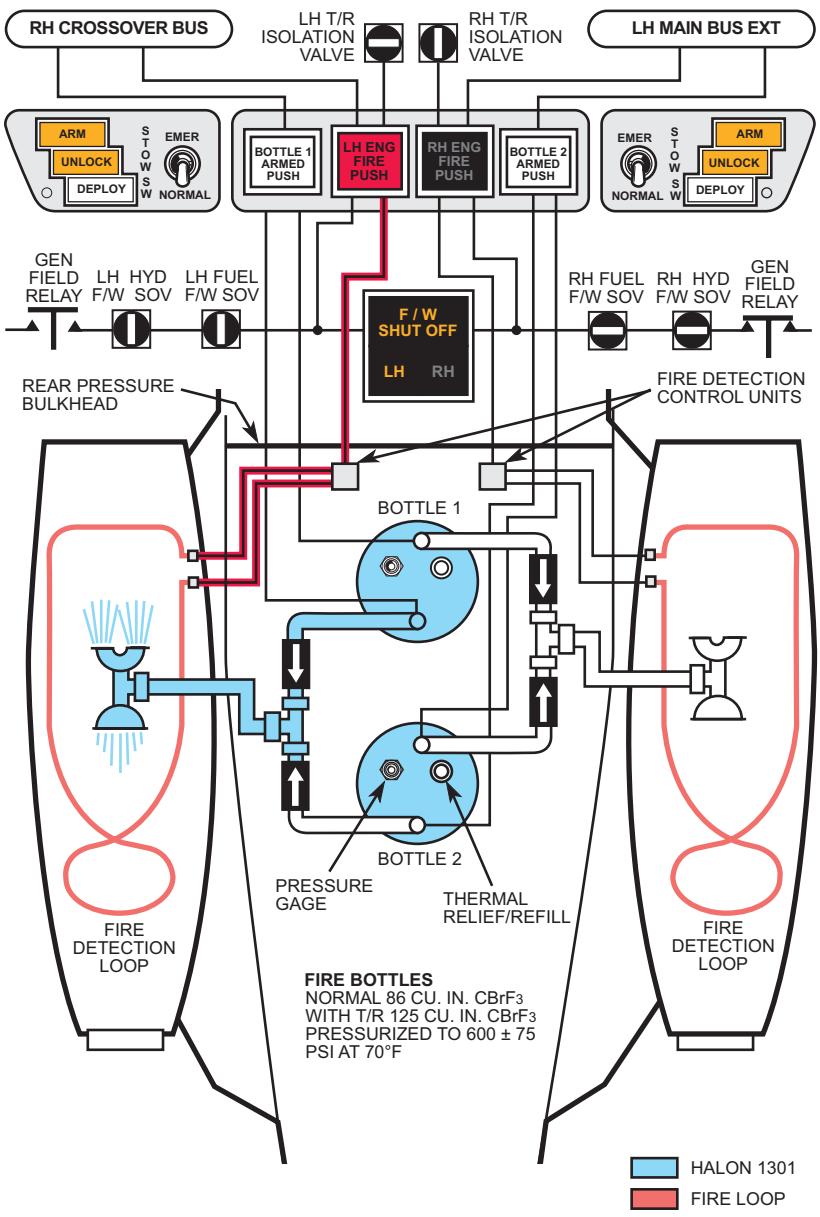


Fire Protection System



Engine Fire Detection

The closed-loop engine fire detection system consists of a detector control unit connected to a stainless steel sensor tube that wraps around the engine combustion and accessory sections. The sensor tube contains a 28V DC energized wire centered in a semi-conductor material. At normal operating temperatures, the material's resistance is high and current does not flow from the center wire to the outer casing.

As temperature increases, the material's resistance decreases until current flowing from the center wire to the outer casing energizes the detector control unit fire relay. The relay closes, the associated ENG FIRE PUSH switchlight illuminates, and the fire bell sounds (if installed).

Lifting the plastic guard and then pressing the illuminated ENG FIRE PUSH switchlight closes the fuel and hydraulic system shutoff valves, de-energizes the generator field relay, arms the fire extinguishing system, and isolates the thrust reversers (if installed).

Engine Fire Extinguishing

Two dual-head single-shot fire extinguisher bottles contain Halon 1301 (bromotrifluoromethane) pressurized to 600 ±75 PSI at 70°F (21°C) with nitrogen. Normal bottle capacity is 86 cubic inches. On **aircraft with thrust reversers**, the fire extinguisher bottles have a 125 cubic inch capacity. Each bottle also has a pressure gage and combination fill and pressure release valve. Abnormally high temperatures (approximately 210°F, 99°C) in the tailcone melt the pressure release valve's fusible check valve to release bottle contents into the tailcone.

Pressing the illuminated ENG FIRE PUSH switchlight arms the fire extinguishing system and illuminates the BOTTLE 1/2 ARMED PUSH switchlights. Pressing an illuminated BOTTLE 1/2 ARMED PUSH switchlight supplies 28V DC to fire the selected bottle's explosive cartridge for the affected engine. Pressurized nitrogen then carries the fire extinguishing agent from the bottle through distribution lines to the engine nacelle. When pressed, the respective BOTTLE 1/2 ARMED PUSH switchlight extinguishes.

If the ENG FIRE PUSH light remains illuminated after 30 seconds and completion of the fire checklist, pressing the other BOTTLE ARMED PUSH switchlight discharges the remaining bottle into the same engine nacelle.

Fire Protection

Power Source	CBrF ₃
Distribution	Each CBrF ₃ bottle to either engine via manifolds and spreader bar
Control	BOTTLE ARMED switchlights (1/2) ENG FIRE warning switchlights (L/R) Left Main Extension bus Right Crossover bus
Monitor	BOTTLE ARMED PUSH switchlights (1/2) CBrF ₃ bottle gages – fully charged bottle is 600 ±75 PSI at 70°F. ENG FIRE warning switchlights (L/R) FIREWALL SHUTOFF annunciators (L/R)
Protection	Fire detect control units (L/R) Fire detection loops (L/R) Firewall shutoff valves (closed) Fuel Hydraulic Thrust reverser isolation valve (closed)

