

I N T R O D U C T I O N

1. The HUNTER F MK.6 is a single-seat, mid-wing fighter aircraft with swept-back wings, variable incidence tail plane, power-operated aileron and elevator controls and cabin pressurisation. It is powered by a Rolls-Royce Avon 203 turbo-jet engine with a fifteen stage axial flow compressor. The engine is installed centrally within the fuselage with its air intakes in the leading edges of the stub wings and a straight through jet pipe exhausting at the fuselage tail end. The armament consists of four electrically-fired and controlled 30 mm. Aden guns carried together with their ammunition, in a removable, pre-armed armament package located in the underside of the front fuselage. The guns are sighted through the medium of a Mk.5 gyro gun sight. The gun sight, which is provided with a manual or radar ranging control, is carried above the centre instrument panel on a retractable mounting. A cine camera, which normally operates in conjunction with the guns, but can be operated separately if desired, is installed in the extreme nose of the aircraft. Universal pylons, to support overload fuel or external stores according to the aircraft's operational duties, are installed under each wing.

2. The pressurised cabin, which accommodates a fully automatic ejector seat, complete with survival equipment, is protected forward of the pilot by heavy plating. It is provided with an electrically-operated hood which slides rearwards for entry and exit. In an emergency, the hood

may be jettisoned. The flying controls are of normal stick and rudder bar type and operate the control surfaces by push-pull tubes. The rudder and port aileron are provided with small electrically-operated trim tabs controllable from the cabin.

3. The fuselage is a monocoque structure manufactured in three main portions, front, centre and rear. The front fuselage, which is provided with a detachable nose piece, is reinforced by a keel member and four longerons, while the centre fuselage and stub wings, housing the air intakes, are built as an integral unit. The rear fuselage is constructed with the lower portion of the fin as an integral part and is terminated by a detachable tail cone.

4. The engine is mounted in the centre fuselage structure at four attachment points. The forward points, located on either side, are suspension linkages which pick up with the engine compressor casing. The rear attachment points consist of swivel bearings and caps at frame 40A which engage with trunnions on the engine turbine nozzle box. An engine-driven gearbox is mounted forward of the rear spar frame. The drive for the gearbox is taken from the engine by a shaft to a turret and thence by means of another shaft to the rear of the gear-box. The gearbox drives the hydraulic pump and two generators which, together, supply all the

hydraulic and electrical power for the aircraft's services. A fire extinguishing system is provided, which is operated manually from the cabin, or automatically in the event of a crash landing.

5. The swept back outer wings are two-spar stressed-skin structures covered with heavy gauge skin which ensures a perfectly smooth finish and gives the necessary stiffness with a minimum of internal structure. Each wing is attached to the fuselage stub wings by joint pins and high-tensile steel plug-ends at the front and rear spars. Electro-hydraulically operated split trailing edge landing flaps extend along the underside of each wing to the inboard ends of the ailerons. The ailerons are conventional structures, their operation being assisted by hydraulically-operated booster jacks installed in the wings.

6. The tail plane is a multi-spar swept back structure built in one piece. Virtually sandwiched between the upper and lower portions of the fin, it has limited movement to allow for variable incidence. It is hinged at the rear spar and is raised or lowered at the leading edge by means of an electric actuator controllable from the cabin. The elevators are of conventional design, their operation being assisted by a hydraulic booster jack located in the fin. The upper portion of the fin is a two-spar structure attached to the lower part, which is integral with the rear fuselage. The attachments are at the front and rear spars. The rudder is hinged to the upper portion of the fin. An air brake, which when in the closed position embraces the underside of the rear fuselage, is fitted to this aircraft.

7. The tricycle alighting gear is electro-hydraulically operated, all three units being of the liquid spring shock-absorber type. The main wheel units are fitted with hydraulically-operated brakes which operate differentially in conjunction with the

rudder bar, and the nose wheel is fully castoring and self-centring during retraction. The nose wheel retracts forward into the fuselage immediately in front of the cabin and the two main wheels retract inwardly into each outer wing. When retracted all three units are totally enclosed within the structure by fairings and are locked up by catches on these fairings. When extended, the main wheels are locked down by internal mechanical locks in the hydraulic jacks. The nose wheel is locked down by a mechanical lock at the top of the leg. The attitude of all the units is shown by an electrically-operated indicator in the cabin.

8. The fuel is contained in flexible bag-type tanks installed in the fuselage and in each outer wing. Two of the fuselage tanks are mounted in the centre fuselage forward of the engine and the other two in the rear fuselage, where they surround the jet pipe. The wing tanks are installed in the leading edge of each outer wing just outboard of the wing root. Provision is also made, on universal pylons, for the installation of drop tanks, which when installed feed fuel to the wing tanks by air pressure supplied by the fuel transfer system. The system is refuelled and defuelled through a standard refuelling valve located in the port wheel bay and the fuel is fed to the engine from the two front tanks, being transferred to these tanks from the other tanks by air pressure taken from the engine compressor. Matched electrically-driven booster pumps are installed in each front tank to supplement the engine-driven pumps and to ensure correct distribution of fuel in each side of the system. To ensure an adequate supply of fuel under negative 'g' conditions, a recuperator is accommodated in each front tank.

9. A pressure demand oxygen system, utilising two high pressure oxygen cylinders installed in the starboard side of the nose wheel bay, with an in-situ charging valve mounted below them, is incorporated in this aircraft. The regulator, together with a gauge

indicating the contents of the oxygen cylinders is mounted in the cabin, the supply pipe from the regulator being taken to a quick-release connection on the ejector seat. An emergency bottle, fitted to the dinghy pack, is automatically brought into operation when ejection action is taken. The emergency system may also be used if the main oxygen system fails.

10. The radio equipment consists of a twin V.H.F. communication installation, while the radar

equipment consists of a D.M.E. navigational aid, an automatic I.F.F. installation and a radar ranging installation. All the transmitter-receivers are carried in the radio bay located in the front fuselage just forward of the transport joint while the radar head and ranging unit are situated in the nose of the aircraft. The equipment is remotely controlled from the cabin.

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