



B737 NG CBT - OXYGEN 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.

OXYGEN SYSTEM

2-This chapter covers the airplane oxygen system and provides an overview of its organisation, operation, controls and indications. Here is the chapter outline: * Introduction * Flight crew oxygen system * Passenger oxygen system * Portable oxygen system

INTRODUCTION

3-The fixed oxygen systems supply oxygen to the flight crew, cabin attendants, and passengers in the event of cabin depressurisation or smoke in the cabin.

4-The oxygen system consists of two independent parts: Flight crew oxygen system and passenger oxygen system.

FLIGHT CREW OXYGEN SYSTEM

5-The flight crew oxygen system supplies diluted or pure oxygen to the pilots and the observer. The system consists of an oxygen bottle, supply lines and mask for each pilot and observer.

6-The oxygen cylinder stores gaseous oxygen for the flight crew system and is placed in the lower deck outside the pressure cabin. An indicator on the oxygen system control panel indicates oxygen cylinder pressure. Nominal cylinder pressure is 1850 psi.

7-The flight crew oxygen masks are held in stowage boxes outboard of the crew seats. Let's take a look at some features of a stowage box before opening it.

8-The stowage box incorporates two flap doors, a RESET/TEST lever and an oxygen flow indicator.

9-RESET/TEST lever is used to turns off the oxygen flow for mask stowing operations and to test the system.

10-To test the system, you push the RESET/TEST lever down while the mask is stowed. The test is satisfactory when the flow of oxygen is heard and a yellow cross shows momentarily in the indicator.

11-In the stowage boxes there are flight crew oxygen masks. The observer oxygen masks are held in stowage cups which do not have the features of the stowage boxes.

12-Each crew member has an identical mask which provides an independently adjustable source of low pressure oxygen. Each mask has inflatable harness for quick donning. A microphone which is controlled by a switch on the audio control

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panel is fitted to the mask.

13-The mask incorporates a regulator which controls the oxygen flow. The regulator is fitted with two red levers which are used for removing the mask and inflating the harness, a tumbler switch with NORMAL and 100% positions and a Emergency control knob with EMERGENCY and TEST positions.

14-Controls on the regulator determine the modes of oxygen delivery. There are three modes of oxygen delivery. Normal or diluter demand, 100% demand and emergency continuous.

15-With the normal/100% tumbler switch in the normal position, the regulator operates in diluter demand mode and supplies oxygen/air mixture to the crew member only when the crew member inhales. The oxygen to air ratio depends on the cabin altitude. The percentage of oxygen in the mixture increases with the increase in cabin altitude.

16-When the tumbler switch is pushed to 100% position, the regulator supplies pure oxygen to the crew member on demand at all cabin altitudes.

17-With the N/100% switch in the 100% position, if the EMERGENCY/TEST selector is rotated, the regulator supplies 100% oxygen continuously under positive pressure which provides protection against smoke and harmful vapors.

18-Note that use of emergency mode depletes oxygen supply at higher rate than normal or 100% mode due continuous flow of oxygen. You must use emergency mode only as conditions require.

19-EMERGENCY/TEST selector is also used to check the mask for continuous flow of oxygen. While you push and hold the TEST/RESET lever down, push the EMERGENCY/TEST selector for 5 seconds. If the yellow cross shows continuously in the flow indicator, it means that regulator is being supplied with continuous flow of oxygen and the test is satisfactory.

20-Masks can be donned with one hand. With the mask stowed in the box, grasp the red levers. Squeeze the levers while pulling the mask from the box. When you squeeze the levers the oxygen mask harness inflates for quick donning. Position the harness over your head. With the oxygen mask and harness in place in your head, release the inflation levers, which deflates the harness and guides the mask assembly to the face.

21-Before stowing the oxygen mask you have to make sure of two things: NORMAL/100% regulator control is on the 100% position and EMERGENCY/TEST selector is NOT in the EMERGENCY position.

22-Then you accomplish the following to stow the mask: Coil the hose and position it at the bottom of the stowage box. Hold the mask by the regulator with the facepiece down and insert the mask-regulator assembly into the stowage box. Make sure it is fully seated against the stop in the stowage box. Close the left-hand door. The OXYGEN ON flag will appear at the center of the door. Close the right-hand door. Push and then release the TEST AND RESET lever on the left-hand door. Verify that the OXYGEN ON flag disappears when the control lever is released.

23-Do not squeeze the red inflation levers during stowing. Doing this will cause the harness to inflate and prevent the

correct stowing of the mask.

PASSENGER OXYGEN SYSTEM

24-The passenger oxygen system supplies emergency breathing oxygen to the passengers and cabin attendants.

25-The passenger oxygen system uses chemical oxygen generators to produce oxygen. The generators contain iron and sodium chloride which react chemically to make gaseous oxygen.

26-Individual chemical oxygen generators are located at each Passenger Service Unit (PSU) above each seat group.

27-Each generator feeds four oxygen masks with continuous flow of oxygen regardless of whether the user is inhaling or exhaling. The extra mask is for an infant. The air inhaled from the mask is a mixture of oxygen and cabin air.

28-A chemical oxygen generator with two masks is also fitted to each attendant station and each lavatory.

29-Passenger oxygen masks can be deployed either automatically or manually.

30-The passenger oxygen system is automatically operated by an altitude pressure switch. When the cabin altitude reaches approximately 14,000 feet, the switch automatically opens the stowage door to deploy the oxygen masks.

31-Passenger oxygen masks can also be deployed manually with a guarded toggle switch on the oxygen system control panel. To activate the system you raise the switch guard and move the switch to ON position. This causes passenger oxygen masks throughout the cabin to deploy.

32-If the passenger oxygen is activated and an oxygen mask stowage door fails to open, the masks may be dropped mechanically by inserting a manual release into the door panel release hole.

33-When the passenger oxygen masks are deployed either automatically or manually, the PASSENGER OXYGEN ON light illuminates on the oxygen system control panel and OVERHEAD illuminates on the Master Caution System.

34-When the passenger masks drop down, oxygen is not immediately available to the user.

35-Pulling one of mask towards the face starts the oxygen supply to all masks in the unit. This action triggers the firing mechanism to start the oxygen generation process in chemical oxygen generator.

36-A green in-line flow indicator changes color to green in the transparent oxygen hose, whenever oxygen is flowing to the mask.

37-The passenger oxygen system can supply continuous oxygen flow for approximately 12 minutes. The user inhales oxygen and cabin air mixture.

38-The Note that once the chemical oxygen generator is activated, passenger oxygen supply cannot be shut off and flow

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of oxygen is constant, whether or not the mask is being worn.

39-Since the system supplies continuous flow of oxygen whether or not the mask is being worn, the NO SMOKING sign should be strictly observed when using passenger oxygen.

40-Furthermore, passenger oxygen should not be used with cabin altitude below 14,000 feet when there is smoke in the cabin, because the user inhales a mixture of oxygen and cabin air.

PORTABLE OXYGEN SYSTEM

41-The airplane also incorporates portable oxygen system which consists of portable oxygen cylinders and protective breathing equipments.

Portable Oxygen Cylinders

42-Portable oxygen cylinders installed at suitable locations in the passenger cabin are intended for use in walk-around first-aid and life-sustaining purposes independent of fixed systems.

43-The portable oxygen cylinders are fitted with a pressure gage, pressure regulator and a shut-off valve. The cylinders are charged with dry aviation grade oxygen to a nominal pressure of 1,800 psi at a temperature of 70 degrees Fahrenheit or 21 degrees Celsius. Under these conditions, the cylinders have a capacity of 11 cubic feet or 311 liters of free oxygen.

44-Each portable oxygen cylinders incorporates two continuous flow outlets. One outlet regulates flow at two liters per minute for walk-around; the second outlet supplies flow at four liters per minute, which is used for first aid.

Protective Breathing Equipment

45-Protective Breathing Equipment devices provide the crew with a smokeless head envelope (smoke hood) and a source of air for combating fires and/or entering areas of smoke or fume accumulation.

46-They are normally found in the galley areas and optionally in the flight compartment.

47-The device is placed over the head and, when activated, provides approximately 15 to over 20 minutes of oxygen depending upon the device used.

COURSE END

48-End of course. ?