



B737 NG CBT - LIGHTING SYSTEM

COURSE OUTLINES

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COURSE START

1-The material contained in this training program is based on the information obtained from current state, local and company regulations and it is to be used for training purposes only. At the time of designing this program contained then current information. In the event of conflict between data provided herein and that in publications issued by the authority, the authority shall take precedence.

LIGHTING SYSTEM

2-This chapter introduces you to the airplane lighting system and provides an overview of its organization, operation, controls and indications. Here is the chapter outline: * Introduction * Flight deck lighting * Passenger cabin lighting * Exterior lighting * Emergency lighting.

INTRODUCTION

3-The lighting system provides interior and exterior illumination of the airplane; the lights also provide information and guidance to passenger in normal and emergency situations.

4-Airplane lighting system consists of flight deck lighting, passenger cabin lighting, exterior lighting and emergency lighting.

5-Flight deck lighting system provides illumination to the instrument panels and flight compartment area. It consists of instrument and panel lights; miscellaneous lights such as dome lights, flood lights and standby compass light, and flight crew lights including map lights, chart lights and utility lights. The system also incorporates a master dim and test switch. Let's take a closer look at those lights and their controls.

Dome Lights

6-Two dome lights provide for general lighting for the flight compartment.

7-You can control the dome lights through DOME WHITE light switch on the aft overhead panel. The switch has three positions:with the switch in OFF position, the lights are extinguished, the DIM position sets the dome lights to low brightness, and the BRIGHT position makes the dome light illuminate with full brightness.

Captain's And First Officer's Instrument Panel Lights

8-The captain's and first officer's instrument panel lights provide the illumination for the instruments and panels in front of the captain and the first officer. The main panel light controls on the left and right forward panels provide the control of the intensity of captain's and first officer instruments and panels illumination.

9-The Captain's main panel light control is used to adjust the brightness of the Captain's panel and instrument lighting, center instrument panel, and automatic flight director system panel displays and edge lighting.

10-First Officer's main panel knob controls brightness of First Officer's panel and instrument lighting.

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Background And Afd Flood Lights

11-Background and automatic flight director system (AFDS) flood light switches are located on the left forward panel. These switches let you control the illumination of forward panel and automatic flight director system panel.

12-Background light OFF / BRIGHT switch controls the brightness of the incandescent lamps that illuminate the entire forward panel.

13-AFDS flood light switch controls brightness of the flood light that illuminates the glareshield panel.

Flood And Aft Electronics Lights

14-Flood and aft electronics lights controls are located on the aisle stand and used to control the illumination of the control stand and aft electronic panel. The FLOOD light switch controls brightness of an overhead flood light which illuminates control stand. The PANEL light switch controls the illumination of aft electronic panel.

Overhead And Circuit Breaker Panel Lights

15-Overhead and Circuit Breaker Panel lights controls on the forward overhead panel let you control the illumination of the overhead panel and circuit breaker panels. The PANEL light switch controls forward and aft overhead panel lights brightness.

16-The CIRCUIT BREAKER light switch controls the brightness of the lights which illuminate circuit breakers.

Map And Chart Lights

17-MAP and CHART light controls are on each sidewall panel.

18-The map light comes on when the MAP switch is pulled up. You turn the control switch to adjust the map light intensity. You can control the direction and area of the light.

19-To operate the chart lights, the CHART control is pulled up and rotated to set the brightness. The chart light illuminates the clip board area.

Utility Lights

20-The utility lights mounted on the sidewalls give a mobile light source in the flight deck. The light control switch at the bottom is used to make the light come on and to adjust the light intensity. You can also push and hold the switch for temporary illumination.

Standby Compass Light

21-The standby compass light illuminates the standby compass card. A three-position switch lets you control the standby compass light: with the switch in OFF position, the light is extinguished, the DIM position sets the light to low brightness, and the BRIGHT position makes the dome light illuminate with full brightness.

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Master Lights Test And Dim Switch

22-The master LIGHTS test and dim switch on the left forward panel lets you do a test of the flight compartment annunciators and lighted push-button switches and set annunciators and lighted push-button switches to the bright or dim mode.

23-BRIGHT position sets all flight deck indicating lights to bright mode. DIM position sets all indicating lights to low brightness. In the TEST position, all of the indicating lights come on bright.

24-Note that placing the Master Lights Test and Dim Switch in the TEST position will activate master caution recall and any stored fault will cause the associated light to remain illuminated when the switch is released.

PASSENGER CABIN LIGHTING

25-General lighting of passenger cabin is supplied by window lights, ceiling lights. Galleys, entries and lavatories are also fitted with the lights. Reading lights are available above each passenger seat.

26-The passenger cabin signs give NO SMOKING and FASTEN SEAT BELT indications to the passengers and attendants. There are also RETURN TO SEAT signs in the lavatories.

27-The passenger cabin signs are controlled by no smoking and fasten belts switches on the forward overhead panel. No smoking switch controls no smoking sign: Fasten belts switch controls both fasten belts sign and return to seat sign.

28-The switches have three positions: OFF, ON and AUTO. When the NO SMOKING and FASTEN BELT switches are in the OFF position, the passenger signs are off.

29-When the switches are placed in the ON position, no smoking, fasten belts and return to seat signs come on and there is a low chime.

30-When the switches are in AUTO position, operation of the signs are controlled automatically by reference to landing gear and flap positions.

31-With AUTO position , when landing gear are extended, the NO SMOKING signs, FASTEN SEAT BELT signs, RETURN TO SEAT signs illuminate and a low chime sounds. When the gear are retracted, the lights extinguish.

32-With AUTO position, when flaps are extended, FASTEN SEAT BELT signs, RETURN TO SEAT signs illuminate and a low chime sounds, and the NO SMOKING signs do not illuminate. When the flaps are retracted, the lights extinguish.

33-In some airplanes, NO SMOKING sign illuminates permanently. When the NO SMOKING switch is selected to ON, a low chime sounds in the cabin.

EXTERIOR LIGHTING

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34-The exterior lighting system consists of logo lights, position lights, strobe lights, anti-collision lights, wing illumination lights, wheel well lights, retractable and fixed landing lights, runway turnoff lights and taxi light.

35-Exterior lighting control switches are located on the forward overhead panel. Let's now take a closer look at external lights and their controls.

Logo Lights

36-The logo lights in the horizontal stabilizers illuminate both sides of the vertical stabilizer to show the airline logo or emblem. The logo light switch let you control the logo lights operation. With the switch in ON position, the logo lights illuminate.

Position And Strobe Lights

37-The position lights in each wing tip show airplane position, direction and attitude to persons in other airplanes or on the ground. The left forward position light is red. The right forward light is green. The aft white position lights are on trailing edge at the base of both winglets.

38-There are also three high intensity white strobe lights installed on the left and right wing tips and the tailcone of the airplane.

39-The POSITION light switch lets you control the operation of position lights and strobe lights. With the switch in OFF position, all position and strobe lights are extinguished. When the switch is selected to STEADY, red, green and white position lights on the wing tips illuminate while the strobe lights remain extinguished. With the POSITION light switch in the STROBE and STEADY position, all position and strobe lights illuminate.

Anti-Collision Lights

40-The anti-collision lights located on the top and bottom of the fuselage make the airplane easier to see in the air and on the ground. Two red anti-collision strobe lights are located on the top and bottom of the fuselage. You can use ANTI COLLISON lights switch to control the anti-collision lights. With the switch in ON position, the red flashing anti-collision lights come on.

Wing Illumination Lights

41-The wing illumination lights on the left and right sides of the fuselage provide illumination to the leading edge of the wings. At night, these lights let the flight crew see when ice collects on the wing leading edges. You use the wing illumination toggle switch to control the wing illumination lights. With the switch in ON position, the lights illuminate the wing leading edges.

Wheel Well Lights

42-The wheel well lights illuminate the wheel well of the nose gear and each main gear. You use the WHEEL WELL switch to control the wing illumination lights. With the switch in ON position, the lights illuminate main and nose wheel wells.

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Landing Lights

43-The landing lights help the flight crew see the runway during takeoff and landing. The landing lights are arranged in two groups. Retractable landing lights and fixed landing Lights.

44-The retractable landing lights are on the lower airplane fuselage, next to the ram air inlet panels. A three-position toggle switch controls each retractable landing light.

45-With the switch in RETRACT position, retractable landing light is stowed and extinguished. When the switch is selected to EXTEND, retractable landing lights extend, but do not illuminate. The lights may be extended at any speed. When the retractable switch is in ON position, retractable landing lights are extended and illuminated.

46-Two fixed landing lights are in the wing root area of each wing. The lights shine forward and down in a fixed position.

47-A two-position toggle switch controls each fixed landing light. When the fixed landing light switch is in ON position, fixed landing lights are illuminated.

Runway Turnoff Lights

48-Runway turnoff and taxi lights let you see the taxiway or runway during taxi.

49-The runway turnoff lights are in each wing root next to the fixed landing lights. The lights illuminate the area in front of the main gear.

50-You control runway turnoff lights with the RUNWAY TURNOFF light switches on the control panel. With the switch in ON position, runway turnoff lights come on.

Taxi Light

51-The taxi light is on the front of the nose landing gear strut. A toggle switch controls the taxi light. In some airplanes, the switch has OFF and ON positions. When the switch is in OFF position, nose gear taxi light is extinguished. With the switch in ON position, the taxi light shines in the same direction as the nose wheel.

52-In some airplanes, the switch has OFF and AUTO positions. When the switch is in OFF position, nose gear taxi light is extinguished. With the switch in AUTO position, the taxi light shines in the same direction as the nose wheel and automatically extinguishes when the nose landing gear is retracted.

EMERGENCY LIGHTS

53-The emergency lighting system provides illumination to the emergency exit paths inside of the airplane and the exit areas around the airplane.

54-The emergency lighting system is powered independently of the airplane system by three battery packs. The battery packs can fully recharge in 90 minutes.

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55-The emergency lights are arranged in two groups: * Interior emergency lights and * Exterior emergency lights.

56-The interior emergency lights consist of aisle lights, exit sing and ceiling lights, and floor proximity lights.

57-Aisle lights under the stowage bins supply light to the general aisle area. They help passengers and crew see in an emergency.

58-The exit sign and exit ceiling lights come on to show the location of the exits and illuminate the area near the exits. Exit signs and lights are located at entry doors, service doors, overwing emergency doors and in the ceiling.

59-The floor proximity lights supply light at the floor level to show the passengers and crew the direction to all of the exits. Floor proximity lights are located at regular intervals down the aisle.

60-Some airplane models incorporate photoluminescent floor path marking strips along the cabin aisle. The photoluminescent strips store the light energy and glow after the lights go out, providing exit path guidance.

61-The photoluminescent strips need to be properly charged with full intensity of the cabin ceiling and sidewall lights. The strips should not be covered or blocked during charging. The strips then function properly when they are needed.

62-A separate bulb in aft DOME light is also powered by emergency lighting system to provide illumination for flight deck evacuation.

63-Exterior emergency lights illuminate the escape slides and the exit areas around the airplane. There are fuselage installed escape slide lights next to the forward and aft service and entry doors. Lights are also installed on the fuselage to illuminate the overwing escape routes and ground contact area.

64-The emergency lights can be controlled through the emergency exit light switch on the forward overhead panel or the emergency exit light switch on the aft flight attendant panel.

65-The emergency exit light switch on the forward overhead panel has three positions: * ARMED, * OFF and * ON

66-The switch is guarded to the ARMED position. With the switch in ARMED position, the system is ready for automatic operation. When AC power is turned off or electrical power to DC bus No. 1 fails, all emergency lights illuminate automatically.

67-When the switch is in OFF position, emergency lights do not come on if electrical power fails or is removed from the airplane.

68-When the switch is moved to ON, all emergency lights illuminate.

69-With the switch in either ON or OFF position, NOT ARMED Light illuminates and both MASTER CAUTION and OVERHEAD

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annunciator lights also come on.

70-Emergency lights can also be controlled from a guarded switch on the aft flight attendant panel. When the switch is pushed to ON position, all emergency lights illuminate even if the flight deck switch is OFF.

COURSE END

71-End of course. ?