

Chap.5. FIRE PROTECTION SYSTEMS

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DESCRIPTION AND OPERATION

POWER UNIT SYSTEM (fig.1)

1. Two bottles are fitted in each engine nacelle, one 12 lb. bottle for the engine spray installation and one 6 lb. bottle for the air-intake installation. Pipes from each bottle are taken to unions on the firewalls (relevant illustration Section 4, Chapter 1). A description of the piping to the sprays and to the air-intakes is given in A.P.4275A, Vol.1.

Automatic operation

2. Two inertia switches are mounted in the nose of the aircraft and operate the system if the aircraft crashes and the impact causes sufficient deceleration. Both bottles are then discharged into their respective systems. For details of the electrical system associated with these switches, refer to Sect.5, Chapter 1. Automatic operation is also initiated if, when the engine is on fire, the propeller

is feathered. The engine air-intake extinguisher system is operated immediately and after a short interval, the engine spray system is operated.

Manual operation

3. Instantaneous operation of each complete power unit installation is initiated by operating the relevant push-button of four, mounted on the pilot's panel. These

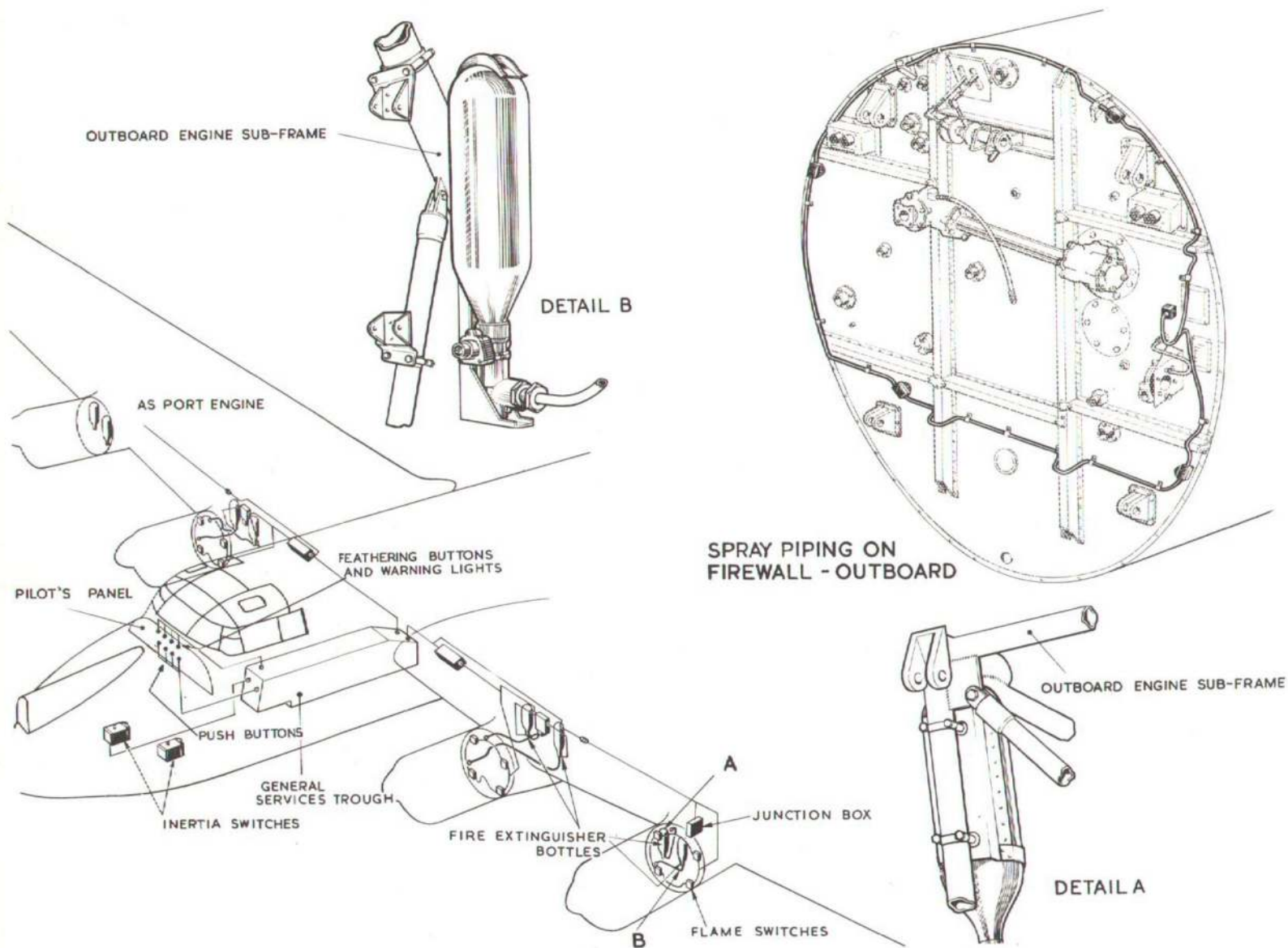


Fig. 1. Fire-extinguisher system—power units.

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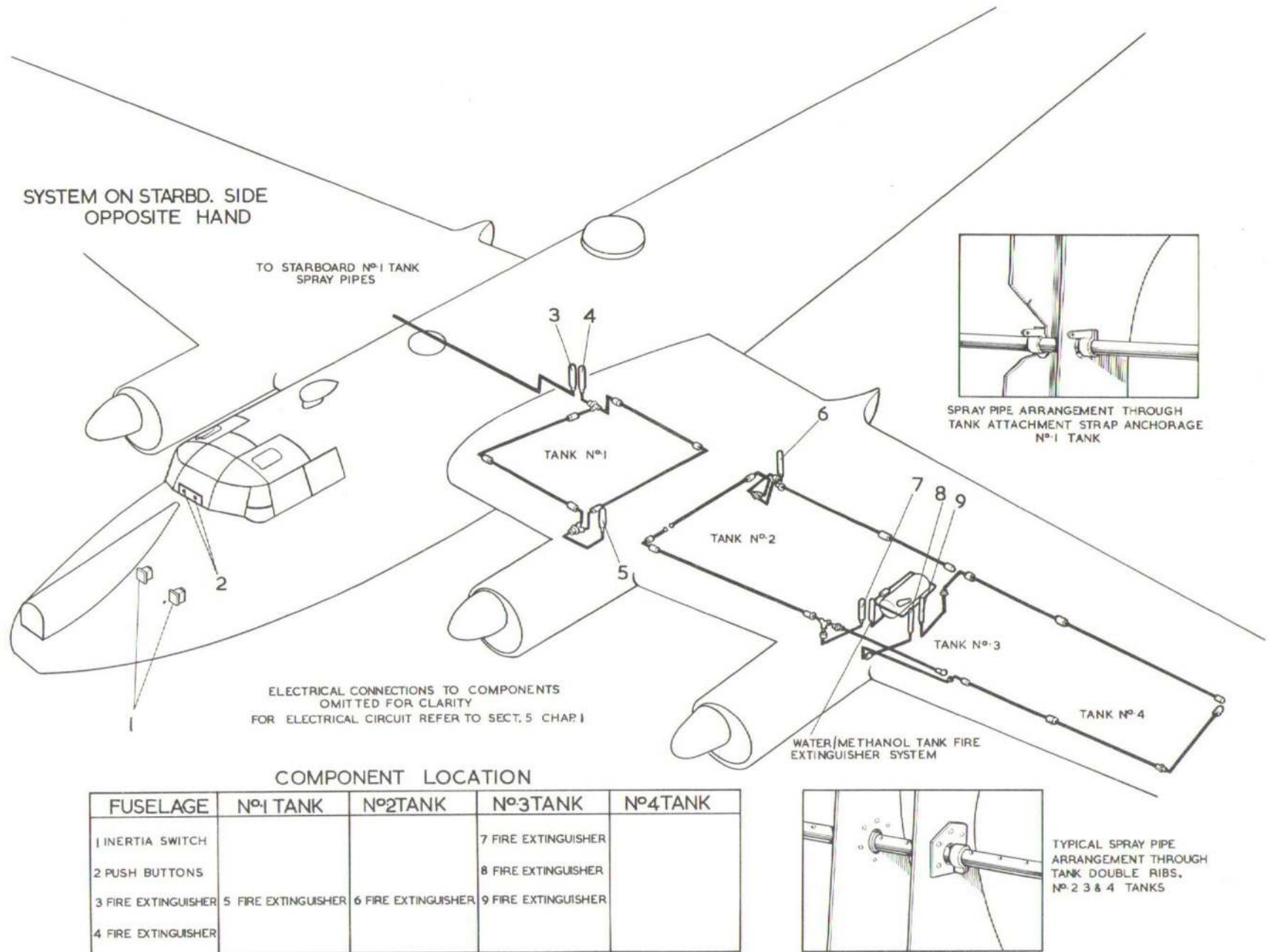


Fig.2. Fire-extinguisher system - fuel tanks.

(Removal of flame cords)

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TABLE 1

Fire protection components

Location	Qty.	Type	Ref. No.	Empty Weight	Full Weight (with cartridge)	Charge Pressure p.s.i.
ENGINE SYSTEM						
Firewalls (1 each)	4	Graviner Mk.12A (Methyl-bromide)	27N/100	3 lb. 13 oz. ± 2½ oz.	10 lb. 1 oz. ± 3½ oz.	250
Firewalls (1 each)	4	Graviner Mk.13A (Methyl-bromide)	27N/99	6 lb. 1 oz. ± 2½ oz.	18 lb. 4½ oz. ± 3½ oz.	250
FUEL TANK SYSTEM						
Fuselage C.S. (port)	2	Graviner Mk.12A (Methyl-bromide)	27N/100	3 lb. 13 oz. ± 2½ oz.	10 lb. 1 oz. ± 3½ oz.	250
Tank No.1 (one each side)	2	Graviner Mk.12A (Methyl-bromide)	27N/100	3 lb. 13 oz. ± 2½ oz.	10 lb. 1 oz. ± 3½ oz.	250
Tank No.2 (one each side)	2	Graviner Mk.12A (Methyl-bromide)	27N/100	3 lb. 13 oz. ± 2½ oz.	10 lb. 1 oz. ± 3½ oz.	250
Tank No.3 (three each side)	6	Graviner Mk.12A (Methyl-bromide)	27N/100	3 lb. 13 oz. ± 2½ oz.	10 lb. 1 oz. ± 3½ oz.	250
Water/methanol tank (one each side)	2	Graviner Mk.12A (Methyl-bromide)	27N/100	3 lb. 13 oz. ± 2½ oz.	10 lb. 1 oz. ± 3½ oz.	250
HAND OPERATED EXTINGUISHERS						
Between formers K and L (port side)	1	Graviner Mk.25H (Methyl-bromide)	27N/84	2 lb. 11 oz. ± 2 oz.	5 lb. 3 oz. ± 3 oz.	60
Former 1 (roof)	1	Graviner Mk.25H (Methyl-bromide)	27N/84	2 lb. 11 oz. ± 2 oz.	5 lb. 3 oz. ± 3 oz.	60
Between formers 5 and 6 (starboard)	1	Graviner Mk.25H (Methyl-bromide)	27N/84	2 lb. 11 oz. ± 2 oz.	5 lb. 3 oz. ± 3 oz.	60
Between formers 13 and 14 (starboard)	1	Graviner Mk.25H (Methyl-bromide)	27N/84	2 lb. 11 oz. ± 2 oz.	5 lb. 3 oz. ± 3 oz.	60
Main access door (starboard)	1	Graviner Mk.25H (Methyl-bromide)	27N/84	2 lb. 11 oz. ± 2 oz.	5 lb. 3 oz. ± 3 oz.	60

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buttons are guarded against inadvertent operation by red-painted hinged covers.

Fire warning system

4. A red warning light is incorporated in each propeller feathering push-button. Eight flame switches are positioned at suitable points in each power unit and connected to the warning system. Warning of fire in any power unit is given by the continuous lighting of the associated warning light.

FUEL TANKS SYSTEMS (fig.2)

5. Fire protection for the fuel tanks, including the water/methanol fluid tanks, is provided by a methyl-bromide system. Twelve bottles for the fuel tanks and one for each water/methanol fluid tank are installed as shown in the illustration.

Piping from which the methyl-bromide is sprayed when the system is operated, is run round the tank compartments from the supply bottles.

Automatic operation

6. Automatic operation of the fuel tanks system in event of the aircraft crashing, is by two inertia switches in the nose. For details of the electrical system associated with these switches, refer to Sect.5, Chapter 1.

Manual operation

7. Two push-buttons are provided on the upper centre portion of the pilots' panel, one for the port tanks and one for the starboard tanks. Either side of the system operates immediately its associated push-button is pressed.

SERVICING

General

8. The following table gives the references under which details of servicing the fire protection systems will be found in A.P.957C, Vol.1 and 6.

Description	Section	Chapter
Power unit	3	2
Fuel tanks	3	3
Extinguishers	3	4

REMOVAL AND ASSEMBLY

General

9. Access to the components of the system is gained by removing cowling panels in the case of the power unit, or

an outboard rear nacelle fairing in the case of a water/methanol fluid tank installation. Refer to Sect.4, Chapter 1. In the case of the fuel tank systems, the

associated tanks must be removed (Sect.4, Chapter 2). Removal of components from clips and other mountings follows standard procedure.



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