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**AIR PUBLICATION**

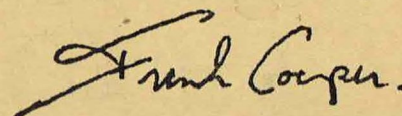
**101B-0407-1B**

[Formerly A.P.4326 G, Vol.1  
and A.P.101B-0407-1, Sect.5,6 and 7]

# **CANBERRA PR MK.7 AIRCRAFT**

## **GENERAL AND TECHNICAL INFORMATION**

BY COMMAND OF THE DEFENCE COUNCIL



Ministry of Defence

FOR USE IN THE ROYAL AIR FORCE

(Prepared by the Procurement Executive, Ministry of Defence)

(A.L. 158, Apr. 77)

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## 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.<br>No. | Amended by         | Date         |
|-------------|--------------------|--------------|
| 1-157       | INCORPORATED       | APR.77       |
| 158         | <i>[Signature]</i> | -1 JUL 1977  |
| 159         | <i>[Signature]</i> |              |
| 160         | <i>[Signature]</i> | -6 SEP 1977  |
| 161         | <i>[Signature]</i> | 14 FEB 1978  |
| 162         | <i>[Signature]</i> | 11 MAY 1978  |
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| 189         | <i>[Signature]</i> | 18/5/88 |
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## LETHAL WARNING

## ENTRY INTO CABIN

Before entering the cabin, personnel must report to the N.C.O. i/c the aircraft, who will ensure that all the relevant safety precautions have been taken.

## ASSISTED ESCAPE SYSTEM

1. Ejection seats and canopy jettison mechanisms are sources of potential danger to personnel and of damage to the aircraft. Serious injury (possibly fatal) 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-0400-5A2, Safety and Servicing Notes.

3. Additional information concerning assisted escape system safety device positioning is to be found in the Aircraft Servicing Schedules  
◀ A.P.101B-0407-10 and A.D.5037 series of Air Diagrams. ▶

## GENERAL

|                        |   |                  |
|------------------------|---|------------------|
| CANOPY JETTISON        | : | EXPLOSIVE BOLTS  |
| CREW HATCH JETTISON    | : | EXPLOSIVE BOLTS  |
| CONTROL COLUMN RELEASE | : | EXPLOSIVE COLLAR |
| WING TIP TANK JETTISON | : | EXPLOSIVE BOLTS  |

Personnel are warned not to interfere with the controls associated with this equipment unless the following precautions have been carried out:-

- (a) The internal service batteries and the detonator-circuit emergency batteries are disconnected and no ground electrical supply is connected to the external supply socket.
- (b) The detonator leads are disconnected where necessary.
- (c) The detonators are removed where necessary.

Note. . .

*Detonators are not to be held in the hand. During all operations, detonators must be supported by their electrical leads. Hold the leads near the detonator base. THIS IS MOST IMPORTANT.*

## FUEL TANK NO.6 EXPLOSION PROTECTION SYSTEM

4. This system includes detonators which are installed in the No.6 fuel tank. Personnel are warned not to interfere with the controls associated with this system, or attempt to remove the tank, unless the internal service battery is disconnected and no ground electrical supply is connected to the external supply socket.

Note. . .

*These detonators are explosive and must be handled with care. They should be kept away from heat applications, electrical leads, sockets, and batteries and not exposed to severe blows or undue force when fitting.*

## ELECTROMAGNETIC COMPATABILITY

5. The electrically-initiated explosive devices listed below are screened and therefore not potentially dangerous as long as they remain in situ, regardless of whether or not H.F. radio or radar equipment is being operated; this also applies to correctly stowed engine starter cartridges.

|                                  |   |                                       |
|----------------------------------|---|---------------------------------------|
| Canopy and hatch explosive bolts | — | Elevator control rod explosive collar |
| Wing-tip tank explosive bolts    | — | Engine starter cartridges             |
| Fire-extinguishers cartridges    |   |                                       |

These devices become potentially lethal however, during loading/unloading, while H.F. radio or radar equipment is in operation. Therefore:-

- (1) Stores having electrically-initiated explosive devices must not be loaded/unloaded during operation of H.F. radio or radar equipment.
- (2) H.F. radio or radar equipment must not be operated during the loading/unloading of the type of stores as in (1).
- (3) Stowed starter cartridges must not be allowed to contact metallic objects while H.F. radio or radar equipment is in operation.

## HIGH ENERGY IGNITERS

6. The energy stored in the capacitors of the high energy igniter units can be of a lethal nature. No servicing should be attempted until at least one minute has elapsed after disconnection of the L.T. supply to the input plug.

## HIGH VOLTAGE ELECTRICAL SYSTEMS

7. 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.







## NOTE TO READERS

Concurrent with the introduction of A.L.158, this publication has been divided into two covers, A.P.101B-0407-1A containing Sections 1, 2, 3 and 4, and A.P.101B-0407-1B containing Sections 5 and 6.



The subject matter of this publication may be affected by Defence Council Instructions, by Servicing schedules 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 Modification leaflet contradicts any portion of this publication, the Instruction, Servicing schedule or Modification 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 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 the text thus: ◀ ..... ▶ to show the extent of amended texts, 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.



## LIST OF ASSOCIATED AIR PUBLICATIONS AND DIAGRAMS

A.P.

*Accessories gearboxes and drives, Rotol* ..... 103C-0107-16  
*Aero engine, Avon Mk.109* ..... 102C-1512 to 1517-1  
*Aircraft painting* ..... 119A-0601-1 series  
*Aircraft wheels, tyres and brakes* ..... 104 series and 2337  
*Aircraft rigid tanks* ..... 4117A  
*Aircraft flexible tanks* ..... 106B series  
*A.R.I.23159/1 (Standby UHF).* ..... 116D-0107-1  
*A.R.I. 23143/1 (V/UHF)* ..... 116D-0116-1  
*A.R.I.18011 (ILS).* ..... 116B-0408-1  
*A.R.I.23023/1 (Radio compass).* ..... 116B-0107-1  
*A.R.I.23090/9 (HIF).* ..... 116D-0102-1A  
*A.R.I.23237/2 (VOR).* ..... 116B-0447-1  
*A.R.I.18089 (IC).* ..... 116N-0105-1  
*A.R.I.5972/2 (Decca Doppler).* ..... 114E-1600-16  
*A.R.I.23219/4 (Radar Alt.).* ..... 116B-0208-1  
*A.R.I.23134/1 (IFF/SSR).* ..... 114J-0101-16  
*A.R.I.23238/5 (DME).* ..... 114J-1700-16  
*Cartridges, power and miscellaneous explosive devices* ..... 110N series  
*Ejection seats, Type 2CA* ..... 109B-0107-1

A.P.

*Electrical manual.* ..... 113D series and 4343 series  
 ◀ *E.M. Release Unit, Type A Mk.3* ..... 110G-0135-125F ▶  
*Hydraulic weighing units and ancillary equipment* ..... 119W-0301-1  
*Hydraulic equipment* ..... 104B/105B series and 1803 series  
*Instrument manuals general instruments* ..... 112G series and 1275A series  
*Navigation instruments.* ..... 112B series and 1275B series  
*Oxygen equipment.* ..... 112G series and 1275G series  
*Prefabricated construction equipment (Basic) — Canberra access structures* ..... 119F-2100 series and 4549A Book 3  
*Pressurizing and air conditioning equipment* ..... 107B series and 4340  
*Principles of aircraft weighing* ..... 119W-0001-1  
*Pyrotechnics* ..... 110E series and 1661E  
*Starting systems for aero engines* ..... 103D-0203-13A7



## LAYOUT OF A.P.101B-0407

## CANBERRA PR MK.7 AIRCRAFT

|                              |                                        |
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| 101B-0407-1A and 1B. . . . . | General and Technical Information      |
| 101B-0407-2 . . . . .        | General Orders and Modifications       |
| 101B-0407-3A . . . . .       | Schedule of Spare Parts                |
| 101B-0407-3B . . . . .       | Appendix 'A'                           |
| 101B-0407-3C . . . . .       | Scales of Unit Equipment               |
| 101B-0407-3D . . . . .       | Scales of Servicing Spares             |
| 101B-0400-5 . . . . .        | Servicing Schedules                    |
| 101B-0400-6 . . . . .        | Repair and Reconditioning Instructions |
| ◀ 101B-0407-10 . . . . .     | Servicing Diagrams Manual ▶            |
| 101B-0407-12 . . . . .       | Ground Handling Notes                  |
| 101B-0400-13 . . . . .       | Modification Lists                     |
| 101B-0407-15 . . . . .       | Pilot's Notes                          |



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# MODIFICATION STANDARD

◀ This Air Publication has been written to the Canberra PR Mk.7 modification standard 7Y2 listed below. Modifications added subsequent to this standard are listed separately.

|    |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |        |
|----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|--------|
| 1  | 96  | 197 | 295 | 344 | 502 | 613 | 726 | 894  | 1169 | 1434 | 1721 | 2193 | 2585 | 3356 | 3819 | 4160 | 4781 | 5190   |
| 2  | 97  | 198 | 296 | 345 | 504 | 617 | 727 | 895  | 1170 | 1436 | 1731 | 2302 | 2587 | 3367 | 3821 | 4223 | 4783 | 5196   |
| 3  | 98  | 199 | 297 | 347 | 506 | 618 | 728 | 899  | 1171 | 1438 | 1734 | 2306 | 2588 | 3368 | 3853 | 4270 | 4798 | 5198   |
| 4  | 99  | 250 | 299 | 349 | 507 | 620 | 730 | 900  | 1175 | 1440 | 1738 | 2315 | 2592 | 3374 | 3878 | 4271 | 4855 | 5200   |
| 6  | 150 | 251 | 300 | 401 | 508 | 621 | 732 | 1002 | 1176 | 1445 | 1739 | 2316 | 2594 | 3391 | 3881 | 4280 | 4925 | 5202 ▶ |
| 8  | 152 | 252 | 303 | 402 | 509 | 622 | 733 | 1005 | 1189 | 1447 | 1750 | 2321 | 2612 | 3423 | 3883 | 4282 | 4933 |        |
| 9  | 153 | 253 | 305 | 404 | 510 | 625 | 735 | 1008 | 1196 | 1450 | 1769 | 2334 | 2614 | 3458 | 3903 | 4286 | 4936 |        |
| 10 | 154 | 255 | 308 | 405 | 512 | 627 | 737 | 1010 | 1200 | 1454 | 1773 | 2335 | 2619 | 3487 | 3906 | 4287 | 4949 |        |
| 11 | 155 | 256 | 309 | 407 | 513 | 628 | 740 | 1011 | 1251 | 1458 | 1778 | 2340 | 2643 | 3513 | 3911 | 4289 | 4958 |        |
| 12 | 157 | 258 | 310 | 410 | 514 | 630 | 742 | 1012 | 1254 | 1459 | 1781 | 2348 | 2647 | 3521 | 3936 | 4294 | 4959 |        |
| 14 | 159 | 259 | 311 | 412 | 515 | 631 | 745 | 1013 | 1258 | 1462 | 1782 | 2353 | 2656 | 3523 | 3937 | 4301 | 4960 |        |
| 15 | 161 | 260 | 312 | 418 | 516 | 632 | 747 | 1015 | 1265 | 1464 | 1784 | 2355 | 2659 | 3626 | 3948 | 4303 | 4962 |        |
| 18 | 163 | 261 | 313 | 419 | 519 | 636 | 748 | 1017 | 1266 | 1465 | 1909 | 2364 | 2664 | 3535 | 3949 | 4308 | 5015 |        |
| 51 | 164 | 265 | 314 | 421 | 520 | 637 | 749 | 1021 | 1270 | 1466 | 1928 | 2379 | 2670 | 3556 | 3955 | 4333 | 5022 |        |
| 53 | 165 | 266 | 315 | 422 | 521 | 638 | 750 | 1022 | 1271 | 1469 | 1929 | 2380 | 2680 | 3557 | 3962 | 4335 | 5027 |        |
| 54 | 166 | 267 | 316 | 424 | 523 | 639 | 851 | 1023 | 1273 | 1472 | 1932 | 2386 | 2683 | 3584 | 3970 | 4351 | 5028 |        |
| 56 | 170 | 268 | 318 | 425 | 525 | 640 | 852 | 1024 | 1274 | 1473 | 1934 | 2391 | 2690 | 3588 | 3995 | 4412 | 5035 |        |
| 57 | 171 | 269 | 319 | 428 | 527 | 641 | 856 | 1026 | 1275 | 1476 | 1940 | 2394 | 2701 | 3589 | 4005 | 4420 | 5038 |        |
| 62 | 174 | 270 | 320 | 429 | 528 | 642 | 857 | 1027 | 1277 | 1477 | 1960 | 2395 | 2704 | 3593 | 4018 | 4427 | 5045 |        |
| 63 | 175 | 271 | 321 | 430 | 531 | 643 | 859 | 1028 | 1283 | 1479 | 1973 | 2399 | 2705 | 3701 | 4044 | 4435 | 5050 |        |
| 66 | 176 | 275 | 322 | 433 | 533 | 644 | 860 | 1029 | 1287 | 1482 | 1981 | 2501 | 2720 | 3703 | 4054 | 4436 | 5051 |        |
| 67 | 177 | 276 | 323 | 434 | 535 | 646 | 862 | 1033 | 1293 | 1486 | 2000 | 2506 | 2721 | 3707 | 4061 | 4443 | 5058 |        |
| 68 | 178 | 277 | 324 | 437 | 536 | 647 | 863 | 1034 | 1294 | 1488 | 2114 | 2511 | 2722 | 3715 | 4063 | 4448 | 5061 |        |
| 69 | 180 | 278 | 325 | 438 | 537 | 649 | 864 | 1036 | 1295 | 1489 | 2123 | 2512 | 2740 | 3724 | 4069 | 4449 | 5063 |        |
| 71 | 181 | 279 | 327 | 440 | 538 | 702 | 866 | 1038 | 1300 | 1495 | 2125 | 2517 | 3197 | 3727 | 4073 | 4454 | 5073 |        |
| 74 | 182 | 280 | 328 | 441 | 541 | 707 | 867 | 1041 | 1402 | 1498 | 2127 | 2535 | 3225 | 3730 | 4077 | 4465 | 5080 |        |
| 78 | 183 | 281 | 330 | 442 | 542 | 708 | 868 | 1044 | 1403 | 1500 | 2128 | 2538 | 3235 | 3749 | 4078 | 4469 | 5091 |        |
| 79 | 184 | 283 | 332 | 443 | 543 | 709 | 869 | 1048 | 1404 | 1702 | 2129 | 2541 | 3241 | 3771 | 4080 | 4481 | 5094 |        |
| 83 | 185 | 284 | 334 | 444 | 550 | 711 | 874 | 1049 | 1408 | 1703 | 2134 | 2559 | 3258 | 3773 | 4081 | 4489 | 5096 |        |
| 85 | 186 | 285 | 335 | 445 | 601 | 712 | 877 | 1151 | 1416 | 1705 | 2148 | 2561 | 3280 | 3779 | 4095 | 4704 | 5099 |        |
| 86 | 188 | 286 | 337 | 446 | 603 | 714 | 878 | 1152 | 1421 | 1707 | 2151 | 2564 | 3281 | 3792 | 4103 | 4705 | 5105 |        |
| 87 | 189 | 291 | 339 | 448 | 606 | 716 | 880 | 1160 | 1422 | 1709 | 2154 | 2567 | 3297 | 3798 | 4107 | 4707 | 5111 |        |
| 89 | 190 | 292 | 340 | 449 | 607 | 717 | 886 | 1162 | 1428 | 1714 | 2158 | 2572 | 3302 | 3801 | 4127 | 4714 | 5112 |        |
| 90 | 195 | 293 | 341 | 450 | 610 | 720 | 889 | 1164 | 1432 | 1716 | 2183 | 2578 | 3330 | 3808 | 4151 | 4720 | 5119 |        |
| 95 | 196 | 294 | 343 | 501 | 612 | 724 | 891 | 1165 | 1433 | 1720 | 2189 | 2584 | 3333 | 3814 | 4152 | 4726 | 5182 |        |

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## MODIFICATIONS INCLUDED SUBSEQUENT TO STANDARD

| Modification<br>Number | Effect on Publication                                                                                                 | Incorporated<br>by A.L. number |
|------------------------|-----------------------------------------------------------------------------------------------------------------------|--------------------------------|
| ◀ 5439                 | To make provision for and introduce a banner<br>target towing facility from a centre line station<br>in the flare bay | 172 ▶                          |







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LEADING PARTICULARS

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|                                                                  | Chapter 2 – Instrument Installation |
| SECTION 6 – RADIO AND RADAR INSTALLATIONS . . . . .              | Chapter 1 – Radio Installation      |
|                                                                  | Chapter 2 – Radar Installation      |

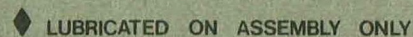
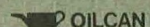


## LUBRICATION - OILS AND GREASES

THE LUBRICATION DIAGRAMS THROUGHOUT THIS PUBLICATION REFER TO OILS AND GREASES BY SYMBOLS. REFERENCE MUST ALWAYS BE MADE TO THIS MARKER CARD FOR INTERPRETATION OF THE LUBRICANT REQUIRED AND THE METHOD OF APPLICATION.

| SYMBOL                                                                              | NOMENCLATURE  | REFERENCE NO.                                   | N.A.T.O. CODE NO. |
|-------------------------------------------------------------------------------------|---------------|-------------------------------------------------|-------------------|
|    | Oil OEP-71    | 34B/9100540                                     | O-136             |
|    | Oil OM-15     | (1 gall.) 34B/9100572<br>(45 gall.) 34B/2202291 | H-515             |
|    | Oil OM-150    | 34B/9100550                                     | O-140             |
|    | Oil OX-14     | (2 oz) 34B/9100589<br>(1/2 pint) 34B/9100590    | O-147             |
|    | Oil OX-38     | (1 gall.) 34B/9100591<br>(45 gall.) 34B/2201941 | O-149             |
|    | Grease XG-271 | 34B/9100510                                     | G-382             |
|    | Grease XG-273 | 34B/9423151                                     | G-357             |
|    | Grease XG-276 | 34B/9425139                                     | G-353             |
|    | Grease XG-287 | (2 oz.) 34B/2241973<br>(28 lb.) 34B/2241861     | G-354             |
|   | Grease XG-293 | 34B/2241797                                     | G-395             |
|  | Grease XG-315 | (4 oz.) 34B/2201438<br>(225 gm.) 34B/2204466    | G-394             |
|  | Grease ZX-28G | 34B/9437518                                     | S-722             |
|  | Grease ZX-28P | 34B/1498                                        | S-722             |
|  | Grease ZX-32  | 34B/2202430                                     | S-717             |

## METHOD OF APPLICATION SYMBOLS





## INTRODUCTION

1. The Canberra PR Mk.7 aircraft is a twin engine jet propelled mid-wing aircraft fitted with a retractable tricycle alighting gear and is employed in the photographic reconnaissance role. The aircraft is powered by two Avon Mk.109 engines which are mounted in the main planes. The crew consists of a pilot and a navigator, each of whom is provided with an ejection seat.

2. The all-metal fuselage is of a monocoque construction, consisting of a stressed skin covering supported on a framework of transverse frames connected by longitudinal stringers; it is built in two sections - front, and rear fuselage. To facilitate assembly of the complete aircraft and dismantling into main units, junctions are provided in all controls, hydraulic pipes, electrical wiring etc., at the ends of the units into which they are built.

3. The front fuselage comprises a transparent nose fairing, fitted with a toughened glass sighting panel, a pressurized cabin sealed off from the remainder of the fuselage by a pressure bulkhead placed diagonally across the fuselage, equipment compartments and the alighting gear nose undercarriage unit. A door, jettisonable in an emergency, is provided on the starboard side of the cabin for normal entry and exit. The pilot's canopy and a hatch above the navigator's seat provide emergency exits for the crew. The pilot's seat is offset to port of the centre-line of the aircraft, to improve visibility, and the navigator's seat is at the rear of the cabin and backed on to the pressure bulkhead. The seats are mounted on separate support structures, raising them above the level of the main cabin floor. An extension of the floor, in the nose, in the form of a sloping ramp, supports the navigator in the prone position.

4. Aft of the pressure bulkhead are three equipment compartments, the alighting gear nose-undercarriage unit, and the forward camera bay. The remainder of the front fuselage is divided by a metal floor supported by arched diaphragm members. The upper half serves as the fuel bay and contains five crash-proof collapsible fuel bags. The lower half is sub-divided into No.6 fuel tank bay, the flare bay and the rear camera bay. The flare bay is of full fuselage width and is closed by two hydraulically operated, retracting doors. Bulkheads at each end carry the door jacks and operating linkage. The main plane centre-section frame is an integral part of the fuselage.

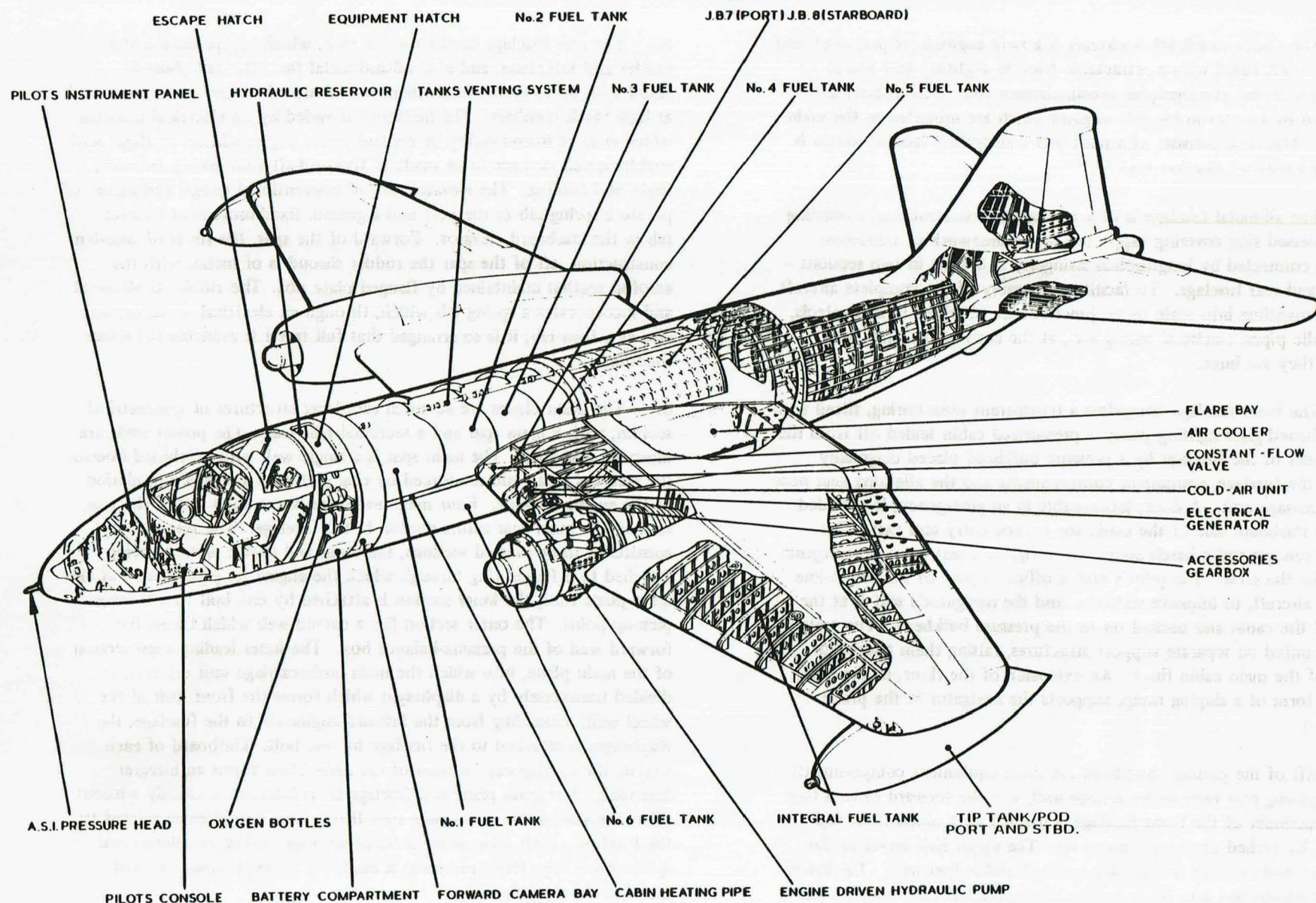
5. The rear fuselage carries the tail unit, which comprises a metal rudder and tail plane, and a wood-and-metal fin. The tail plane is fitted with an incidence adjustment unit designed to give positive control at high Mach numbers. The incidence is varied by an electrical actuator which ensures irreversibility of control under any condition of flight and enables quick changes to be made in fore-and-aft trim during take-off, flight and landing. The elevators are of conventional design and incorporate a spring tab in the port and a geared, fixed-movement balance tab in the starboard elevator. Forward of the spar, the fin is of wooden construction, aft of the spar the rudder shroud is of metal, with the aerofoil section maintained by flanged plate ribs. The rudder is all-metal and incorporates a spring tab which, through an electrical actuator, acts also as a trim tab; it is so arranged that full travel is available for either function.

6. The main planes are all-metal cantilever structures of symmetrical section, with a main spar and a sectional rear wall. The power units are mounted mid-wing. The main spar is a single web with machined booms, the web cut away and reinforced by ring plates for the accommodation of the engine jet pipe. Four main and seven shear bolts attach the spar root to the main spar centre-section in the fuselage. The rear wall consists of three pressed sections, the inner and centre sections being attached to a forged ring through which the engine jet pipe passes; at the main plane root, the inner section is attached by one bolt to a fuselage pick-up point. The outer section has a curved web which forms the forward wall of the pressure-balance box. The inner leading-edge section of the main plane, into which the main undercarriage unit retracts, is divided transversely by a diaphragm which forms the front wall of the wheel well; extending from the inboard engine-rib to the fuselage, the diaphragm is attached to the fuselage by one bolt. Outboard of each engine, the leading edge section of the main plane forms an integral fuel tank. The main plane and fuselage skins intersect smoothly without fillet, the skin at the main-plane root fitting over a joint angle riveted to the fuselage. Each main plane is fitted with air brakes, an aileron and split trailing edge flaps, provision is made for fitting jettisonable fuel tanks to the wing tips.

7. The flying controls are conventional; pedals operating the rudder, and a horn type control column operating the ailerons and elevators. All control runs consist of push-pull tubes and levers.



UK RESTRICTED



CANBERRA PR Mk. 7

◀ PICTORIALLY AMENDED ▶

UK RESTRICTED



8. The retractable tricycle alighting gear is operated hydraulically, the main undercarriage units retracting inwards into the main planes and the nose undercarriage unit retracting rearward into the front fuselage. The main unit struts are oleo-pneumatic single cantilever-mounted wheels, and with hydraulic disc-type brakes. The nose undercarriage is liquid-sprung; the unit is fully castering and self-centring with twin wheels keyed together to eliminate shimmy.

9. The engines are mounted on engine ribs just forward of the main spar. Each is slung on four attachments, all but one of which are designed to take up expansion. All auxiliaries are mounted on gearboxes inboard of the engines. Turbo-starters are fitted, the units being faired into the engine air intakes. Oil is carried in the engine sumps only and is fuel-cooled.

10. Fuel is delivered from No.1, 2, 3, 4 and 6 tanks into a collector box at the rear of No.6 tank. No.5 tank and the collector box are each fitted with two submerged fuel pumps and are connected to galleries delivering fuel to the engines. A submerged fuel pump is fitted in each integral wing-tank and low-pressure cocks permit fuel from these tanks to be fed direct to the engines or transferred to No.5 tank. Separate

switches operate the fuel pumps and low-pressure cocks. Electrostatic fuel contents gauges are fitted in all fuselage tanks and the integral wing tanks. Individual vent pipes are installed for the integral tanks, while all fuselage tanks vent into a common gallery.

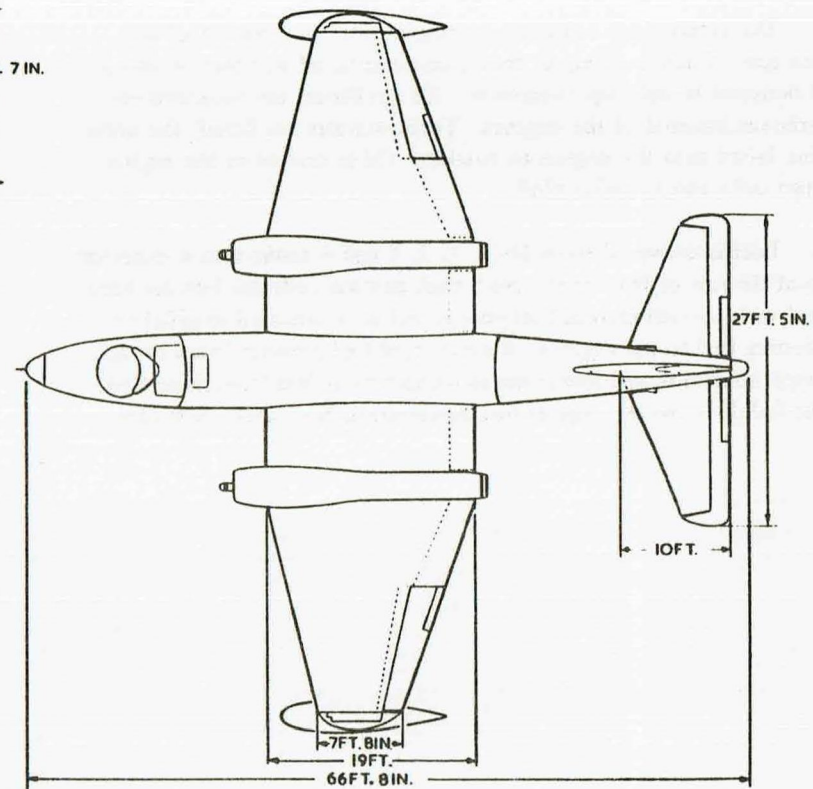
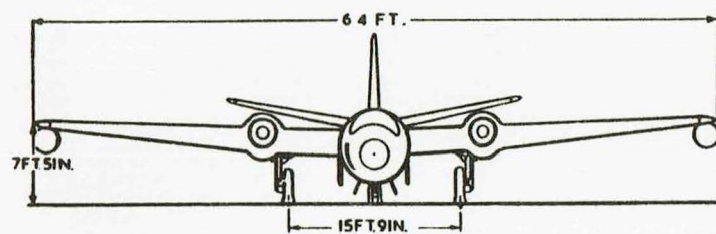
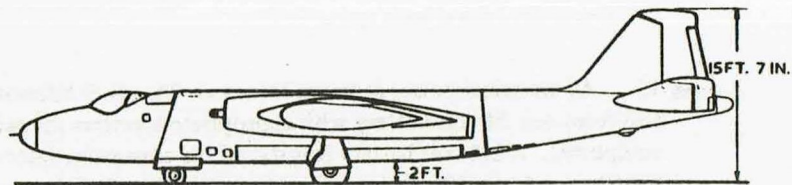
11. The fire protection system comprises five extinguishers serving the flare bay, fuselage fuel tank bays and the engines; flame detectors are utilized in the engine bays only.

◀ 12. All electrical power is drawn from two 24 volt, 9 kilowatt generators and from one 24 volt battery with appropriate inverters for radio and radar equipment. A 2.4 volt battery is installed for emergency instrument panel lighting; and two 12 volt batteries situated in the pilot's console, supply emergency power for the detonator circuits and the turn and slip indicator. One 24 volt battery, situated in the upper equipment compartment, provides the emergency power for operating the standby U.H.F. radio.

13. Radio and radar equipment, suitable to the role of the aircraft, is installed; the controls and associated equipment being located at positions convenient to the crew member concerned. ▶



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GENERAL ARRANGEMENT

RESTRICTED



NAME.....CANBERRA PR MK.7  
TYPE.....TWIN-ENGINE, JET-PROPELLED  
MID-WING MONOPLANE  
DUTY.....PHOTOGRAPHIC RECONNAISSANCE  
CREW.....TWO

*For the main dimensions of the aircraft refer to the General Arrangement illustration. For the settings and ranges of movement of the main control surfaces refer to Section 3, Chapter 4.*

|                                                      |                    |
|------------------------------------------------------|--------------------|
| Aerofoil section . . . . .                           | R.A.E./D           |
| Chord                                                |                    |
| At root . . . . .                                    | 19 ft              |
| At tip . . . . .                                     | 7 ft 8 in.         |
| Incidence . . . . .                                  | 2 deg              |
| Dihedral (measured on top surface of wing) . . . . . | 2 deg $\pm$ 10 min |
| Sweep back (at leading edge) . . . . .               | 13 deg 33 min      |
| Sweep forward (at trailing edge) . . . . .           | 19 deg 53 min      |

|                                                                           |                                                                 |
|---------------------------------------------------------------------------|-----------------------------------------------------------------|
| <i>Aerofoil section</i> . . . . .                                         | <i>R.A.E./D</i>                                                 |
| <i>Chord</i>                                                              |                                                                 |
| <i>At root (leading edge extended to aircraft centre line).</i> . . . . . | <i>10 ft</i>                                                    |
| <i>At tip</i> . . . . .                                                   | <i>4 ft</i>                                                     |
| <i>Incidence (measured at starboard inboard rigging gauge position)</i>   |                                                                 |
| <i>Take-off position.</i> . . . . .                                       | <i>3 deg 15 min ± 2 min</i>                                     |
| <i>Range between electrical stops.</i> . . . . .                          | <i>2 deg 12 min ± 13 min to</i><br><i>3 deg 59 min ± 13 min</i> |
| <i>Dihedral (measured at inboard rigging gauge position</i>               |                                                                 |
| <i>at max. incidence).</i> . . . . .                                      | <i>7 deg 57 min ± 15 min</i>                                    |
| <i>Tail plane stub incidence</i> . . . . .                                | <i>1 deg</i>                                                    |

|                        |              |
|------------------------|--------------|
| Aerofoil section ..... | R.A.E./D     |
| Chord                  |              |
| At root .....          | 12 ft 8½ in. |
| At tip .....           | 5 ft 0½ in.  |

|                                                    |                       |
|----------------------------------------------------|-----------------------|
| Main plane, including aileron (gross)              | .960 ft <sup>2</sup>  |
| Main plane, including aileron (nett)               | 836.5 ft <sup>2</sup> |
| Ailerons (total)                                   | .72 ft <sup>2</sup>   |
| Aileron trim tabs (total) aft of hinge             | 3.65 ft <sup>2</sup>  |
| Flaps (total)                                      | 64.2 ft <sup>2</sup>  |
| Tail plane, including elevators (gross), projected | 190.8 ft <sup>2</sup> |
| Tail plane, including elevators (nett), projected  | 166.8 ft <sup>2</sup> |
| Elevators, including horn                          | 56.8 ft <sup>2</sup>  |
| Elevator trim tabs (total), aft of hinge           | 5.44 ft <sup>2</sup>  |
| Fin, including rudder and tab (nett)               | 66.53 ft <sup>2</sup> |
| Rudder, including horn                             | 28.06 ft <sup>2</sup> |
| Rudder, trim tab, aft of hinge                     | 2.577 ft <sup>2</sup> |

▲ *Acrylic finishing scheme (matt) (Mod.5111) . . . . . D.T.D.5599A*

|             |             |
|-------------|-------------|
| Gloss white | D.T.D.899A  |
| Gloss white | D.T.D.5555A |
| Silver      | D.T.D.5580A |
| Matt black  | BSX28       |

### MAIN UNDERCARRIAGE

|                                       |                                            |
|---------------------------------------|--------------------------------------------|
| Type .....                            | Two single-wheel units, inwards retracting |
| Shock absorber                        |                                            |
| Type .....                            | Oleo pneumatic                             |
| Air pressure (with wheels off ground) |                                            |
| A.U.W. below 42,500 lb .....          | 450 ± 25 lb/in <sup>2</sup>                |
| A.U.W. 42,500 lb to 51,000 lb .....   | 545 ± 25 lb/in <sup>2</sup>                |
| A.U.W. 51,000 lb to 60,000 lb .....   | 640 ± 25 lb/in <sup>2</sup>                |
| Fluid .....                           | OM-15                                      |
| Capacity - fluid .....                | 12 pints (approx.)                         |



## ELECTRICAL SYSTEM

|                               |                        |
|-------------------------------|------------------------|
| Wiring . . . . .              | Plessey                |
| Voltage . . . . .             | 28V d.c.               |
| Generators . . . . .          | Two 9kW, Type 519      |
| Batteries . . . . .           | One 24V, 40A/h, Type K |
| Voltage regulators . . . . .  | Type 114               |
| Emergency batteries . . . . . | Two 12V, 4Ah           |

|                         |                                               |
|-------------------------|-----------------------------------------------|
| Type . . . . .          | Dunlop AH.52692                               |
| Tyres . . . . .         | Dunlop DF.1621                                |
| Tubes . . . . .         | Dunlop DT.1609                                |
| Tyre pressure . . . . . | Refer to Servicing Schedule (A.P.101B-0400-5) |
| Brakes . . . . .        | Dunlop hydraulic with Maxaret units           |

## ENGINES

*Type . . . . . Twin wheel, non-steerable, casting,  
rearward retracting, Dowty*

*Shock absorber . . . . . Levered suspension, liquid spring, Dowty*

*Pressure (with wheels off ground) . . . . . 1500 lb/in<sup>2</sup>*

*Fluid . . . . . OM-15*

*Capacity - fluid . . . . . 1.5 pints*

*Wheels*

*Type . . . . . Dunlop AH.9590*

*Tyres . . . . . Dunlop K.K.E.N.14N*

*Tubes . . . . . Dunlop K.K.2*

*Tyre pressure . . . . . Refer to Servicing Schedule (A.P.101B-0400-5)*

## HYDRAULIC SYSTEM

|                                                           |                                                                                                                                                   |
|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Pumps                                                     | Lockheed Mk.9                                                                                                                                     |
| Fluid                                                     | OM-15                                                                                                                                             |
| Capacity of system                                        | 33 pints (approx.)                                                                                                                                |
| Pressure settings                                         |                                                                                                                                                   |
| Cut-out valve                                             | cut out, $2700^{+50}_{-0}$ lb/in <sup>2</sup><br>cut in, 2200 lb/in <sup>2</sup>                                                                  |
| Thermal relief valves                                     | open, 3350 to 3550 lb/in <sup>2</sup><br>re-seat 3100 lb/in <sup>2</sup>                                                                          |
| Flaps relief valve                                        | open, $2850 \pm 50$ lb/in <sup>2</sup>                                                                                                            |
| Reservoir pressure relief valve                           | open, 12-17 lb/in <sup>2</sup><br>re-seat, 8 lb/in <sup>2</sup>                                                                                   |
| Accumulator inflation pressure<br>(main and wheel brakes) | $1350^{+50}_{-0}$ lb/in <sup>2</sup> at +5 deg C<br>and $1400^{+50}_{-0}$ lb/in <sup>2</sup> at +15 deg C<br>when exhausted of hydraulic pressure |

*Name*. . . . . Avon Mk.109 (E.C.U. Mk.10901)  
*Type*. . . . . Pure jet gas turbine  
*Starter*. . . . . B.T.H. turbo starter, Type T.B.S.720, Mk.3  
*Cartridge*. . . . . No.10, Mk.3 (720 grammes)  
*Fuel*. . . . . Avgur with F.S.I.I. D.Eng.R.D.2453  
                     (Ref.No.34A/2201036) - N.A.T.O. Code F-34  
                     Avgtag with F.S.I.I. D.Eng.R.D.2454  
                     (Ref.No.34A/2201037) - N.A.T.O. Code F-40  
                     In case of emergency, only the  
                     following alternative fuels may be used.  
                     Avgur without F.S.I.I. D.Eng.R.D.2494  
                     (Ref.No.34A/9431771) - N.A.T.O. Code F-35  
                     Avcat without F.S.I.I. D.Eng.R.D.2498  
                     (Ref.No.0722/2202148) - N.A.T.O. Code F-44  
                     Avgtag without F.S.I.I. D.Eng.R.D.2486  
                     (Ref.No.34A/9100448) - N.A.T.O. Code F-45  
*Fuel pressure warning lamps*. . . . . Illuminated when pressure falls  
                                                 below  $6_{-0.0}^{+0.5}$  lb/in<sup>2</sup>  
*Oil*. . . . . OX-38  
*Accessories gearbox*  
     No.1 engine. . . . . Rotol Type P.T.G.3/25 (Ref.No.37L/189)  
     No.2 engine. . . . . Rotol Type P.T.G.3/26 (Ref.No.37L/190)  
     *Oil*. . . . . OX-38

**Note . . .**

*Should oil other than OX-38 have been used, the gearbox must be flushed out with oil OX-38, emptied, and then refilled with new oil OX-38.*



## PRESSURE HEAD SETTING

Position ..... On nose tip  
 Type ..... Mk.8W  
 Angular setting ..... Parallel with aircraft centre line  $\pm 1$  deg

## TANK CAPACITIES

| Fuel tanks                                                                    |               | Weight (lb) |       |       |
|-------------------------------------------------------------------------------|---------------|-------------|-------|-------|
|                                                                               |               |             | Avtur | Avtag |
| No.1                                                                          | Forward Group | 260 gal     | 2080  | 2028  |
| No.2                                                                          |               | 260 gal     | 2080  | 2028  |
| No.3                                                                          |               | 220 gal     | 1760  | 1716  |
| No.4                                                                          |               | 220 gal     | 1760  | 1716  |
| No.5 (aft)                                                                    |               | 540 gal     | 4320  | 4212  |
| No.6 (belly) (including collector box - 45 gal NOT including 30 gal unusable) |               | 417 gal     | 3336  | 3223  |
| Main plane integral tanks (port and starboard)                                |               | 856 gal     | 6848  | 6677  |
| Wing tip jettisonable tanks (two)                                             |               | 488 gal     | 3904  | 3806  |
| Total fuel (usable)                                                           |               | 3261 gal    | 26088 | 25016 |

## ◀ Oil

In engine sumps (each engine) ..... 16 pints  
 Total oil (each engine) ..... 19 pints  
 Accessories gearboxes (each gearbox) ..... 3.125 pints  
 Hydraulic tank ..... 16 pints  
 2-speed accessories gearbox (each gearbox) ..... 0.875 pints

## Note . . .

The lubricant Reference and N.A.T.O. code numbers are printed on the reverse of the List of Contents marker card.

## OXYGEN SYSTEM

## Cylinders

One ..... 2250 litres (Ref.No.6D/9429900)  
 Six ..... 750 litres (Ref.No.6D/9429896)

## Emergency oxygen

Forward station ..... One Mk.2A set  
 Ejection seats ..... One Mk.7J set each ▶



