2.17. LIGHTING SYSTEM

The lighting system consits of external and internal lights.

EXTERNAL LIGHTING

The external lighting system includes:

– position lights
– anticollision lights
– ground beacon light
– landing lights
– taxi light
– recognition light
– wing inspection light

The control switches for operating the external lights are located in the LIGHTS panel on the central control pedestal.

Two forward (left red, right green) and two rearward (white) position lights are located on the main wing tips. Electrical power to the position lights is delivered by the left single feed bus through the POS LTS 5-ampere circuit breaker on the pilot circuit breaker panel and through the two position POS-OFF control switch.

Two anticollision strobe lights and one ground beacon strobe light are provided: the first anticollision light is located on the vertical fin upper fairing, the second one on the bottom fuselage, and the ground beacon on the top fuselage. The anticollision strobe lights are fed by individual power supply units while the ground beacon light is connected to a flasher unit.

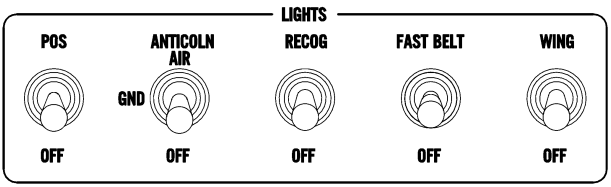

Figure 2.17-1. External Lights Control Panel

Electrical power to both the anticollision lights and to the ground beacon light is delivered by the right single feed bus through the ANTI COL LTS 5-ampere circuit breaker on the copilot circuit breaker panel. The anticollision and the ground beacon lights are controlled through the three position ANTI COLN AIR-GND-OFF control switch: when set to the AIR position the switch actuates the anticollision lights, while when set to the GND position actuates the ground beacon light.Two landing and one taxi fully retractable lights are installed on a movable door located on the fuselage belly just forward the nose landing gear well.

WARNING

Do not operate the landing/taxi light switch at speeds above 160 KIAS.

The three position LANDING-TAXI-OFF control switch energizes the lights door actuator when moved to either the LANDING or the TAXI position. As the lights door opens extending the landing and the taxi lights, the LTS DOOR OPEN annunciation on the MFD System Page comes on to indicate when the landing lights door is open; if the System Page is not displayed the LTS DOOR OPEN appear on the MFD under the "SYS" annunciation. When the lights door is completely extended a limit switch actuates the landing lights or the taxi light through individual relays as per the selected LANDING or TAXI position of the control switch. While the lights are extended any selection from the landing to the taxi or viceversa can be operated.

Setting the control switch to OFF, the actuator starts moving the lights door to closed, the door limit switch causes the lights relays to disengage and the related lights go off. As the door reaches the closed position the LTS DOOR OPEN green advisory light goes off.

Electrical power is delivered:

– to the left landing light by the left single feed bus through the L LDG LT 20-ampere circuit breaker on the pilot circuit breaker panel.

– to the right landing light by the right single feed bus through the R LDG LT 20-ampere circuit breaker on the copilot circuit breaker panel.

– to the taxi light by the left dual feed bus through the TAXI LT 15-ampere circuit breaker on the pilot circuit breaker panel.

– to the lights door actuator by the left dual feed bus through the LTS DOOR ACTR 3-ampere circuit breaker on the pilot circuit breaker panel.

NOTE

Electrical power delivery from the left dual feed bus to the taxi light and to the lights door actuator allows using the taxi light for landing in the event of failure on the single feed busses.

One recognition light is installed at the top of the vertical fin leading edge. Electrical power to the recognition light is delivered by the right single feed bus through the RECOG LT 5-ampere circuit breaker on the copilot circuit breaker panel and through the two position RECOG-OFF control switch.

One wing inspection light is installed outboard of the left engine nacelle. The inspection light allows observing the icing condition on the wing leading edge during night operations. Electrical power to the inspection light is delivered from the right single feed bus through the WING INSP LT 3-ampere circuit breaker on the copilot circuit breaker panel and through the two position WING INSP-OFF control switch.

INTERNAL LIGHTING

The INTERNAL LTS/FLOOD/LIGHTS DIMMING CONTROL panel on the left side of the cockpit allows controlling and dimming the internal lights.

The instrument panel glareshield flood lights are controlled through the FLOOD three position (BRT-DIM-OFF) switch. The power is delivered by the essential bus through the FLOOD LTS 3-ampere circuit breaker on the pilot circuit breaker panel.

The PANELS knob controls the continuous dimming of all the cockpit electroluminescent panels lights and display bezels. The A.C. power is delivered by two voltage inverters installed behind the instrument panel and controlled by the PANELS knob.

The DISPLAY knob controls the continuous dimming of the left and right PFDs, the MFD and the CDU.

The LAMP two position (BRT/DIM) switch controls the two levels of brightness of the master warning, master caution and ICE indications, the LDG position lights and the REV/MISC panel indications.

The two spot type crew lights, located on the left and the right side of the cockpit dome, are controlled through the CREW membrane on/off switch located on the entry door switch panel or by the two position COCKPIT-OFF switch on the INTERNAL LTS panel. These lights are fed by the hot battery bus through the 3 Amp. ENTR BAG LTS circuit breaker located on the main junction box circuit breaker panel in the baggage compartment.

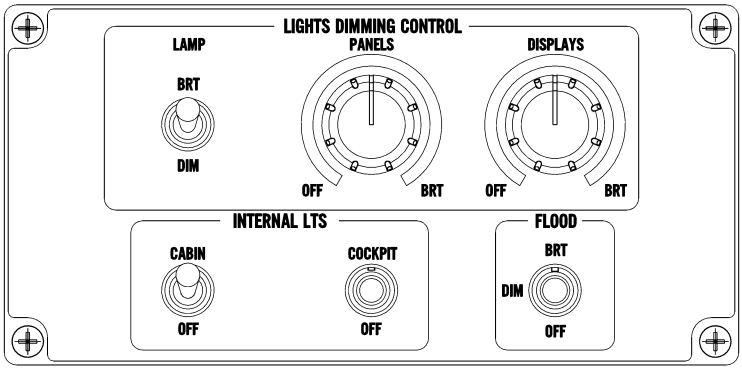

Figure 2.17-2. Internal Lights Control Panel

Two map lights are installed on the left and the right side of the cockpit. Each map light is controlled by its own on/off switch with rheostat and is fed from the essential bus through the FLOOD LTS 3 Amp. circuit breaker on the pilot circuit breaker panel.

The two position CABIN-OFF switch on the INTERNAL LTS panel controls the passenger cabin lights.The cabin illumination depends on the specific interior chosen: the following systems could apply in general.

– An entry light is located close to the cabin door frame. It is fed by the hot battery bus through the 3 Amp. ENTR/BAG LTS circuit breaker located on the main junction box circuit breaker panel and is controlled through the ENTRY membrane switch located on the entry door switch panel.

– Cabin lights are located laterally alongside the cabin dome in two rows.
They are controlled by the CABIN membrane on/off/bright/dim switches located on the Entry Door Switch panel and by other switches located in other points (like, for instance, seat armrests).
Electrical power is supplied by the interior bus, linked to the left generator bus, through the 35 Amp. UTIL circuit breaker located on the main junction box circuit breaker panel in the baggage compartment.

– Individual orientable spot type reading lights are located laterally alongside the cabin dome and are fed from the right single feed bus through the READING LTS 10 Amp. circuit breaker located on the copilot circuit breaker panel. Each light is controlled by its own READ LIGHT membrane on/off switch on the corresponding seat armrests.

– Spot type table lights are located in the cabin dome just above the retractable tables and they are operated from the TABLE LIGHT membrane switch on the corresponding seat arm rest. They are fed by the same bus and through the same circuit breaker as the reading lights.

– Vanity and indirect lights are located in the lavatory compartment. They are controlled by the VANITY and INDIRECT LIGHTS membrane switch on the lavatory switch panel.
A light is provided inside the Coat closet compartment, and it is operated directly by the compartment door.
All the lights are fed by the auxiliary interior bus, linked to the left generator bus through the 35 Amp. UTIL circuit breaker located on the main junction box circuit breaker panel in the baggage compartment.

– The rear baggage compartment light is controlled by an on/off toggle switch located close to the compartment door frame. A microswitch actuated by the door allows turning on the light only if the door is open. The light is fed from the hot battery bus through the 3 Amp. ENTR/BAG LTS circuit breaker located on the main junction box circuit panel in the baggage compartment.