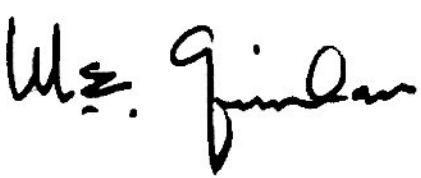
CANBERRA T Mk 17

PILOT'S NOTES

BY COMMAND OF THE DEFENCE COUNCIL



Prepared by Royal Air Force Handling Squadron

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Ministry of Defence (Air)
July 1986

Reprint of
AP101B-0417-15

CANBERRA T Mk 17

REPRINT OF PILOT'S NOTES

1. This reprint of the Pilot's Notes for the Canberra T Mk 17 (to AL 13 standard) should be placed in an anonymous 4-ring, A5 size binder. The 3-ring binder used for the previous issue is now obsolete, and the reprint has therefore been carried out in A5 size.

2. All copies of the previous issue (November 1967) of the Pilot's Notes are now obsolete and should be destroyed.

3. The major change introduced into the reprint under AL 13 is the addition of Supplement No 1. This Supplement describes the changes to the ECM, navigation, and communications equipment brought about by the incorporation of Mod 5466.

AMENDMENT RECORD SHEET

Record the incorporation of each Amendment List in the publication by signing against the appropriate AL No and inserting the date of incorporation.

AL No	Amended By	Date
1 to 13	Already incorporated	
14		11/1/89
15		7/8/90
16		8/2/92
17		
18		
19		
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AIL RECORD

AIL No	*Date of Issue*	*Location Part Chap*	*Signature*	*Cancelled By*	*Signature*	*Date*

ANA RECORD

ANA No	*DTG*	*Location Pan Chap*	*Signature*	*Cancelled By*	*Signature*	*Date*
1 to 10	—	—	—	INCORPORATED		—

NOTES TO USERS

1 This book is divided by marker cards, as follows:

Preliminary Matter
Part 1 Description and Management of Systems
Part 2 Limitations
Part 3 Handling
Part 4 Emergencies
Part 5 Illustrations

Where applicable, the parts are divided into chapters as listed on the marker cards. A Folio Sheet reference number is at the top left-hand corner of each sheet, each Part starting at FS1.

2 The limitations quoted in Part 2 are mandatory and are not to be exceeded except in an emergency. Instructions containing the word 'must' are also mandatory.

3 This book and its associated Flight Reference Cards aim to provide the best operating instructions and advice currently available. Although they provide guidance for most eventualities, they are not substitutes for sound judgement and good airmanship; moreover, they assume an adequate knowledge of the pertinent volumes of AP 3456 Series (Flying). Furthermore, circumstances might requi aircrew to depart from or modify the prescribed procedure and drills. Consequently the Pilot's Notes and Flight Reference Cards should not be regarded as documents which are to be adhered to inflexibly at all times — other than as explained in para 2 above.

4 Amendment Lists will be issued as necessary and each amendment list instruction sheet will state the main purpose of the amendment and will include a list of modifications covered in the text. New or amended matter of importance ◆ will be indicated by symbols in the text thus: ◀ .... ▶ or thus ◆....◆ to show the extent of amended text and thus ▶◀ or thus ◆◆ to show where text has been deleted. The number ◆ of the amendment list by which a sheet was initially issued, or re-issued, will appear at the bottom of the front pages and any amendment marks on either page forming a sheet will relate to that amendment. However, when a new chapter is issued with an amendment list or an existing chapter is completely revised, the fact will be indicated

within the heading of the chapter and the amendment marks will not appear on the pages.

5 The following conventions are observed throughout this Book:

(a) The actual markings on controls are indicated in the text by capital letters.

(b) Unless otherwise stated all airspeeds, mach numbers, accelerations, temperatures and altitudes quoted are indicated values.

(c) **WARNINGS** are inserted only when the serious consequences of not following a certain procedure might otherwise be overlooked.

(d) Information which requires to be emphasised is printed in italics.

(e) Notes are inserted to clarify the reason for a procedure or to give information which, while not essential to the understanding of the subject, is useful to the reader.

(f) Cross references given in the text refer to chapters in the same part unless otherwise stated.

Modification numbers are only referred to in the text when it is necessary to differentiate between pre- and post-mod states. For ease of reference, a list of the modifications mentioned in the text is included in these preliminary pages, with a cross reference to the location in the text of the modification details.

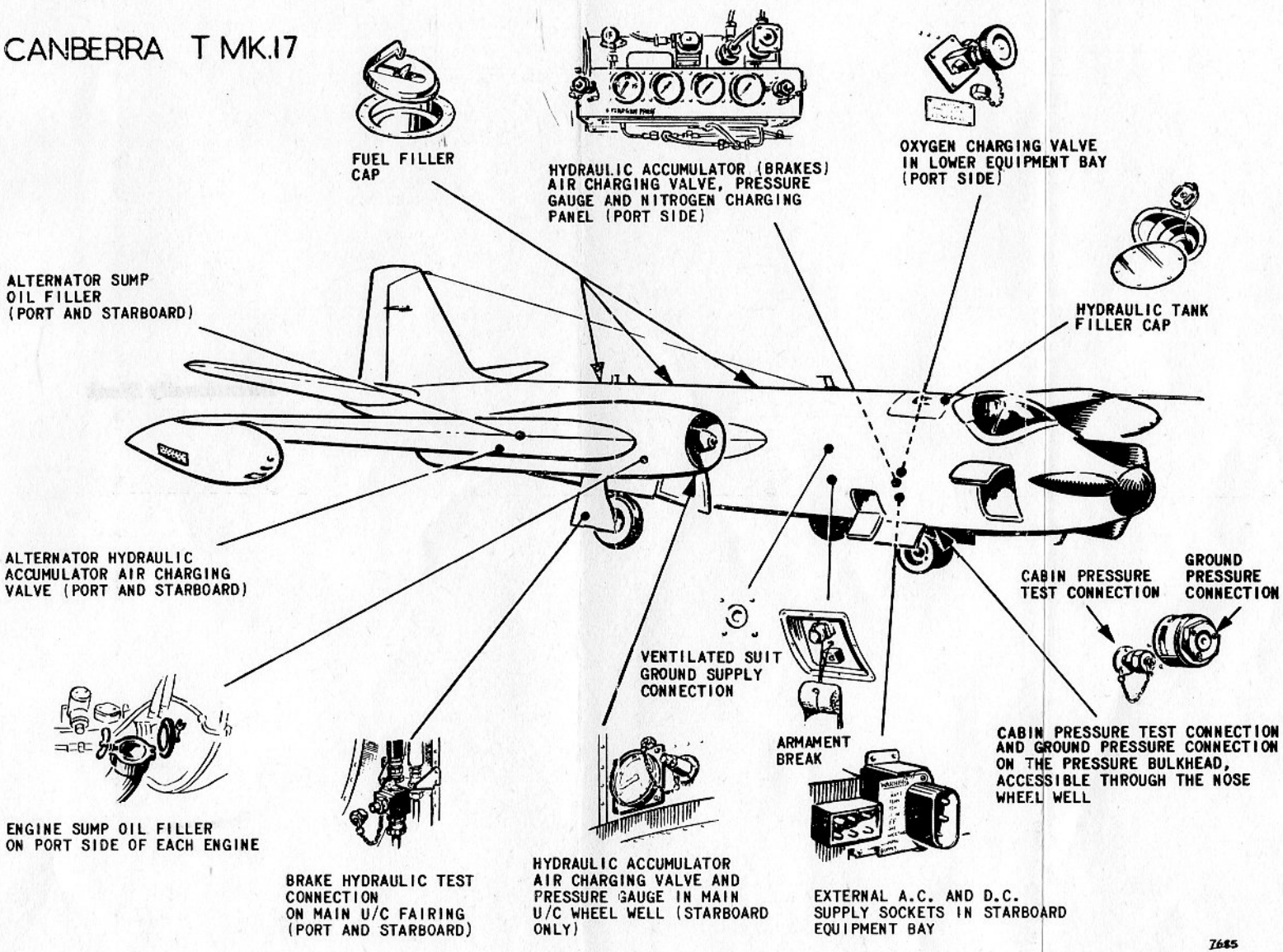
7 This book is complementary to the Flight Reference Cards (AP 101B-0417-14) and the Operating Data Manual (AP 101B-0417-16) for the aircraft.

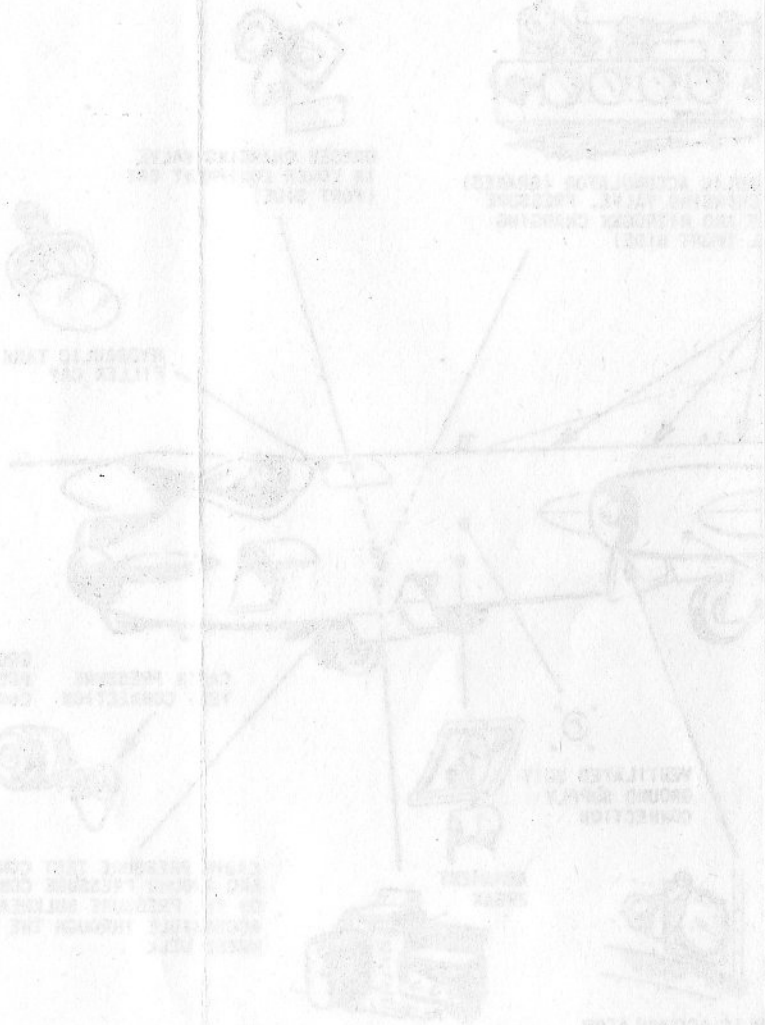
IMPORTANT

Comments and suggestions should be forwarded to the Officer Commanding, Royal Air Force, Handling Squadron, Boscombe Down, Salisbury, SP4 0JF.

FS1A

CANBERRA T MK.17





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LIST OF FOLIO SHEETS

This list shows all the Folio Sheets which should be present in these Pilot's Notes at AL16. Sheets which should have manuscript amendments are marked with an asterisk.

Folio Sheet	*Issued by*
Preliminaries	
Title Page	AL15
Amendment Record Sheet	AL13
AIL Record	AL14
FS1	AL12
FS1A	Initial Issue
FS1B	AL16
FS2	AL14
FS3	AL14
FS4	AL16
FS5	AL16
FS6	AL16
Part 1	
Marker Card	AL4
Part 1 Chapter 1	
FS1	AL16
FS2	AL16
FS3	AL16
FS4	AL16
FS5	AL16
FS6	AL16
FS7	AL16
FS7A	AL16
Part 1 Chapter 2	
FS8	AL9
FS9	Initial Issue
FS10	AL9
FS11	AL16
Part 1 Chapter 3	
FS12	AL16
FS13	AL16
FS14	AL4
Part 1 Chapter 4	
FS15	AL4
FS16	AL6
FS17	AL4
Part 1 Chapter 5	
FS18	AL4
FS19	AL14
FS20	AL14
FS20A	AL14
Part 1 Chapter 6	
FS21	AL9
FS21A	AL16
Part 1 Chapter 7	
FS22	AL16
FS23	AL16
FS24	AL16
FS25	AL16
FS26	AL16
FS27	AL16
FS27A	AL16
FS27B	AL16
Part 1 Chapter 8	
FS28	AL15
FS29	AL16
FS30	AL16
FS30A	AL15
Part 1 Chapter 9	
FS31	AL9
FS32	AL9
FS33	AL9
Part 1 Chapter 10	
FS34	AL5
FS35	AL2

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List of Folio Sheets - *continued*

Folio Sheet	*Issued by*
Part 1 Chapter 11	
FS36	AL11
FS37	AL9
FS38	AL6
FS38A	AL6
FS39	AL9
FS40	AL6
FS41	AL7
FS42	AL7
Part 2	
Marker card	Initial issue
Part 2 Chapter 1	
FS1	AL16
FS1A	AL16
Part 2 Chapter 2	
FS2	AL16
FS3	AL16
Part 2 Chapter 3	
FS4	AL14
FS5	AL14
FS6	AL14
FS7	AL14
FS8	AL14
Part 3	
Marker card	Initial Issue
Part 3 Chapter 1	
FS1	AL5
FS2	AL6
Part 3 Chapter 2	
FS3	AL12
FS3A	AL14
FS3B	AL14
FS4	AL6
FS5	AL6
FS6	AL6
FS7	AL9
FS8	AL6
FS8A	AL6
FS9	AL4
FS9A	AL14

Folio Sheet	*Issued by*
Part 3 Chapter 3	
FS10	AL16
FS11	AL16
FS12	AL16
FS13	AL16
FS14	AL16
Part 3 Chapter 4	
FS15	AL16
FS16	AL16
FS17	AL16
Part 4	
Marker card	Initial issue
Part 4 Chapter 1	
FS1	AL16
FS2	AL16
Part 5	
Marker card	Initial Issue
Part 5 Chapter 1	
FS1	AL16
FS2	AL6
FS3	AL4
FS4	AL4
FS5	AL4
FS6	AL4
FS7	AL4
FS8	AL4
Supplement 1	
Marker card	AL14
FS1	AL16
FS2	AL16
F53	AL14
FS4	AL14
FS5	AL15
FS6	AL14
FS7	AL14
FS8	AL16
FS9	AL13
FS10	AL13
FS11	AL13

INTRODUCTION

1 General

The Canberra T Mk 17 is employed in the electronic countermeasures (ECM) training role. It is powered by two Avon Mk 102 engines. Three crew (pilot, navigator and air electronics officer (AEO)) are normally carried.

2 Electrical System

(a) DC is provided by two 28-volt, engine-driven generators and four 12-volt batteries connected in series-parallel. If the main DC supplies fail an emergency battery supplies various emergency circuits.

(b) AC is supplied by two turbo-alternators driven by air from the compressor on each engine. Either alternator can supply the entire AC load required in flight, but provision is made for ◆ alternative supplies to instruments by two inverters. A dedicated inverter supplies Omega. ◆

3 Fuel System

Fuel is carried in three fuselage tanks and may be augmented by wing tip tanks. The forward and centre tanks are self-sealing and the rear tank is a crash-proof collapsible bag. Fuel can be fed, via LP pumps, from the fuselage tanks to either engine.

4 Hydraulic System

Hydraulic power, produced by two hydraulic pumps, one on each engine accessory gearbox, is used to operate the undercarriage, flaps, airbrakes, wheelbrakes and air inlet scoops. A handpump circuit is provided for emergency lowering of the undercarriage and to charge the wheelbrakes accumulator if the main system fails.

5 Engines

The Avon Mk 102 engine is a turbo-jet having a twelve-stage axial-flow compressor directly coupled to a two-stage turbine. It gives approximately 6500 lb static thrust at sea level. The throttle controls incorporate a fast idling stop, set at approximately 4800 RPM, below which the turbo-alternators come off line.

6 Aircraft Controls

The rudder, aileron and elevator controls are conventional and manually operated. The variable incidence tailplane, rudder trim tab and the aileron bias system, are electrically operated. To provide adequate clearance for the pilot during ejection, a snatch unit pulls the control column forward automatically when the pilot ejects. Selectors for undercarriage, flaps, airbrakes and air inlet scoops are electrically actuated.

7 Flight Instruments, Radio and Radar

Flight instruments are conventional. A combined omnibearing selector and deviation indicator combines the functions of a VOR bearing selector and ILS deviation indicator. Radio and radar equipment includes UHF, VHF, HF, VOR/ILS, radio compass (ADF), ◆ radio altimeter, Tacan, IFF/SSR and Green Satin (pre-Mod 5466) and, post-Mod 5466, an Omega system. A radio mixing system, ◆ incorporating intercom, is provided. ◆◆ Communications recording equipment is installed.

8 Equipment Compartments

(a) Three bays for various items of aircraft equipment are aft of the cabin pressure bulkhead. The upper equipment bay is above the nose undercarriage well and access to it is via a removable hatch on top of the fuselage. The left and right equipment bays are on either side of the nose undercarriage well, with access doors in the fuselage wall.

(b) Additional equipment may be carried in two packs in the pack bay in the lower centre fuselage and in wing tip pods which may be fitted in lieu of wing tip tanks.

9 Fire Protection

Fire detection, warning and extinguishing systems are fitted for each engine and for the pack bay. Two non-toxic hand-operated fire extinguishers are in the cabin. Provision is made for automatic operation of the engine and pack bay extinguishers in crash conditions.

10 Doors and Emergency Exits

The entrance door, pilot's canopy and navigator's hatch are all jettisonable and serve as emergency exits. The navigator's hatch is automatically jettisoned when either the navigator or AEO eject.

11 Ejection Seats

All three crew are provided with ejection seats incorporating single lever ejection. The pilot ejects through the canopy.

12 Oxygen System

Oxygen is carried in bottles in the upper equipment bay and supplied to crew members via Mk 17 pressure demand regulators. An emergency oxygen bottle is fixed to each ejection seat.

13 Air Conditioning and Pressurization

The air conditioning and pressurization systems are supplied by air bleed from the engine compressors. The temperature is controlled by a mixing valve by means of which a proportion of hot air from the compressors is passed through coolers in the inner plane leading edge and a cold air unit in the left inner plane.

14 Location of Controls and Indicators

(a) The location of controls and indicators is referred to in these notes by reference to the following panels and compartments.

Left wall	)
Take-off panel	)
Left console	)
Left front panel	)
Flight instrument panel	) Cockpit
Engine instrument panel	)
Engine starter panel	)
Right instrument panel	)
Coaming panel	)
Electrical control panel (front face)	)
Left wall	)
Navigator's instrument panel	)
Coaming panel	) Cabin
AEO's control unit panel	)
Right wall	)
Electric control panel (rear face)	)

(b) The location of controls is illustrated in Part 5.

◆◆

MODIFICATIONS MENTIONED IN THE TEXT

	Mod No	*Title*	*Location* *Part*	*Chapter*	*Para*	
◆	5466	Introduces new ECM equipment plus Omega	Supplement 1			
	5541	Introduces pack bay overheat warning light	1	8	13	
		SEM				
	175	Introduces sealed lead-acid batteries	1	1	4	
	185	Introduces high intensity strobe lights	1	8	7	◆

ASSOCIATED AIR PUBLICATIONS

Canberra T Mk 17 Flight Reference Cards	...	AP 101B-0417-14
Canberra T Mk 17 Operating Data Manual	...	AP 101B-0417-16
Canberra T Mk 17 Aircraft, General and Technical Information	...	AP 101B-0417-1A & 1B
Avon Mk 1 Aero-Engine and Avon Mk 10201 Engine Change Units	...	AP 102C-1522-1

LEADING PARTICULARS

Principal Dimensions

	Feet	*Inches*
Span without wing-tip tanks/pods	64	0
Span with wing-tip tanks/pods	65	6
Length overall	67	4
Height to top of fin	15	7
Height to top of canopy (unladen aircraft)	8	8

Undercarriage

Mainwheel Units (two)

Type	Single wheel, inwards retracting
Shock absorber	Oleo pneumatic
Nitrogen pressure ...	Refer to AP 101B- $^{0400}_{0400A}$ -5A2
Fluid	OM-15 (NATO H-515)
Capacity	12 pints
Tyre pressure	Refer to AP 101B- $^{0400}_{0400A}$ -5A2
Brakes	
Pressure at reducing valve	2500 $^{+0}_{-100}$ PSI
Pressure at brakes ...	1500 $^{+150}_{-0}$ PSI

Nosewheel Unit

Type	Twin wheel, non-steerable castering, rearward retracting
Shock absorber	Levered suspension, liquid spring
Pressure (wheels off ground)	1500 PSI
Fluid	OM-15 (NATO H-515)
Capacity	1·5 pints
Tyre pressure	Refer to AP 101B- $^{0400}_{0400A}$ -5A2

Hydraulic System

Fluid	OM-15 (NATO H-515)
Capacity of system	31 pints (approximately)
Capacity of tank	2 gallons
Pumps (two)	Lockheed Mk 9
Accumulator charging gas ...	Nitrogen
Thermal relief valve setting	3450 ±100 PSI (See Part 1, Chap 3)

LIST OF ABBREVIATIONS USED IN THE TEXT

AC	Alternating current
ACU	Acceleration control unit
ADF	Automatic direction finding
AEO	Air electronics officer
AGL	Above ground level
AUW	All up weight
BCF	Bromochlorodifluoromethane
BPC	Barometric pressure control
BTB	Busbar tie circuit breaker
BTDU	Breech time delay unit
BTRU	Barostatic time release unit
CG	Centre of gravity
CHAG	Chain arresting gear
DAGS	Drift angle groundspeed
DC	Direct current
DV	Direct vision
ECM	Electronics countermeasures
ECP	Electrical control panel
EMBS	Emergency maximum braking speed
EOA	Engine out allowance
FFFD	Fault free fire detection
FRC	Flight Reference Cards
GPB	Ground power circuit breaker
GPI	Ground position indicator
HF	High frequency
HP	High pressure
HT	High tension
Hz	Hertz (cycles per second)
IAS	Indicated airspeed
IFF	Identification friend or foe
ILS	Instrument landing system
JPT	Jet pipe temperature
kVA	Kilovolt amps
kW	Kilowatt
lb	Pound
LP	Low pressure
M	Mach number
◆ MEP	Main electrical panel ◆
MHz	Megahertz
MI	Magnetic indicator
NMBS	Normal maximum braking speed
OBS	Omni-bearing selector
ODM	Operating Data Manual
PSI	Pounds per square inch
PUAG	Purpose use arresting gear
QRF	Quick release fitting
RHAG	Rotary hydraulic arresting gear
RMI	Radio magnetic indicator
RPM	Revolutions per minute
SSR	Secondary surveillance radar
TAS	True airspeed
T/R	Transmitter/receiver
UHF	Ultra high frequency
UVPSU	Undervolt and phase sequencing unit
VCH	Visual committal height
VHF	Very high frequency
VLF	Very low frequency
VOR	VHF omni-directional radio range
VSC	Variation setting control

LIST OF ABBREVIATIONS USED IN THE TEXT

AC	Alternating current
ACU	Acceleration control unit
ADF	Automatic direction finding
AEO	Air electronics officer
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AUW	All up weight
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BTDU	Breech time delay unit
BTRU	Barostatic time release unit
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DV	Direct vision
ECM	Electronics countermeasures
ECP	Electrical control panel
EMBS	Emergency maximum braking speed
EOA	Engine out allowance
FFFD	Fault free fire detection
FRC	Flight Reference Cards
GPB	Ground power circuit breaker
GPI	Ground position indicator
HF	High frequency
HP	High pressure
HT	High tension
Hz	Hertz (cycles per second)
IAS	Indicated airspeed
IFF	Identification friend or foe
ILS	Instrument landing system
JPT	Jet pipe temperature
kVA	Kilovolt amps
kW	Kilowatt
lb	Pound
LP	Low pressure
M	Mach number
◆ MEP	Main electrical panel ◆
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OBS	Omni-bearing selector
ODM	Operating Data Manual
PSI	Pounds per square inch
PUAG	Purpose use arresting gear
QRF	Quick release fitting
RHAG	Rotary hydraulic arresting gear
RMI	Radio magnetic indicator
RPM	Revolutions per minute
SSR	Secondary surveillance radar
TAS	True airspeed
T/R	Transmitter/receiver
UHF	Ultra high frequency
UVPSU	Undervolt and phase sequencing unit
VCH	Visual committal height
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