

LETHAL WARNINGS

ASSISTED ESCAPE SYSTEM

1. Ejection seats and canopy jettison mechanisms are sources of potential danger to personnel and of damage to the aircraft. Serious (*possibly fatal*) injury may result if any firing mechanisms are inadvertently operated whilst the aircraft is on the ground.

2. The following instructions detailing the responsibilities and positioning of the assisted escape system safety devices are to be strictly adhered to:-

R.N. Safety precautions contained in A.P.(N) 140 - Naval Aircraft Maintenance Manual.

R.A.F. Lethal Warnings contained in the A.P.101B-1000-5A2, Safety and Servicing Notes.

3. Additional information concerning assisted escape system safety device positioning is to be found in the Aircraft Servicing Schedules and 109B series of Air Diagrams.

H.E. IGNITION UNITS

1. In certain circumstances the energy stored in the capacitors embodied in the H.E. ignition units may be of a lethal nature.

2. As a safety precaution, it is essential, after disconnecting the L.T. plug, to wait for at least one minute before handling the unit.

HIGH VOLTAGE ELECTRICAL SYSTEMS

Voltages in excess of 30 volts (R.M.S.) a.c. or 50 volts d.c. can in certain circumstances be lethal. When working on such systems requiring the exposure of live terminals, a second tradesman is always to be in attendance.

ARMAMENT INSTALLATIONS

1. The ARMAMENT SAFETY BREAK key must be inserted and turned to SAFE, immediately following engine shut-down after every flight, and must remain in - except during certain armament electrical tests - until just before flight.



ARMAMENT ELECTRICAL SAFETY ARRANGEMENTS

1. The following is a brief description of the basic armament electrical safety arrangements of the aircraft, together with details of their application. The armament electrical circuit is protected against accident by two basic safety arrangements. These are:-

- (a) A SAFETY RELAY, which will not operate until alighting gear UP has been selected.
- (b) An ARMAMENT SAFETY BREAK, which must be left safe (key inserted) until just before flight and made safe after flight immediately after engine shut-down. For circuit testing, refer to para.3.

A GROUND ARMING LINK key is provided as an item of ground equipment, for use when it is necessary to test the armament circuits.

Application of the ARMAMENT SAFETY BREAK and the GROUND ARMING LINK key

2. The circuits are affected by use of these items as follows:-
 - (a) With the ARMAMENT SAFETY BREAK key removed, and the GROUND ARMING LINK key inserted, all the armament circuits are operative.

(continued overleaf)

- (b) With the ARMAMENT SAFETY BREAK key removed, and the GROUND ARMING LINK key removed, there is a supply to the EJECTOR RELEASE UNITS.
- (c) With the ARMAMENT SAFETY BREAK key inserted, and the GROUND ARMING LINK key removed, the whole of the armament circuit is inoperative.

Preparation of the aircraft for armament circuit tests

3. In preparation for these tests, the ARMAMENT SAFETY BREAK key must be removed, and the GROUND ARMING LINK key must be inserted. Before doing this, it is essential to ensure that:-

- (a) All but dummy guided-missile rounds are off-loaded or made safe by replacement of the firing links in the missile bodies with safety plugs. These are stowed in the missile pack and are accessible after removal of a quick-release panel on each side.
- (b) Ejector release unit safety plugs are fitted in the breech end of the units in replacement of the electrical supply plugs.

Note. . .

The ejector release unit safety plugs must be fitted immediately after engine shut-down and must remain in position whether or not the guided-weapon pack is fitted to the aircraft. They are only to be replaced by the electrical supply plugs just before flight.

4. Upon completion of the circuit tests, the ARMAMENT SAFETY BREAK key must be inserted, and the GROUND ARMING LINK key removed.

A.I. RADAR

Emission of microwave radiation from the A.I. equipment constitutes a hazard to personnel, and radar tradesmen must ensure that a semi-circular area of 50 feet radius in front of the aircraft is roped off and that KEEP CLEAR notices are displayed prior to and during testing of the radar equipment in the radome.

On no account must the A.I. radar equipment be switched on inside the hangar as this may cause damage to the receiver unit.

CANOPY SAFETY LOCK

The safety lock must always be fitted to the canopy jack when the canopy is to remain open during servicing.

CANOPY RISK OF FIRE

In sunlight an open canopy can act as a reflector lens causing a cockpit fire. Aircraft must not be parked directly facing the sun with the canopy left open.

HEARING CONSERVATION – ENGINE GROUND RUNNING

When ground running the engines, personnel should avoid if possible the areas of a high decibel level as shown in the NOISE CONTOURS graph.

Note. . .

The noise contours in the graph are estimated. Such conditions as throttle settings, obstructions, reflections and weather conditions can cause the contours to vary.

NOTE TO READERS

The subject matter of this publication may be affected by Defence Council Instructions, Servicing schedules (Vol.5), or 'General Orders and Modifications' leaflets in this A.P., in the associated publications listed overleaf, or even in some others. If possible, Amendment Lists are issued to correct this publication accordingly, but it is not always practicable to do so. When an Instruction, Servicing schedule or leaflet contradicts any portion of this publication, the Instruction, Servicing schedule or leaflet is to be taken as the overriding authority.

The inclusion of references to items of equipment does not constitute authority for demanding the items.

Each leaf, except the original issue of preliminaries, bears the date of issue and the number of the Amendment List with which it was issued. New or amended technical matter will be indicated by triangles positioned in text thus:◀ — — — ▶ to show the extent of amended text, and thus: - ▶◀ to show where text has been deleted. When a Section, or Chapter is issued in a completely revised form, the triangles will not appear.

If more than one copy of this publication is held, each set of covers should be given a copy number and kept together.

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LIST OF ASSOCIATED AIR PUBLICATIONS AND AIR DIAGRAMS

	A.P.
Aircraft, R.A.F., engineering	101A or 1464D series
Air data system, Mk.2	112F-0007
AI23D	114C-0200
Armament servicing and testing equipment	110T or 4483A series
Avon Mk.30100 series engine change units and associated jet pipes	112C-1520
Avon Mk.30201 engine change units	102C-1523
Cameras and accessories, air	112P or 1355C series
Cine cameras and accessories	112P or 1355D series
Combustion starters, aero engines	103D or 1181B series
Control column handles	113D-1607
Ejection seats and escape equipment	109 or 4288 series
Electrical manual	113 or 4343 series
Explosives operated release and ejector units	110G or 1664E series
Fire detection, prevention, suppression and extinguishing equipment	107E series
Fuel system components	103B or 4282A series
Ground equipment - R.A.F., engineering	119F or 1464G series
Ground servicing equipment, data book	4306A
Guns, Aden 30 mm	1641S
Hydraulic and undercarriage equipment - British Messier	104 or 1803T series
Hydraulic and undercarriage equipment - Electro-Hydraulics	104 or 1803F series
Hydraulic and undercarriage equipment - miscellaneous	104 or 1803P series
Hydraulic equipment - Dowty	105B or 1803D series
Hydraulic equipment - Dowty Rotol	105B or 1803U series
Hydraulic equipment - Dunlop	105B or 1803S series
Hydraulic equipment - Integral... ..	105B or 1803J series
I.F.F./S.S.R.1520 (A.R.I.23134/3)	114J-0101
I.L.S. airborne equipment (A.R.I.18011)	116B-0408
Instrument manual - general instruments	112G or 1275A series
Instrument manual - light fighter sights	112E-0309
Instrument manual - navigation instruments	112B or 1275B series
Instrument manual - oxygen equipment... ..	107D or 1275G series
Instrument test and calibration, data book	112T-0001
Integrated flight instrument and control systems	112 or 4685 series
Lifting equipment and haulage accessories	119K or 2817A series
Liquid oxygen replenishing equipment	119F, 107D or 4765 series
Manually-operated release units	1664A

	A.P.
Master reference gyros Mk.2	112B-0306
Missile storage, preparation, transportation, loading and off-loading procedures	110A or 2852B series
Parachutes and parachute harness	109 or 1182 series
Pneumatic equipment - Dunlop	105C or 4303B series
Pneumatic equipment - Hymatic	105C or 4303C series
Pneumatic equipment - miscellaneous	105C or 4303Z series
Pneumatic equipment - Teddington	105C or 4303E series
Powered flying control units and equipment - Hobson	105D-0405
Pressure-cabin testing trolley	119F or 2306G series
Pressure fuelling equipment - aircraft	119F or 4511 series
Pressurizing and air-conditioning equipment	107B or 4340 series
Radar altimeter (A.R.I.23232)	116B-0215
Rotol accessory gearbox and drives... ..	110C or 2240A series
◀ Sonar locator beacon ARI 23329/1	116B-0907
Servicing diagrams	101B-1003/6-10 ▶
Stand-by U.H.F. transmitter-receiver	10056 ... 116D-0110
Tacan (A.R.I.18107)	116B-0304
Tanks, rigid, aircraft... ..	106B or 4117A series
Telebriefing (A.R.I.18012 and F.G.R.I.18013)	116N-0301
U.H.F. multi-channel transmitter-receiver	ARC52 116D-0134
U.H.F. homing installations (A.R.I.18120 series)	116B-0301
Undercarriage equipment - Dowty Rotol	104 or 1803V series
Weapon system - Firestreak	118C-0701
Weapon system - Red Top	118C-0601
Wheels, tyres and brakes, aircraft... ..	104 or 2337 series

	A.D.
Lubrication	101B-1003/6-D1
Flying controls	101B-1003/6-D2
Hydraulic system... ..	101B-1003/6-D3
Fuel system	101B-1006-D4
E.C.U. installation	101B-1003/5/6-D5
Jet efflux... ..	101B-1003/5/6-D6
Emergency controls	101B-1006-D8
Pressurizing and air conditioning	101B-1003/6-D10
Access panels	101B-1003/6-D11
Electrical installation	101B-1003/6-D12
Electrical locations	101B-1003/6-D13
Oxygen system	101B-1003/6-D16
Canopy mechanism and lubrication	101B-1003/6-D17

PREFACE

Because of the volume of the information given, A.P.101B-1003-1 is issued as two books, the breakdown being as follows:-

A.P.101B-1003-1A

Introduction

Leading particulars

Section 1 - Controls and exits

Section 2 - Ground handling and preparation for flight

Section 3 - Airframe

Section 4 - Power unit installation

Section 5 - Armament installation

A.P.101B-1003-1B

Introduction

Leading particulars

Section 6 - Electrical installation

Section 7 - Instrument installation

Section 8 - Wireless installation

Section 9 - Radar installation

MODIFICATIONS INCLUDED SUBSEQUENT TO STANDARD

Modification Number	Effect upon Publication	Incorporated by A.L. Number
4831	[Amends Preliminary matter Amends Sect.1, Chap.1 Amends Sect.2, Chap.3A Amends Sect.2, Chap.4 Amends Sect.3, Chap.1 Amends Sect.3, Chap.8D Amends Sect.5, Chap.7]	140
4846	Amends Sect.1, Chap.1	143
◀ 4828	[Amends Sect. 3, Chap. 10 Amends Sect. 3, Chap. 6 Amends Preliminary matter Amends Preliminary matter]	150
4837		
4844		
4839		▶

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SECTION 2 - GROUND HANDLING AND PREPARATION FOR FLIGHT	Chapter 1 - Ground handling Chapter 2 - Preparation for flight Chapter 3 - Loading and c.g. data, weighing, and fatigue index data Chapter 4 - General servicing Chapter 5 - <i>(Not applicable to this aircraft)</i> Chapter 6 - Procedures following hazardous incidents
SECTION 3 - AIRFRAME	Chapter 1 - Fuselage Chapter 2 - Main plane Chapter 3 - Tail unit Chapter 4 - Flying controls Chapter 5 - Alighting gear Chapter 6 - Hydraulic systems Chapter 7 - <i>(Not applicable to this aircraft)</i> Chapter 8 - Air systems Chapter 9 - <i>(Not applicable to this aircraft)</i> Chapter 10 - Oxygen system Chapter 11 - Emergency equipment Chapter 12 - <i>(Not applicable to this aircraft)</i> Chapter 13 - Braking parachute installation
SECTION 4 - POWER UNIT INSTALLATION	Chapter 1 - Power unit Chapter 2 - Fuel system Chapter 3 - <i>(Not applicable to this aircraft)</i> Chapter 4 - <i>(Not applicable to this aircraft)</i> Chapter 5 - Fire protection system Chapter 6 - <i>(Not applicable to this aircraft)</i>
SECTION 5 - ARMAMENT INSTALLATION	Chapter 1 - <i>(Not applicable to this aircraft)</i> Chapter 2 - <i>(Not applicable to this aircraft)</i> Chapter 3 - <i>(Not applicable to this aircraft)</i> Chapter 4 - <i>(Not applicable to this aircraft)</i> Chapter 5 - <i>(Not applicable to this aircraft)</i> Chapter 6 - <i>(Not applicable to this aircraft)</i> Chapter 7 - Guided weapon installation Chapter 8 - Harmonization

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LUBRICATION

THE LUBRICATION DIAGRAMS THROUGHOUT THE PUBLICATION SHOW ONLY SYMBOLS. REFERENCE SHOULD ALWAYS BE MADE TO THIS MARKER CARD FOR THE LUBRICANT REQUIRED AND THE METHOD OF APPLICATION.

METHOD OF APPLICATION SYMBOL

- ◆ LUBRICATED ON ASSEMBLY ONLY
- ◇ LUBRICATION UNNECESSARY E.G., OILITE BUSHES
- Ⓟ PRE-PACKED BEARINGS
- 🔫 GUN LUBRICATION
- 🛢 OILCAN
- 👤 HAND

SYMBOL	NOMENCLATURE	REFERENCE NO.	N.A.T.O. CODE NO.
○	OIL OX-14	(2 OZ.) 34B/9100589 (½ PINT) 34B/9100590	O-147
●	OIL OX-38	(1 GAL.) 34B/9100591 (45 GAL.) 34B/2201941	O-149
⊖	OIL OX-320	34D/2202126	O-218
+	GREASE XG-250	33H/9424829	S-736
◻	GREASE XG-271	34B/9100510	G-382
◼	GREASE XG-273	34B/9423151	G-357
◼	GREASE XG-276	34B/9425139	G-353
◻	GREASE XG-284	34B/9439321	G-366
◻	GREASE XG-287	34B/2241973	G-354
◻	GREASE XG-293	34B/2241797	G-395
◻	GREASE XG-300	34B/2201013	G-372
⊗	GREASE XG-315	(4 OZ.) 34B/2201438 (225 GRM.) 34B/2204466	G-394
▲	GREASE ZX-13	34B/9100528	S-720
	GREASE ZX-24	34B/9427802	S-718
Ⓜ G	GREASE ZX-38	34B/9437518	S-722
Ⓜ P	GREASE ZX-38	34B/9437518	S-722
⚠	GREASE ZX-30	34B/9440586	S-722

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INTRODUCTION

1. The Lightning F Mk.3 is a single-seat interceptor aircraft, of all-metal construction, powered by two fuselage-mounted, straight-flow, turbo-jet engines. The aircraft is capable of supersonic performance in most flight conditions. The leading and trailing edges of the mid-mounted main plane and the slab tail plane are highly swept, as is the leading edge of the single fin. Because of the high sweep-back of the main planes, the ailerons are positioned in what would correspond to the wing tips on less highly-swept main planes. Flying controls comprise ailerons, tail plane, rudder, air brakes, and trailing-edge flaps, all power-operated and irreversible. The alighting gear is of conventional tricycle design, the nose undercarriage retracting forward into the front fuselage, and the main wheel units retracting outboard into the main planes.

2. The structure is orthodox, except for some use of honeycomb-sandwich panelling, e.g. in the rudder, tail plane and ailerons. The fuselage is constructed in two units, the front unit containing the pressurized cockpit and engine air intake duct, and the rear unit the engines and jet pipes. The main planes are assembled to the rear fuselage as a single unit prior to final assembly of the complete fuselage. Access to the engines and items of equipment is gained through removable or hinged hatches, and numbered access panels, in the skin.

3. The nose is formed by the circular lip of the single air-intake duct and the conical centre-body which houses the A.I. radar. Aft of the nose, the intake duct dips to pass under the cockpit and then divides to form separate ducts to the two engines. Beneath the duct are the nose-undercarriage bay and a removable armament pack. The top of the duct is the lower limit of the pressurized cockpit area, the forward and aft limits being pressure bulkheads. Fixed windscreen panels and a jettisonable clam-shell canopy cover the cockpit, and a dorsal spine, housing miscellaneous equipment, extends aft from the canopy to the leading edge of the fin.

4. The engines are disposed one to the rear of, and above, the other. Their exhaust units are coupled, by intermediate jet pipes of different lengths, to reheat jet pipes which incorporate variable-area propelling nozzles projecting slightly beyond the aft end of the rear fuselage. A compartment in the under-surface of the fuselage, beneath the lower jet pipe, houses the ribbon-type brake parachute.

5. The major part of each main plane constitutes an integral fuel tank of irregular shape, extending almost from the centre-line of the aircraft. Part of the leading-edge structure forms a second fuel tank and the whole of the flap forms a third fuel tank. Additional fuel can be carried in a jettisonable ventral tank.

6. The fuel transfer system ensures that the ventral tank is emptied first by transfer to the port and starboard integral tanks. The port wing tank system feeds No.1 engine and the starboard wing tank system No.2; a wing-to-wing transfer system enables all fuel to be used when flying on one engine. In each wing tank system all fuel is transferred to a collector tank, normally by gravity feed augmented by two electrically-driven transfer pumps. From the collector tank fuel is fed to the associated engine H.P. pump and reheat pump by a double-ended booster pump driven by a fuel-draulic motor. One single connector on the port side of the fuselage enables all tanks to be pressure refuelled or defuelled.

7. Each of the three undercarriage units comprises an oleo-pneumatic shock-absorber strut and a single wheel, the strut being lowered and retracted by a hydraulic jack. The nose unit casters through 340 deg and hydraulic shimmy damping is incorporated. All tyres are tubeless, and the main wheels are fitted with hydraulic plate-type brakes and anti-skid mechanisms. Fairings and hydraulically- and mechanically-operated doors close the undercarriage bays to leave the fuselage and main-plane skin contours unbroken when the alighting gear is retracted.

8. The ailerons, tailplane, and rudder are controlled from a control column and a rudder bar, movement being transmitted through rods and levers to the control

valves of hydraulically-operated powered flying-control units which actuate the control surfaces. Because the powered flying-control units are irreversible the pilot's controls are mechanically and hydraulically loaded to simulate control-surface aerodynamic loads. Trimming is effected by electrically-operated linear actuators which displace the associated control loading device. Electro-hydraulic autostabilizer actuators are connected into each control run to impose the demands of the flight control system on the control surfaces.

9. Hydraulic power is derived from two pumps on each engine, the four pumps supplying three independent systems. In addition to the services previously referred to, the flaps, airbrakes, armament pack services, and brake parachute compartment doors are powered hydraulically. The power supply to the flying-control units is completely duplicated to obviate loss of control should one engine or hydraulic system fail, and accumulators provide a reserve of power for short periods of operation in extreme

emergencies. A hand pump is provided for ground servicing purposes.

10. Electrical power is supplied by a 28-volt d.c. generator and a 200-volt, 3-phase, a.c. generator. Both units are fitted to the gearbox of a turbine drive unit in the rear fuselage. The turbine is driven by an air supply fed from the engine compressors. A stand-by 3.5 kW d.c. power supply is provided by an air turbine/generator unit installed in the spine. If an a.c. generator failure occurs, a stand-by inverter is automatically brought into operation to provide an a.c. supply for essential services. Two batteries are installed; one is the main battery which will maintain essential d.c. power for a limited period when a generated supply is not available; the other is an emergency battery for internal cockpit lighting if the normal supply fails.

11. Engine compressor air is used for cockpit air-conditioning and pressurization, anti-g and A.V.S. services,

anti-icing, rain dispersal, de-misting, cooling and pressure datum purposes.

12. The wireless installation provides for U.H.F. main and stand-by telecommunication, U.H.F. navigational homing, telebriefing, and I.L.S. The radar installation includes Tacan, I.F.F./S.S.R. and AI 23C. ▶

13. The basic armament consists of two Firestreak or Red Top guided missiles, the respective packs being interchangeable.

14. The pilot's seat is a fully automatic ejection type. Connected to it, through a personal equipment connector, are the A.V.S. and anti-g supplies, main- and emergency-oxygen supplies and the tel/mic.

15. The main oxygen supply consists of a LOX converter and associated stabilizing equipment working through a pressure demand oxygen regulator system. Emergency oxygen is provided by a seat-mounted gaseous oxygen cylinder.

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A.P.101B-1003-1A
A.L.82, Mar.71



LIGHTNING F MK.3

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LEADING PARTICULARS

NAME.....LIGHTNING F MK. 3
 TYPE.....TWIN-ENGINE, MID-WING MONOPLANE
 DUTY.....INTERCEPTOR FIGHTER
 CREW.....ONE

PRINCIPAL DIMENSIONS

For the principal dimensions of the aircraft refer to the General Arrangement illustrations. For the settings and range of movement of the main control surfaces refer to Section 3, Chapter 4.

MAIN-PLANE DATA

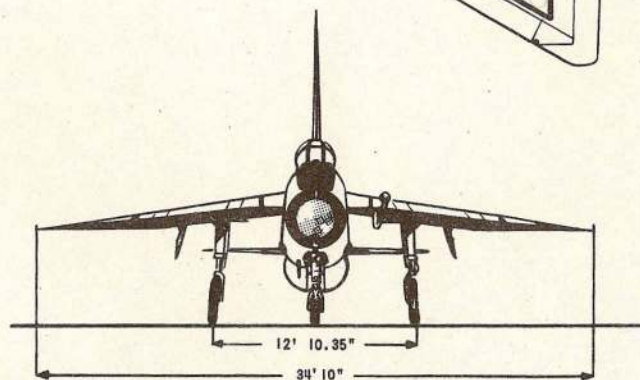
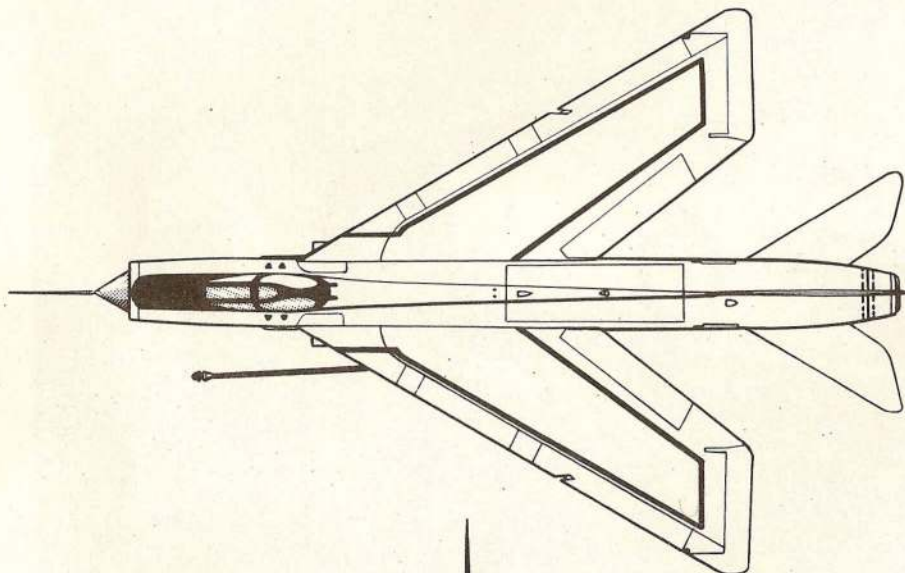
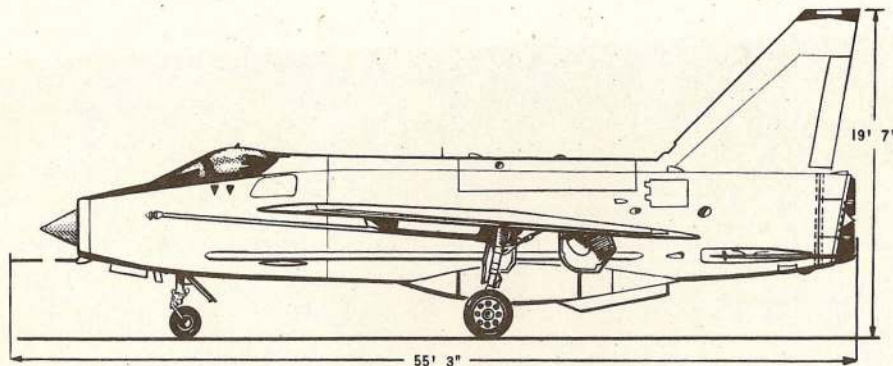
Aerofoil section E.E.A. Ltd. ASN/P1/3
 Chord
 at root 222 in.
 at tip (theoretical) 15.72 in.
 Incidence 2 deg.
 Anhedral 3 deg.
 Sweepback
 at leading edge 60 deg
 at trailing edge 51 deg 56 min

TAIL-PLANE DATA

Aerofoil section E.E.A. Ltd. ASN/P1/3
 Chord
 at root 84.96 in.
 at tip (theoretical) 12 in.
 Incidence Variable
 (Refer to Sect. 3, Chap. 4)
 Sweepback at leading edge 60 deg

FIN AND RUDDER

Aerofoil section E.E.A. Ltd. ASN/P1/3



General arrangement

3-8002-1

FIN AND RUDDER - continued

Chord

at root 137.2 in.
at tip 38 in.

AREAS

Main plane, including aileron - gross..... 458.52 ft²
Main plane, including aileron - nett 380.11 ft²
Ailerons (total) 27.06 ft²
Flaps (total) 44.94 ft²
Fin, including rudder 70.50 ft²
Rudder 8.84 ft²
Tail plane 75.24 ft²

ALIGHTING GEAR

MAIN UNDERCARRIAGE

Type Two single-wheel units, outward retracting

Shock-absorbers

Type Oleo-pneumatic, Dowty Rotol 2.00384.001 and
2.00385.001 (pre Mod.4375)
2.00384.007 and 2.00385.007 (post Mod.4375)

Fluid OM-15 (Ref.No.34B/9100572) N.A.T.O. Code No.H-515

Air pressure Refer to Sect.2, Chap.2

Wheels

Dunlop AH 52268 (pre Mod.4770)
AH 52754 (post Mod.4770)

Brakes

Dunlop AH 52411 } pre Mod.4862
AH 52412 }
AH 52485 } post Mod.4862
AH 52486 }

Maxaret units

Dunlop port AC 64794
starboard AC 64800

Tyres Tubeless (Ref.No.27A/4691)

Tyre pressures Refer to A.P.4700C, Vol.5 (Sect.1)

ALIGHTING GEAR - NOSE UNDERCARRIAGE

Type Non-steerable, 340 deg casting forward retracting

Shock-absorber

Type Oleo pneumatic, Dowty Rotol 2.00163.004 (pre Mod.4080)
2.00163.015 (post Mod.4080)

Fluid OM-15 (Ref.No.34B/9100572) N.A.T.O. Code No.H-515

Air pressure Refer to Sect.2, Chap.2

Wheel Dunlop AH 52017

Tyre Tubeless DF 3881T

Tyre pressure Refer to A.P.4700C Vol.5 (Sect.1)

POWER UNITS

Type Straight-flow turbo-jet engines with reheat jet pipes

Engines Avon Mk.30201 engine change units

Oil OX-38

Oil capacity (each engine) 12 pints

Engine starter system Plessey LTSA 140

Fuel AVPIN D.Eng.R.D.2492 (Ref.No.34A/9423147)
N.A.T.O. Code No.S-746

Tank capacity 3 gal

Reheat jet pipes J.P.134 and J.P.135

FUEL

Specifications

Avtur (34A/2201036).....D.Eng.R.D.2453, N.A.T.O. Code F.34

Avtag (34A/2201037).....D.Eng.R.D.2454, N.A.T.O. Code F.40

In cases of emergency only, the following alternative fuels may be used:-

Avtur (34A/9431771).....D.Eng.R.D.2494, N.A.T.O. Code F.35

Avcat (0722/2202148).....D.Eng.R.D.2498, N.A.T.O. Code F.44

French Navy Fuel.....AIR 3404A, N.A.T.O. Code F.42

FUEL - continued

Tank capacities (usable)

Main and leading-edge tanks	640 gal
Flap tanks	66 gal
Ventral tank	250 gal

HYDRAULIC SYSTEMS

PUMPS

Services system	Integral Type 180, Mk.50 or Mk.65
Controls systems	Integral Type 220, Mk.37
Fluid	OM-15 (Ref.No.34B/9100572) N.A.T.O. Code No.H-515
Normal working pressure	3000 lb/in ²
Brake pressure	1500 lb/in ²
Capacity (total)	75 pints
Accumulator pressures	Refer to Sect.3, Chap.6

AIR SYSTEMS

Air conditioning and pressurization

Constant flow valve	B.A.C. Type EF2.75.153
Cold-air unit	de Havilland RU45/04
Heat exchanger	Marston Excelsior D158/130A
Water boiler	Marston Excelsior D695/4A
Water header tank	B.A.C. Type EF2.75.479
Contents	90% by volume distilled or softened water 10% by volume
	D.T.D. 779 (AL-3) (Ref.No.34B/9100470)
Capacity	1.5 gal approx.
Pressure controller	Normalair (Pt.No.517500)
Combined valve unit	Type 7/20 (Pt.No.520200)
Accessory drive	
Main air turbine	Rotol ADE 383
Gearbox oil	OX-38
Oil capacity	3.75 pints
Stand-by air turbine/generator unit	Rotax Type BT0102-L
	(Ref.No.5UA/7875)

AIR SYSTEMS - continued

Control valve	Type M 6702
Reheat pumps	Lucas TFP 116
Sump oil	OX-38

ELECTRICAL SYSTEMS

Main	28-volt d.c.
	200-volt, 3-phase, 400 Hz, a.c.
Stand-by	28-volt d.c.
	115-volt, 3-phase, 400 Hz, a.c.

D.C.

Generator Brushless Type AE 2519, Mk.2 (Ref.No.5UA/1098481)

Stand-by generator

Batteries

Main One 24 volt, 18 Ah (Ref. No. 5J/6546954)

Emergency One 24-volt, 0.4 Ah (Ref.No.5J/4335344)

A.C.

Generator Brushless Type AE 2071 (Ref.No.5UA/8783)

Stand-by a.c. Inverter Type 100A (Ref.No.5UB/4938)

RADIO AND RADAR INSTALLATION

U.H.F. telecommunication	A.R.I.18124/1
U.H.F. stand-by telecommunication	A.R.I.23057
U.H.F. homer	A.R.I.18120/4
Telebriefing	A.R.I.18012
I.L.S.	A.R.I.18011
TACAN	A.R.I.18107
I.F.F./S.S.R.1520	A.R.I.23134/3

AIRBORNE INTERCEPTION INSTALLATIONS

AI 23D A.R.I.5897/7
L.F.S.
◀ Sighting head..... Type 2, Mk. 6

Control unit..... Type L, Mk.8 ▶

INTEGRATED FLIGHT INSTRUMENT AND CONTROL SYSTEM

Pressure heads
Main.....Mk.9P 401 PHA/2 (Ref.No.6A/NIV)
Secondary.....PH 1223B (Ref.No.6A/7489)
Air data system
Air data computer.....Mk.2, Type E (Ref.No.6TD/1193)
Pitot/static transducer.....Mk.2, Type B (Ref.No.6TD/8722)
Static transducer.....Mk.2, Type D (Ref.No.6TD/1192)
Dynamic flight instrument system
MRG Mk.2.....
 { Gyro reference unit Ref.No.6G/39 or 6G/40
 { Electronic unit Ref.No.6G/41 or 6G/42
Flight control system
Flight control computer.....Type E (Ref.No.6TD/1092339)
Pilots controller.....Type G (Ref.No.6TD/1501)

ARMAMENT

Guided weapon pack.....Two Firestreak missiles or two
Red Top missiles

OXYGEN SYSTEM

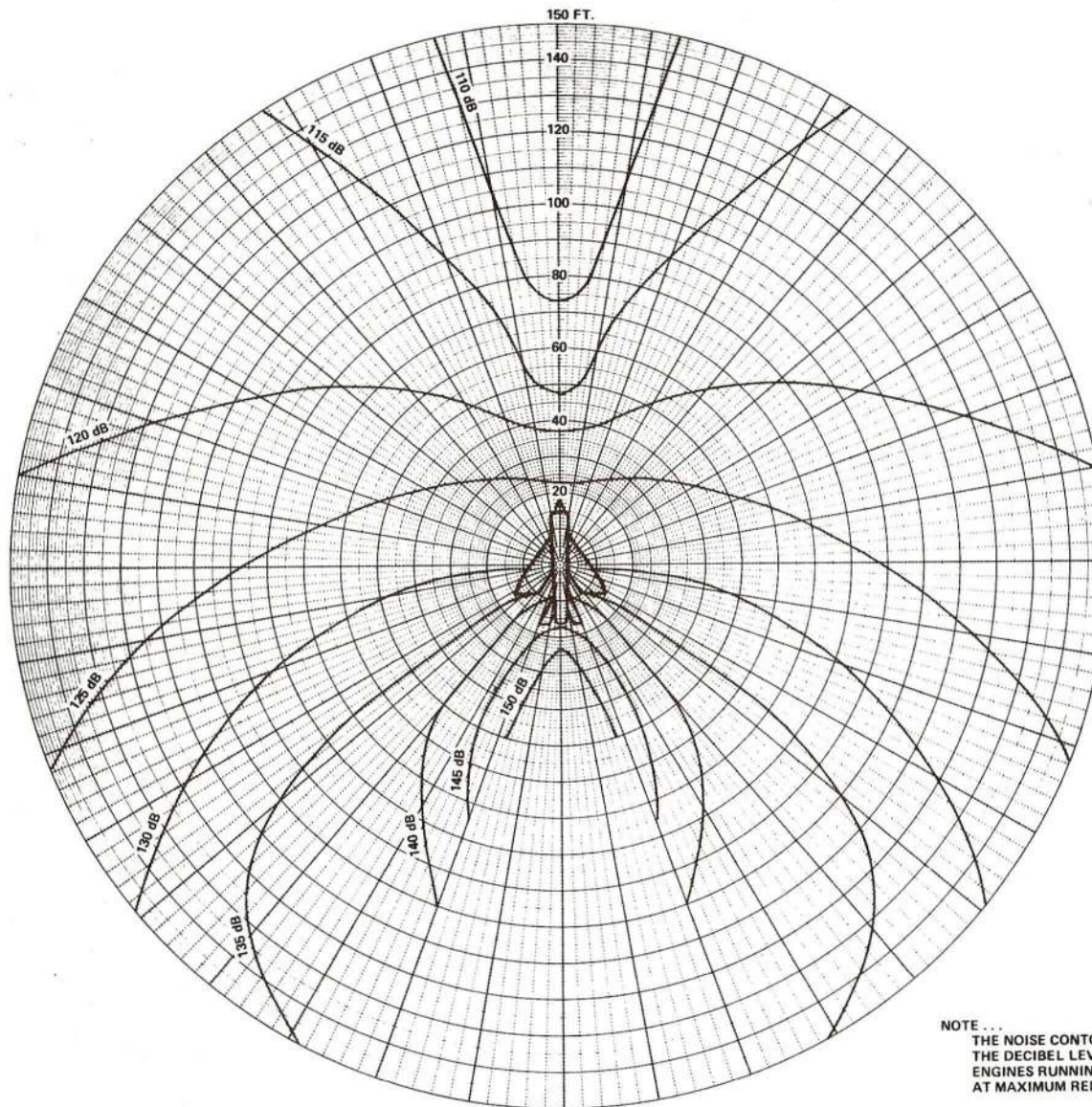
B.O.A. liquid oxygen
Container, 3/2 litre.....Mk.6 (Ref.No.6D/2159)
Stabilizing container.....EF2.71.255
Demand and inflation regulator.....Mk.17F (Ref.No.6D/2671)

CREW SURVIVAL EQUIPMENT

Ejection seat.....Type 4 B.S.C. Mk.2 (Ref.No.27L/50160)
Parachute and harness.....Back Type Mk.45 (Ref.No.15A/1328)
Survival pack.....Seat Type V (Ref.No.27C/2395)
Emergency oxygen equipment
Cylinder and release mechanism.....Mk.4 (Ref.No.6D/2689)
Demand regulator.....Mk.1 (Ref.No.6D/2285)
Remote pressure gauge and connection.....(Ref.No.6D/2526)

BRAKE PARACHUTE ASSEMBLY

Brake parachute.....LB2/Mk.2 (Ref.No.15D/791)
Cable assembly.....EF3.83.743 (Ref.No.26DK/1503517)



NOTE . . .
THE NOISE CONTOURS REPRESENT
THE DECIBEL LEVEL WITH BOTH
ENGINES RUNNING, ONE ENGINE
AT MAXIMUM REHEAT.

LIGHTNING - NOISE CONTOURS

MODIFICATIONS INCLUDED SUBSEQUENT TO STANDARD

Modification Number	Effect upon Publication	Incorporated by A.L. Number
4831	[Amends Preliminary matter Amends Sect.1, Chap.1 Amends Sect.2, Chap.3A Amends Sect.2, Chap.4 Amends Sect.3, Chap.1 Amends Sect.3, Chap.8D Amends Sect.5, Chap.7]	140
4846	Amends Sect.1, Chap.1	143
4828	[Amends Sect. 3, Chap. 10]	150
4837	[Amends Sect. 3, Chap. 6]	
4844	[Amends Preliminary matter]	
4839	[Amends Preliminary matter]	
4851	[Amends Preliminary matter]	153
4862	[Amends Sect.1, Chap.3 Amends Sect.3, Chap.11]	

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