OLYMPUS 201 SERIES

Section 17

INTRODUCTION TO THE AIRCRAFT

1. General Appearance

The Vulcan B/K Mk. 2 is a tailless, delta wing all metal bomber. Powered by four Olympus 201 turbo-jet engines, it has long range, fast cruising speed, and high operational ceiling. The load is heavy and variable, e.g. supply panniers, bombs and additional fuel tanks. There is no defensive armament on this aeroplane.

2. Fuselage

Four sections comprise the fuselage:-

(a) The nose fairing provides a mounting for the flight refuelling probe and radar scanner.

(b) The front section forms the crew's pressure cabin. The entrance door, air bombers, blister and cockpit canopy are fitted here.

(c) The centre section is integral with the main planes and forms the bomb bay, engine bays, fuel tank bays and nose wheel bay.

(d) The rear section forms the jet pipe and caps, and the tail warning radar scanner cone. Five crew members are carried, the two pilots sitting side by side in the cockpit, which is a raised platform at the forward end of the cabin. The remaining crew members sit side by side facing aft at a single table the full width of the cabin. This is known as the crews compartment. The entrance door carries its own folding ladder. A further moveable ladder gives access to the cockpit from the crew compartment.

3. Control Surfaces

Control of the aircraft is effected by four elevons in each wing and by a single rudder. Each elevon is operated by its own electrohydraulic power unit (P.F.C.'s) the rudder has two P.F.C.'s. Air brakes, above and below the engine air intakes, are provided. The pilots control is a single grip handle and rudder pedals. Incorporated within the P.F.C.'s is a device which will simulate the feel of the airflow on the control surfaces.

4. Systems

(a) A hydraulic system operates the undercarriage retraction, bomb doors, wheel brakes and nose wheel steering. Three pumps are provided on numbers 1, 2 and 3 engines.

(b) A compressed air system used for the emergency lowering of the undercarriage, opening and closing the entrance door and the initial movement when jettisioning the canopy.

(c) An air conditioning system to maintain the air in the cabin at reasonable temperatures and pressures. An extension of this system allows ventilated suits to be worn by each crew member.

(d) A thermal de-icing system provides against ice formation on wing, fin and engine air intakes. De-icing fluid is provided for windscreens.

/(e) The fuel

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(e) The fuel system comprises 14 bag type fuel tanks. Four of which are in the fuselage and five in each wing. All tanks are pressurised. Refuelling is carried out under pressure.

5. Electrical Power

Supplied by four engine driven alternators at 200 volts A.C., 400 c/s. By transformers and rectifiers this supply is changed to 115 volts A.C., 1600 c/s, 115 volts A.C., 400 c/s and 28 volts D.C. For emergencies a Ram Air Turbine driven alternator and or an Airborne Auxiliary Power Pack is used. Ground supply plugs, one for 200 volts A.C. and two for 28 volts D.C. are provided.