**ON A/C ALL

26–00–00–001

FIRE PROTECTION, GENERAL

Introduction

The fire protection system includes components throughout the aircraft to provide detection, extinguishing and indication of fire conditions.

Fire Detection System

The fire detection system is designed to sense fire, overheat and smoke conditions.

Refer to Figure 1.

The fire detection system consists of:

- Nacelle fire detection system (26–11–00)
- Baggage compartment smoke detection system (26–12–00)
- Lavatory smoke detection system (26–12–00)
- Auxiliary Power Unit (APU) fire detection system (26–13–00).

Fire or overheat detection is done by six Advanced Pneumatic Detectors (APD) in the nacelles and one APD in the APU.

Smoke detection is done by two smoke detectors located in the aft baggage compartment, one in the forward baggage compartment and one in the lavatory.

On aircraft with ModSum 4–458982 and 4–458912 incorporated, the forward baggage compartment has been removed along with the forward HRD fire bottle, fire or smoke detection, indication and the test functions.

Fire Extinguishing System

The fire extinguishing system provides components throughout the aircraft for the extinguishing of detected fires.

Refer to Figure 2.

The fire extinguishing system consists of:

- Nacelle fire extinguishing system (26–21–00)
- Baggage compartment fire extinguishing system (26–22–00)
- APU fire extinguishing system (26–23–00)
- Lavatory fire extinguishing system (26–24–00)
- Portable hand–operated fire extinguishers (26–25–00).

Refer to Figure 3.

Two dual–port fire–extinguishing bottles are installed in the left wing root for engine nacelle fire or overheat suppression. Both bottles can be used to extinguish a fire in either engine.

Fire extinguishing for the baggage compartments is performed by two High Rate Discharge (HRD) fire extinguisher bottles and one Low Rate Discharge (LRD) fire extinguisher bottle. Each baggage

compartment has one HRD fire extinguisher bottle; the LRD bottle is shared between the FWD and AFT baggage compartments.

One fire–extinguishing bottle is used to suppress fire and overheat conditions in the APU compartment.

The lavatory waste bin is protected by a single thermally–activated fire–extinguisher.

The flight compartment and passenger compartment are protected by portable hand–operated fire–extinguishers.

On aircraft with ModSum 4–459188 incorporated, fire extinguishing for the AFT baggage compartment is performed by one High Rate Discharge (HRD) fire extinguisher bottle and two Low Rate Discharge (LRD) fire extinguisher bottles.

Fire Indication and Test functions

Refer to Figure 4.

Fire or smoke detection is shown on the Fire Protection Panel (FPP), Caution and Warning Panel (CWP) and Glareshield Panel located in the flight compartment.

Indication and test functions are provided on the Fire Protection Panel for:

- Engines
- APU
- Forward and Aft Baggage Compartments.

Indication is provided at the cabin repeater lights for the lavatory smoke and fire detection.

Control Amplifier

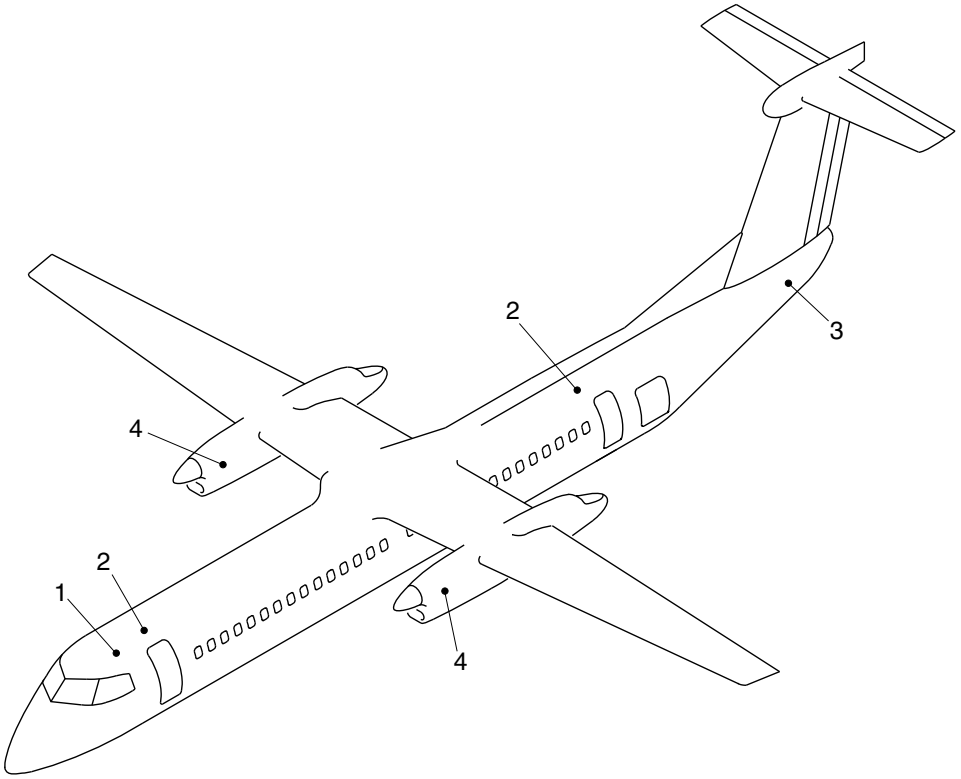
Refer to Figure 5.

The control amplifier of the fire protection system performs fire detection and extinguishing system monitoring and test functions. It is located on the No. 2 equipment panel.

Refer to Figure 4.

The control amplifier does the following:

- Detection and extinguishing monitoring
- Built In Tests (BIT) function
- Controls the advisory lights on the Fire Protection Panel
- Controls the warning lights on the Caution and Warning Panel and Glareshield Panel
- Controls the fire bell chime (optional).

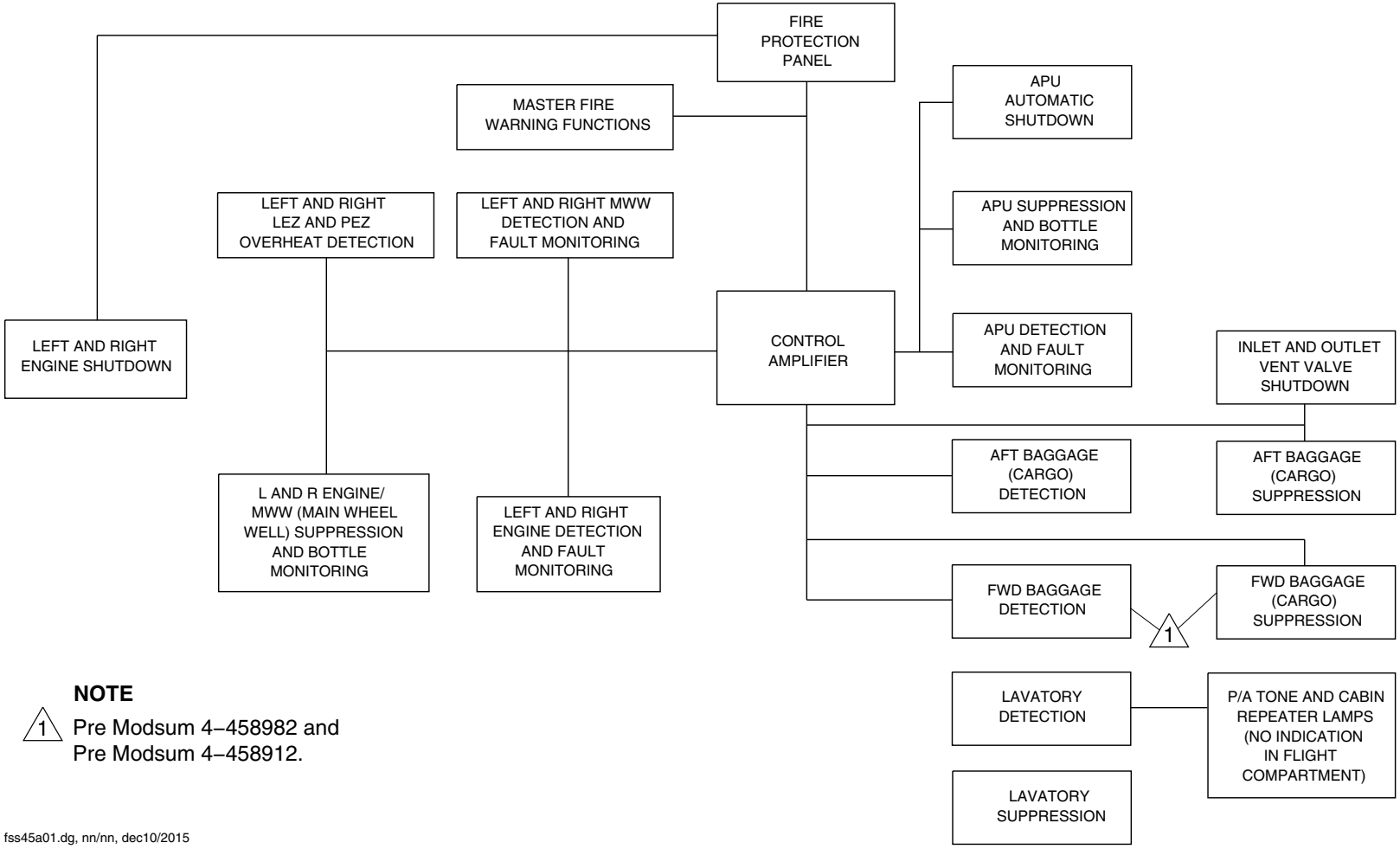


LEGEND

1. Lavatory smoke detection system.
2. Baggage compartment smoke detection system.
3. APU fire detection system.
4. Nacelle fire and overheat detection system.

fs379a01.dg, ck, jun08/2011

Fire Protection System General Locator
Figure 1

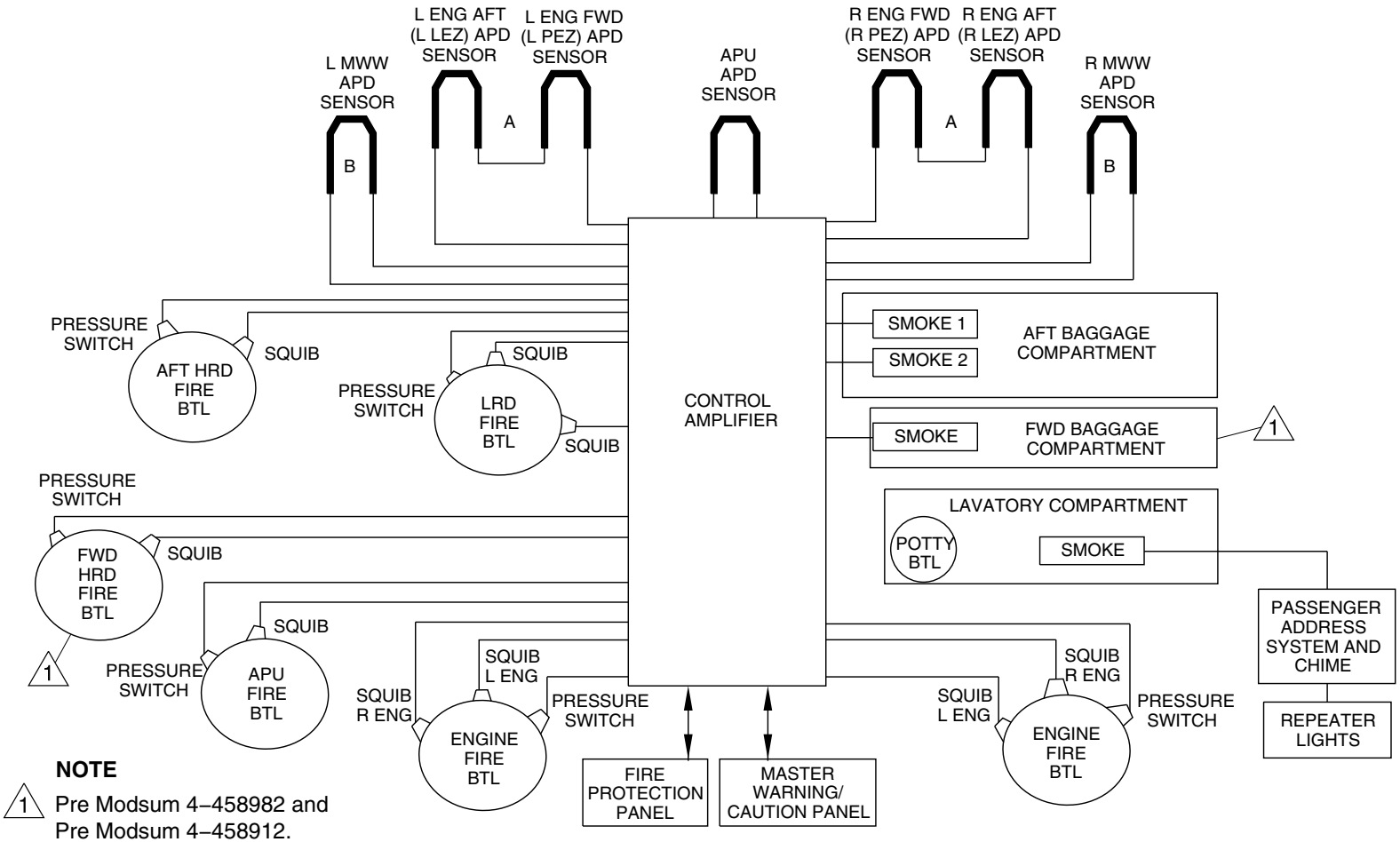


NOTE

1 Pre Modsum 4–458982 and
Pre Modsum 4–458912.

fss45a01.dg, nn/nn, dec10/2015

Fire Protection Block Diagram
Figure 2



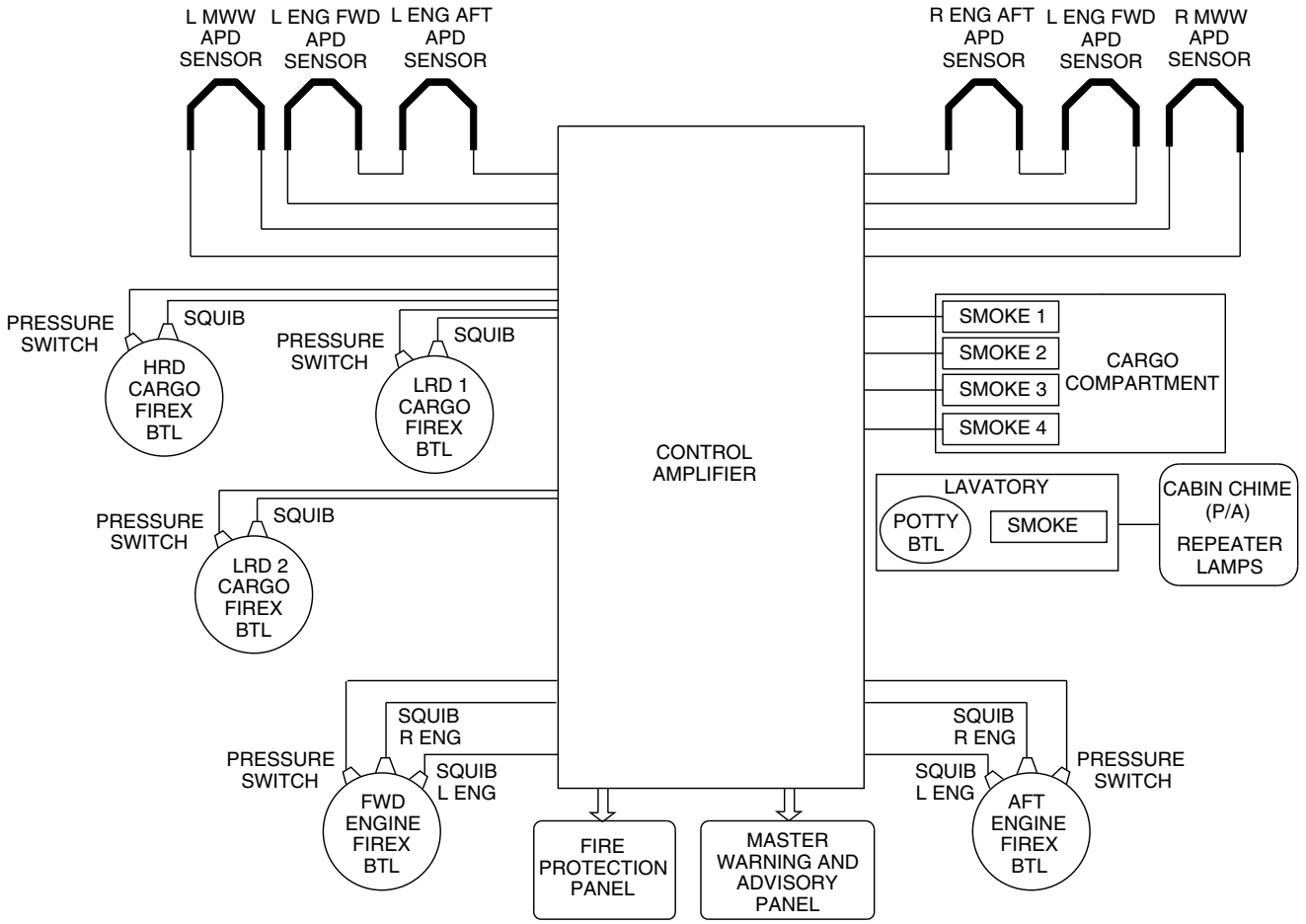
NOTE

1 Pre Modsum 4–458982 and Pre Modsum 4–458912.

bras01a01,dg, sw/nn, dec10/2015

PRE MODSUM 4–459188

Fire Protection System Schematic
Figure 3 (Sheet 1 of 2)



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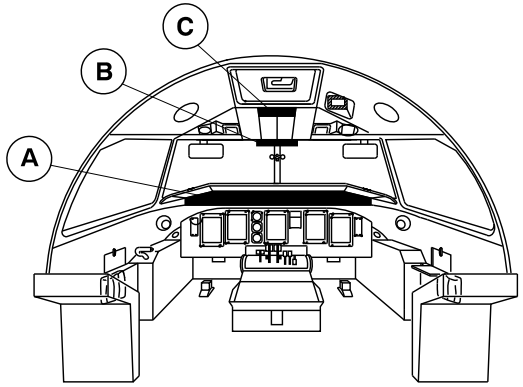
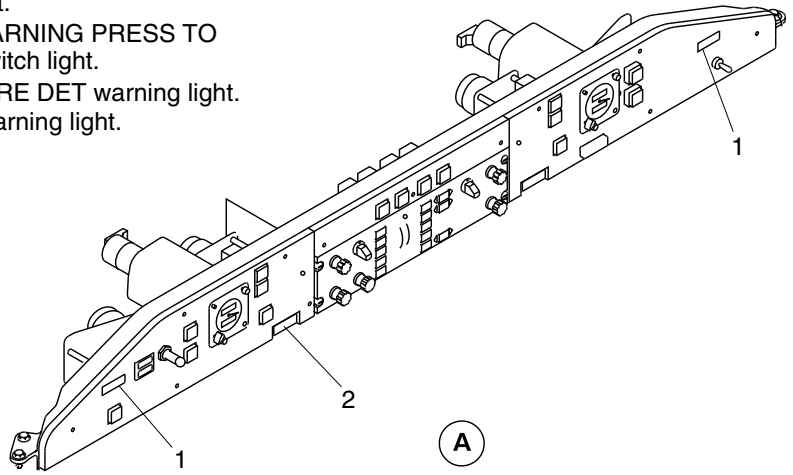
POST MODSUM 4–459188

Fire Protection System Schematic
Figure 3 (Sheet 2 of 2)



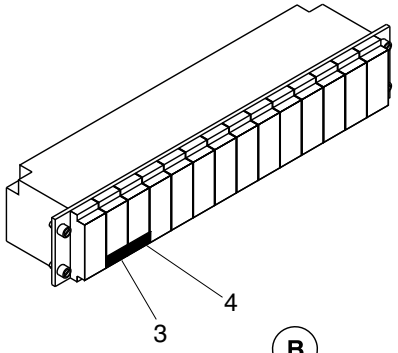
LEGEND

1. ENGINE FIRE PRESS TO RESET switch light.
2. Master WARNING PRESS TO RESET switch light.
3. CHECK FIRE DET warning light.
4. SMOKE warning light.



A

GLARESHIELD PANEL

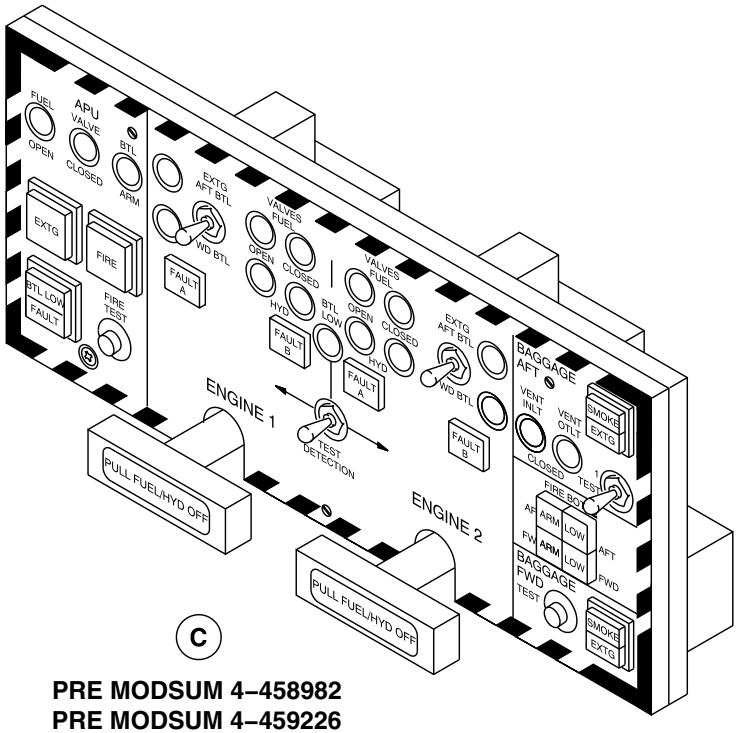


B

CAUTION AND WARNING PANEL

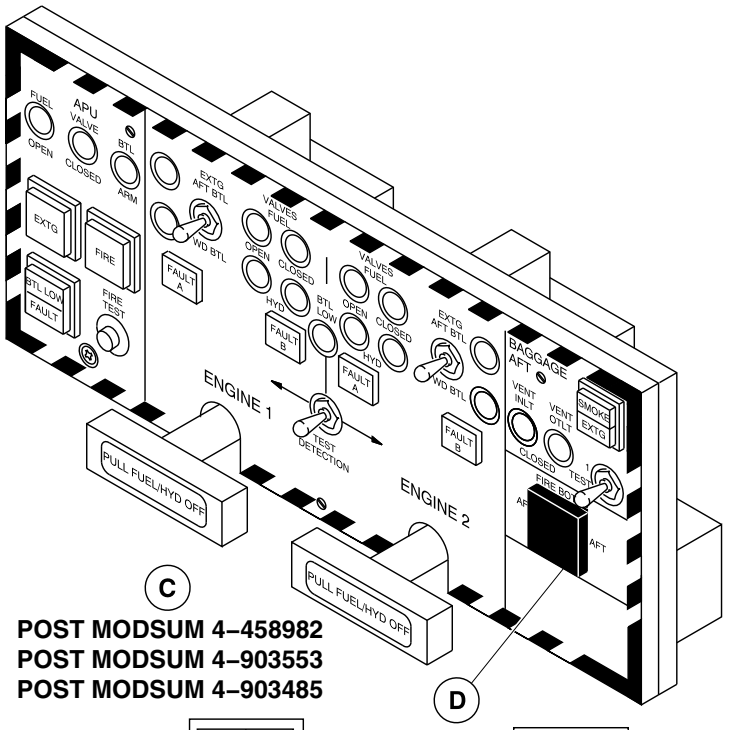
bras09a01.dg, sw/nn, jul11/2014

Indications in Flight Compartment for Fire Protection System
Figure 4 (Sheet 1 of 3)



C

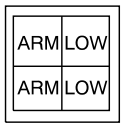
PRE MODSUM 4–458982
PRE MODSUM 4–459226
PRE MODSUM 4–903553
PRE MODSUM 4–903485



C

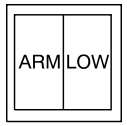
POST MODSUM 4–458982
POST MODSUM 4–903553
POST MODSUM 4–903485

D



D

POST MODSUM 4–458982
POST MODSUM 4–903485



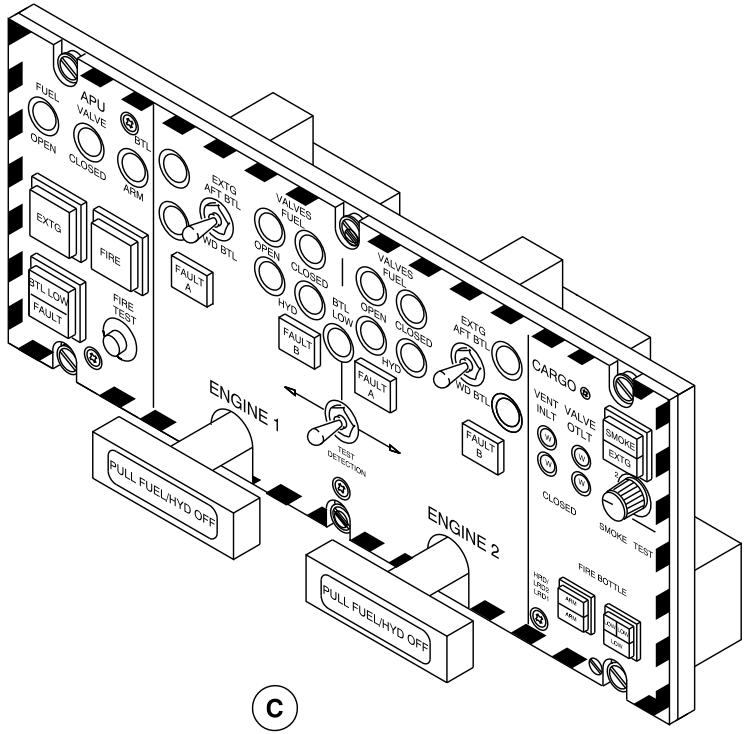
D

POST MODSUM 4–903553

FIRE PROTECTION PANEL

bras09a02.dg, nn/kb, apr05/2019

Indications in Flight Compartment for Fire Protection System
Figure 4 (Sheet 2 of 3)

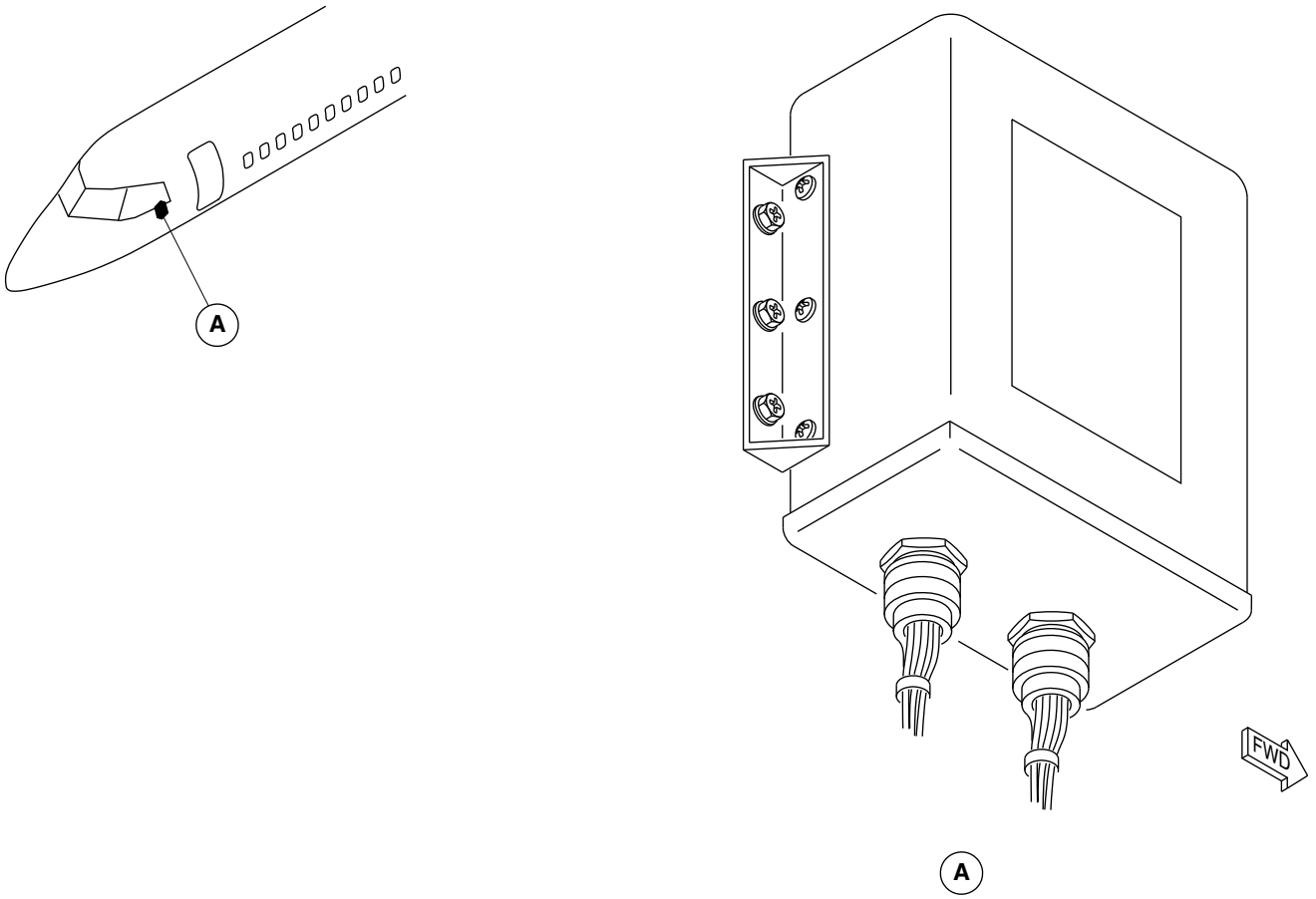


C

POST MODSUM 4–459226

bras09a03.dg, ms, sep07/2015

Indications in Flight Compartment for Fire Protection System
Figure 4 (Sheet 3 of 3)



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Control Amplifier
Figure 5

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26–10–00–001

DETECTION

General

For the Nacelle Fire Detection System, refer to SDS 26–11–00.

For the Smoke Detection System, refer to SDS 26–12–00.

For APU Fire Detection System, refer to SDS 26–13–00.

**ON A/C ALL

26–11–00–001

NACELLE FIRE DETECTION SYSTEM

Introduction

The nacelle fire detection system supplies indications of fire and overheat conditions in the nacelle fire zones.

General Description

Refer to Figure 1.

The fire detection system uses Advanced Pneumatic Detectors (APD) to sense a fire or overheat condition in the nacelles. The fire or overheat condition is shown on the Fire Protection Panel (FPP) in the flight compartment.

Three APD's are located in each nacelle (left and right). The APD's or fire detection loops, give fire and overheat detection in the Main Wheel Well (MWW) zone, Leading Edge Zone (LEZ) and Propeller Electronic Controller (PEC) area of the Fire Zone.

The nacelle fire detection system has these components:

- Engine/Leading Edge Zone Advanced Pneumatic Detectors
- Propeller Electronic Control Advanced Pneumatic Detectors
- MLG Zone Advanced Pneumatic Detectors.

Detailed Description

The Advanced Pneumatic Detectors (APD) use gas–filled sensor tubes to monitor heating of the zone.

Refer to Figure 2.

Two switches in the APD – the integrity switch and the alarm switch – provide the fault and alarm signals for indication on the Fire Protection Panel (FPP).

Refer to Figures 3 and 4.

The integrity switch monitors the pressure in the sensor element. If the pressure falls below a minimum rated level, the normally closed integrity switch opens and sends a signal to the control amplifier. The FAULT A or FAULT B light on the FPP comes on.

A fire or overheat condition will cause gas expansion within the APD. When the temperature reaches a set level, the increased gas pressure closes the alarm switch. The APD will generate a fire signal to the appropriate engine PULL FUEL/HYD OFF handle light directly.

When the alarm switch closes, it also sends the signal to the control amplifier and is indicated by:

- PULL FUEL/HYD OFF handle light (red) on the FPP comes on
- CHECK FIRE DET warning light (flashing red) on the Caution and Warning Panel comes on
- Master WARNING PRESS TO RESET light (red) on the Glareshield Panel comes on
- ENGINE FIRE PRESS TO RESET light (flashing red) on the left and right side of the Glareshield Panel comes on

– Audible BELL warning sounds (optional).

Pushing either the left or right ENGINE FIRE PRESS TO RESET indicator turns the audible BELL warning off; Both ENGINE FIRE PRESS TO RESET remain on steady state for the duration of the alarm condition.

Advanced Pneumatic Detectors (APD)

Refer to Figure 1.

Advanced Pneumatic Detectors (APD) or fire detection loops are used to sense a fire or overheat condition in the nacelles.

Three APD's are located in each nacelle. They give fire and overheat detection in the Main Wheel Well (MWW) zone, Leading Edge Zone (LEZ) and Propeller Electronic Controller (PEC) area of the Fire Zone.

APD's have a main element body and sensor tube. The main element body is held in place by two P–clamps and the sensor tube is supported by additional clamps and grommets.

APD's are sensor tubes filled with helium gas to monitor for fires. The helium gas is sensitive to changes in temperature; its pressure increases with the increase in temperature. Spot heat releases hydrogen from the central core which increases pressure in the loop.

Refer to Figure 2.

APD's receive electrical power from the 28 Vdc left essential and right essential bus. Malfunction of either the left or right essential bus will not cause complete loss of fire detection in the left or right nacelles.

Two switches in the APD – the integrity switch and the alarm switch – provide the fault and alarm signals. The fire or overheat condition is shown on the Fire Protection Panel (FPP).

The integrity switch monitors the pressure in the sensor element. If an APD breaks, the loss of pressure in the sensor will open the switch and turn on the FAULT A or FAULT B light on the FPP.

The alarm switch is normally open, and closes when an overheat or fire condition occurs, caused by the gas pressure increase in the APD. The table that follows shows the specified alarm temperature values:

Table 1: Alarm Temperature and Test Data

ADVANCED PNEUMATIC DETECTORS (APD) LOCATION	DETECTOR PART NUMBER	ALARM TEMPERATURE °F (°C)	MINIMUM RESET TEMPERATURE °F (°C)
Propeller Electronic Controller (PEC) Zone	8SC1287	282 to 318 (139 to 159)	252 (122)
Main Wheel Well (MWW) Zone	8SC1288	235 to 265 (113 to 129)	210 (99)
Leading Edge Zone (LEZ)	8SC1275	470 to 530 (243 to 277)	420 (216)

The APD alarm switch provides signals to the appropriate engine PULL FUEL/HYD OFF handle light directly. The alarm signals are also processed by the control amplifier and then sent to the FPP.

The sensors in the engine/LEZ and PEC are connected in such a manner that if there is a fault in one of the APD's, a FAULT A indication on the fire protection panel comes on. A fault in the undercarriage zone APD will give a FAULT B indication on the fire protection panel. The CHK FIRE DETECT light and FAULT light indications come on at the same time.

The sensor loops in LEZ and PEC are connected in series with the control amplifier in such a manner that if the loop in PEC fails, the fire zone LEZ loop will still provide fire indications. However, if the LEZ loop fails, the PEC loop will not function as a fire detector. It is therefore possible to receive a FAULT A indication and an engine fire warning concurrently.

System Tests

Refer to Figures 3 and 4.

To test the nacelle fire detection system, select the (two position, spring–loaded to center) test switch on the Fire Protection Panel to either ENGINE 1 or ENGINE 2.

The nacelle fire detection test indications are as follows:

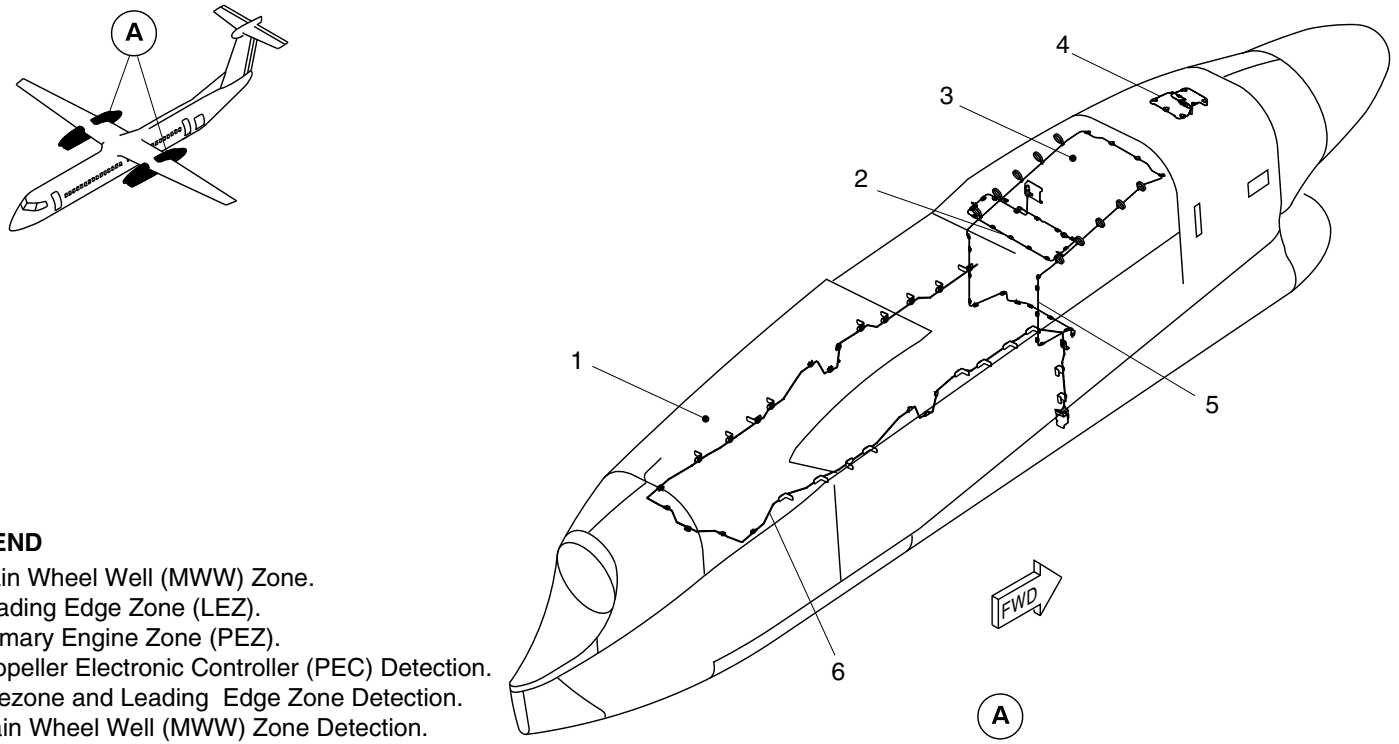
- Master WARNING PRESS TO RESET light (red) on the Glareshield Panel comes on and flashes
- CHECK FIRE DET warning light (red) on the Caution and Warning Panel comes on and flashes
- Both ENGINE FIRE PRESS TO RESET lights (red) on the Glareshield Panel come on and flash
- PULL FUEL/HYD OFF light (red) on the pull–handle of the Fire Protection Panel come on
- FAULT A and FAULT B lights (amber) on the Fire Protection Panel come on
- FIRE BELL audible warning comes on (optional).

Any nacelle APD will cause the PULL FUEL/HYD OFF handle to illuminate.

The ENGINE FIRE PRESS TO RESET advisory lights will come on only if correct response is obtained from all three nacelle APD's and the control amplifier is functioning normally. Pushing either ENGINE FIRE PRESS TO RESET advisory light will silence the fire bell.

Training Information Points

Care must be taken during the installation and removal of the APD. Any damage to the sensor tube can result in a leak of the inert gas which will result in APD sensor failure.



LEGEND

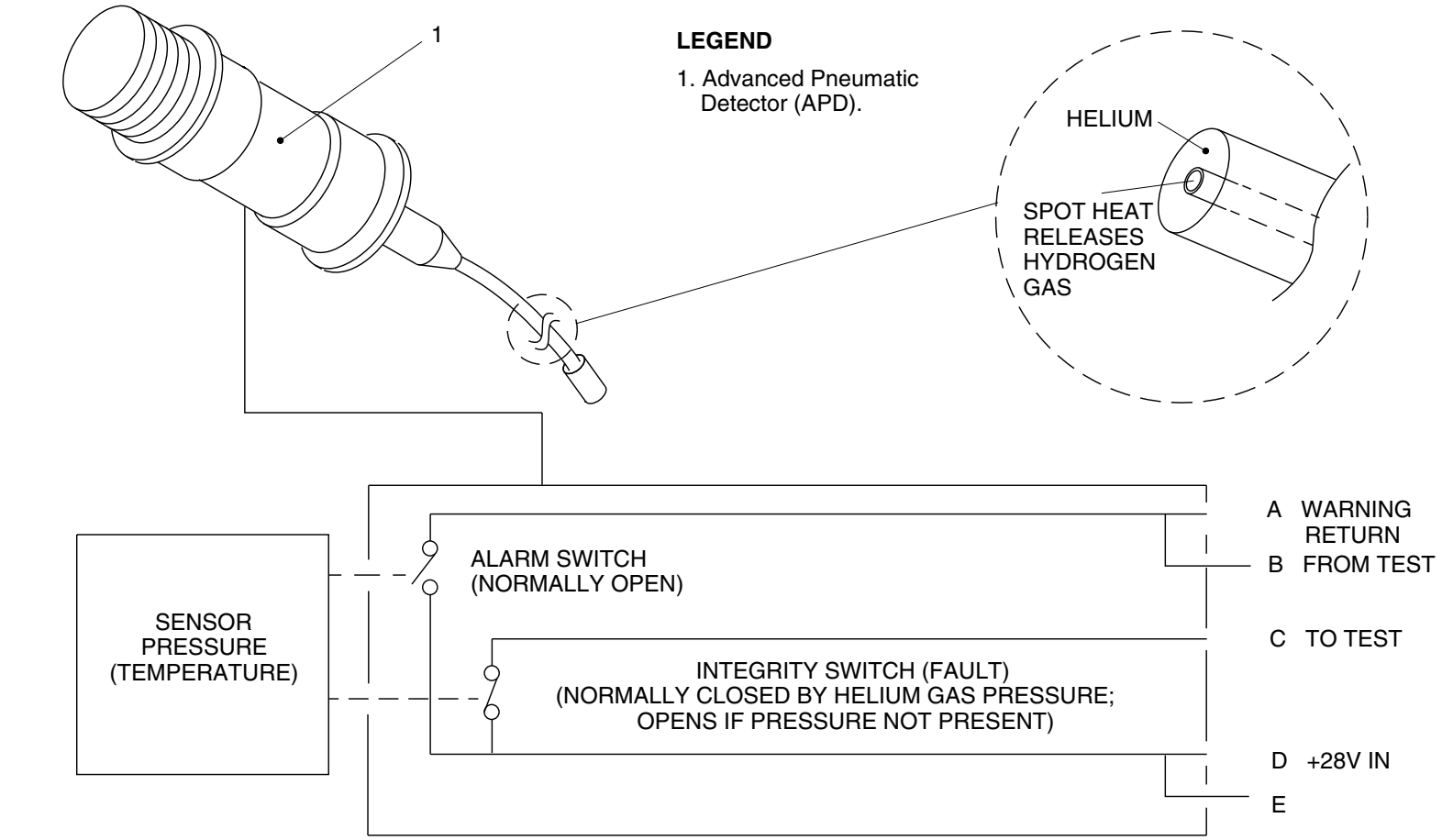
1. Main Wheel Well (MWW) Zone.
2. Leading Edge Zone (LEZ).
3. Primary Engine Zone (PEZ).
4. Propeller Electronic Controller (PEC) Detection.
5. Firezone and Leading Edge Zone Detection.
6. Main Wheel Well (MWW) Zone Detection.

NOTE

Left nacelle shown.
Right nacelle similar.

brar78a01.dg, sw, 03/06/03

Advanced Pneumatic Detectors for Nacelle Fire Detection
Figure 1



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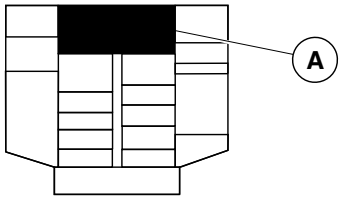
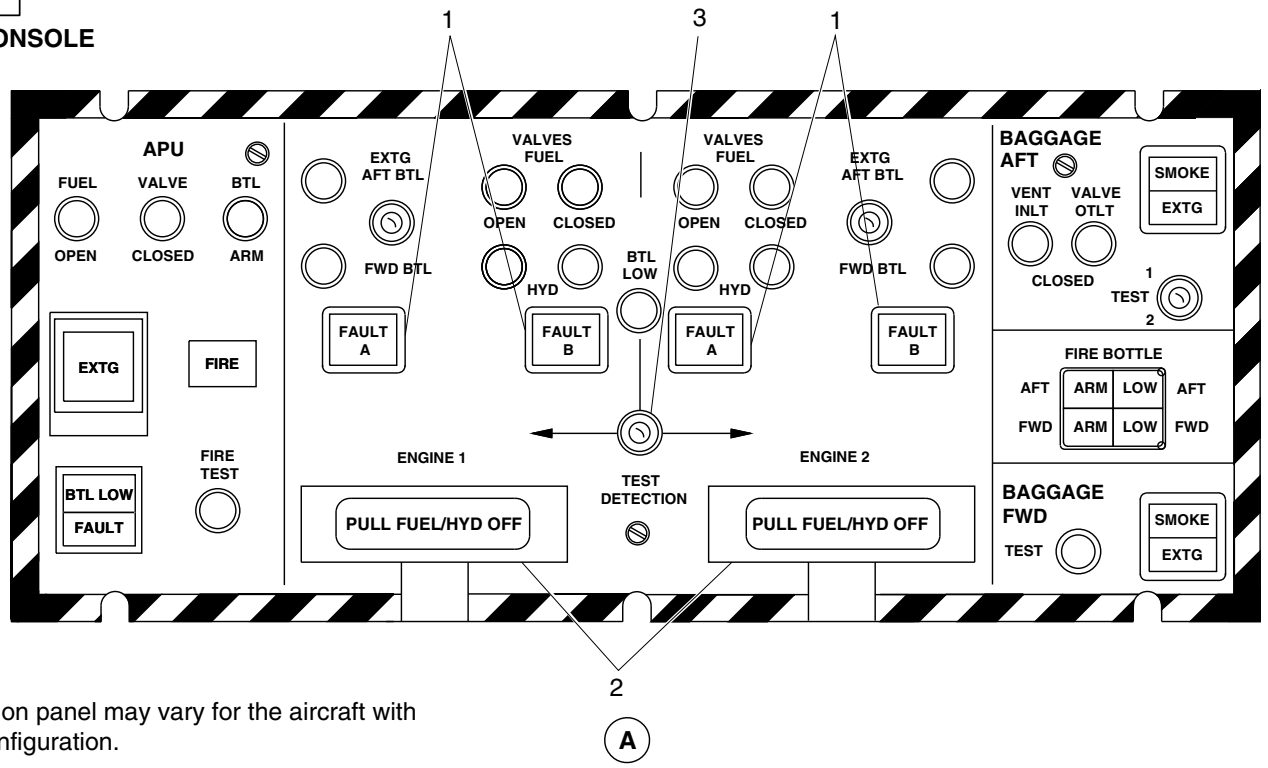
Advanced Pneumatic Detector (APD)
Figure 2



OVERHEAD CONSOLE

LEGEND

1. Loop fault indication light.
2. PULL FUEL/HYD OFF handle.
3. Fire detection system test switch.

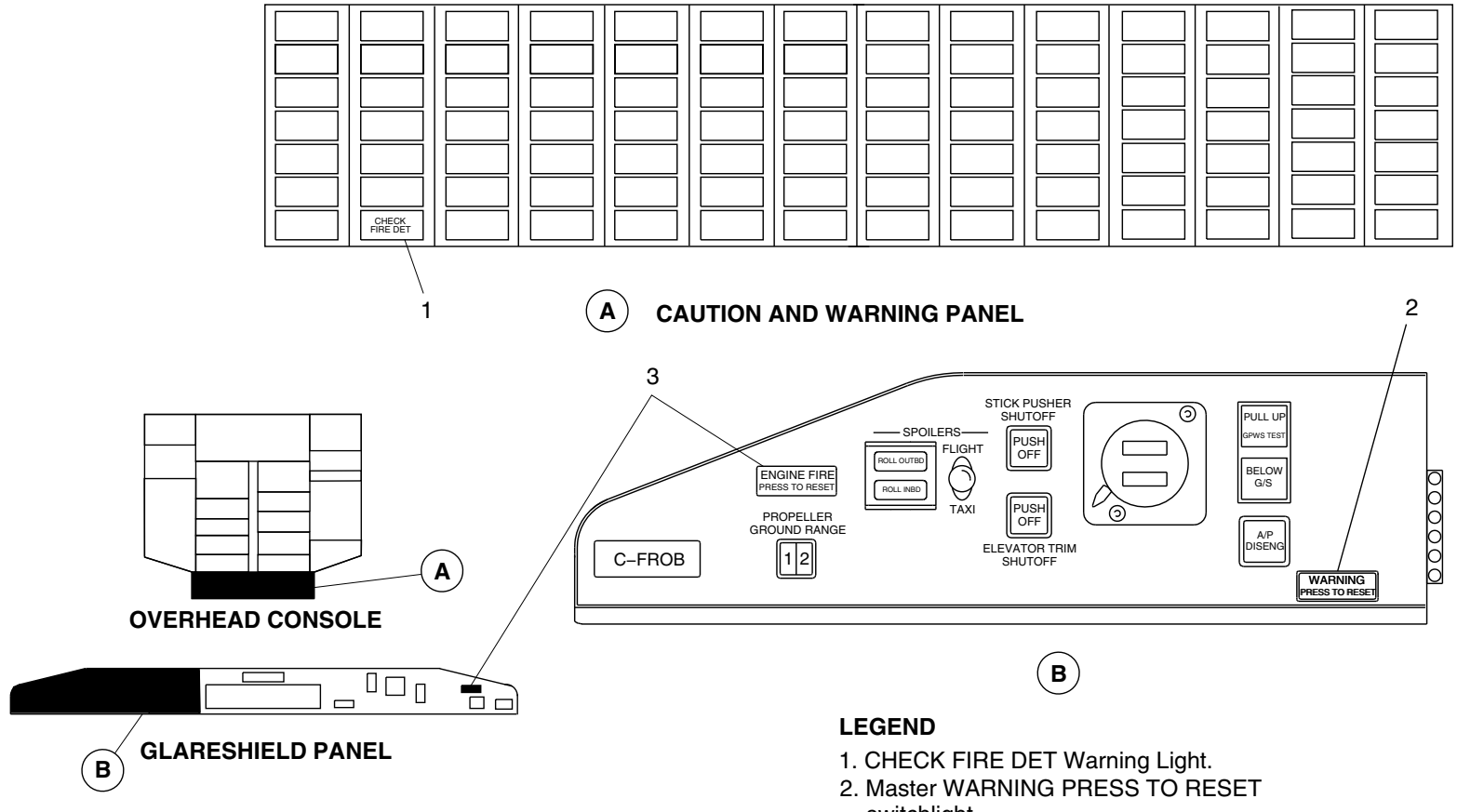


NOTE

The fire protection panel may vary for the aircraft with cargo combi configuration.

bras04a01.dg, sw/ms, nov19/2015

Fire Protection Panel Detail for Nacelle Fire Detection and Test
Figure 3



LEGEND

1. CHECK FIRE DET Warning Light.
2. Master WARNING PRESS TO RESET switchlight.
3. ENGINE FIRE PRESS TO RESET Annunciator Switch.

bras05a01.dg, sw, 04/06/03

Indications for Nacelle Fire
Figure 4

**ON A/C ALL

26–12–00–001

SMOKE DETECTION SYSTEM

Introduction

The smoke detection system monitors the baggage and lavatory areas for smoke conditions.

General Description

Refer to Figure 1.

Smoke detection is done by smoke detectors which are installed in the AFT baggage (cargo) compartment, the FWD baggage area and the lavatory. Smoke detectors are photosensitive devices that use a light beam that detects smoke particles when the beam is interrupted.

If a smoke or fire condition is sensed, the applicable warning indicator lights in the flight compartment, or the repeater lights in the passenger compartment ceiling come on.

The Smoke Detection System has the components that follow:

- AFT Baggage Smoke Detectors
- FWD Baggage Smoke Detector
- Lavatory Smoke Detector.

On aircraft with ModSum 4–458982, 4–458912 (extra capacity) and CR825CH03262 (cargo–combi) incorporated, the forward baggage compartment has been removed along with the smoke detector, forward HRD fire bottle, smoke switchlight and the test switch.

On aircraft with ModSum 4–459223 incorporated, four smoke detectors are installed in the cargo compartment.

Detailed Description

Refer to Figure 2.

The AFT and FWD baggage smoke detectors are monitored by the control amplifier.

If a smoke or fire condition is sensed, each baggage smoke detector directly turns on the applicable SMOKE advisory light on the Fire Protection Panel (FPP). The alarm signal is also sent to the control amplifier. The control amplifier turns on indications on the FPP, Glareshield Panel, and Caution and Warning Panel in the cockpit.

Smoke in the lavatory compartment will cause the repeater lights in the passenger compartment ceiling to come on, and a single audible warning (high chime) in the passenger address system will sound. The alarm signal will switch on the Light Emitting Diode (LED) and the audio alert, located on the smoke detector. There is no cockpit indication of any smoke events in the lavatory.

Refer to Figures 3 and 5.

Smoke detection in the aft baggage compartment is annunciated by:

- SMOKE (red) warning light on the Caution and Warning Panel comes on and flashes
- Master WARNING PRESS TO RESET light on the Glareshield Panel comes on and flashes

- BAGGAGE AFT SMOKE (red) advisory light on the Fire Protection Panel comes on
- AFT FIRE BOTTLE ARM (amber) light on the Fire Protection Panel comes on
- VENT VALVE INLET and VENT VALVE OTLT CLOSED (white) lights on the Fire Protection Panel come on
- BAGGAGE AFT EXTG (white) switchlight on the Fire Protection Panel comes on
- Three chimes.

Refer to Figures 5 and 6.

Smoke detection in the forward baggage compartment is annunciated by:

- SMOKE (red) warning light on the Caution and Warning Panel comes on and flashes
- Master WARNING PRESS TO RESET light on the Glareshield Panel comes on and flashes
- BAGGAGE FWD SMOKE (red) advisory light on the Fire Protection Panel comes on
- FWD FIRE BOTTLE ARM (amber) light on the Fire Protection Panel comes on
- BAGGAGE FWD EXTG (white) switchlight on the Fire Protection Panel comes on
- Three chimes.

Refer to Figures 4 and 5.

On aircraft with ModSum 4–459226 incorporated, the smoke detection in the cargo compartment is annunciated by:

- SMOKE (red) warning light on the Caution and Warning Panel comes on and flashes
- Master WARNING PRESS TO RESET light on the Glareshield Panel comes on and flashes
- CARGO SMOKE (red) advisory light on the Fire Protection Panel comes on
- HRD/LRD2 ARM (amber) light and LRD1 ARM (amber) light on the Fire Protection Panel come on
- VENT VALVE INLT CLOSED 1 light, VENT VALVE INLT CLOSED 2 light, VENT VALVE OTLT CLOSED 1 light and VENT VALVE OTLT CLOSED 2 light (white lights) on the Fire Protection Panel come on
- CARGO EXTG (white) switchlight on the Fire Protection Panel comes on
- Three chimes.

AFT Baggage Smoke Detectors

Refer to Figures 1 and 8.

The AFT Baggage Smoke Detectors sense the presence of smoke in the aft baggage (cargo) compartment.

The AFT baggage compartment has two smoke detectors. Smoke detector 2 is located at the rear and smoke detector 1 is located at the front of the aft baggage compartment. Each smoke detector is a self–contained open–area detector and is a line replaceable unit

(LRU). Electrical connections are provided using an external 66 pin connector, keyed to eliminate mismatching.

On aircraft with Kidde smoke detectors (P/N 473597–15) installed, each smoke detector has a Printed Circuit Board (PCB) assembly attached to the baseplate. A labyrinth is installed on the PCB assembly and the labyrinth consists a photodiode. The PCB assembly also consists a maintenance LED.

The maintenance LED comes on:

- Because of a dirty labyrinth
- When the analog voltage signal from the photodiode gets too high or too low
- If the heater circuit does not operate correctly
- As a function of test mode.

NOTE

A serviceable smoke detector can have the maintenance LED illuminated because of the dirty labyrinth.

Refer to Figure 3.

During a fire or smoke condition, one or both smoke detectors produce an alarm, based on a predetermined trip set point. This causes the “SMOKE” indicator light on the Fire Protection Panel (FPP) to come on. The control amplifier will automatically operate relay contacts to remove electrical power from the AFT baggage vent inlet and vent outlet shutoff valves, to minimize the air flow within the baggage compartment. Indication of vent valve status will be shown as VENT VALVE INLT and VENT VALVE OTLT lights on the FPP.

The smoke detectors have a Built–In Test capability that completely tests their functionality in response to a test signal from the FPP.

Cargo Compartment Smoke Detectors

Refer to Figures 4 and 1.

On aircraft with ModSum 4–459223 incorporated, the cargo compartment has four smoke detectors. Smoke detector 4 is located at the rear and smoke detector 1 is located at the front of the cargo compartment. Smoke detector 2 and smoke detector 3 are located between the smoke detector 1 and smoke detector 4. Each smoke detector is a self–contained open–area detector and is a line replaceable unit (LRU). Electrical connections are provided using an external 66 pin connector, keyed to eliminate mismatching.

On aircraft with Kidde smoke detectors (P/N 473597–15) installed, each smoke detector has a Printed Circuit Board (PCB) assembly attached to the baseplate. A labyrinth is installed on the PCB assembly and the labyrinth consists a photodiode. The PCB assembly also consists a maintenance LED.

The maintenance LED comes on:

- Because of a dirty labyrinth
- When the analog voltage signal from the photodiode gets too high or too low
- If the heater circuit does not operate correctly
- As a function of test mode.

NOTE

A serviceable smoke detector can have the maintenance LED illuminated because of the dirty labyrinth.

During a fire or smoke condition, one or the other three smoke detectors produce an alarm, based on a predetermined trip set point. This causes the CARGO SMOKE indicator light on the Fire

Protection Panel (FPP) to come on. The control amplifier will automatically operate relay contacts to remove electrical power from the cargo compartment vent inlet and vent outlet shutoff valves, to minimize the air flow within the cargo compartment. Indication of vent valve status will be shown as VENT VALVE INLT CLOSED 1 light, VENT VALVE INLT CLOSED 2 light, VENT VALVE OTLT CLOSED 1 light and VENT VALVE OTLT CLOSED 2 light on the FPP.

The smoke detectors have a Built–In Test capability that completely tests their functionality in response to a test signal from the FPP.

FWD Baggage Smoke Detector

Refer to Figures 1 and 8.

The FWD Baggage Smoke Detector senses the presence of smoke in the forward baggage compartment.

The FWD baggage smoke detector is a self–contained open–area detector. It is a line replaceable unit (LRU) and is located in the forward baggage compartment. Electrical connections are provided using an external 66 pin connector, keyed to eliminate mismatching.

On aircraft with Kidde smoke detectors (P/N 473597–15) installed, each smoke detector has a Printed Circuit Board (PCB) assembly attached to the baseplate. A labyrinth is installed on the PCB assembly and the labyrinth consists a photodiode. The PCB assembly also consists a maintenance LED.

The maintenance LED comes on:

- Because of a dirty labyrinth
- When the analog voltage signal from the photodiode gets too high or too low
- If the heater circuit does not operate correctly
- As a function of test mode.

NOTE

A serviceable smoke detector can have the maintenance LED illuminated because of the dirty labyrinth.

Refer to Figure 6.

During a fire or smoke condition, the smoke detector produces an alarm, based on a predetermined trip set point. This causes the “SMOKE” indicator light on the Fire Protection Panel (FPP) to come on.

The smoke detector has a Built–In Test capability that completely tests its functionality in response to a test signal from the FPP.

Lavatory Smoke Detector

Refer to Figures 1 and 7.

The Lavatory Smoke Detector senses the presence of smoke in the lavatory.

The smoke detector is a self–contained open–area detector. It is a line replaceable unit (LRU) and it is installed on the lavatory ceiling. Electrical connection is made through a D–style connector.

The aircraft is installed with a Jamco smoke detector or a Kidde Model 3000 smoke detector.

If the smoke detector is activated by a smoke condition, the lavatory smoke detector gives these indications:

- Red alarm indicator light on the smoke detector on aircraft with the Jamco smoke detector

- Red status indicator light on the smoke detector on aircraft with the Kidde smoke detector
- Local audible alarm
- One loud chime alert in the passenger address (P/A) system.

In addition to the above indications, on aircraft without CR825SO90286 (aft lavatory) and without CR825CH02917 (class divider aisle curtain), the cabin annunciator lights on all the three advisory light panels on the passenger compartment ceiling come on.

On aircraft with CR825SO90286 and with CR825CH02917, the red light on the side of the fwd lavatory comes on and the red lights on the cabin aisle class divider RHS forward come on.

On aircraft with CR825SO90286 and without CR825CH02917, the cabin annunciator lights on all the three advisory light panels on the passenger compartment ceiling come on and the red light on the side of the fwd lavatory comes on.

On aircraft with CR825SO90286, the cabin annunciator lights on all the three advisory light panels on the passenger compartment ceiling come on and the red light on the side of the aft lavatory comes on.

On aircraft with the Jamco smoke detector, if the lavatory smoke alarm is activated by smoke you can cancel the alarms and reset the smoke detector when you push the interrupt push–button.

On aircraft with the Kidde smoke detector, if the lavatory smoke alarm is activated by smoke you can cancel the alarms and reset the smoke detector when you push the horn cancel push–button.

On aircraft with the Kidde smoke detector, the status indicator conditions are as follows:

- Off – smoke detector deenergized and not operational
- Steady green – normal operation
- Steady red – unserviceable (acceptable at initial power–up but unserviceable if it stays red)
- Steady red – indicates an alarm condition (smoke detected)
- Flashes green – serviceable (Type 1 fault detected)
- Flashes red – unserviceable (Type 2 fault detected)

The lavatory smoke detector is tested when you push and hold the self test push–button switch on the detector itself (Refer to System Tests).

System Tests

Refer to Figures 3 and 5.

The baggage compartment smoke test produces exactly the same response as a smoke detection event.

The AFT baggage compartment test switch is a two–position toggle switch (TEST 1/TEST 2). During TEST 1, the smoke detector 1 in the AFT baggage is tested. During TEST 2, the smoke detector 2 in the AFT baggage is tested.

During TEST 1/TEST 2 the following is annunciated:

- SMOKE (red) warning light on the Caution and Warning Panel comes on

- Master WARNING PRESS TO RESET light on the Glareshield Panel comes on and flashes
- BAGGAGE AFT SMOKE (red) advisory light on the Fire Protection Panel comes on
- AFT FIRE BOTTLE ARM (amber) light on the Fire Protection Panel comes on
- VENT VALVE INLT and VENT VALVE OTLT CLOSED (white) lights on the Fire Protection Panel come on (for the aft baggage compartment only)
- BAGGAGE AFT EXTG (white) switchlight on the Fire Protection Panel comes on
- Three chimes.

Refer to Figures 5 and 6.

The FWD baggage compartment test switch is a push button test switch. During the forward baggage compartment test the following is annunciated:

- SMOKE (red) warning light on the Caution and Warning Panel comes on
- Master WARNING PRESS TO RESET light on the Glareshield Panel comes on and flashes
- BAGGAGE FWD SMOKE (red) advisory light on the Fire Protection Panel comes on
- FIRE BOTTLE FWD ARM (amber) light on the Fire Protection Panel comes on
- BAGGAGE FWD EXTG (white) switchlight on the Fire Protection Panel comes on
- Three chimes.

Refer to Figure 7.

The lavatory smoke detector is tested in response to a signal from a self test push–button switch on the detector itself. To start the lavatory smoke detector test, push and hold the self test push–button switch. The lavatory smoke detector will make the indications that follow:

- Red alarm indicator light on the smoke detector on aircraft with the Jamco smoke detector
- Red status indicator light on the smoke detector on aircraft with the Kidde smoke detector
- Local audible alarm
- One loud chime alert in the passenger address (P/A) system.

Refer to Figures 4 and 5.

On aircraft with ModSum 4–459226 incorporated, the cargo smoke test produces exactly the same response as a smoke detection event. During the cargo compartment test the following is annunciated:

- SMOKE (red) warning light on the Caution and Warning Panel comes on and flashes
- Master WARNING PRESS TO RESET light on the Glareshield Panel comes on and flashes
- CARGO SMOKE (red) advisory light on the Fire Protection Panel comes on
- HRD/LRD2 ARM (amber) light and LRD1 ARM (amber) light on the Fire Protection Panel come on

- VENT VALVE INLT CLOSED 1 light, VENT VALVE INLT CLOSED 2 light, VENT VALVE OTLT CLOSED 1 light and VENT VALVE OTLT CLOSED 2 light (white lights) on the Fire Protection Panel come on
- CARGO EXTG (white) switchlight on the Fire Protection Panel comes on
- Three chimes.

In addition to the above indications, on aircraft without CR825SO90286 (aft lavatory) and without CR825CH02917 (class divider aisle curtain), the cabin annunciator lights on all the three advisory light panels on the passenger compartment ceiling come on.

On aircraft with CR825SO90286 and with CR825CH02917, the red light on the side of the fwd lavatory comes on and the red lights on the cabin aisle class divider RHS forward come on.

On aircraft with CR825SO90286 and without CR825CH02917, the cabin annunciator lights on all the three advisory light panels on the passenger compartment ceiling come on and the red light on the side of the fwd lavatory comes on.

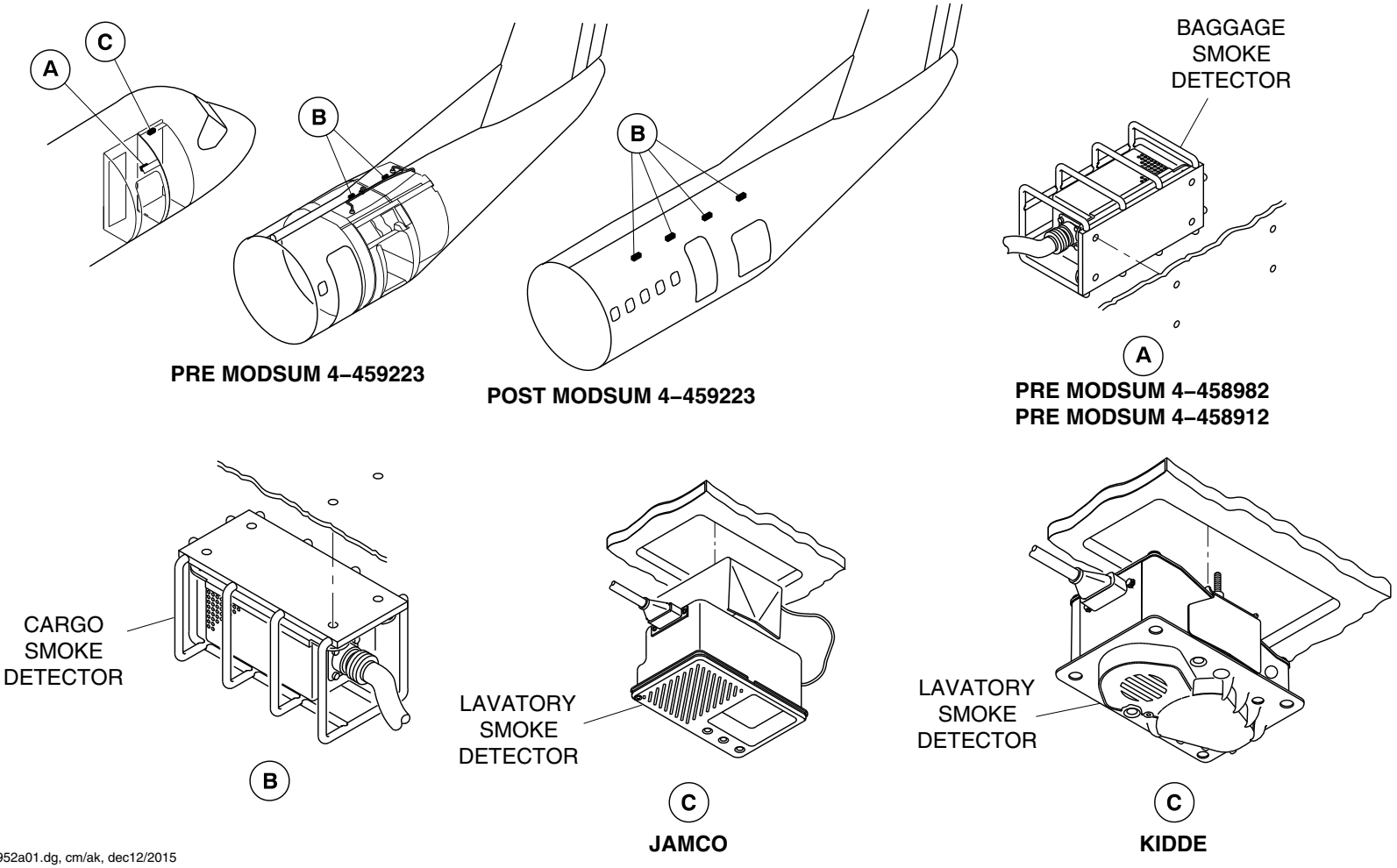
On aircraft with CR825SO90286, the cabin annunciator lights on all the three advisory light panels on the passenger compartment ceiling come on and the red light on the side of the aft lavatory comes on.

On aircraft with the Jamco smoke detector, while you hold the self–test push–button, push and release the interrupt pushbutton. The audible alarm stops and the cabin indications go out. When you release the self–test push–button, the red alarm indicator light on the smoke detector goes off.

On aircraft with Kidde smoke detector, when you release the self–test switch, the audible alarm stops and the cabin indications go out. The red status indicator light on the smoke detector goes green or flashes green.

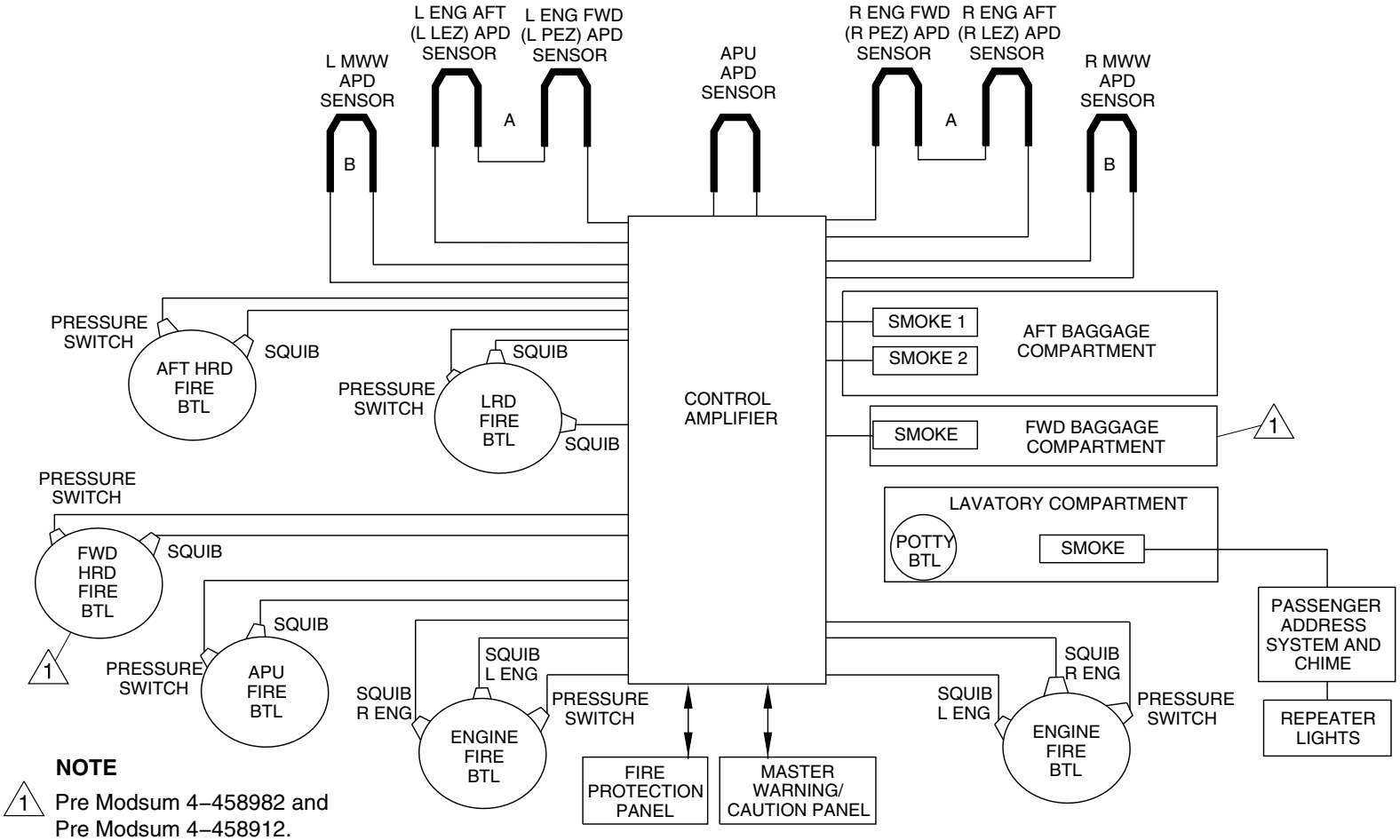
NOTE

The self–test push–button switch and the horn cancel switch are in a recess. To push them, it is necessary to use a thin tool approximately 3 in. (7.6 cm) long.



fs952a01.dg, cm/ak, dec12/2015

Smoke Detectors
Figure 1



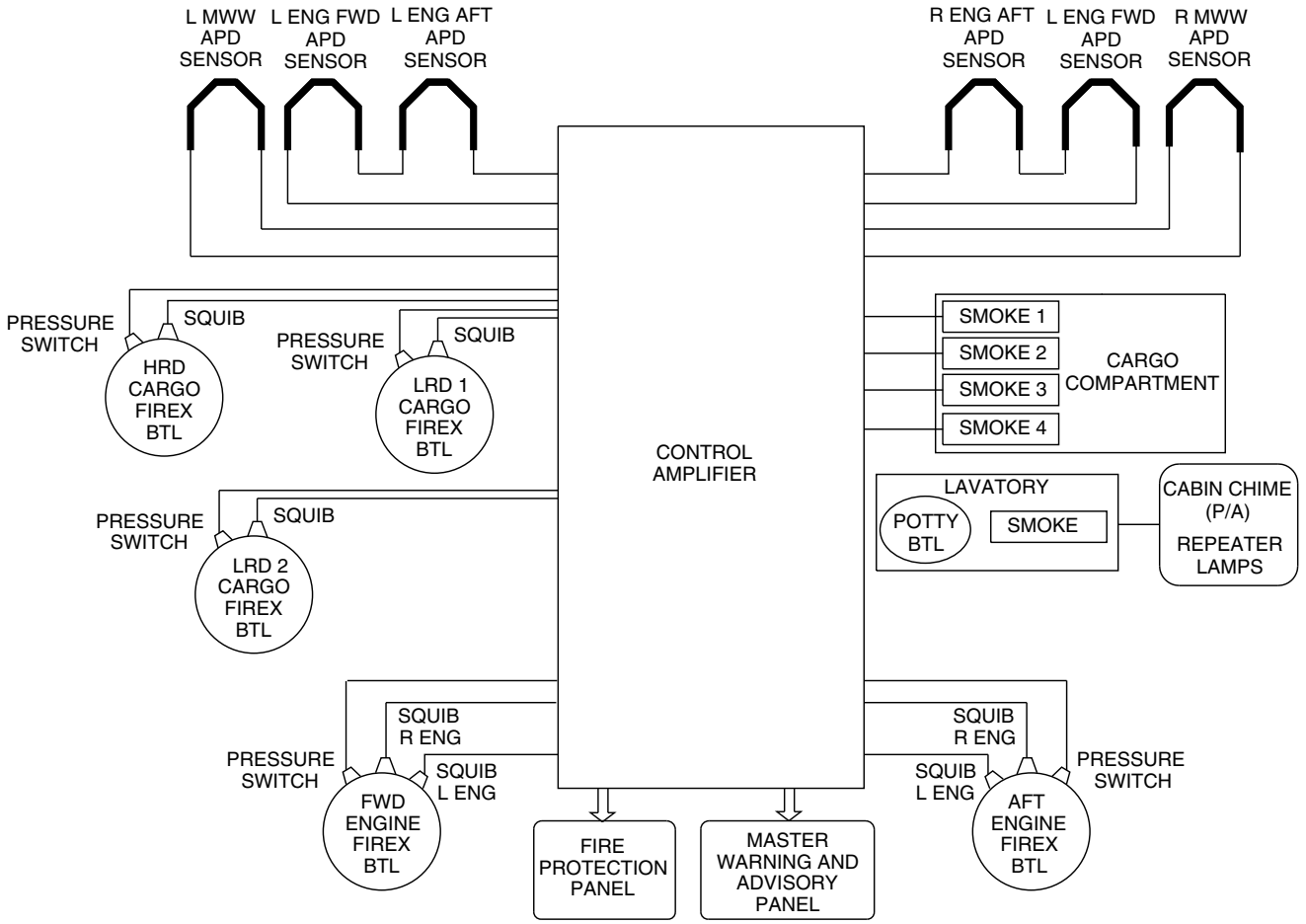
NOTE

1 Pre Modsum 4–458982 and Pre Modsum 4–458912.

bras01a01,dg, sw/nn, dec10/2015

PRE MODSUM 4–459188

Fire Protection System Schematic
Figure 2 (Sheet 1 of 2)



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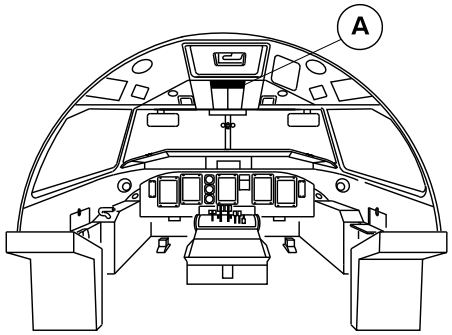
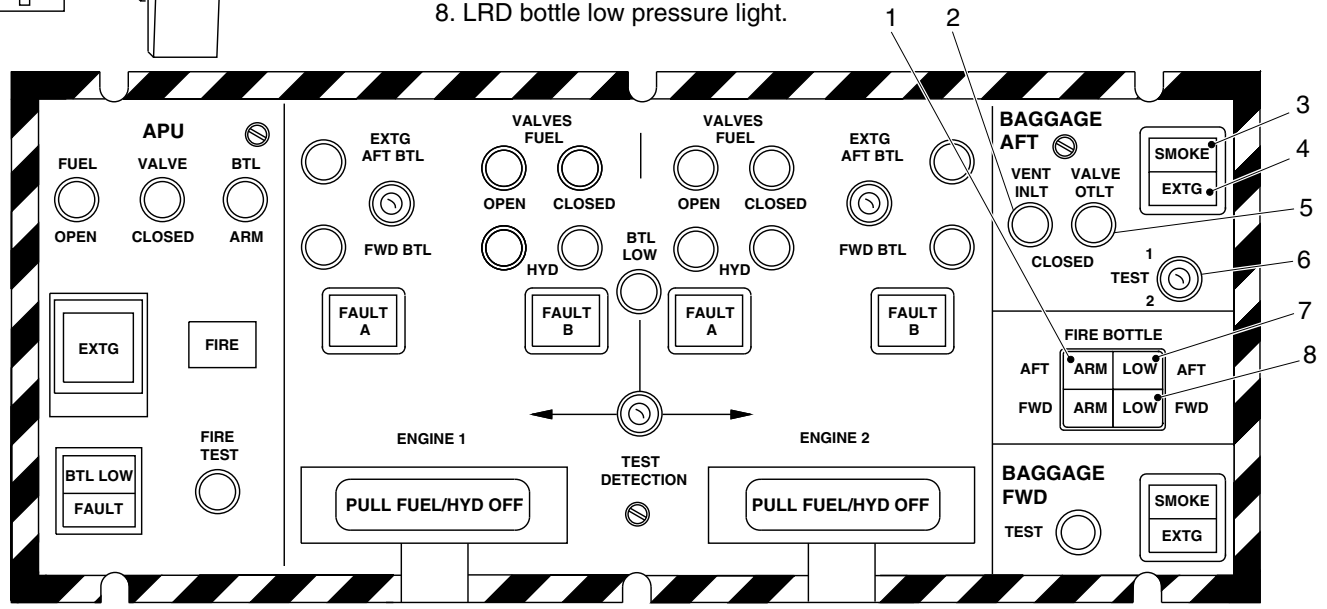
POST MODSUM 4–459188

Fire Protection System Schematic
Figure 2 (Sheet 2 of 2)



LEGEND

1. Aft baggage HRD ARM light.
2. Inlet vent valve closed light.
3. Smoke detected light.
4. Extinguisher switch light.
5. Outlet vent valve closed light.
6. Smoke detector test switch.
7. HRD bottle low pressure light.
8. LRD bottle low pressure light.



A

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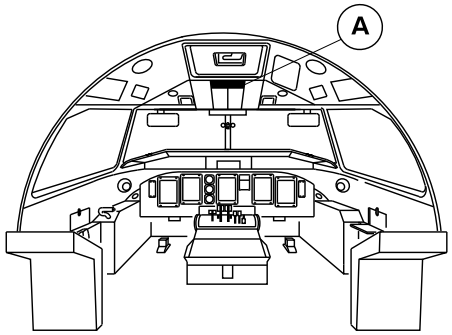
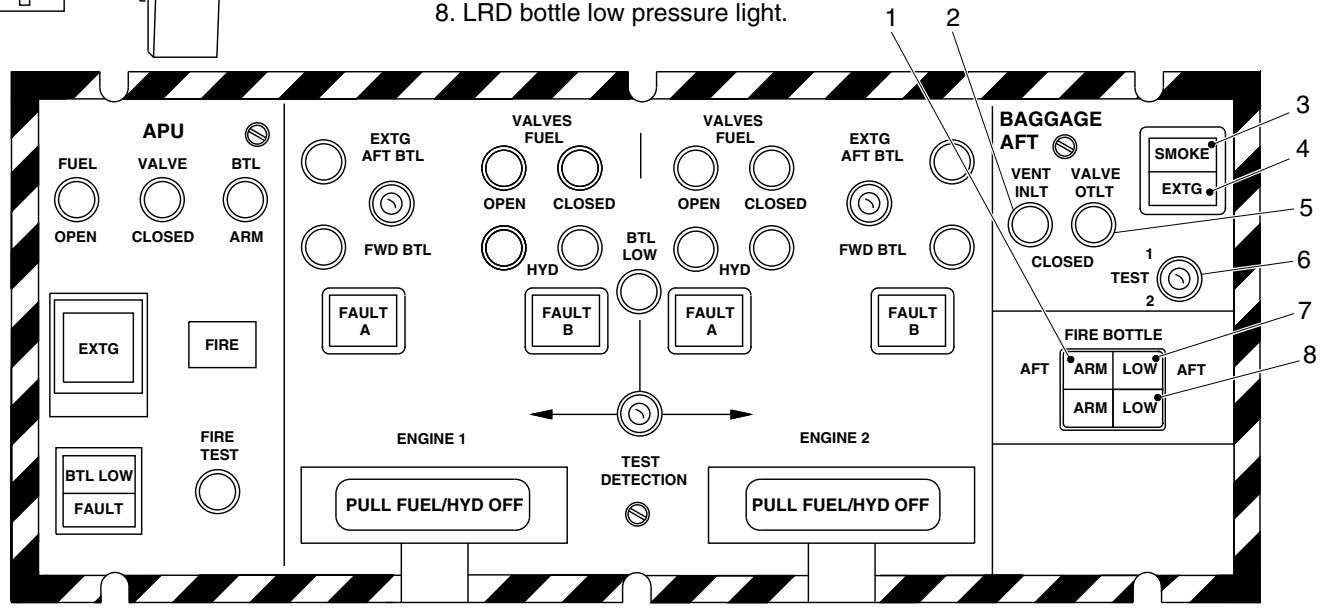
PRE MODSUM 4–458982

Fire Protection Panel Detail for AFT Baggage Compartment Smoke and Fire
Figure 3 (Sheet 1 of 2)



LEGEND

1. Aft baggage HRD ARM light.
2. Inlet vent valve closed light.
3. Smoke detected light.
4. Extinguisher switch light.
5. Outlet vent valve closed light.
6. Smoke detector test switch.
7. HRD bottle low pressure light.
8. LRD bottle low pressure light.



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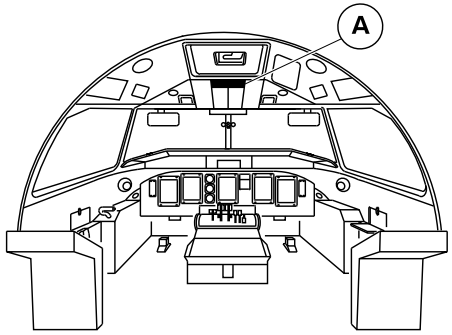
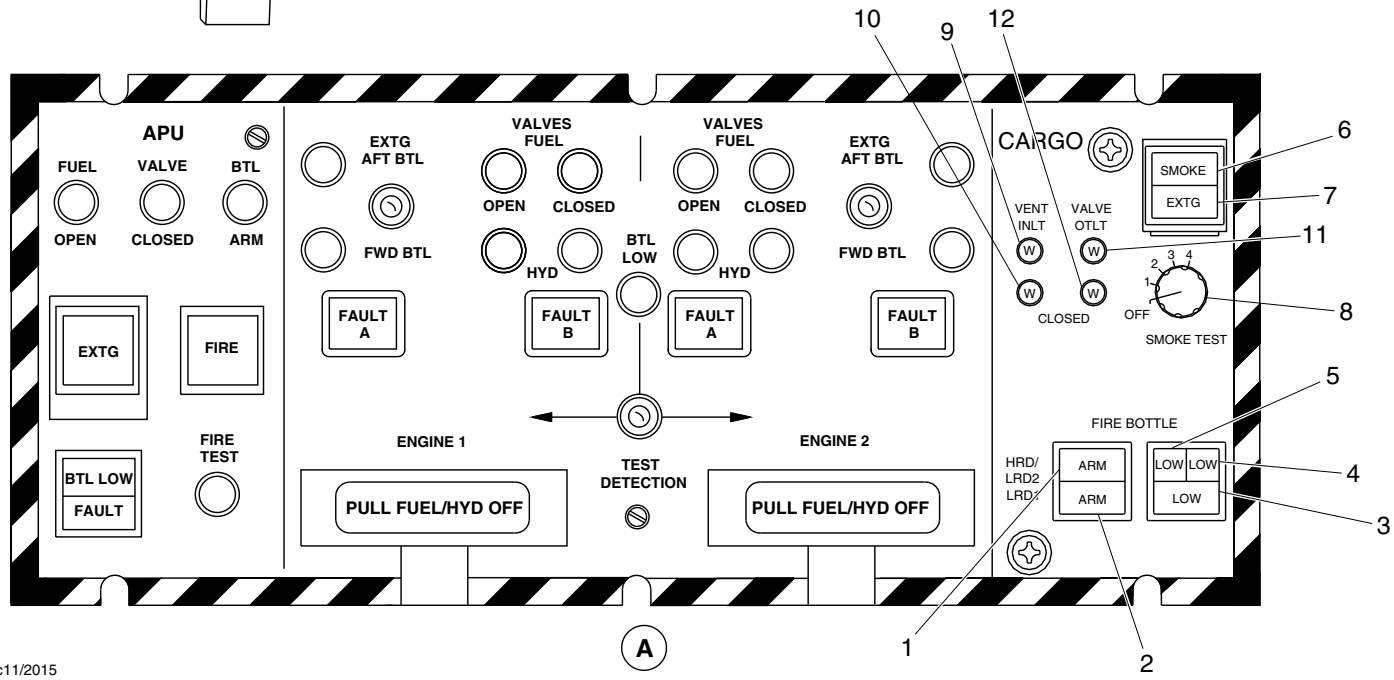
POST MODSUM 4–458982

Fire Protection Panel Detail for AFT Baggage Compartment Smoke and Fire
Figure 3 (Sheet 2 of 2)



LEGEND

1. HRD/LRD2 ARM Light.
2. LRD1 ARM Light.
3. LRD1 low pressure light.
4. LRD2 low pressure light.
5. HRD low pressure light.
6. CARGO SMOKE detector switch light.
7. CARGO EXTG switch light.
8. CARGO SMOKE detector test switch.
9. VENT VALVE INLT CLOSED 1 light.
10. VENT VALVE INLT CLOSED 2 light.
11. VENT VALVE OTLT CLOSED 1 light.
12. VENT VALVE OTLT CLOSED 2 light.



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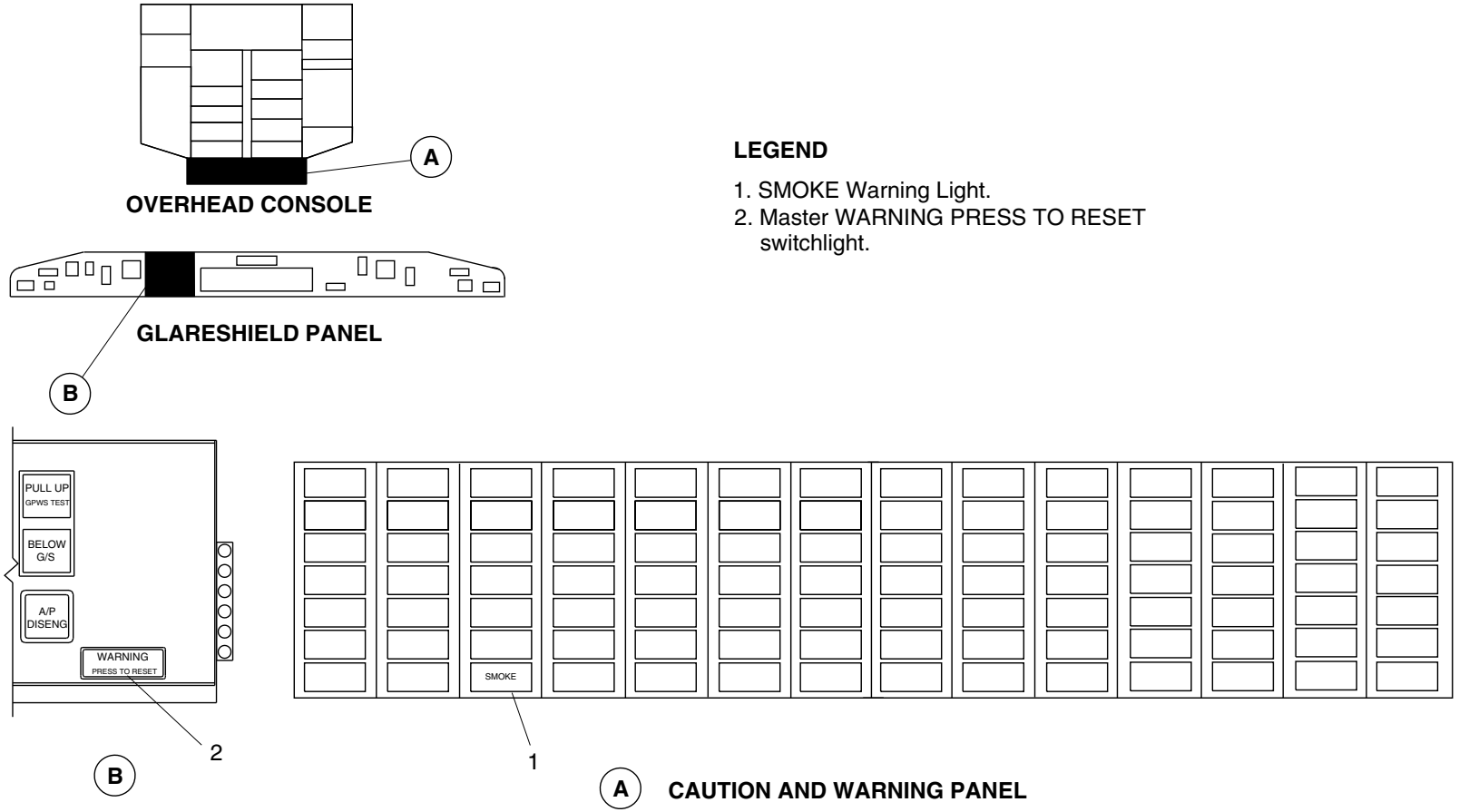
Fire Protection Panel Detail for AFT Cargo Compartment Smoke and Fire
Figure 4



LEGEND

1. SMOKE Warning Light.
2. Master WARNING PRESS TO RESET switchlight.

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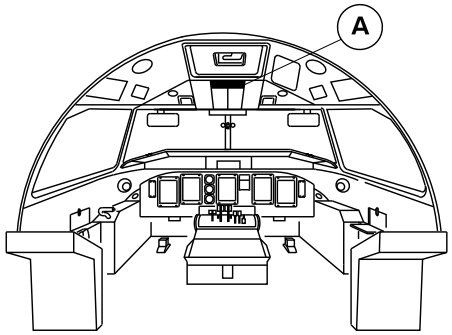
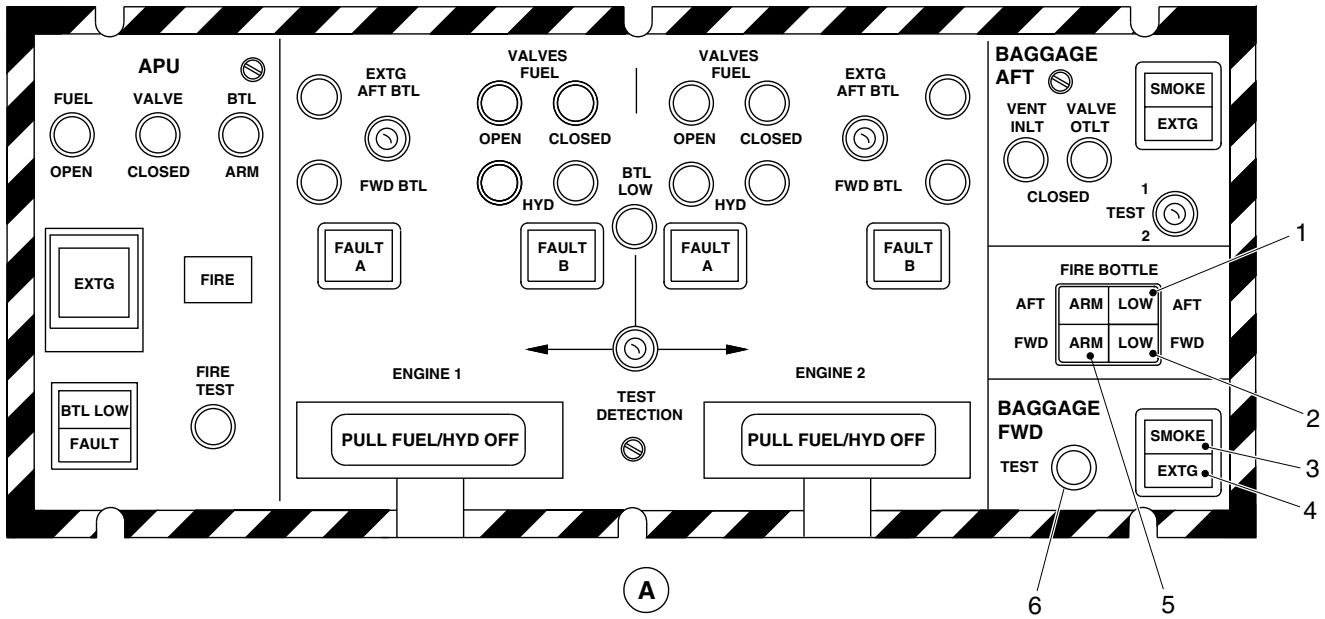
Warning Lights for Baggage–Compartments Smoke Detection
Figure 5



LEGEND

1. LRD bottle low pressure light.
2. HRD bottle low pressure light.
3. Smoke indication light.
4. Extinguisher switch light.
5. Forward bottle ARM light.
6. Forward baggage compartment smoke detector test switch.



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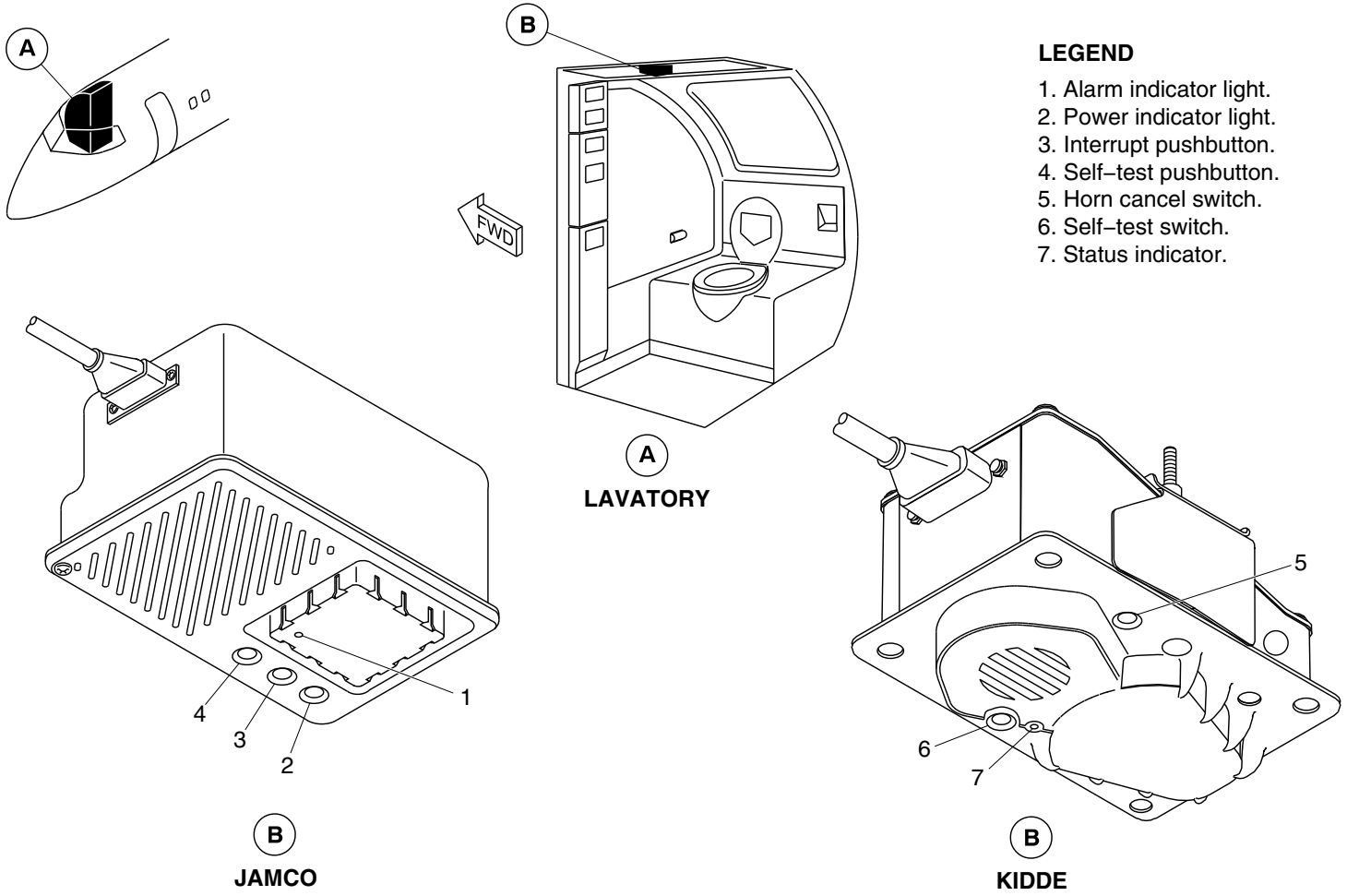
Fire Protection Panel Detail for FWD Baggage Compartment Smoke and Fire
Figure 6



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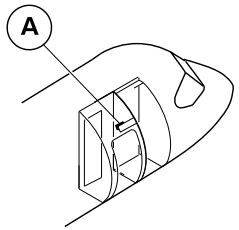
Lavatory Smoke Detector
Figure 7



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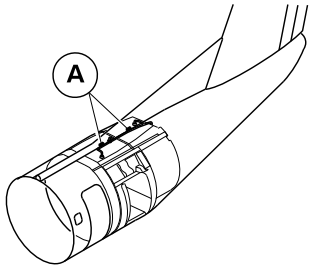
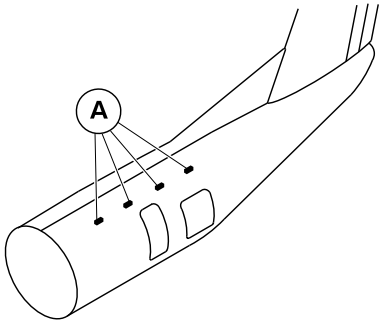
PRE MODSUM 4–458912



PRE MODSUM 4–459223



POST MODSUM 4–459223

LEGEND

1. Maintenance LED.

cg5967a01.cgm, aj, jan17/2020

Kidde Smoke Detector (P/N 473597–15)
Figure 8

**ON A/C ALL

26–13–00–001

APU FIRE DETECTION SYSTEM

Introduction

The Auxiliary Power Unit (APU) fire detection system senses fire or overheat conditions in the APU compartment.

General Description

The APU fire detection system has one Advanced Pneumatic Detector (APD) located in the APU compartment which senses changes in temperature.

The APU fire detection system has the component that follows:

– APU Compartment Advanced Pneumatic Detector.

Detailed Description

Refer to Figure 1.

There is one Advanced Pneumatic Detector (APD) located in the APU compartment. The APD has a main element body and a sensor tube which extends around the APU compartment. The main element body is held in place by two P–clamps and the sensor tube is supported by additional clamps and grommets. The sensor tube is filled with an inert gas which is sensitive to changes in temperature.

Refer to Figure 2.

The APD receives electrical power from the right essential bus. Two switches (integrity and alarm) are integral in the APD. They show the APU compartment fire or overheat conditions on the Fire Protection Panel (FPP).

The integrity switch monitors the pressure in the sensor element. If an APD breaks, the loss of pressure will open the integrity switch and signal the control amplifier to turn on the FAULT light on the FPP.

The alarm switch is normally open, and closes when an overheat or fire condition occurs, caused by the pressure increase in the APD. The table that follows shows the specified alarm temperature values:

Table 1: Alarm Temperature and Test Data

ADVANCED PNEUMATIC DETECTORS (APD) LOCATION	DETECTOR PART NUMBER	ALARM TEMPERATURE °F (°C)	MINIMUM RESET TEMPERATURE °F (°C)
APU Zone	8SC1289	564 to 636 (296 to 336)	504 (262)

The alarm switch directly signals the FIRE advisory light on the FPP. The FIRE (red) advisory light remains on steady state for the duration of the alarm. The alarm signals are also processed by the control amplifier and then sent to the FPP.

Refer to Figures 3 and 4.

When a fire or overheat is sensed in the APU, the control amplifier does as follows:

- FIRE (red) light on the Fire Protection Panel (FPP) comes on
- BTL ARM (amber) light on the FPP comes on
- FUEL OPEN (green) advisory light on the FPP goes off
- FUEL CLOSED (white) light on the FPP comes on
- EXTG (white) switch light on the FPP comes on
- CHECK FIRE DET (red) warning light on the Caution and Warning Panel comes on and flashes
- Master WARNING PRESS TO RESET (red) light on the Glareshield Panel comes on and flashes

When a fire or overheat is sensed, the APU will automatically shut down and the FAIL advisory light on the APU control panel will come on.

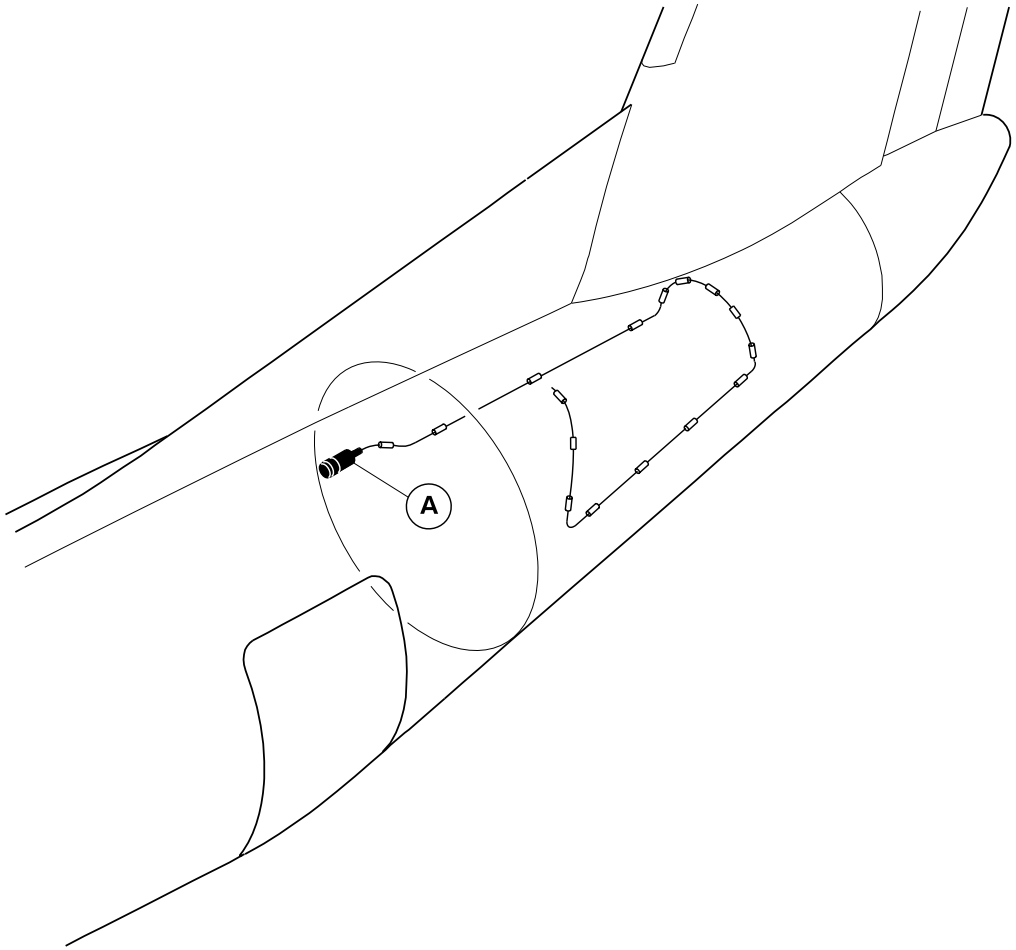
System Tests

Refer to Figures 3 and 4.

To test the APU Fire Protection System, the FIRE TEST push button on the Fire Protection Panel (FPP) is pushed. During APU fire test, the control amplifier performs the following:

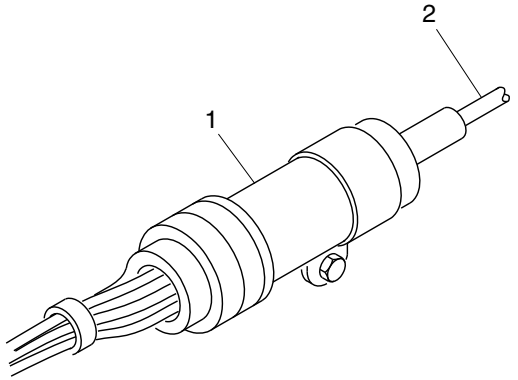
- FIRE (red) light on the Fire Protection Panel (FPP) comes on
- BTL ARM (amber) light on the FPP comes on
- FUEL OPEN (green) advisory light on the FPP goes off
- FUEL CLOSED (white) light on the FPP comes on
- EXTG (white) switch light on the FPP comes on
- FAULT (amber) light on the FPP comes on
- CHECK FIRE DET (red) warning light on the Caution and Warning Panel comes on and flashes
- Master WARNING PRESS TO RESET (red) light on the Glareshield Panel comes on and flashes

The shutdown signal to the APU FADEC and the APU fuel shut off valve circuits are also tested and the APU shuts down.



LEGEND

1. Main element body.
2. Sensor tube.



A
ADVANCED PNEUMATIC DETECTOR

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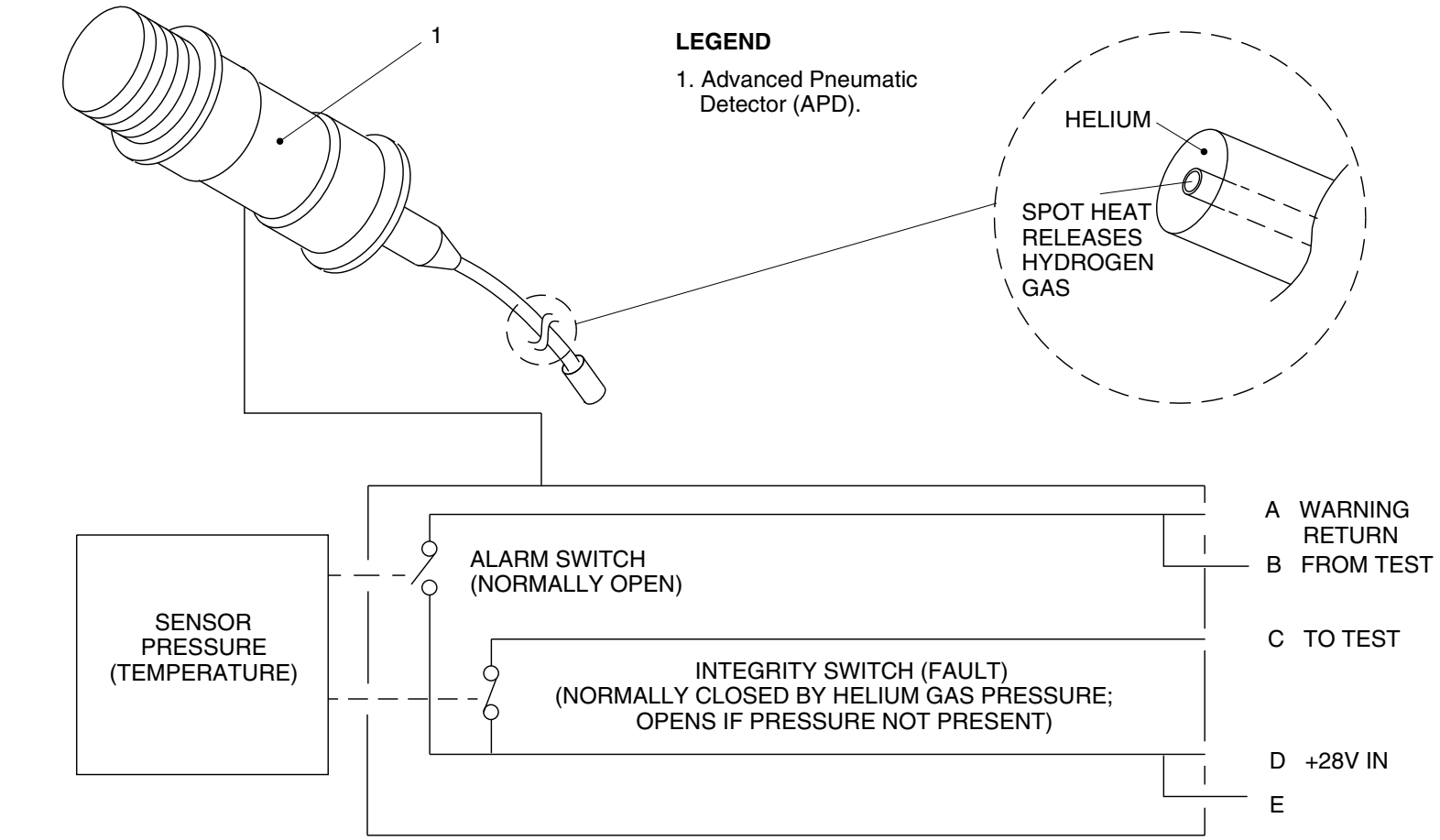
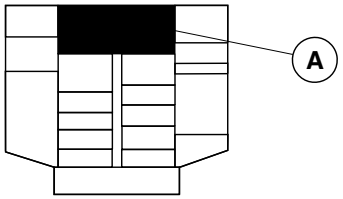
Advanced Pneumatic Detector for APU Compartment Fire Detection
Figure 1



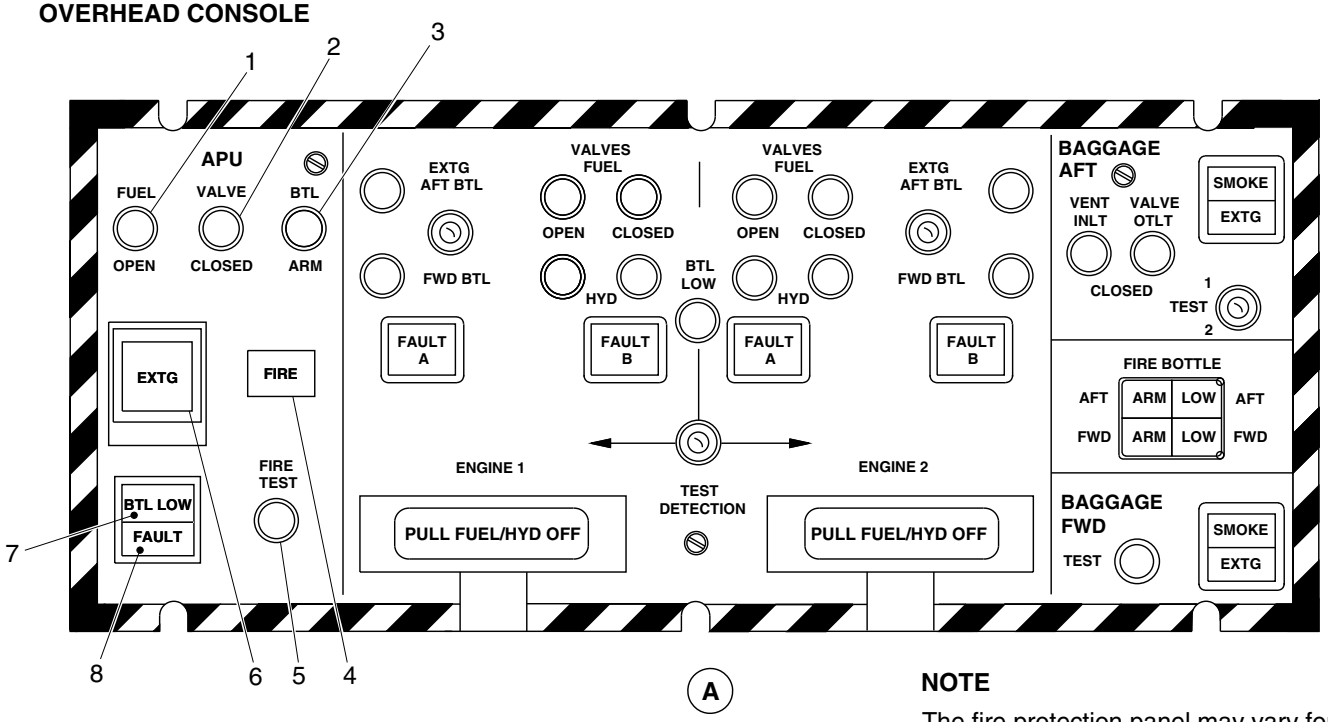
Advanced Pneumatic Detector (APD)
Figure 2



OVERHEAD CONSOLE

LEGEND

1. Fuel Valve Open Indication Light.
2. Fuel Valve Closed Indication Light.
3. APU Bottle Arm Light.
4. APU Fire Indication Light.
5. APU Fire Detection Push Button.
6. Extinguisher Switchlight (Guarded).
7. APU Fire Bottle Low Pressure Indication.
8. Fault Indication Light.

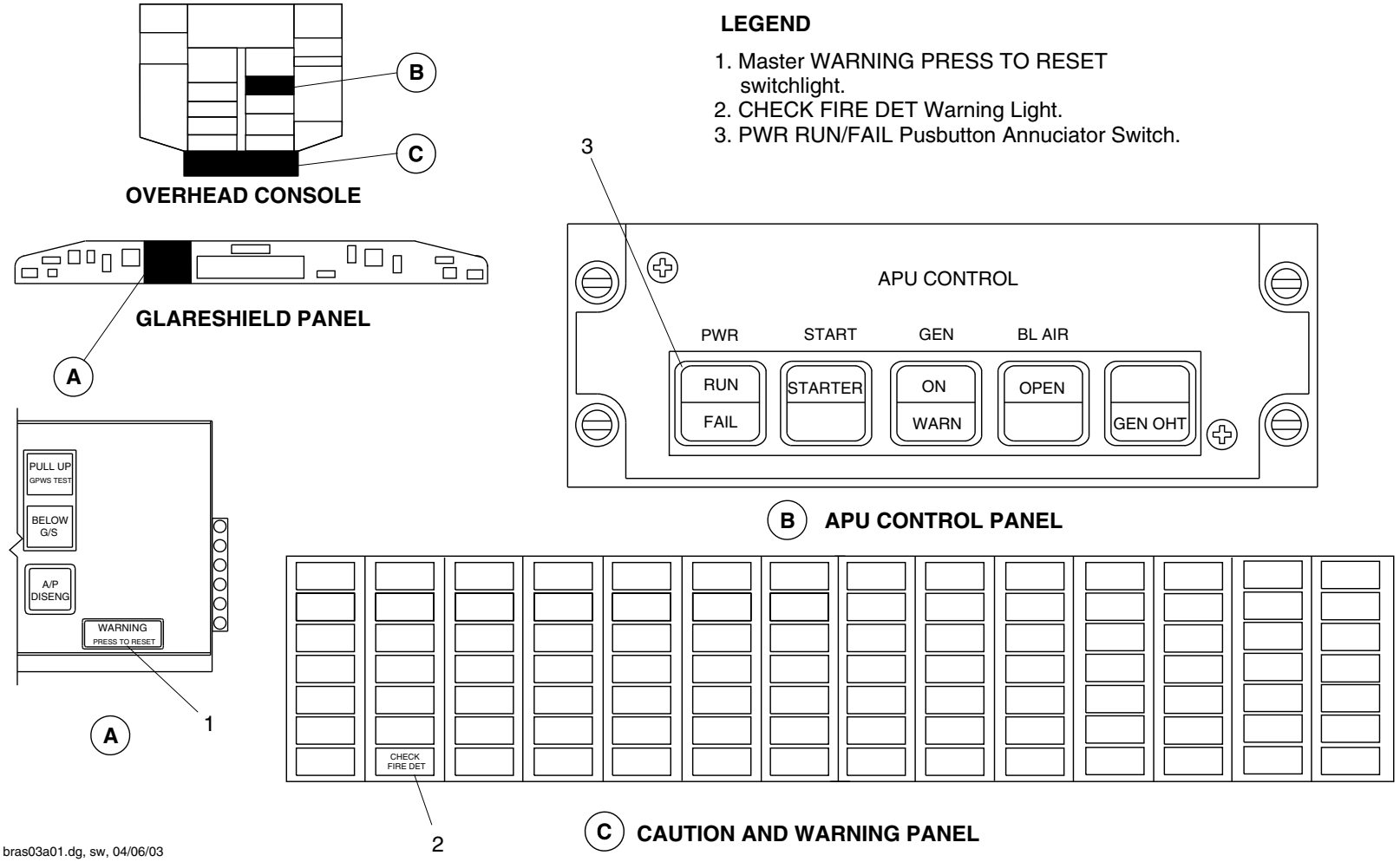


NOTE

The fire protection panel may vary for the aircraft with cargo combi configuration.

bras02a01.dg, sw/ms, nov19/2015

Fire Protection Panel Detail for APU Fire Protection
Figure 3



LEGEND

1. Master WARNING PRESS TO RESET switchlight.
2. CHECK FIRE DET Warning Light.
3. PWR RUN/FAIL Pusbutton Annuciator Switch.

bras03a01.dg, sw, 04/06/03

Indications for APU Fire
Figure 4

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26–20–00–001

FIRE EXTINGUISHING

Introduction

The fire protection system provides components throughout the aircraft for the extinguishing of detected fires.

General Description

Two dual port FIREX bottles are installed FWD and AFT in the left wing root, for engine fire suppression. Both bottles can be used to extinguish a fire in either engine.

Fire extinguishing for the baggage compartments is performed by two High Rate (HR) fire extinguisher bottles and one Low Rate (LR) fire extinguisher bottle.

One fire extinguishing bottle is used to suppress fire and overheat conditions in the APU compartment.

The lavatory compartment waste bin is protected by a single thermally activated fire extinguisher.

Four hand held fire extinguishers are provided at the locations that follow:

- Flight compartment
- Forward passenger compartment
- Aft passenger compartment

On aircraft with ModSum 4–459188 incorporated, fire extinguishing for the aft baggage compartment is performed by one High Rate Discharge (HRD) fire extinguisher bottle and two Low Rate Discharge (LRD) fire extinguisher bottles.

Detailed Description

Refer to Figures 1 , 2 and 3.

The engine nacelle left and right extinguisher bottles can be discharged into the Primary Engine Zone (PEZ), Main Wheel Well (MWW) and Leading Edge Zone (LEZ) zones from the Fire Protection Panel (FPP). The left or right bottle squibs are armed by pulling the PULL FUEL/HYD OFF handle. After arming, the pilot can operate one of the extinguisher bottles with the EXTG switch on the FPP. An electrical signal is sent through the bridgewires, which ignites the Electro–Explosive Device (EED). When the EED explodes it ruptures a burst disc, and the pressurized bottle then discharges through the connector Check Tee.

The bottle configuration can give two applications of fire suppressant into the zones, in the event that the first attempt was not effective.

Refer to Figures 4 , 5 and 7.

Indications on the Fire Protection Panel (FPP) are used to monitor the fire and the overheat conditions in the FWD and AFT baggage compartments. Extinguisher bottle pressure is also monitored from the FPP. Pilot action, pressing the applicable SMOKE EXTG switchlight is required to activate the High Rate fire extinguishers. If a fire condition is sensed in the AFT baggage compartment, the aft High Rate fire bottle will discharge first followed by the Low Rate fire extinguisher which discharges automatically after seven minutes. The seven minute delay is to make sure that any remaining fire will be extinguished. If a fire condition is sensed in the FWD baggage

compartment, both the high rate and low rate extinguishers will discharge at the same time.

Refer to Figure 6.

On aircraft with ModSum 4–459188 or 4–459226 incorporated, if a fire condition is sensed in the aft cargo compartment, the aft High Rate fire bottle and the Low Rate fire bottle (LRD1) will discharge first followed by the Low Rate fire bottle (LRD2) which discharges automatically after seven minutes. The seven minute delay is to make sure that any remaining fire will be extinguished.

Refer to Figures 8 , 9 and 10.

When a fire or overheat condition is sensed in the APU compartment, the lights that follow come on:

- The APU BTL “ARM” advisory light on the Fire Protection Panel (FPP)
- CHECK FIRE DET warning light on the Caution and Warning panel
- MASTER WARNING light on the center glareshield panel.

The control amplifier controls a drive relay which closes the APU fuel valve. When electrical power from the drive relay is supplied to the Full–Authority Digital–Electronic–Control (FADEC) the APU FUEL VALVE “CLOSED” advisory light on the FPP comes on. The APU is shutdown automatically and the FLR advisory light on the APU control panel comes on. After a 7 second delay, an electrical signal from the FPP ignites an Electro–Explosive Device (EED) in the extinguisher cartridge. The EED then explodes, and the fire extinguishing agent is automatically released through the distribution tubes to the APU compartment. If automatic fire extinguishing fails and a fire or overheat condition is still sensed, a manual override capability is available by operating the APU EXTG switch located on the FPP. APU fire extinguisher bottle pressure is shown by a BOTTLE LOW FAULT light on the FPP.

Refer to Figure 11.

The lavatory fire extinguisher is located in the upper amenity assembly, just above the waste bin. It is attached to the bulkhead with two screws with the end caps pointing in the waste bin.

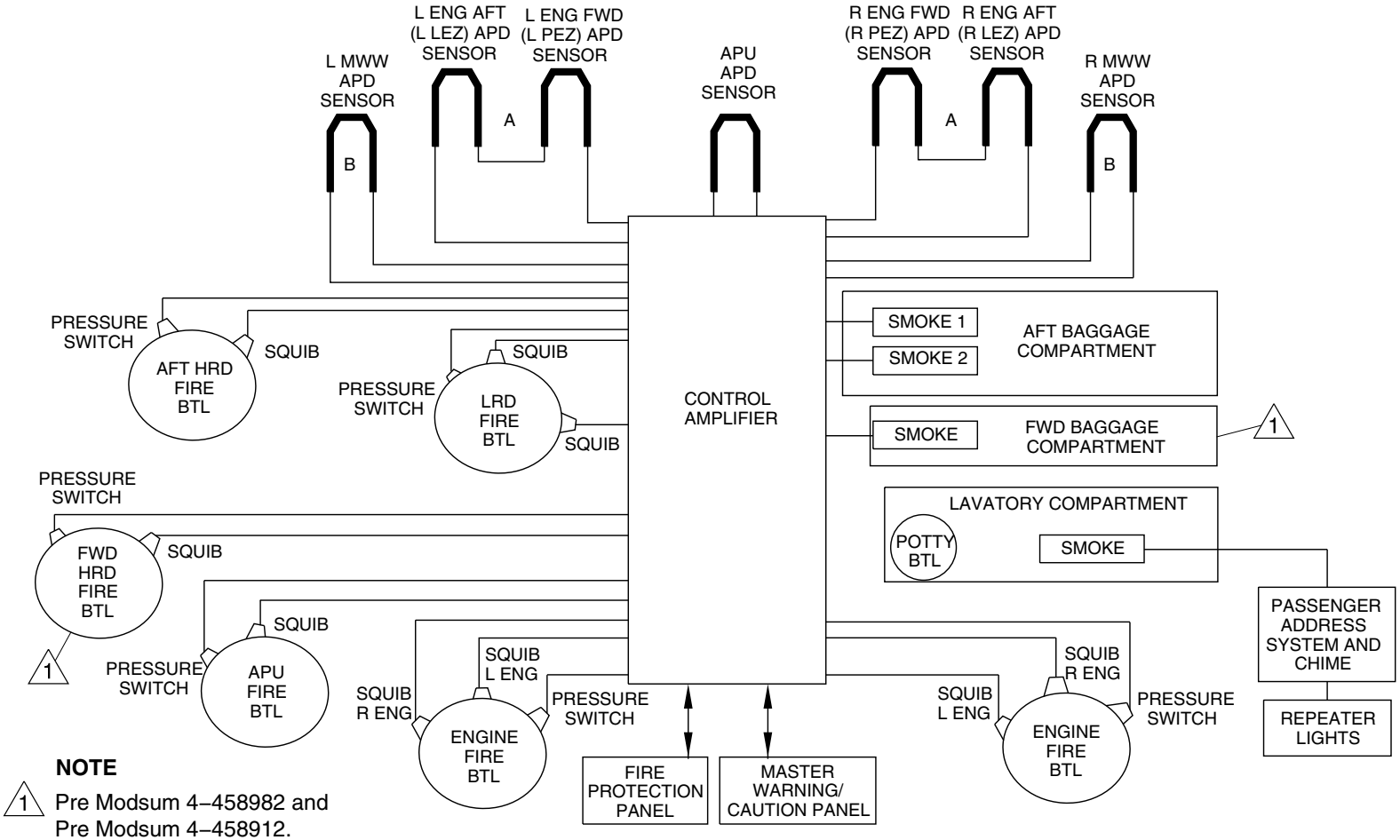
The lavatory fire extinguisher has dual discharge outlets. It is a thermally actuated extinguisher with no electrical interface. If the end caps on the discharge tubes reach 174 °F (79 °C), the fusible alloy seals melt and release the end cap from the tubes. The extinguishing agent is then released into the waste bin.

Refer to Figure 12.

A single portable hand–operated fire extinguisher in the flight compartment is attached to the left bulkhead behind the pilot’s seat. Instructions for use of the extinguisher are shown on the body of the extinguisher bottle.

A single portable hand–operated fire extinguisher is installed in the forward draft bulkhead compartment aft of the airstair entrance. Instructions for use of the extinguisher are shown on the body of the extinguisher bottle.

Two portable hand–operated fire extinguishers in the aft passenger compartment are attached to the aft draft bulkhead. The two extinguishers are located in a drawer attached to the left aft draft bulkhead forward side. Instructions for use of the extinguisher are shown on the body of the extinguisher bottle.



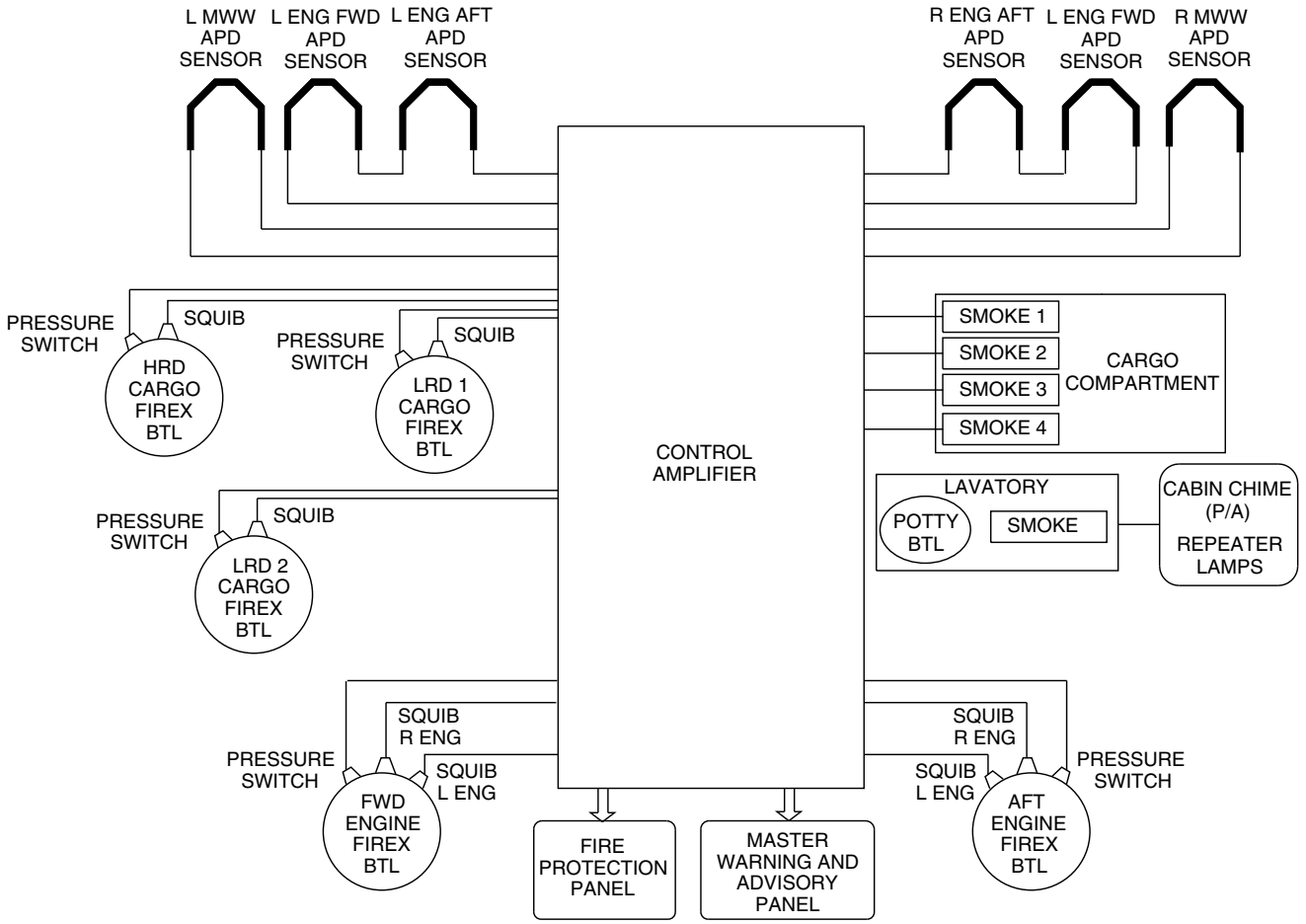
NOTE

1 Pre Modsum 4–458982 and Pre Modsum 4–458912.

bras01a01,dg, sw/nn, dec10/2015

PRE MODSUM 4–459188

Fire Protection System Schematic
Figure 1 (Sheet 1 of 2)



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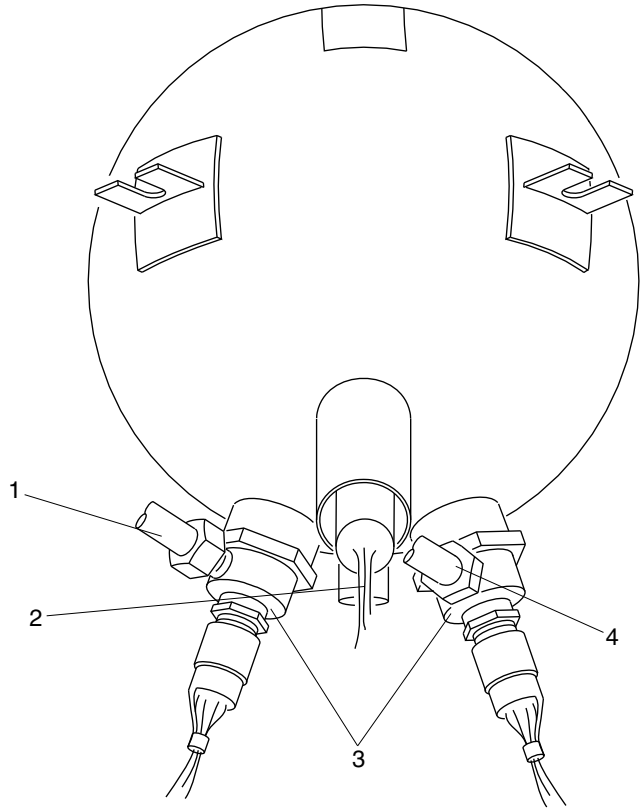
POST MODSUM 4–459188

Fire Protection System Schematic
Figure 1 (Sheet 2 of 2)

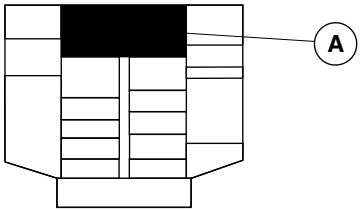


LEGEND

1. Outflow Line To Nacelle #1.
2. Pressure Indication.
3. Discharge Valves.
4. Outflow Line To Nacelle #2.

fs344a01.cgm

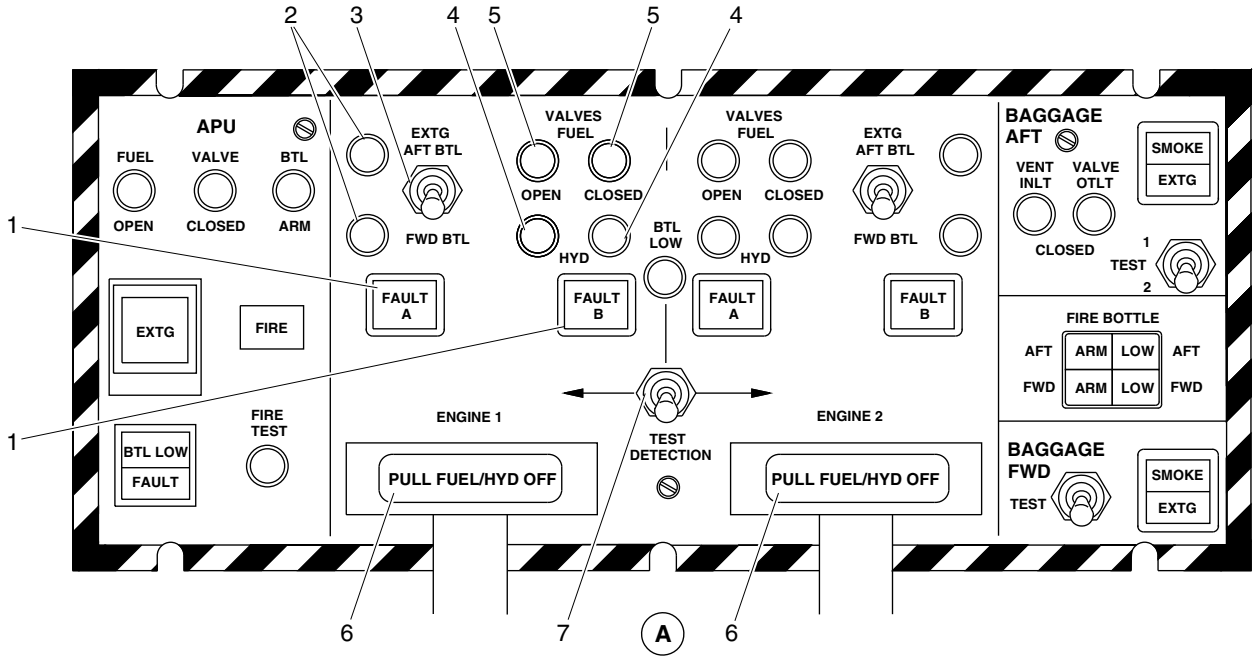
Fire Extinguishing, Nacelle Fire Extinguisher Bottles
Figure 2



OVERHEAD CONSOLE

LEGEND

1. Loop Fault Indication Lights.
2. Bottle Arming Lights.
3. Extinguisher Bottle Select Switch.
4. Hydraulic Emergency Shut Off Valves Open/Closed Lights..
5. Fuel Valves Open/Closed Lights.
6. Pull Fuel/ HYD Off Handles.
7. Fire Detection System Test Switch.



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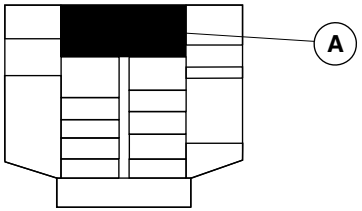
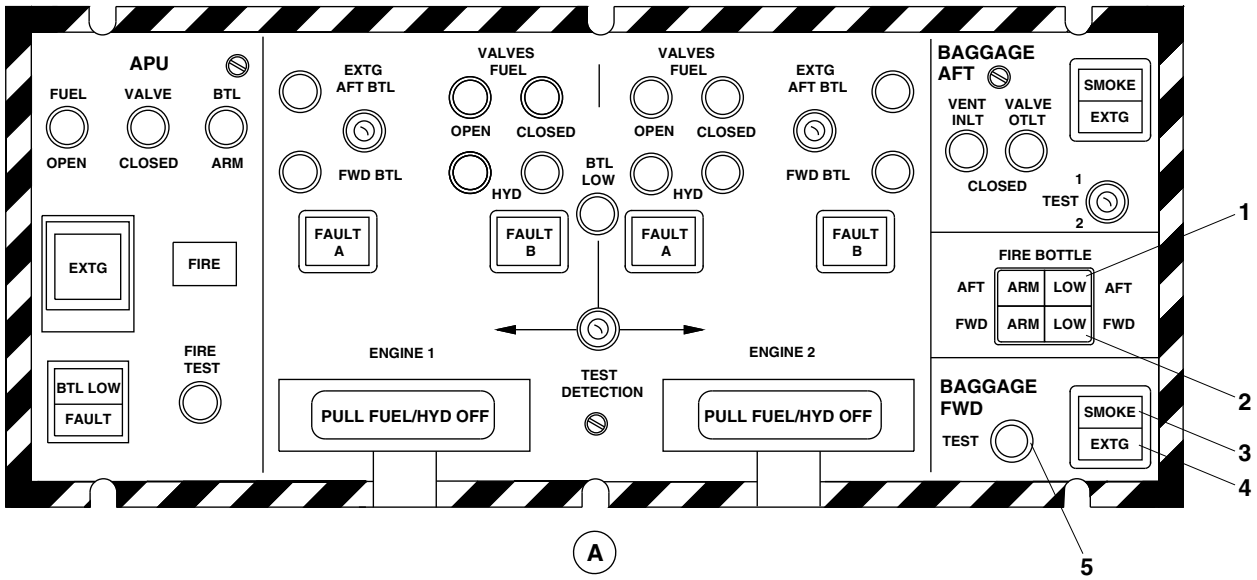
Fire Protection Panel (Nacelle Fire)
Figure 3



OVERHEAD CONSOLE

LEGEND

1. LRD Bottle Low Pressure Light.
2. HRD Bottle Low Pressure Light.
3. Smoke Indication Light.
4. HRD Extinguisher Switchlight.
5. Forward Baggage Compartment Smoke Detector Test Switch.



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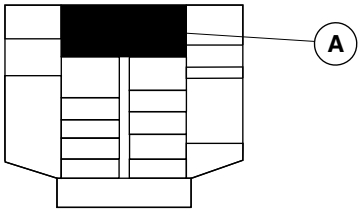
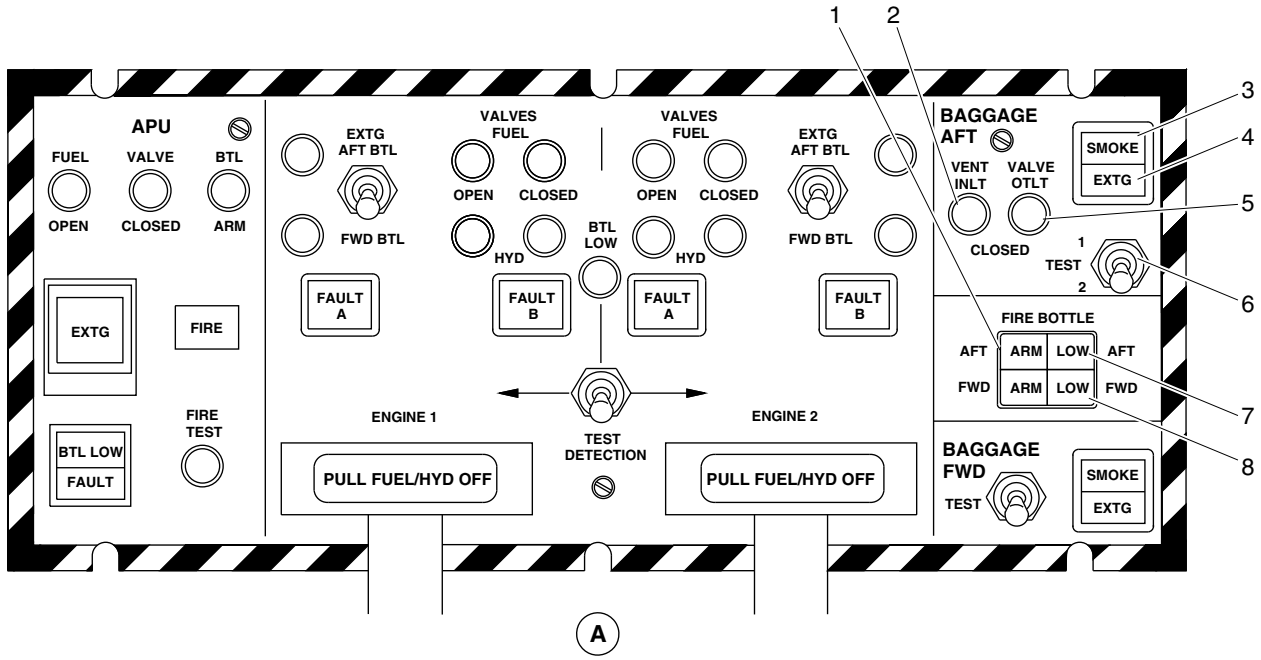
Fire Protection Panel (Fwd Baggage Fire)
Figure 4



OVERHEAD CONSOLE

LEGEND

1. Aft Baggage HRD ARM Light.
2. Inlet Vent Valve Closed Light.
3. Smoke Detected Light.
4. Extinguisher Switchlight.
5. Outlet Vent Valve Closed Light.
6. Smoke Detector Test Switch.
7. HRD Bottle Low Pressure Light.
8. LRD Bottle Low Pressure Light.



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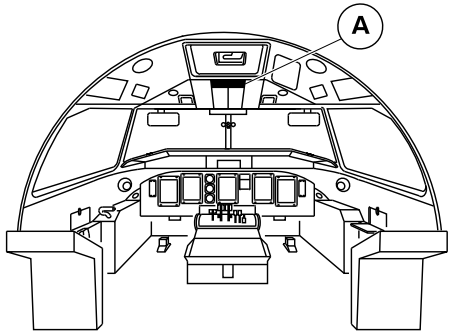
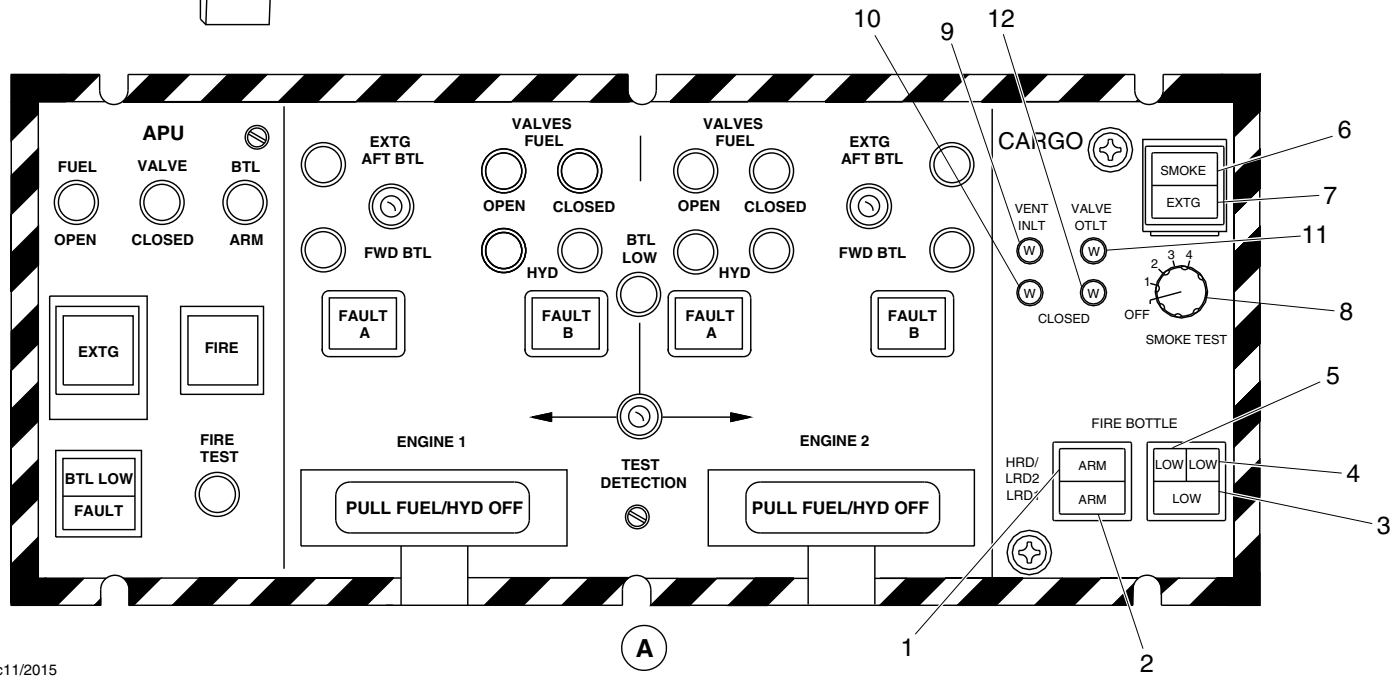
Fire Protection Panel (Aft Baggage Fire)
Figure 5



LEGEND

1. HRD/LRD2 ARM Light.
2. LRD1 ARM Light.
3. LRD1 low pressure light.
4. LRD2 low pressure light.
5. HRD low pressure light.
6. CARGO SMOKE detector switch light.
7. CARGO EXTG switch light.
8. CARGO SMOKE detector test switch.
9. VENT VALVE INLT CLOSED 1 light.
10. VENT VALVE INLT CLOSED 2 light.
11. VENT VALVE OTLT CLOSED 1 light.
12. VENT VALVE OTLT CLOSED 2 light.



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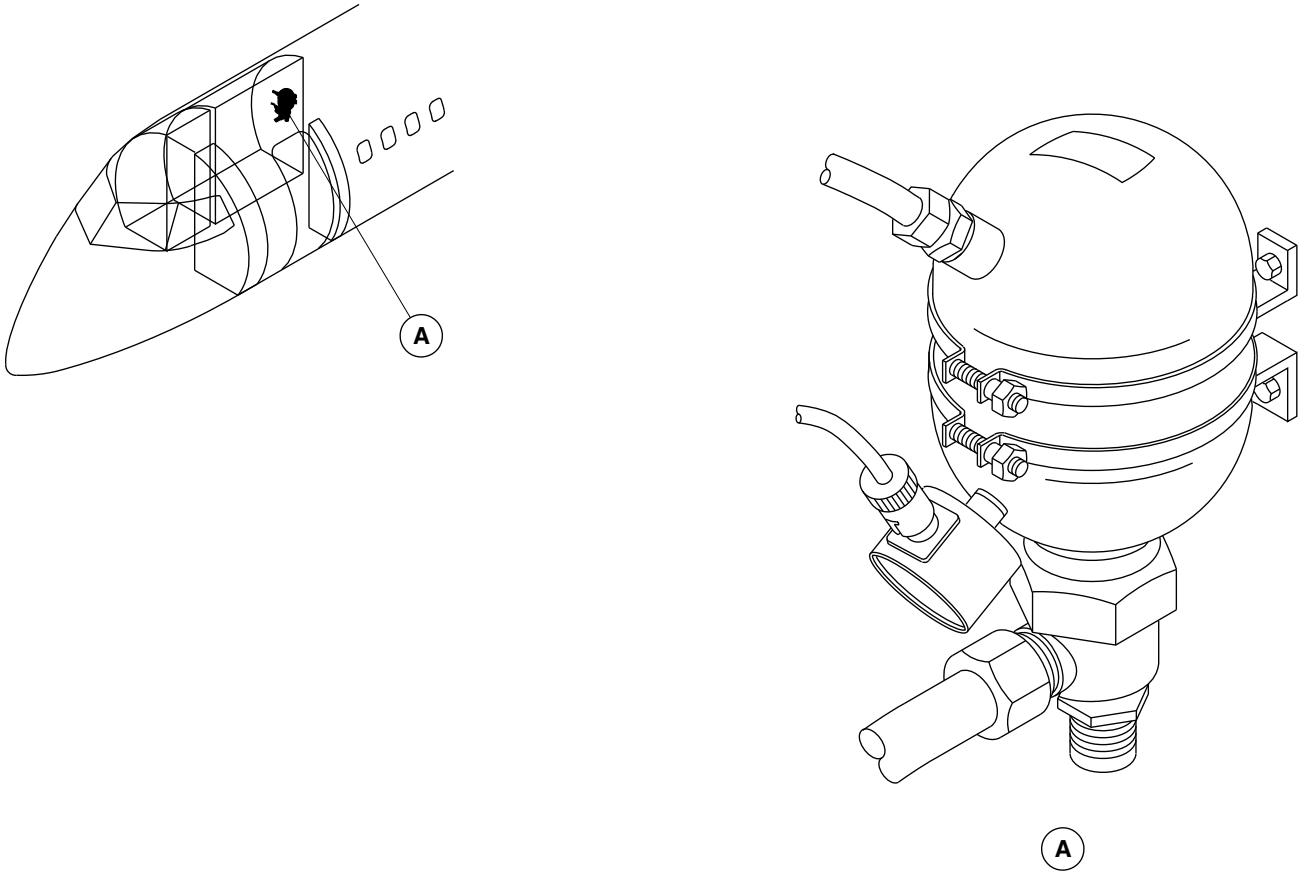
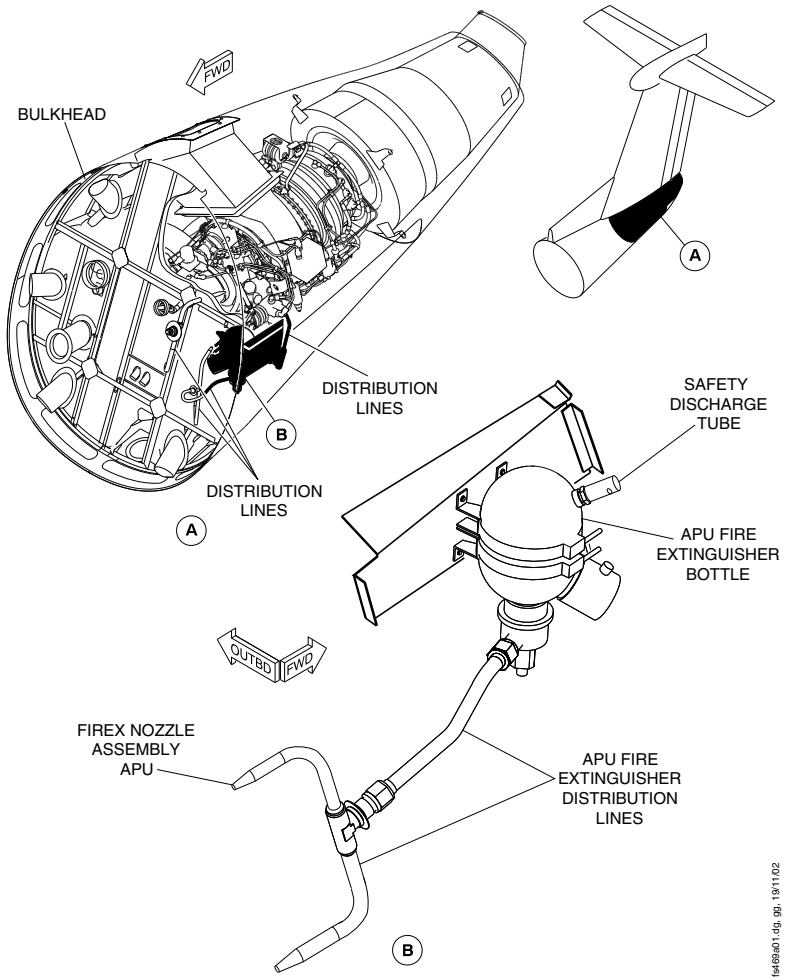
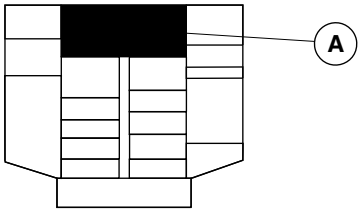
Fire Protection Panel (Aft cargo Fire)
Figure 6



Fwd High Rate Discharge Bottle
Figure 7



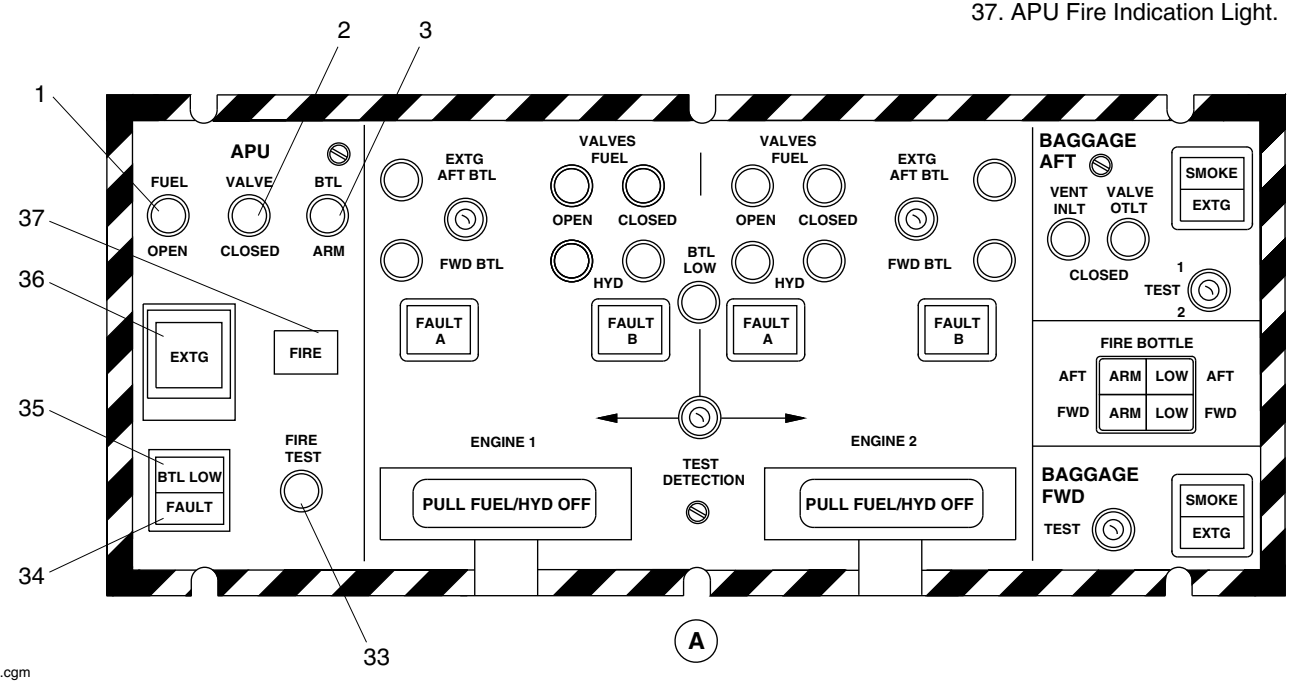
APU Fire Extinguisher Bottle
Figure 8



OVERHEAD CONSOLE

LEGEND

1. Fuel Valve Open/Closed Indication Lights.
2. Fuel Valve Closed Indication Lights.
3. APU Bottle Arm Light.
33. APU Fire Detection Push Button.
34. Fault Indication Light.
35. APU Fire Bottle Low Pressure Indication.
36. Extinguisher Switchlight (Guarded).
37. APU Fire Indication Light.



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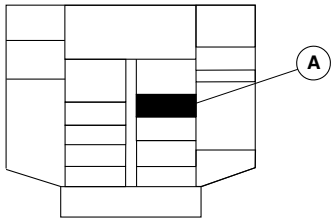
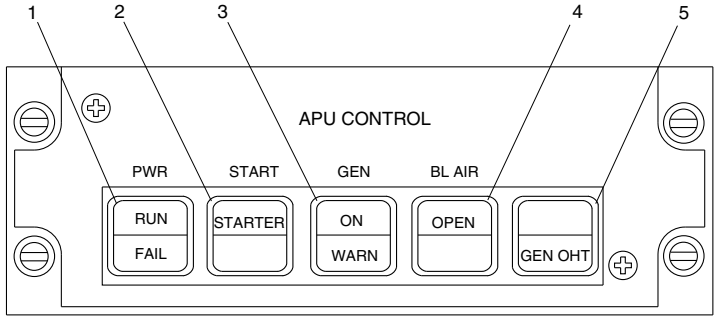
Fire Protection Panel for APU Fire
Figure 9



OVERHEAD CONSOLE

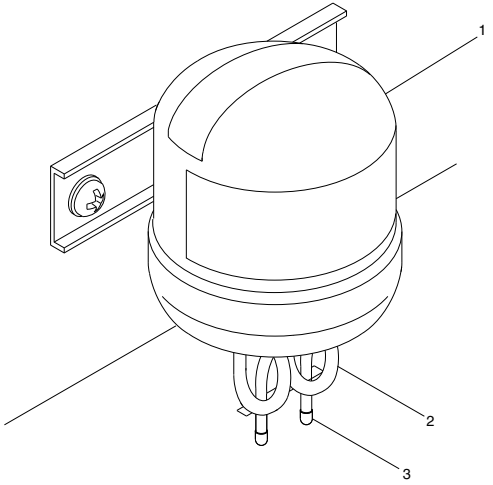


LEGEND

1. Power Run\Failure Pushbutton Annunciator Switch.
2. Starter Pushbutton Annunciator Switch.
3. Generator On\Warning Pushbutton Annunciator Switch.
4. Bleed Air Open Pushbutton Annunciator Switch.
5. Generator Overheat Annunciator Light.

fs733a01.cgm

APU Control Panel
Figure 10



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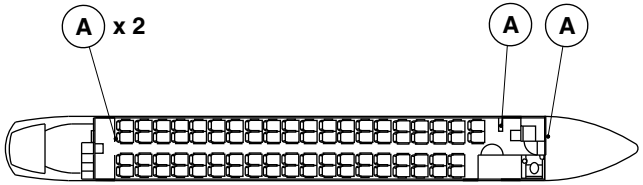
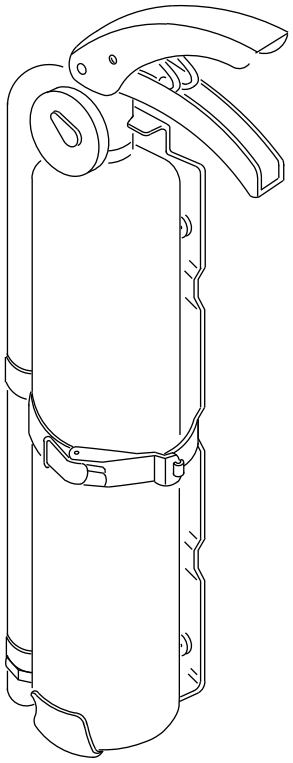
LEGEND

1. Fire Extinguisher Bottle.
2. Discharge Tubes.
3. End Caps.

Lavatory Compartment Fire Extinguisher
Figure 11





NOTE

Each fire extinguisher contains Halon 1211 extinguishant and can be used on electrical fires or fires involving fuel or oil.
Halon 1211 is nontoxic and noncorrosive.

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Hand Held Fire Extinguishers
Figure 12

**ON A/C ALL

26–21–00–001

NACELLE FIRE EXTINGUISHING

Introduction

The Nacelle Fire Extinguishing uses two fire–extinguishing bottles for the nacelles fire extinguishing.

General Description

Refer to Figures 1 and 2.

Two dual–port fire–extinguishing bottles are installed FWD and AFT in the left wing root, for engine fire or overheat suppression. Both bottles can be used to extinguish a fire in either engine. Indications in the flight compartment show the flight crew when the bottle pressure is low.

Each bottle is connected through a Check Tee piece with a drain. This gives extinguisher coverage to the right or left nacelle Primary Engine Zone (PEZ), Leading Edge Zone (LEZ) and Main Wheel Well (MWW) zones.

Electrical connections are installed for both explosive squibs and the bottle monitor pressure switch.

Detailed Description

A fire or overheat condition in the left or right nacelle will cause these flight deck indications (refer to 26–11–00):

- PULL FUEL/HYD OFF handle light (for related engine, on the Fire Protection Panel)
- CHECK FIRE DET warning light (on the Caution and Warning Panel)
- Master WARNING PRESS TO RESET light on the Glareshield Panel
- ENGINE FIRE PRESS TO RESET lights on the left and right side of the Glareshield Panel
- Audible warning bell.

Refer to Figure 3.

The PULL FUEL/HYD OFF handle is pulled to close the fuel and hydraulic shut–off valves and arm the FWD and AFT bottles. Two BTL ARM lights on the Fire Protection Panel will come on showing that both bottles have continuity on the squib and pressure switches.

To discharge a bottle, the EXTG switch is set to AFT BTL or FWD BTL position. The selected bottle will discharge its extinguishant into the nacelle area. The bottle pressure switch will open and the BTL LOW light will come on to show the loss of bottle pressure. The BTL ARM lights go off.

Fire Extinguisher Bottles

Refer to Figure 2.

The Fire Extinguisher Bottles contain the suppressant necessary to combat nacelle fire or overheat. They are located in the left wing root.

The extinguisher bottles use dual–bridgewire Electro–Explosive Devices (EED) within each cartridge and redundant power lines with separate circuit breakers for reliability.

Bridgewire “A” of all cartridges is taken from one circuit breaker and routed along the left side of the aircraft to the cartridge. Bridgewire “B” of all cartridges is taken from a separate circuit breaker and routed along the right side of the aircraft to the respective cartridge. This arrangement meets the rotor burst requirements and gives redundant firing signals for each cartridge.

On A/C with modsum 4Q126352 incorporated, the electrical connectors are attached with lanyards. These lanyards make sure that the correct connector is connected to the discharge squib during maintenance practices.

Refer to Figure 3.

The left and right extinguisher bottles are discharged manually from the Fire Protection Panel (FPP) into the Primary Engine Zone (PEZ), Leading Edge Zone (LEZ) and Main Wheel Well (MWW) zones.

The left or right bottle squibs are armed by pulling the PULL FUEL/HYD OFF handle on the FPP. After arming, the pilot can operate one of the extinguisher bottles with the EXTG switch. An electrical signal is sent through the bridgewires, which ignites the EED. When the EED explodes, it ruptures a burst disc and the pressurized bottle then discharges through the connector Check Tee.

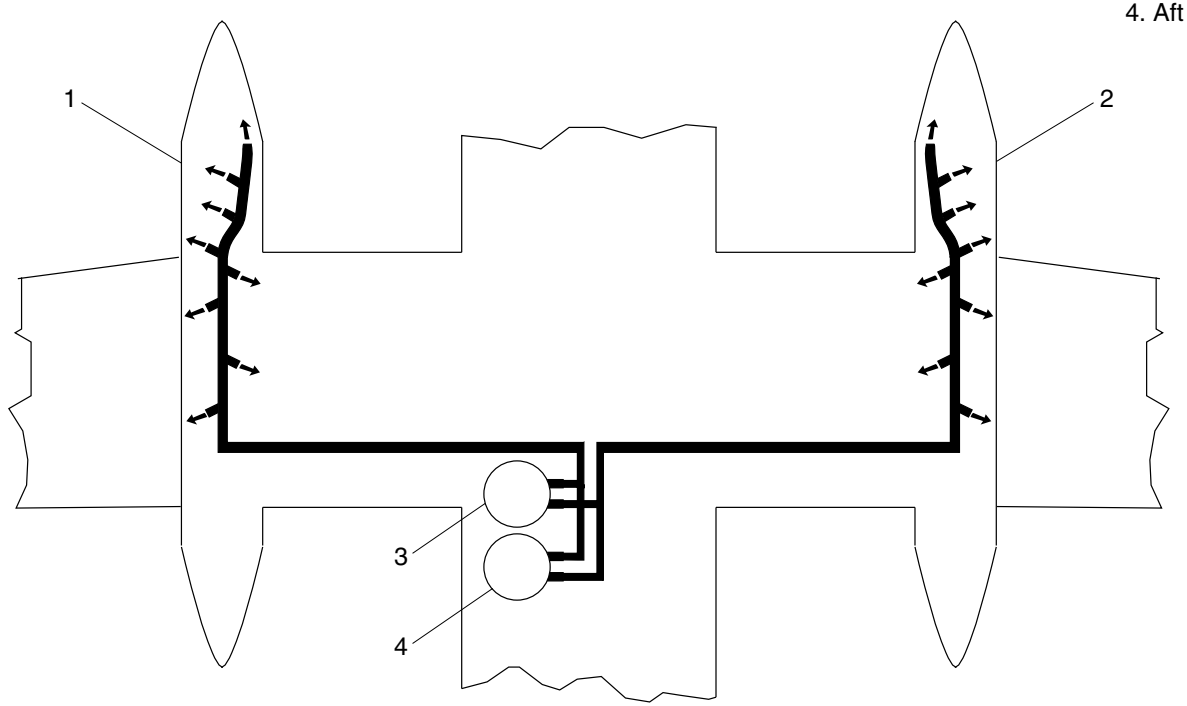
The bottle configuration can give two applications of fire suppressant into the zones, in the event that the first attempt was not effective.

The extinguisher bottles are constantly monitored for pressure during the non–alarm state. The bottle pressure switch status is shown by the BTL LOW light on the FPP. This light will come on when either bottle has lost pressure. The PULL FUEL/HYD OFF handle test will show which bottle needs service; the arming light for that bottle will not come on.

A manual exercise key is supplied for ground check of proper pressure switch operation. The key will open the pressure switch contacts, to simulate a depressurized bottle.

LEGEND

1. No. 1 nacelle.
2. No. 2 nacelle.
3. Forward extinguisher bottle.
4. Aft extinguisher bottle.



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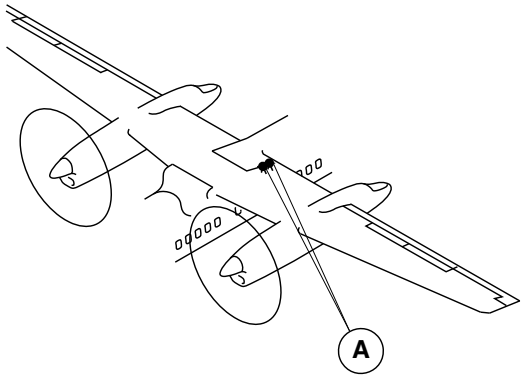
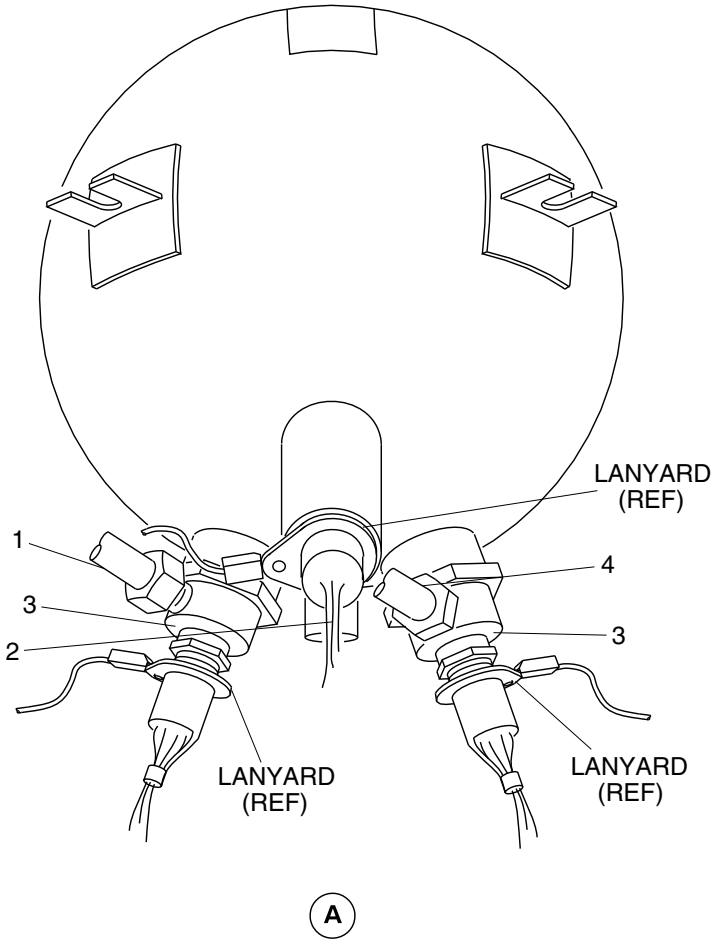
Nacelle Extinguisher Discharge
Figure 1





LEGEND

1. Outflow line to nacelle No.1.
2. Pressure indication.
3. Discharge valves.
4. Outflow line to nacelle No.2.

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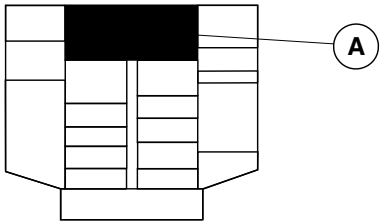
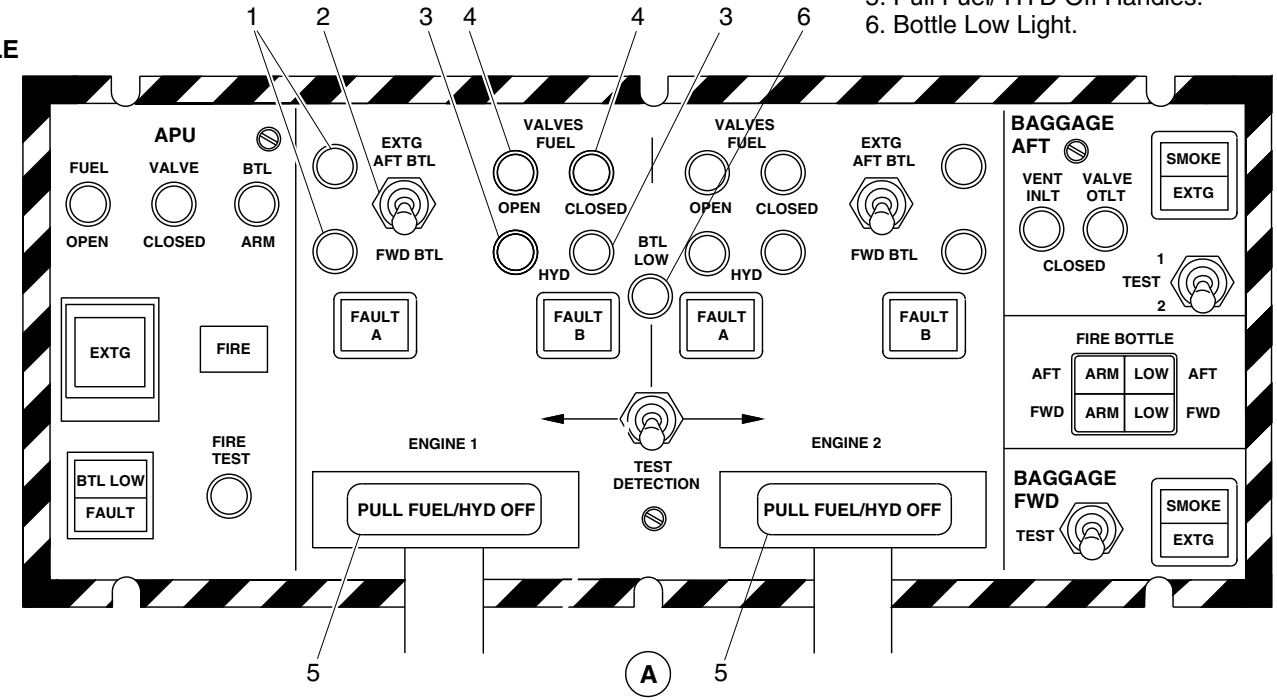
Nacelle Fire Extinguisher
Figure 2



OVERHEAD CONSOLE

LEGEND

1. Bottle Arming Lights.
2. Extinguisher Bottle Select Switch.
3. Hydraulic Emergency Shut Off Valves Open/Closed Lights.
4. Fuel Valves Open/Closed Lights.
5. Pull Fuel/ HYD Off Handles.
6. Bottle Low Light.



NOTE

The fire protection panel may vary for the aircraft with cargo combi configuration.

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Fire Protection Panel Detail for Nacelle Fire Extinguishing
Figure 3

**ON A/C ALL

26–22–00–001

BAGGAGE COMPARTMENT FIRE EXTINGUISHING

Introduction

The baggage compartment fire extinguishing system suppresses fire and overheat conditions in the forward (FWD) and AFT baggage compartments.

General Description

Fire extinguishing for the FWD and AFT baggage compartments is performed by two High Rate Discharge (HRD) fire extinguisher bottles and one Low Rate Discharge (LRD) fire extinguisher bottle. Each baggage compartment has one HRD fire extinguisher; the LRD fire extinguisher is shared between the baggage compartments.

Each HRD fire extinguisher bottle has one High Rate fire extinguisher cartridge. The LRD fire extinguisher bottle has two Low Rate fire extinguisher cartridges. Each cartridge contains an Electro–Explosive Device (EED) and discharges the contents of the bottles through the applicable fire extinguisher distribution tubes.

The baggage compartment fire extinguishing system has the components that follow:

- AFT High Rate Fire Extinguisher Bottle
- FWD High Rate Fire Extinguisher Bottle
- High Rate Fire Extinguisher Cartridges
- Low Rate Fire Extinguisher Bottle
- Low Rate Fire Extinguisher Cartridges.

On aircraft with ModSum 4–458982 and ModSum 4–458912 incorporated, the forward baggage compartment has been removed along with the forward HRD fire extinguisher bottle and cartridge.

On aircraft with ModSum 4–459188 incorporated, fire extinguishing for the AFT baggage compartment is performed by one High Rate Discharge (HRD) fire extinguisher bottle and two Low Rate Discharge (LRD) fire extinguisher bottles.

Detailed Description

Indications on the Fire Protection Panel (FPP) are used to monitor the fire and the overheat conditions in the FWD and AFT baggage compartments. Extinguisher bottle pressure is also monitored from the FPP. Pilot action, pressing the applicable SMOKE EXTG switchlight is required to activate the High Rate fire extinguishers.

If a fire condition is sensed in the AFT baggage compartment, the aft high rate fire bottle will discharge first, followed by the low rate fire extinguisher bottle which discharges automatically after seven minutes. The seven minutes delay is to make sure that any remaining fire will be extinguished.

If a fire condition is sensed in the FWD baggage compartment, both the high rate and low rate fire extinguishers will discharge at the same time.

On aircraft with ModSum 4–459188 or 4–459226 incorporated, if a fire condition is sensed in the cargo compartment, the High rate fire bottle (HRD) and Low rate fire bottle LRD1 will discharge first followed by the Low rate fire bottle LRD2 which discharges automatically after seven minutes.

Refer to Figure 1.

The extinguishing event indications of an aft baggage fire are as follows:

- FIRE BOTTLE AFT ARM segment on the Fire Protection Panel goes off (blank), showing that the HRD Electro–Explosive Device (EED) is fired
- FIRE BOTTLE AFT LOW segment on the Fire Protection Panel comes on (amber), showing that the HRD fire bottle is empty (low pressure)
- FIRE BOTTLE FWD LOW segment on the Fire Protection Panel comes on (amber) 22 minutes after pushing EXTG switch, showing that the LRD fire bottle is empty (low pressure).

Refer to Figure 3.

The extinguishing event indications of a forward baggage fire are as follows:

- FIRE BOTTLE FWD ARM segment on the Fire Protection Panel goes off (blank), showing that the HRD EED is fired
- FIRE BOTTLE FWD LOW segment on the Fire Protection Panel comes on (amber), showing that the HRD fire bottle is empty (low pressure)
- FIRE BOTTLE AFT LOW segment on the Fire Protection Panel comes on (amber) 15 minutes after pushing EXTG switch, showing that the LRD fire bottle is empty (low pressure).

Refer to Figure 2.

On aircraft with ModSum 4–459226 incorporated, the extinguishing event indications of cargo fire are as follows:

- FIRE BOTTLE LRD1 ARM segment on the Fire Protection Panel goes off (blank), showing that the LRD1 EED is fired
- After seven minutes, the FIRE BOTTLE HRD/LRD2 ARM segment on the Fire Protection Panel goes off (blank), showing that the HRD EED and LRD2 EED are fired
- FIRE BOTTLE HRD LOW segment on the Fire Protection Panel comes on (amber), showing that the HRD fire bottle is empty (low pressure)
- FIRE BOTTLE LRD1 LOW segment on the Fire Protection Panel comes on (amber) about 170 minutes after pushing the CARGO EXTG switch, showing that the LRD1 fire bottle is empty (low pressure). FIRE BOTTLE LRD2 LOW segment comes on 7 minutes after the LRD1 LOW segment comes on, showing that the LRD2 fire bottle is empty (low pressure).

Aft High Rate Fire Extinguisher Bottle

Refer to Figure 4.

The Aft High Rate Fire Extinguisher Bottle contains the suppressant necessary for first line fire protection.

The AFT high rate fire bottle is a stainless steel container filled with 11 lb (4.99 kg) of liquid fire extinguishing agent Halon 1301 and pressurized with Nitrogen gas at 360 psig (2482 kPag). The bottle is installed in the aft equipment bay. One high rate fire extinguisher cartridge is located on the bottom of the AFT high rate fire bottle.

If a smoke condition is sensed in the AFT baggage compartment, the AFT inlet and outlet vent valves will close automatically and give an indication on the FPP. The HRD extinguisher fires with the push of the AFT EXTG switch. After a seven minute delay, the low rate fire extinguisher will automatically discharge to make sure the fire is out.

On aircraft with modsum 4–459188 incorporated, the AFT high rate fire bottle is a stainless steel container filled with 19.75 lb (8.95 kg) of liquid fire extinguishing agent Bromotrifluoromethane and pressurized with Nitrogen gas at 360 psig (2482 kPag). The bottle is installed in the aft equipment bay. One cartridge is located on the bottom of the AFT high rate fire bottle.

On A/C with modsum 4Q126352 incorporated, the electrical connectors are attached with lanyards. These lanyards make sure that the correct connector is connected to the discharge squib during maintenance practices.

Low Rate Fire Extinguisher Bottle

Refer to Figure 4.

The Low Rate Fire Extinguisher Bottle contains the suppressant necessary for slow release.

The low rate fire extinguisher is a stainless steel container filled with 17.5 lb (7.94 kg) of liquid fire extinguishing agent Halon 1301 and pressurized with Nitrogen gas at 360 psig (2482 kPag). The bottle is installed in the aft equipment bay, but is shared between the FWD and AFT baggage compartments.

When a smoke condition is sensed in the AFT baggage compartment and the aft High–Rate fire bottle is activated, the Low–Rate fire extinguisher will automatically discharge after seven minutes. A metering device located inside the low rate fire extinguisher controls the slow release of the extinguishing agent from the bottle. This device lets the bottle discharge the extinguishing agent into the baggage compartment at a concentration of 3% for 45 minutes.

If a smoke condition is sensed in the FWD baggage compartment, both the High–Rate and the Low–Rate fire extinguishers will discharge at the same time.

On A/C with modsum 4Q126352 incorporated, the electrical connectors are attached with lanyards. These lanyards make sure that the correct connector is connected to the discharge squib during maintenance practices.

On aircraft with ModSum 4–124265 and 4–190605 incorporated, the discharge tube is removed from the forward discharge head and blanked with a plug.

On aircraft with ModSum 4–124541 incorporated, the forward discharge head is blanked with a plug.

On Aircraft with ModSum 4–459188 incorporated, AFT baggage compartment is equipped with two Low Rate Discharge (LRD) fire extinguisher bottles. The low rate fire bottle is a stainless steel container filled with 19.75 lb (8.95 kg) of liquid fire extinguishing agent Bromotrifluoromethane and pressurized with Nitrogen gas at 360 psig (2482 kPag). The bottles are installed in the aft equipment bay. One cartridge is located on the bottom of each low rate fire extinguisher bottle.

Dryer Metering Unit (DMU)

Refer to Figure 4.

On aircraft with ModSum 4–459188 incorporated, the low rate fire extinguisher bottles are connected with the DMU. The moisture from the extinguisher agent is removed by the DMU to prevent freezing. The DMU is a one–time use desiccant unit that must be replaced when a low rate fire extinguisher bottle is discharged.

FWD High Rate Fire Extinguisher Bottle

Refer to Figure 5.

The FWD High Rate Fire Extinguisher Bottle contains the suppressant necessary for first line fire protection.

There is one High Rate fire extinguisher bottle located on the forward baggage compartment aft wall. The High Rate extinguisher for the FWD baggage compartment is a stainless steel container filled with 4.33 lb (1.96 kg) of liquid fire extinguishing agent Halon 1301 and pressurized with Nitrogen gas at 360 psig (2482 kPag).

If a smoke condition is sensed in the FWD baggage compartment an indication is given on the FPP. Pilot action is required to manually activate the high rate fire extinguisher and the low rate fire extinguisher will discharge simultaneously with it.

On A/C with modsum 4Q126352 incorporated, the electrical connectors are attached with lanyards. These lanyards make sure that the correct connector is connected to the discharge squib during maintenance practices.

High Rate Fire Extinguisher Cartridges

High Rate Fire Extinguisher Cartridges cause the extinguisher bottle to discharge its contents through the distribution tubes leading to the FWD or AFT baggage compartment.

There is one High Rate fire extinguisher cartridge for each High Rate fire extinguisher. Each fire extinguisher cartridge is attached to its related discharge head, located on the bottom of the fire extinguisher bottle.

Each cartridge contains a dual bridgewire Electro–Explosive Device (EED) and redundant power lines with separate circuit breakers for mission reliability. In each cartridge, bridgewire “A” is taken from one circuit breaker and routed down the left side of the aircraft to the cartridge. Bridgewire “B” is taken from a separate circuit breaker and routed down the right side of the aircraft to the cartridge. Loss of electrical power to one bridgewire will not cause loss of extinguisher fire capability.

Each cartridge has an electrical connector. When an electrical signal is sent through the bridgewires, the EED ignites and explodes rupturing a “burst” disk. This causes the extinguisher bottle to discharge its contents through the distribution tubes leading to the FWD or AFT baggage compartment.

Low–Rate Fire Extinguisher Cartridges

Low–Rate Fire Extinguisher Cartridges cause the extinguisher bottle to discharge its contents through the distribution tubes leading to the AFT or FWD baggage compartment.

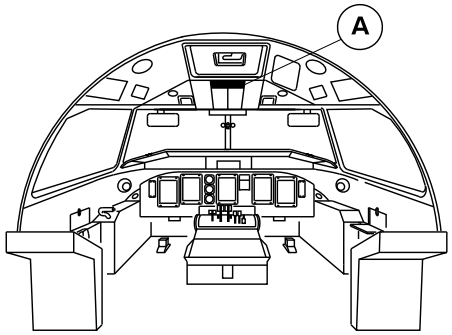
There are two low rate fire extinguisher cartridges. Each fire extinguisher cartridge is attached to its related discharge head, located on the bottom of the LRD fire extinguisher bottle.

Each cartridge contains a dual bridgewire Electro–Explosive Device (EED) and redundant power lines with separate circuit breakers for mission reliability. In each cartridge, bridgewire “A” is taken from one circuit breaker and routed down the left side of the aircraft to the cartridge. Bridgewire “B” is taken from a separate circuit breaker and routed down the right side of the aircraft to the cartridge. Loss of either power breaker will not cause loss of fire extinguisher capability.

Each cartridge has a related electrical connector. When an electrical signal is sent through the bridgewires, the EED ignites and explodes rupturing a burst disk. This causes the extinguisher bottle to discharge its contents through the distribution tubes leading to the AFT or FWD baggage compartment.

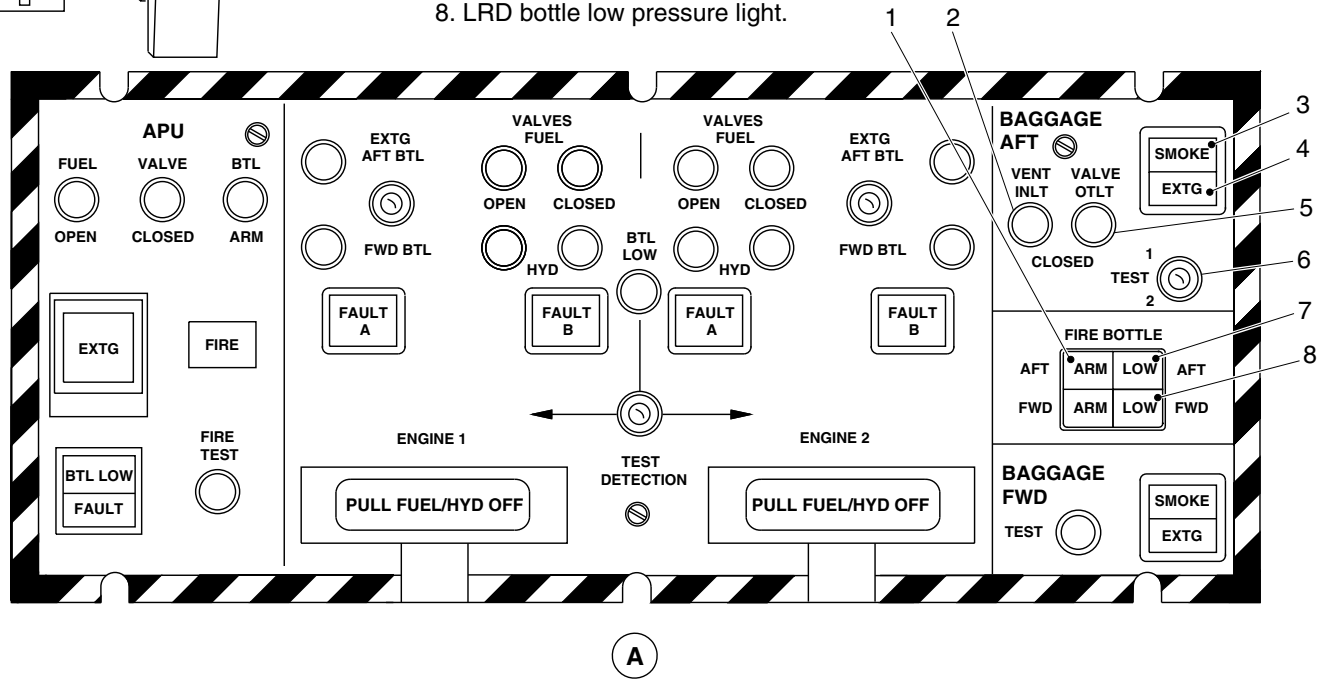
On aircraft with ModSums 4–458927, 4–124541 and 4–190605 incorporated, there is only one low rate fire extinguisher cartridge, installed at the aft discharge head for the aft baggage compartment. The forward discharge head is blanked with a plug.

On Aircraft with ModSum 4–459188 incorporated there is one cartridge for each of the two low–rate fire–extinguisher bottles. Each cartridge is attached to its related discharge head, located on the bottom of the LRD fire extinguisher bottle.



LEGEND

1. Aft baggage HRD ARM light.
2. Inlet vent valve closed light.
3. Smoke detected light.
4. Extinguisher switch light.
5. Outlet vent valve closed light.
6. Smoke detector test switch.
7. HRD bottle low pressure light.
8. LRD bottle low pressure light.



A

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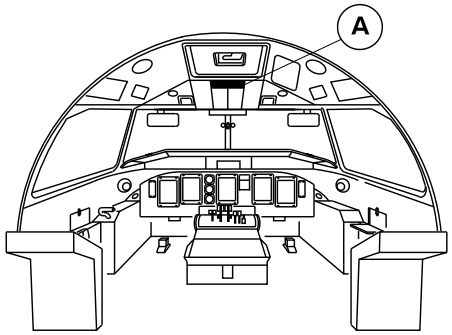
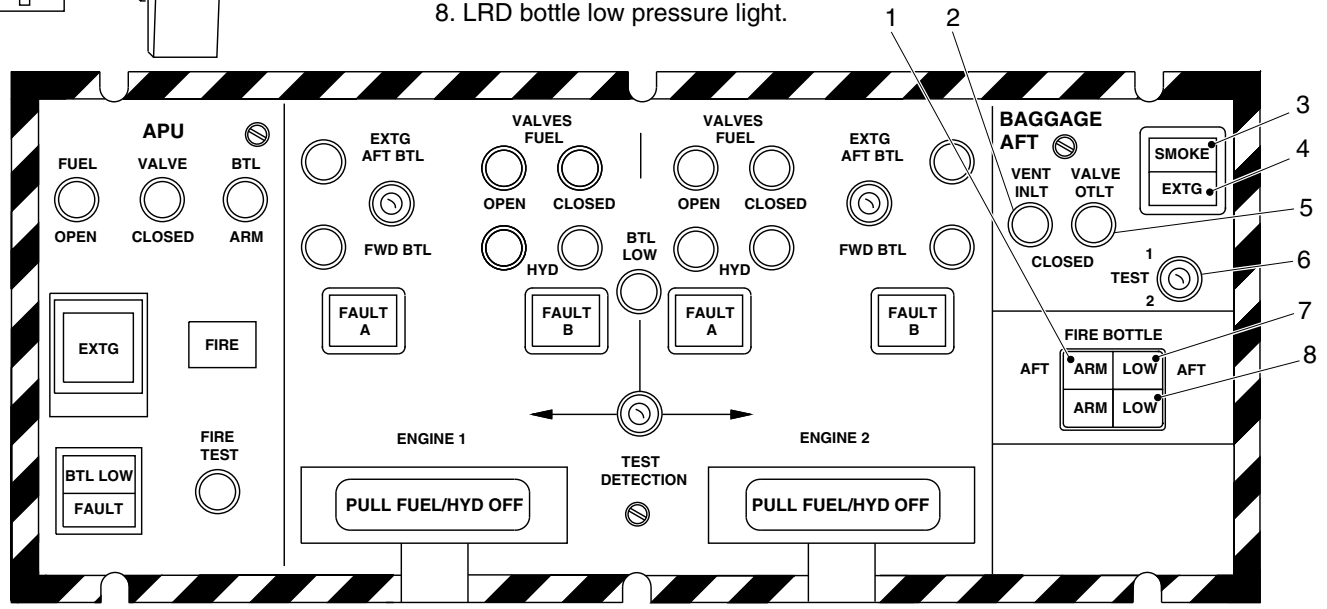
PRE MODSUM 4–458982

Fire Protection Panel Detail for AFT Baggage Compartment Smoke and Fire
Figure 1 (Sheet 1 of 2)



LEGEND

1. Aft baggage HRD ARM light.
2. Inlet vent valve closed light.
3. Smoke detected light.
4. Extinguisher switch light.
5. Outlet vent valve closed light.
6. Smoke detector test switch.
7. HRD bottle low pressure light.
8. LRD bottle low pressure light.



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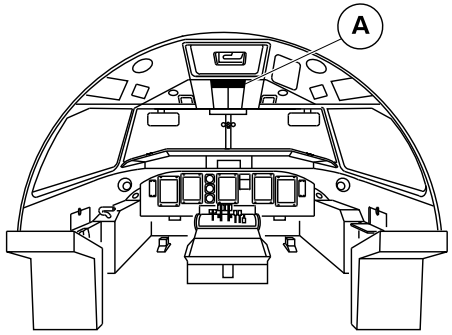
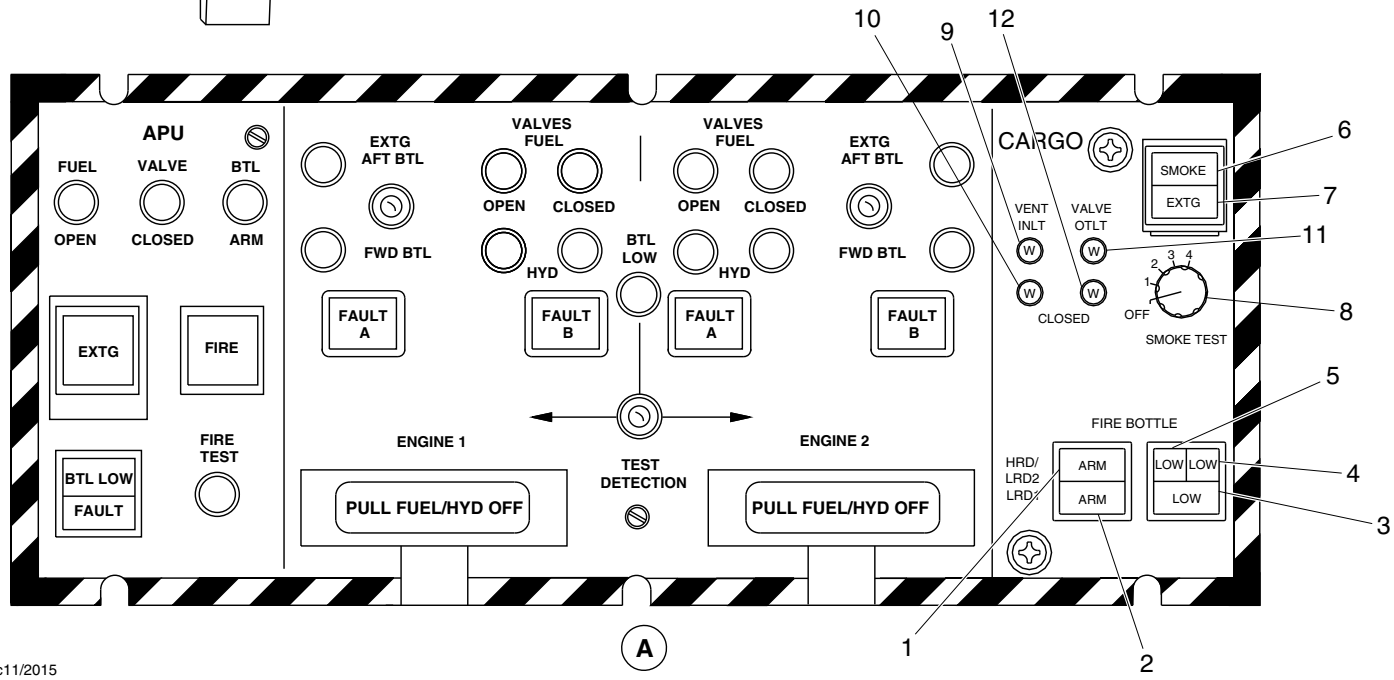
POST MODSUM 4–458982

Fire Protection Panel Detail for AFT Baggage Compartment Smoke and Fire
Figure 1 (Sheet 2 of 2)



LEGEND

1. HRD/LRD2 ARM Light.
2. LRD1 ARM Light.
3. LRD1 low pressure light.
4. LRD2 low pressure light.
5. HRD low pressure light.
6. CARGO SMOKE detector switch light.
7. CARGO EXTG switch light.
8. CARGO SMOKE detector test switch.
9. VENT VALVE INLT CLOSED 1 light.
10. VENT VALVE INLT CLOSED 2 light.
11. VENT VALVE OTLT CLOSED 1 light.
12. VENT VALVE OTLT CLOSED 2 light.



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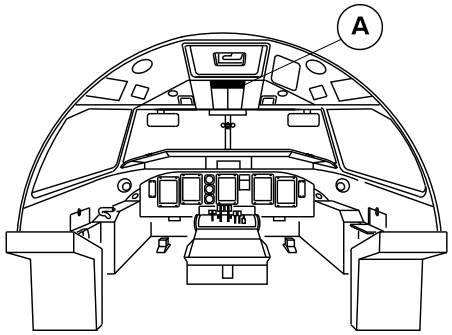
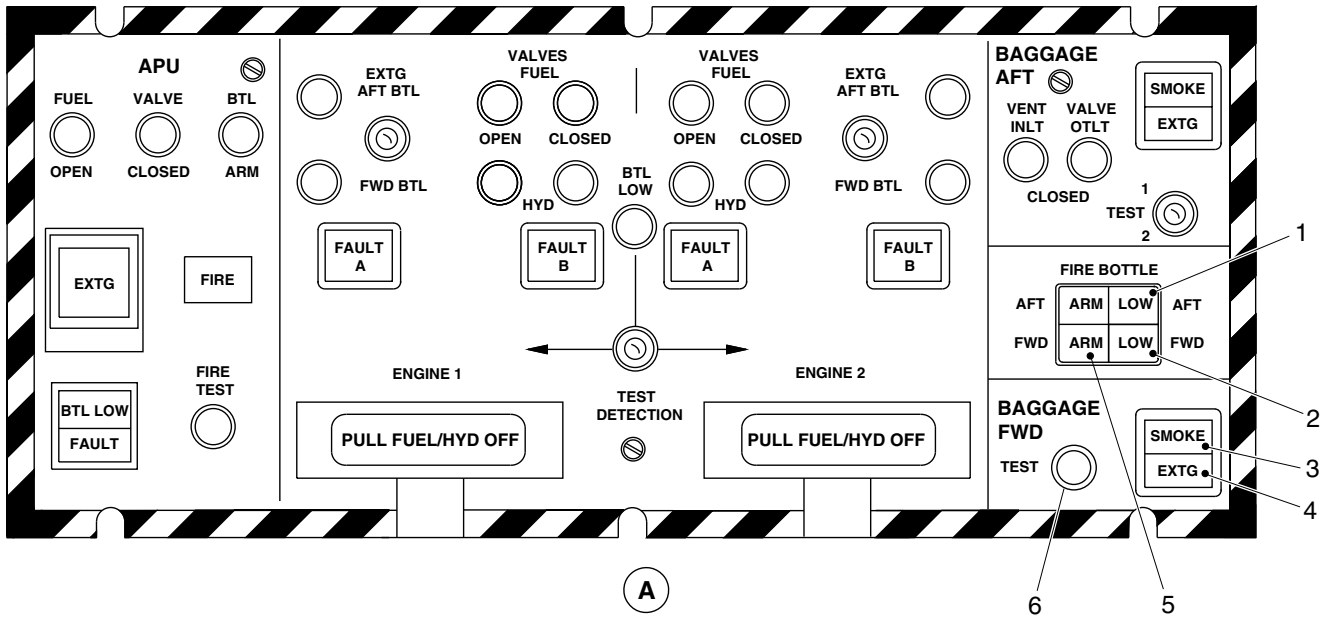
Fire Protection Panel Detail for AFT Cargo Compartment Smoke and Fire
Figure 2



LEGEND

1. LRD bottle low pressure light.
2. HRD bottle low pressure light.
3. Smoke indication light.
4. Extinguisher switch light.
5. Forward bottle ARM light.
6. Forward baggage compartment smoke detector test switch.



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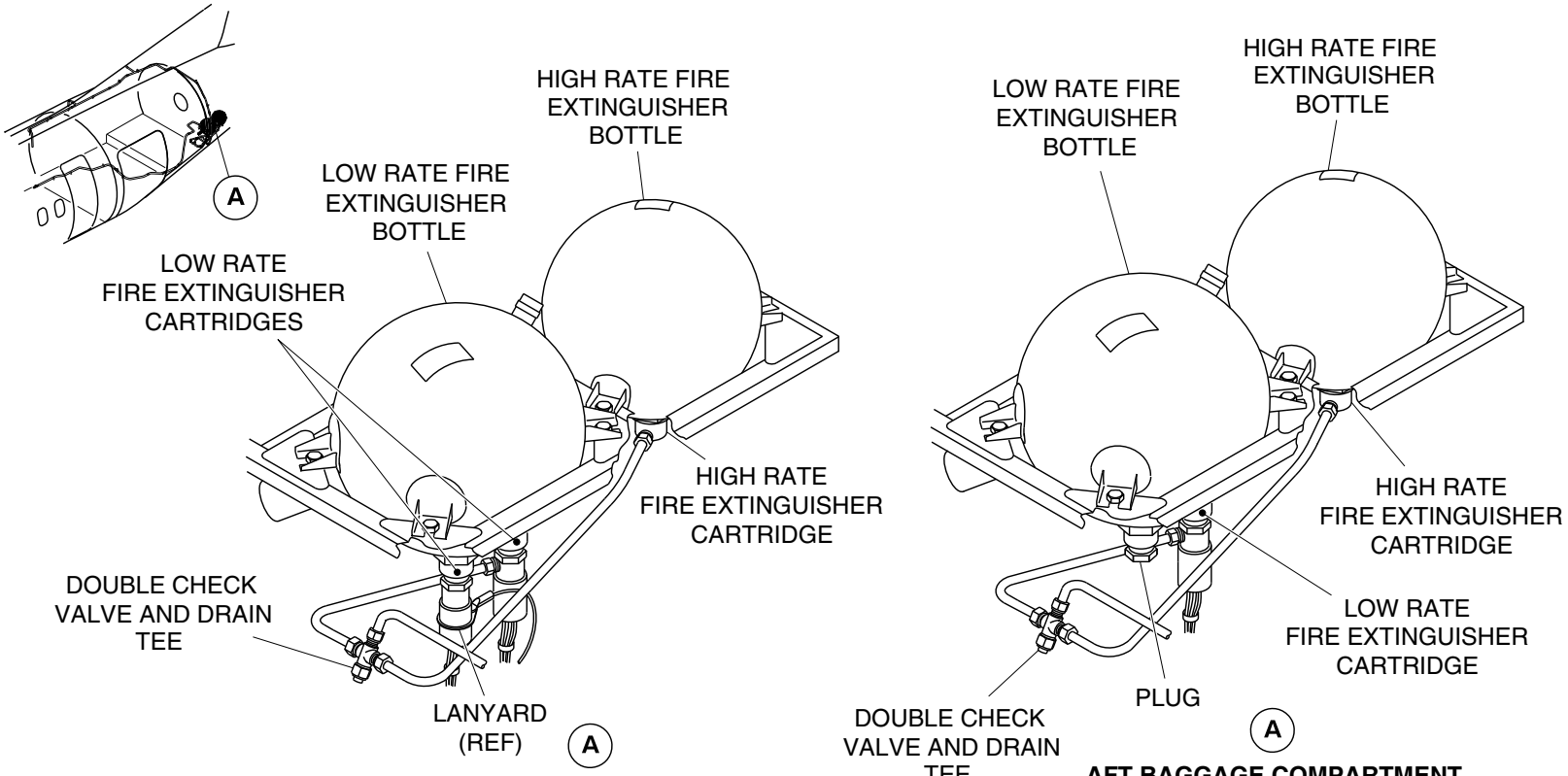
Fire Protection Panel Detail for FWD Baggage Compartment Smoke and Fire
Figure 3



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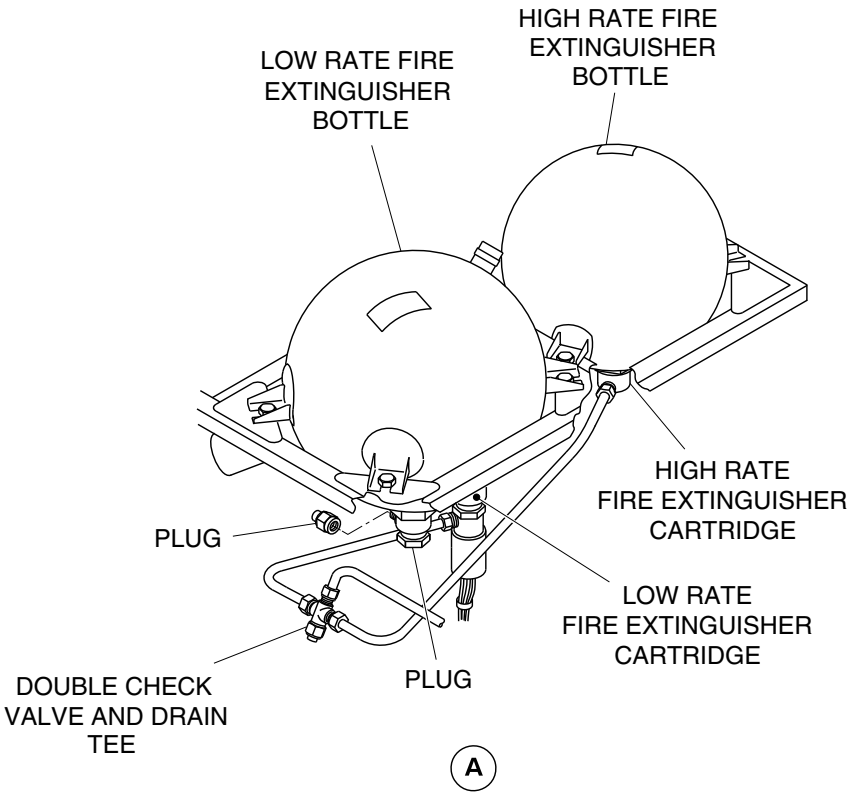
High Rate and Low Rate Baggage Compartment Fire Extinguishers
Figure 4 (Sheet 1 of 3)



**AFT BAGGAGE COMPARTMENT
FIRE EXTINGUISHER BOTTLES
POST MODSUM 4–124265
POST MODSUM 4–124541**

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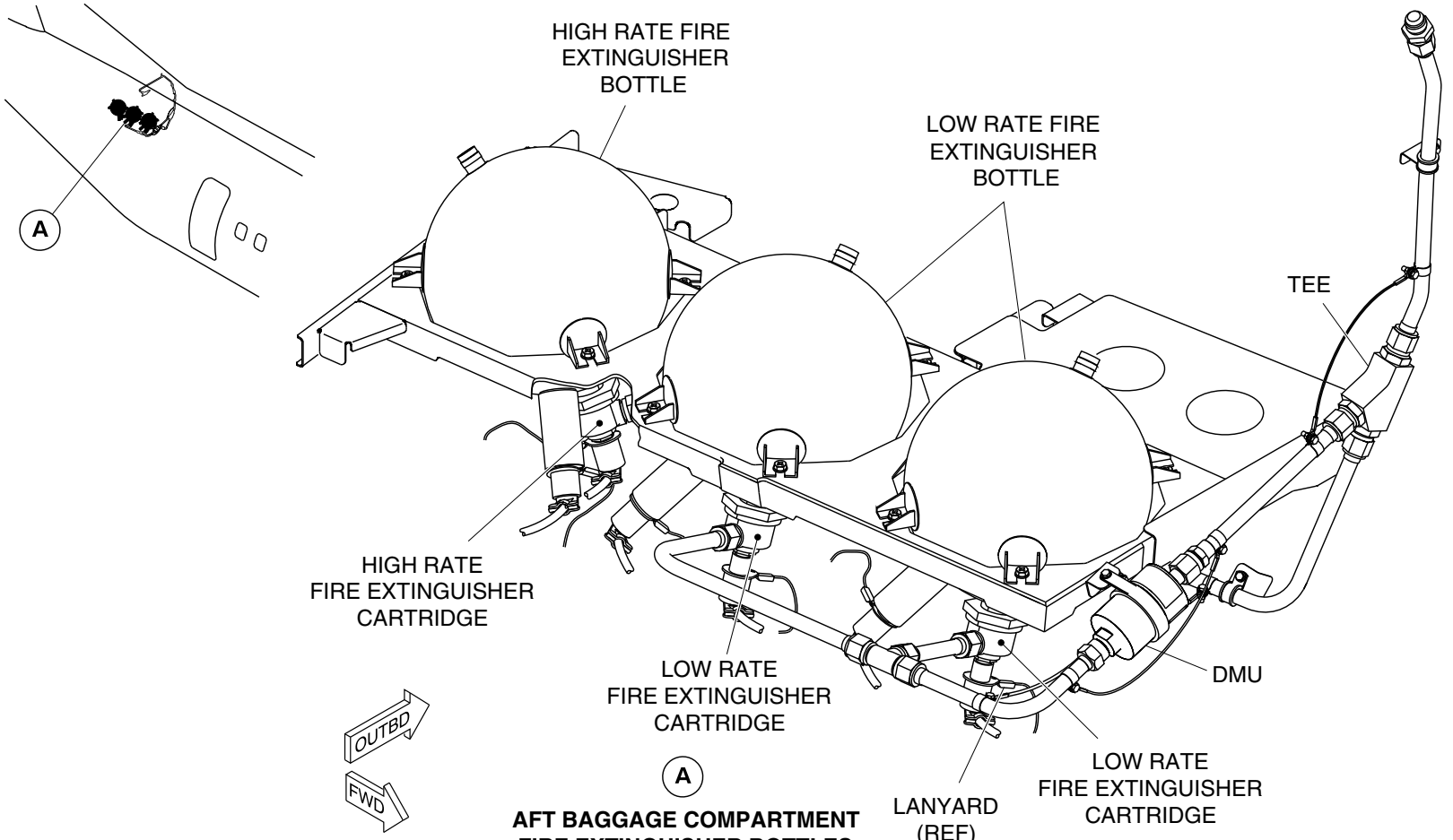
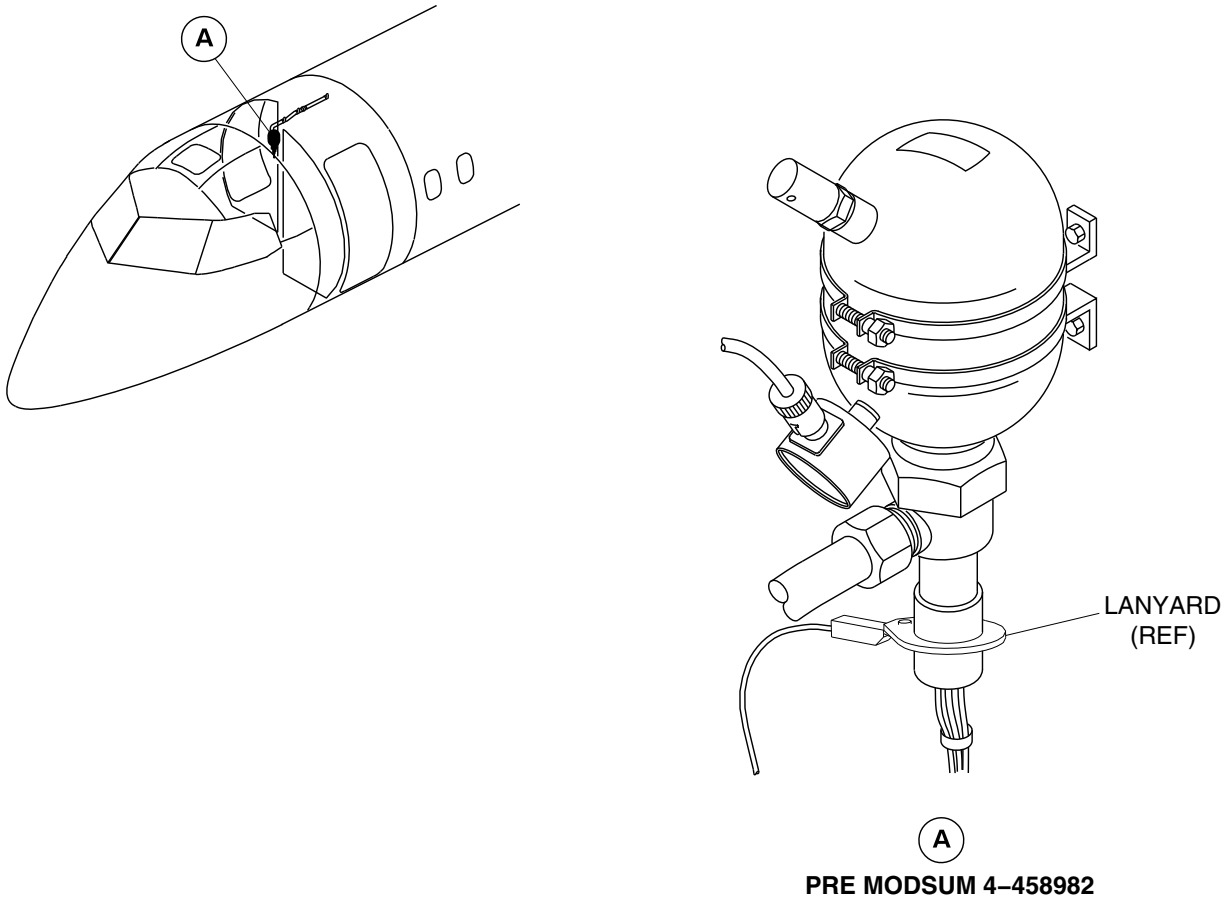
High Rate and Low Rate Baggage Compartment Fire Extinguishers
Figure 4 (Sheet 2 of 3)



High Rate and Low Rate Baggage Compartment Fire Extinguishers
Figure 4 (Sheet 3 of 3)



PRE MODSUM 4–458982

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Forward Baggage Compartment Fire Extinguisher
Figure 5

**ON A/C ALL

26–23–00–001

APU FIRE EXTINGUISHING

Introduction

The Auxiliary Power Unit (APU) Fire Extinguishing System suppresses fire and overheat conditions in the APU.

General Description

Refer to Figure 1.

One fire extinguishing bottle is used to suppress fire and overheat conditions in the APU compartment. The APU fire extinguishing bottle has one fire extinguisher cartridge.

The APU fire extinguishing system has the components that follow:

- APU Fire Extinguisher Bottle
- APU Fire Extinguisher Cartridge.

Detailed Description

Refer to Figures 2 and 3.

Indications on the flight compartment are used to monitor APU fire or overheat conditions (refer to 26–13–00).

No pilot action is required to operate APU fire protection. The control amplifier controls a relay which closes the APU fuel valve. When electrical power from the relay is supplied to the Full–Authority Digital–Electronic–Control (FADEC), the APU FUEL VALVE "CLOSED" advisory light on the Fire Protection Panel (FPP) comes on. The APU is shutdown automatically and the FAIL advisory light on the APU control panel comes on. After a seven seconds delay, an electrical signal from the control amplifier ignites an Electro–Explosive Device (EED) in the extinguisher cartridge. The EED then explodes and the fire extinguishing agent is automatically released through the distribution tubes to the APU compartment. The APU BTL ARM light on the FPP goes out and the BTL LOW light comes on.

If automatic fire extinguishing fails and a fire or overheat condition is still sensed, a manual override capability is available by operating the APU EXTG switch located on the FPP. APU fire extinguisher bottle pressure is shown by a BTL LOW light on the FPP. The APU will automatically shut down.

APU Fire Extinguisher Bottle

Refer to Figure 1.

There is one APU fire extinguishing bottle for the APU compartment. The fire extinguishing bottle contains the suppressant necessary to combat a fire or overheat in the APU compartment.

The bottle is located in the aft equipment bay, forward of the APU compartment and is connected to the distribution tubes leading into the APU compartment.

The fire extinguisher is a stainless steel container filled with 4.37 lb (1.98 kg) of liquid fire extinguishing agent Halon 1301 and pressurized with Nitrogen gas at 600 psig (4136 kPag).

On A/C with modsum 4Q126352 incorporated, the electrical connectors are attached with lanyards. These lanyards make sure

that the correct connector is connected to the discharge squib during maintenance practices.

APU Fire Extinguisher Cartridge

Refer to Figure 1.

APU Fire Extinguisher Cartridge causes the extinguisher bottle to discharge its contents through the distribution tubing leading to the APU compartment. There is one APU fire extinguisher cartridge attached to the discharge head, located on the bottom of the fire extinguishing bottle.

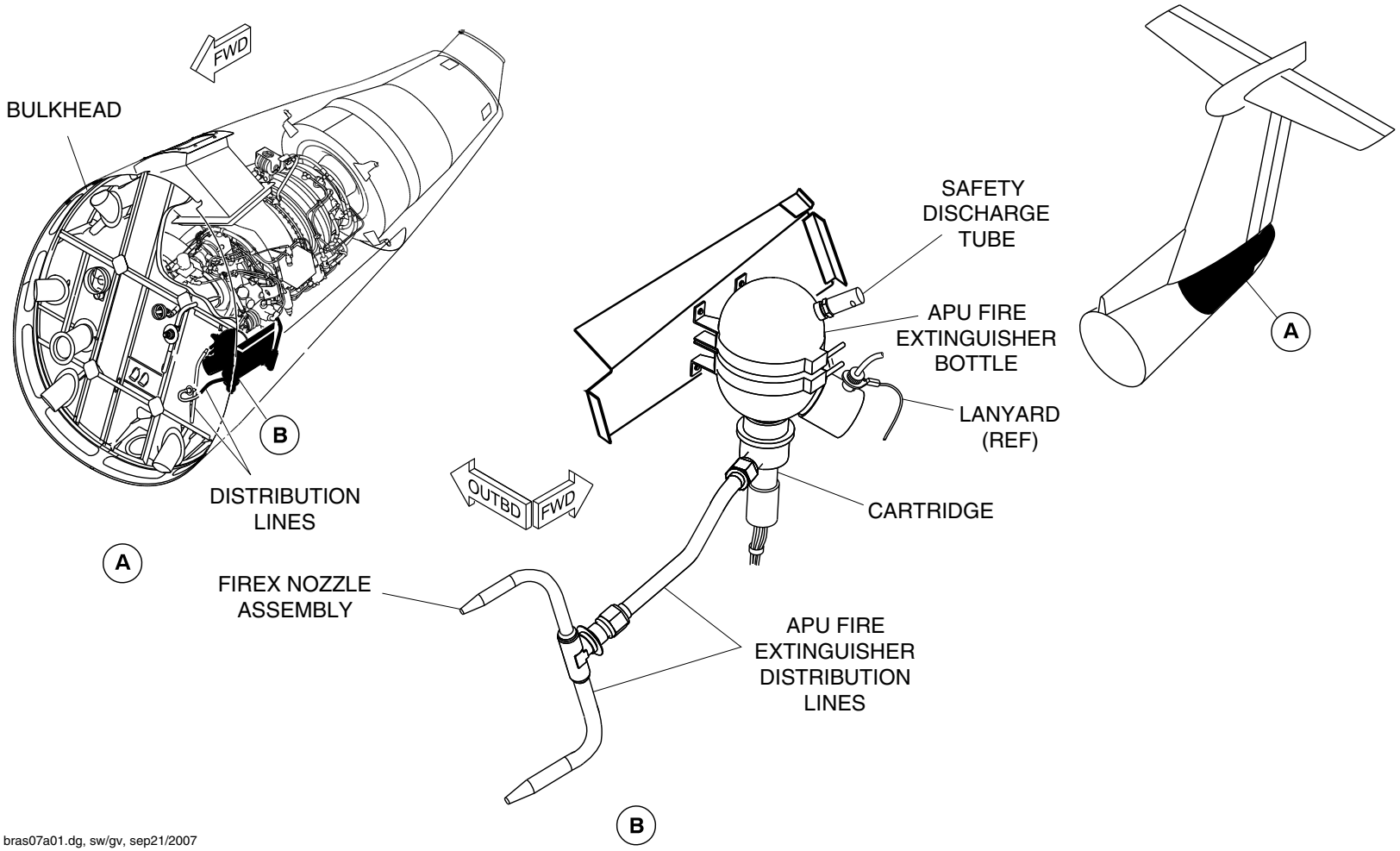
The cartridge contains a dual–bridgewire Electro–Explosive Device (EED) and redundant power lines with separate circuit breakers for reliability. Bridgewire “A” is taken from one circuit breaker and routed along the left side of the aircraft to the cartridge. Bridgewire “B” is taken from a separate circuit breaker and routed along the right side of the aircraft to the cartridge. Malfunction of either power circuit breaker will not cause loss of fire extinguisher capability.

Each cartridge has an electrical connector. When an electrical signal is sent through the bridgewires, the EED ignites and explodes, rupturing a burst disk. This causes the extinguisher bottle to discharge its contents through the distribution tubes leading to the APU compartment.

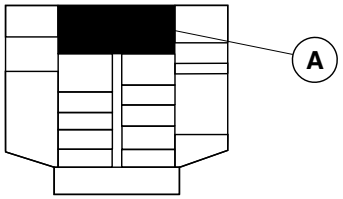
The fire extinguisher cartridge must be handled with extreme care.

Discharge Nozzles

The APU fire extinguisher bottle is located outside of the APU compartment and is connected to distribution lines leading into the compartment.



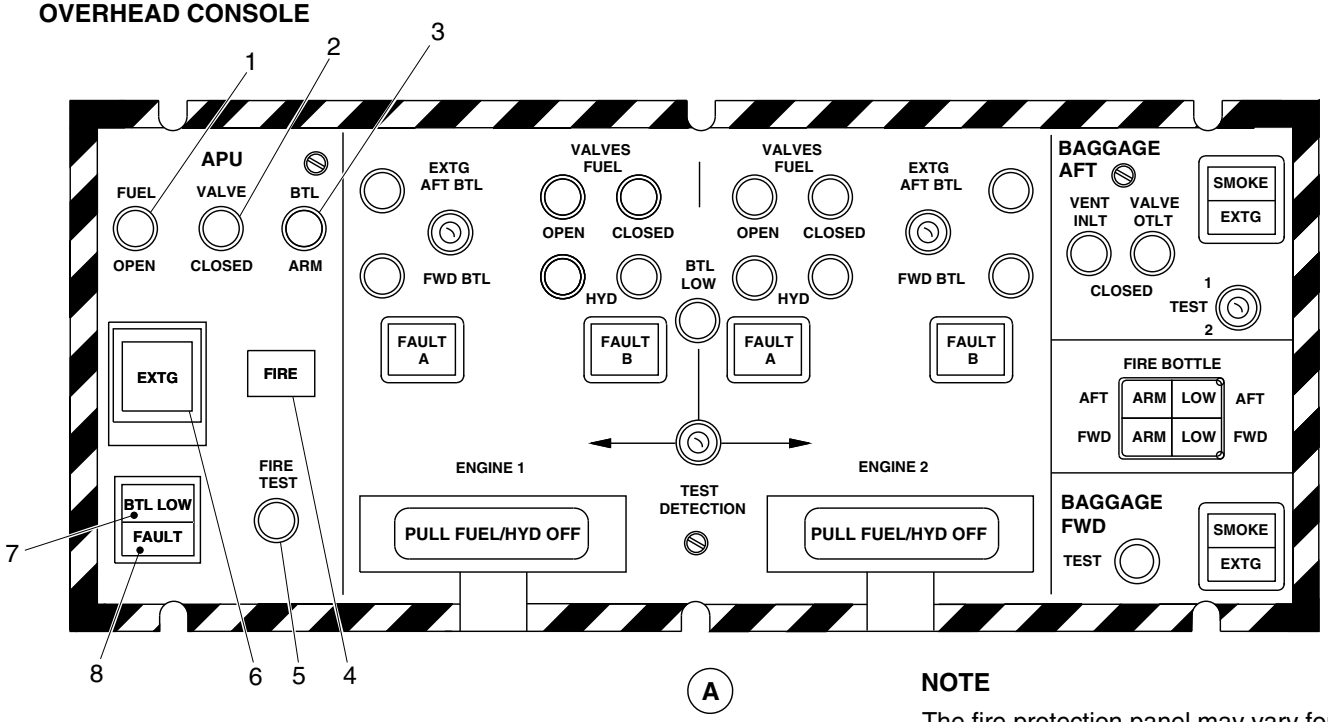
APU Fire Extinguisher Bottle
Figure 1



OVERHEAD CONSOLE

LEGEND

1. Fuel Valve Open Indication Light.
2. Fuel Valve Closed Indication Light.
3. APU Bottle Arm Light.
4. APU Fire Indication Light.
5. APU Fire Detection Push Button.
6. Extinguisher Switchlight (Guarded).
7. APU Fire Bottle Low Pressure Indication.
8. Fault Indication Light.



NOTE

The fire protection panel may vary for the aircraft with cargo combi configuration.

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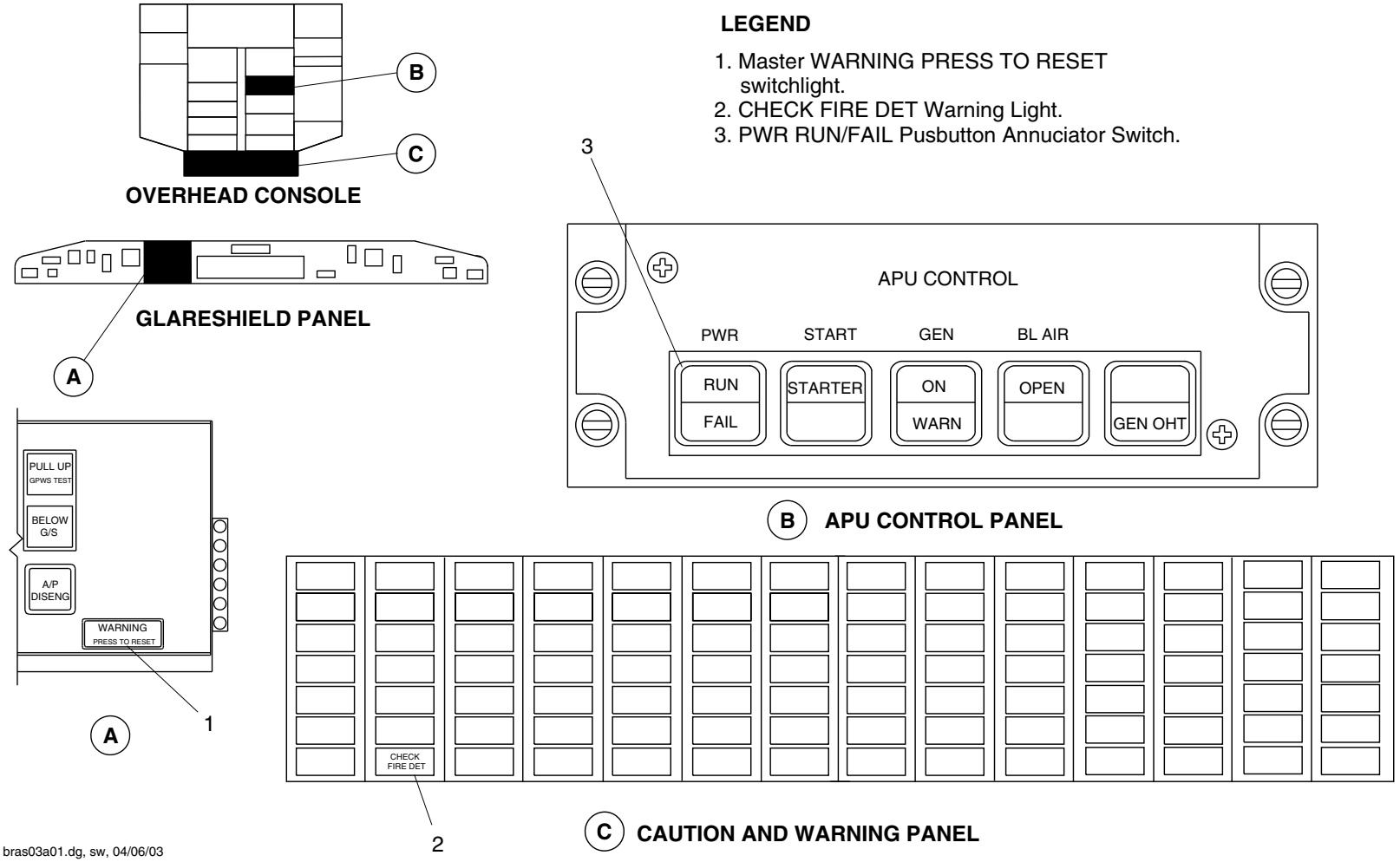
Fire Protection Panel Detail for APU Fire Protection
Figure 2



LEGEND

1. Master WARNING PRESS TO RESET switchlight.
2. CHECK FIRE DET Warning Light.
3. PWR RUN/FAIL Pusbutton Annuciator Switch.

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Indications for APU Fire
Figure 3

**ON A/C ALL

26–24–00–001

LAVATORY FIRE EXTINGUISHING

Introduction

The lavatory fire extinguisher is used to extinguish a possible fire in the lavatory waste–bin.

General Description

The lavatory compartment waste–bin is protected by a single, thermally–activated fire extinguisher with no electrical interface. If a fire occurs in the lavatory compartment waste–bin, the extinguishing agent is discharged into the bin.

Detailed Description

Refer to Figure 1.

The lavatory fire extinguisher has dual–discharge outlets that are thermally actuated with no electrical interface. When a fire occurs in the lavatory compartment waste–bin, the temperature of the end caps on the container increases. When the temperature reaches a set point, it causes the fusible seals to melt and release the end caps from the discharge tubes. The extinguishing agent is then released and discharged into the bin.

The lavatory fire extinguisher cannot be refilled or reused. It requires periodic weighing of the fire extinguisher bottle to make sure that it is full. If the discharge tubes are bent beyond the specified angle, fire suppression may not work properly.

Lavatory Fire Extinguisher

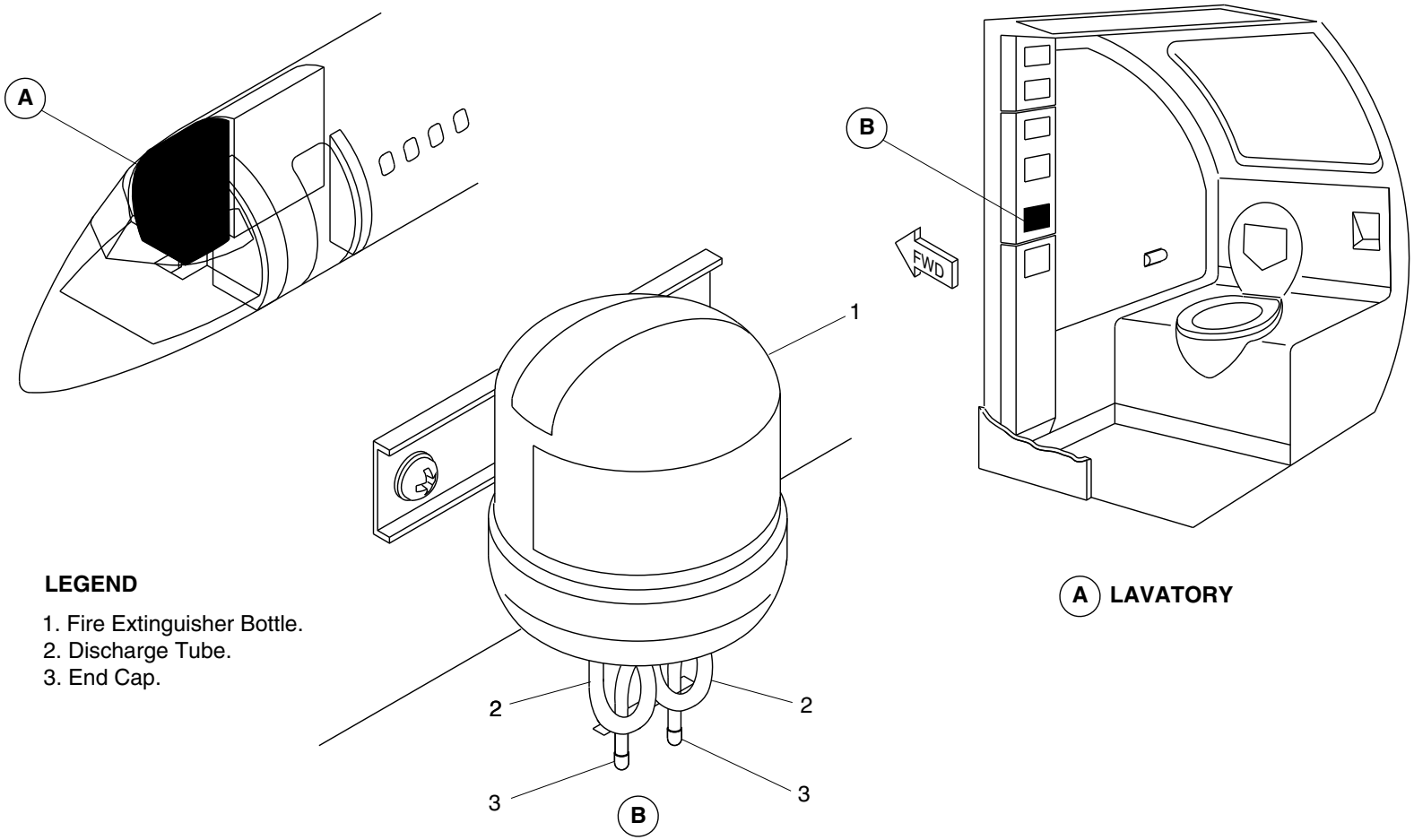
The Lavatory Fire Extinguisher is used to combat a fire in the lavatory waste–bin.

The lavatory fire extinguisher uses bromotrifluoromethane (Halon 1301) as the extinguishing agent. The bottle for the agent is a stainless steel sphere with an internal volume of 9 cubic inches (0.15 L). The bottle is charged with 0.25 pounds (0.113 kilograms) of agent to a pressure of 27 psi (186 kPa).

Refer to Figure 1.

The lavatory fire extinguisher has two discharge outlets. If the end caps on the discharge tubes reach 174 °F (79 °C), the fusible alloy seals melt and release the end cap from the tubes. The extinguishing agent is then released into the waste–bin.

The lavatory fire extinguisher is located in the upper amenity assembly, just above the waste–bin. It is attached to the bulkhead with two screws, with the end caps protruding into the waste–bin.



LEGEND

1. Fire Extinguisher Bottle.
2. Discharge Tube.
3. End Cap.

A LAVATORY

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Lavatory Compartment Waste–Bin Fire Extinguisher
Figure 1

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**ON A/C ALL

26–25–00–001

PORTABLE HAND–OPERATED FIRE EXTINGUISHERS

Introduction

The flight compartment and passenger compartment are protected by four portable hand–operated fire extinguishers.

General Description

Refer to Figure 1.

The portable hand–operated fire extinguishers are located at three locations in the aircraft. They are attached to the aircraft with quick–release brackets.

Four fire extinguishers are provided at the locations that follow:

- Flight compartment
- Forward passenger compartment
- Aft passenger compartment (2).

The location of the fire extinguishers may vary due to the different interior arrangements.

Detailed Description

Refer to Figure 2.

A single portable hand–operated fire extinguisher in the flight compartment is attached to the left bulkhead behind the pilot's seat. Instructions for use of the extinguisher are shown on the body of the extinguisher bottle.

Refer to Figure 3.

A single portable hand–operated fire extinguisher is located in the forward draft bulkhead stowage. Instructions for use of the extinguisher are shown on the body of the extinguisher bottle.

Refer to Figure 4.

On aircraft with ModSum 4–457986 or SB84–25–167 incorporated, a single portable hand–operated fire extinguisher is located in the overhead stowage bin above the forward draft bulkhead.

Refer to Figure 5.

Two portable hand–operated fire extinguishers in the aft passenger compartment are attached to the aft draft bulkhead. The two extinguishers are located in a drawer attached to the left aft draft bulkhead forward side. Instructions for use of the extinguisher are shown on the body of the extinguisher bottle.

Refer to Figure 6.

On aircraft with the ModSums 4–458134 or 4–457926 or 4–458788 incorporated, the two portable hand–operated fire extinguisher

bottles of the aft passenger compartment are located in the inboard opening drawer of the G4 galley.

Refer to Figure 7.

On aircraft with ModSum 4–458135 incorporated, two portable hand–operated fire extinguisher bottles are located in the stowage compartment of the left aft draft bulkhead. One additional portable hand–operated fire extinguisher bottle is located in the aft side lower compartment of the G6 galley.

Refer to Figure 8.

On aircraft with ModSums 4–458730 or 4–458827 or 4–458906 or 4–457830 or 4–458987 or 4–459071 or 4–459102 or 4–459242 or 4–459248 or 4–459268 or 4–459258 or 4–459352 or 4–459383 or 4–458354 or 4–458467 or 4–459521 or 4–459581 or 4–459564 or 4–459643 or 4–459671 or 4–460032 or 4–459903 or 4–460117 incorporated, two portable hand–operated fire extinguisher bottles are located in the stowage compartment of the left aft draft bulkhead. One additional portable hand–operated fire extinguisher bottle is located in the forward draft stowage bulkhead.

Refer to Figure 9.

On aircraft with ModSum 4–458930 incorporated, two portable hand–operated fire extinguisher bottles are located in the stowage compartment of the left aft draft bulkhead. One additional portable hand–operated fire extinguisher bottle is located in the forward draft stowage bulkhead.

Refer to Figure 10.

On aircraft with Modsum 4–458284 incorporated, two portable hand–operated fire extinguisher bottles are located on and inside the stowage compartment on the forward face of the G2 galley. One additional portable hand–operated fire extinguisher bottle is located in the forward draft stowage bulkhead.

Refer to Figure 11.

On aircraft with ModSum 4–459305 and SB 84–25–181 incorporated, two portable hand–operated fire extinguisher bottles are located inside the stowage compartment of the left aft draft bulkhead. One additional portable hand–operated fire extinguisher bottle is located in the forward draft stowage bulkhead.

Refer to Figure 12.

On aircraft with ModSum 4–459214 incorporated, one portable hand–operated fire extinguisher bottle is located in the forward overhead stowage bin on the left side before the first row of the passenger seats. One additional portable hand–operated fire extinguisher bottle is located in the aft emergency equipment stowage compartment on the left side after the last row of passenger seats.

Refer to Figure 13.

On aircraft with ModSum 4–459395 incorporated, two portable hand–operated fire extinguisher bottles are located in the stowage compartment of the left aft draft bulkhead. One portable hand–operated fire extinguisher bottle is located in the forward draft stowage bulkhead and two additional portable hand–operated fire extinguisher bottles are located in the last left hand and right hand overhead bins.

Refer to Figure 4.

On aircraft with SB84–25–174 incorporated, the portable hand–operated fire extinguisher bottle is relocated from the forward stowage draft bulkhead to the forward overhead bin on left side before the first row of passenger seats.

Refer to Figure 14.

On aircraft with ModSum 4–459449 incorporated, two portable hand–operated fire extinguisher bottles are located in the stowage compartment of the left aft draft bulkhead. One additional portable hand–operated fire extinguisher bottle is located in the forward draft stowage bulkhead.

Refer to Figure 15.

On aircraft with ModSum 4–459513 incorporated, one portable hand–operated fire extinguisher bottle is located inside the stowage compartment of the left aft draft bulkhead. One additional portable hand–operated fire extinguisher bottle is located in the forward draft stowage bulkhead.

Refer to Figure 16.

On aircraft with ModSum 4–459551 incorporated, two portable hand–operated fire extinguisher bottles are located inside the stowage compartment of the left aft draft bulkhead. One additional portable hand–operated fire extinguisher bottle is located in the forward wardrobe.

Refer to Figure 17.

On aircraft with ModSum 4–459615 or 4–459739 or 4–459742 or 4–460068 incorporated, one portable hand–operated fire extinguisher bottle is located inside the stowage compartment of the right aft bulkhead. Two additional portable hand–operated fire extinguisher bottles are located in the forward wardrobe.

Refer to Figure 18.

On aircraft with ModSum 4–459956 incorporated, one portable hand–operated fire extinguisher bottle is located in the stowage compartment of the left aft draft bulkhead. One portable hand–operated fire extinguisher bottle is located in the forward draft stowage bulkhead and one additional portable hand–operated fire extinguisher bottle is located in the last left hand overhead stowage bin.

Refer to Figure 19.

On aircraft with ModSum 4–459932 incorporated, one portable hand–operated fire extinguisher bottle is located inside the stowage compartment of the left aft draft bulkhead. Two additional portable hand–operated fire extinguisher bottles are located in the forward wardrobe.

Refer to Figure 8.

On aircraft with ModSums 4–460148 or 4–460209 incorporated, two portable hand–operated fire extinguisher bottles are located in the inboard opening drawer of the G4 galley. One additional portable hand–operated fire extinguisher bottle is located in the forward draft stowage bulkhead.

Refer to Figure 20.

On aircraft with ModSum 4–460087 incorporated, two portable hand–operated fire extinguisher bottles are located inside the stowage compartment on the forward face of G4 galley. One additional portable hand–operated fire extinguisher bottle is located in the forward wardrobe.

Hand–Operated Fire Extinguisher

The hand–operated fire extinguishers are used to manually combat fires in the passenger and flight compartments.

The portable hand–operated fire extinguisher bottles are filled with 3.5 lb (1.6 kg) of Halon 1211 (bromochlorodifluoromethane) which is a universal extinguishing agent.

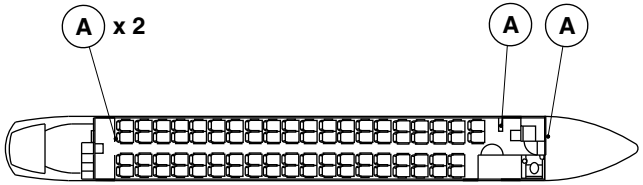
On aircraft with ModSums 4–458047 or 4–458112 or 4–458134 or 4–458174 or 4–457926 or 4–457986 or 4–458228 or 4–458135 or 4–458201 or 4–458082 or 4–458788 or 4–457830 or 4–458987 or 4–459071 or 4–459102 or 4–459242 or 4–459248 or 4–459268 or 4–459258 or 4–458284 or 4–459305 or 4–459352 or 4–459383 or 4–459214 or 4–458354 or 4–458467 or 4–459521 or 4–459581 or 4–459564 or 4–459643 or 4–459671 or 4–459739 or 4–459742 or 4–459956 or 4–459932 or 4–460032 or 4–459903 or 4–460117 or 4–460148 or 4–460209 or 4–460087 incorporated, the portable hand–operated fire extinguisher bottles are filled with 3.0 lb (1.4 kg) of Halon.

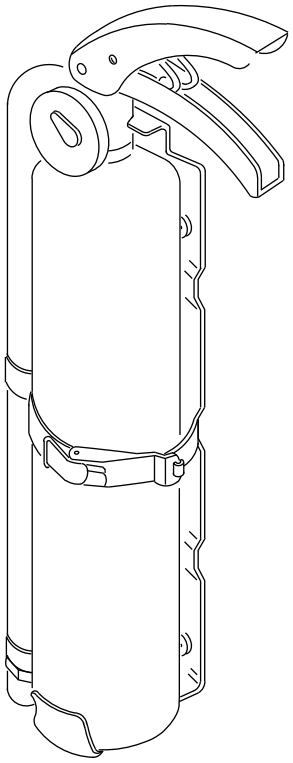
On aircraft with ModSum 4–458008 or 4–459551 incorporated, there are two types of fire extinguishers. One is filled with 4.5 lb (2.04 kg) of Halon and the other with 6.88 lb (3.12 kg) of water.

The portable hand–operated fire extinguisher bottles are suitable for use on electrical, fuel or oil fires. The Halon 1211 extinguishing agent is not toxic or corrosive. It does not cause cold burns, harm fabrics or metals and does not leave residue on electrical components.

On aircraft with ModSum 4–459513 or 4–460068 incorporated, the portable hand–operated fire extinguisher bottles are non–Halon. The extinguishing agent used is HFC–236fa, also known under trade name FE36. It has lower toxicity levels than Halon 1211 or Halon 1301 and can be safely used in small spaces. It also has no ozone depleting properties.

On aircraft with ModSum 4–459615 incorporated, the portable hand–operated fire extinguisher bottles are filled with 5.5 lb (2.49 kg) of Halon.



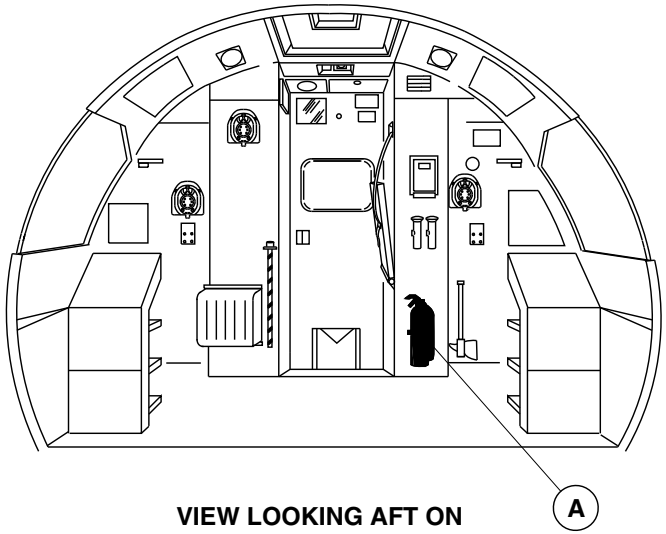


NOTE

Each fire extinguisher contains Halon 1211 extinguishant and can be used on electrical fires or fires involving fuel or oil.
Halon 1211 is nontoxic and noncorrosive.

fsm93a01.cgm

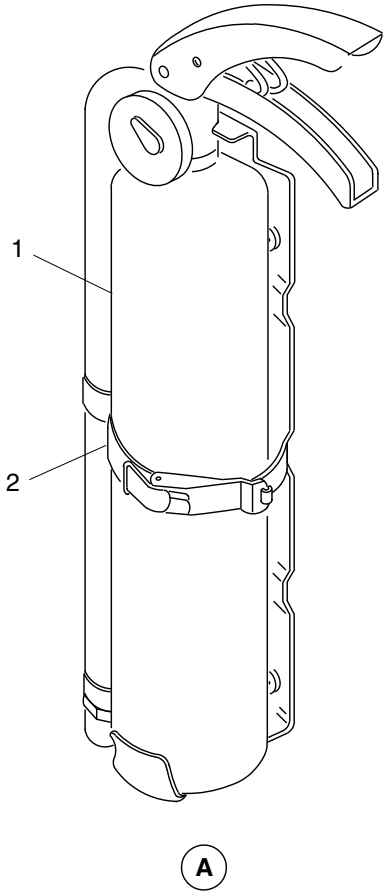
Hand Held Fire Extinguishers
Figure 1



VIEW LOOKING AFT ON
COCKPIT BULKHEAD

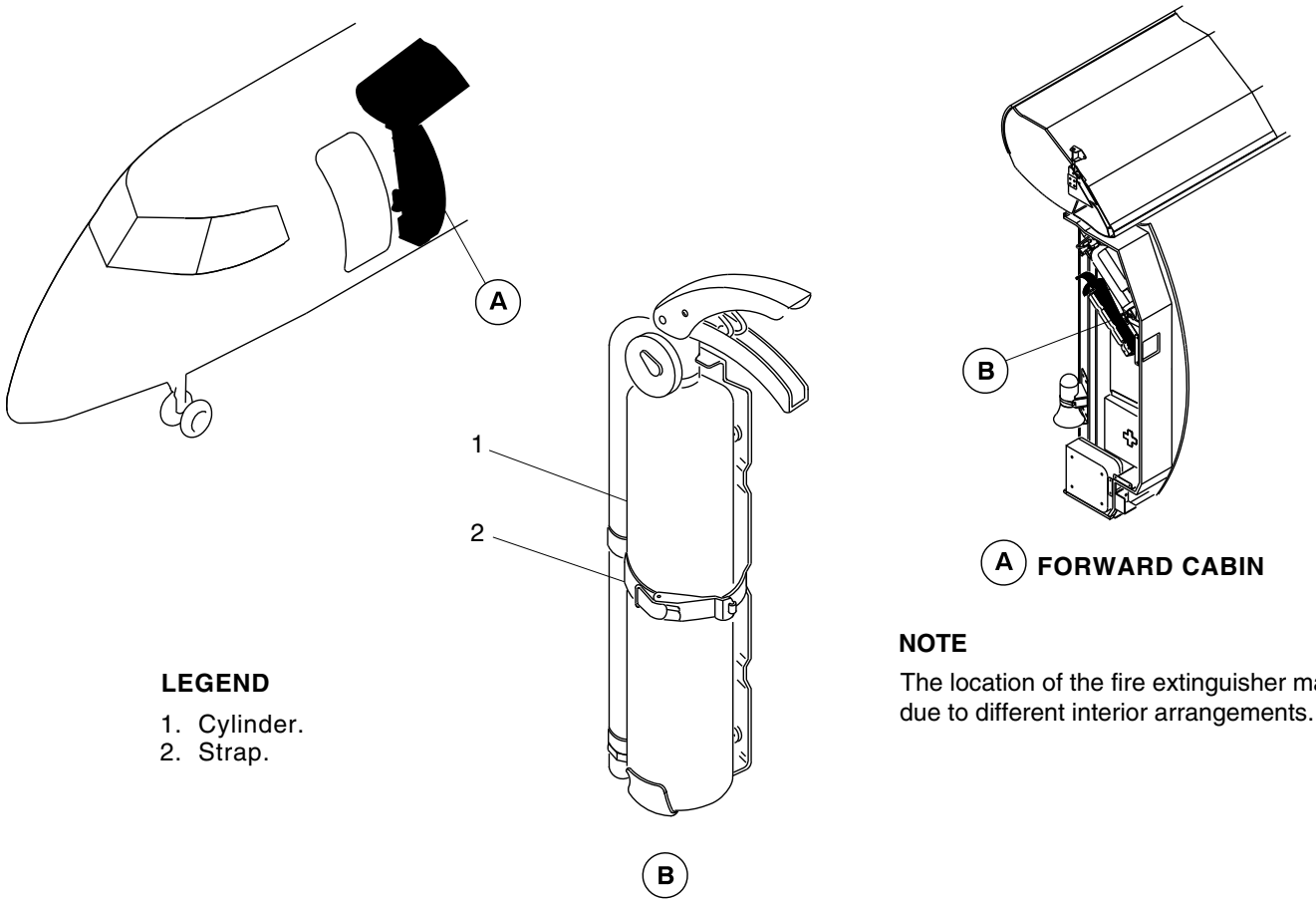
LEGEND

1. Cylinder.
2. Strap.



fsz14a01.dg, sw, 03/06/03

Hand–Operated Fire Extinguisher – Flight Compartment
Figure 2



LEGEND

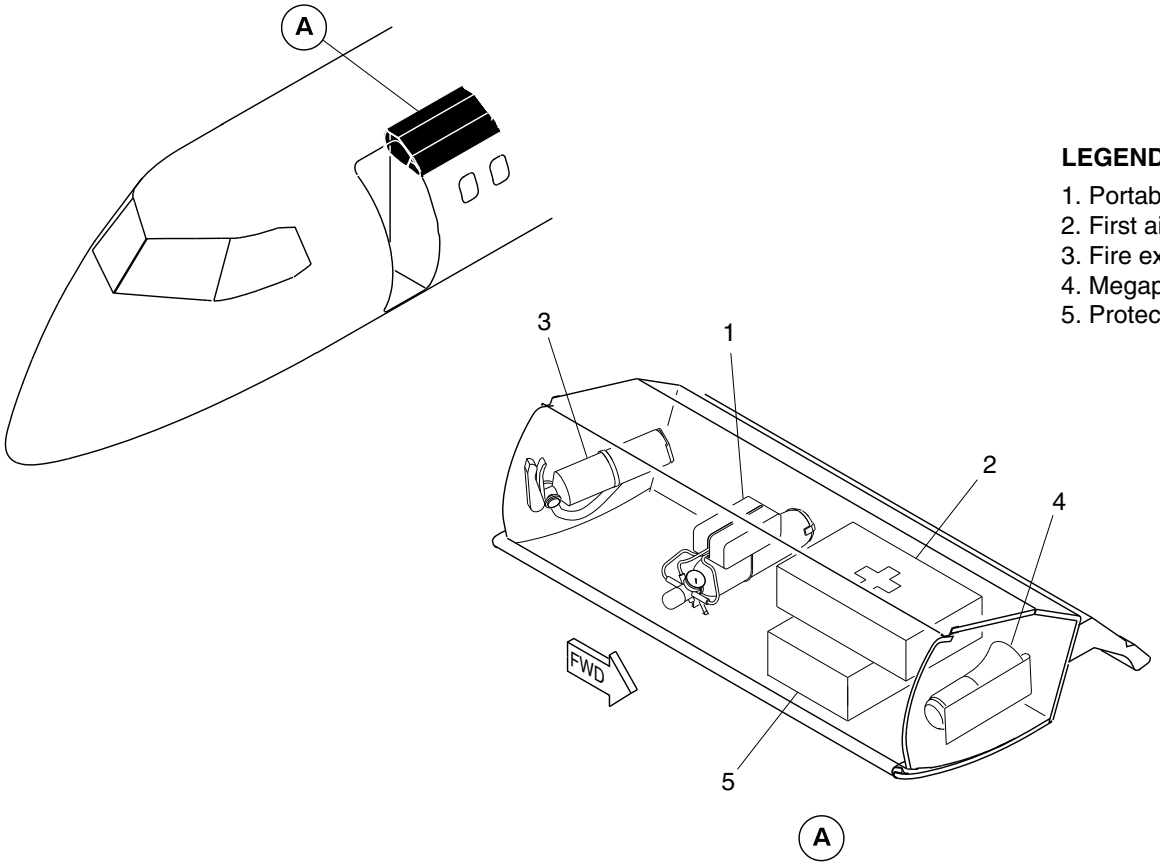
1. Cylinder.
2. Strap.

NOTE

The location of the fire extinguisher may vary due to different interior arrangements.

ftm95a01.dg, gg/sw, 02/06/03

Hand–Operated Fire Extinguisher – Forward Passenger Compartment
Figure 3

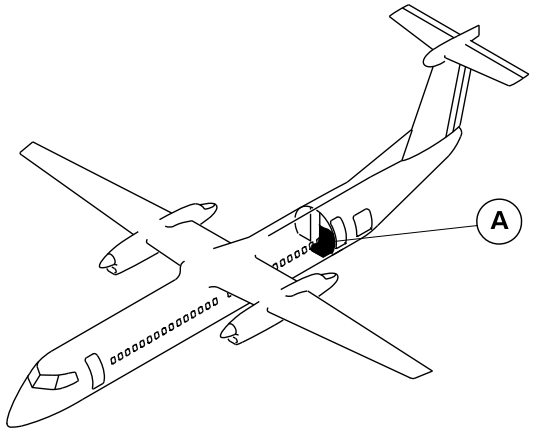


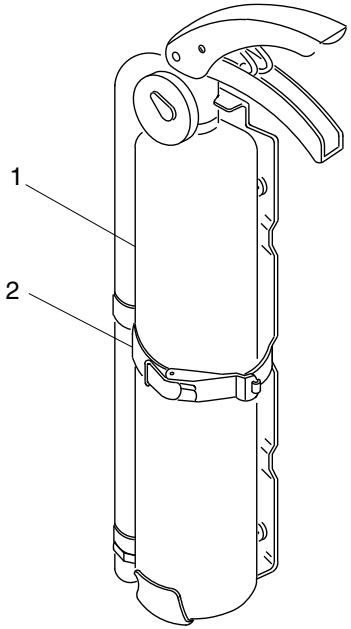
LEGEND

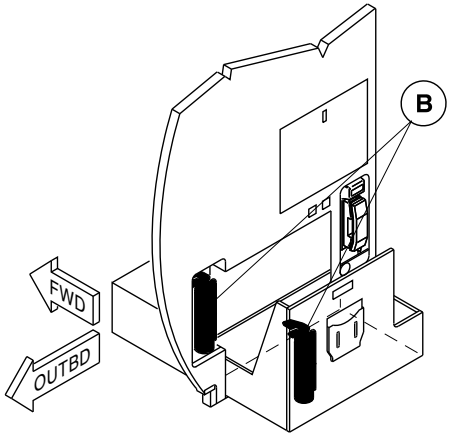
1. Portable oxygen bottle.
2. First aid kit.
3. Fire extinguisher.
4. Megaphone.
5. Protective breathing equipment.

cg1075a01.dg, cs, aug24/2010

Emergency Equipment of the Overhead Bin
Figure 4







A REAR VIEW OF AFT DRAFT BULKHEAD

NOTE

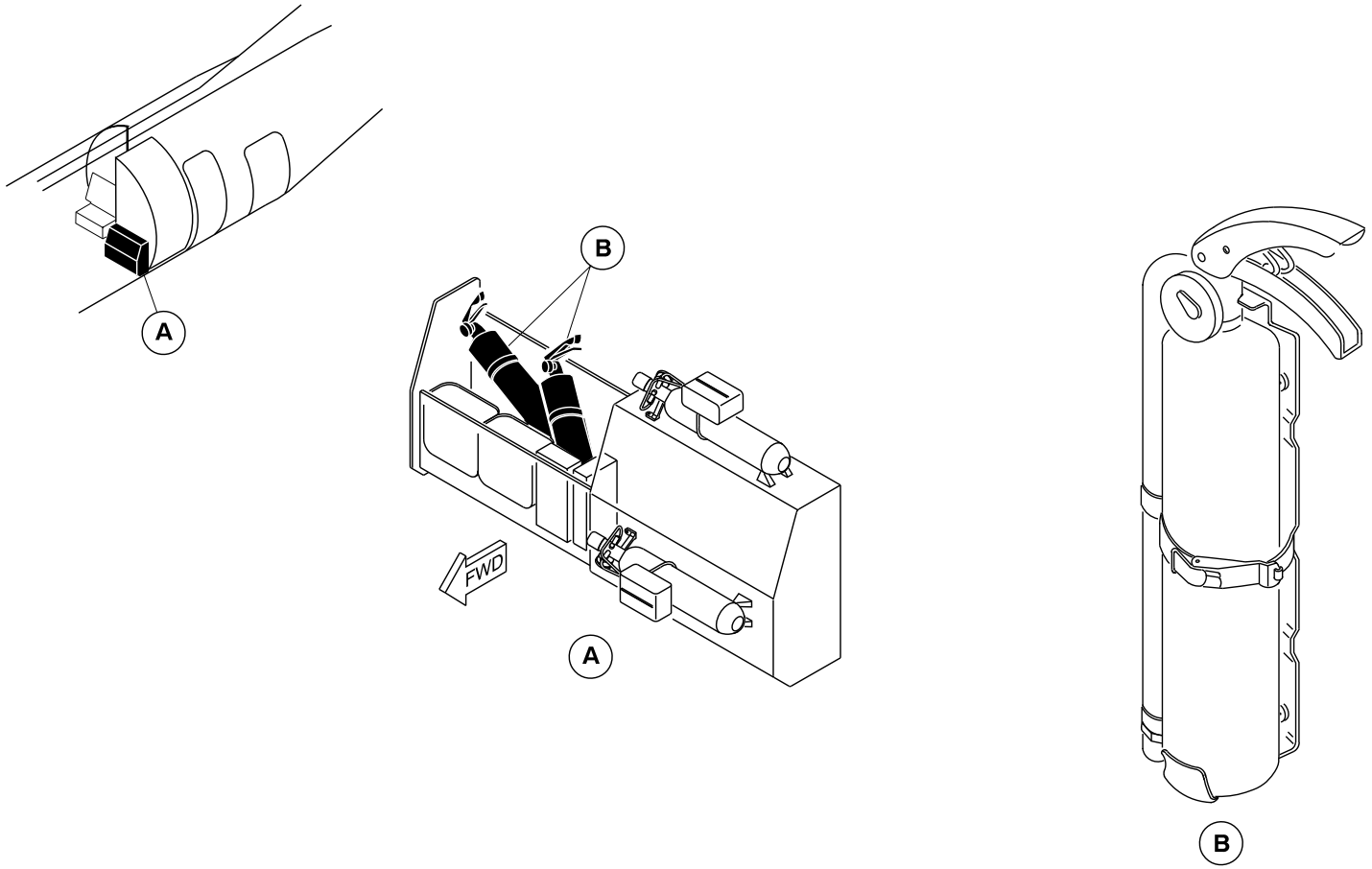
The location of the fire extinguisher may vary due to different interior arrangements.

LEGEND

1. Cylinder.
2. Strap.

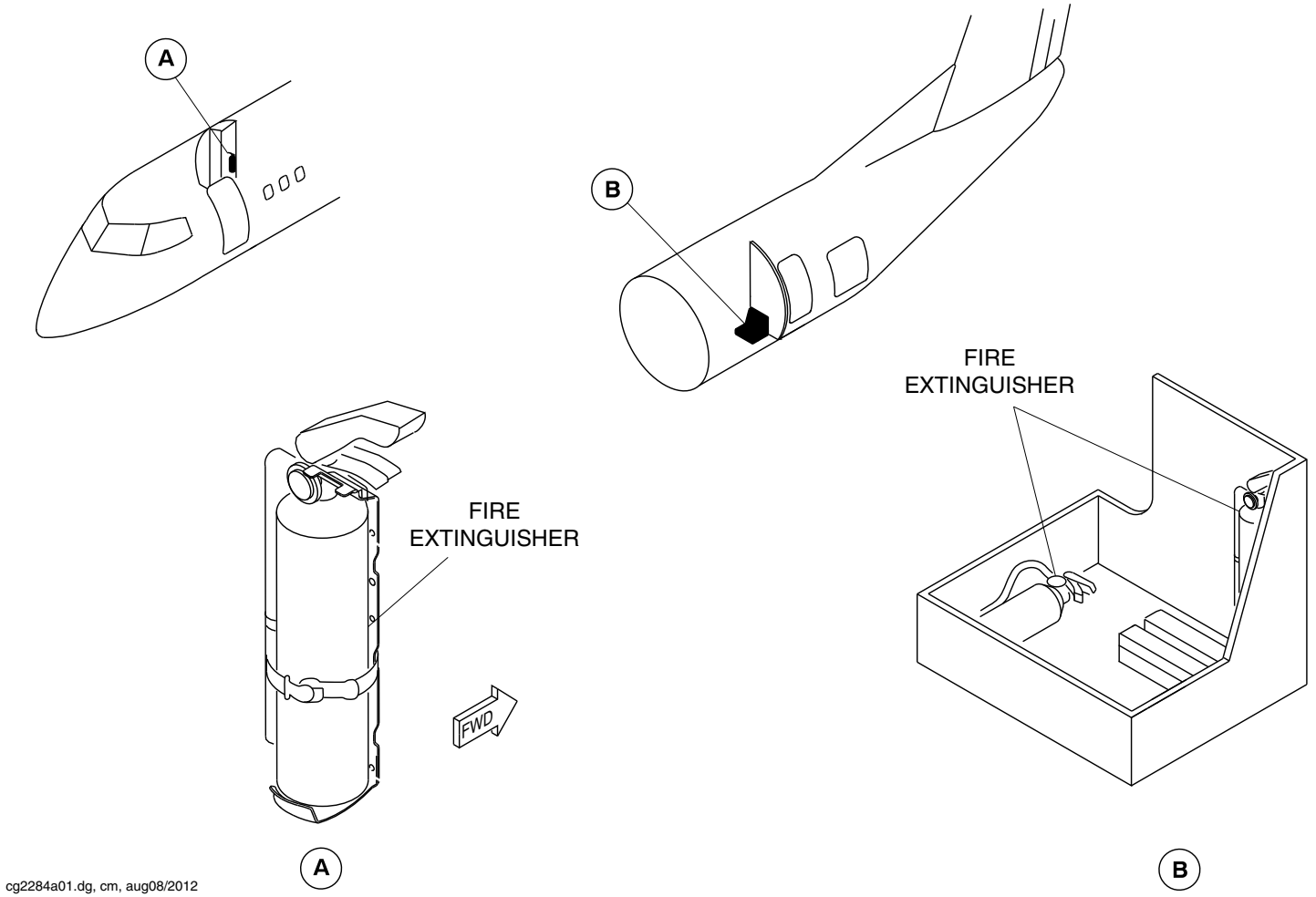
fs0b7a01.dg, gg/sw, 02/06/03

Hand–Operated Fire Extinguisher – AFT Passenger Compartment
Figure 5

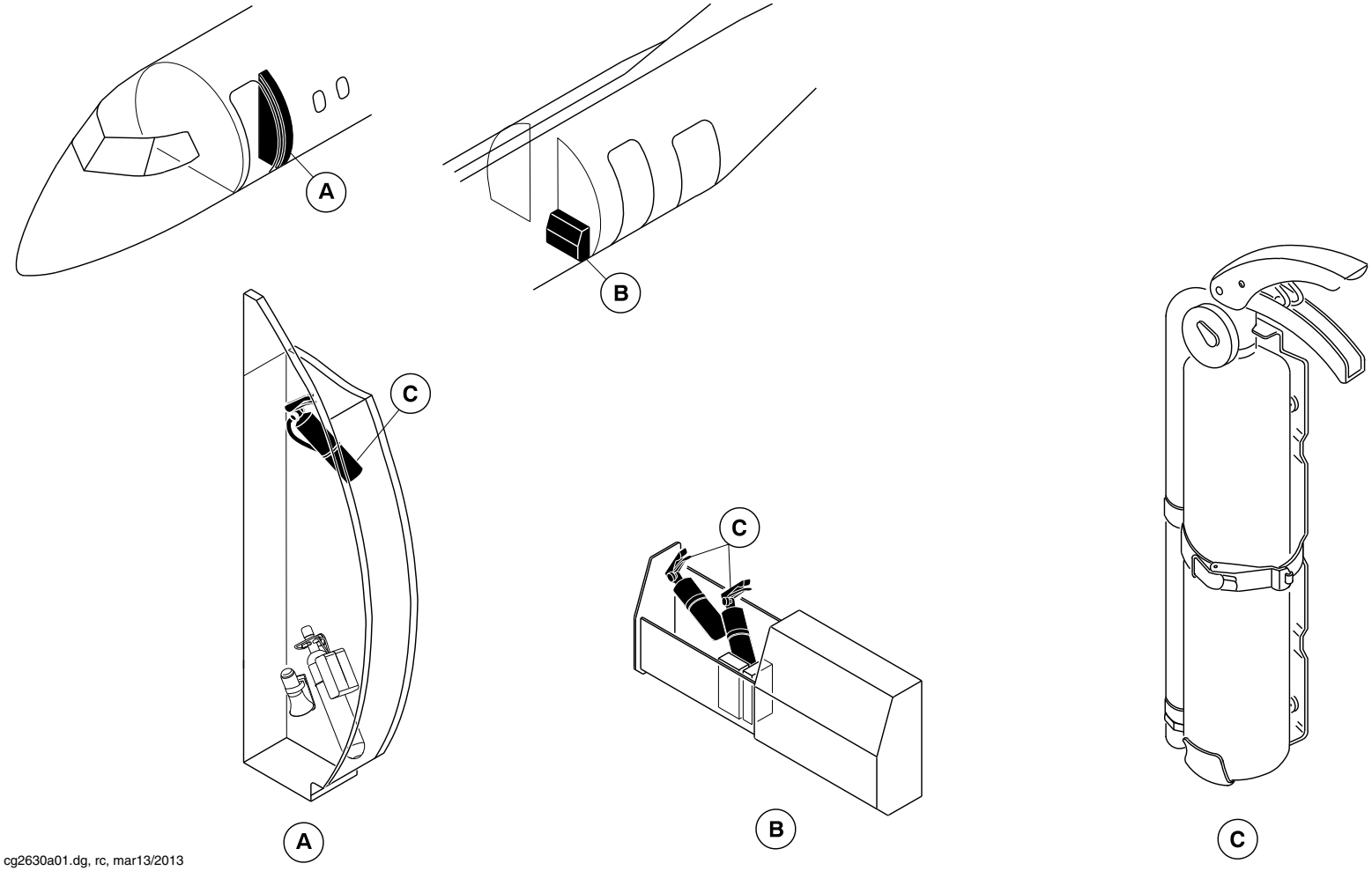


cg1071a01.dg, cs, aug24/2010

Hand–Operated Fire Extinguisher – Aft Passenger Compartment
Figure 6

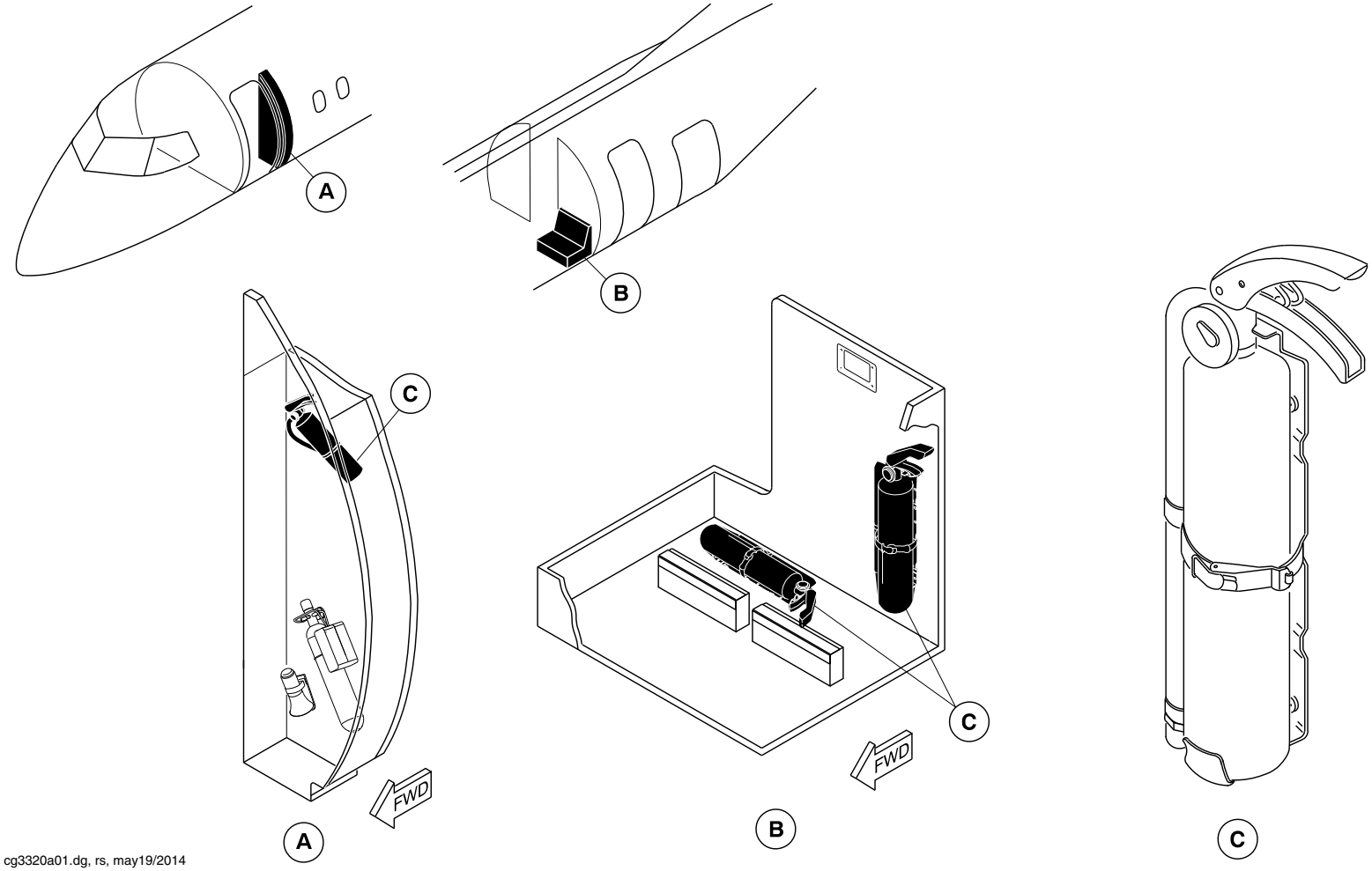


Hand – Operated Fire Extinguisher – Forward and Aft Passenger Compartment
Figure 7



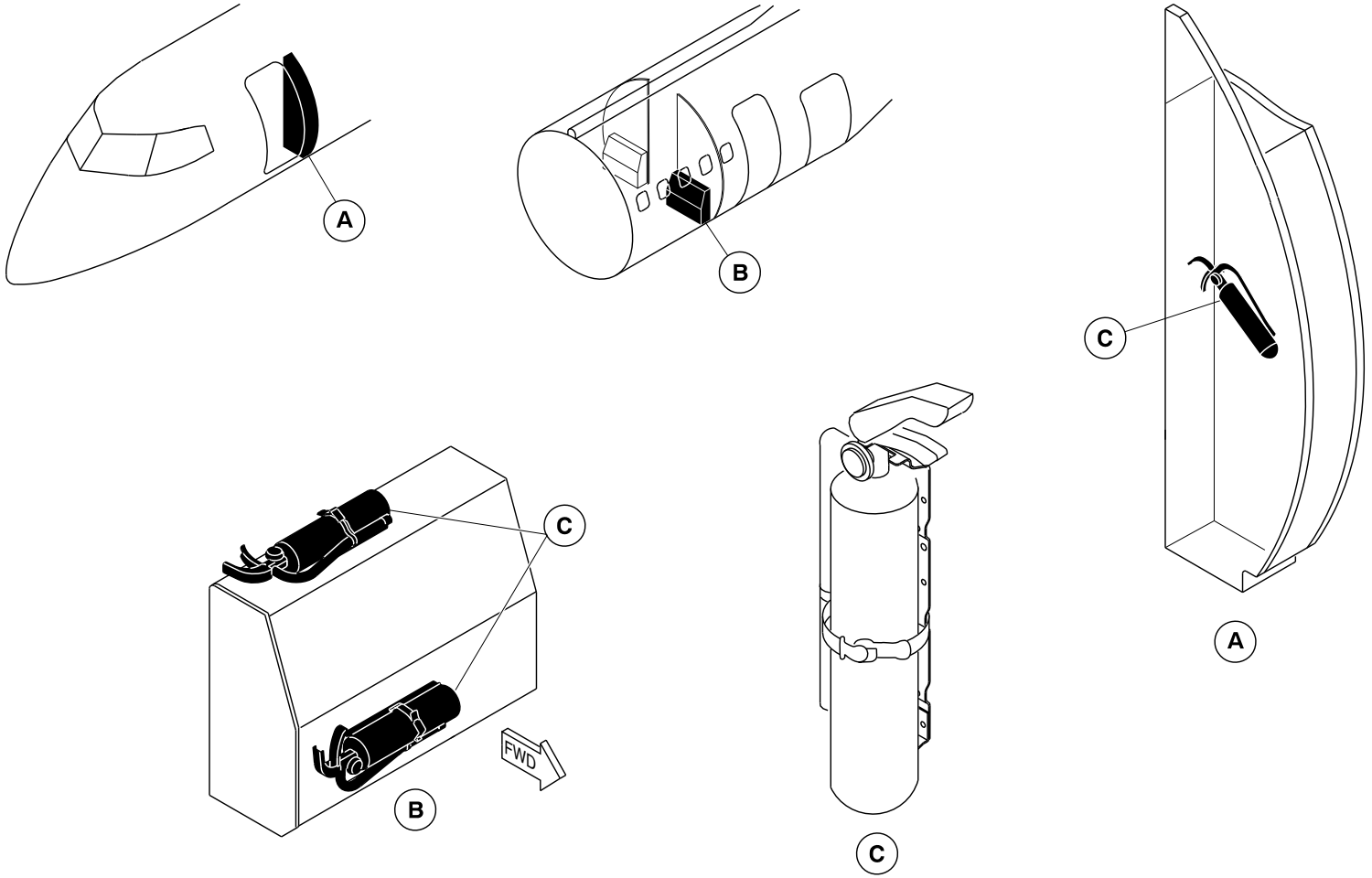
cg2630a01.dg, rc, mar13/2013

Hand Held Fire Extinguishers
Figure 8



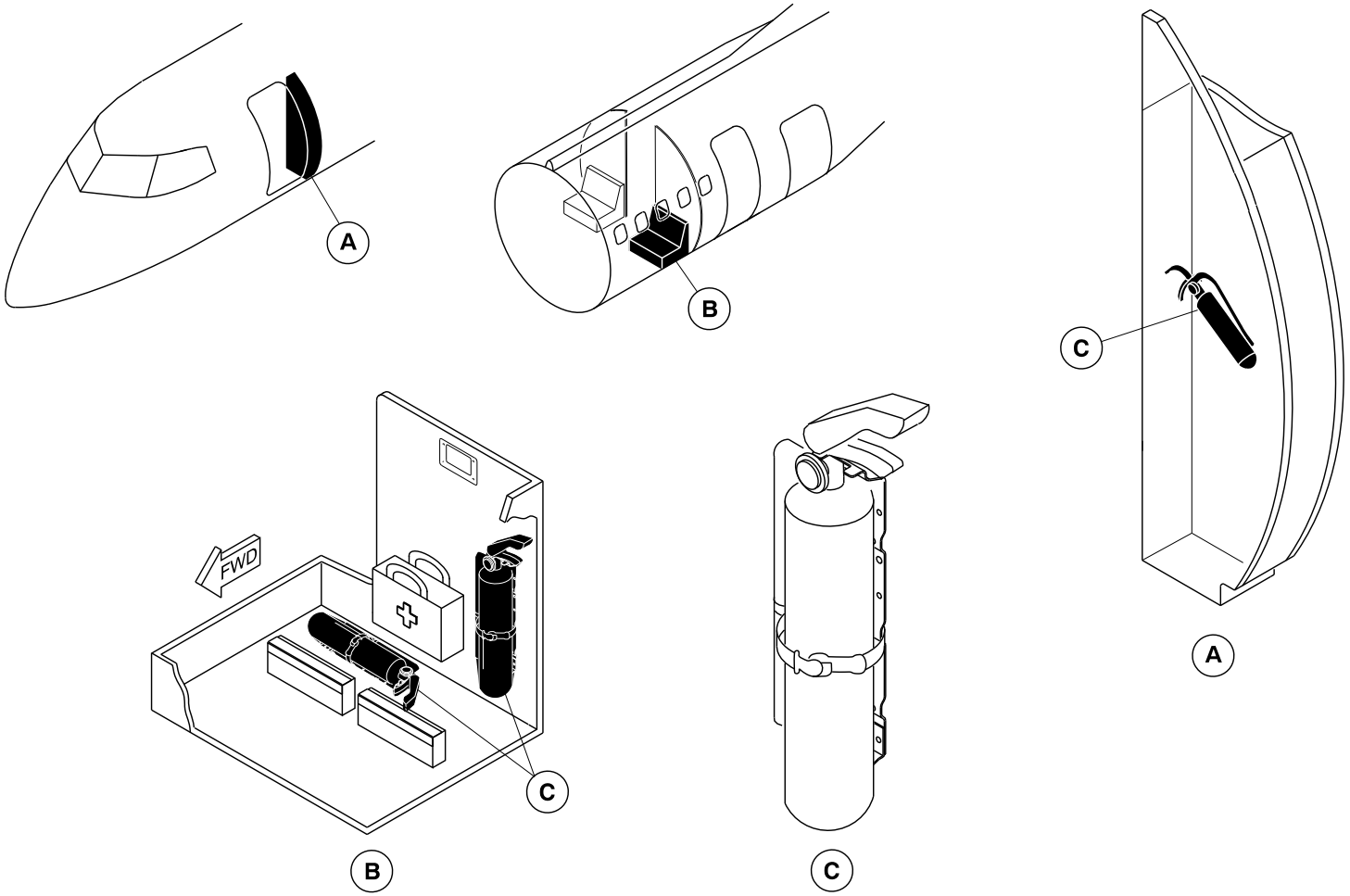
cg3320a01.dg, rs, may19/2014

Hand Held Fire Extinguishers
Figure 9



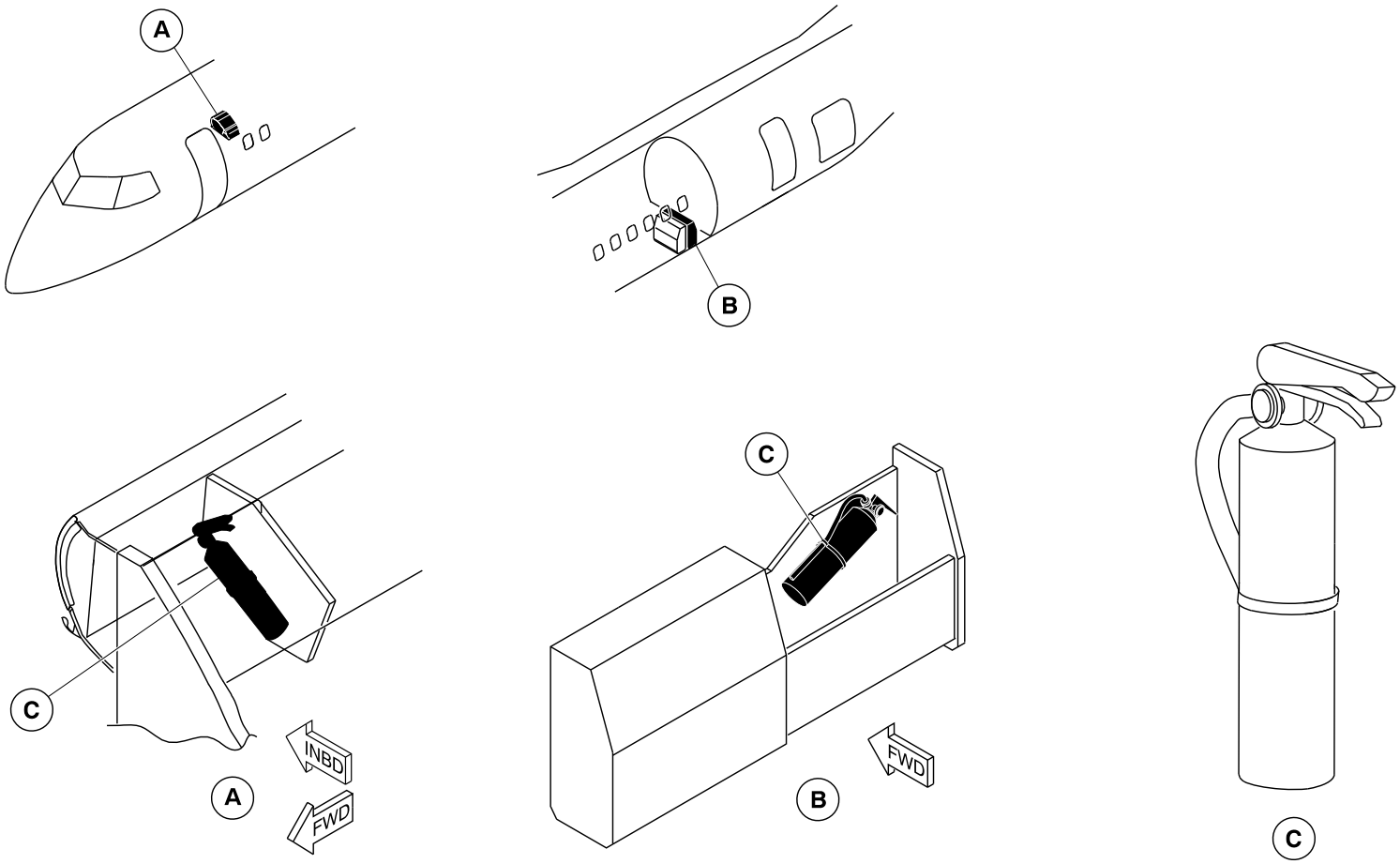
cg3898a01.dg, rc, may14/2015

Hand Held Fire Extinguishers
Figure 10



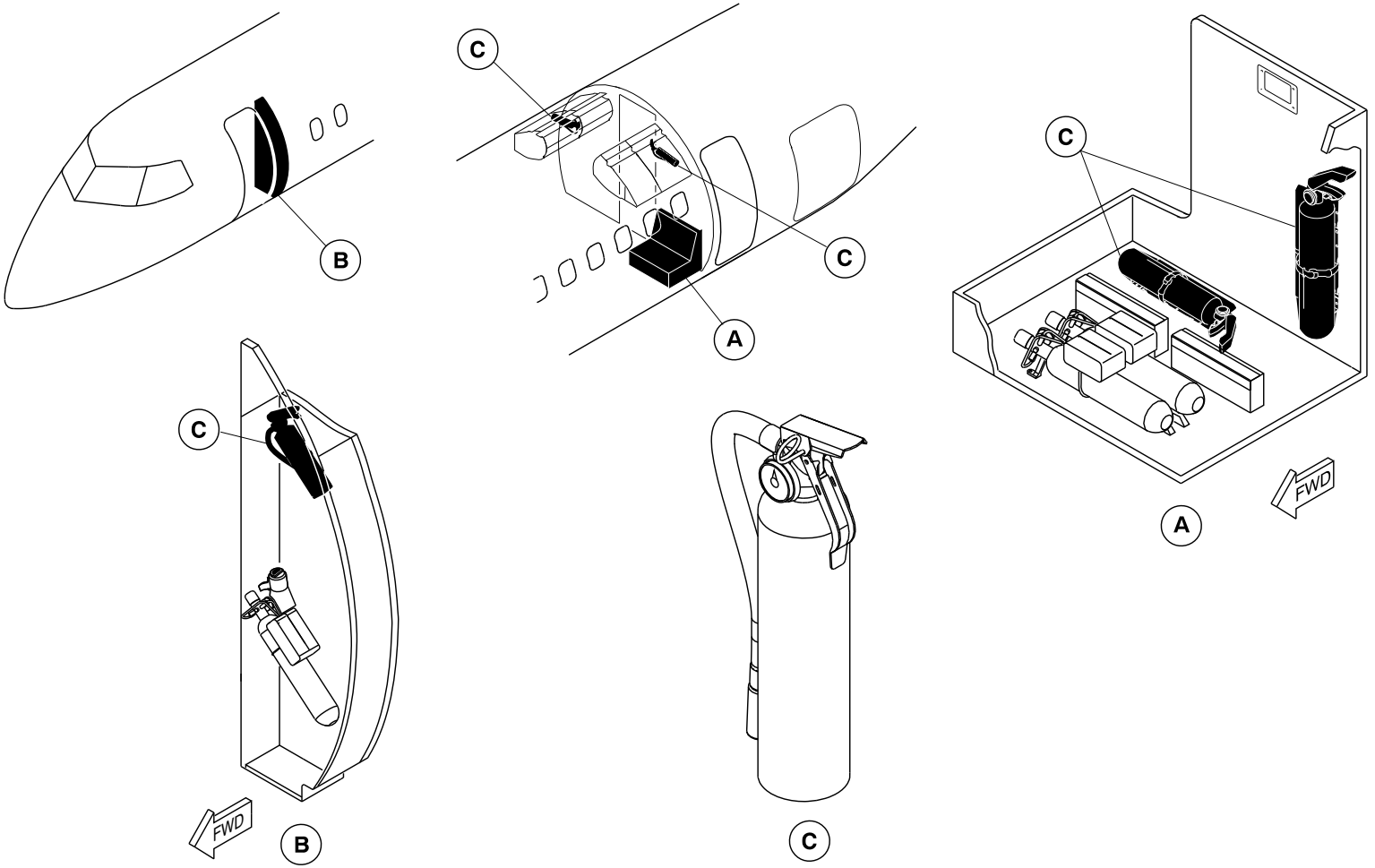
cg3899a01.dg, rc, may14/2015

Hand Held Fire Extinguishers
Figure 11

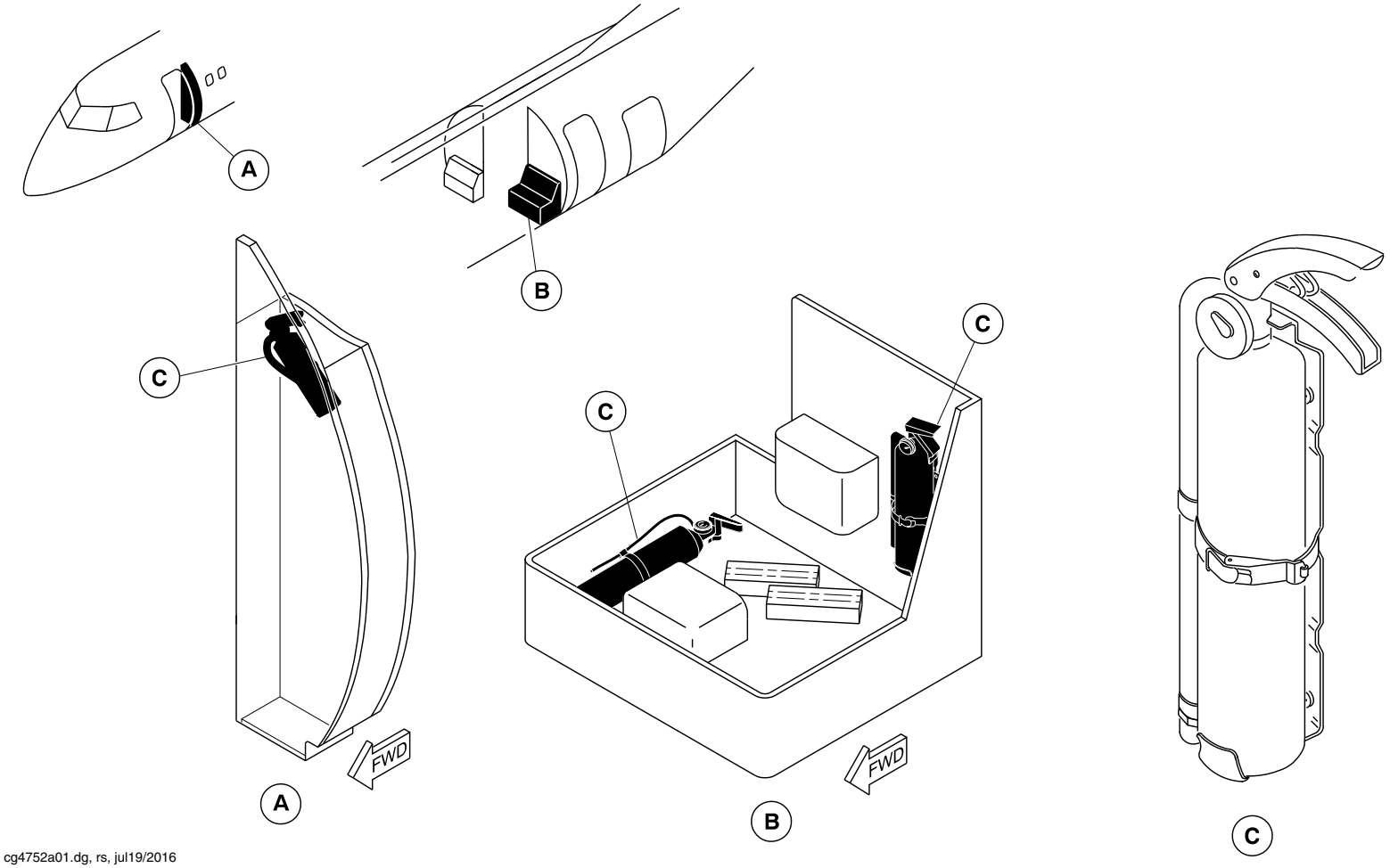


cg4076a01.dg, ak/ms, oct16/2015

Hand Held Fire Extinguishers
Figure 12

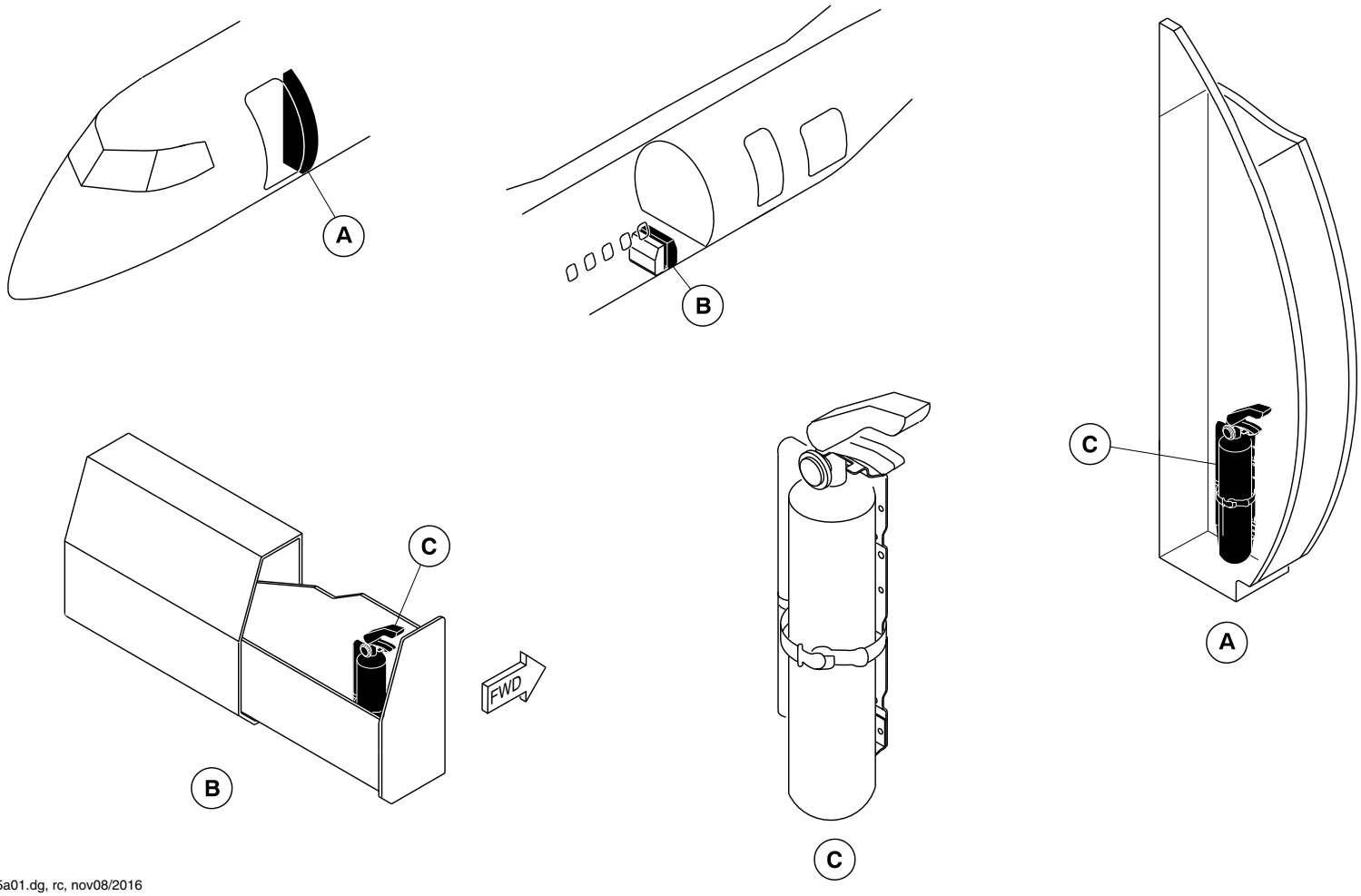


Portable Hand – Operated Fire Extinguishers
Figure 13



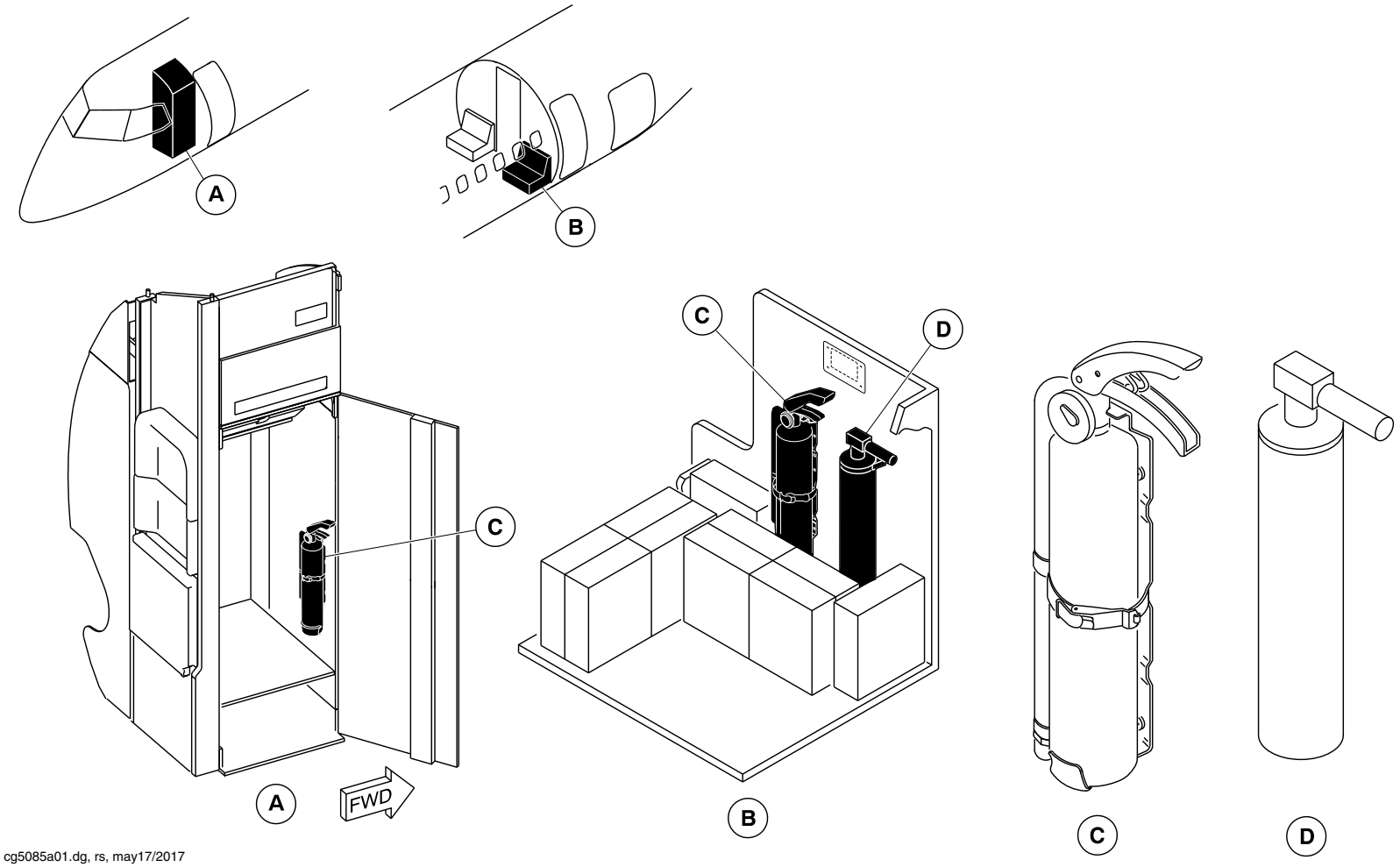
cg4752a01.dg, rs, jul19/2016

Hand Held Fire Extinguishers
Figure 14

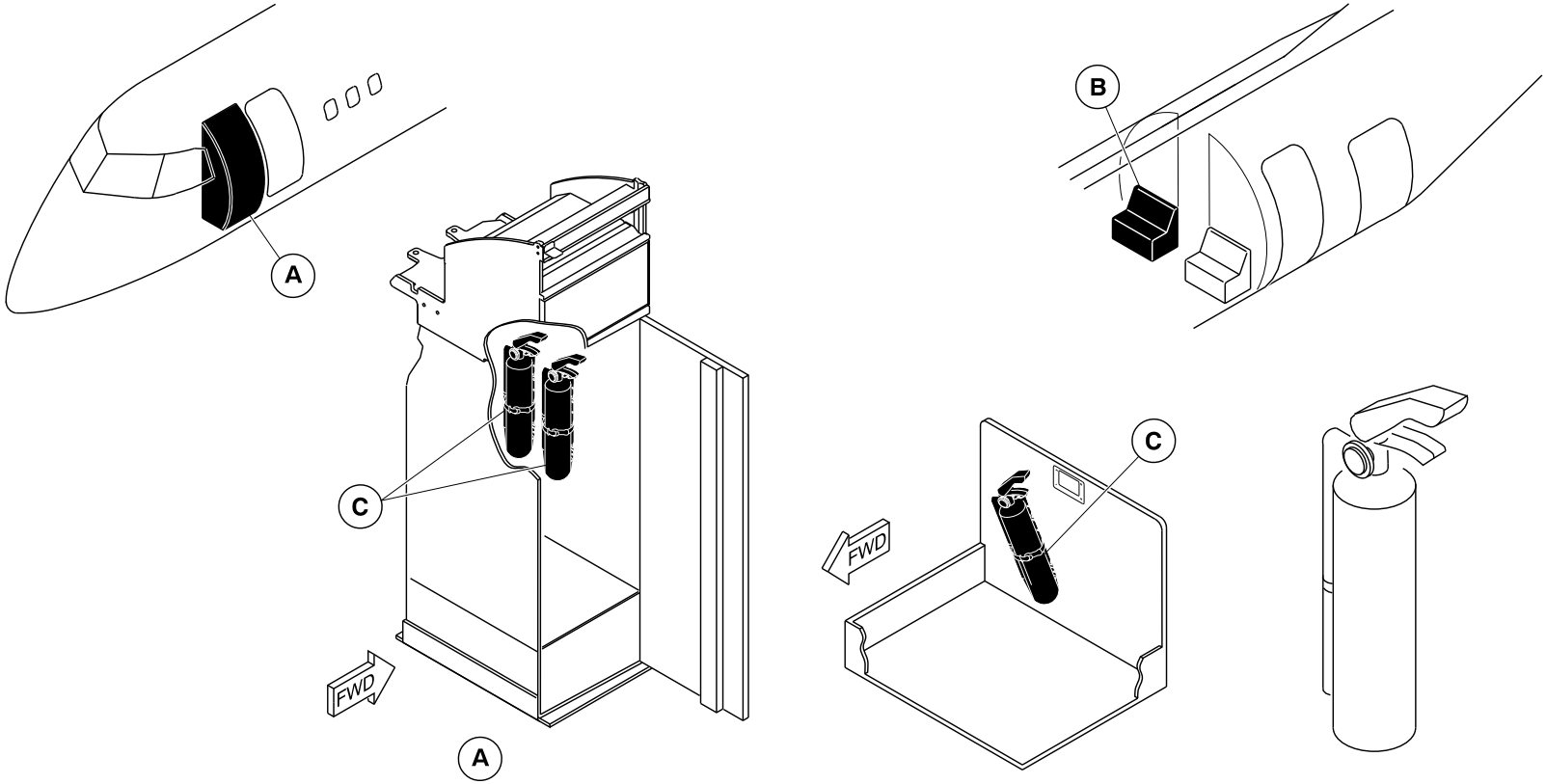


cg4945a01.dg, rc, nov08/2016

Hand Held Fire Extinguishers
Figure 15



Hand Held Fire Extinguishers
Figure 16

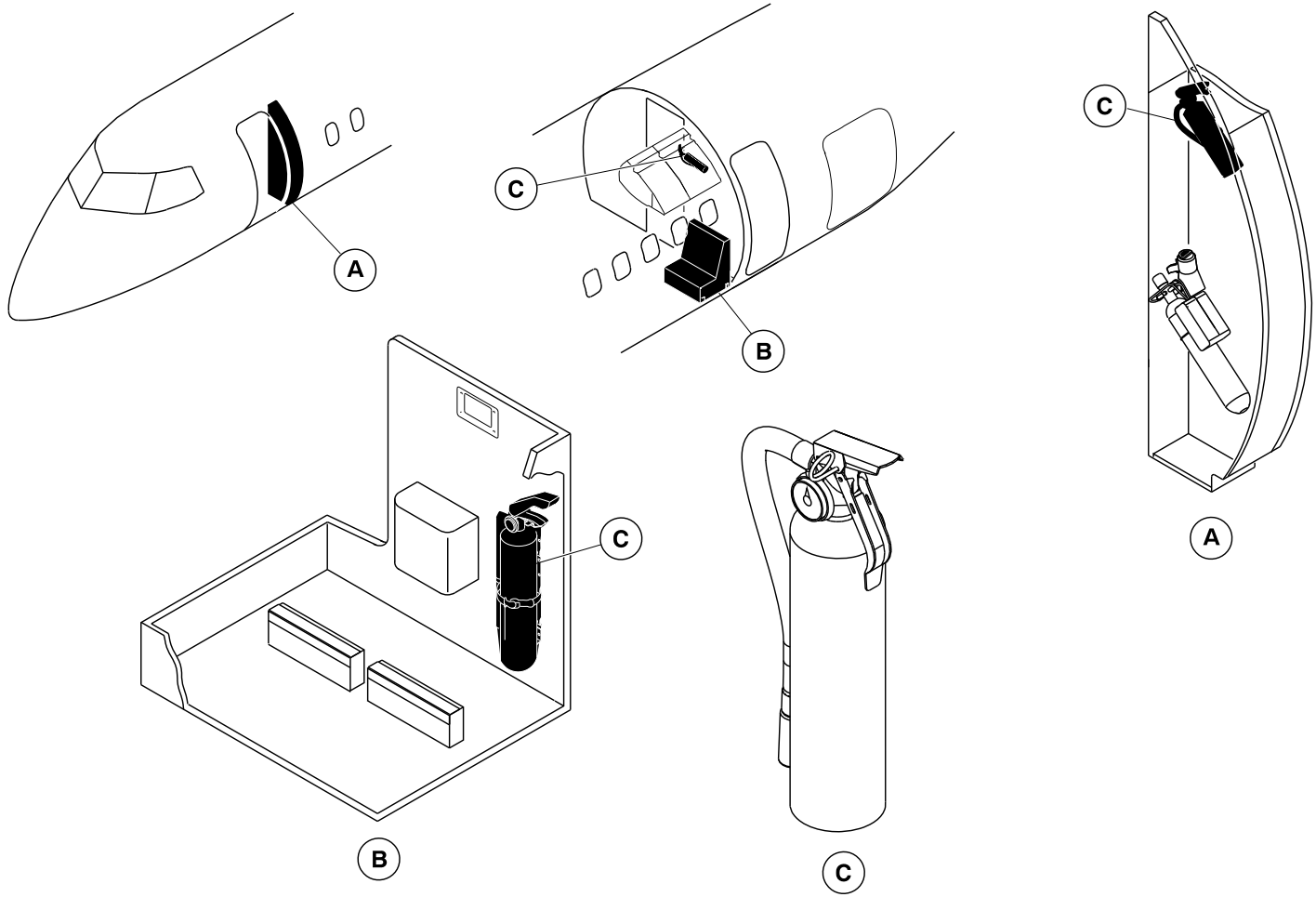


NOTE

The location and orientation of the fire extinguisher may vary for different configurations.

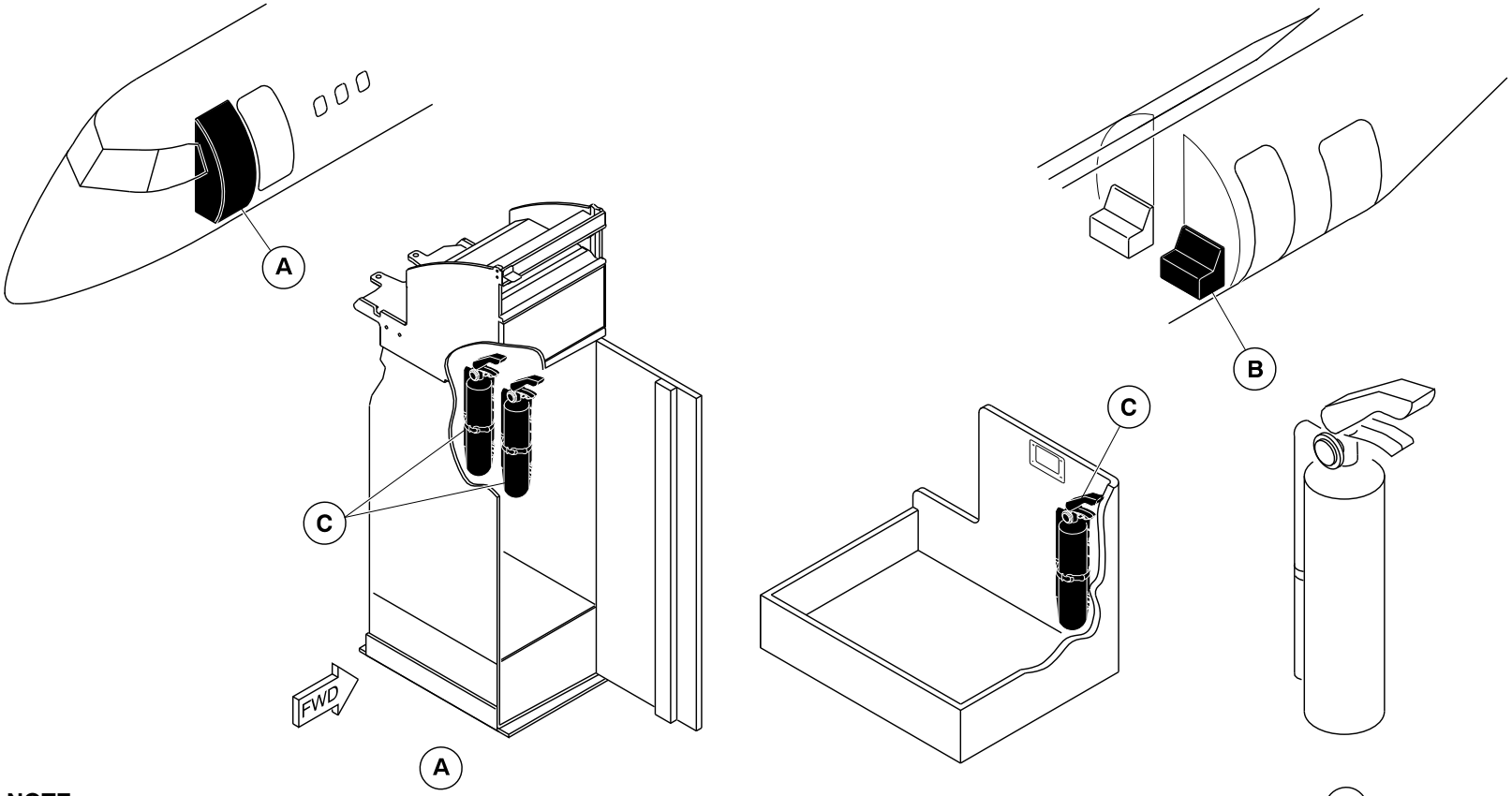
cg5132a01.dg, rc/nn, may22/2018

Hand Held Fire Extinguishers
Figure 17



cg5472a01.dg, kb, nov29/2018

Portable Hand – Operated Fire Extinguishers
Figure 18

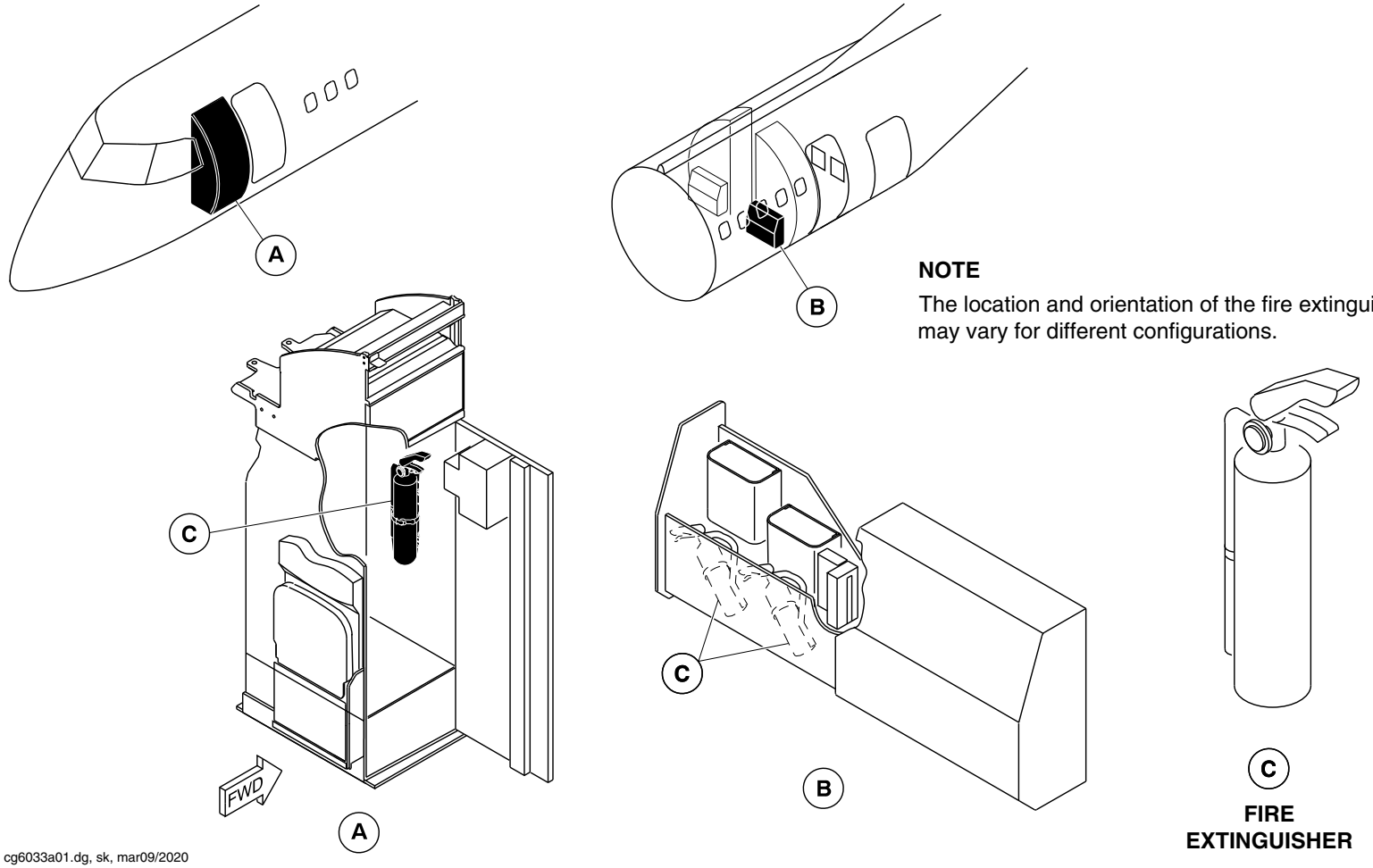


NOTE

The location and orientation of the fire extinguisher may vary for different configurations.

cg5502a01.dg, nn, dec31/2018

Hand Held Fire Extinguishers
Figure 19



NOTE

The location and orientation of the fire extinguisher may vary for different configurations.

Hand Held Fire Extinguishers
Figure 20

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