EMERGENCY EQUIPMENT

GENERAL

COCKPIT

Cockpit Oxygen
Cockpit oxygen is a conventional high-pressure gaseous system. The system uses a 50 cubic foot cylinder to store oxygen at high pressure (1,850 psi). The cylinder is installed on the right side of the cockpit/cabin partition behind the First Officer. A removable panel behind the First Officer’s seat allows access to the cylinder for removal and replacement.

An oxygen service panel on the right side of the front fuselage allows external access to the oxygen cylinder and to a pressure gauge. A relief valve opens if the pressure exceeds 90 psi. The system is protected from over-pressurization by a safety disc located on the lower right side of the aircraft’s nose. Discharge through the safety disc may be visually verified when the discharge indicator (green disc) has been blown out.

The cylinder has an integrated shutoff/regulator valve that controls oxygen outlet pressure. The regulator valve supplies **cockpit oxygen at low pressure (70 psi) in the ON position**. The valve closes in the OFF position, thus the cockpit masks will neither operate nor test.

Cylinder pressure is indicated in the cockpit on the MFD ECS page. If the cylinder pressure drops below 400 psi, an EICAS OXYGEN LO PRESS caution message will be presented.

The cylinder supplies oxygen to each pilot and observer mask. Each pilot and observer is provided with a quick-donning diluter/demand type mask, which is inside a mask stowage box adjacent to their respective station.
MASK STOWAGE BOXES
The mask stowage boxes are directly connected to the oxygen distribution line and to the communication system. A mask supply hose connection and a microphone jack are inside the mask stowage box. Both pilot boxes incorporate a shutoff valve, which keeps the mask regulator unpressurized while in the stowed position.

The shutoff valve opens when the box doors are opened, thus allowing the oxygen to flow to the mask. After taking the mask out of the stowage box, the box doors can be closed without interrupting the oxygen supply to the mask. A white OXY ON flag appears on the left box door when the box shutoff valve is open and oxygen is supplied to the mask. Stopping the oxygen flow requires the left box door to be closed and the Test/Shutoff Sliding Control to be activated. Both pilot mask stowage boxes are provided with a flow indicator.

The observer’s mask stowage box does not have a Test/Shutoff Sliding Control. The observer’s mask is permanently pressurized, so oxygen will flow only on demand.

COCKPIT MASK
The cockpit mask is a quick-donning oro-nasal type which allows oxygen to flow on demand or under pressure, as required. The mask has an automatic oxygen dilution system which provides pure oxygen when the cabin altitude exceeds 33,000 ft.

The mask can also be manually selected to the 100% position to provide pure oxygen at all altitudes or to the EMERGENCY position to maintain positive pressure in the venting orifice. The pilot masks have a venting valve, a venting and a microphone.

The observer’s mask is similar to the pilot masks, except that the observer’s mask does not have a venting valve and it has a flow indicator installed in the supply hose.

COCKPIT FIRE PROTECTION
Pilots have smoke goggles to be used with their masks. Observer smoke goggles are not required.

The smoke goggles were designed for use with the pilot’s cockpit mask assembly by matching the mask face cone. The venting valve on the mask shell is manually actuated by the pilot to provide a direct connection between the venting orifice and the goggles.

A metered oxygen flow is directed to inside the goggle cavity to provide continuous venting and to prevent any infiltration of harmful gases when the mask regulator is selected to the emergency position.

One PBE unit is available in the cockpit for fire fighting.
CABIN EMERGENCY EQUIPMENT

Flight Attendant Jumpseat
- Flashlight
- Live Vest

FWD Entry Storage Area L/H (3AB Bulkhead)
- Fire Extinguisher
- PBE
- O2 Walk Around Bottle
- Grab and Go Kit

FWD Entry Storage Area R/H (Above Closet)
- First Aid Kit
- Medical Kit
- AED
- O2 Tool

G2 Side Storage Space
- Demo Equipment
- Seatbelt Extenders
- Infant Life Vests (5)

AFT Storage Area
- Fire Extinguisher
- PBE
- Flashlight

CABIN OXYGEN
Oxygen supplied to the passengers and to the Flight Attendant comes from chemical oxygen generators and continuous-flow masks installed in proper dispensing units.

The dispensing units are located in the right and left overhead passenger service units, the lavatory, and the Flight Attendant station. Each unit may be equipped with one, two, or three continuous flow masks.

The Passenger Oxygen Control Panel is located on the right lateral console, above the First Officer’s mask stowage box. The system is automatically activated, if the Passenger Oxygen Latches knob is set to AUTO and the cabin pressure altitude is above 14,000 ft. The automatic
deployment of the continuous-flow masks is controlled by a dedicated altimetric switch and electric latches to open the dispensing units.

The system may be manually activated, at any altitude, by setting the Passenger Oxygen Latches knob to MANUAL. If the passenger oxygen system is activated and the dispensing unit door does not open, the masks may be dropped manually by the Flight Attendant by a door opening O2 tool.

After the masks drop from their dispensing units, the oxygen generator is activated when any mask in the associated dispensing unit is pulled down. Pulling one mask down causes all the masks in that unit to come down and be supplied with 100% oxygen. High temperature is produced in the oxygen chemical generator when it is activated and supplying oxygen. An in-line flow indicator is visible in the transparent oxygen hose when oxygen is flowing to the mask. Oxygen flows for approximately 12 minutes and cannot be shut off.

Each chemical generator supplies oxygen continuously when it is activated, whether the masks connected to it are being used or not.

The oxygen ON indicator light on the Passenger Oxygen Control Panel illuminates when the electric latches have been energized. The NO SMOKING and FASTEN SEAT BELTS signs in the passenger cabin are also automatically illuminated. These indicator and passenger advisory lights remain illuminated until the oxygen system is reset.

PORTABLE OXYGEN
The cylinder has approximately 10 cubic feet of usable oxygen. An ON-OFF regulator is installed on the cylinder neck. The cylinder has two outlets for connecting the two continuous-flow masks furnished in the cylinder bag. The cylinder must be used exclusively for therapeutic first-aid purposes only. A gauge is provided to monitor the cylinder pressure.

The minimum portable oxygen cylinder pressure for dispatch is 1,200 psi (calculated for a maximum utilization period of 30 minutes).

EMERGENCY LOCATOR TRANSMITTER
The ELT transmits a radio signal on 121.5 and 243.0 MHz when activated to help locate the aircraft during search and rescue operations. The system has a transmitter, an antenna, and a remote panel. The transmitter has an ON/OFF switch and an impact switch. The remote panel is on the cockpit main panel. The transmitter is installed in the lavatory right ceiling panel. The antenna is on the top rear of the fuselage.

The ELT may be activated either manually or automatically. A red light flashes on the cockpit remote panel to indicate an ELT activation.

Manual activation occurs when either the transmitter ON/OFF switch or the remote panel switch is turned ON.

Automatic activation occurs when the transmitter impact switch senses a deceleration of more than 5 G's. The transmitter ON/OFF switch must be OFF and the remote panel switch must be in the ARM position for automatic activation.

Pilots can deactivate both manual and automatic activations by performing the TEST/RESET function, which is listed on the remote panel.