

**FIRE PROTECTION****TABLE OF CONTENTS**

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<b>SYSTEM DESCRIPTION</b>
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**INTRODUCTION**

There are fire detection and extinguishing systems for:

- engines
- lavatories
- APU
- cargo compartments.

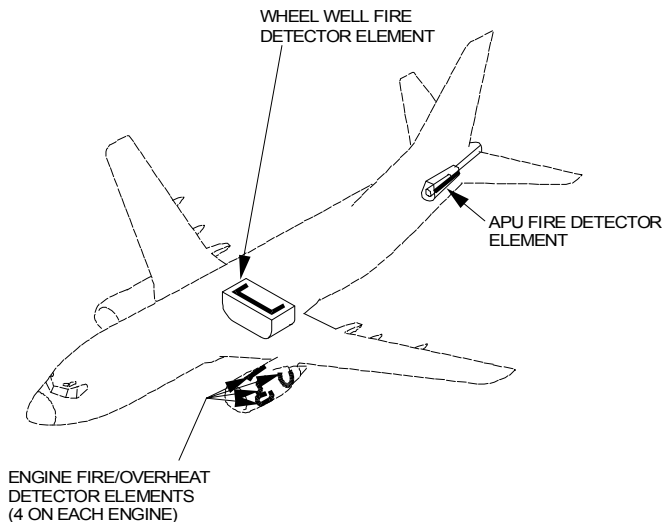
The engines also have overheat detection.

The main gear wheel well has a fire detection system, but no fire extinguishing capability.

**ENGINE FIRE PROTECTION**

Engine fire protection consists of these systems:

- engine overheat and fire detection powered by the battery bus
- engine fire extinguishing powered by the hot battery bus.



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**FIRE AND OVERHEAT DETECTOR ELEMENT LOCATIONS**

**ENGINE OVERHEAT AND FIRE DETECTION**

Each engine contains two overheat / fire detector loops. Each of these loops consists of four detector elements. Each loop provides both fire and overheat detection. As the temperature of a detector increases to a predetermined limit, the detector senses an overheat condition. At higher temperatures, the detector senses a fire condition. Normally, both detector loops must sense an overheat or fire condition to cause an engine overheat or fire alert. The **ENG OVERHEAT** light or engine fire warning switch remains illuminated until the temperature drops below the onset temperature.

An OVHT DET switch for each engine, labeled A, B, and NORMAL, permits selection of either loop A or B, or both A and B (NORMAL), as the active detecting loops.

The system contains a fault monitoring circuit. If one loop fails with the OVHT DET switch in NORMAL, that loop is automatically deactivated and the remaining loop functions as a single loop detector. There is no flight deck indication of single loop failure. If both loops fail on an engine, the **FAULT** light illuminates and the system is inoperative.

If the OVHT DET switch is positioned to A or B, the system operates as a single loop system. The non-selected loop is not monitored. If the selected loop fails, the **FAULT** light illuminates and the system is inoperative.

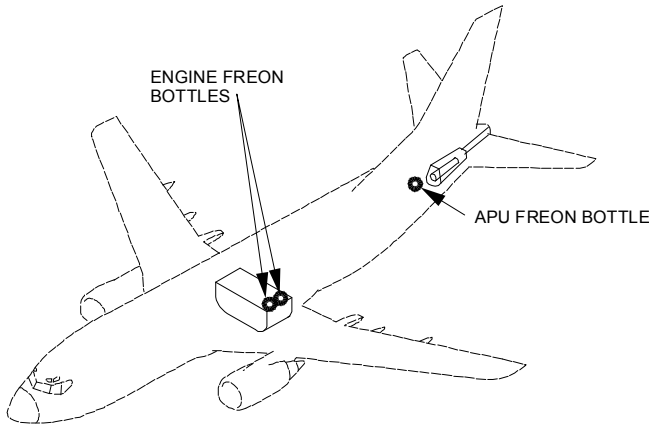
The indications of an engine overheat are:

- both **MASTER CAUTION** lights illuminate
- the **OVHT/DET** system annunciator light illuminates
- the related **ENG OVERHEAT** light illuminates.

The indications of an engine fire are:

- the fire warning bell sounds
- both master **FIRE WARN** lights illuminate
- the related engine fire warning switch illuminates
- all related engine overheat alert indications illuminate
- engine overheat occurs before engine fire warning.

Note: The **FAULT** light is not connected to the Master Caution light system.

**ENGINE FIRE EXTINGUISHING**

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**EXTINGUISHER BOTTLE LOCATIONS**

The engine fire extinguisher system has two engine fire extinguisher bottles, two engine fire warning switches, two **BOTTLE DISCHARGE** lights, and an **EXT TEST** switch. Either or both bottles can be discharged into either engine.

The engine fire warning switches are normally locked down to prevent inadvertent shutdown of an engine. Illumination of an engine fire warning switch or **ENG OVERHEAT** light unlocks the engine fire warning switch. The switches may also be unlocked manually.

Pulling the engine fire warning switch up:

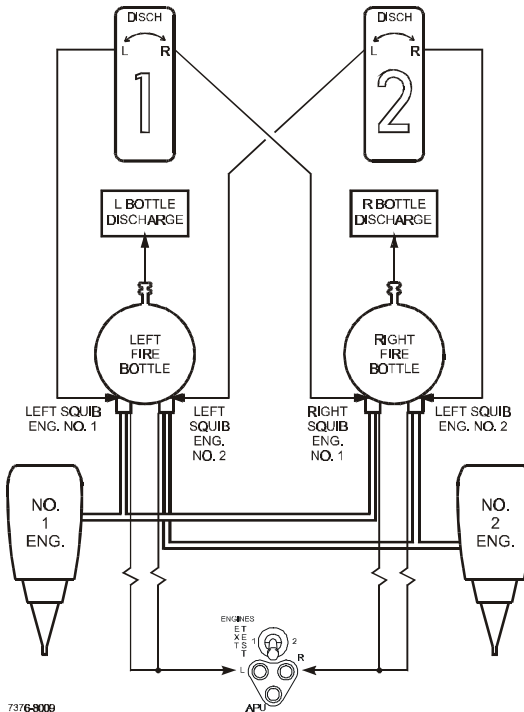
- ③ ③ ⑤ closes the main engine fuel shutoff valve
- ⑦ ⑧ ⑨ closes both the engine fuel shutoff valve at the HMU and the spar fuel shutoff valve
- closes the engine bleed air valve resulting in loss of wing anti-ice to the affected wing and closure of bleed air operated pack valve as long as the pneumatic isolation valve remains closed
- trips the generator control relay and breaker
- closes the hydraulic fluid shutoff valve and deactivates the engine driven hydraulic pump **LOW PRESSURE** light

- disables respective thrust reverser
- allows the engine fire warning switch to be rotated for discharge
- arms one discharge squib on each engine fire extinguisher bottle.

Rotating the engine fire warning switch electrically “fires” a squib, discharging the extinguishing agent into the related engine. Rotating the switch the other way discharges the remaining bottle.

The L or R BOTTLE DISCHARGE light illuminates a few seconds after the engine fire warning switch is rotated, indicating the bottle has discharged.

The ENG OVERHEAT light remains illuminated until the temperature drops below the onset temperature.

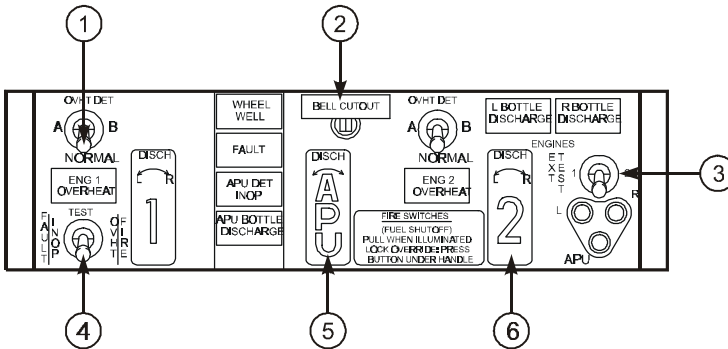


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**ENGINE FIRE EXTINGUISHER SCHEMATIC**

## CONTROLS AND INDICATORS

### OVERHEAT / FIRE PROTECTION PANEL SWITCHES



### AFT ELECTRONIC PANEL

7376-8003

- ① Overheat Detector (OVHT DET) Switch
 

NORMAL – detection loop A and loop B are active.

A – detection loop A is active.

B – detection loop B is active.
- ② Fire Warning BELL CUTOUT Switch
 

Push –

  - extinguishes both master **FIRE WARN** lights
  - silences the fire warning bell
  - silences the remote APU fire warning horn (on the ground only)
  - resets the system for additional warnings.
- ③ Extinguisher (EXT) TEST Switch
 

(spring-loaded to center)

1 or 2 – tests bottle discharge circuits for all three extinguisher bottles.

- ④ Fault / Inoperative (FAULT/INOP) and Overheat / Fire (OVHT/FIRE) TEST Switch

(spring-loaded to center)

FAULT/INOP – tests fault detection circuits for both engines and the APU.

OVHT/FIRE – tests overheat and fire detection loops on both engines and APU, and wheel well fire detector.

- ⑤ APU Fire Warning Switch

Illuminated (red) –

- indicates fire in APU
- unlocks APU fire warning switch.

Flight Deck

- Master **FIRE WARN** lights illuminate, fire warning bell sounds.

Main Wheel Well

- APU fire warning horn sounds (on ground only), and APU fire warning light flashes.

Down – normal position, mechanically locked if no fire signal.

Up –

- arms APU extinguisher circuit
- closes fuel shutoff valve, APU bleed air valve, and APU inlet door
- trips generator control relay and breaker
- allows APU fire warning switch to rotate.

Rotate (left or right) –

- discharges APU fire bottle.

Rotating the APU fire warning switch in either direction electrically “fires” the squib discharging the extinguishing agent into the APU. The APU **BOTTLE DISCHARGE** light illuminates after a few seconds, indicating the bottle has discharged.

## ⑥ Engine Fire Warning Switch

Illuminated (red) –

- indicates fire in related engine
- unlocks related engine fire warning switch
- Master **FIRE WARN** lights illuminate and fire warning bell sounds.

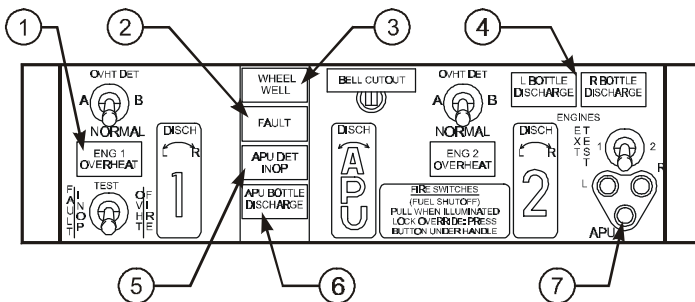
Down – normal position, mechanically locked if no fire signal.

Up –

- arms one discharge squib on each engine fire extinguisher
- closes fuel, hydraulic shutoff and engine bleed air valves
- disables thrust reverser
- trips generator control relay and breaker
- deactivates engine driven hydraulic pump **LOW PRESSURE** light
- allows engine fire warning switch to rotate.

Rotate (left or right) – discharges related fire bottle.

**OVERHEAT / FIRE PROTECTION PANEL LIGHTS**



**AFT ELECTRONIC PANEL**

7376-8004

① Engine (ENG) OVERHEAT Light

Illuminated (amber) – indicates overheat in related engine.

- MASTER CAUTION and OVHT/DET system annunciator lights illuminate.

② FAULT Light

Illuminated (amber) – with the overheat detector switch in NORMAL - indicates both detector loops for an engine have failed.

Illuminated (amber) – with the overheat detector switch in A or B – indicates the selected loop for an engine has failed.

- MASTER CAUTION and OVHT/DET system annunciator lights do not illuminate.

③ WHEEL WELL Fire Warning Light

Illuminated (red) – indicates fire in main gear wheel well

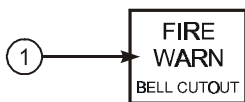
- Master FIRE WARN lights illuminate and fire warning bell sounds.

④ Engine BOTTLE DISCHARGE Light

Illuminated (amber) – indicates related fire extinguisher bottle has discharged.

- ⑤ APU Detector Inoperative (**DET INOP**) Light  
Illuminated (amber) – indicates APU detector loop has failed.
- **MASTER CAUTION** and **OVHT/DET** system annunciator lights illuminate.
- ⑥ APU **BOTTLE DISCHARGE** Light  
Illuminated (amber) – indicates APU extinguisher bottle has discharged.
- ⑦ Extinguisher Test (**EXT TEST**) Lights  
Illuminated (green) – **EXT TEST** switch is positioned to 1 or 2 and circuit continuity is normal.

**MASTER FIRE WARNING LIGHT**



**GLARESHIELD**

7376-8005

① Master Fire Warning (**FIRE WARN**) Lights

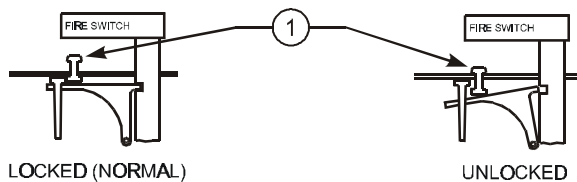
Illuminated (red) – indicates a fire warning (or system test) in engine, APU, main gear wheel well or cargo compartment

- fire warning bell sounds
- if on ground, remote APU fire warning horn sounds.

Push –

- extinguishes both master **FIRE WARN** lights
- silences fire warning bell
- silences remote APU fire warning horn
- resets system for additional warnings
- pushing fire warning bell cutout switch on overheat / fire protection panel results in same actions.

**FIRE WARNING SWITCH OVERRIDE**



**AFT ELECTRONIC PANEL**

7376-8006

① Fire Warning Switch Override

Push – unlocks fire warning switch.

## FIRE AND OVERHEAT SYSTEM TESTS

The fire and overheat detection systems can be tested by pushing and holding the FAULT/INOP and OVHT/FIRE TEST switch. Extinguisher continuity can be tested by pushing and holding the EXT TEST switch. All test indications clear when switches are released.

### FAULT/INOP Test Detection

The fault detection (Overheat and Fire Monitor) circuits for both the engines and the (Fire Monitor) for the APU are tested by pushing and holding the FAULT/INOP and OVHT/FIRE TEST switch in the FAULT/INOP position.

The indications for the FAULT/INOP test are:

- both **MASTER CAUTION** lights illuminate
- the **OVHT/DET** system annunciator light illuminates
- the **FAULT** light illuminates
- the **APU DET INOP** light illuminates.

### OVERHEAT/FIRE Test Detection

The overheat and fire detection loops (continuity test) on both engines, the APU, and the fire detector in the wheel well are tested by pushing and holding the FAULT/INOP and OVHT/FIRE TEST switch in the OVHT/FIRE position.

The indications for the OVHT/FIRE test are:

- the fire warning bell sounds
- both master **FIRE WARN** lights illuminate
- both **MASTER CAUTION** lights illuminate
- the **OVHT/DET** system annunciator light illuminates
- both engine fire warning switches illuminate
- the APU fire warning switch illuminates
- both **ENG OVERHEAT** lights illuminate
- the **WHEEL WELL** fire warning light illuminates if AC power is available
- on the ground, the wheel well APU fire warning horn sounds and the wheel well APU fire warning light flashes.

### Extinguisher Test

When the EXT TEST switch is positioned to 1 or 2, the green **EXT TEST** lights illuminate, verifying circuit continuity from the squib to the engine fire warning switch.

### APU FIRE PROTECTION

APU fire protection consists of these systems:

- APU fire detection powered by the battery bus.
- APU fire extinguishing powered by the hot battery bus.

### APU Fire Detection

A single fire detection loop is installed on the APU. As the temperature of the detector increases to a predetermined limit, the detector senses a fire condition. The APU fire warning switch remains illuminated until the temperature of the detector has decreased below the onset temperature.

The system contains a fault monitoring circuit. If the loop fails, the **APU DET INOP** light illuminates indicating the APU fire detection system is inoperative.

The indications of an APU fire are:

- the fire warning bell sounds
- both master **FIRE WARN** lights illuminate
- the APU fire warning switch illuminates
- the APU automatically shuts down
- the wheel well APU fire warning horn sounds, (on the ground only), and the wheel well APU fire warning light flashes.

### APU Fire Extinguishing

The APU fire extinguisher system consists of one APU fire extinguisher bottle, an APU fire warning switch, an **APU BOTTLE DISCHARGE** light, and an EXT TEST switch. The APU ground control panel located in the right main wheel well also contains an APU fire warning light, an APU BOTTLE DISCHARGE switch, an APU fire control handle and APU HORN CUTOFF switch.

The APU fire warning switch is normally locked down to prevent inadvertent shutdown of the APU. Illumination of the APU fire warning switch unlocks the switch. The switch may also be unlocked manually.

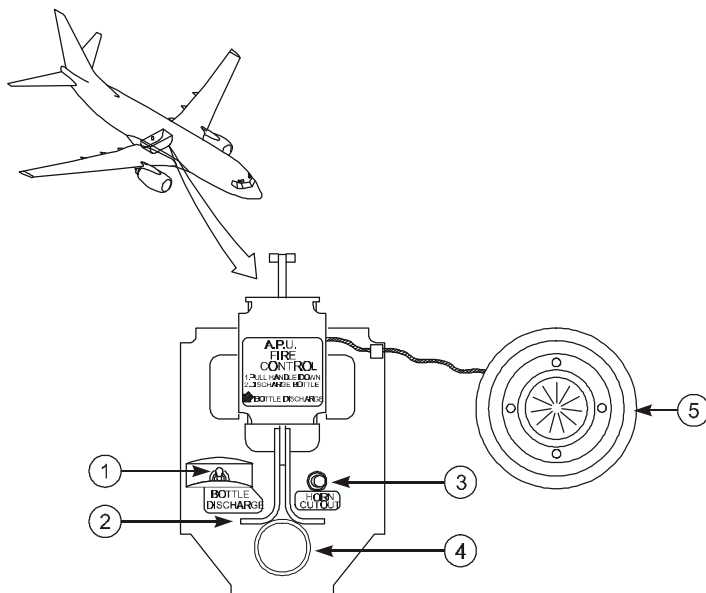
Pulling the APU fire warning switch up:

- provides backup for the automatic shutdown feature
- closes the fuel solenoid and closes the APU fuel shutoff valve
- closes the APU bleed air valve
- closes the APU air inlet door
- trips the APU generator control relay and breaker
- allows the APU fire warning switch to be rotated for discharge
- arms the APU fire extinguisher bottle squib.

Rotating the APU fire warning switch in either direction electrically “fires” the squib discharging the extinguishing agent into the APU. The **APU BOTTLE DISCHARGE** light illuminates after a few seconds, indicating the bottle has discharged.

The APU fire warning switch and fire **WARNING** light (wheel well) remain illuminated until the temperature surrounding the sensor / responder has decreased below the alarm temperature.

**APU GROUND CONTROL PANEL**



**MAIN WHEEL WELL**

7376-8007

① APU BOTTLE DISCHARGE Switch

(spring-loaded to center)

Left or right – discharges APU extinguisher.

Note: Armed only if APU fire control handle is pulled at this panel.

② APU Fire Control Handle

Up – normal position.

Down –

- closes APU fuel shutoff and solenoid valves, bleed air valve and APU inlet door
- trips generator control relay and breaker
- arms APU BOTTLE DISCHARGE switch (on this panel only).

③ APU Fire Warning HORN CUTOUT Switch

Push –

- silences fire alarm bell
- silences APU fire warning horn
- causes APU fire warning light to stop flashing but remain illuminated.

④ APU Fire Warning Light

Illuminated (red flashing) – indicates fire in APU.

Flight Deck

- Flight deck fire warning bell sounds.

Main Wheel Well

- APU fire warning horn sounds.

Illuminated (red steady) – indicates APU fire warning HORN CUTOUT switch has been pushed following an APU fire indication.

⑤ APU Fire Warning Horn

### Compartment Fire Classification

The forward and aft cargo compartments are now classified as Class C compartments. The classification changed from D to C with the installation of the fire detection and suppression system.

**CARGO COMPARTMENT SMOKE DETECTION AND SUPPRESSION**

③③⑤ Cargo compartment smoke detection and extinguishing is powered by the hot battery bus.

⑦⑧⑨ Cargo compartment smoke detection is powered by DC bus 1 and DC bus 2.

⑦⑧⑨ Cargo compartment fire extinguishing is powered by the hot battery bus.

**Cargo Compartment Smoke Detection**

The forward and aft cargo compartments each have smoke detectors in a dual loop configuration. Normally, both detection loops must sense smoke to cause an alert. These loops function in the same manner as the engine overheat / fire detection loops.

**③③⑤ Cargo Compartment Fire Warning**

A cargo fire warning is indicated by:

- fire warning bell
- **FIRE WARN** lights
- **MASTER CAUTION** lights
- Annunciator Panel:
  - **OVHT/DET**
- Cargo Fire Control Panel:
  - **FIRE** light
  - **A** and **B DET** lights for affected cargo compartment
- **FWD** or **AFT** squib light for affected compartment
- **BTL-1** and **BTL-2** squib lights.

**⑦⑧⑨ Cargo Compartment Fire Warning**

The indications of a cargo compartment fire are:

- fire warning bell
- **FIRE WARN** lights
- the **FWD/AFT** cargo fire warning light(s) illuminates.

### ③③⑤ Cargo Compartment Fire Suppression

The forward and aft cargo compartments contain discharge nozzles in the ceiling. Two extinguisher bottles (1 ST and 2 ND) are connected to the forward and aft compartment nozzles through a diverter valve. Each bottle has one squib.

The diverter valve has two squibs, forward and aft. Only one can be fired. This determines the compartment to which the (1 ST and 2 ND) bottles are discharged.

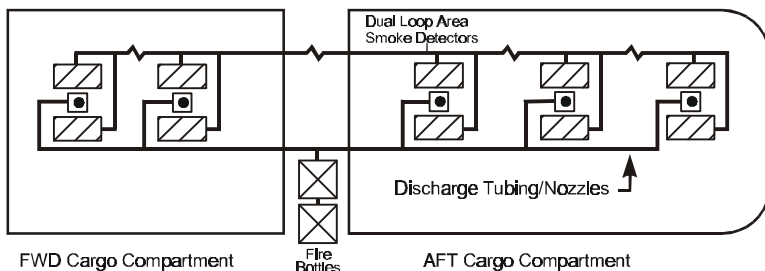
When a fire is indicated with the ARM switch on the cargo fire control panel selected to AUTO, the respective forward or aft diverter valve squib light and both bottle squib lights illuminate. These lights indicate the respective squib is armed.

When the bottle one DSCH 1 ST BTL switch is pushed, agent is quickly discharged into the compartment determined by the diverter valve to put out “knock down” the fire. When the bottle two DSCH 2 ND BTL switch is pushed, 15 minutes after discharging the first bottle, agent is discharged through a metering valve, then through the diverter. The metering valve sustains discharge from bottle two for approximately 45 minutes, which provides fire suppression for 60 minutes.

### ⑦⑧⑨ Cargo Compartment Fire Suppression

Two fire extinguisher bottles are installed. Detection of a fire in either forward or aft compartment causes the **FWD** or **AFT** cargo fire warning light to illuminate. The extinguishers are armed by pushing the appropriate cargo fire ARMED switch. Once armed, the first bottle is discharged by pushing the cargo fire DISCH switch. This discharges the first bottle total contents into the selected compartment. The second bottle discharges 60 minutes later at a reduced flow into the selected compartment automatically. Discharge of the second bottle may be disabled if the system is disarmed. The cargo fire **DISCH** light illuminates when a bottle is discharged. It may take up to 30 seconds for the light to illuminate. On landing, if the first bottle was discharged and the system remains armed, the second bottle discharge is inhibited.

**7 8 9 CARGO FIRE EXTINGUISHER SCHEMATIC**



7376-8011

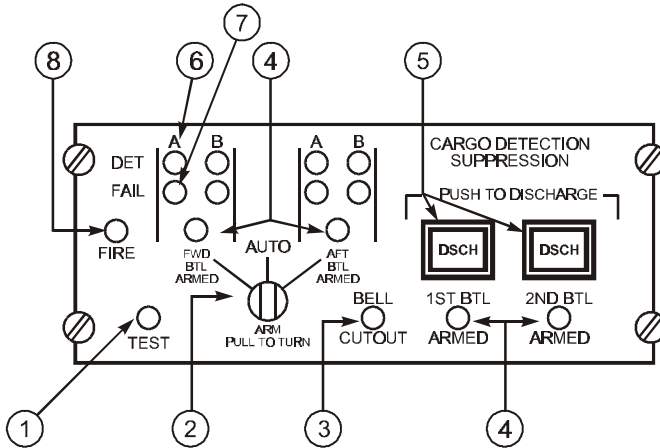
**3 3 5 CARGO FIRE SYSTEM TESTS**

The cargo fire detection and extinguishing system can be tested by pushing and holding the cargo fire TEST switch. This sends a test signal to the forward and aft cargo fire detector loops and continuity of bottle and deverter valve squibs circuits. All test indications clear when the TEST switch is released.

**7 8 9 CARGO FIRE SYSTEM TESTS**

The cargo fire detection and suppression system can be tested by pushing and holding the cargo fire TEST switch. This sends a test signal to the forward and aft cargo fire detector loops and verifies continuity of the extinguisher bottle squib circuits. All test indications clear when the TEST switch is released.

### ③ ③ ⑤ CARGO FIRE PANEL



7376-8008

- ① TEST Switch – Push – Tests detection and suppression systems.

Fire bell – sounds

**FIRE WARN** – 2 (red) lights illuminate

**MASTER CAUTION** – 2 (amber) lights illuminate

**OVHT/DET** annunciator illuminates

**CARGO FIRE CONTROL PANEL** (forward center pedestal)

**DET** – 4 (amber) lights, respective detector loop operational

**FAIL** – 4 (amber) lights, respective loop fail monitor system operational

**FWD BLT ARMED / AFT BLT ARMED** – 2 (green) lights – diverter squibs operational

**1ST BTL ARMED / 2ND BTL ARMED** – 2 (green) lights – each bottle squib operational

**FIRE** – one (red) light

**DSCH** annunciators switch lights – 2 (amber) lights do not illuminate when TEST switch is pushed.

**DSCH** annunciators switch lights are tested when lights test switch on the center instrument panel is placed to TEST.

- ② ARM Switch – Controls arming of squibs.
- AUTO – With a cargo fire warning indication:
- Diverter valve squib automatically armed for compartment with fire.
  - Extinguisher squibs automatically armed for bottle 1 and bottle 2.
  - Respective squib lights illuminate.
  - Permits automatic switching from dual to single loop mode if a single loop fails.
- FWD or AFT – Cargo fire warning indication not required:
- Forward or aft compartment diverter valve squib armed for selected compartment.
  - Respective diverter squib light illuminates.
  - Bottle 1 squib light and bottle 2 squib light illuminate.
- ③ BELL CUTOUT Switch
- Resets fire warning system, extinguishes **FIRE WARN** lights and silences fire bell.
- ④ Squib lights – 4 (green) – Illuminated, respective squib armed or TEST switch pushed.
- **FWD/AFT** squib lights illuminated  
Forward or aft squibs on diverter valve armed.
  - **BTL 1** or **BTL 2** squib lights illuminated  
Bottle 1 and 2 squibs armed.
- ⑤ DSCH – Push to discharge – 2 switches
- Automatically armed with fire indication when ARM switch selected to AUTO
  - Manually armed when ARM switch selected to FWD or AFT.
  - DSCH (1 ST BTL) push to discharge switch – Push  
Fire two squibs – Either the forward or aft cargo compartment squib on diverter valve and number 1 bottle squib. Agent flows through diverter valve to appropriate compartment.
  - DSCH (2 ND BTL) push to discharge switch – Push  
Fires number 2 bottle squib. Agent flows through metering and diverter valves to appropriate compartment.

- **DSCH** annunciators 2 (amber)

Illuminated when respective bottle pressure is low.

- ⑥ **DET** lights 4 (amber)

Illuminated when respective detector senses smoke or **TEST** switch pushed.

- ⑦ **FAIL** lights 4 (amber)

Illuminated when respective loop has failed or **TEST** switch pushed.

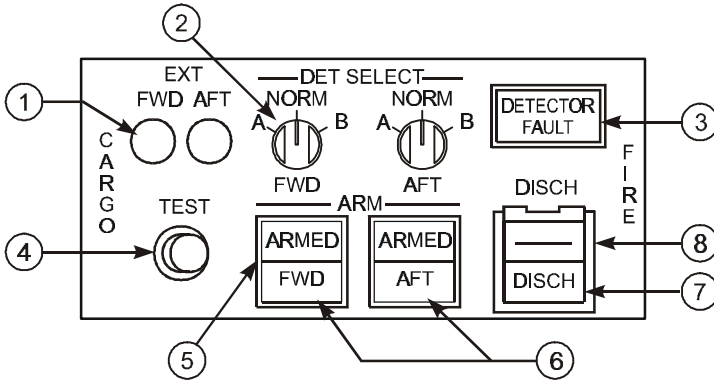
- ⑧ **FIRE** light (red)

Illuminated when forward or aft cargo compartment smoke (fire) detected or **TEST** switch pushed.

③ ③ ⑤ **Cargo Fire Light Test**

To test the Cargo Suppression Detection Control Panel lights, the aircraft's Master Dim and Test switch must be moved to **TEST**. This will test all the lights on the Cargo Suppression Detection Control Panel including the **DSCH** indicators not tested by the system test.

**7 8 9 Cargo Fire Panel**



**AFT ELECTRONIC PANEL**

7376-8010

① Extinguisher (EXT) Test Lights

Illuminated (green) - Cargo Fire TEST switch is pushed and fire bottle discharge squib circuit continuity is normal.

② Detector Select (DET SELECT) Switches

NORM - detection loop A and B are active.

A - detection loop A is active.

B - detection loop B is active.

③ DETECTOR FAULT Light

Illuminated (amber) -

- Both loops in one or both cargo compartments have failed

④ Cargo Fire TEST Switch

PUSH - tests circuits for both forward and aft cargo fire detector loops and suppression system.

**7 8 9 Cargo Fire Test**

The indications for the Cargo Fire test are:

- the fire warning bell sounds
- both master **FIRE WARN** lights illuminate
- the extinguisher test lights illuminate
- the **FWD** and **AFT** cargo fire warning lights illuminate when all detectors in selected loop(s) respond to the fire test
- the cargo fire bottle **DISCH** light illuminates.

During a cargo fire test, the **DETECTOR** fault light illuminates if one or more detectors in the loop(s) has failed.

Individual detector faults can only be detected by a manually initiated test. The **MASTER CAUTION** light does not illuminate.

At the end of cargo fire testing, up to a four second delay may occur to allow all applicable indications to extinguish at the same time.

**⑤ Cargo Fire ARM Switches**

PUSH -

- **FWD ARMED** - extinguisher armed for the forward cargo compartment
- **AFT ARMED** - extinguisher armed for the aft cargo compartment.
- If the first bottle has discharged and the system remains armed, the second bottle discharge is inhibited upon landing.
- The second bottle discharge timer is disabled when the system is disarmed.

**⑥ Cargo Fire (FWD/AFT) Warning Lights**

Illuminated (red) -

- at least one detector in each loop detects smoke
- with power failed in one loop, at least one detector on the remaining loop detects smoke
- master **FIRE WARN** lights illuminate and fire warning bell sounds.

⑦ Cargo Fire Bottle Discharge (**DISCH**) Light

Illuminated (amber) - indicates that either extinguisher bottle has discharged

⑧ Cargo Fire Discharge (**DISCH**) Switch

PUSH - if system is armed, discharges the first extinguisher bottle. Timer is set for 60 minutes to discharge the second extinguisher bottle.

### MAIN WHEEL WELL FIRE DETECTION

Main wheel well fire detection is powered by the No. 1 AC transfer bus.

The main wheel well has no fire extinguishing system. The nose wheel well does not have a fire detection system.

A single fire detector loop is installed in the main wheel well. As the temperature of the detector increases to a predetermined limit, the detector senses a fire condition. The **WHEEL WELL** fire warning light remains illuminated until the temperature of the detector has decreased below the onset temperature.

The indications for a main wheel well fire are:

- the fire warning bell sounds
- both master **FIRE WARN** lights illuminate
- the **WHEEL WELL** fire warning light illuminates.

## LAVATORY FIRE PROTECTION

Lavatory fire protection consists of these systems:

- lavatory smoke detection
- lavatory fire extinguishing (heat activated).

### Lavatory Smoke Detection

The lavatory smoke detection system monitors for the presence of smoke.

When smoke is detected:

- an aural warning sounds
- the red alarm indicator light on the lavatory smoke detector panel illuminates.

There is no flight deck indication. When smoke is no longer present the system automatically resets.

### Lavatory Fire Extinguisher System

Heat activated fire extinguishers for each disposal receptacle located within the lavatory have been installed. The built-in fire extinguisher will discharge automatically into each disposal receptacle upon occurrence of a fire in the receptacle.

A fire extinguisher system is located beneath the sink area in each lavatory.

When a fire is detected:

- fire extinguisher operation is automatic
- flight deck has no indication of extinguisher discharge.

### Lavatory Smoke Detector

A smoke detector in each lavatory monitors the air for presence of smoke or equivalent contaminants. The detector sounds an aural warning and illuminates a light.

There are two types of smoke detectors. On early aircraft, the smoke detector is below the sink behind the access door. On later aircraft the smoke detector is in the ceiling of the lavatory.

### Early Type

The detector uses a photocell device to detect the smoke. Only a 4-7% smoke concentration is necessary to activate the aural and visual alarms, depending on the efficiency of the lav ventilation system. Based on an average ventilation system, a cigarette smoker will probably activate the alarm system.

The aural alarm sounds the cabin chime every 4 seconds. The visual alarm is the amber call light for the respective lavatory. Aural and visual alarms remain active until the smoke concentration is reduced below alarm level.

The smoke detector is powered by 28V DC bus 1 through a circuit breaker on P18-4 panel labeled **PASS & CREW CALL**.

Circuit breaker deactivation shuts down all detectors and **PASS & CREW** call system.

### Later Type

The smoke detector uses an ionization sensor to detect smoke. A very small amount of radioactive material ionizes the air between two electrodes, allowing current to flow through the air between the electrodes. Any smoke particles present interfere with this current flow. The change in current flow is sensed by a current amplifier, which outputs a signal to turn on the alarm horn and alarm indicator light.

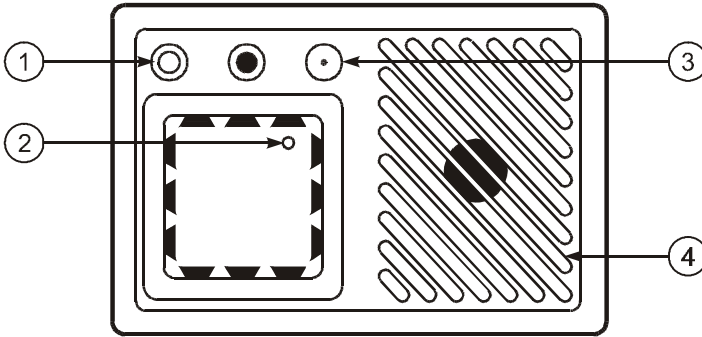
The smoke detector is powered by the 28V DC bus 1 through a circuit breaker on P18-4 panel labeled **PASS & CREW CALL/LAV SMOKE DETECTOR**.

Once activated, the smoke detector continues to sound an aural alarm and light remains illuminated until reset.

Reset can be made by pulling the **LAV SMOKE** detector circuit breaker on P18-4 for 5 seconds and then closing the circuit breaker. If the circuit breaker is not closed, smoke detectors and call system are deactivated.

**7 8 9** Smoke detector deactivation is via circuit breaker P18-3 (lavatory smoke).

**3 5 7 8 9 Lavatory Smoke Detector – Later Type**



**LAVATORY SMOKE DETECTOR**

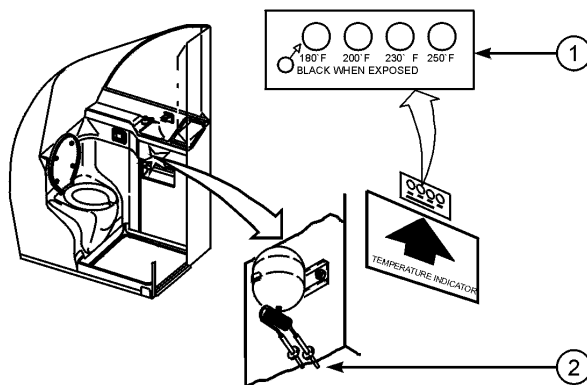
7376-8001

- ① **POWER-ON** Indicator Light (green) – Illuminated when power is applied to the smoke detector.
- ② **ALARM** Indicator Light (red) – Illuminated when smoke is detected.
- ③ **TEST** Switch – INOP
- ④ **Speaker** – Alarm horn, activates with continuous tone when smoke is detected.

Horn sounds until reset.

**LAVATORY FIRE**

**Lavatory Fire Extinguisher**



BELOW LAVATORY SINK

7376-8002

- ① TEMPERATURE INDICATOR Placard
  - White – normal condition.
  - Black – exposed to high temperatures.
- ② Heat Activated Nozzles
  - Flat black – normal condition.
  - Aluminum – indicates extinguisher has discharged.

Note: Some bottles only have one nozzle.

**LIST OF EFFECTIVE PAGES**

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* TOC-2	11/15/02	* LEP-2	11/15/02		
* 1	11/15/02				
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\* Asterisk indicates page(s) revised or added by the current revision.

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