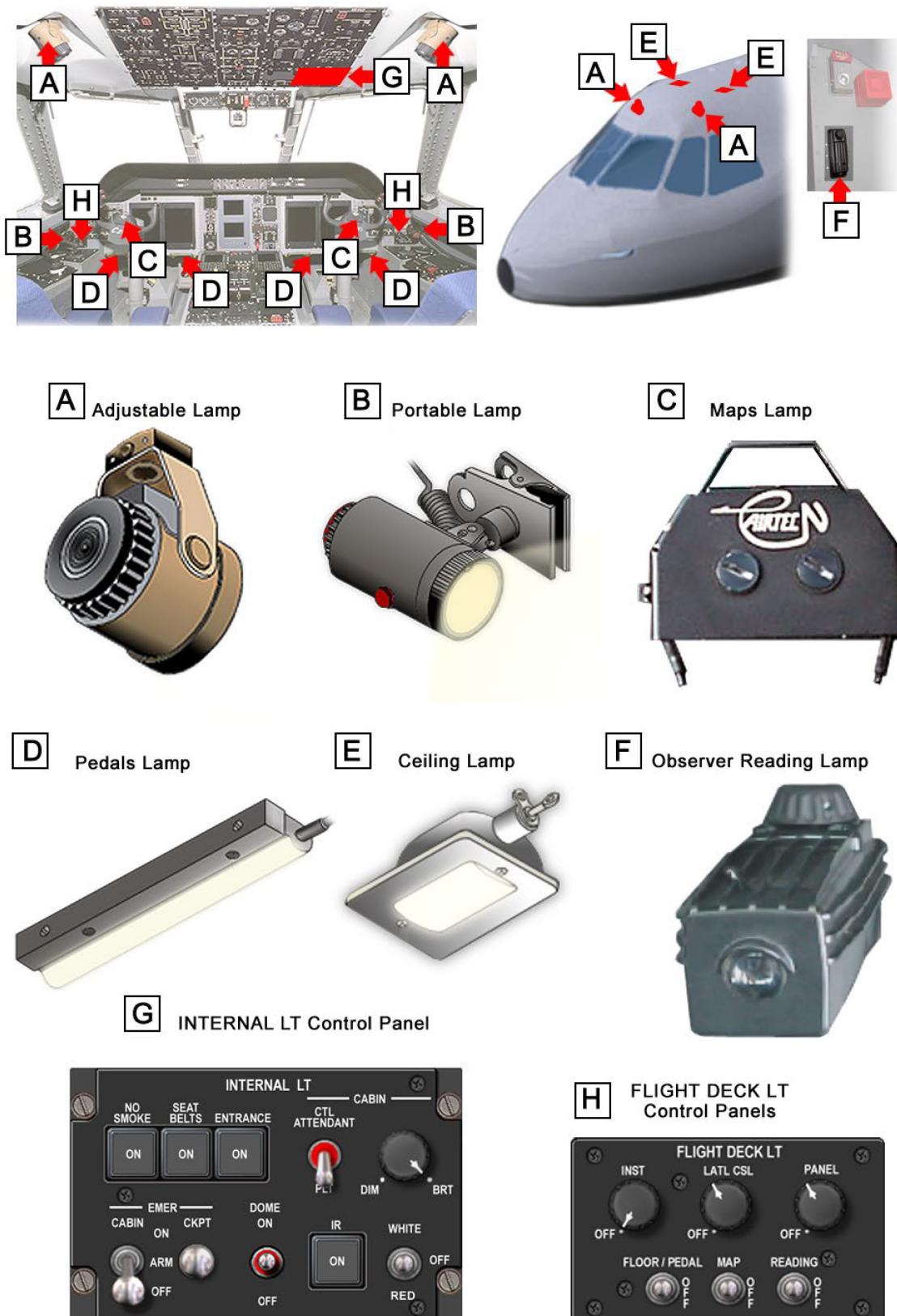


Figure 33-1 Cockpit Surrounding Lighting - Components

## CONTROLS AND INDICATORS

### (1) DOME Switch:

- ON: to activate ceiling lamps.

### (2) FLOOR/PEDAL Switch:

- FLOOR/PEDAL: to activate the relevant pedal lights set.

### (3) MAP Switch:

- MAP: to activate the relevant map lamp.

### (4) READING Switch:

- READING: to activate the relevant adjustable lamp.

### (5) Portable Lamp Switch/Regulator:

to switch on the lamp and adjust brightness.

### (6) Observers Reading Lamp Switch/Regulator:

to switch on the lamp and adjust brightness.

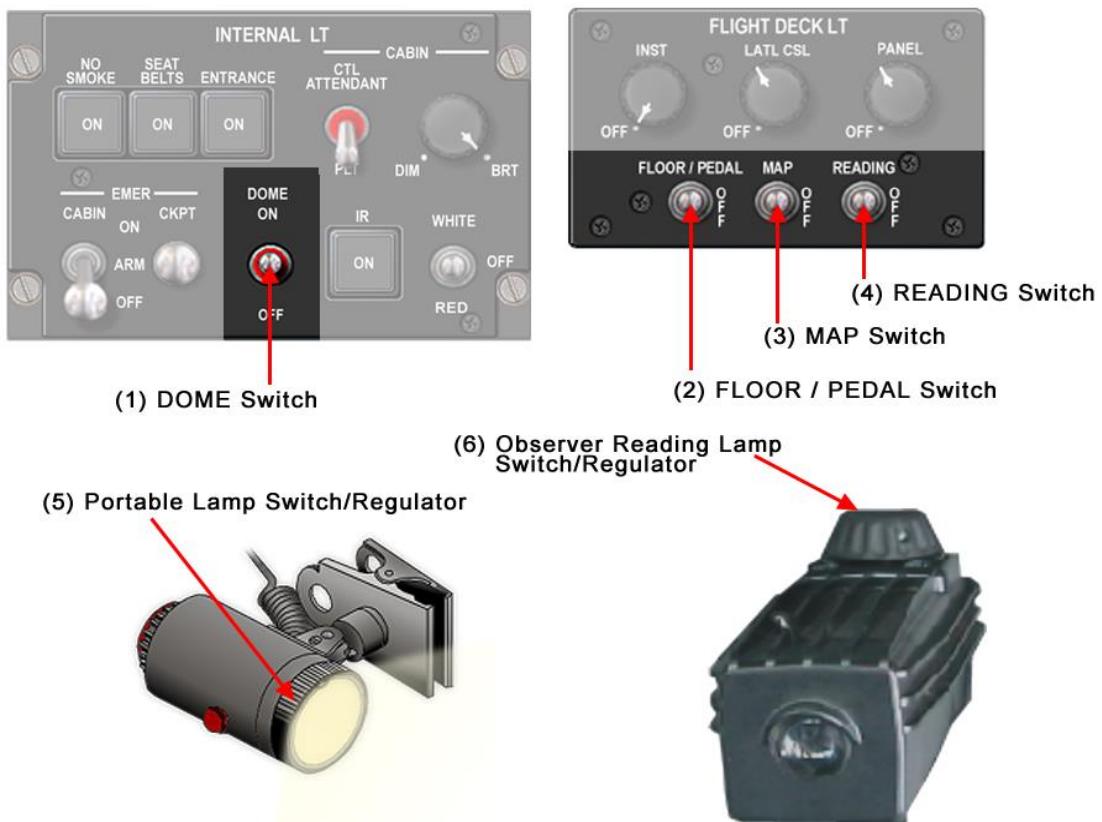


Figure 33-2 Cockpit Surrounding Lighting - Controls and Indicators

# PANEL AND INSTRUMENTS LIGHTING

Intended to enlighten both instrument and cockpit panels legends.

The panels have integrated lighting by means of miniaturized bulbs attached to each panel rear. When bulbs are turned on they light white-over-black etched legends. Panel lighting is boosted by indirect lighting from tubular lamps located beneath the glare-shield as well as instrument side consoles, thus lighting instruments from outside.

The instruments have also built-in lighting. Essential switches are colour-code lighted.

Regulators make dimmed lighting possible-like in visual mode, as when using Night Vision Goggles (NVG).

## DESCRIPTION

Main components are:

- ***Current Regulators***: valid for 28V DC current, supply 0-5V DC potentiometer-adjusted regulated output.
- ***Instrument Tubular Lamps***: located beneath the glare-shield and at both side consoles, to light panels outside, laid in two sets of three lights each.
- ***FLIGHT DECK LT Control Panels***: located at the right and left ends of the instruments central panel (C/M-1 & C/M-2), include cockpit panels and instruments lighting controls.
- ***FLT DECK LT Control Panel***: located at the cockpit overhead panel.

The system is divided into three zones, each one managed from its own control panel.

- LH console and instruments LH panel, are controlled from the FLIGHT DECK LT control panel located at the left side of the instruments central panel (C/M-1).
- Overhead panel, instruments central panel and pedestal are controlled from the FLT DECK LT control panel located at the overhead panel.
- RH console and instruments RH panel are controlled from the FLIGHT DECK LT control panel located at the right side of the instruments central panel (C/M-2).

Besides this, the following units have their own controls to adjust light brightness in both visual and NVG-compatible lighting modes.

- IESI includes a MENU button to adjust screen brightness (refer to CHAPTER 34 - NAVIGATION).
- MCDUs are fitted with two BRT buttons (+/-) to control screen and annunciators brightness (refer to CHAPTER 31 - INDICATING AND RECORDING).
- IEDS is fitted with potentiometer-regulated screen brightness (refer to CHAPTER 31 - INDICATING AND RECORDING)
- EFIS control panel (EFCP, located at both left and right sides of the instruments control central panel, one for each pilot) is fitted with the PFD BRT and ND BRT knobs for screen activation and brightness adjustment. Likewise, IMG BRT potentiometer adjusts ND brightness, when displaying in WxR or "terrain" mode (refer to CHAPTER 31 - INDICATING AND RECORDING, and CHAPTER 34 - NAVIGATION)

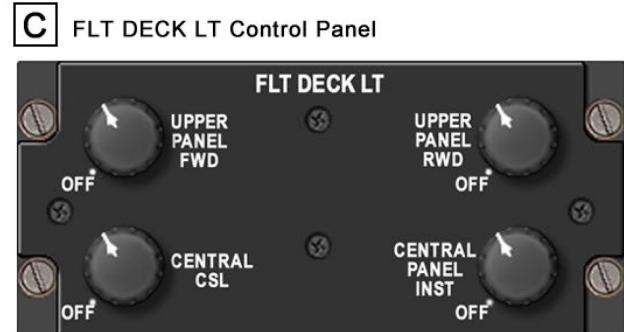
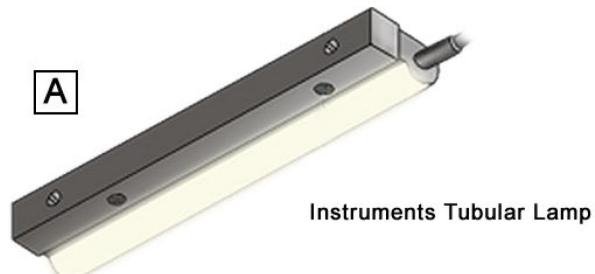
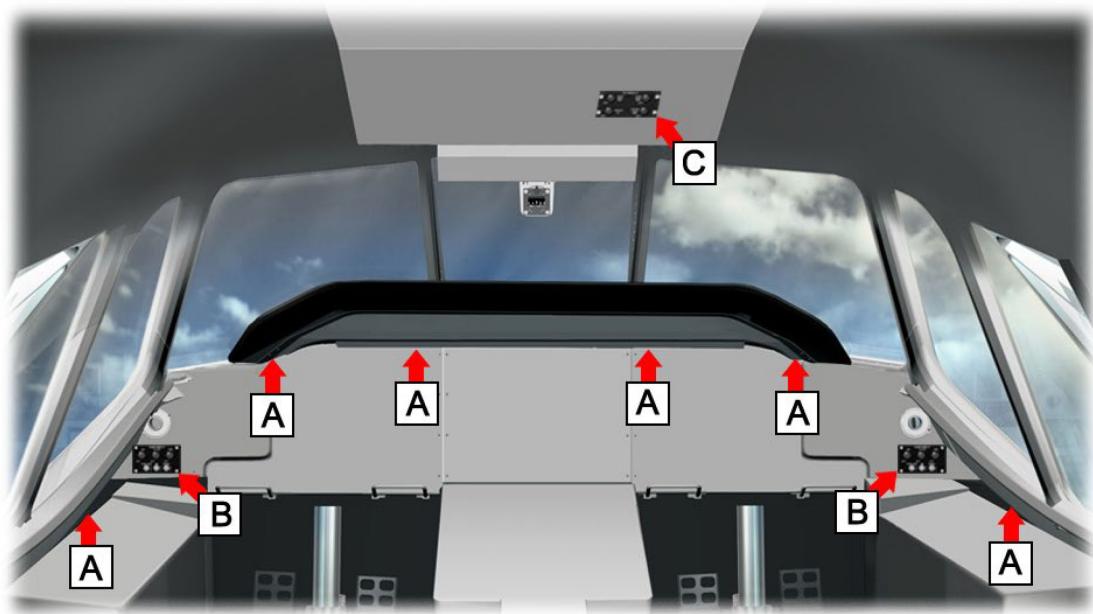


Figure 33-3 Instruments and Panels Lighting

## CONTROLS AND INDICATORS

**(1) INST Knob:**

to activate and adjust brightness of the instruments built-in lights at the relevant instrument panel (C/M-1 or C/M-2).

**(2) LATL CSL Knob:**

to turn on instruments built-in lights and adjust brightness, on the relevant console (C/M-1 or C/M-2).

**(3) PANEL Knob:**

to connect and vary instrument panels (C/M-1 or C/M-2) tubular lamps.

**(4) UPPER PANEL FWD Knob:**

to activate and adjust overhead control panels built-in lights brightness.

**(5) UPPER PANEL RWD Knob:**

to turn on and adjust overhead circuit-breaker panels inner-lamps brightness.

**(6) CENTRAL PANEL INST Knob:**

to switch on and regulate instruments central panel built-in lights brightness.

**(7) CENTRAL CSL Knob:**

to turn on and adjust pedestal instruments built-in lamps brightness.

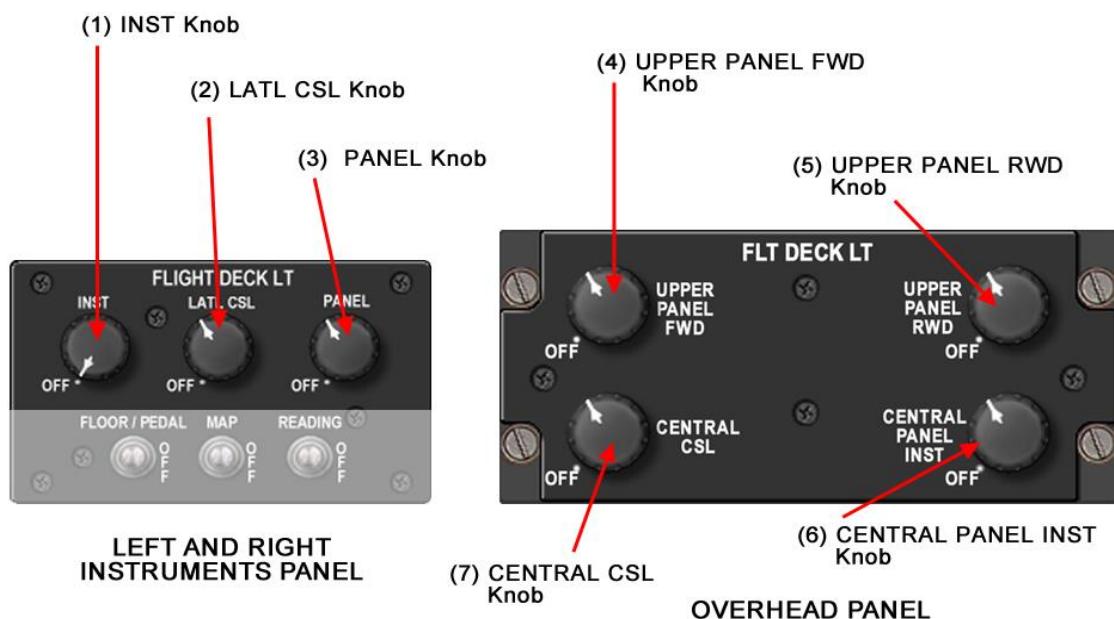


Figure 33-4 Instruments and Panels Lighting - Controls and Indicators

## CARGO CABIN LIGHTING

Cargo cabin lighting consists of:

- Cargo Cabin Common Lighting.
- Toilet Cabin Lighting.
- Passenger Signs
- Paratroops Lights.
- Cargo Area Lighting.

Cargo cabin lighting is night vision goggles compatible (refer to NVG-COMPATIBLE LIGHTING, in this chapter).

## CARGO CABIN COMMON LIGHTING

Cargo cabin is lighted by a ceiling dome-lamp close to the crew door, and by white, red and infrared ceiling lamps located along the cabin. Ceiling lights are adjustable and may be dimmed by a control potentiometer operating a current regulator.

Visual lighting at the cargo cabin is night vision goggles compatible (refer to NVG-COMPATIBLE LIGHTING, in this chapter).

## DESCRIPTION

Main components are:

- **Dome Lamp:** circular white-colour lamp, ceiling-located around the cockpit door.
- **Ceiling Lights:** 16 rectangular ceiling-located lamps at the cargo cabin. Arranged in pairs, alternately laid in White/Red and White/Infrared units at each side of the aircraft central line.
- **Current Regulators:** located at electric cabinets 1 and 2, convert 28V DC unregulated input to 0-28V DC regulated output that can be varied by means of a control potentiometer.
- **INTERNAL LT Control Panels:** located at the cockpit ceiling, allows cargo cabin common lighting management and checking.
- **ATTENDANT CONTROL Panels:** located at cargo cabin fore right and rear left-sides, also provide cargo cabin common lighting management.

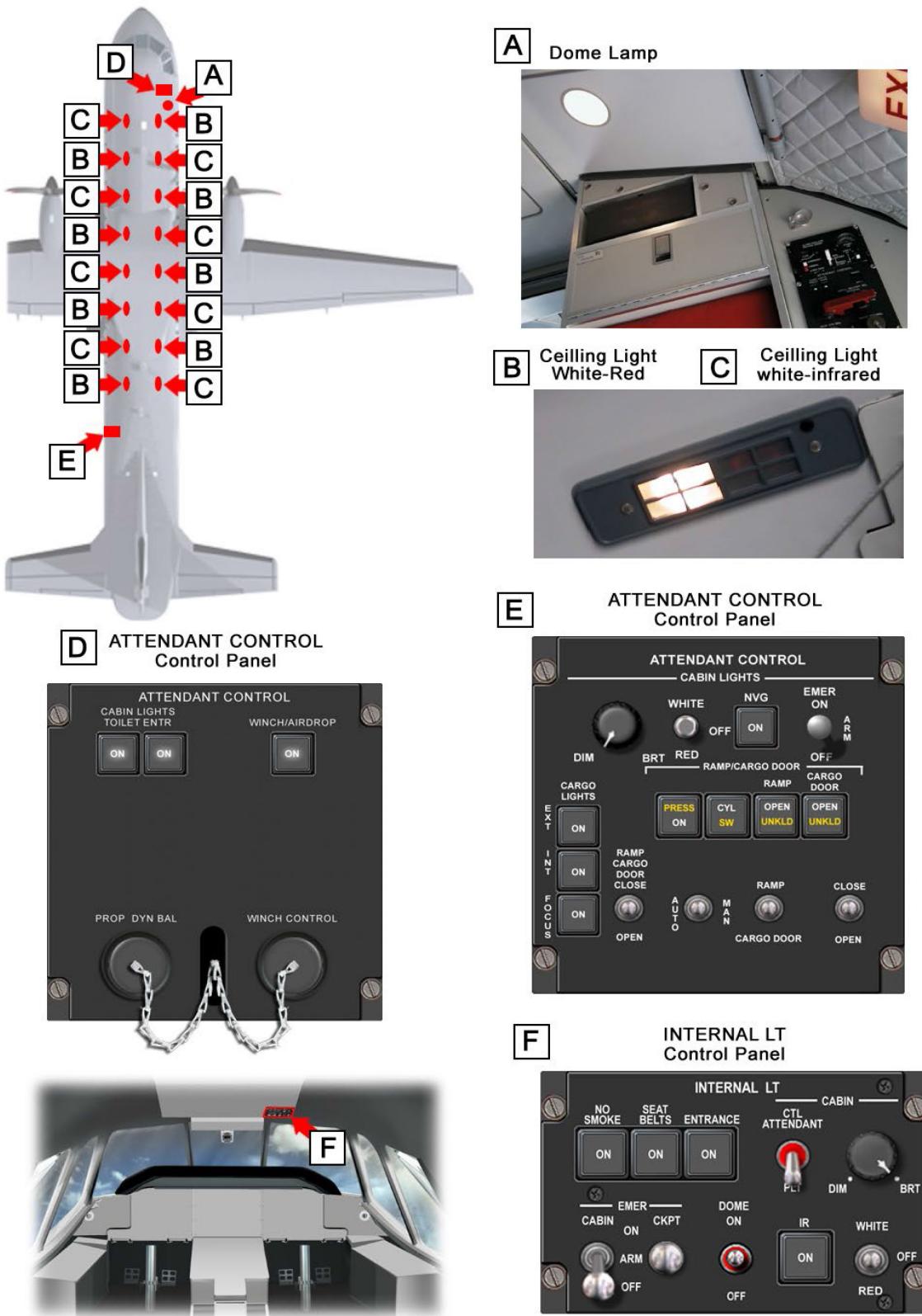


Figure 33-5 Cargo Cabin Common Lighting - Components

## CONTROLS AND INDICATORS

### (1) ENTR Pushbutton:

- Pressed (*ON light on*): activates the crew door dome lamp. ON light at ENTRANCE pushbutton also comes on.

### (2) ENTRANCE Pushbutton:

- Pressed (*ON light on*): activates the crew door dome lamp. ON light at the ENTR pushbutton also comes on.

### (3) CABIN CTL Selector:

- ATTENDANT: rear cargo cabin ATTENDANT CONTROL panel controls cargo cabin common lighting.
- PLT: cockpit overhead INTERNAL LT panel controls cargo cabin common lighting.

### (4) CABIN DIM/BRT Knob:

controls the cargo cabin common lighting brightness if CABIN CTL selector, at the INTERNAL LT panel, is on the PLT position.

### (5) CABIN WHITE/OFF/RED Selector:

- WHITE: switches on cargo cabin ceiling white lights, if CABIN CTL selector is on the PLT position.
- RED: activates cargo cabin ceiling red lights, if CABIN CTL selector is on the PLT position.
- OFF: shuts down all cargo cabin ceiling lights, if CABIN CTL selector is on the PLT position.

### (6) CABIN IR Pushbutton:

- Pressed (*ON Light on*): turns on cargo cabin infrared lighting. This action can be revoked by pressing the ATTENDANT CONTROL panel CABIN LIGHTS NVG pushbutton, at the rear cargo cabin (in that case ON lights at both pushbuttons will go off, and cargo cabin infrared lights in the cargo cabin will be turned off). (refer to NVG-COMPATIBLE LIGHTING, in this chapter).

### (7) CABIN LIGHTS DIM/BRT Knob:

controls the cargo cabin common lighting brightness, if the CABIN CTL selector, at the INTERNAL LT panel, is on the ATTENDANT position.

### (8) CABIN LIGHTS WHITE/OFF/RED Selector:

- WHITE: activates cargo cabin ceiling white lights if the CABIN CTL selector is on the ATTENDANT position.
- RED: activates cargo cabin ceiling red lights if the CABIN CTL selector is on the ATTENDANT position.
- OFF: turns off cargo cabin ceiling lights, if the CABIN CTL selector is on the ATTENDANT position.

### (9) CABIN LIGHTS NVG Pushbutton:

- Pressed (*ON Light on*): activates cargo cabin common lighting infrared lights. This action can be revoked from the cockpit INTERNAL LT panel, by pressing the CABIN IR pushbutton (in that case ON lights at both pushbuttons, and cargo cabin infrared lights, will be turned off).

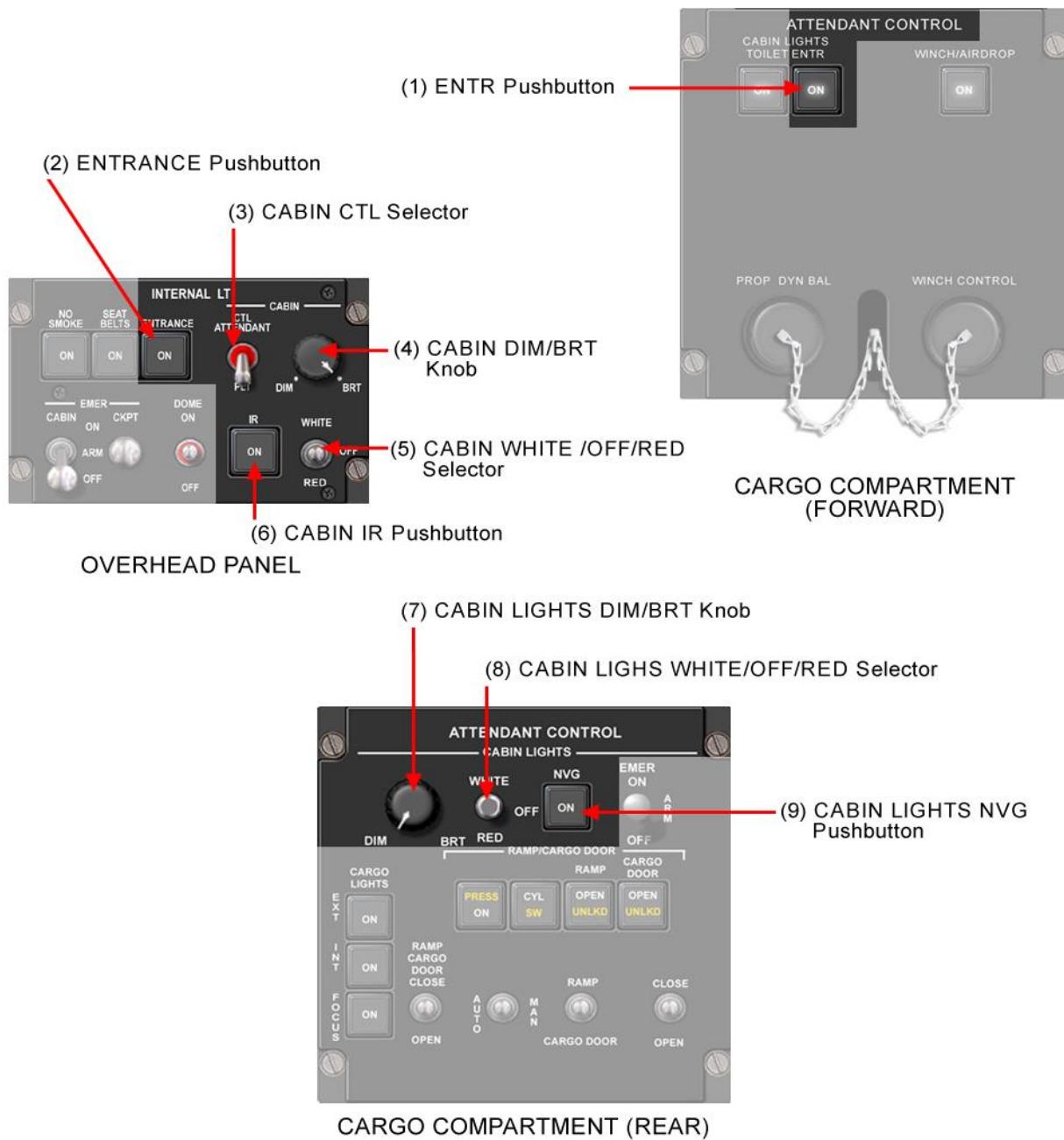


Figure 33-6 Cargo Cabin Common Lighting - Controls and Indicators

# TOILET CABIN LIGHTING

## DESCRIPTION

- **Toilet Light:** a light, with two light bulbs inside, located at the toilet side wall.
- **ATTENDANT CONTROL Panel:** located at the rack at FR10, enables system management and monitoring.

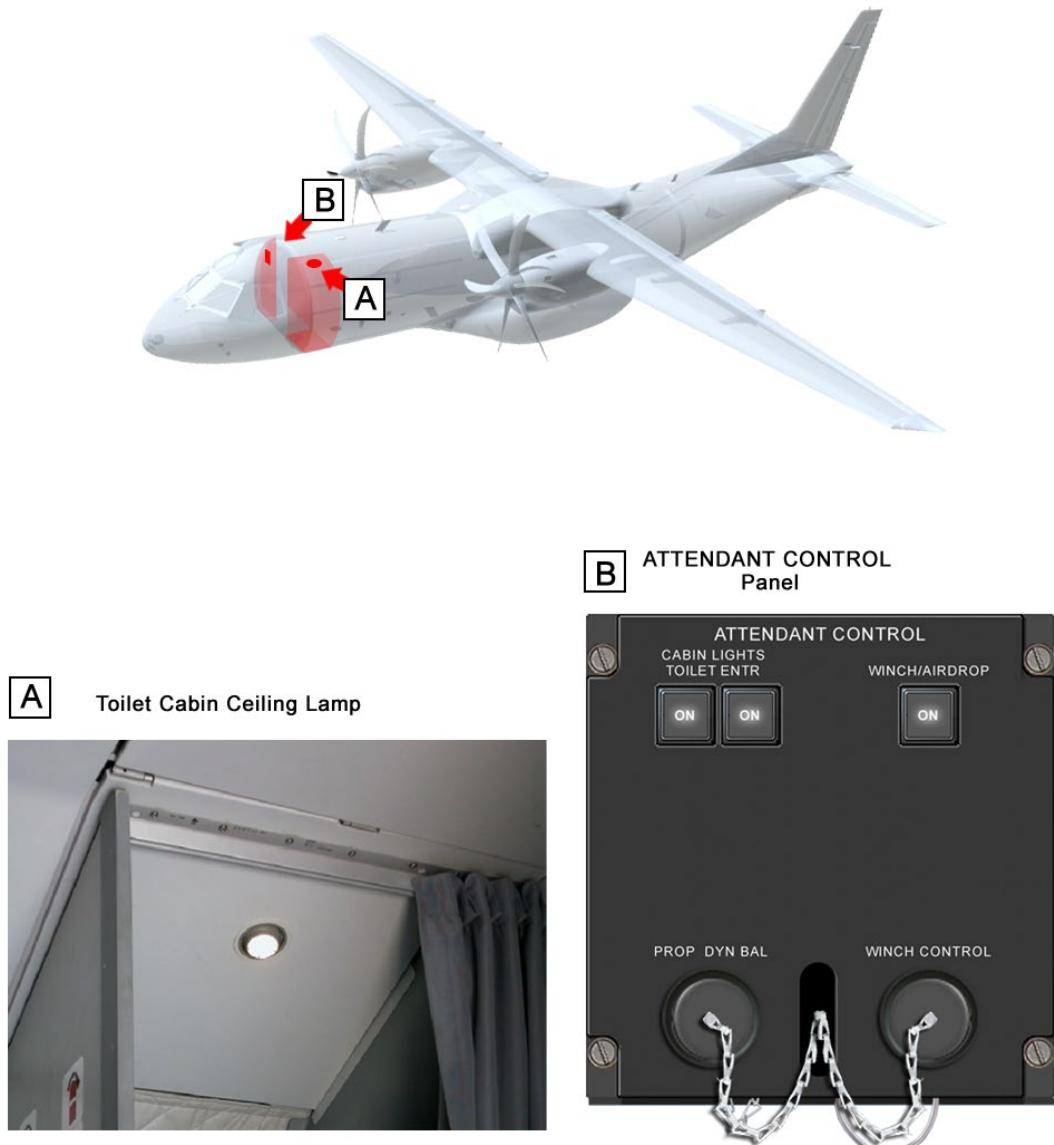


Figure 33-7 Toilet Cabin Lighting - Components

## OPERATION

The toilet light is controlled from the ATTENDANT CONTROL panel.

When the TOILET pushbutton is pressed, the ON light comes on, and the toilet light is also turned on.

## CONTROLS AND INDICATORS

### (1) TOILET Pushbutton:

- Pressed (ON light on): the toilet is energized and the toilet light is turned on.

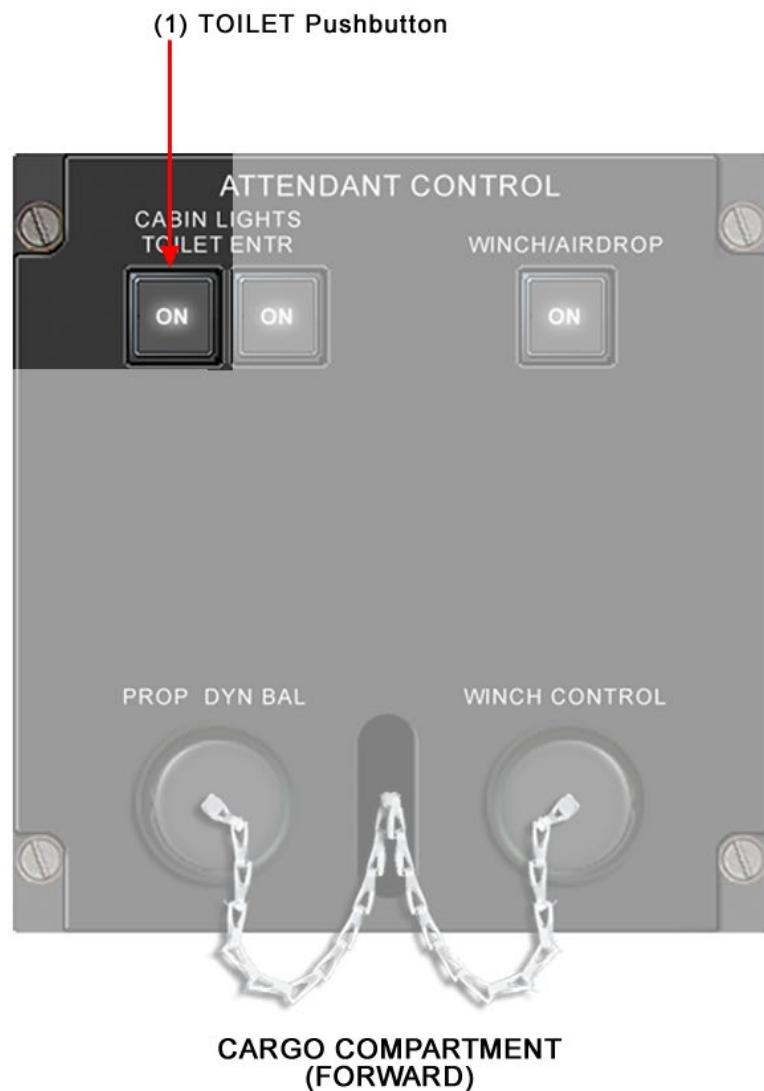


Figure 33-8 Toilet Cabin Lighting - Controls and Indicators

# PASSENGER SIGNS

Passenger Signs provides cargo cabin visual announces.

## DESCRIPTION

Main components are:

- **Caution Lights:** three cargo cabin located annunciators, one at the fore right, and the other two at each side of the central area. Lights come on to show both "no smoking" and "fasten seatbelts" annunciators.
- | One more annunciator in the toilet comes on to indicate the return to the cabin.
- **INTERNAL LT Control Panel:** located at the cockpit overhead panel, enables passenger annunciator system management and monitoring.

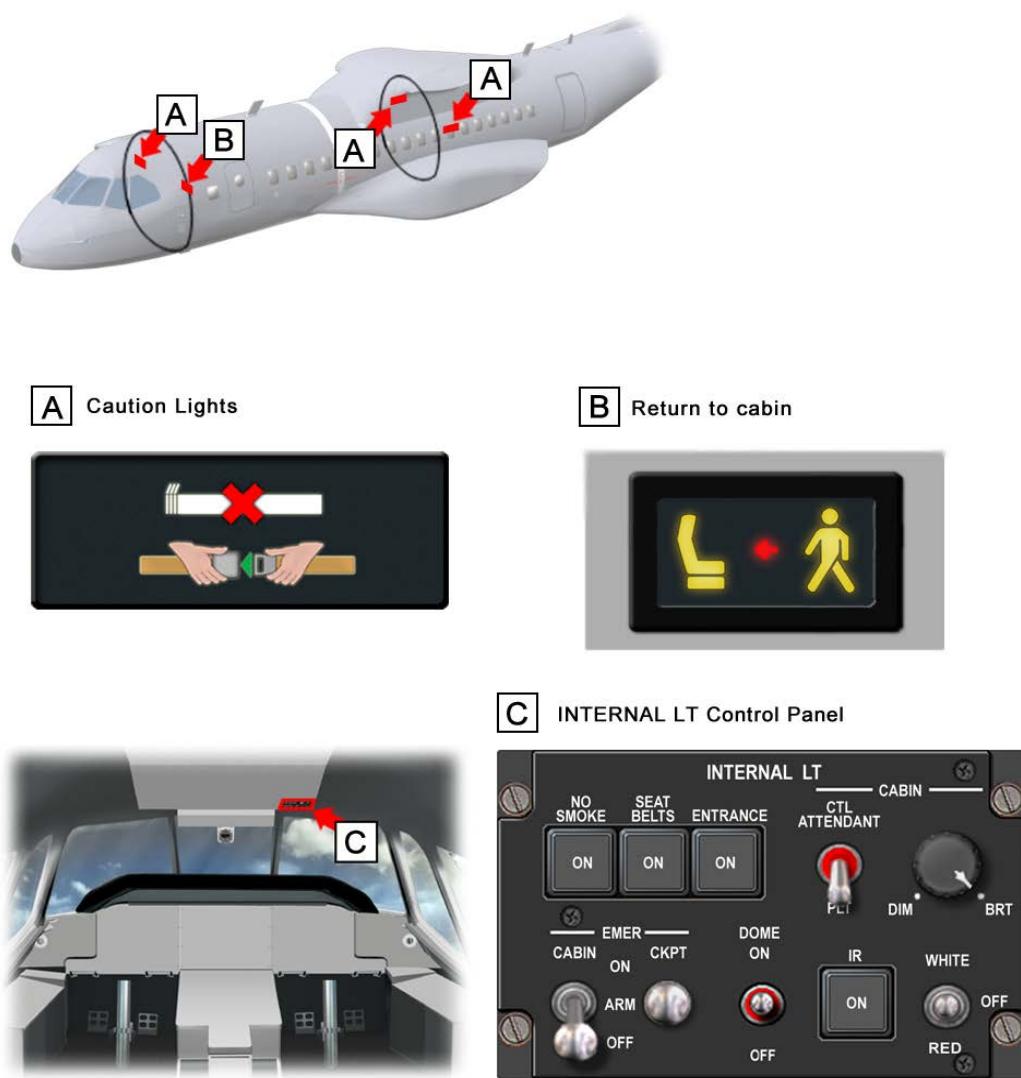


Figure 33-9 Passenger Signs - Components

## CONTROLS AND INDICATORS

### (1) NO SMOKE Pushbutton:

- Pressed (*ON light on*): activates main cabin "no smoking" annunciator, and plays Hi/Lo attention tone through the PA system.

### (2) SEAT BELTS Pushbutton:

- Pressed (*ON light on*): activates main cabin "fasten seatbelt" annunciator, and plays Hi/Lo attention tone through the PA system.

Also activates the return to cabin annunciator.

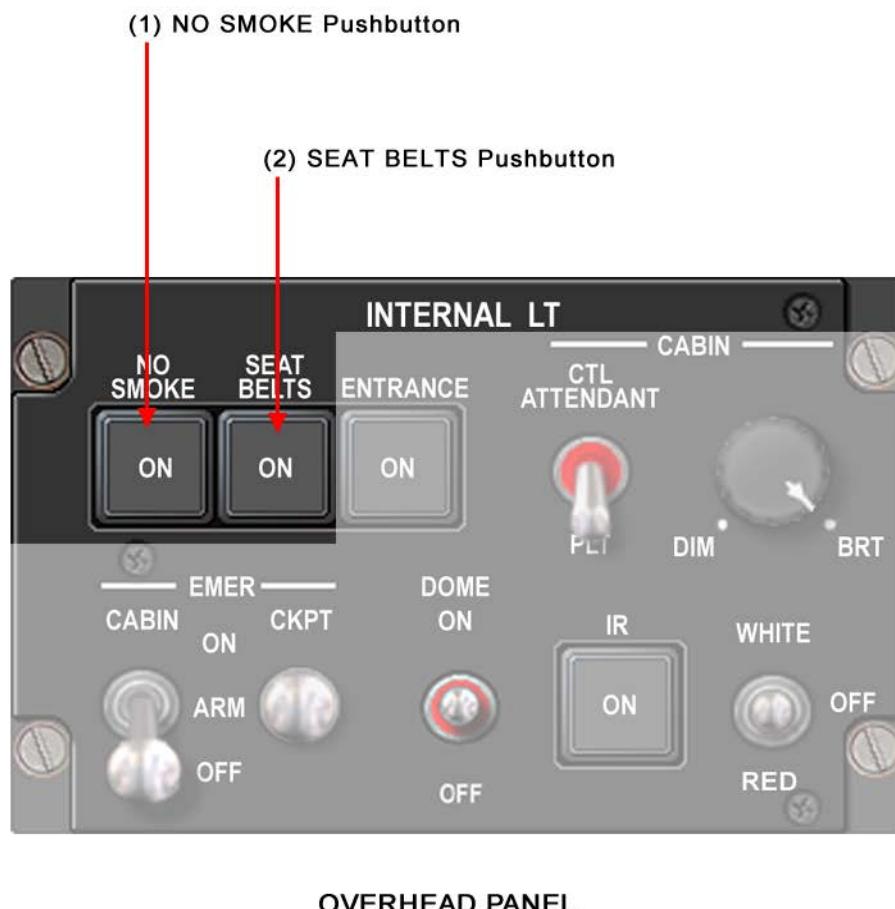


Figure 33-10 Passenger Signs - Controls and Indicators

## PARATROOPS LIGHTS

Visual annunciators at the main cabin to grant or hold up paratroops jumping.

Paratroop lights are NVG-compatible, but jump annunciators are remarked (in both visual and NVG-compatible lighting modes) by a flashing green light, since red light is steady as night goggles through-viewing is monochromatic.

### DESCRIPTION

Main components are:

- **Jump Lights:** six sets of two lights each, in red/green configuration. Respectively located one at each side of the paratroops doors, and the other two at the ramp and cargo door ceiling.
- **AERIAL DLVY Control Panel:** located at the cockpit pedestal, enables paratroops annunciator lights control and monitoring.

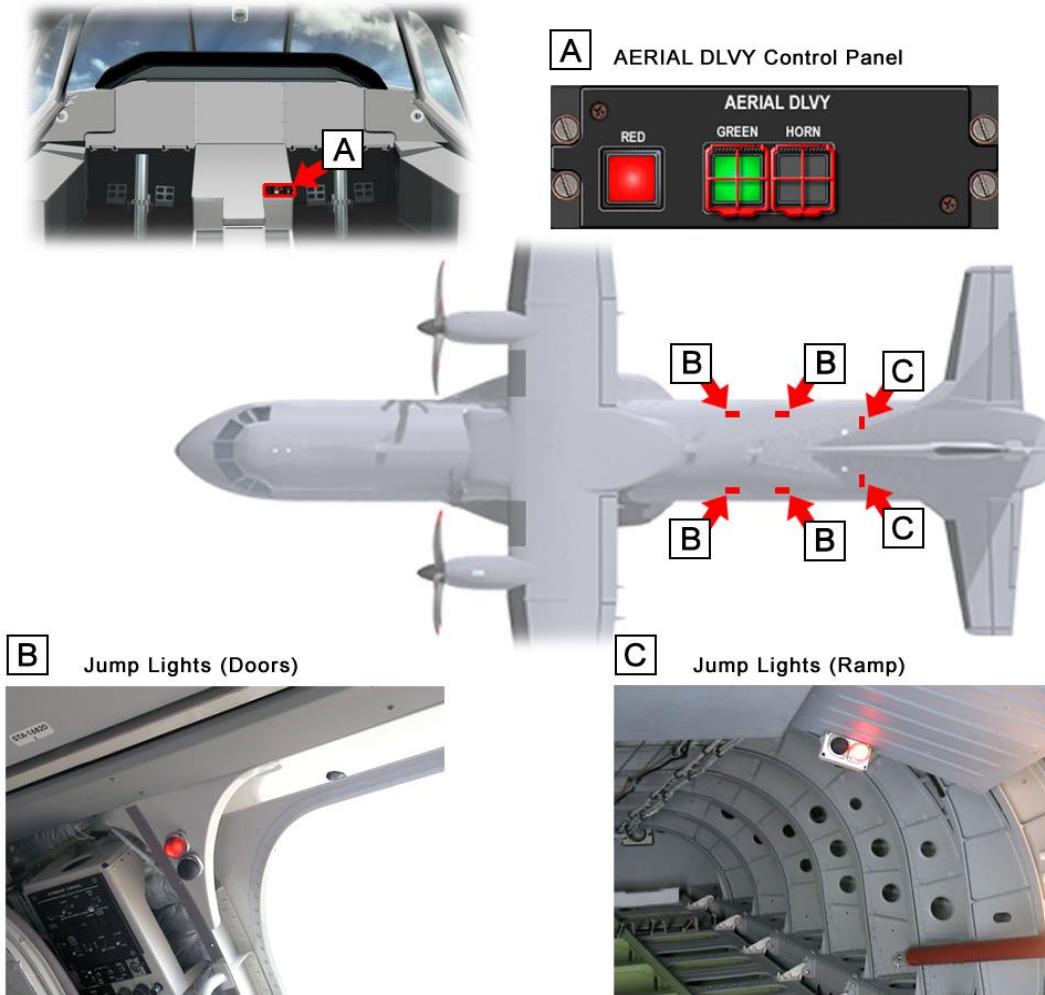


Figure 33-11 Paratroops Lights - Components

## CONTROLS AND INDICATORS

### (1) RED Pushbutton:

- Pressed (*red light, on*): activates jumping red lights to announce paratroopers jumping or cargo launching is not granted.

### (2) GREEN Pushbutton (*under guard cover*):

- Pressed (*green light, on*): activates jumping green lights (flashers), and turns off red lights to indicate paratroopers jumping or cargo launching is granted.

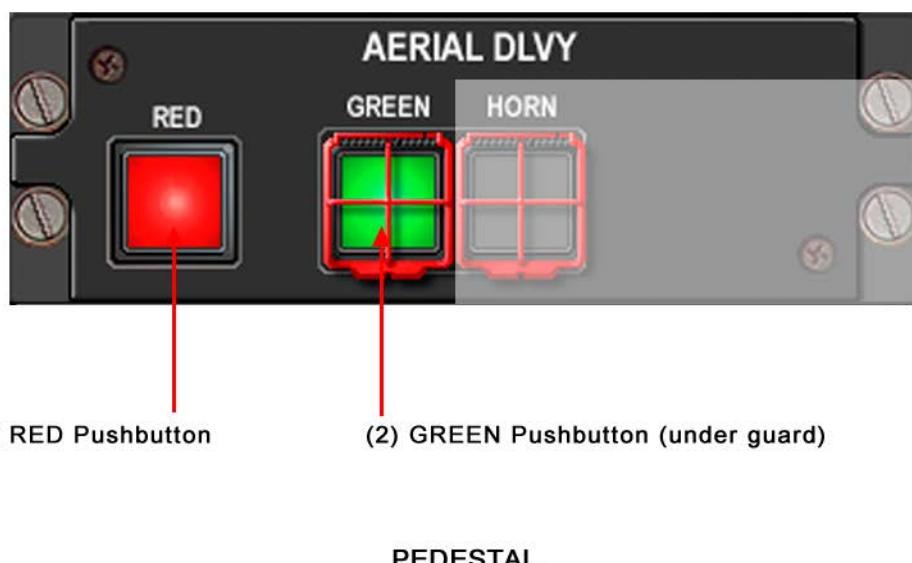


Figure 33-12 Paratroops Lights - Controls and Indicators

# CARGO AREA LIGHTING

Cargo area lighting is intended to light cargo area, cargo ramp and nearby areas.

Cargo area lighting is achieved by means of two lamps: one located behind the cargo door (outwards-focusing), and another at the cargo cabin ceiling.

The aircraft is also fitted with one spotlight located at the loading area left side.

## DESCRIPTION

Main components are:

- **Cargo Area External Lamp:** Located behind the cargo door, lights cargo ramp platform and nearby areas.
- **Cargo Area Internal Lamp:** cargo cabin ceiling located, lights loading area inner section.
- **Cargo Cabin Lamp:** diffusely lights both, loading and nearby areas.
- **ATTENDANT CONTROL Panel:** located at the rear cargo cabin, enables loading operations management and supervision.

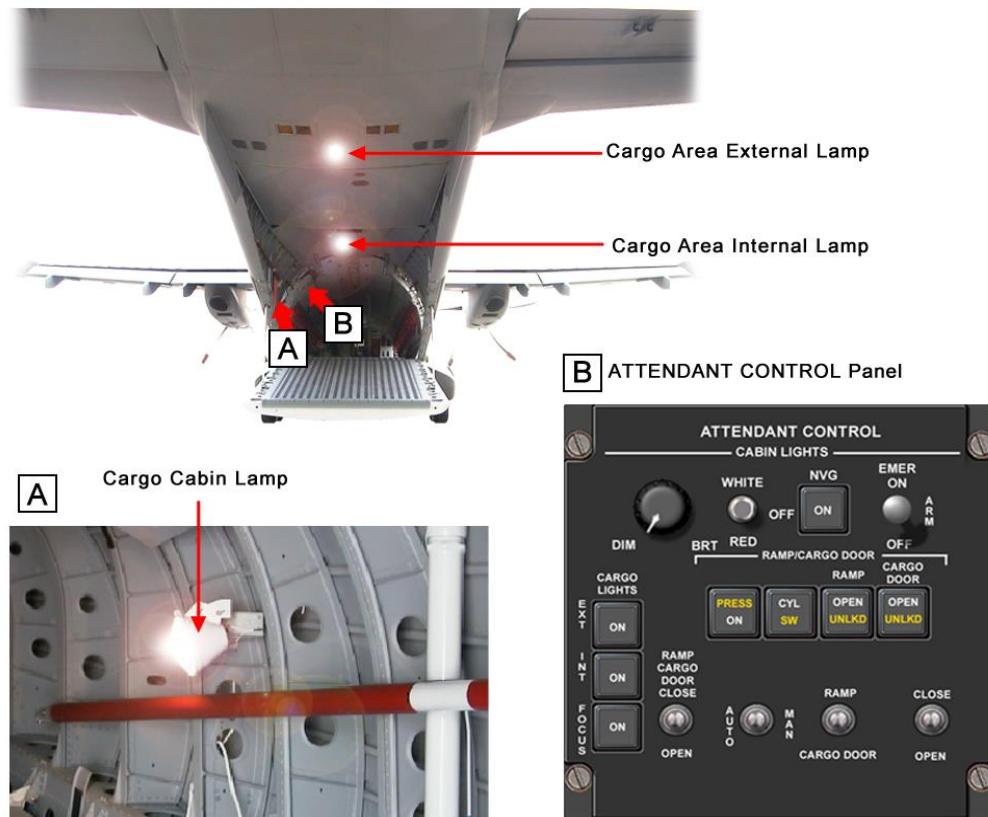


Figure 33-13 Cargo Area Lighting - Components

## CONTROLS AND INDICATORS

### (1) EXT CARGO LIGHTS Pushbutton:

- Pressed (ON light, on): activates the Cargo Area External Lamp.

### (2) INT CARGO LIGHTS Pushbutton:

- Pressed (ON light, on): activates the Cargo Area Internal Lamp.

### (3) FOCUS CARGO LIGHTS Pushbutton:

- Pressed (ON light, on): activates the Cargo Cabin lamp.



Figure 33-14 Cargo Area Lighting - Controls and Indicators

## NVG-COMPATIBLE LIGHTING

The C-295M is fitted with interior and exterior lights that are compatible with Night Vision Goggles (NVG).

### OPERATION

- **Exterior Lighting:** when NVG MODE dual-switch is set to ON, all the exterior visual lights are disabled and only Navigation, Landing, Formation and Taxi infrared lights are enabled. If any of these visual lights were on before setting the dual-switch to ON, it is replaced with its infrared light.
- **Cockpit Lighting:** when NVG MODE dual-switch is set to ON, PFDs, NDs, MCDUs, AHCPs, Accelerometer and IEDS lighting changes to NVG-compatible lighting mode. "Pilot Flying" arrows, located at each side of the HSI SEL pushbutton in the FGCP, are dimmed. The rest of cockpit lighting (as panels and instruments surrounding light) does not change and has to be manually dimmed as necessary.
- **Cargo Cabin Lighting:** when IR pushbutton (at the INTERNAL LT control panel, in the cockpit) or the NVG pushbutton (at the ATTENDANT CONTROL panel, in the cargo cabin) is pressed the ON light comes on in both pushbuttons, the white/red ceiling and the paratroops visual lights are disabled and the ceiling and paratroops infrared lights are enabled. If any of these visual lights were on before pressing these buttons, they are replaced with their infrared lights.

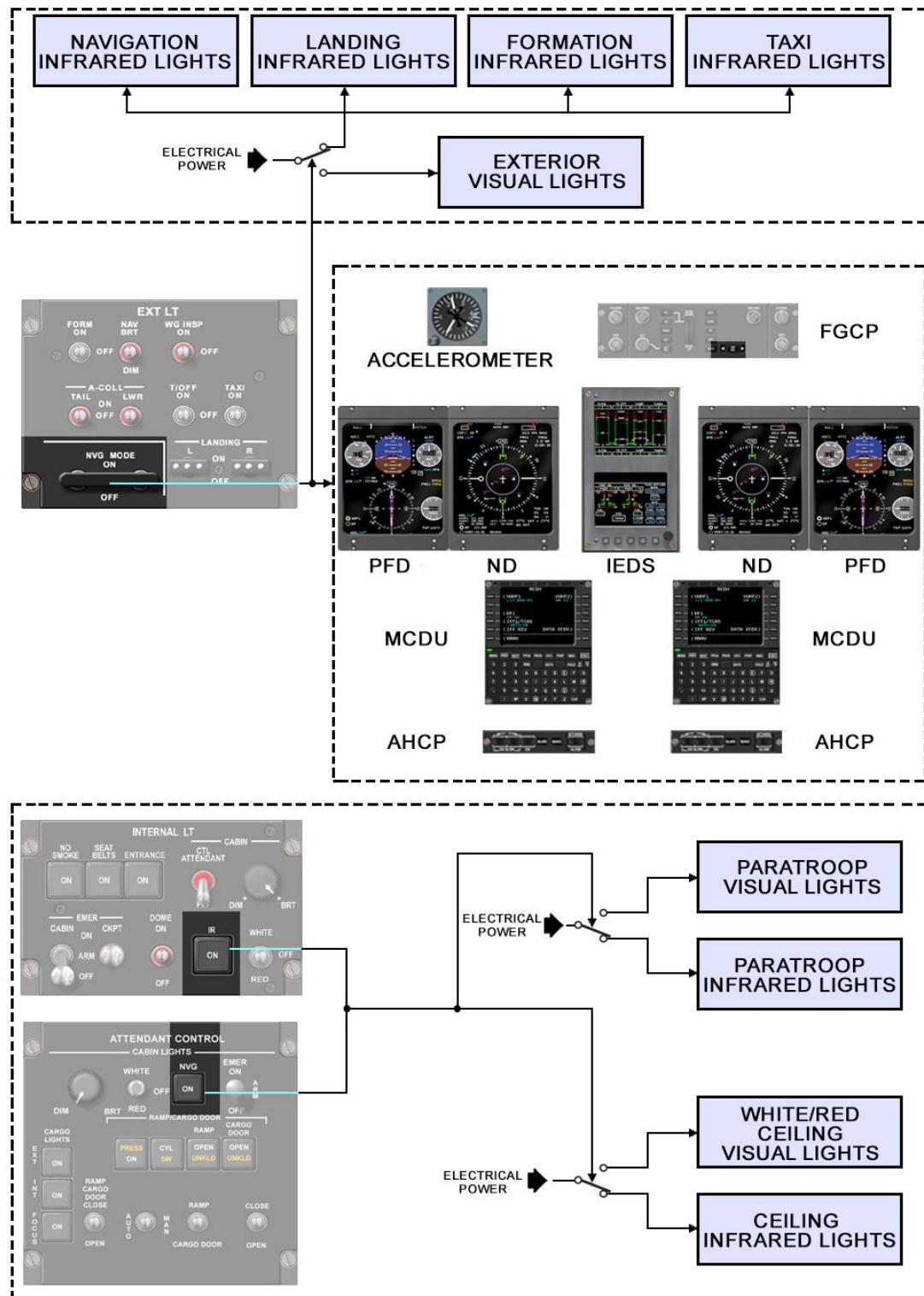


Figure 33-15 NVG - Architecture

## CONTROLS AND INDICATORS

### (1) NVG MODE Dual-switch:

- ON: activates infrared exterior lights and dims cockpit lighting.

### (2) CABIN IR Pushbutton:

(refer to CARGO CABIN COMMON LIGHTING, in this chapter)

### (3) CABIN LIGHTS NVG Pushbutton:

(refer to CARGO CABIN COMMON LIGHTING, in this chapter)



OVERHEAD PANEL

(3) CABIN LIGHTS NVG Pushbutton



CARGO COMPARTMENT (REAR)

(2) CABIN IR Pushbutton



OVERHEAD PANEL

Figure 33-16 NVG - Controls and Indicators

## EXTERNAL LIGHTING

External lighting is intended to make the aircraft visible while both at ground or airborne, under limited or zero visibility conditions. It also ensures that both aircraft position and attitude is perfectly identified by other aircraft.

External lighting includes Navigation, Anti-collision, Landing, Taxi, Runway Turnaround, Inspection, Formation, and Emergency Evacuation lighting.

External lighting can be visual (all) or NVG-compatible (Navigation, Landing, Formation and Taxi).

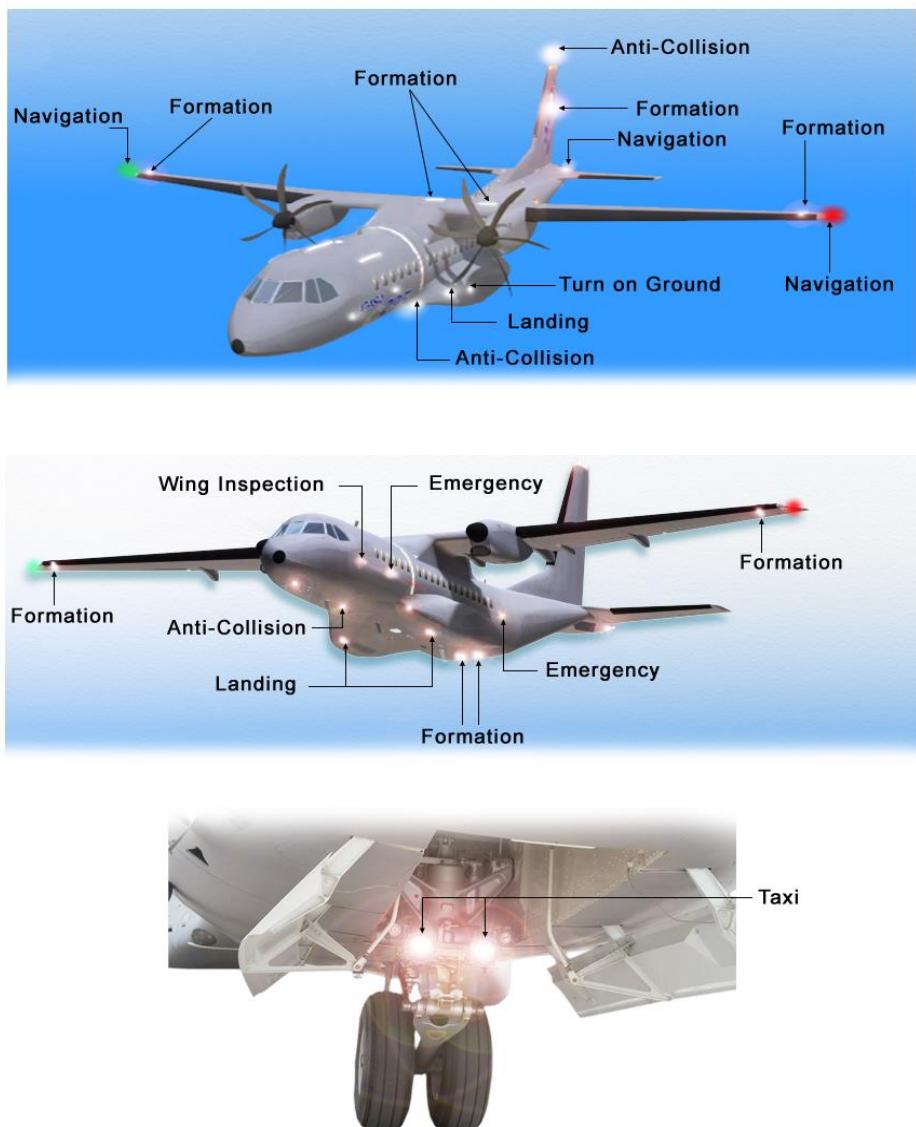


Figure 33-17 External Lighting - Components

# NAVIGATION LIGHTS

Navigation lights are intended to indicate aircraft attitude by both wingtips and tail identification.

Also feasible to activate NVG-compatible mode for navigation lighting, consisting of two infrared lights on the tail cone, and two more; one at each wingtip. When this mode is active, visual lights go off automatically (refer to NVG-COMPATIBLE LIGHTING, in this chapter).

Visual Navigation lights have high-intensity and low-intensity modes. Modes are selected by using the BRT/DIM NAV switch.

## DESCRIPTION

Main components are:

- **Wingtip Navigation Lights:** wingtip-located, a green light for the right wing and a red one for the left wing, both providing 110° visibility angle.
- **Infrared Wingtip Navigation Lights:** wingtip-located, infrared units close to visual lights.
- **Tail Navigation Lights:** cone-located, white tail lights.
- **IR Tail Navigation Lights:** cone-located, infrared tail units are closed to visual Navigation lights.
- **EXT LT Control Panel:** located at the cockpit overhead panel.

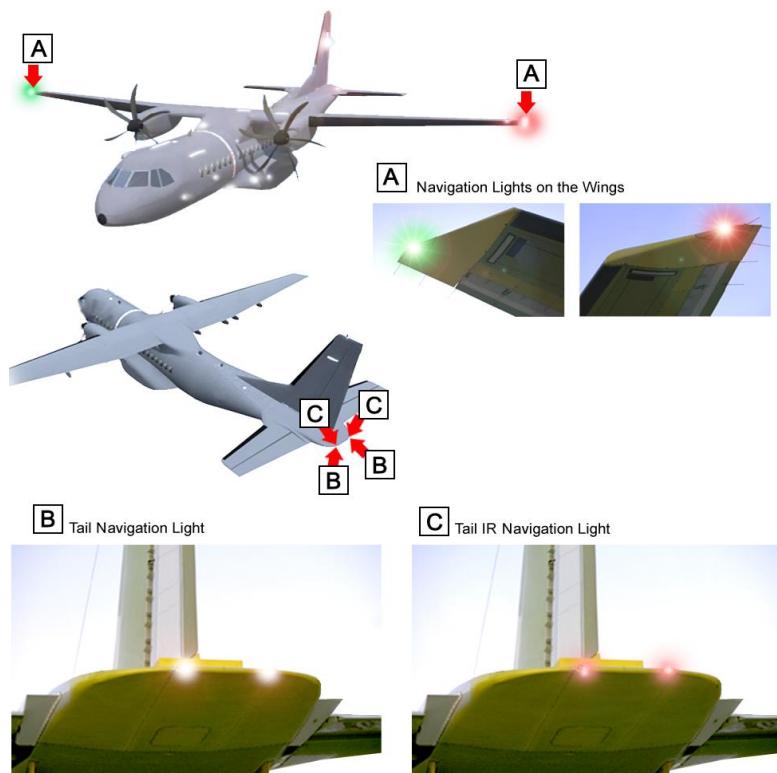


Figure 33-18 Navigation Lights - Components

## CONTROLS AND INDICATORS

### (1) NAV Selector:

- *BRT*: all navigation lights perform at maximum intensity in visual mode.
- *DIM*: all navigation lights perform at minimum intensity in visual mode.

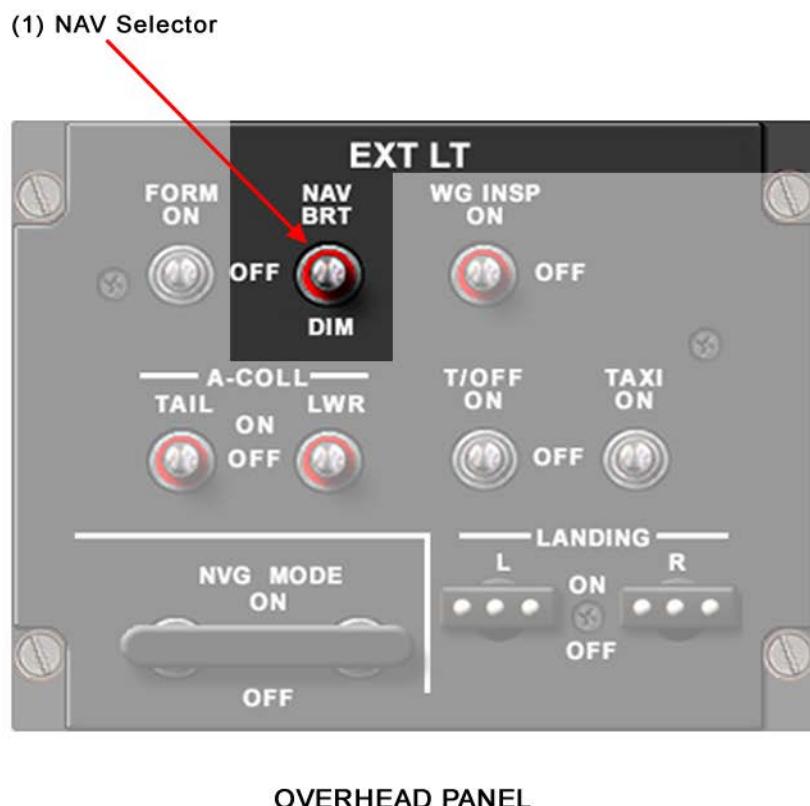


Figure 33-19 Navigation Lights - Controls and Indicators

## ANTI-COLLISION LIGHTS

The aircraft has anti-collision lights to ensure its position is clearly visible at night.

Anti-collision lights are not NVG-compatible. Therefore, automatically turn off when NVG MODE dual-switch is set to ON.

### DESCRIPTION

Main components are:

- **Anti-collision Lights:** There are two lights installed one on the top of the vertical stabilizer, and the other on the forward part of the lower fuselage. Anti-collision lights are stroboscopic units, flashing at a rate of  $50 \pm 10$  flashes per minute. Each light runs separately.
- **EXT LT Control Panel:** located at the cockpit overhead panel.

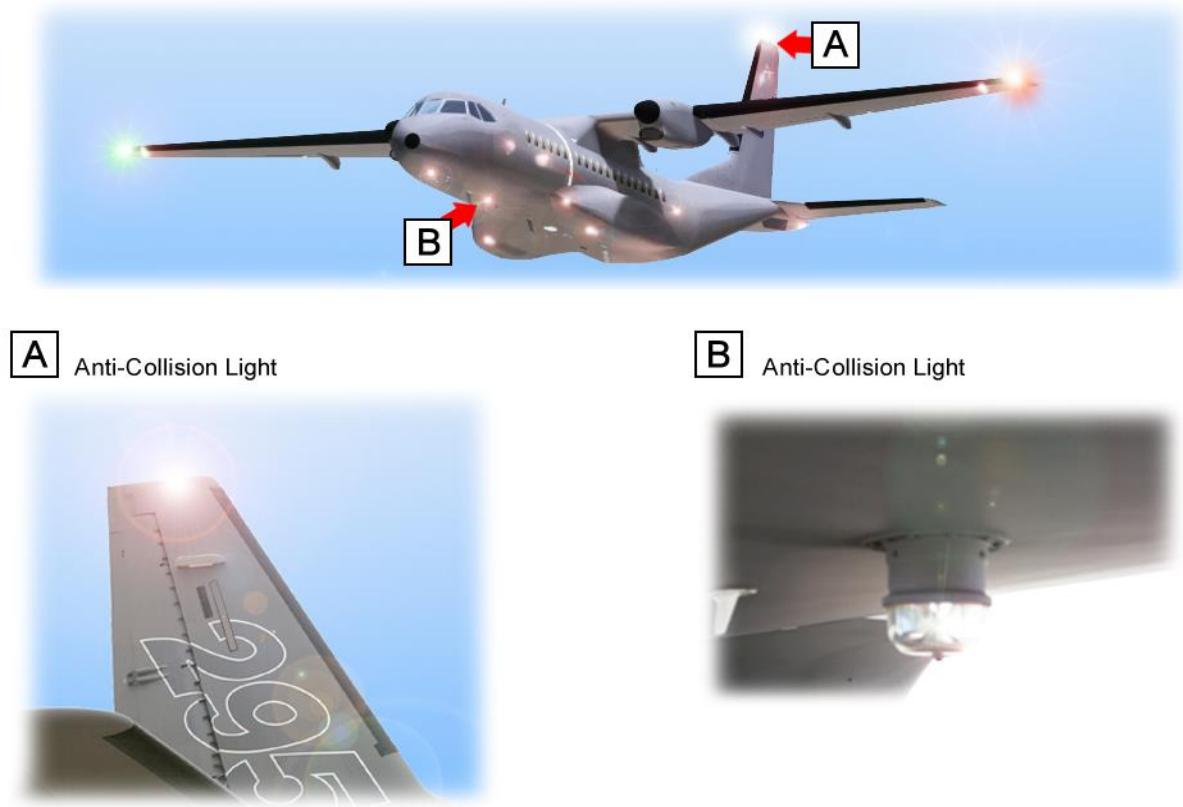


Figure 33-20 Anti-Collision Lights - Components

## CONTROLS AND INDICATORS

### (1) A-COLL TAIL Switch:

- ON: activates the anti-collision light located at the fin tip, in visual mode.

### (2) A-COLL LOWER Switch:

- ON: activates the anti-collision light at the aircraft belly, in visual mode.

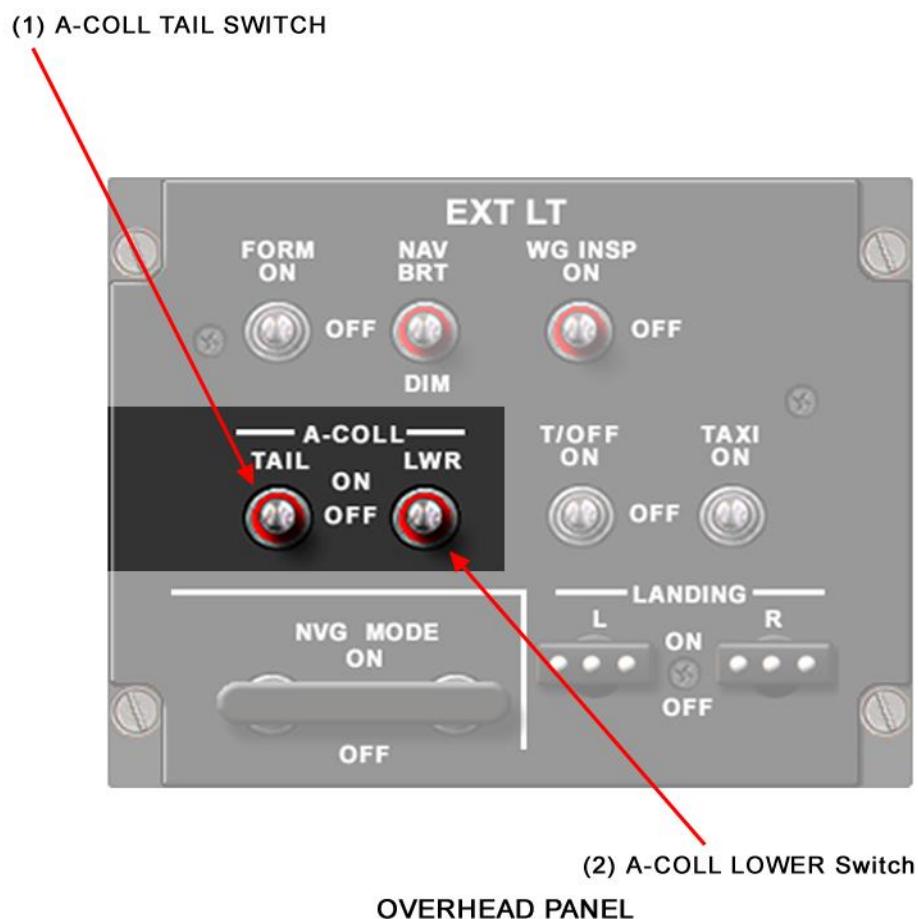


Figure 33-21 Anti-Collision Lights - Controls and Indicators

## LANDING LIGHTS

The aircraft has two landing spotlights located at each main landing gear fairing.

Also feasible to operate infrared landing lights for night-vision goggles (NVG) compatibility.

### DESCRIPTION

Main components are:

- **Landing Lights:** located at each main landing gear fairing, consist of two spotlights with three visual and two infrared, bulbs each. Every light may run separately.
- **EXT LT Control Panel:** located at the cockpit overhead panel.

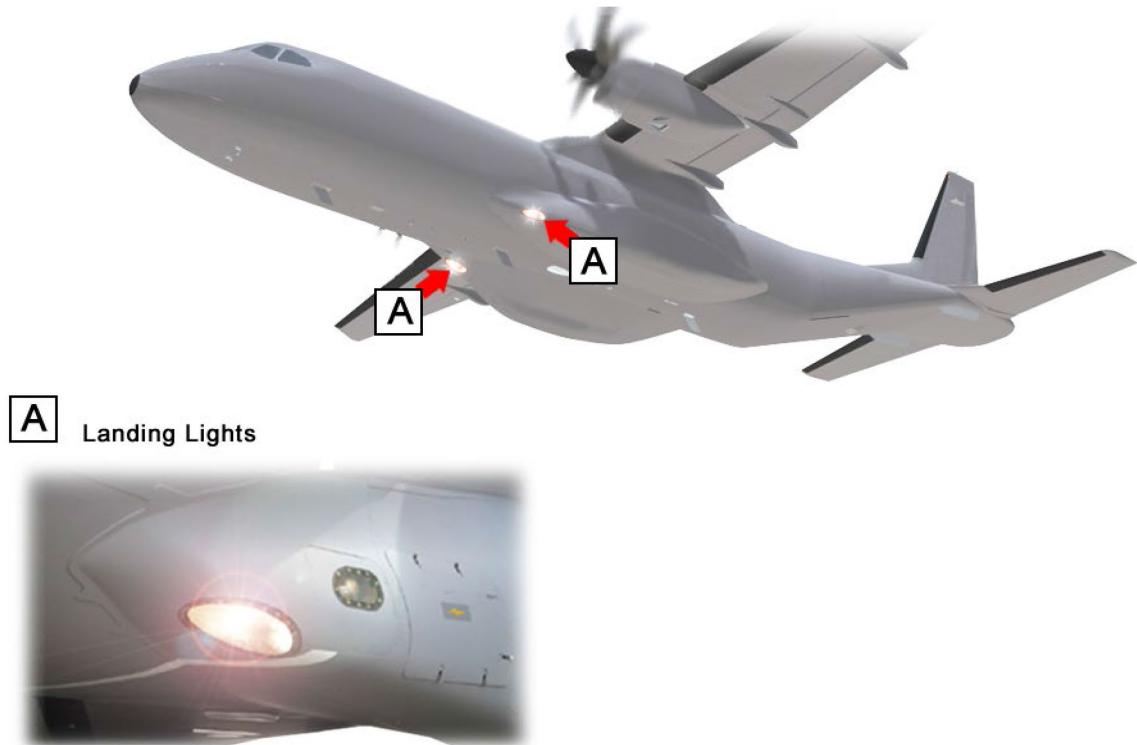
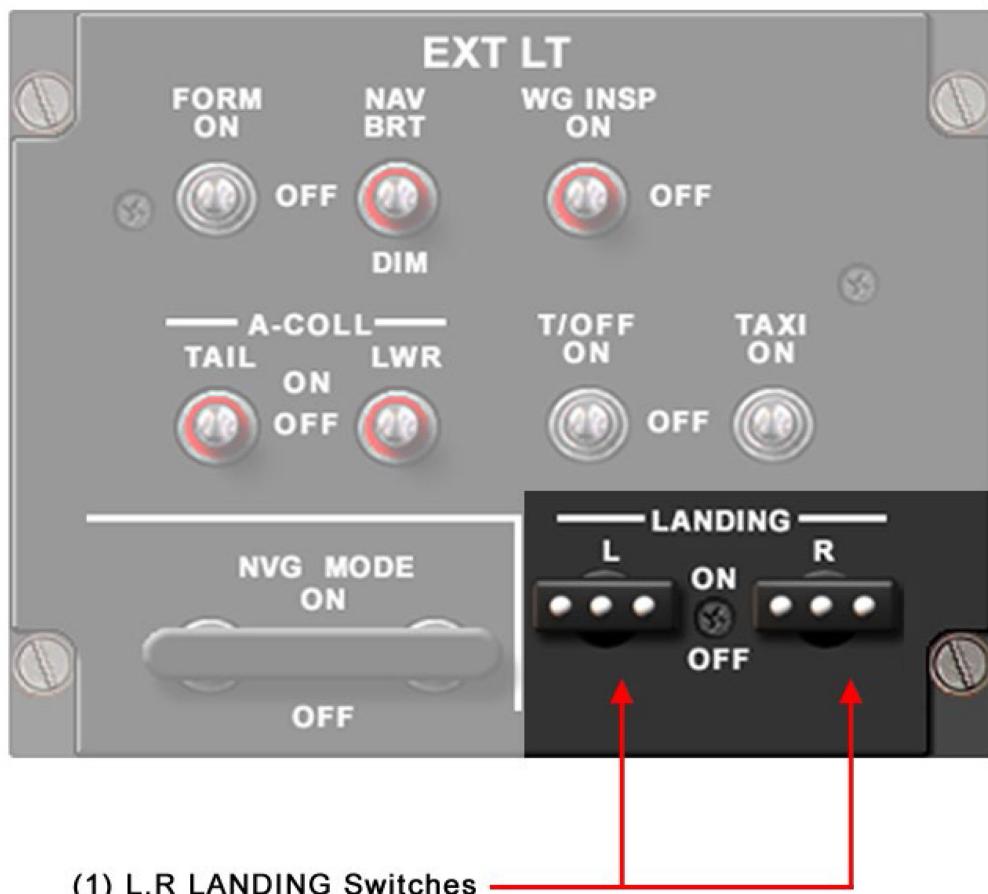


Figure 33-22 Landing Lights - Components

## CONTROLS AND INDICATORS

### (1) L, R LANDING Switches:

- ON: respectively activate left (L) or right (R) visual or NVG-compatible landing light.



OVERHEAD PANEL

Figure 33-23 Landing Lights - Controls and Indicators

## TAXI LIGHTS

The aircraft has two visual and two infrared, taxi lights (compatible with night vision goggles) located at the nose landing gear leg.

### DESCRIPTION

Main components are:

- **Taxi Lights:** two visual spotlights located at the nose landing gear leg.

#### NOTE

Taxi light lamps generate a considerable heat. For this reason, in order to prevent a reduction in their service life, it is recommended to avoid using taxi lights when the aircraft is stopped

- **IR Taxi Lights:** two infrared spotlights located at the nose landing gear leg.
- **EXT LT Control Panel:** located at the cockpit overhead panel.
- **Switch Box:** nose gear bay housed, detects nose wheel position by means of micro-switches thus, taxi lights can only be energized when landing gear is not up and locked.

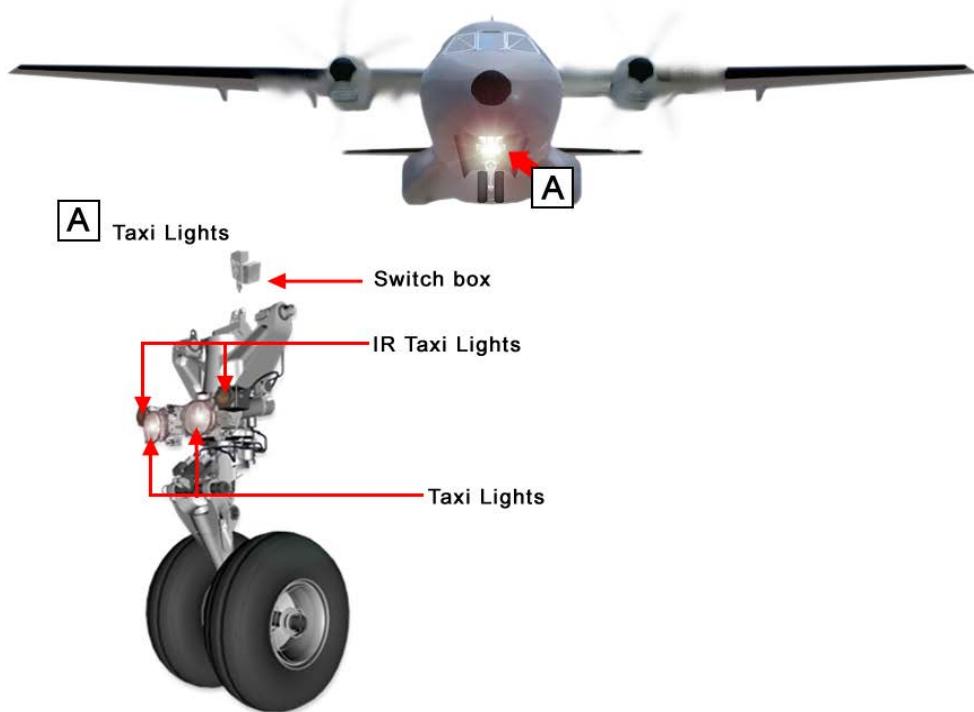


Figure 33-24 Taxi Lights - Components

## CONTROLS AND INDICATORS

### (1) TAXI Switch:

- ON: activates visual or infrared taxi lights.

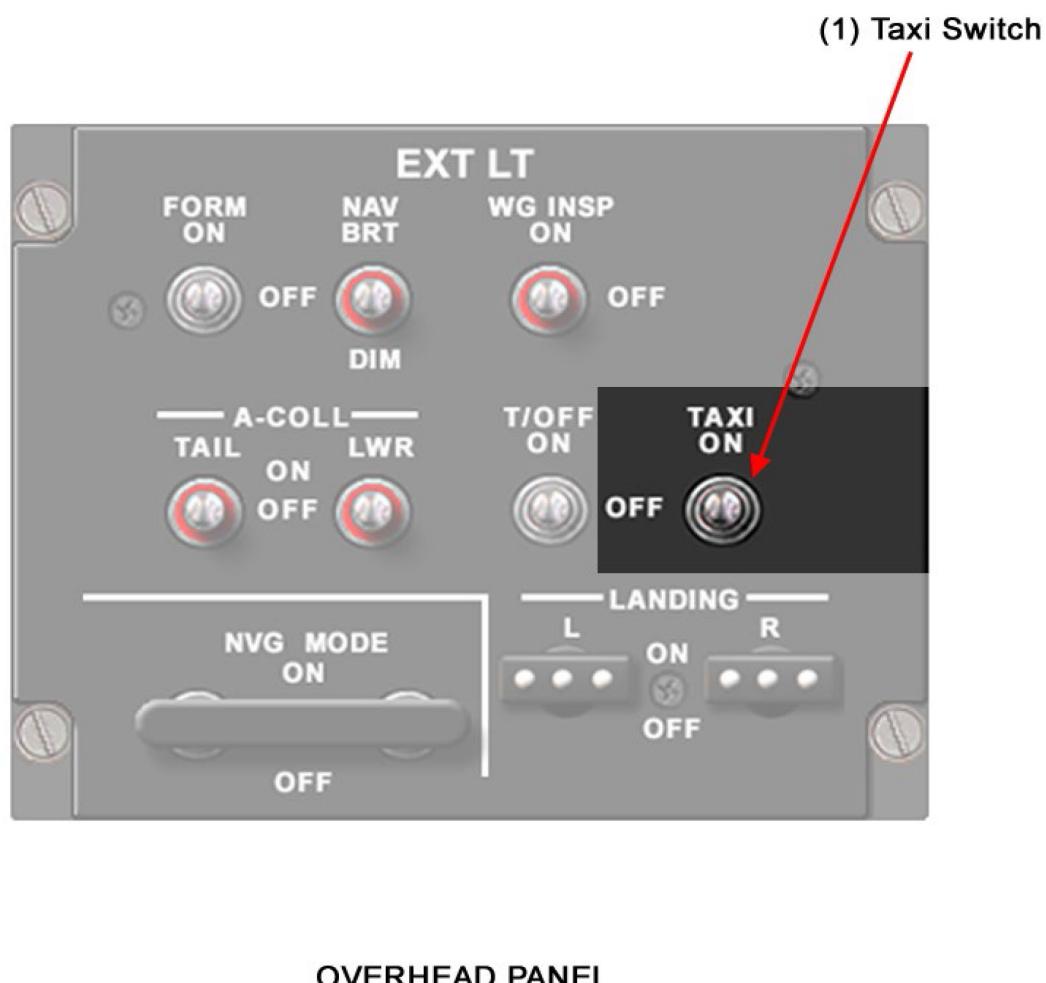


Figure 33-25 Taxi Lights - Controls and Indicators

## RUNWAY TURNAROUND LIGHTS

Runway turnaround lights are intended to light the ground both laterally as in front of the aircraft, so pilots may be able to identify runway turnaround zones while taxiing.

### DESCRIPTION

Main components are:

- **Runway Turnaround Lights:** two spotlights located at the front of each main landing gear nacelle.
- **EXT LT Control Panel:** located at the cockpit overhead panel.

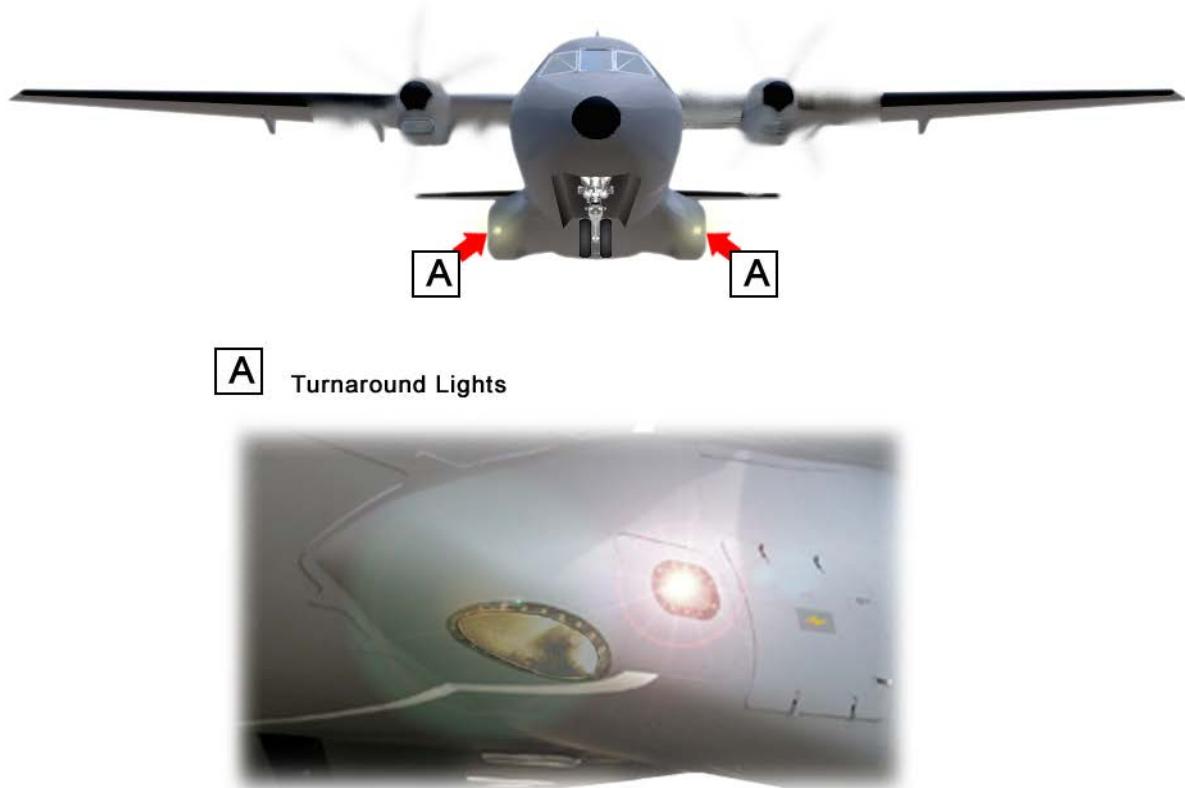


Figure 33-26 Runway Turnaround Lights - Components

## CONTROLS AND INDICATORS

### (1) T/OFF Switch:

- ON: activates runway turnaround lights, in visual mode.

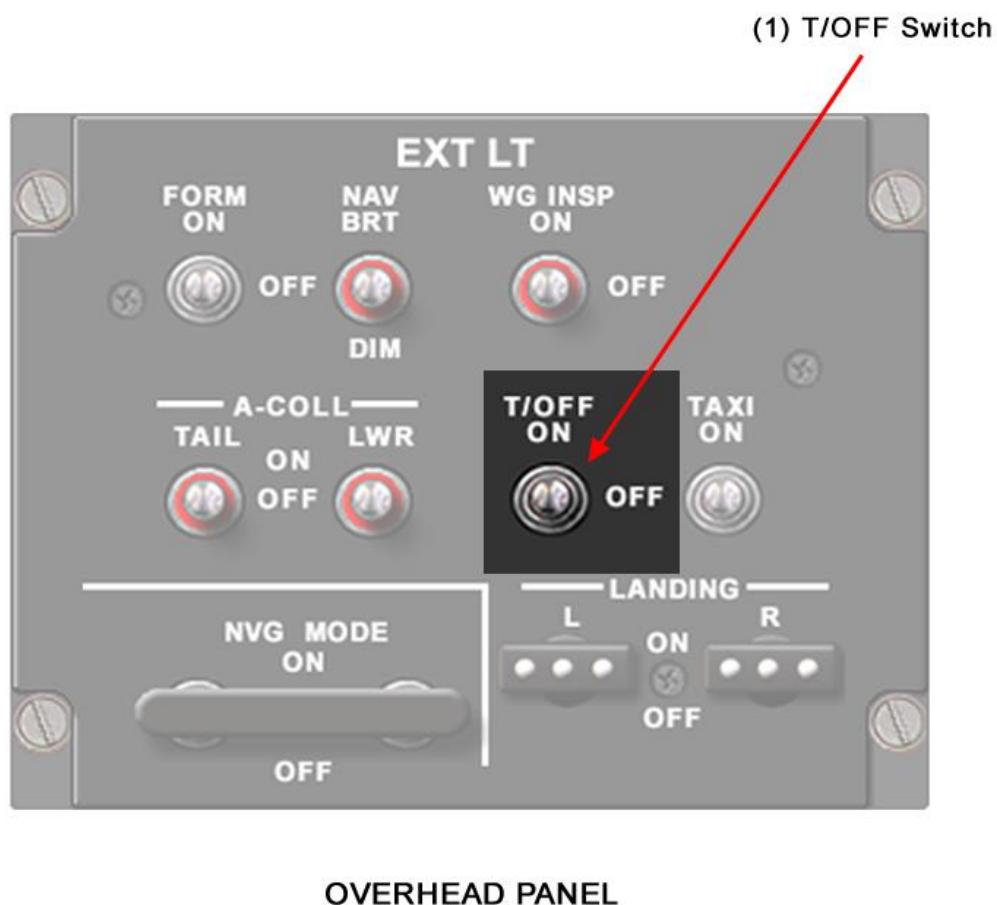


Figure 33-27 Runway Turnaround Lights - Controls and Indicators

## WING INSPECTION LIGHTS

Wing inspection lights are intended to light wing leading-edges, engine air intakes and propeller blades as well. These lights enable ice-accretion visual check, and assist ground servicing personnel

### DESCRIPTION

Main components are:

- **Wing Inspection Lights:** two spotlights located at each side of the fore fuselage.
- **EXT LT Control Panel:** located at the cockpit overhead panel.



Figure 33-28 Wing Inspection Lights - Components

## CONTROLS AND INDICATORS

### (1) WG INSP Switch:

- ON: activates the wing inspection lights, in visual mode.



Figure 33-29 Wing Inspection Lights - Controls and Indicators

## FORMATION LIGHTS

Formation lights are intended to perform as auxiliary elements while at night-flight close formation, for relative positioning assessment and distance estimation concerning accompanying aircraft.

The aircraft has two lighting rows, consisting of visual/infrared electro-luminous band, symmetrically located at each wingtip (top and underside), fuselage top and bottom, and fin.

### DESCRIPTION

Main components are:

- ***Formation Lights***: electro-luminous green bands.
- ***IR Formation Lights***: electro-luminous infrared bands.
- ***EXT LT Control Panel***: located at the cockpit overhead panel.



Figure 33-30 Formation Lights - Components

## CONTROLS AND INDICATORS

### (1) FORM Switch:

- ON: activates visual or infrared formation lights.

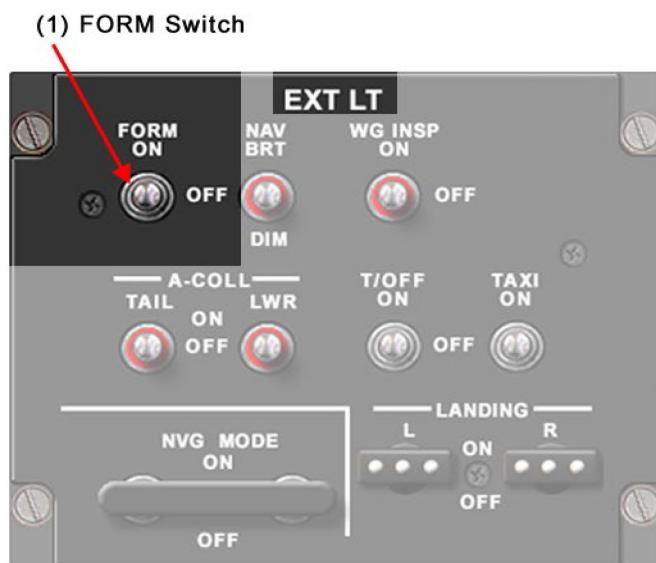


Figure 33-31 Formation Lights - Controls and Indicators

## EMERGENCY LIGHTING

Emergency lighting provides internal cabin and exit doors lighting, as well as external lighting by means of spotlights while under emergency conditions, or if lamps power supply fails.

The emergency lighting system includes:

- Cockpit Emergency Lighting.
- Cargo Cabin Emergency Lighting.
- Emergency External Lighting.

## COCKPIT EMERGENCY LIGHTING

Cockpit emergency lighting is intended to provide light enough under emergency conditions, or if main DC power supply system fails.

### DESCRIPTION

Main components are:

- **Portable Light:** located behind the pilot seat and fixed to a base-set by a handle, is fitted with an internal battery and a charge indicator light that comes on when the unit is supplied with 28V DC power.
- **INTERNAL LT Control Panel:** located at the cockpit overhead panel.

### OPERATION

The system is operated from the control panel EMER CKPT switch.

Thus, if the aircraft is energized and the switch is in the ARM position, portable light battery gets charged from the aircraft 28V DC power supply; emergency light is off, and indicator light is on. At this pointing, if voltage drops below 15V, or if the aircraft is only battery-fed, the system automatically turns on the emergency light, remaining on even if pulled out.

With the switch set to OFF, battery will be charged although the automatic activation circuit will be disabled. Finally, for emergency light manual turn-on, simply set the switch to ON. If so, emergency light will remain on, even if pulled out.

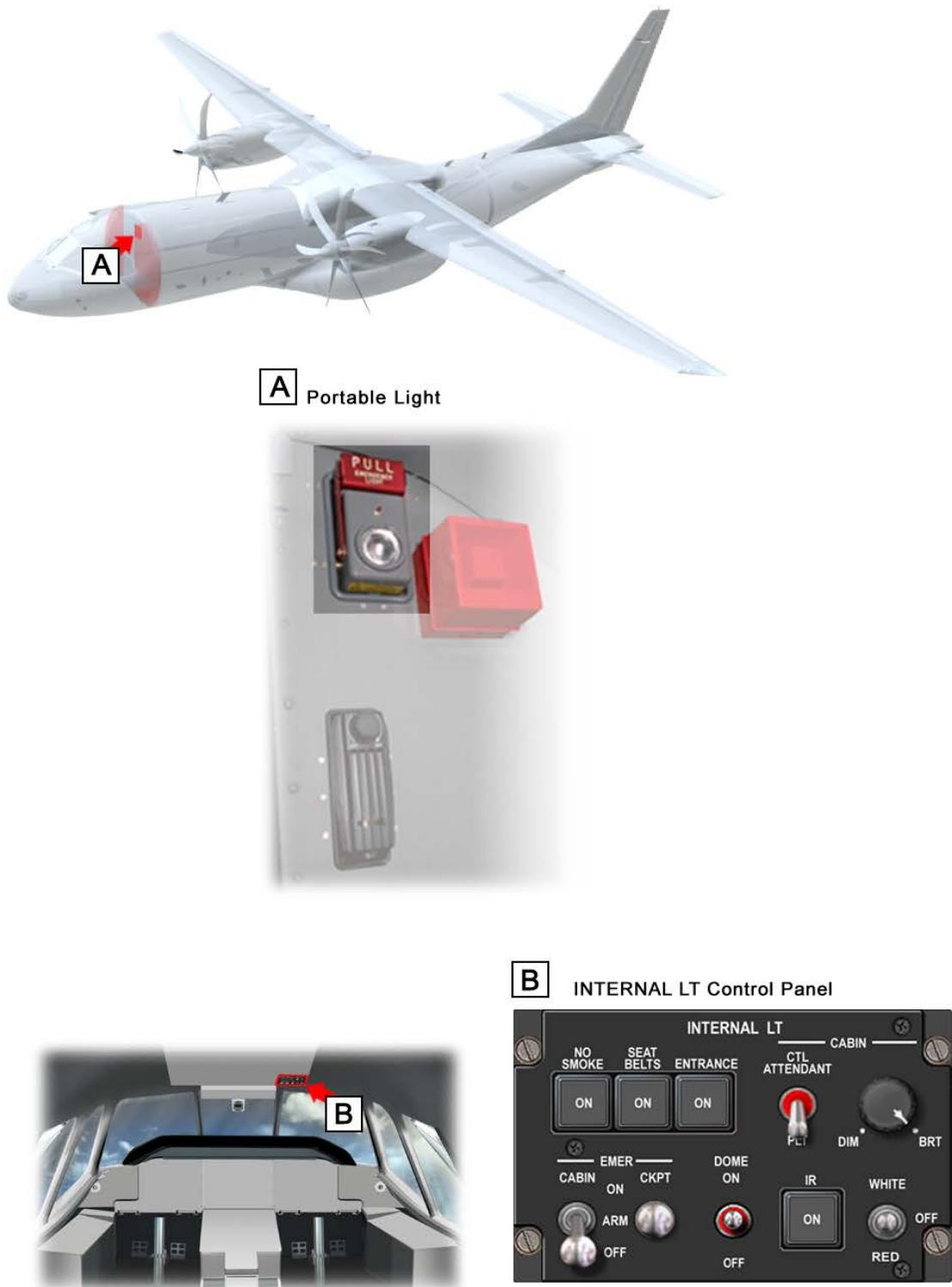


Figure 33-32 Cockpit Emergency Lighting - Components

## CONTROLS AND INDICATORS

### (1) Charging Indicator:

- On: portable light internal battery is being recharged.

### (2) EMER CKPT Switch:

- ON: activates cockpit portable light.
- ARM: portable light battery is being charged. Light comes on if voltage drops below 15V, or if the aircraft is only battery field.
- OFF: portable light battery is being charged. The light does not come on if voltage drops.



Figure 33-33 Cockpit Emergency Lighting - Controls and Indicators

# CARGO CABIN EMERGENCY LIGHTING

Cargo cabin emergency lighting is intended to provide light enough under emergency conditions, or if main lighting system power fails.

If normal electrical power supply fails, emergency power lighting comes from four battery-powered sources, while also feeds the emergency external lighting.

## DESCRIPTION

Main components are:

- **Battery-driven Power Supply:** located at the cargo cabin lateral bulkheads, the batteries supply 6-volt output, while charged at 28V DC from the aircraft electrical system at, BAT BUS 1, through automatic EMER LIGHT switch on the L MISCELLANEOUS circuit-breaker panel.
- **Exit Lamps:** located close next to crew, emergency, and paratroops doors, are rectangular boxes with a white translucent cover EXIT marked.
- **Aisle Lamps:** located at cargo cabin ceiling, along each side of the aircraft central axis. Aisle lamps provide lighting while in an emergency.
- **INTERNAL LT Control Panel:** located at the cockpit overhead panel.
- **ATTENDANT CONTROL Panel:** located at rear cargo cabin.

## OPERATION

The system is operated from EMER CABIN and EMER switches on the INTERNAL LT and ATTENDANT CONTROL panels respectively. The switches also operate the emergency external lighting.

Thus, while the switches are in the ARM position, batteries on the power supplies are being charged from the aircraft electrical power system. EMER LTS caution message will not be IEDS displayed, and cargo cabin emergency lights will be off. At this point, if voltage drops below 15V, or if the aircraft is only battery-fed, the system automatically activates emergency lighting.

With switches in the OFF position, power supply batteries will be charged from the aircraft 28V DC power supply. EMER LTS caution message will be IEDS displayed, to indicate the system is not operative.

Emergency lights manual turn-on is available by setting, any of the switches to ON (emergency external lights will also come on).

If both EMER CABIN and EMER switches are not in the same position, the following order of priority applies:

1. ON
2. ARM
3. OFF

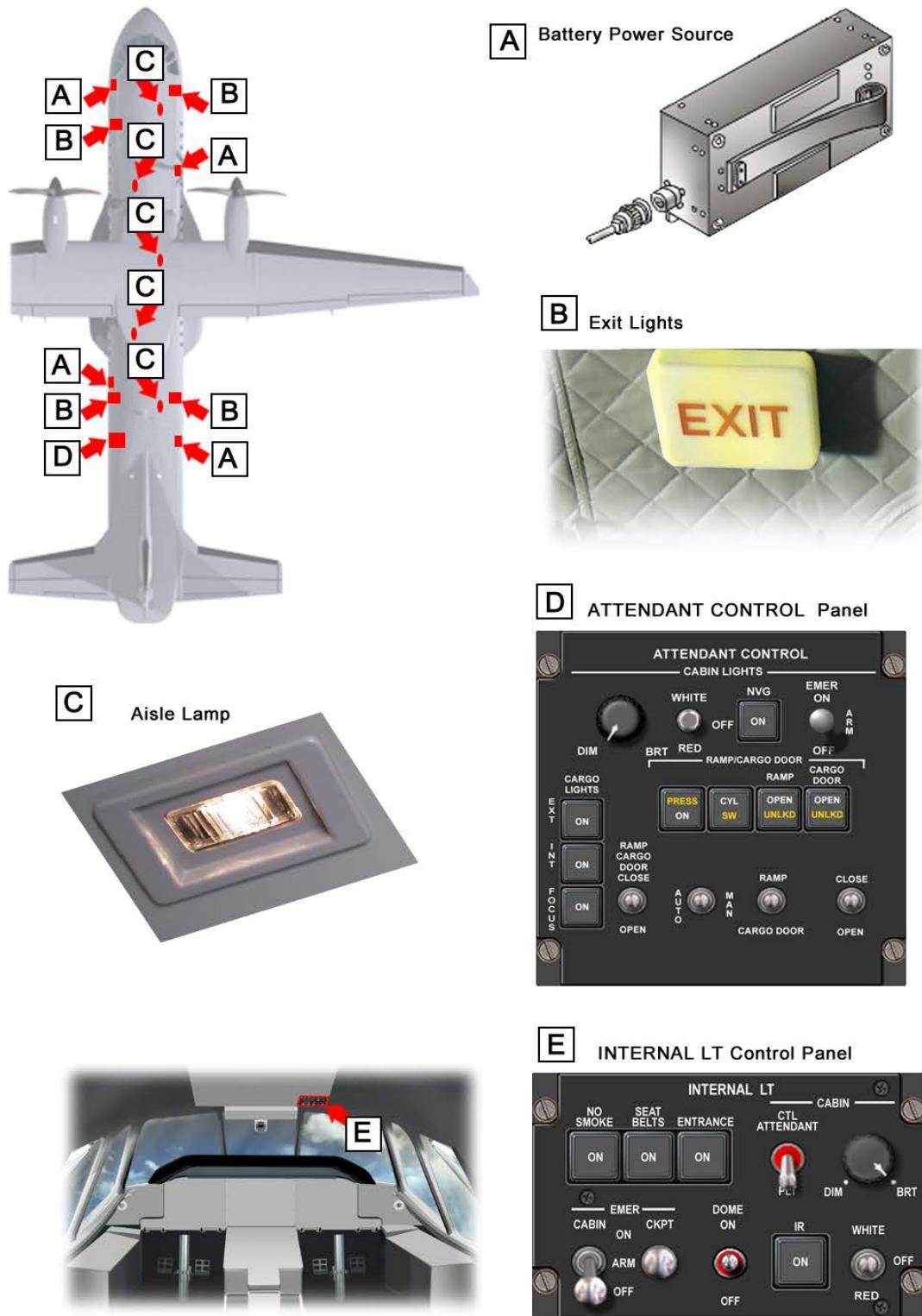


Figure 33-34 Cargo Cabin Emergency Lighting - Components

## CONTROLS AND INDICATORS

### (1) EMER CABIN Switch:

- ON: both external and cargo cabin emergency lights are automatically activated.
- ARM: emergency power supply batteries are being charged. Both cargo cabin and external lights automatically become operative, if voltage drops to 15V.
- OFF: neither cargo cabin, nor external emergency lights are operative if voltage drops.

### (2) EMER Switch:

- ON: both external and cargo cabin emergency lights are automatically activated.
- ARM: emergency power supply batteries are being charged both cargo cabin and external emergency lights automatically become operative if voltage drops to 15V, or if the aircraft is only battery-fed.
- OFF: neither cargo cabin, nor external, emergency lights are operative if the voltage drops.

### (3) (IEDS) EMER LTS Caution Message:

EMER CABIN and EMER switches are in the OFF position both cargo cabin and external emergency lights are off.

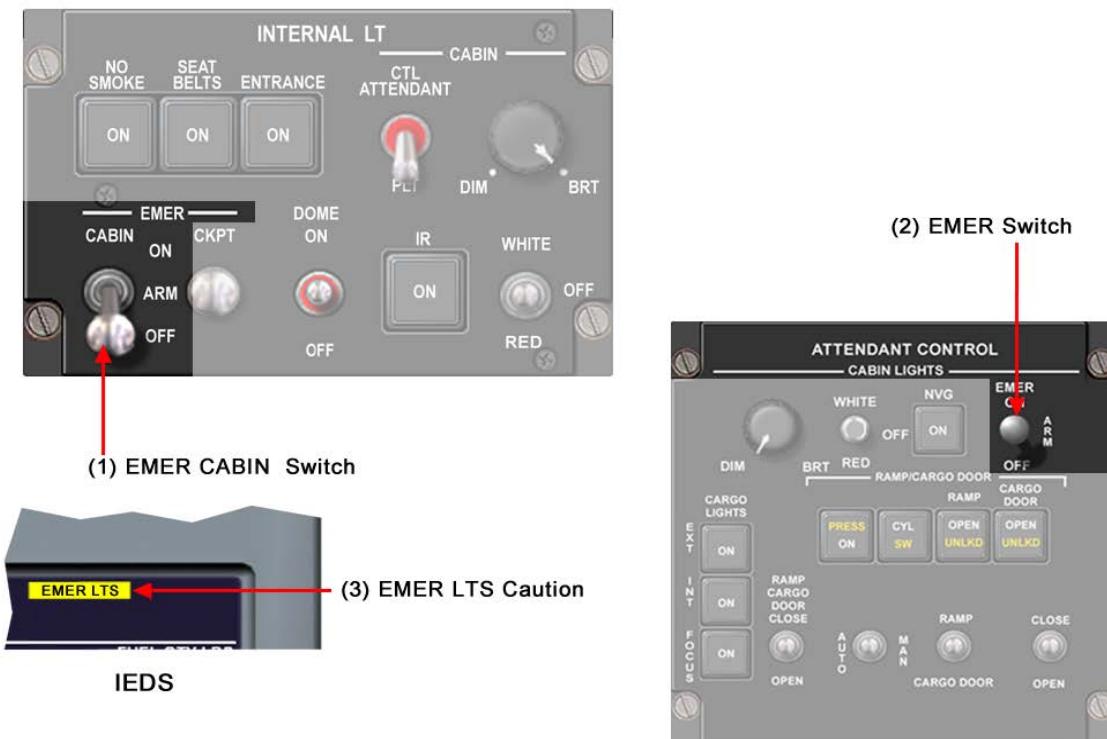


Figure 33-35 Cargo Cabin Emergency Lighting - Controls and Indicators

## EXTERNAL EMERGENCY LIGHTING

External emergency lighting is intended to provide light enough under emergency conditions, or if main lighting system power supply fails.

In case of normal power supply failure, four battery-powered sources provide emergency power that also feeds cargo cabin emergency lights.

### DESCRIPTION

Main components are:

- **Battery Power Source:** the same one that supplies cargo cabin emergency lights.
- **Exit Emergency Spotlights:** located outside the aircraft and, close to each exit door, light nearby areas while in an emergency.
- **INTERNAL LT Control Panel:** located at the overhead panel in the cockpit.
- **ATTENDANT CONTROL Panel:** located at rear cargo cabin.

### OPERATION

The system operates in a similar way as cargo cabin emergency lighting does. It is controlled from the same EMER CABIN and EMER switches, respectively located at INTERNAL LT and ATTENDANT CONTROL panels.

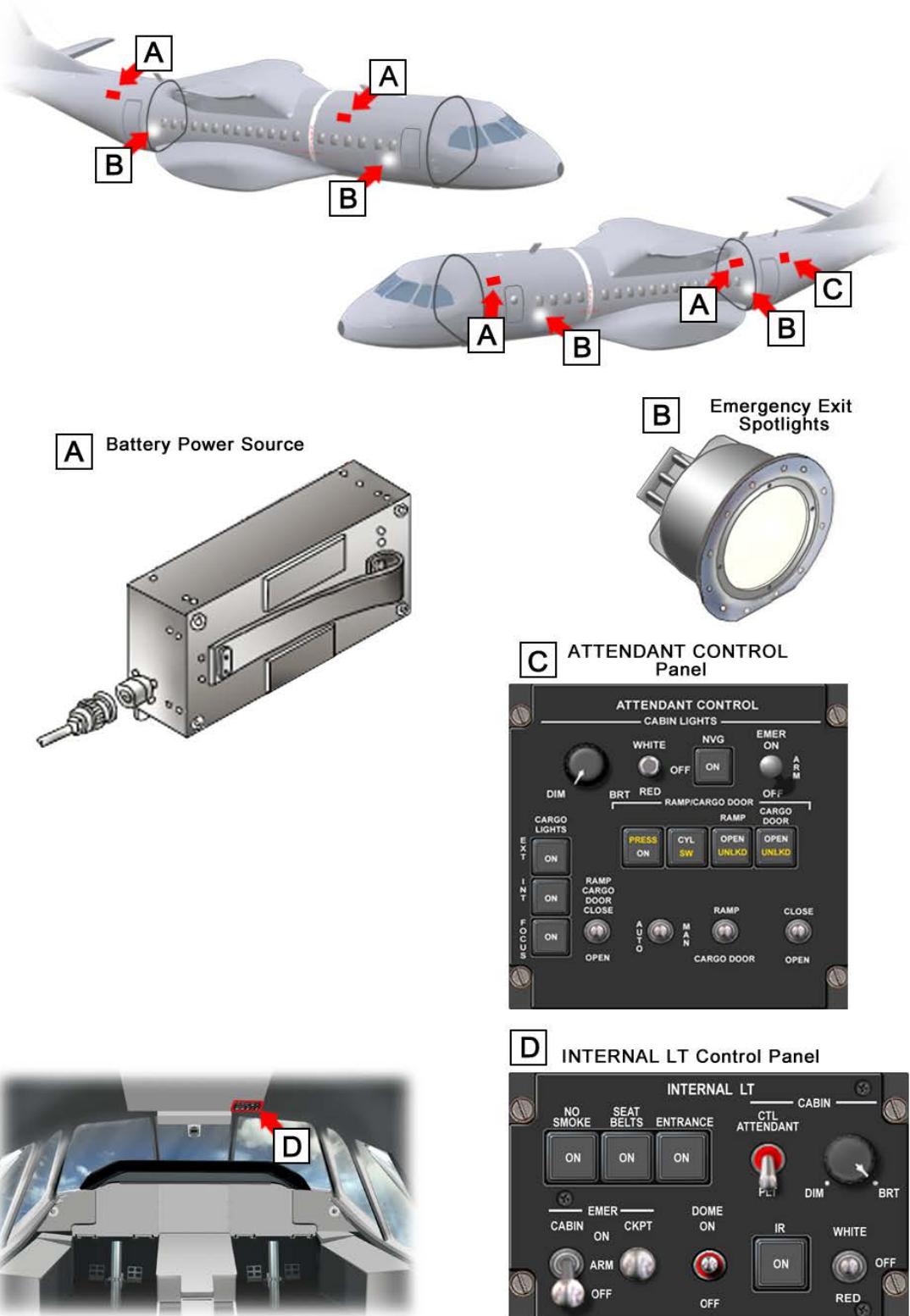


Figure 33-36 Emergency External Lighting - Components

## CONTROLS AND INDICATORS

### (1) EMER CABIN Switch:

- ON: automatically activates both external and cargo cabin emergency lights.
- ARM: emergency power supply batteries are being charged. Both external and cargo cabin emergency lights automatically get operative if voltage drops to 15V.
- OFF: neither external, nor cargo cabin, emergency lights become operative when the voltage drops.

### (2) EMER Switch:

- ON: automatically activates both external and cargo cabin emergency lights.
- ARM: emergency power supply batteries are being charged. Both external and cargo cabin emergency lights automatically get operative if voltage drops to 15V, or if the aircraft is only battery-fed.
- OFF: external, nor cargo cabin, emergency lights become operative when the voltage drops.

### (3) (IEDS) EMER LTS Caution Message:

EMER CABIN and EMER switches are in the OFF position. The external and cargo cabin emergency lightings are not operative.

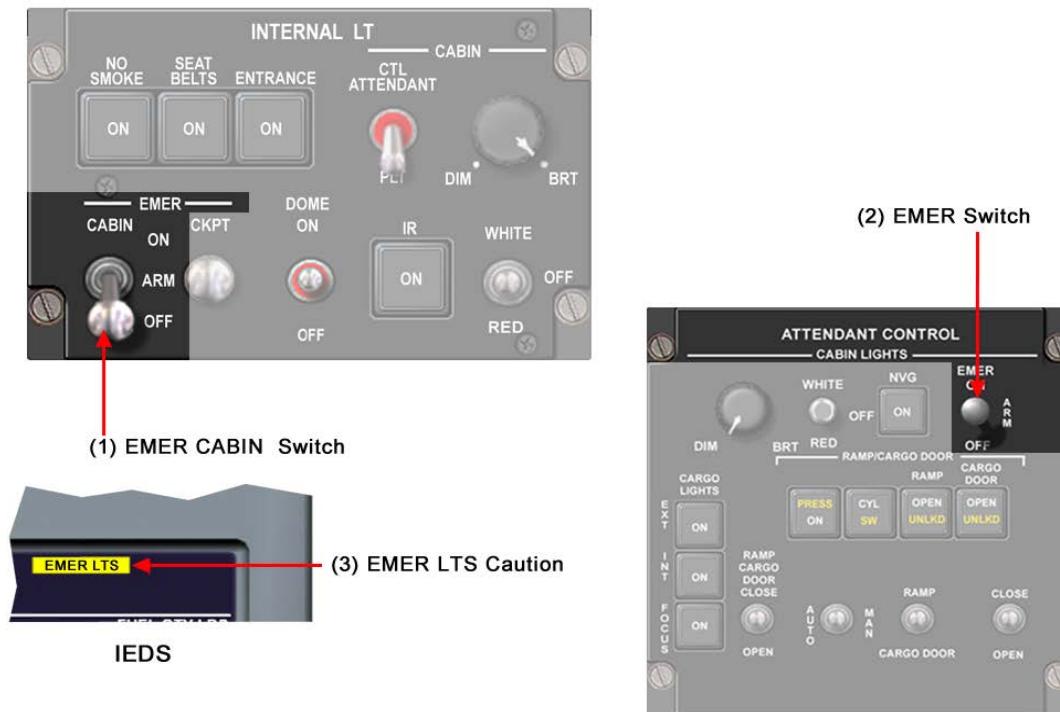


Figure 33-37 Emergency External Lighting - Controls and Indicators