

A.P. 4347 F VOL. I (DRAFT)

HUNTER F Mk.6
GENERAL & TECHNICAL
INFORMATION

HAWKER AIRCRAFT LIMITED

AMENDMENT RECORD SHEET

Incorporation of an Amendment List in this publication is to be recorded by signing in the appropriate column and inserting the date of making the amendments.

A.L. No	AMENDED BY	DATE
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3	A. H. Hawes	1/5/56
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6	Role Yong	13/9/56
7	Role Yong	13/9/56
8	Role Yong	11/1/57
9	Role Yong	14/2/57
10	Role Yong	10/5/57
11	Role Yong	0/5/57
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N. V. KONINKLIJKE NEDERLANDSE
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Klasse R. Dienstgeheim

HUNTER F.MK.6

AIRCRAFT

GENERAL AND TECHNICAL INFORMATION

C O N T E N T S

Leading particulars
Introduction

Section 1 - Controls and exits	Chapter 1 - Pilot's controls and equipment 2 - Not applicable 3 - Emergency controls, equipment and exit.
Section 2 - Ground handling and preparation for flight	Chapter 1 - Ground handling 2 - Preparation for flight 3 - Loading and C.G. data 4 - General servicing
Section 3 - Airframe..	Chapter 1 - Fuselage 2 - Main planes 3 - Tail unit 4 - Flying controls 5 - Alighting gear 6 - Hydraulic system 7 - Not applicable 8 - Air conditioning system 9 - De-icing system 10 - Oxygen system 11 - Emergency system 12 - Not applicable 13 - Anti 'G' system
Section 4 - Power unit installation... ..	Chapter 1 - Power unit 2 - Fuel system 3 - Not applicable 4 - Not applicable 5 - Fire protection system
Section 5 - Electrical system and instrument installation	Chapter 1 - Electrical system 2 - Instrument installation

Section 6 - Radio installation	Chapter 1 - Wireless installation
	2 - Radar installation
Section 7 - Armament installation	Chapter 1 - Pyrotechnics
	2 - R.P. equipment
	3 - Guns
	4 - Bombing equipment

(A detailed contents list is given at the beginning of each Section or Chapter)

LEADING PARTICULARS

NAME HUNTER F.MK.6
 TYPE SINGLE SEAT, SINGLE-ENGINE, MID-WING
 LAND-BASED MONOPLANE
 DUTY INTERCEPTOR FIGHTER

MAIN DIMENSIONS

Refer to the general arrangement illustration

MAIN PLANES

Aerofoil section Hawker symmetrical .085 t/c
 at 37.5% of chord
 Mean chord 10.2 ft.
 Aspect ratio 3.33
 Incidence + 1 deg. 30 min.
 Dihedral - 1 deg.
 Angle of sweepback at 25% of chord 39.9 deg.

TAIL PLANE

Aerofoil section Hawker symmetrical .08 t/c
 at 34% of chord.
 Mean chord. 4.55 ft.
 Incidence Variable
 Dihedral Nil
 Angle of sweepback at 25% of chord 41.9 deg.

AREAS

Wings, with ailerons and flaps - gross 340 sq.ft.
 Ailerons, nett total 26.52 sq.ft.

Flaps, landing - gross	31.2 sq.ft.
Tail plane, with elevators - gross	53.9 sq.ft.
Elevators - gross	16.3 sq.ft.
Fin with rudder and tab - gross	35 sq.ft.
Rudder, with tab	6.1 sq.ft.
Rudder, tab	0.4 sq.ft.

RANGE OF MOVEMENT AND SETTING OF CONTROL SURFACES
Refer to Section 3, Chapter 4, fig.8

ALIGHTING GEAR
Main Wheel Units

Type	Two cantilever units, retracting inwards
Track	14.75 ft.
Shock-absorber struts	
Type	Dowty liquid-spring (Part No. E.7900.Y.A/B)
Fluid used	OM-15 (Stores Ref.34B/159)
Pressure	(Refer to A.P.1803E, Vol.1)
Wheels	
Type	Dunlop A.H.50207
Tyres	Dunlop (29 in. x 6.75 in. - 16 in) Code D.R.1821
Tubes	Dunlop Code D.T.1808
Inflation pressure	Refer to Servicing Schedule
Brakes	
Type	Dunlop hydraulic A.H.50247 and 8
Working pressure	1,500 lb. per sq.in.

Nose Wheel Unit

Type	One cantilever unit, retracting forward
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Fuel filter de-icing	
Pump	F.P.MK.3, Stores Ref.5UE/4698
Tank capacity	1 gallon
Fluid.	A.L.8 Stores Ref.34B/720
Oil	
Engine	
Specification	<i>(Stores Ref 34A/266)</i> OX-38 (Stores Ref. 34A/206)
Quantity (carried in engine sump)	9 $\frac{1}{2}$ pints approx.
Accessory gear box	
Specification	OX-38 <i>(Stores Ref 34A/266)</i> O.E.P-71 (Stores Ref. 34A/206)
Capacity.	2 $\frac{1}{2}$ pints
Turret (vertical drive arm)	
Specification.	OX-38 <i>(Stores Ref. 34A/266)</i> O.E.P-71 (Stores Ref. 34A/206)
Capacity	$\frac{3}{4}$ pint
Cold air unit	
Specification	OX-38 (Stores Ref.34A/266)

HYDRAULIC SYSTEM

Type	High pressure
Components.	Dowty
Services operated	Alighting gear, wheel brakes landing flaps, air brake and power controls.
Pump	Dowty Part No.A.8003Y/RH/3,000
Fluid	OM-15 (Stores Ref.34B/159)
Accumulator inflation pressures	
Aileron and elevator	1,575 lb. per sq.in.
Wheel brakes	750 lb. per sq.in.
Emergency air bottle pressures	
Alighting gear and flaps.	2,000 lb. per sq.in.
Relief valve blow-off pressures	
Hand pump	2,800 \pm 100 lb. per sq.in.
Flaps	3,000 \pm 50 lb. per sq.in. -500
Thermal relief valves	4,000 to 4,150 and 3,100 to 3,250 lb. per sq.in.

ELECTRICAL SYSTEM

Voltage..	24 normal
Generators (2)	Type 517 (Stores Ref.5UA/6088)
Voltage regulators (2)	Type 94 (Stores Ref.5UC/5937)
Cut-out units (2)	Differential, Type A, Mk.2 (Stores Ref.5CY/4211)
Batteries (2)	Type C, 12 volt, 25 amp. (Joint Service 6140/101532)

WIRELESS

V.H.F.	T.R.1934/1935 or T.R.1985/1986 twin installation (A.R.I.5490)
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RADAR

D.M.E.	T.3708 (A.R.I.5849)
I.F.F.	R.3121A (A.R.I.5131A)
Radar ranging	(A.R.I.5820)

ANTI-'G' SYSTEM

Air bottles (2)	Dunlop ACM/16782
Capacity..	110 in. each
Anti-'G' valve	Hymatic Type AG.2 (Stores Ref.27VB/3254)
Pressure reducing valve	Palmer Type C.58 (Stores Ref.27VC/27)
Selector valve	Hymatic Type SV.9 (Stores Ref.27VB/3441)
In-situ charging pressure	1,800 to 2,000 lb. per sq.in.

DE-ICING SYSTEM

Windscreen de-icing *Cancelled by mod 501*

Tank capacity	4.5 pints	TYPE D.1., MK.2.
Pump	Self priming pump	Pt. No. EKS. 6496
Fluid	AL-8	(Stores Ref. 34B/720)

OXYGEN SYSTEM

Cylinders (2)	Mk.5D (Stores Ref.6D/1383E)
Capacity	750 litres each
Pressure reducing valve	Mk.1 (Stores Ref.6D/1616)
Regulator	Mk.17B (Stores Ref.6D/1710) or Mk.17 (Stores Ref.6D/1700)
Charging pressure (in-situ)	1,800 lb. per sq.in.

AIR CONDITIONING SYSTEM

Cold air unit	Sir G. Godfrey Ltd, ACRE 9 Mk.6 W (Stores Ref.27UA/401)
Pre-cooler	Marston-Excelsior D.119-5A
Intercooler	Marston-Excelsior D.119-6A

FIRE PROTECTION SYSTEM

Extinguisher bottle (2)	Mk.12A (Stores Ref.27N/100) Mk.13A (Stores Ref.27N/99)
Flame switches (12)	Mk.4. No.HS/RS/300 (Stores Ref.27N/91)
Inertia switches (2)	Mk.1 (Stores Ref.27N/93)

SEAT

Ejection type	Martin Baker Mk.2H (Stores Ref.27L/50018)
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ARMAMENT

Pre-armed gun package	
Type of guns	Aden 30 m.m.
Number of guns	Four (two right-hand, two left hand)
Control	Electrical
Firing mechanisms	Electrical
Number of rounds per gun	150
Total number of rounds	600
Gun cocking	Pneumatic (ground supply)
Universal pylon	
Number.. . . .	One under each wing
R.P. (to be issued later)	

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.

PILOT'S EJECTION SEAT

WARNING

1. An ejection seat is a potential danger to personnel and aircraft. If the firing mechanism is inadvertently operated while the aircraft is on the ground the seat will be ejected, serious injury (possibly fatal) may be caused to any person in or leaning into the cabin and damage will be done to the aircraft.
2. The following instructions must therefore be obeyed implicitly:-

Before attempting to enter the cabin, report to the N.C.O. immediately in charge of aircraft servicing (R.A.F.) or to the ordnance supervisory rating (R.N.), who will ensure that the seat is safe for the purpose required.

3. Full instructions for rendering the seat safe are contained in the A.P.4288 series, in A.D.5307, and in the A.D.6038 series.



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DO NOT TOUCH ENGINE TO MOVE STAND

DO NOT TOW
DO NOT USE STEERING BAR