BEAGLE

AUSTER 6.A

MAINTENANCE MANUAL

CONVERSION OF THE AUSTER MILITARY MK.6 TO CIVIL MK.6A STANDARD ENTAILS EMBODIMENT OF CERTAIN MODIFICATIONS. THE FOLLOWING PAGES ADVISE OF ALTERATION AND DISCREPANCIES WHICH SHOULD BE CONSIDERED WHEN REFERRING TO THE RELEVANT TEXT IN THIS PUBLICATION

BEAGLE AIRCRAFT LIMITED, REARSBY AERODROME, LEICESTER, ENGLAND.

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CONVERSION OF THE AUSTER MILITARY MK. 6 TO CIVIL MK. 6A STANDARD ENTAILS EMBODIMENT OF CERTAIN MODIFICATIONS. THE FOLLOWING PAGES ADVISE OF ALTERATION AND DISCREPANCIES WHICH SHOULD BE CONSIDERED WHEN REFERRING TO THE RELEVANT TEXT IN THIS PUBLICATION.

THIS MANUAL COMPLIES WITH BRITISH CIVIL AIRWORTHINESS REQUIREMENTS, CHAPTER A6-2. THE TECHNICAL ACCURACY OF THIS MANUAL HAS BEEN VERIFIED AND IS CERTIFIED AS CORRECT.

SIGNED..... DATE:- OCTOBER, 1960.

A.R.B. DESIGN APPROVAL No. AD/1057/45.

AUSTER AIRCRAFT LIMITED, REARSBY AERODROME, LEICESTER, ENGLAND.

LEADING PARTICULARS

THE ITEMS ENUMERATED BELOW ARE TO BE DISREGARDED IN THE EXISTING TEXT AND READ AS GIVEN IN THE FOLLOWING AMENDED LIST.

NAME	AUSTER MK. 6A.
DUTY ... ... (DELETE).	-

ENGINE

NAME	GIPSY MAJOR 10/1-1.
FUEL ... ... MIN. OCTANE 80 (NOT EXCEEDING 4 c.c. T.E.L. PER GALL).	
OIL	D.E.D. 2472 B/O.

ALIGHTING GEAR

TAIL WHEEL SHOCK ABSORBER	LAMINATED LEAF SPRING ASSEMBLY.

TANK CAPACITIES

FUEL (12 GALLS. IN EACH WING TANK)	TOTAL 24 GALLS.
[illegible] TANK ... (DELETE)	-

AREAS

FIN AND RUDDER	20.2 SQ. FT.

CONTROL SETTING

TAKE OFF	$20^{0} \pm 2^{0}$.
LANDING	$40^{0} \pm 2^{0}$

INTRODUCTION

1. THE AUSTER MK. 6A IS A STRUT-BRACED, HIGH-WING CABIN MONOPLANE WITH A FIXED UNDERCARRIAGE AND IS POWERED BY A GIPSY MAJOR 10/1-1 ENGINE. IT IS PRIMARILY A GENERAL PURPOSE AIRCRAFT, THOUGH IT MAY READILY BE MODIFIED OR ADAPTED TO FULFIL OTHER USEFUL ROLES, PARTICULARLY GLIDER TOWING.

2. THE CABIN ACCOMMODATES PILOT AND ONE PASSENGER IN INDIVIDUAL SIDE-BY-SIDE SEATS, WHILST A SEAT IN THE REAR COMPARTMENT PROVIDES FOR A SECOND PASSENGER.

3. WELDED STEEL TUBE FORMS THE BASIC STRUCTURE OF THE FUSELAGE TO WHICH WOODEN FAIRING STRIPS ARE ATTACHED, THE WHOLE BEING FABRIC COVERED. THE CABIN HAS A PLYWOOD FLOOR (THE THREE FORWARD PANELS OF WHICH ARE STRESSED), A MOULDED TRANSPARENT ROOF, SIDE PANELS AND WINDSCREEN. EACH CABIN DOOR CAN BE JETTISONED IN AN EMERGENCY.

4. THE MAIN PLANES ARE OF A COMPOSITE WOOD AND METAL CONSTRUCTION AND ARE COVERED WITH DOPED FABRIC. THEY ARE SUPPORTED BY STEEL LIFT-STRUTS OF STREAMLINE SECTION, ARRANGED IN V-FORMS - IN SIDE VIEW - AND ANCHORED TO THE BOTTOM FUSELAGE LONGERONS AT THE UNDERCARRIAGE REAR ATTACHMENT FITTINGS. AUXILIARY AEROFOIL FLAPS ARE FITTED TO THE MAIN PLANES.

5. OF WELDED STEEL TUBE AND CHANNEL CONSTRUCTION AND COVERED WITH FABRIC, THE TAIL UNIT INCORPORATES HORN-BALANCED TYPE ELEVATORS. THE FIN AND TAIL PLANE ARE BRACED TO EACH OTHER AND TO THE FUSELAGE BY FOUR TIE-RODS. EACH ELEVATOR IS PROVIDED WITH A TRIM TAB. THE PORT TAB, WHICH IS INDEPENDENTLY OPERATED, IS FOR NORMAL TRIMMING PURPOSES, WHILST THE STARBOARD IS A BALANCE TAB AND FUNCTIONS AUTOMATICALLY WITH THE FLAPS, TO WHICH MECHANISM IT IS CONNECTED. THE RUDDER HAS A FIXED TRIMMING PLATE WHICH CAN BE PRE-SET BY BENDING TO THE REQUIRED POSITION.

6. FUEL IS NORMALLY CONTAINED IN TWO TANKS WHICH MAY BE OF THE NON-SELF SEALING TYPE. THEY ARE SITUATED ONE IN EACH ROOT END BAY OF EACH MAIN PLANE. THE OIL TANK IS MOUNTED IN THE ENGINE BAY FORWARD OF THE FIREWALL. OIL TEMPERATURE AND PRESSURE GAUGES ARE PROVIDED.

7. THE UNDERCARRIAGE MAIN WHEELS INCORPORATE BENDIX BRAKES WHICH MAY BE OPERATED EITHER SIMULTANEOUSLY, OR INDEPENDENTLY, BY HEEL PEDALS; A PARKING BRAKE HANDLE IS ALSO PROVIDED. MAIN UNDERCARRIAGE SHOCK ABSORPTION IS EFFECTED BY RUBBER BUNGEES IN TENSION. THE TAIL WHEEL HAS A SOLID RUBBER TYRE AND THE UNIT IS OF THE LAMINATED LEAF SPRING TYPE.

8. OPERATION OF THE FLYING CONTROLS IS CONVENTIONAL WITH THE EXCEPTION OF THE TRIMMING TAB ON THE STARBOARD ELEVATOR WHICH IS, IN EFFECT, A BALANCE TAB. THIS TAB IS INTERCONNECTED WITH THE FLAP MECHANISM AND AUTOMATICALLY TRIMS THE AIRCRAFT WHEN THE FLAPS ARE OPERATED. THE FLAP LEVER IS SITUATED ON THE CABIN FLOOR ON THE STARBOARD SIDE OF THE PILOT'S SEAT. CONTROL OF THE PORT TRIMMING TAB IS THROUGH A SMALL CRANK HANDLE SECURED TO THE INTERSECTING MEMBERS AT THE CENTRE OF THE CABIN ROOF.

SECTION 1

PARA. 2 - DISREGARD THIS PARAGRAPH AS WRITTEN AND READ:-

2. FUEL IS NORMALLY CONTAINED IN TWO TANKS WHICH MAY BE OF THE NON-SELF-SEALING TYPE. THESE TANKS ARE ALUMINIUM SHELLS WITH OR WITHOUT RUBBER COVERING. THEY ARE MOUNTED, ONE IN EACH ROOT END BAY IN THE PORT AND STARBOARD MAIN PLANES. FUEL FLOW IS CONTROLLED BY A PUSH-PULL KNOB ON THE EXTREME PORT SIDE OF THE INSTRUMENT PANEL. A LONG-RANGE FUEL TANK (MOD. NO. 219 - TO SPECIAL ORDER ONLY) CAN ALSO BE CARRIED, IN PLACE OF AN OBSERVER. THE TANK IS OF CYLINDRICAL FORM, AND IS SITUATED ACROSS THE REAR OF THE CABIN. WHEN THIS AUXILIARY TANK IS FITTED, THE PREVIOUSLY MENTIONED PUSH-PULL KNOB, TOGETHER WITH ITS ASSOCIATED FUEL COCK, IS REPLACED BY A THREE-WAY COCK MOUNTED ON A BRACKET FIXED TO THE FUSELAGE SHOCK TRUSS, ON THE STBD. SIDE OF THE PILOT'S SEAT. THE COCK IS MARKED "MAIN", "OFF", "AUX". AND WHEN THE COCK IS SET TO "MAIN", FUEL IS DRAWN SIMULTANEOUSLY FROM BOTH WING TANKS; AT THE "OFF" POSITION, ALL TANKS ARE OFF; AND AT "AUX.", FUEL IS DRAWN FROM THE AUXILIARY TANK ONLY.

PARAS. 4, 16 AND 18 - THE MK. 6 HAS NO ELECTRICAL INSTALLATION THEREFORE THESE PARAS. SHOULD BE DISREGARDED THOUGH CERTAIN ITEMS OF EQUIPMENT MAY REMAIN IN THE AIRCRAFT.

SECTION 2

WITH THE EXCEPTION OF PARAGRAPHS 5 AND 10 THIS SECTION IS INAPPLICABLE AND SHOULD BE DISREGARDED.

PARA. 5 - DISREGARD THIS PARAGRAPH AS WRITTEN AND READ AS FOLLOWS:-

5. AN "ANTIFYRE", PISTOL-TYPE EXTINGUISHER IS LOCATED ON THE STARBOARD SIDE FAIRING AND MAY BE DETACHED BY GIVING A SHARP PULL FROM THE RETAINING CLIPS. IT IS OPERATED BY COCKING THE PISTOL AND FIRING, ENSURING THAT THE STREAM IS DIRECTED BELOW THE BASE OF THE FIRE. A SPARE CHARGE IS STOWED IMMEDIATELY IN FRONT OF THE PISTOL MOUNTING.

PARA. 10 - THIS PARAGRAPH IS APPLICABLE TO THE MK. 6A AIRCRAFT.

SECTION 3

PARA. 1 - DISREGARD THIS PARAGRAPH AS WRITTEN AND READ:-

1. REAR PASSENGER SEAT:- THE REAR PASSENGER'S SEAT IS SITUATED IN THE REAR COMPARTMENT OF THE CABIN, ON THE PORT SIDE, AND IS SECURED IN THE FORWARD FACING POSITION.

PARA. 2 - THIS PARAGRAPH IS INAPPLICABLE AND SHOULD BE DISREGARDED.

SECTION 4

CHAPTER 1

PARA. 5 - DISREGARD C.G. LIMITS QUOTED AND READ AS FOLLOWS:-

5. FORWARD LIMIT ... ... 15 INCHES.
AFT LIMIT ... ... 21 INCHES.

PARAS. 6 TO 11 INC. - PARAS. 6 TO 11 ARE NOT APPLICABLE TO THE MK. 6A AND ARE TO BE DISREGARDED.

TABLE 4 - THE TOTAL MAXIMUM WEIGHT IS TO BE REGARDED AS 2200 LBS. AND THE TABLE TO BE DISREGARDED AS THE DETAILS ARE NOT APPLICABLE TO THE MK. 6A.

TABLES 1, 2 AND 3 - TABLES 1, 2 AND 3 SHOULD BE DISREGARDED.

CHAPTER 2

PARA. 6 - DISREGARD THIS PARAGRAPH AS WRITTEN AND READ:-

6. THE FUEL SPECIFICATION IS QUOTED IN THE LEADING PARTICULARS. THE FILLER CAP FOR EACH FUEL TANK IS SITUATED IN THE TOP SURFACE OF EACH MAIN PLANE, NEAR THE LEADING EDGE, AT THE ROOT END. A FLOAT-ACTUATED CONTENTS GAUGE IS BOLTED TO THE INBOARD FACE OF EACH TANK AND IS VISIBLE FROM INSIDE THE CABIN.

PARAS. 8 TO 11 INC. - PARAGRAPHS 8 TO 11 ARE INAPPLICABLE AND SHOULD BE DISREGARDED.

FIG. 3 - DISREGARD REFERENCE TO FUEL GAUGES AND EMERGENCY SHUT-OFF COCKS.

FIG. 4 - THIS ILLUSTRATION IS INAPPLICABLE TO THE MK. 6A AND SHOULD BE DISREGARDED.

CHAPTER 3

PARA. 3 - DISREGARD THIS PARAGRAPH.

FIG. 4 - DISREGARD MEASUREMENT OF FLAP MOVEMENT GIVEN. THESE ARE NOW TO BE READ AS:-

TAKE-OFF	($20^{0} \pm 20^{0}$).
FULLY DOWN FOR LANDING ...	($40^{0} \pm 40^{0}$).

FIG. 5 - "KEY TO SYMBOLS".

THE OIL AND GREASE SPECIFICATIONS AS GIVEN AGAINST THE SYMBOL INDENTS ARE TO BE DISREGARDED AND THE FOLLOWING SPECIFICATIONS SUBSTITUTED:-

OIL SPECIFICATION	D.T.D. 417A.
GRAPHITED WAX SPEC.	B.S.M. 20.
GREASE SPEC.	ESSO 659.
GREASE SPEC.	D.T.D. 825.

SECTION 5

PARA. 4 - THIS PARAGRAPH IS INAPPLICABLE AND SHOULD BE DISREGARDED.

FIG. 6 - THIS IS INAPPLICABLE AND SHOULD BE DISREGARDED.

FIG. 10 - DISREGARD FIG. 10 AS INAPPLICABLE.

FIGS. 15, 16 AND 17 - THESE ILLUSTRATIONS ARE INAPPLICABLE AND SHOULD BE DISREGARDED.

IN THE MK. 6A THE SEAT IS PERMANENTLY SECURED IN THE FORWARD FACING POSITION.

FIG. 18 - DISREGARD AS INAPPLICABLE.

SECTION 6

THE MK. 6A HAS NO ELECTRICAL INSTALLATION AND THIS SECTION IS, THEREFORE, INAPPLICABLE AND SHOULD BE DISREGARDED. CERTAIN ITEMS OF ELECTRICAL EQUIPMENT MAY, HOWEVER, REMAIN IN THE AIRCRAFT. THE APERTURE FOR THE WIND-DRIVEN GENERATOR, SITUATED IN THE LEADING EDGE OF THE STARBOARD MAIN PLANE (PARA. 14) IS CLOSED BY AN ALLOY PANEL AND FABRIC COVERING.

SECTION 7

CHAPTER 1

PARA. 6 - DISREGARD THIS PARAGRAPH AS WRITTEN AND READ:-

6. AT THE REAR OF THE STRUCTURE (FRAME NO. 6) AND AT THE LAST BAY, ARE HORIZONTAL SPIGOTS FOR THE ATTACHMENT OF THE TAIL PLANE. A SAFETY TUBE, OF EQUAL LENGTH, IS FITTED WITHIN THE

HORIZONTAL TOP TUBE OF FRAME No. 6 AND IS SECURED BY A SPLIT PIN PASSING THROUGH BOTH COMPONENTS. IN THE SAME BAY ON TOP OF FRAME No. 6 IS THE FRONT VERTICAL SPIGOT FOR THE FIN ATTACHMENT, THE SECOND SPIGOT BEING AN EXTENSION, UPWARDS, OF THE STERNPOST. THE BOTTOM OF THE STERNPOST CARRIES LUGS FOR THE ATTACHMENT OF THE TAIL PLANE BRACING WIRES. FITTINGS ARE PROVIDED AT THE BOTTOM OF THE REAR FUSELAGE TO WHICH THE LEAF SPRINGS, FORMING THE TAIL WHEEL SHOCK ABSORBER, ARE BOLTED.

CHAPTER 3

PARA. 2 - DISREGARD THIS PARAGRAPH AS WRITTEN AND READ:-

2. FIN - THE FIN HAS A WELDED STEEL CONTOUR FRAME WITH WELDED CHANNEL-SECTION STEEL BRACING RIBS. IT IS SECURED TO SPIGOTS ON THE FUSELAGE TOP LONGERONS, THE FRONT ATTACHMENT BEING AT THE TOP OF FRAME No. 6, WHILST THE REAR ONE IS ATTACHED TO AN UPWARD EXTENSION OF THE STERNPOST. THREE OILITE BUSHES FORMING THE FIXED PORTION OF THE RUDDER HINGE, ARE SECURED IN DISTANCE TUBES WELDED TO THE FINPOST AND STERNPOST.

PARA. 3 - DISREGARD THIS PARAGRAPH AS WRITTEN AND READ:-

3. RUDDER - THE RUDDER, A HORN-BALANCED TYPE, HAS A WELDED STEEL TUBE CONTOUR FRAME WITH WELDED CHANNEL-SECTION STEEL RIBS. THE FRONT TUBE CARRIES THREE HINGE FITTINGS CORRESPONDING WITH THOSE OF THE FIN. THE RUDDER OPERATING LEVER IS ALSO WELDED TO THE BOTTOM OF THIS FRONT TUBE.

PARA. 4 - DISREGARD THIS PARAGRAPH AS WRITTEN AND READ:-

4. TAIL PLANE - THE TAIL PLANE IS IN TWO SEPARATE PORTIONS, EACH HAVING A WELDED STEEL TUBE FRAMEWORK WITH WELDED CHANNEL-SECTION STEEL RIBS. THE LEADING AND TRAILING EDGE TUBES FIT INTO SPIGOTS ON THE FUSELAGE TOP LONGERONS. THE TRAILING EDGE TUBE CARRIES A BUSH FOR THE BRACING TIE-RODS ATTACHMENT BOLT, AND ALSO THREE BUSHES WHICH FORM PART OF THE ELEVATOR HINGE.

PARA. 5 - DISREGARD THIS PARAGRAPH AS WRITTEN AND READ:-

5. ELEVATORS - EACH ELEVATOR IS OF WELDED STEEL TUBE CONSTRUCTION WITH WELDED STEEL CHANNEL-SECTION RIBS AND IS OF THE HORN-BALANCED TYPE. THE FORWARD TUBE OF EACH ELEVATOR CARRIES THREE OILITE BUSHED HINGES, AND AT ITS INBOARD END, AN OPERATING LEVER. THESE LEVERS, ON EACH COMPONENT, ARE BOLTED TOGETHER TO FORM ONE OPERATING UNIT. FOR THE PURPOSE OF CARRYING THE OPERATING CABLES, LINK PLATES ARE ATTACHED TO THE HORNS OF THE LEVERS. A TRIMMING TAB IS HINGED TO THE RECESSED INBOARD TRAILING EDGE OF THE PORT ELEVATOR AND A BALANCE TAB IS HINGED, LIKEWISE, TO THE STARBOARD ELEVATOR.

CHAPTER 4

PARA. 10 - DISREGARD THIS PARAGRAPH AS WRITTEN AND READ:-

10. THE FLAPS ARE OPERATED BY A LEVER MOUNTED ON THE CABIN FLOOR ON THE STARBOARD SIDE OF THE PILOT'S SEAT. THE LEVER HAS TWO SIDE PLATES AT THE BASE WHICH ARE PINNED TO A TORQUE TUBE EXTENDING ACROSS THE CABIN FLOOR, IT EMBODIES A RATCHET WHICH ENGAGES IN ONE OF THREE NOTCHES IN THE CONTROL QUADRANT AND SECURES THE SELECTED FLAP POSITION. THE TORQUE TUBE HAS A LEVER AT EACH END WHICH CONNECTS TO THE FLAPS, VIA A SYSTEM OF LINKS AND CONNECTION RODS RUNNING UP EACH SIDE OF THE CABIN AND AFT THROUGH THE MAIN PLANE ROOT GAP. A GUARD IS FITTED AT THE STARBOARD END OF THE TORQUE TUBE TO PREVENT TRAPPING BY THE LEVER, OF THE FEET OF THE OCCUPANT OF THE REAR COMPARTMENT. THE CONNECTING ROD IMMEDIATELY FORWARD OF EACH FLAP IS ADJUSTABLE FOR LENGTH. ONE OF THE LINKS AT THE TOP STARBOARD SIDE OF THE CABIN HAS TWO LUGS FOR ATTACHMENT OF THE STARBOARD ELEVATOR BALANCE TAB CONTROL CABLES (PARA. 8).

PARA. 5 - DISREGARD THIS PARAGRAPH.

FIG. 3 - DISREGARD THIS ILLUSTRATION AS INAPPLICABLE.

SECTION 8

PARA. 1 - DISREGARD THIS PARAGRAPH AS WRITTEN AND READ:-

1. THE AUSTER MK. 6A IS POWERED BY A GIPSY MAJOR 10/1-1 FOUR-CYLINDER, IN-LINE, AIR-COOLED, INVERTED TYPE ENGINE DRIVING A FIXED PITCH DIRECT DRIVE WOODEN PROPELLER. THE ENGINE IS MOUNTED IN ENGINE BEARERS FORMED BY A SQUARE-SECTION STEEL-TUBE STRUCTURE, AND IS SEPARATED FROM THE FUSELAGE BY A FIREWALL. FUEL IS CARRIED IN TWO TANKS, ONE BEING SITUATED IN THE ROOT END BAY OF EACH MAIN PLANE. OIL IS CARRIED IN A SINGLE TANK MOUNTED AT THE BOTTOM FORWARD FACE OF THE FIREWALL. THE TANK IS AN ALUMINIUM SHELL WITH CRASH PROOF COVERING. OIL TEMPERATURE AND OIL PRESSURE GAUGES ARE INCORPORATED IN THE SYSTEM.

FIG. 4 - DISREGARD THIS FIG. AS INAPPLICABLE.

FIG. 6 - DISREGARD THIS ILLUSTRATION AS INAPPLICABLE.

FIG. 8 - DISREGARD THIS ILLUSTRATION AS INAPPLICABLE.

PARA. 4 - DISREGARD THIS PARAGRAPH AS WRITTEN AND READ:-

4. THE NOSE COWLING IS ATTACHED BY SCREWS TO THE FRONT ENGINE MOUNTING BRACKETS AT EACH SIDE. THE TWO BOTTOM COWLINGS ARE EACH SECURED BY SCREWS TO THE NOSE COWLING AND TO BRACKETS ON THE OIL TANK (WHEN MOD. NO. 269 IS NOT EMBODIED) OR BRACKETS ON THE FRONT FUSELAGE UNDERSIDE COWLING (MOD. NO. 269) AND TO THE FIREWALL FLANGE. THE TOP PANEL IS ATTACHED TO THE NOSE COWLING AND THE FIREWALL FLANGE BY SCREWS. EACH SIDE COWLING PANEL IS SECURED TO THE PANEL ABOVE AND BELOW IT BY TURN-BUTTON FASTENERS. THE BOTTOM PANEL IS EXTENDED REARWARDS AND INCORPORATES AN EXHAUST DEFLECTOR FOR THE PROTECTION OF THE UNDERCARRIAGE BUNGEE CORDS.

PARAS. 17, 18 AND 19 - THESE PARAGRAPHS ARE INAPPLICABLE AND SHOULD BE DISREGARDED.

SECTION 11

PARA. 8 - DISREGARD THIS PARAGRAPH AS WRITTEN AND READ:-

8. THE SEAT CUSHION HAS A FLAP AT ITS FORWARD UNDERSIDE, AND THIS IS TRAPPED BETWEEN THE SEAT BACK PLATE AND ARMOUR PLATING, WHERE THE LATTER IS FITTED; WHEN ARMOUR PLATING IS NOT FITTED, THE SEAT IS LEFT LOOSE ON THE BACK PLATE. THE SQUAB CUSHION ALSO HAS A FLAP WHICH FITS OVER THE TOP OF THE SQUAB FRAME, AND THUS SECURES THE CUSHION IN POSITION; THE FLAP HAS A CUT-OUT TO ALLOW FOR THE SAFETY HARNESS SHOULDER STRAPS. IT IS ESSENTIAL THAT MOD. 225 IS INCORPORATED WHEN THE AIRCRAFT IS USED FOR GLIDER TOWING. THIS MODIFICATION PROVIDES FOR THE FITTING OF AN OIL TEMPERATURE GAUGE. IT IS ALSO ESSENTIAL THAT MOD. 3753 IS EMBODIED TO PROVIDE A CYLINDER HEAD TEMPERATURE GAUGE. THIS INSTRUMENT IS FITTED IN THE APERTURE PREVIOUSLY OCCUPIED BY AN AMMETER ON THE STARBOARD SECTION OF THE INSTRUMENT PANEL.

PARA. 11 - NOTE THAT IN THE MK. 6A THE SEAT IS LOCKED IN THE FORWARD FACING POSITION.

PARA. 18 - THIS PARAGRAPH IS NOT APPLICABLE AND SHOULD BE DISREGARDED.

PARAS. 2, 15, 19 AND 35 - THESE PARAGRAPHS ARE INAPPLICABLE AND ARE TO BE DISREGARDED.

FIG. 1 - THIS ILLUSTRATION AND KEY ARE INAPPLICABLE AND ARE TO BE DISREGARDED.

FIG. 1A - THIS ILLUSTRATION IS INAPPLICABLE AND IS TO BE DISREGARDED.

FIG. 2 - THE SEAT IN THE MK. 6A IS SECURED IN THE FORWARD FACING [illegible] ONLY. THE TURNING AND LOCKING GEAR IS NOT APPLICABLE AND SHOULD BE DISREGARDED.

FIGS. 5 TO 9 INC. - THE FIGS. 5 TO 9 INCLUSIVE ARE TO BE DISREGARDED.

MAINTENANCE SCHEDULE

NOTE:-

THIS AIRFRAME SCHEDULE IS TO BE USED IN CONJUNCTION WITH THE A.R.B. APPROVED ENGINE SCHEDULE APPROPRIATE TO THE TYPE OF ENGINE FITTED.

TO COMPLY WITH BRITISH CIVIL AIRWORTHINESS REQUIREMENTS, THE OPERATOR OF EACH AIRCRAFT USED FOR PUBLIC TRANSPORT PREPARES AN INSPECTION SCHEDULE, AND SUBMITS IT TO THE AIR REGISTRATION BOARD FOR APPROVAL. THE FOLLOWING SCHEDULE HAS BEEN DRAWN UP TO ASSIST OPERATORS TO MEET THIS REQUIREMENT, AND ALSO TO SERVE AS A COMPREHENSIVE GUIDE FOR A PRIVATE OWNER. NOTE, HOWEVER, THAT THE INSPECTION MAY NOT NECESSARILY INCLUDE ALL ITEMS OF EQUIPMENT FITTED BY SPECIAL ORDER.

CHECK CYCLE

INSPECTIONS IN THIS SCHEDULE SHOULD BE COMPLETED IN ACCORDANCE WITH THE FOLLOWING CYCLE:-

PRE FLIGHT INSPECTION

NOT EXCEEDING 10 HOURS, OR 7 DAYS, WHICHEVER IS SOONER	CHECK 1.
NOT EXCEEDING 50 HOURS FLYING	CHECK 2.
NOT EXCEEDING 150 HOURS FLYING	CHECK 3.
NOT EXCEEDING 300 HOURS FLYING, OR 12 MONTHS, WHICHEVER IS SOONER ...	CHECK 4.
NOT EXCEEDING 600 HOURS FLYING, OR 24 MONTHS, WHICHEVER IS SOONER ...	CHECK 5.

ALL THE ABOVE CHECKS ARE CUMULATIVE - I.E. A CHECK 3 MUST INCLUDE CHECKS 1 AND 2.

NOTES

1. CERTIFICATES OF MAINTENANCE MUST BE ISSUED ON THE COMPLETION OF EACH CHECK 1 - THE PERIOD OF VALIDITY BEING THAT STATED FOR CHECK 1 IN THE CHECK CYCLE ABOVE.

2. ANY DAMAGE OR DEFECT AFFECTING SAFETY MUST BE RECTIFIED BEFORE THE AIRCRAFT FLIES AGAIN.

3. WHENEVER A FLIGHT OVER WATER IS CONTEMPLATED, AS DEFINED IN THE AIR NAVIGATION (GENERAL) REGULATIONS, ENSURE THAT ALL LIFEBELTS ARE SERVICEABLE AND SECURELY STOWED.

4. ALL FLYING CONTROL SYSTEMS:-

(A) WHENEVER INSPECTIONS ARE MADE OR WORK UNDERTAKEN AT ANY POSITION IN THESE SYSTEMS, DETAILED INVESTIGATION MUST BE MADE ON COMPLETION TO ENSURE THAT DISTORTION, TOOLS, RAG OR ANY OTHER LOOSE ARTICLES OR FOREIGN MATTER SUCH AS COULD IMPEDE THE FREE MOVEMENT AND SAFE OPERATION OF THE SYSTEM/S ARE NOT PRESENT AND THAT THE INSTALLATION IS CLEAN.

(B) IF, AS A RESULT OF THE APPLICATION OF THIS MAINTENANCE SCHEDULE, ANY PART OF EITHER THE MAIN OR ANY ASSOCIATED SYSTEM IS DISMANTLED, ADJUSTED, REPAIRED OR RENEWED, THAT PART OF THE SYSTEM/S WHICH HAS BEEN DISTURBED SHALL BE SUBJECTED TO A DUPLICATE INSPECTION WITH FREE MOVEMENT, RANGE, DIRECTION AND TENSION CHECKS AND SHALL BE CERTIFIED IN ACCORDANCE WITH BRITISH CIVIL AIRWORTHINESS REQUIREMENTS, SECTION A, CHAPTER A5-3.

5. FLYING TIMES:-

BECAUSE OF THE IMPORTANCE OF INCLUDING TAXYING TIME WHEN CALCULATING THE FATIGUE LIVES OF AIRFRAME COMPONENT PARTS AND ALSO THE OVERHAUL PERIODS OF ENGINES AND PROPELLERS, IT IS ESSENTIAL THAT HOURS OF FLYING BE RECORDED ON A "CHOCK-TO-CHOCK" BASIS. IN CONSEQUENCE, THEREFORE, ALL PERIODS QUOTED IN THIS SCHEDULE IN "HOURS FLYING" ARE TO BE CALCULATED ON A "CHOCK-TO-CHOCK" BASIS - SEE CIVIL AIRCRAFT INSPECTION PROCEDURES LEAFLET ML/1-1.

INDEX

PRE-FLIGHT INSPECTION

AIRCRAFT STRUCTURE	
1. ALL COVERINGS	- INSPECT FOR DAMAGE AND SECURITY, PARTICULARLY THE UNDER-SURFACES. REMOVE ANY ACCUMULATIONS OF HOAR FROST, SNOW OR ICE FROM ALL SURFACES IMMEDIATE PRIOR TO FLIGHT.
MAIN PLANE	
2. LIFT AND JURY STRUTS	- INSPECT, VISUALLY, FOR EVIDENCE OF DAMAGE.
TAIL PLANE	
3. BRACING RODS	- INSPECT FOR DAMAGE AND SECURITY.
MAIN WHEEL ASSEMBLIES	
4. STRUCTURE AND FABRIC COVERINGS	- CLEAN AND INSPECT FOR DAMAGE AND SECURITY.
5. RUBBER SHOCK CORDS AND STEEL CHECK CABLES.	- CLEAN AND INSPECT VISIBLE PORTIONS FOR OBVIOUS DAMAGE.
6. WHEELS	- CLEAN AND INSPECT FOR DAMAGE.
7. TYRES	- CLEAN AND INSPECT FOR DAMAGE. CHECK THAT PRESSURES ARE NORMAL.
TAIL WHEEL ASSEMBLY - IF FITTED	
8. LEAF SPRINGS, SHACKLES, WHEEL FORK AND WHEEL 9. BUNGEE STEERING CORDS - IF FITTED	- CLEAN AND INSPECT FOR DAMAGE AND SECURITY.
FLYING CONTROLS	
10. ALL CONTROL SURFACES	- INSPECT FOR DAMAGE AND SECURITY AND ENSURE THAT THEY OPERATE CORRECTLY AND FREELY OVER THE FULL RANGE OF MOVEMENT. REMOVE ANY ACCUMULATIONS OF HOAR FROST, SNOW OR ICE, IMMEDIATELY PRIOR TO FLIGHT.
11. LOCKING DEVICES	- ENSURE REMOVAL AND CORRECT STOWAGE IMMEDIATELY PRIOR FLIGHT.
AIR SPEED INDICATOR SYSTEM	
12. PITOT HEAD	- REMOVE COVER IMMEDIATELY PRIOR TO FLIGHT.
INSTRUMENTS	
13. INSTRUMENTS AND PANEL	- INSPECT THE PANEL FOR SECURITY. ENSURE THAT THE INSTRUMENTS AND THEIR GLASSES ARE CLEAN AND UNDAMAGED. CHECK THAT BEZELS - IF FITTED - ARE TIGHT AND INSTRUMENT READINGS NORMAL.
ELECTRICAL INSTALLATION - IF FITTED	
14. ACCUMULATOR	- BEFORE NIGHT FLYING ENSURE THAT A SERVICEABLE ACCUMULATOR IS INSTALLED. ENSURE CONNECTIONS ARE SECURE AND CORRECTLY MADE AND THAT THE ACCUMULATOR IS SECURELY FITTED.
15. GENERAL LIGHTING CIRCUITS) 16. NAVIGATION LAMPS)	- BEFORE NIGHT FLYING CHECK FUNCTIONING OF CIRCUITS, RETURN ALL SWITCHES TO OFF.
EQUIPMENT	
17. SEATS AND SAFETY BELTS (OR HARNESS)	- INSPECT FOR DAMAGE AND SECURITY; CHECK FOR DAMAGE TO BELT OR HARNESS CLASPS.
18. PYROTECHNIC SIGNALLING EQUIPMENT - IF CARRIED	- ENSURE THAT COMPLEMENT IS CORRECT AND STOWED SAFELY.
19. LOOSE EQUIPMENT, BAGGAGE, ETC.	- ENSURE SECURE STOWAGE.
20. IF SOLO FLIGHT IS INTENDED	- SECURE UNOCCUPIED BELTS OR HARNESS AND ENSURE THAT NOTHING IN THE CABIN CAN FOUL THE FLYING CONTROLS.

SAFETY EQUIPMENT

21. LIFEBELTS – IF CARRIED
- CHECK FOR STOWAGE – CORRECT LOCATION. NO EVIDENCE OF EXTERNAL DAMAGE OR CONTAMINATION. DATES VALID.

22. HAND FIRE EXTINGUISHER – IF FITTED
- ENSURE THAT THE EXTINGUISHER HAS NOT BEEN DISCHARGED AND THAT IT IS SECURELY STOWED.

23A. ANTIFYRE PISTOLE – IF FITTED
- ENSURE CHARGE IS FITTED AND THAT PISTOLE AND SPARE CHARGE ARE CORRECTLY STOWED. CHECK THAT THE CORRECT NUMBER OF SPARE CHARGES ARE PROVIDED.

23. FIRST-AID PACK
- ENSURE THAT THE SEAL ON THE PACK IS UNBROKEN AND THAT THE PACK IS SECURELY STOWED.

GENERAL

24. TRANSPARENT PANELS
- CLEAN AND INSPECT FOR DAMAGE.

25. AIRCRAFT
- CLEAN EXTERNALLY AND INTERNALLY AS NECESSARY.

26. ALL DOORS, ZIP FASTENERS, PANELS, ETC.
- ENSURE THAT ITEMS ARE CLOSED AND SECURED IMMEDIATELY PRIOR TO FLIGHT.

CHECK 1

FUSELAGE

27. FABRIC COVERING AND FASTENERS – EXAMINE FOR DAMAGE AND SECURITY.

28. CABIN DOORS, LATCHES OR LOCKS AND HINGES – EXAMINE FOR DAMAGE AND SECURITY. CHECK THAT THE LATCHES OR LOCKS ARE FUNCTIONING CORRECTLY.

29. CABIN DOOR JETTISON MECHANISM – ENSURE THAT THE [illegible] HAS NOT BEEN MOVED AND THAT THE PINS ARE IN [illegible] ENGAGEMENT WITH THE DOOR HINGES.

30. TRANSPARENT PANELS – CLEAN, AND EXAMINE FOR SCRATCHES, CRACKS AND OTHER DAMAGE. ENSURE PANELS ARE SECURE.

32. BUFFER PADS FOR SHOCK TRUSS – EXAMINE FOR DAMAGE AND SECURITY.

MAIN PLANE

33. FABRIC COVERING OF:- MAINPLANE AND AILERONS – EXAMINE FOR DAMAGE AND SECURITY; CHECK FOR EVIDENCE OF LOOSE OR DAMAGED INTERNAL MEMBERS.

34. MAINPLANE LEADING EDGE PLY OR METAL SKIN. – EXAMINE FOR DAMAGE AND SECURITY.

35. LIFT AND JURY STRUTS – INSPECT VISUALLY FOR DAMAGE AND ENSURE THAT STRUTS ARE SECURE.

36. AILERON HINGES AND ATTACHMENT BRACKETS – ENSURE THAT THE HINGE ASSEMBLIES ARE SECURE, AND THAT THE ATTACHMENT BRACKETS ARE NOT DAMAGED AND SECURE.

37. FLAPS – EXAMINE METAL SKIN AND MEMBERS FOR DAMAGE AND SECURITY. CHECK THAT THE FLAPS DO NOT SHOW SIGNS OF DISTORTION.

38. ROOT GAP FAIRINGS – ENSURE THAT THE FAIRINGS ARE SECURE.

TAIL UNIT

39. FABRIC COVERING OF:- TAILPLANE, ELEVATORS, FIN AND RUDDER – EXAMINE FOR DAMAGE AND SECURITY; CHECK FOR EVIDENCE OF LOOSE OR DAMAGED INTERNAL MEMBERS AND THAT TAILPLANE AND FIN ARE SECURE.

40. ELEVATOR AND RUDDER HINGES AND ATTACHMENTS – ENSURE THAT THE HINGE AND PIN ASSEMBLIES ARE SECURE.

* 41. ELEVATOR TRIMMING TAB AND FLAP BALANCE TAB) – EXAMINE FOR DAMAGE AND SECURITY.

* 42. TAIL TRIMMERS – IF FITTED)

43. RUDDER MASS BALANCE (EXTERNAL TYPE) AND TRIMMING STRIP – EXAMINE FOR DAMAGE AND SECURITY.

44. TAILPLANE BRACING RODS AND END FITTINGS – CHECK FOR ADEQUATE TENSION AND ENSURE THAT THE RODS AND END FITTINGS ARE UNDAMAGED AND SECURE.

NOTE: CAREFULLY INSPECT END FITTINGS FOR CRACKING ESPECIALLY IN VICINITY OF BOLTS.

MAIN WHEEL ASSEMBLIES

45. DIAGONAL TUBES AND ATTACHMENTS TO STUB AXLES. – EXAMINE FOR DAMAGE AND SECURITY.

46. FABRIC COVERINGS OF SHOCK TRUSS – CLEAN AND EXAMINE FOR DAMAGE AND SECURITY.

47. RUBBER SHOCK CORDS AND STEEL CHECK CABLES. – CLEAN AND EXAMINE VISIBLE PORTIONS FOR OBVIOUS DAMAGE.

48. WHEELS – CLEAN AND EXAMINE FOR DAMAGE AND SECURITY.

49. TYRES – CLEAN AND EXAMINE FOR DEEP CUTS AND OTHER DAMAGE. CHECK THE TYRES FOR CREEP AND CORRECT AIR PRESSURE; ENSURE THAT THE VALVE CAPS ARE SECURELY REPLACED.

TAIL WHEEL ASSEMBLY

51. LEAF SPRING, SHACKLES, WHEEL – CLEAN AND EXAMINE FOR DAMAGE AND SECURITY. LUBRICATE AS NECESSARY.

51A BUNGEE STEERING CORDS AND STEERING LEVER – IF FITTED – CLEAN AND EXAMINE FOR DAMAGE AND SECURITY. ENSURE TAIL WHEEL FOLLOWS MOVEMENT OF RUDDER.

BRAKE SYSTEM

52. CONTROL HANDLE AND PEDALS – EXAMINE FOR SECURITY AND CHECK FOR SATISFACTORY OPERATION OF THE SYSTEM. ENSURE THAT THERE IS NO TENDENCY OF THE HANDLE TO SLIP.

53. CABLE END FITTINGS AT MAIN WHEELS – CLEAN AND EXAMINE FOR DAMAGE AND SECURITY.

FLYING CONTROLS

54. AILERONS, ELEVATORS AND RUDDER – CHECK FOR CORRECT OPERATION AND ENSURE THAT FULL AND FREE MOVEMENT IS OBTAINED. RETURN THE CONTROLS TO THEIR NEUTRAL POSITIONS AND LOCK IF NECESSARY.

55. ELEVATOR TRIMMING TABS – IF FITTED
56. FLAP BALANCE TAB. – CHECK FOR CORRECT OPERATION AND ENSURE THAT FULL AND FREE MOVEMENT IS OBTAINED AND THAT THE FRICTION DEVICE OPERATES SATISFACTORILY. RESET THE CONTROL IN THE NEUTRAL POSITION.

57. FLAPS – CHECK FOR CORRECT OPERATION AND ENSURE THAT FULL AND FREE MOVEMENT IS OBTAINED. ENSURE THAT THE SPRING LOADED LOCKING MECHANISM OPERATES SATISFACTORILY AND THAT THERE IS NO EVIDENCE OF RATCHET WEAR.

58. CONTROL ARCH ASSEMBLY – INSPECT, VISUALLY, FOR DAMAGE AND SECURITY OF COMPONENTS AND CONNECTIONS.

59. RUDDER PEDAL RETURN SPRING – EXAMINE FOR DAMAGE AND SECURITY; CHECK FOR SATISFACTORY OPERATION.

59A RUDDER STOP ASSEMBLY – EXAMINE FOR DISTORTION. CHECK THAT WHEN ELEVATOR IS IN NEUTRAL POSITION OR IN RAISED POSITION FOULING WITH RUDDER CANNOT OCCUR.
NOTE: SEE AUSTER SERVICE BULLETIN NO. 34.

VACUUM SYSTEM

60. VENTURI HEADS – CLEAN THE HEADS; ENSURE THAT THE BORES AND SLOTS ARE NOT OBSTRUCTED AND EXAMINE FOR DAMAGE AND SECURITY.

AIR SPEED INDICATOR SYSTEM

61. PITOT HEAD – EXAMINE FOR DAMAGE AND SECURITY AND ENSURE THAT THE AIR VENTS IN THE STATIC TUBE ARE NOT OBSTRUCTED. FIT COVER IF NECESSARY.

62. PIPELINES – DRAIN, IF MOISTURE ACCUMULATIONS ARE SUSPECTED; CHECK FOR LEAKS.

INSTRUMENTS

63. INSTRUMENTS AND PANEL – EXAMINE THE PANELS FOR SIGNS OF DAMAGE AND CHECK SECURITY. ENSURE THAT THE INSTRUMENTS AND THEIR GLASSES ARE CLEAN AND UNDAMAGED. CHECK THAT ALL BEZELS, IF FITTED, ARE TIGHT AND INSTRUMENT READINGS ARE NORMAL.

64. AIR-SPEED INDICATOR – CHECK FOR SATISFACTORY FUNCTIONING BY ROLLING A RUBBER TUBE FITTED OVER THE PRESSURE TUBE OF THE PITOT HEAD.

65. ALTIMETER (IF "SENSITIVE" TYPE) – SET SUBSIDIARY SCALE TO READ BAROMETRIC PRESSURE OF THE DAY AT THE AERODROME AND ENSURE THAT THE POINTERS INDICATE WITHIN THE PERMISSIBLE TOLERANCE OF ZERO. ALTERNATIVELY, CHECK AGAINST AERODROME ALTIMETER.

66. TURN AND BANK INDICATOR – EXAMINE FOR DAMAGE AND SECURITY.

67. CLOCK – IF FITTED – SET TO THE CORRECT TIME, AND IF NECESSARY, WIND.

68. COMPASS – EXAMINE FOR DAMAGE AND SECURITY. ENSURE THAT THE GRID-RING, LOCK AND ANTI-VIBRATION DEVICES FUNCTION SATISFACTORILY AND THAT THE BOWL IS NOT DISCOLOURED. CHECK THAT BUBBLES ARE NOT PRESENT IN THE FLUID.

69.	COMPASS DEVIATION CARDS	- ENSURE THAT CARDS ARE LEGIBLE AND SECURE.
	ELECTRICAL INSTALLATION - IF FITTED	
70.	WIND-DRIVEN GENERATOR	- EXAMINE THE BLADES OF THE [illegible] FOR DAMAGE AND SECURITY.
71.	ACCUMULATOR	- EXAMINE FOR SECURITY, SIGNS OF OVER-CHARGING, LEAKAGE OF THE ELECTROLYTE AND CORROSION IN THE VICINITY OF THE STOWAGE. ENSURE THAT AIR VENTS ARE CLEAR AND CABLE CONNECTIONS ARE SECURE. TEST VOLTAGE ON LOAD AND ENSURE THAT ACCUMULATOR IS FULLY CHARGED.
72.	EXTERNAL SUPPLY SOCKET	- EXAMINE EXTERNALLY, FOR CLEANLINESS, DAMAGE AND SECURITY. ROTATE THE COVER AGAINST THE SPRING AND ENSURE THAT THE RETURN MOVEMENT IS NOT SLUGGISH.
73.	FUSES AND SPARES	- ENSURE THAT THEY ARE SERVICEABLE AND OF THE CORRECT VALUE AND TYPE.
74.	ALL LAMPS AND LIGHTING	- TEST FOR CORRECT FUNCTIONING. RETURN ALL SWITCHES TO "OFF" POSITION.
	RADIO - IF FITTED	
75.	MASTS, AERIALS AND ALL RADIO ATTACHMENTS	- EXAMINE FOR SECURITY.
	EQUIPMENT	
76.	SEATS AND SAFETY BELTS (OR HARNESS)	- INSPECT FOR DAMAGE AND SECURITY; CHECK FOR DAMAGE TO BELT OR HARNESS CLASPS OR WEBBING. ENSURE THAT THE SEAT CANVASSES ARE NOT FRAYED AND THAT THE WEAVE IS NOT OPENING.
77.	PYROTECHNIC SIGNALLING EQUIPMENT - IF CARRIED	- ENSURE THAT COMPLEMENT CORRECT AND STOWED SAFELY.
78.	LOOSE EQUIPMENT, BAGGAGE, ETC.	- ENSURE SECURE STOWAGE.
	SAFETY EQUIPMENT	
79.	LIFEBELTS - IF CARRIED	- CHECK FOR CORRECT LOCATION AND STOWAGE. NO EVIDENCE OF EXTERNAL DAMAGE OR CONTAMINATION. DATES VALID.
80.	HAND FIRE EXTINGUISHER - IF FITTED	- ENSURE THAT THE EXTINGUISHER HAS NOT BEEN DISCHARGED AND THAT IT IS SECURELY STOWED.
80A	ANTIFYRE PISTOLE - IF FITTED NOTE: REMOVE CHARGE FOR ACTION CHECK. RE-LOAD AFTER CHECK PISTOLE AND CHARGE CANNOT BE PUT INTO MOUNTING IN COCKED POSITION.	- CLEANLINESS. CRACKS. CORROSION. OTHER DAMAGE. CHECK COCKING AND FIRING ACTION.
80B	CHECK SEALING OF MATRIX BY TAPPING CENTRE OF CAP LIGHTLY WITH FINGER. IF SEAL IS BROKEN WHITE POWDER FILLING WILL EMERGE; THE CHARGE MUST BE CHANGED AND RETURNED FOR REFILLING.	- CLEANLINESS. CRACKS. CORROSION. SEALING CAP MATRIC - UNBROKEN. OTHER DAMAGE. GREASE BAYONET PINS.
	ANTIFYRE PISTOLE CHARGES - IF FITTED.	
80C	ANTIFYRE PISTOLE AND SPARE CHARGE MOUNTINGS - IF FITTED	- CLEANLINESS. CRACKS. CORROSION. DISTORTION. OTHER DAMAGE. SECURITY.
81.	FIRST-AID PACK	- ENSURE THAT THE SEAL ON THE PACK IS UNBROKEN AND THAT PACK IS SECURELY STOWED.
	GENERAL	
82.	AIRCRAFT	- CLEAN EXTERNALLY AND INTERNALLY.
83.	ALL DRAINAGE [illegible] AND HOLES	- ENSURE THAT THEY ARE UNOBSTRUCTED.
84.	ALL DOORS, ZIP FASTENERS AND PANELS.	- EXAMINE FOR DAMAGE.

CHECK 2

FUSELAGE

85. Structure	- Obvious damage.
86. Cabin door latches or locks and hinges	- Lubricate.
87. Cabin door jettison levers, connecting links and pins - if fitted.	- Damage. Security. Lubricate.
87A Cabin door retaining mechanism - if fitted	- Damage. Satisfactory operation. Security. Lubricate.
88. Cabin access steps	- Damage. Distortion. Security.
89. Guard panel on shock truss	- Dents and other damage. Security.
90. Floor 90A Exhaust deflector plate - if fitted	- Damage. Security.
91. Cabin heating duct and control shutter - if fitted	- Damage to ducts. Correct functioning of control shutter. Security.

CHECK 3

FUSELAGE

92. Ballast weight mounting and attachments - if fitted	- Damage. Corrosion. Security.

MAIN PLANE

102. Structure	- Signs of internal damage. Evidence of vertical movement in region of flap bay - if flaps are fitted.
103. Lift and jury struts	- Excessive bowing. Corrosion of lift struts at attachment of jury struts. Other damage. Security.
104. Aileron hinge assemblies	- Damage. Lubricate.
105. Flaps:- Torque tube Bearing brackets and hinges	- Damage. Security. Lubricate.
105A Inboard bearing tie rod supports	- Correct adjustment. Security.
106. Root gap fairings	- Damage. Correct fitment. Security.

MAIN PLANE

107. Leading edge skin:- Plywood or metal	- Excessive surface buckles.
108. Lift and jury struts	- Cracks, corrosion, and other damage, particularly under fittings and fabric coverings, and at spar attachments.

CHECK 4

FUSELAGE

93. INTERNAL STRUCTURE OF FUSELAGE – CORROSION OF METAL COMPONENTS. DETERIORATION OF WOODEN MEMBERS. SERVICEABILITY OF FABRIC AND ATTACHMENTS.
NOTE: OPEN AVAILABLE INSPECTION PATCHES. COMPLETE A VISUAL INSPECTION OF STRUCTURE EXPOSED, ESPECIALLY AT TAIL CONE, BY LIFTING AREA OF FABRIC AND TAPE AT STEARPOST.

94. CABIN DOOR JETTISON MECHANISM – IF FITTED. – CORRECT FUNCTIONING. CORROSION OF LEVERS AND CONNECTING LINKS, ETC.
NOTE: SUPPORT THE DOOR FOR THIS TEST AND RE-ENGAGE MECHANISM CORRECTLY AT COMPLETION OF TEST.

95. GUARD PANEL ON SHOCK TRUSS – CORROSION. OTHER DAMAGE.

96. SHOCK TRUSS BOBBINS – CORROSION. CHAFING. DISTORTION. OTHER DAMAGE. SECURITY.

97. BUFFER PADS FOR SHOCK TRUSS – DETERIORATION.

97A ALL WOODEN MEMBERS – MOULD, SHRINKAGE, DETERIORATION, SIGNS OF SPLITTING AND DISTORTION.

MAIN PLANE

110. INTERNAL STRUCTURE OF MAIN PLANE AND AILERONS – DAMAGE. DETERIORATION. FAILURE OF GLUED JOINTS.
NOTE: OPEN AVAILABLE PANELS, PATCHES, ETC. COMPLETE A VISUAL INSPECTION OF STRUCTURE EXPOSED.

111. ATTACHMENTS OF MAIN PLANE TO FUSELAGE – DAMAGE. CORROSION. SECURITY.

112. AILERON HINGE ASSEMBLIES – WEAR. CRACKS.

CHECK 5

FUSELAGE

98. ALL METAL STRUCTURAL MEMBERS, FITTINGS AND ATTACHMENTS. – CRACKS, DISTORTION, BOWING, CORROSION, DISTORTION AND CORROSION OF BOLTS AND ELONGATION OF BOLT HOLES. SECURITY OF MEMBERS.
NOTE: RELEASE FASTENERS AND FOLD BACK COVERING. REMOVE CABIN REAR FLOOR, UNDERSIDE METAL SHIELD AND SEATS, ETC. CAREFULLY INSPECT AT WELDED JOINTS AND FLOOR ATTACHMENT ASSEMBLIES.

100. FABRIC COVERING AND ATTACHMENTS. – DETERIORATION. SECURITY.

101. PROTECTIVE TREATMENT. – DETERIORATION.

MAIN PLANE

NOTE: REMOVE MAIN PLANE, STRUTS, AILERONS AND, IF FITTED, FLAPS FOR DETAIL INSPECTION.

112A ALL WOODEN MEMBERS – DAMAGE, MOULD, SPLITTING, SHRINKAGE, DETERIORATION AND FAILURE OF GLUED JOINTS. COMPRESSION SHAKES, PARTICULARLY IN THE VICINITY OF THE STRUT FITTINGS.

115. ALL METAL STRUCTURAL MEMBERS – CRACKS. DISTORTION. CORROSION AND OTHER DAMAGE. BOWING OF STRUTS.

CHECK 2

CHECK 3

TAIL UNIT

120. STRUCTURE – SIGNS OF INTERNAL DAMAGE. SECURITY OF TAILPLANE AND FIN TO FUSELAGE.

120A TAILPLANE ATTACHMENT STUBS – EVIDENCE OF FAILURE. SEE NOTICE TO L.A.E's No. 42.
NOTE: TO BE COMPLETED AT PERIODS NOT EXCEEDING 100 HOURS FLYING.

121. LEADING EDGES OF TAILPLANE AND FIN – DAMAGE. DISTORTION.

122. TRAILING EDGES OF ELEVATOR AND RUDDER – DAMAGE. DISTORTION.

122A FABRIC STRIP BETWEEN TAILPLANE AND ELEVATOR AND ELEVATOR AND TRIMMING TABS – IF FITTED. – CLEANLINESS. DAMAGE. SECURITY.

123. ELEVATOR AND RUDDER HINGE ASSEMBLIES – DAMAGE. *LUBRICATE.
HINGES ASSEMBLIES OF:-

124. ELEVATOR TRIMMING TABS) – DAMAGE. SECURITY. LUBRICATE.
125. FLAP BALANCE TAB)

126. TAILPLANE BRACING ROD ATTACHMENTS – EVIDENCE OF EXCESSIVE SLACKNESS.

TAIL UNIT

127. RUDDER MASS BALANCE ASSEMBLY – EXTERNAL TYPE – CORROSION.

128. TAILPLANE BRACING RODS AND ATTACHMENT FITTINGS – FRACTURES. CORROSION. DISTORTED LUGS. ELONGATION OF BOLT HOLES.
NOTE: SLACKEN OFF LOCKNUTS AND EXAMINE ROD THREADS FOR EVIDENCE OF FATIGUE WHERE NUTS BUTT AGAINST FORK ENDS.

128A TAILPLANE LEADING EDGE TUBE – CRACKS IN VICINITY OF FRONT ATTACHMENT SADDLE WASHERS.
NOTE: APPLICABLE TO TAILPLANES WITH BRAZED SADDLE WASHERS AT PERIODS NOT EXCEEDING 250 HOURS FLYING – NOT APPLICABLE TO TAILPLANES WITH WELDED SADDLE WASHERS OF A.I.D. 3252 OR 3413 EMBODIED – SEE NOTICES TO L.A.E's No. 42.

128B TAILPLANE BRACING ROD ATTACHMENT FITTINGS ON AIRCRAFT – CRACKS. CORROSION. OTHER DAMAGE. CORRECTLY REFITTED. SECURITY.
NOTE: REMOVE.

* NOT APPLICABLE IF SELF-LUBRICATING BEARINGS ARE FITTED.

MAIN WHEEL ASSEMBLIES

SIDE BRACING TUBES AND DIAGONAL TUBES. – EVIDENCE OF BOWING, CORROSION OR OTHER DAMAGE. CRACKS AT WELDS.
NOTE: DO NOT REMOVE WHEELS.

SHOCK TRUSS SIDE BEARINGS – NUTS ON HINGE BOLTS CORRECTLY SECURED BUT NOT OVERTIGHTENED.
SEE AUSTER SERVICE BULLETINS Nos. 19 & 20.

MAIN WHEEL ASSEMBLIES

NOTE: JACK THE AIRCRAFT, REMOVE THE WHEELS AND DISMANTLE BRAKE UNITS. CLEAN COMPONENTS.

140. SHOCK TRUSS SIDE BEARING BOLTS – EVIDENCE OF EXCESSIVE [illegible] AND BENDING.

141. WHEELS, STUB AXLES AND FITTINGS – SERVICEABILITY OF WHEEL BEARINGS.

CHECK 4

113. FLAPS:- TORQUE TUBE) BEARING BRACKETS) AND HINGES)	- WEAR. CRACKS. CORROSION.
113A AILERON MASS BALANCE ASSEMBLIES	- CORROSION AT ATTACHMENTS. SECURITY.

CHECK 5

116. INTERNAL BRACING RODS AND TUBES	- CHAFING, PARTICULARLY AT SPACERS, CORROSION AND CORRECT TENSION.
117. ALL METAL ATTACHMENT FITTINGS, BOLTS, PINS, ETC.	- WEAR. CHAFING. DISTORTION. CORROSION. ELONGATION OF HOLES.
117A RIB BRACING TAPES	- DETERIORATION. FRAYING. SECURITY.
[illegible] ATTACHMENTS	- DETERIORATION. SECURITY.
119. PROTECTIVE TREATMENT.	- DETERIORATION.

TAIL UNIT

129. INTERNAL STRUCTURE OF TAILPLANE FIN AND CONTROL SURFACES NOTE: OPEN AVAILABLE PATCHES OR FABRIC SUFFICIENT TO ASCERTAIN CONDITION OF INTERNAL STRUCTURE. COMPLETE A VISUAL INSPECTION OF STRUCTURE EXPOSED.	- CORROSION OF METAL COMPONENTS. SERVICEABILITY OF FABRIC AND ATTACHMENTS.
130. ATTACHMENTS OF TAILPLANE AND FIN TO FUSELAGE	- DAMAGE. CORROSION. SECURITY.
131. ELEVATOR (ELEVATOR TAB, IF FITTED) AND RUDDER HINGE ASSEMBLIES	- WEAR. CRACKS. CORROSION.
132. TAIL TRIMMER HINGE ASSEMBLIES, IF FITTED	- WEAR. CRACKS. CORROSION.

TAIL UNIT

[illegible] - REMOVE TAIL UNIT [illegible] FOR DETAIL INSPECTION.	
133. ALL METAL STRUCTURAL MEMBERS NOTE:- IF NECESSARY, REMOVE FABRIC COVERING. CAREFULLY INSPECT AT WELDED JOINTS.	
134. ALL METAL ATTACHMENT FITTINGS, BOLTS, PINS, ETC.	- WEAR, CHAFING, STRETCH, CORROSION. ELONGATION OF HOLES.
135. FABRIC COVERING AND ATTACHMENTS	- DETERIORATION. SECURITY.
136. PROTECTIVE TREATMENT.	- DETERIORATION.
136A RUDDER MASS BALANCE - INTERNAL TYPE	- DAMAGE. CORROSION OF ATTACHMENTS. SECURITY.

MAIN WHEEL ASSEMBLIES

149. SIDE BRACING TUBES, CROSS BRACINGS AND DIAGONAL TUBES NOTE: OPEN UP FABRIC OR PATCHES TO PERMIT INTERNAL INSPECTION.	- DISTORTION AND BOWING, CRACKS, CORROSION AND OTHER DAMAGE. SECURITY.
150. DIAGONAL TUBE - LOWER ATTACHMENTS	- DISTORTION. CORROSION AND OTHER

MAIN WHEEL [illegible] IES

156. ALL METAL COMPONENTS	- DETERIORATION OF PROTECTIVE TREATMENT.
157. WHEEL ASSEMBLIES	- CORRECT ALIGNMENT AND TRACK.
[illegible]. PROTECTIVE TREATMENT OF ASSEMBLIES	- DETERIORATION.

CHECK 2

138A SHOCK TRUSS SIDE BEARING GUSSET PLATES	- CRACKS, PARTICULARLY AT WELDS. OTHER DAMAGE. SECURITY.
139. RUBBER SHOCK CORDS AND STEEL CHECK CABLES	- CHAFING AND OTHER DAMAGE. EVIDENCE OF STRETCHING.

CHECK 3

NOTE: A WHEEL SIDE FLOAT OF 0.005 TO 0.012 IN. MUST BE PRESENT.

	EXCESSIVE SLACKNESS OF WHEELS ON AXLES. DAMAGE, CORROSION AND SECURITY OF AXLES AND ATTACHMENTS. PACK WHEEL BEARINGS WITH GREASE ON ASSEMBLY.
142. BRAKE BACK PLATE	- CORROSION, DISTORTION AND OTHER DAMAGE. BOLTS LOOSE OR SIGNS OF SHEARING.
143. BRAKE LININGS AND DRUMS	- CRACKS, CORROSION AND OVER-HEATING. EXCESSIVE WEAR, SCORING, FREEDOM FROM OIL AND GREASE. SECURITY.
144. BRAKE SHOES, OPERATING LEVER FULCRUM PIN AND PIVOT BOLTS	- CRACKS, CORROSION, DISTORTION AND OTHER DAMAGE. SECURITY. LUBRICATE FULCRUM PIN AND PIVOT BOLTS.
145. CAM BLOCKS AND PRIMARY SHOES	- CORRECT CLEARANCES.
146. BRAKE UNIT SPRINGS AND OPERATING CABLE ATTACHMENTS.	- SERVICEABILITY OF SPRINGS. CORROSION. SECURITY OF CABLE ATTACHMENTS.
147. STAR WHEEL	- CORROSION AND OTHER DAMAGE. LUBRICATE.
148. BRAKE UNIT	- CORRECT ASSEMBLY. ADJUSTMENT. SATISFACTORY OPERATION.

TAIL SKID OR WHEEL ASSEMBLY

150. LEAF SPRING AND SHACKLES ASSEMBLY	- FLATTENING OF SPRINGS. CRACKS, CORROSION AND OTHER DAMAGE. LUBRICATE.
160. SKID - IF FITTED	- CORROSION. EXCESSIVE WEAR.
161. WHEEL, BEARING BLOCK AND FORK ASSEMBLY - IF FITTED	- CRACKS, CORROSION AND OTHER DAMAGE. EVIDENCE OF PIVOT BOLT WEAR. LUBRICATE BEARING.
161A STEERING LEVERS - IF FITTED	- CRACKS. EXCESSIVE WEAR. CORROSION. OTHER DAMAGE. SECURITY.
161B BUNGEE STEERING CORDS - IF FITTED	- FRAYING. DAMAGE TO AND SECURITY, OF END CONNECTIONS.

TAIL SKID OR WHEEL ASSEMBLY

162. WHEEL, AXLE, FORK AND PIVOT BOLT NOTE: DISMANTLE AND CLEAN ALL COMPONENTS.	- EXCESSIVE WEAR OF COMPONENTS. CORROSION. DISTORTION OF PIVOT BOLT. ELONGATION OF BOLT HOLE. SERVICEABILITY OF WHEEL BEARINGS. PACK WHEEL BEARING WITH GREASE ON ASSEMBLY.

CHECK 4

CHECK 5

NOTE:- REMOVE BOLTS. — DAMAGE.
ELONGATION OF BOLT HOLES.
DAMAGE TO BOLTS AND NUTS.

151. SHOCK TRUSS SIDE BEARING GUSSET PLATES — CORROSION.

152. RUBBER SHOCK CORDS — DETERIORATION.

153. STEEL CHECK CABLES — FRAYING.
CORROSION.
OTHER DAMAGE.
DETERIORATION OF PROTECTIVE TREATMENT.

154. TYRES
NOTE: REMOVE. — DEEP CUTS, BULGES, ABRASIONS AND OTHER DAMAGE, PARTICULARLY TO CARCASE CORDS.

155. TUBES
NOTE: REMOVE. — DETERIORATION.
CHAFING AND OTHER DAMAGE, PARTICULARLY IN THE VICINITY OF THE INFLATION VALVES.

TAIL SKID OR WHEEL ASSEMBLY

163. LEAF SPRING AND SHACKLES ASSEMBLY
NOTE:- DISMANTLE AND CLEAN ALL COMPONENTS. — EXCESSIVE WEAR.
CORROSION.
SIGNS OF BOLT SHEAR.
ELONGATION OF BOLT HOLES.

164. BUFFER PADS — DETERIORATION.

165. TYRE - IF FITTED)
166. BUNGEE CORDS - IF FITTED) — DETERIORATION.

167. PROTECTIVE TREATMENT OF ASSEMBLIES — DETERIORATION.

TAIL SKID OR WHEEL ASSEMBLY

CHECK 2

BRAKE SYSTEM

168. BRAKE CONTROL HANDLE, CATCH AND RATCHET ASSEMBLY
169. HANDLE ATTACHMENT BRACKETS
- CLEANLINESS.
- DAMAGE AND DISTORTION.
SECURITY OF ALL COMPONENTS.
LUBRICATE HANDLE ASSEMBLY.

170. BRAKE PEDAL AND TORQUE SHAFT ASSEMBLY
- CLEANLINESS.
DAMAGE AND DISTORTION.
SECURITY.
LUBRICATE BEARINGS.

171. BRAKE PEDAL RETURN SPRINGS - IF FITTED
- CLEANLINESS.
DAMAGE.
SATISFACTORY FUNCTIONING.
SECURITY.
LIGHTLY LUBRICATE.

172. CABLES
- CORRECT ADJUSTMENT.
FRAYING AND SECURITY AT THE END CONNECTIONS.
SECURITY OF CABLES ALONG RUN.
LIGHTLY LUBRICATE END CONNECTIONS.

FLYING CONTROLS

182. CONTROL STICK/S
183. CONTROL ARCH, QUADRANTS, TIE ROD AND LEVER
184. RUDDER PEDALS AND TORQUE TUBES
185. ELEVATOR TAB OR TRIMMER OPERATING HANDLE
186. FLAP CONTROL HANDLE AND RATCHET ASSEMBLY
187. FLAP CROSS SHAFT - FITTED
188. AILERON OPERATING LEVER AND TIE ROD IN MAINPLANE
189. AILERON ACTUATING CHANNEL LEVER
190. ELEVATOR ACTUATING LEVER AND TORQUE SHAFT
191. RUDDER ACTUATING LEVER
192. ELEVATOR TAB AND FLAP BALANCE TAB ACTUATING LEVER.
ALL CABLE CONNECTIONS TO AND BEARINGS AND ATTACHMENTS OF THE ABOVE ITEMS.

CLEANLINESS.
DAMAGE.
SECURITY.
LUBRICATE.

CHECK 3

BRAKE SYSTEM

173. CABLE SHEATHING
- DAMAGE.
DETERIORATION.

FLYING CONTROLS

197. AILERON OPERATING ROD BALL ENDS
- SLACKNESS.

198. AILERON CONTROL PULLEY ATTACHMENTS AT CONTROL ARCH
- DAMAGE.
EXCESSIVE WEAR.
END LINKS NOT ALONGATED.
SECURITY.

199. CONTROL LOCKING STOPS
- CHECK ALIGNMENT OF SURFACES IN NEUTRAL POSITION.

CHECK 4

BRAKE SYSTEM

174. Brake control handle catch and ratchet assembly 175. Handle attachment brackets	– Evidence of excessive wear. Corrosion.
176. Brake pedal and torque shaft assembly	– Excessive bearing wear. Corrosion.
177. Brake pedal return springs – if fitted.	– Adequate tension. Corrosion.
178. Cables at end connections	– Corrosion. Fraying. Other damage.

CHECK 5

BRAKE SYSTEM

179. Brake control handle, catch and ratchet assembly NOTE:– Remove, dismantle and clean all components.	– Damage. Corrosion. Internally. Excessive wear.
180. Sheathed cables	– Fraying. Strain. Excessive wear. Corrosion.
181. Functional test	– Correct operation of entire system after re-assembly. Satisfactory holding of aircraft against full engine power.

FLYING CONTROLS

201. Control stick/s 202. Control arch, quadrants, tie rod and lever 203. Rudder pedals and torque tubes 204. Elevator tab or tail trimmer operating handle 205. Flap control handle and ratchet assembly. NOTE:– See Auster Service Bulletin Issue No. 25. 206. Flap cross shaft (if fitted) 207. Aileron operating lever and tie rod in mainplane 208. Aileron actuating channel lever 209. Elevator actuating lever and torque shaft 210. Rudder actuating lever 211. Elevator tab or tail trimmer actuating lever	– Excessive wear. Distortion. Bearings for slackness. Corrosion (in situ inspection). Cracks.

FLYING CONTROLS

NOTE:– Remove, dismantle and clean all components. 214. Control arch, quadrants, tie rod and lever assembly 215. Elevator tab control friction device	– Excessive wear of bearings, pivots, pins, etc. Corrosion of pins, etc. Other damage.
216. Control cables	– Damage. Strain. Deterioration of protective treatment.
216A Elevator trimming tab	– Renew control cables.
217. Cable pins and end connections	– Excessive wear and corrosion of pins, etc. Ensure that holes in end fittings are not elongated.
218. All controls	– Neutral settings correct. Ranges and direction of movement correct. Tension correct. Record results.

System/s correctly adjusted, in safety and components secure. Complete duplicate inspection and comply with the requirements of Notes 4(A) and 4(B) on Page 1. Certify. Check correct operation of all systems.

CHECK 2

CHECK 3

193A ELEVATOR TRIMMING TAB CONTROL WIRES [illegible] STRANDED CABLES [illegible] – STRANDED WIRES – CLEANLINESS; NO GRIT IN [illegible]. [illegible] – OUTER WIRES – [illegible] CORROSION. [illegible] DAMAGE. LUBRICATE. SECURITY, WITH FREE MOVEMENT AT END CONNECTIONS. LUBRICATE.

194. ALL CABLES AND SPLICES
NOTE: PARTICULARLY INBOARD RUDDER CONTROL CABLES.

– FRAYING. EXCESSIVE WEAR. CORROSION, PARTICULARLY WHERE THEY PASS OVER PULLEYS OR THROUGH FAIRLEADS, GUIDE BUSHES AND TUBES. ENSURE THAT FOULING CANNOT OCCUR THROUGH INCORRECT TENSION, FOREIGN MATTER, INCORRECTLY STOWED EQUIPMENT, ETC.

195. ALL CABLE PINS, TURNBUCKLES AND SHACKLES

– DAMAGE. SECURITY. LUBRICATE.

196. ALL CONTROL PULLEYS– PULLEY GUARDS, CABLE FAIRLEADS, GUIDE BUSHES AND TUBES.

– CLEANLINESS. CORRECT ALIGNMENT. [illegible]. SECURITY. LUBRICATE PULLEY PIVOTS AND ENSURE PULLEYS ROTATE FREELY.

VACUUM SYSTEM – IF FITTED

219. VENTURI – CORRECT ALIGNMENT.

VACUUM SYSTEM – IF FITTED

220. RUBBER JOINTS – DETERIORATION AND CLIPS SECURE.

AIR SPEED INDICATOR SYSTEM

223. PITOT HEAD – CHECK SETTING. SECURITY OF CALIBRATING RING.

224. PIPELINES [illegible] DISCONNECT [illegible] AND [illegible] UNIONS. – DRAIN AND BLOW THROUGH [illegible] PIPELINES [illegible]. REMAKE OF UNIONS, ETC. TEST FOR LEAKS.

AIR SPEED INDICATOR SYSTEM

225. RUBBER JOINTS – DETERIORATION AND CLIPS SECURE.

226. FLEXIBLE PIPELINES – KINKS AND CHAFING. DETERIORATION AND OTHER DAMAGE. CLIPS SECURE.

CHECK 4

CHECK 5

212. ALL CABLE CONNECTIONS TO AND BEARINGS AND ATTACHMENTS OF THE ABOVE ITEMS	EXCESSIVE WEAR. DISTORTION. BEARINGS FOR SLACKNESS. CRACKS. CORROSION (IN SITU INSPECTION).
213. ALL CONTROL PULLEYS, PULLEY GUARDS, CABLE FAIRLEADS, GUIDE BUSHES AND TUBES	EXCESSIVE WEAR. CORROSION.

VACUUM SYSTEM - IF FITTED

221. VENTURI NOTE: REMOVE AND CLEAN.	- CORROSION. INTERNAL OBSTRUCTIONS AND DAMAGE.
222. ALL PIPELINES	- DAMAGE. CORROSION AND SECURITY. CORRECTLY SUPPORTED.
222A SYSTEM TEST	- COMPLETE A TEST OF THE ENTIRE SYSTEM.

VACUUM SYSTEM - IF FITTED

AIR SPEED INDICATOR SYSTEM

227. PITOT HEAD	- CORROSION.
228. ALL METAL PIPELINES	- DAMAGE. CRACKS (PARTICULARLY JURY STRUT CLIPS). CORROSION. SECURITY. CORRECTLY SUPPORTED.

AIR SPEED INDICATOR SYSTEM

229. FLEXIBLE PIPELINES AND CONNECTIONS NOTE: REMOVE.	- DETERIORATION. SERVICEABILITY.
229A METAL PIPELINES NOTE: RELEASE CLIPS OF ALL PIPES AND MOVE PIPES TO REVEAL SURFACE OBSCURED BY CLIPS.	- CORROSION OF SURFACES OF PIPES, ESPECIALLY PIPES ON JURY STRUTS AND IN MAIN PLANES. OTHER DAMAGE. CLIPS REFITTED AND SECURED.

CHECK 2

INSTRUMENTS

230. ALL RELEVANT INSTRUMENTS, THEIR ATTACHMENTS AND PIPELINE CONNECTIONS. – INSTRUMENT ZERO SETTINGS SATISFACTORY. SECURITY.

231. DIRECTIONAL INDICATOR – IF FITTED
232. ARTIFICIAL HORIZON – IF FITTED
– SERVICEABILITY OF FILTERS. RENEW IF NECESSARY.

233. TURN AND SLIP INDICATOR – SERVICEABILITY OF FILTER.
NOTE: CLEAN FILTER.

234. COMPASS CORRECTOR BOX – SECURITY.

ELECTRICAL INSTALLATION – IF FITTED

240. WIND-DRIVEN GENERATOR – IF FITTED – SPIN WINDMILL AND CHECK FOR FREEDOM OF ARMATURE ROTATION. ENSURE THAT THE GENERATOR AND CABLE CONNECTIONS ARE CLEAN AND SECURE.

241. ACCUMULATOR – CHECK STATE OF CHARGE.

242. AMMETER OR VOLTMETER – CLEANLINESS. SATISFACTORY FUNCTIONING. SECURITY.

243. CABLES AND/OR CONDUITS – CLEANLINESS. CUTS. CHAFING. OIL SOAKAGE AND OTHER DAMAGE. CORRECTLY SUPPORTED. CLIPS, ETC. TIGHT.

244. CONDUITS, PLUGS AND SOCKET CONNECTIONS – TIGHTNESS.

CHECK 3

INSTRUMENTS

235. COMPASS – FREEDOM FROM PIVOT FRICTION.

ELECTRICAL INSTALLATION – IF FITTED

245. WIND-DRIVEN GENERATOR – IF FITTED – CLEAN COMMUTATOR AND BRUSH GEAR. COMMUTATOR FOR SCORING. BRUSHES FOR EXCESSIVE WEAR AND FOR FREEDOM OF MOVEMENT IN THEIR HOLDERS. SPRINGS FOR CORRECT TENSION.

246. PANELS, FUSEBOXES, SWITCHES, LAMPHOLDERS AND TERMINAL BLOCKS – CLEANLINESS. DAMAGE. EVIDENCE OF WEAR OF SWITCH AND LAMPHOLDER INTERNAL COMPONENTS. SIGNS OF CORROSION INTERNALLY AND EXTERNALLY. SECURITY OF UNITS.

247. TERMINALS AND COMPONENTS IN PANELS
248. CABLE CONNECTIONS TO PANELS, FUSEBOXES, TERMINAL BLOCKS, LAMPHOLDERS AND SWITCHES, ETC.
– CLEANLINESS. DAMAGE. CORROSION. SECURITY.

249. ALL "LIVE" FUSES – DISCOLOURATION.

250. LAMPS – DISCOLOURATION. LOOSE CAPS. SAGGING FILAMENTS. SPARES COMPLEMENT CORRECT – IF APPLICABLE.

251. LAMP GLASSES, SCREENS, MOULDING, ETC. – CLEANLINESS. DAMAGE. SECURITY.

251A MAGNETIC RELAY SWITCHES – IF FITTED – CLEANLINESS AND PITTING OF CONTACTS. SATISFACTORY FUNCTIONING. CORROSION OF COMPONENTS. SECURITY.

CHECK 4

INSTRUMENTS

236. CANCELLED.

237. PANEL ATTACHMENT ASSEMBLIES – CORROSION AND OTHER DAMAGE.

CHECK 5

INSTRUMENTS

238. ALTIMETER – CALIBRATION CHECK. LEAKAGE TEST.
NOTE: REMOVE.

239. AIR SPEED INDICATOR – CALIBRATION CHECK. FIT NEW CORRECTOR CARD.

239A RATE OF CLIMB INDICATOR – IF FITTED – CALIBRATION CHECK. LEAKAGE TEST.

ELECTRICAL INSTALLATION – IF FITTED

252. WIND-DRIVEN GENERATOR – IF FITTED – BEARINGS FOR END PLAY AND LACK OF LUBRICATION.

253. ACCUMULATOR CUT-OUT – CLEANLINESS. PITTING OF CONTACTS. SATISFACTORY FUNCTIONING. SECURITY.

254. VOLTAGE REGULATOR – CLEANLINESS. SATISFACTORY FUNCTIONING. SECURITY.

255. SUPPRESSOR – CONDENSERS – WAX SEEPAGE AND SECURITY. COILS – SECURE. CONNECTIONS – CLEAN AND SECURE. GENERAL – UNITS SECURE, CLEAN AND NOT CORRODED.

256. BONDING – DAMAGE. SECURITY.
NOTE: COMPLETE AN INSPECTION OF VISIBLE PORTIONS.

ELECTRICAL INSTALLATION – IF FITTED

257. EXTERNAL SUPPLY SOCKET – IF FITTED – CORROSION OF CONTACTS. CORRECT GAP SETTING. LIGHTLY LUBRICATE.

258. AMMETER OR VOLTMETER – CHECK ACCURACY OF READINGS.

259. SUPPRESSOR – TEST INSULATION RESISTANCE.

260. CABLES – DETERIORATION OF INSULATION. COMPLETE AN INSULATION TEST.

261. CONDUITS – INGRESS OF OIL OR MOISTURE – PARTICULARLY AT EXPOSED POSITIONS. CORROSION OF PLUGS AND SOCKETS.
NOTE: LUBRICATE NUT THREAD.

262. ALL BONDING STRIPS – CLEANLINESS. CORROSION AND OTHER DAMAGE. SECURITY.
NOTE: COMPLETE A RESISTANCE TEST.

263. TAIL WHEEL TYRE
NOTE: TEST CONDUCTIVITY.

CHECK 2

RADIO - IF FITTED

CHECK 3

RADIO - IF FITTED

EQUIPMENT

265. UPHOLSTERY	- DAMAGE. SECURITY.
266. SEAT AND FITTINGS	- DISTORTION. CORROSION OF FITTINGS. OTHER DAMAGE.
267. CABIN VENTILATORS	- CORRECT FUNCTIONING. DAMAGE. SECURITY.

SAFETY EQUIPMENT

269. FIRE EXTINGUISHER - IF FITTED NOTE: REMOVE. SEE AUSTER SERVICE BULLETIN ISSUE NO. 25.	- CHECK CONTENTS BY WEIGHING AND RECORD WEIGHTS. EXAMINE MOUNTING ATTACHMENTS FOR DAMAGE. CORROSION. SECURITY.

SAFETY EQUIPMENT

269A ANTI-FYRE PISTOLE (IF FITTED) NOTE: CLEAN OFF OLD OIL AND GREASE. OIL THROUGH COCKING LEVER TRAVEL APPERTURE. SHAKE OUT SURPLUS OIL FROM INTERIOR OF GRIP.	- LUBRICATE PIVOTS AND MOVING PARTS.

GENERAL

GENERAL

CHECK 4

RADIO - IF FITTED

264. AERIAL ATTACHMENTS - CORROSION AND OTHER DAMAGE.
MASTS AND ALL ATTACHMENTS OF RADIO APPARATUS.

EQUIPMENT

268. SEAT CANVASSES - REPLACE IF NECESSARY.

SAFETY EQUIPMENT

GENERAL

CHECK 5

RADIO - IF FITTED

EQUIPMENT

268A UPHOLSTERY - DETERIORATION.

SAFETY EQUIPMENT

GENERAL

270. AIRCRAFT RIGGING AND SYMMETRY - CHECK, ADJUST IF NECESSARY, AND RECORD.

APPENDIX 1

OVERHAUL PERIODS, OTHER CHECKS AND NOTES

ITEM No.	ITEM	MANUFACTURER	PART NO.	OVERHAUL PERIODS
1.	INSTRUMENTS			
1.1	ARTIFICIAL HORIZON			1,000 HOURS FLYING OR 2 YEARS.
1.2	DIRECTIONAL GYRO			1,000 HOURS FLYING OR 2 YEARS.
1.3	TURN AND SLIP INDICATOR			1,000 HOURS FLYING OR 2 YEARS.
1.4	AIR SPEED INDICATOR			1,200 HOURS FLYING OR 4 YEARS.
1.5	ALTIMETER			1,200 HOURS FLYING OR 4 YEARS.
1.6	RATE OF CLIMB INDICATOR			1,200 HOURS FLYING OR 4 YEARS.
1.7	COMPASS			CHECK SWING WHENEVER CONDITIONS QUOTED IN CIVIL AIRCRAFT INSPECTION PROCEDURE LEAFLET AL-10-3 APPERTAIN.
2.	ELECTRICAL			
2.1	AMMETER			2,400 HOURS FLYING OR 4 YEARS.
2.2	ACCUMULATOR CUT-OUT			1,200 HOURS FLYING OR 2 YEARS.
2.3	VOLTAGE REGULATOR			1,200 HOURS FLYING OR 2 YEARS.
3.	SAFETY EQUIPMENT			
3.1	FIRE EXTINGUISHER WATER/GLYCOL			
3.2	FIRE EXTINGUISHER METHYL/BROMIDE			
3.3				
3.4				
3.5	LIFEBELTS			3 MONTHS ELAPSED TIME - INFLATION TEST AND SERVICE-ABILITY CHECK - WEIGH AND RECORD WEIGHT OF CO^2 BOTTLE.
4	EQUIPMENT			
4.1	CONTROL CABLES (RUDDER)		JA 2393 JA 2394	300 HOURS FLYING. 300 HOURS FLYING.
4.2	CONTROL CABLES (RUDDER)		JA 2393 X JA 2394 X	1,200 HOURS FLYING. 1,200 HOURS FLYING.

LIST OF SECTIONS

PRELIMINARIES

LEADING PARTICULARS, INTRODUCTORY SECTIONS

Note.—*A list of contents is given at the beginning of each section or chapter*

P30032 465871/8865 4/60 625 C & P Gp 375

LEADING PARTICULARS

NAME ... ... AUSTER Mk. 6A
TYPE ... ... SINGLE-ENGINED, HIGH-WING MONOPLANE
~~**DUTY** ... ... AIR OBSERVATION POST~~

ENGINE

Name ... ... *Gipsy Major, ~~Mk. 7~~*
Type ... ... *Four-cylinder, inverted, in-line, direct drive, air-cooled*
Fuel ... ... ~~82 AVGAS (Stores Ref. 34A/265)~~
Oil ... ... ~~OIL OM 270 (Stores Ref. 34A/32)~~

PROPELLER

Type ... ... *Horden Richmond HR.671/C, 2-blade, wooden, fixed pitch*
Diameter ... ... *6 ft. 10 in.*

ALIGHTING GEAR

Undercarriage

Type ... ... *Non-retractable*
Track ... ... *6 ft. 0 in.*
Wheels ... ... *Dunlop 6½ in. Code AH.8152*
Outer covers ... ... *6 in. × 6½ in. Code IA.11/14 (pre Mod. 283), or Code IAT-R14 (Mod. 283)*
Inner tubes ... ... *Code IA.3*
Tyre pressures ... ... *See Vol. 4*
Brakes ... ... *Bendix, 5⅞ in.*

Tail wheel

Type ... ... *Fully castering, Code AHO.17930 (c/w solid tyre)*
Tyre ... ... *6 in. × 2 in.*
Shock absorbers ... ... ~~Rubber cords in tension~~

TANK CAPACITIES

Fuel ... ...
Normal (one tank in each wing) ... ... *Total, ~~22 gall.~~*
~~*Long range tank (Mod No. 219)*~~ ... ... ~~17 gall.~~
Oil ... ... *3 gall. oil*
1 gall. air space

DIMENSIONS

Note . . . For main dimensions of the aircraft, reference should be made to the General Arrangement Diagram following these Leading Particulars.

Main Plane

Aerofoil section *N.A.C.A.23012*
Chord ... ... *5 ft. 3 in.*
Incidence ... ... *inboard, 3¾ deg. ± ½ deg.*
outboard, 2½ deg. ± ½ deg.
Dihedral ... ... *1 deg., 30 min. ± 30 min.*

Tail Plane ...

Chord, at root, including elevator ... ... *3 ft. 8⅞ in.*
Incidence ... ... *0 deg. ± 30 min.*
Dihedral ... ... *Nil*

AREAS

Main plane (nett) ... ... *169 sq. ft.*
Main plane (gross) ... ... *184·5 sq. ft.*
Ailerons (total) ... ... *18 sq. ft.*
Flaps (total) ... ... *16·1 sq. ft.*

LEADING PARTICULARS—*continued*

AREAS—*continued*

Tail plane with elevators	24 sq. ft.
Elevators (total)	11 sq. ft.
Fin	~~5 sq. ft.~~
Rudder	~~7·25 sq. ft.~~

SETTINGS AND RANGES OF MOVEMENT OF CONTROL SURFACES

Ailerons	5·0 ± 0·5 in., up and down
Elevators (post mod. 347)	... in. up
	7·60 ... down
Elevators (pre mod. 347)	3·50 ± 0·25 in. up
	8·00 ± 0·25 in. down
Elevator trim tabs—	
Port (post mod. 347)	3·20 ± 0·25 in. up and down
Port (pre mod. 347)	3·50 ± 0·25 in. up and down
Starboard (post mod. 347)	2·75 ± 0·25 in. down only
	Neutral position ± 0·14 in.
Starboard (pre mod. 347)	3·00 ± 0·25 in. down only
	Neutral position ± 0·14 in.
Flaps—	
Normal position	+45 min. to fuselage datum, ± 1 deg.
Take-off position	~~+25 deg. to fuselage datum, ± 2 deg.~~
Landing position	~~+55 deg. to fuselage datum, ± 4 deg.~~
Rudder	12·75 ± 0·75 in. each way
Control column—	
Neutral position ... ... 7 ± 0·50 in.	*All dimensions measured from the top of the control column to the instrument panel*
Fully forward ... ... 2·25 ± 0·25 in.	
Fully aft ... ...12 ± 0·25 in.	
Lateral movement from neutral	...31 deg. ± 30 min., each way

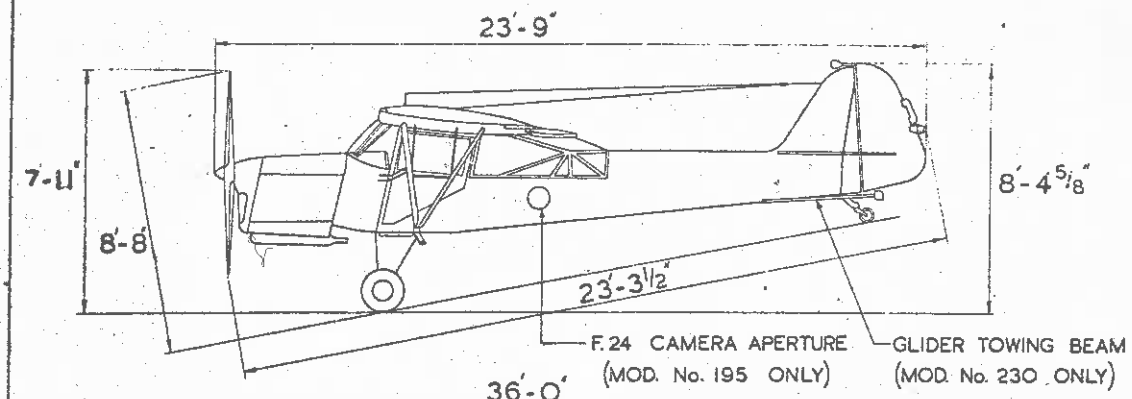
For linear dimensions not quoted above, see Sect. 4, Chap. ..., fig. 4

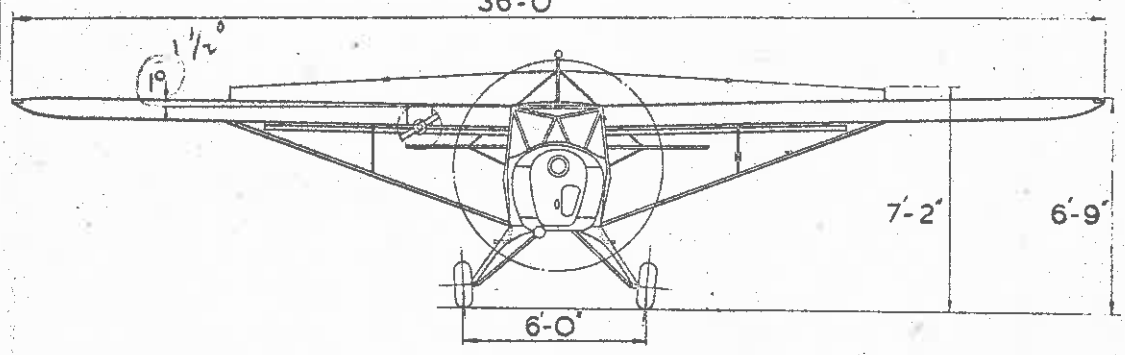
PRESSURE HEAD

Position	Port plane jury strut
Distance from centre line of aircraft	6 ft. $3\frac{3}{8}$ in.
Angle	0 deg. to datum
Position of calibrating ring on pressure head ...	... 0·156 in. forward of centre of forward hole (Sect. 11, fig. 2)

This leaf issued with A.L. No 12, June 1949

AP.2440 F LEADING PARTICULARS



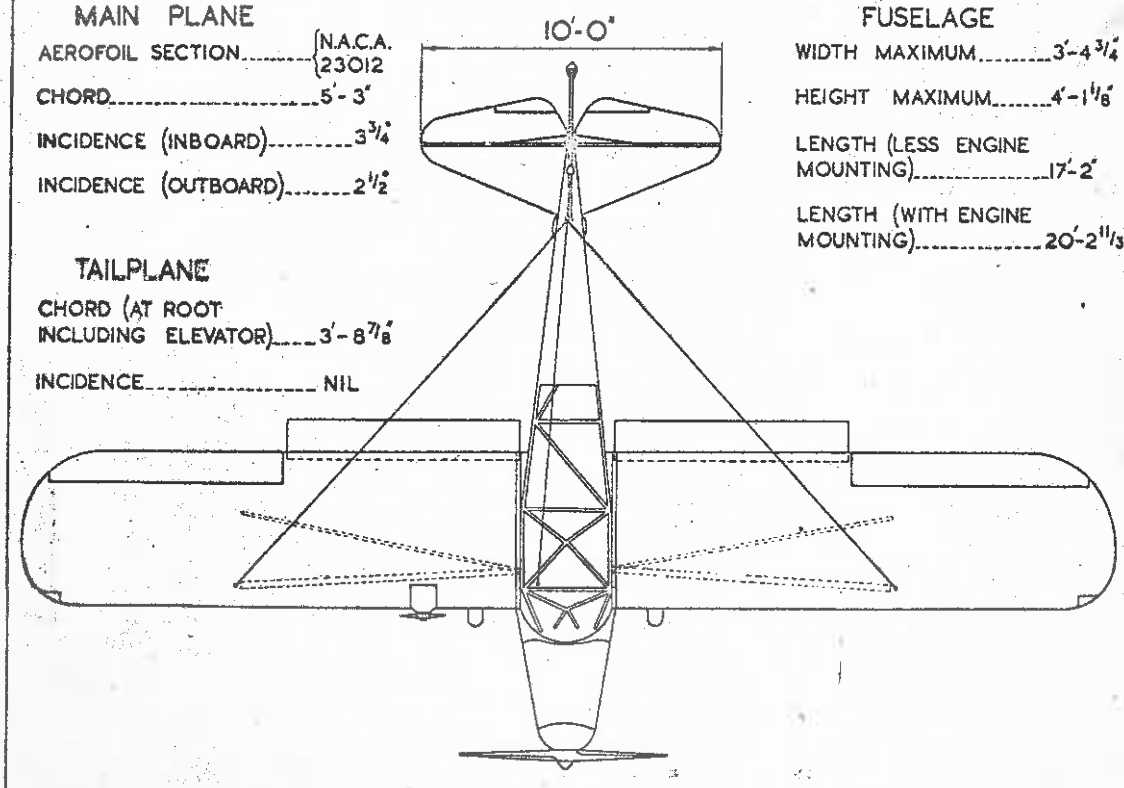


MAIN PLANE

AEROFOIL SECTION	N.A.C.A. 23012
CHORD	5'-3"
INCIDENCE (INBOARD)	3 3/4°
INCIDENCE (OUTBOARD)	2 1/2°

TAILPLANE

CHORD (AT ROOT INCLUDING ELEVATOR)	3'-8 7/8"
INCIDENCE	NIL



FUSELAGE

WIDTH MAXIMUM	3'-4 3/4"
HEIGHT MAXIMUM	4'-1 1/8"
LENGTH (LESS ENGINE MOUNTING)	17'-2"
LENGTH (WITH ENGINE MOUNTING)	20'-2 11/32"

GENERAL ARRANGEMENT OF AIRCRAFT

Fr.5676 M23427/G1047 7/49 525 C.& P. Gp.959141

SECTION

PILOT'S CONTROLS AND EQUIPMENT

SECTION 1

PILOT'S CONTROLS AND EQUIPMENT

LIST OF CONTENTS

LIST OF ILLUSTRATIONS

Introduction

1. This Section describes the location of the controls and equipment with which the pilot is concerned, and also explains their operation, where necessary. Emergency and safety equipment details are in Sect. 2. The aircraft has no hydraulic, or pneumatic, systems.

Main services

Fuel system See fmt Handbook.

2. Fuel is normally contained ~~in two self-sealing tanks~~ of aerofoil section, which are mounted, one in each root-end bay, in the port and starboard main planes. Fuel flow is controlled by a push-pull knob on the extreme port side of the instrument panel. A long-range fuel tank (Mod. No. 219–S.O.O.) can also be carried, in place of an observer. The tank is of cylindrical form, and is situated across the rear of the cabin. When this auxiliary tank is fitted, the previously mentioned push-pull control knob, together with its associated fuel cock, is replaced by a three-way cock mounted on a bracket fixed to the fuselage shock truss, on the port side of the pilot's seat. The cock is marked MAIN–OFF–AUX., and when the cock is set to MAIN, fuel is drawn simultaneously from both wing tanks; at the OFF position, all tanks are off; and at AUX., fuel is drawn from the auxiliary tank only.

Oil system

3. An oil temperature indicator is provided in aircraft which incorporate Mod. No. 225. The indicator is on the starboard side of the instrument panel.

Electrical system See fmt Handbook

4. The electrical system comprises navigation lamps, downward identification lamp, cabin and compass lighting, and on aircraft embodying Mod. No. 223, a warning light for the engine fire-warning system. Power is supplied from a 12-volt accumulator on the port side of the aircraft, just behind the pilot's seat. The accumulator is charged by an air-driven generator in the leading edge of the starboard main plane. An external supply socket is provided on the port side of the fuselage, for enabling the engine starter to be operated, and for ground-testing any circuit without discharging the accumulator. A master change-over switch is incorporated in the system, and is situated on the instrument panel. This must be set to the FLIGHT position after the engine has been started, and at GROUND after landing.

Aircraft controls

Primary flying controls

5. The control stick is attached to an arch of welded steel tubing extending across the cabin. When operating the elevators, the whole arch

rods in a fore-and-aft direction, whilst permitting the stick to swing laterally for aileron operation. The rudder is operated by pedals, which are not adjustable for length.

Trimming tab

6. The small crank lever mounted in the cabin roof at the intersection of the diagonal bracing members operates the port elevator trimming tab, and is turned clockwise to induce nose heaviness, and vice versa.

Flaps

7. The operating lever is situated on the centre line of the aircraft, at floor level, and is pivoted to the rear of the shock truss. The flaps may be set in any of three positions by a spring catch on the lever which is disengaged by depressing the knob at its top. The flap settings are quoted in the Leading Particulars. The starboard elevator trim tab is interconnected with the flap controls, and operates automatically in conjunction with the flaps.

Brakes

8. Bendix wheel brakes are fitted, and are operated by simultaneous pressure on two small heel pedals, in front of the rudder pedals. Independent operation of the heel pedals gives differential control of the brakes for ground steering purposes. The brakes can be locked ON by a parking handle at the extreme port side of the instrument panel. The handle is pulled out to lock the brakes, after having first depressed both heel pedals: the pressure should be maintained on the pedals until the parking handle has been pulled out.

Engine controls

Throttle

9. The throttle lever is situated at the bottom, centre, of the instrument panel. To open the throttle, push the lever forward.

Mixture control

10. This is the lever immediately on the right of the throttle lever, and is pushed forward from the normal (RICH) to the WEAK position. When at WEAK, the lever will automatically be returned to RICH if the throttle is closed.

Ignition switches

11. The ignition switches for the magnetos are mounted [illegible] at the top of the instrument panel. They are ON when the switches are up.

Cabin equipment

The cabin has a door on each side, both [illegible] and opening forwards. They are secured shut by a spring-loaded latch, which can be operated from both inside and outside the cabin. Each door has a window panel which is hinged along the top edge, so that it opens in an outward and upward direction. Spring catches which lock the window closed are situated at the bottom of the window frame, in the centre, and can be released by lifting the handles immediately above the catch boxes. The windows may be held open in any of three positions by a lever fitted to the forward end of each window.

Pilot's seat

13. The pilot's seat is on the port side of the cabin. The fore-and-aft and height positions of the seat can be adjusted by turning the wheel at the front of the seat, below the pilot's legs.

Compass

14. The compass (type P.12), together with its adjustable corrector, is mounted under the roof, at the centre of the wind screen, and is supported by a light alloy frame. The course is read by means of a mirror having an adjustable mounting arm which is attached to the back of the compass.

Rear-view mirror

15. A rear-view mirror is provided above the cabin roof, and is attached to the cabin roof framework, on the port side.

Lighting

16. A cabin lamp is mounted on a universal joint in the cabin roof. The switch is on the port side of the instrument panel, near the bottom edge. An emergency lamp is also provided (*Sect. 2*), and is independently supplied from a 24 volt accumulator, beneath the port side of the instrument panel.

Heating

17. The heating system (Mod. No. 190) delivers warm air from an engine manifold casing into the cabin through a louvre, and is controlled by a small knob immediately below the throttle lever. The knob is pulled outwards to turn on the cabin.

Radio equipment

18. The [illegible] on the port side of the pilot's seat truss, and is

so positioned that it may be operated by both the pilot and observer. The radio, together with its mounting, is arranged to slide forward over the shock truss, to allow easy access to the rear of the cabin. A press-to-transmit switch is mounted in the top of the control stick.

Controls locking

19. The flying controls can be locked inside [illegible] adjustable straps, which, when [illegible] are stowed in one of the door [illegible]. Clamps for locking the control surfaces externally are provided [illegible] equipment (*Sect. 4, Chap. 2*).

Glider towing release knob

20. On aircraft equipped for glider towing (Mod. No. 230), the glider release knob is positioned on the centre-line of the aircraft, forward of the shock truss. The knob should be pulled to release the tow cable.

A.1134A

21. Aircraft equipped for glider towing are provided [illegible] an A.1134A amplifier unit for [illegible] tion between aircraft and glider. [illegible] near the floor, to the [illegible] seat (*Fig. 1, item* 36).

KEY TO FIG. 1 (CABIN INTERIOR)

FLYING CONTROLS

4 TRIM TAB CONTROL
Turn clockwise for *NOSE DOWN*; central position for *NEUTRAL*

42 FLAP LEVER
To disengage lever in aircraft pre-Mod. No. 248, place thumb on button at top of lever, and slide handle forward; in aircraft with Mod. No. 248, depress trigger lever on handle. Bottom position—*FLAPS UP*; middle position—*TAKE OFF*; top position—*FLAPS DOWN*

ENGINE CONTROLS

17 IGNITION SWITCHES
Down—*OFF*; up—*ON*

32 STARTER BUTTON (BENEATH SPRING COVER)

31 MIXTURE CONTROL
Forward—*WEAK*; Aft—*RICH*

[illegible] THROTTLE LEVER

24 FRICTION ADJUSTER
Turn clockwise to increase friction

FUEL SYSTEM

[illegible] FUEL GAUGE EMERGENCY SHUT-OFF COCKS
PUSH TO CLOSE

[illegible] CONTENTS GAUGES

[illegible] FUEL CONTROL UNIT
PUSH ON—PULL OFF

37 THREE-WAY FUEL COCK (MOD. NO. 219) *MAIN*—wing tanks *ON*; *OFF*—all tanks *OFF*; *AUX.*—auxiliary tanks *ON*

ELECTRICAL AND RADIO

5 CABIN LAMP

7 ACCUMULATOR, FOR EMERGENCY LAMP

9 CABIN LIGHTING SWITCH
Turn clockwise for *ON*

10 FIRE WARNING LAMP (MOD. NO. 223)

11 EMERGENCY CABIN LAMP SWITCH
Up—*OFF*; down—*ON*

14 EMERGENCY LAMP

15 MORSE BUTTON

21 GROUND/FLIGHT SWITCH
Down—*FLIGHT*; up—*GROUND*

22 AMMETER, OR POWER FAILURE WARNING LAMP ON R.C.A.F. AIRCRAFT

23 VOLTMETER

26 COMPASS LIGHTING SWITCH
Turn clockwise for *ON*

27 NAVIGATION LAMPS SWITCH

28 SPEECH SWITCH
Depress to transmit. Mic. must be plugged into radio socket

29 IDENTIFICATION LAMP SWITCH
Up—*OFF*; down—*STEADY*; SWITCH OFF TO MORSE

36 A.1134A TEL-MIC. SOCKET (MOD. NO. 230)

43 *MOUNTING PLATFORM FOR RADIO EQUIPMENT

44 *CRATE FOR RADIO SUPPLY UNIT

39 *MOUNTING FOR ELECTRICAL EQUIPMENT

INSTRUMENTS

6 COMPASS

12 TACHOMETER

13 AIR SPEED INDICATOR

16 TURN-AND-BANK INDICATOR

18 FORE-AND-AFT LEVEL
Note.—This item is not fitted on aircraft embodying Mod. No. 284

19 OIL PRESSURE GAUGE

24 OIL TEMPERATURE GAUGE (MOD. NO. 225)

30 ALTIMETER

MISCELLANEOUS

3 REAR VIEW MIRROR

25 DOOR JETTISON HANDLE
OPEN NORMAL LATCH, LIFT YELLOW HANDLE AND PUSH OUT DOOR

33 PARKING BRAKE HANDLE

35 CABIN HEAT CONTROL
Cabin heat—pull *ON*

38 DIFFERENTIAL BRAKE PEDALS

40 GLIDER RELEASE KNOB (MOD. No. 230)

41 CARTRIDGE STOWAGE FOR SIGNAL PISTOL

45 FIRE EXTINGUISHER

46 AIR-INTAKE CONTROL
PULL for hot air: *PUSH* for cold air

* Not applicable for R.C.A.F. aircraft

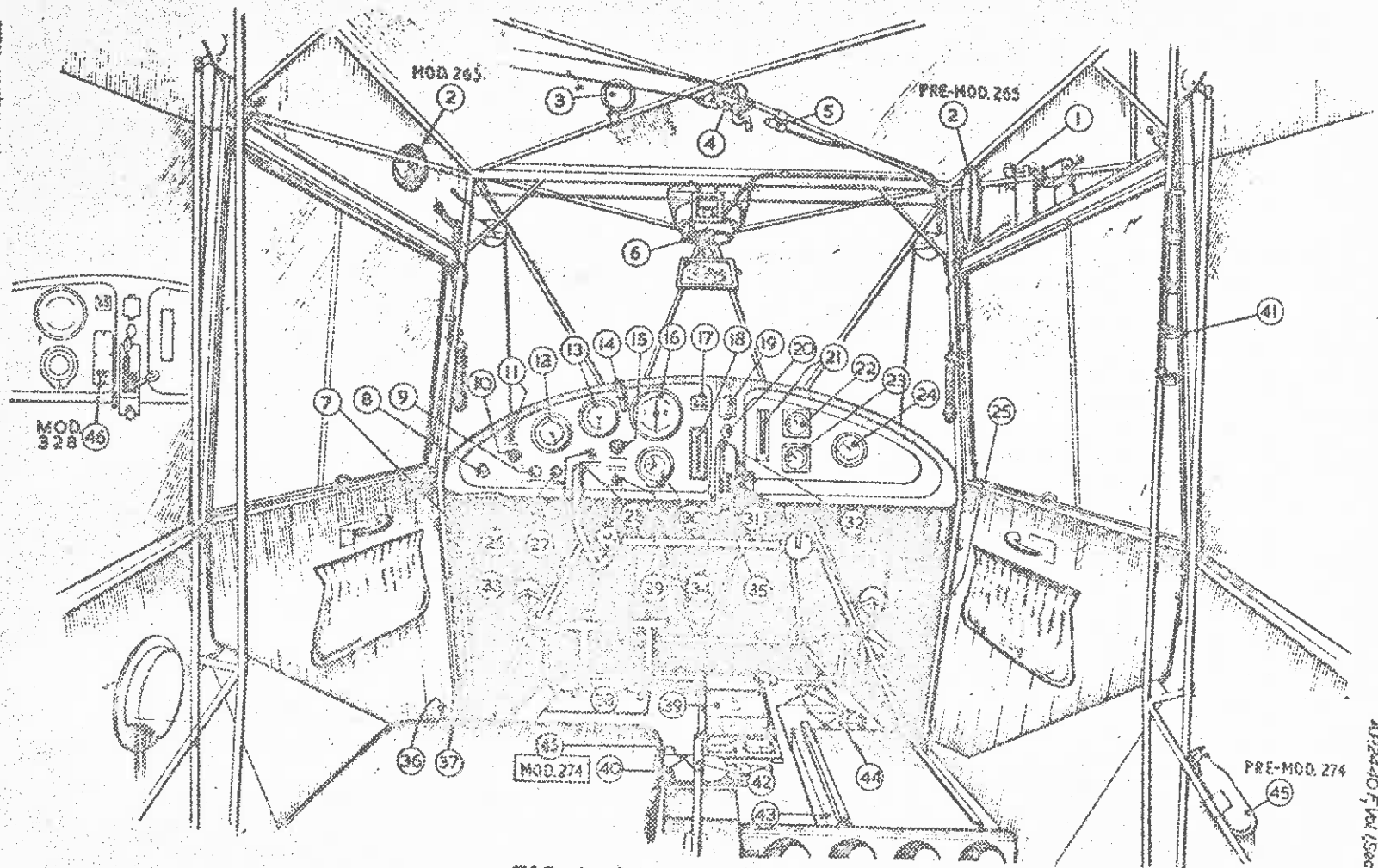


FIG. 1 CABIN INTERIOR

RESTRICTED

SECTION

2

EMERGENCY CONTROLS, EQUIPMENT AND EXITS

FIRE EXTINGUISHERS

5. On early aircraft a hand-operated fire extinguisher is retained in a clip attached to a fuselage side-bracing member on the starboard side, immediately aft of the door. This extinguisher is easily removed from its mounting. On aircraft embodying Mod. 274 (*fig.* 6), a hand-operated fire extinguisher is retained in a mounting fitted to the cabin floor, forward of the pilot's seat. To release this extinguisher from its stowage the retaining clip should first be removed away from the head; the main fixing wires can then be released by lifting the clip at the centre top of the extinguisher. On aircraft embodying Mod. 366 the location of the fire extinguisher is the same. Method of removal from its stowage is shown in fig. 7.

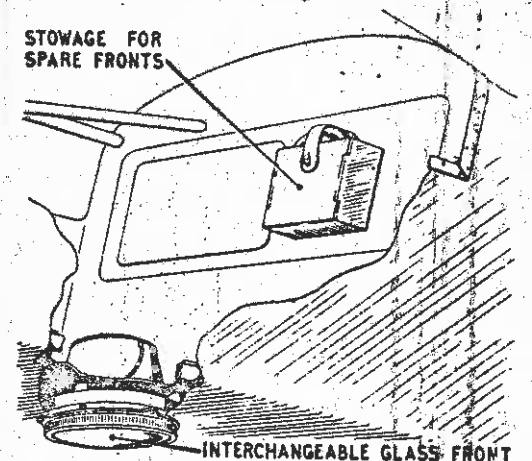


Fig. 8. Identification lamp

IDENTIFICATION LAMP

6. A downward identification lamp is situated in the rear of the cabin (*fig.* 8) the switch for which is located on the port side of the instrument panel. A Morse signalling button for the lamp is located directly above this switch. When it is required to show a steady light the switch must be pressed down (ON); when the lamp is required for Morse signalling the switch must obviously be in the up (OFF) position, as the button is used for making and breaking the circuit. Coloured fronts for the identification lamp are housed in a box on the bulkhead at the rear of the cabin.

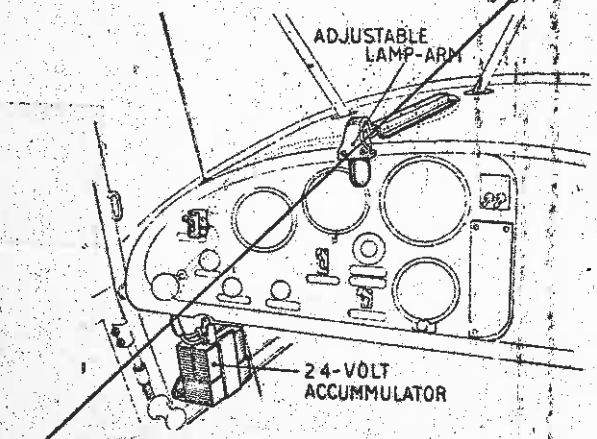


Fig. 9. Emergency lighting system

EMERGENCY LIGHTING SYSTEM

7. An independent lamp is provided for lighting the instrument panel in the event of the failure of the normal system. This emergency system (*fig.* 9) comprises a 2·4-volt accumulator, secured to the fuselage side frame forward of the port door, the necessary cables, a switch and the lamp, the latter being mounted on the instrument panel.

EXTERNAL ELECTRICAL SUPPLY SOCKET

8. An external supply socket is provided on the port side of the fuselage (rear of the port door) for engine starting from an external battery.

CROW-BAR

9. This is clipped to a diagonal fuselage member on the port side of the cabin, behind the pilot's seat.

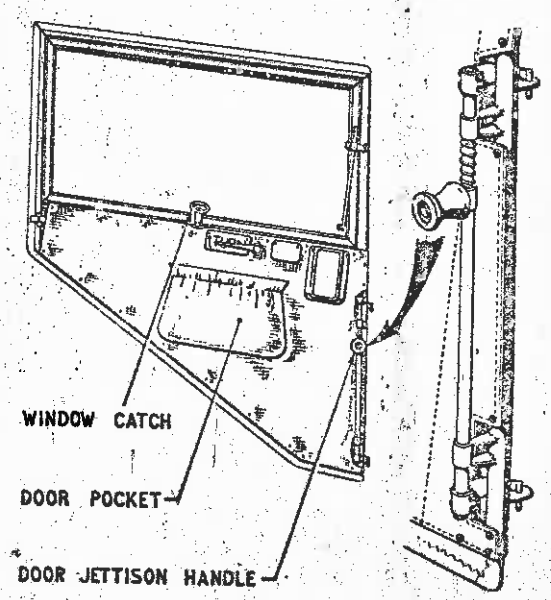


Fig. 10. Cabin door and jettison mechanism

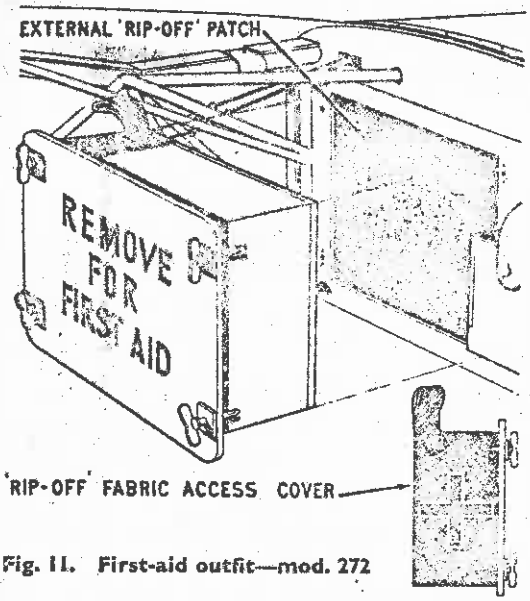


Fig. 11. First-aid outfit—mod. 272

CABIN DOOR JETTISON MECHANISM

10. Both doors are fitted with a jettison device (*fig.* 10). To jettison, first open the door in the normal manner, then lift the yellow knob at the front of the door and push outwards.

FIRST-AID OUTFIT

11. On aircraft incorporating Mod. 272 this outfit can be reached from inside the cabin by unscrewing the white panel which forms part of the bulkhead at the rear. The outfit is attached to the rear face of the panel. Access to this outfit can be gained from outside the aircraft by removing the stencilled rip-off patch on the starboard side of the fuselage. On aircraft pre-Mod. 272 the first-aid outfit is stowed on the floor of the fuselage aft of the rear bulkhead, access being obtained from the outside of the aircraft only by removing the rip-off patch on the port side of the fuselage.

OBSERVER'S SEAT

R.A.F. Aircraft

12. In preparation for an emergency landing, the rotatable seat must be locked in the position facing aft as shown in fig. 12.

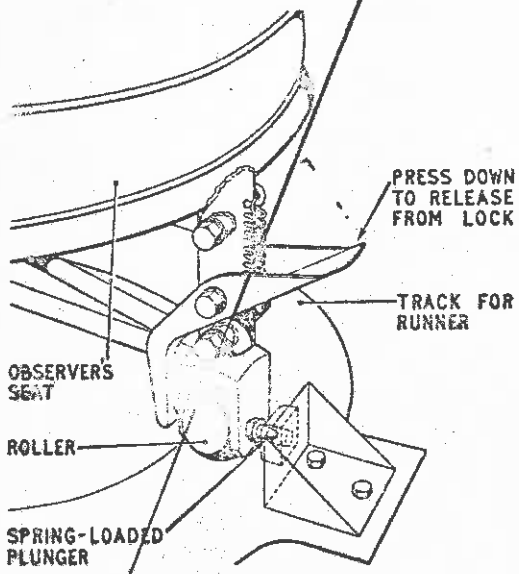


Fig. 12. Observer's seat lock—R.A.F. aircraft

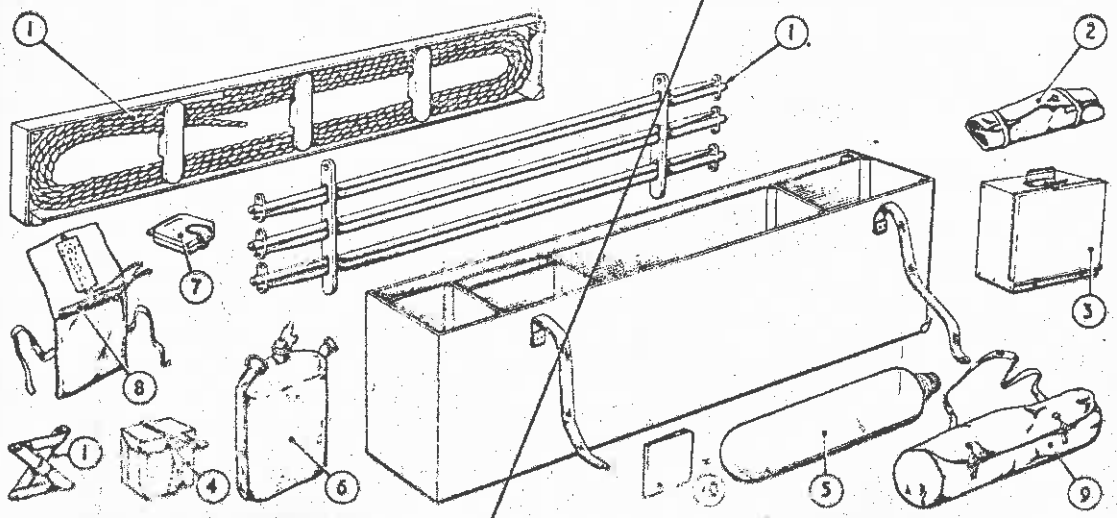
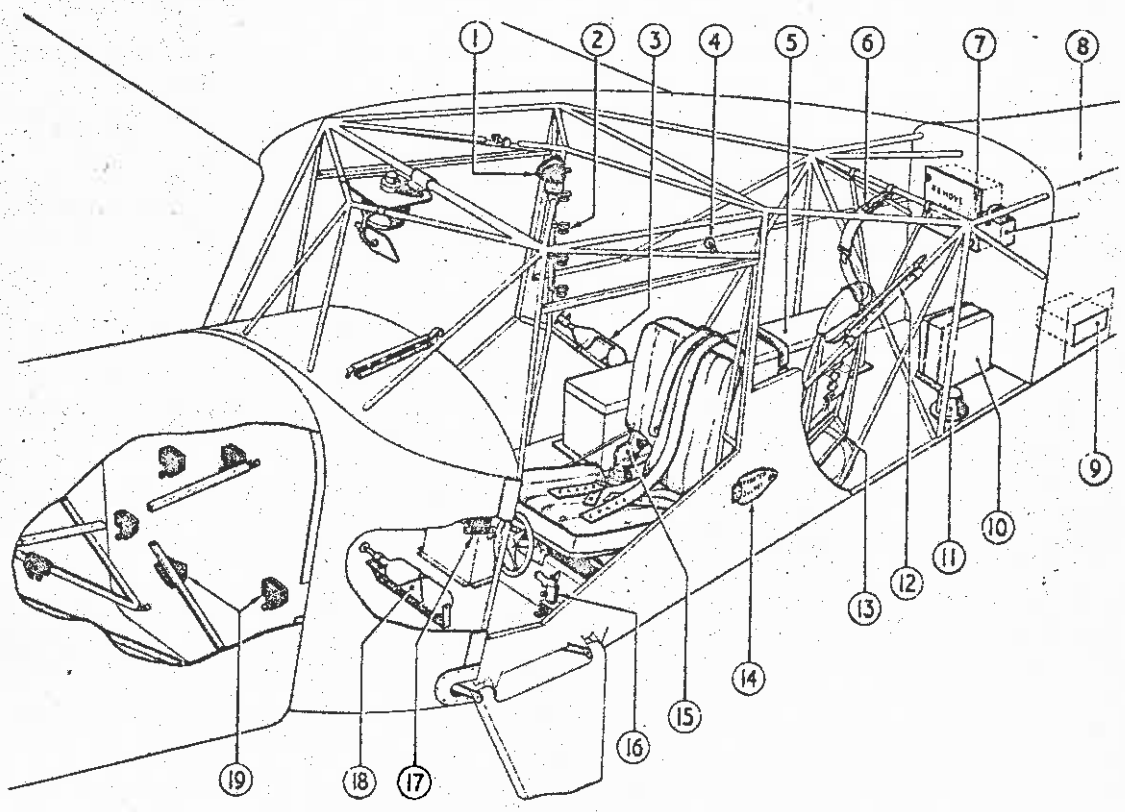
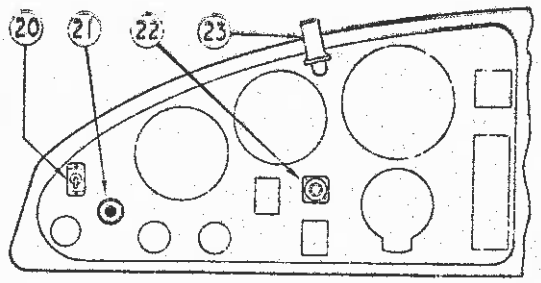


Fig. 13. Desert equipment



1 REAR VIEW MIRROR
2 CARTRIDGE STOWAGE
3 FIRE EXTINGUISHER, PRE-MOD. No. 274
4 EMERGENCY FUEL COCKS, PORT AND STBD.
5 DESERT EQUIPMENT, MOD. No. 214
6 OBSERVER'S PARACHUTE STOWAGE
7 FIRST-AID STOWAGE, MOD. No. 272
8 STOWAGE FOR IDENTIFICATION LAMP GLASS FRONTS
9 FIRST-AID STOWAGE, PRE-MOD. No. 272
10 A.1134 UNIT, MOD. No. 230
11 DOWNWARD IDENTIFICATION LAMP
12 CROWBAR
13 OBSERVER'S SEAT LOCKING
14 EXTERNAL SUPPLY SOCKET
15 SIGNAL PISTOL
16 THREE-WAY FUEL COCK, MOD. No. 219
17 2·4 V. ACCUMULATOR FOR EMERGENCY LAMP
18 FIRE EXTINGUISHER, MOD. No. 274
19 FLAME SWITCHES, MOD. No. 223



20 EMERGENCY LAMP SWITCH
21 FIRE WARNING LAMP
22 IDENTIFICATION LAMP MORSING SWITCH
23 EMERGENCY LAMP

Fig. 14. Location diagram

SECTION

3

CONTROLS AND EQUIPMENT AT CREW STATIONS

SECTION 3

CONTROLS AND EQUIPMENT AT CREW STATIONS

LIST OF CONTENTS

Observer's seat in R.A.F. aircraft

1. The observer's seat is situated in the rear of the cabin, on the port side, behind the pilot's seat. It is fully rotating, but can be locked in either of two positions, one facing aft, and the other facing midway between front and starboard. The seat is locked by a spring-loaded plunger on the front leg of the seat, which engages holes in brackets attached to the cabin floor.

Observer's seat in R.C.A.F. aircraft

2. The observer's seat is situated in the rear of the cabin, on the port side, behind the pilot's seat. It is a fixed structure, and faces midway between starboard and aft.

SECTION 4

INSTRUCTIONS FOR GROUND PERSONNEL

P300S2 465371/8865 4/60 625 C & P Gp 375

CHAPTER

1

LOADING AND C.G. DATA

P13093 M4130/G052 9/48 350 C & P Gp. 1

Chapter 1

(This chapter supersedes that issued with A.L. 9)

LOADING AND C.G. DATA

LIST OF CONTENTS

LIST OF ILLUSTRATIONS

INTRODUCTION

1. This chapter deals with the effect of different loads upon the fore-and-aft positions of the centre of gravity (C.G.) of these aircraft. The C.G. position is determined with the aircraft in rigging position (fuselage datum line horizontal) and is found by taking moments about a fixed point known as the C.G. datum point.

DATUM POINT

2. The position of the datum point is arbitrarily selected by the manufacturers, and, in these aircraft, is situated at the leading edge of the main plane.

POSITIVE AND NEGATIVE MOMENTS

3. The distance of each load from the datum point is known as its "moment arm". The loads are measured in pounds and the distance in inches. If a load is forward of the datum point its moment arm is taken as negative and the resultant moment is therefore negative. Conversely, the moment arms and moments of loads aft of the datum point are taken as positive.

METHOD OF CALCULATING THE C.G. POSITION

4. The C.G. position is determined by the following expression :—

$$\frac{(\text{Tare weight} \times \text{tare moments arms}) + (\text{weight of loads} \times \text{respective moment arms})}{\text{Tare weight} + \text{total weight of loads}}$$

$$= \frac{\text{Tare moment} + \text{load moments}}{\text{Total weight}}$$

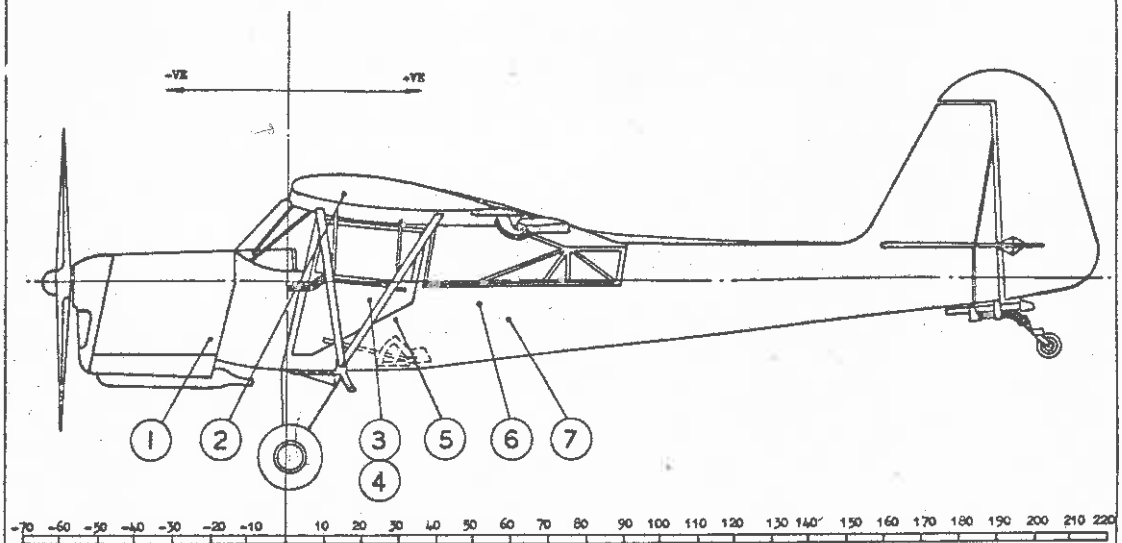
C.G. RANGE

5. The approved limits of C.G. travel (*fig.* 1 *and* 2) are as follows :—

Forward limit	...	~~42·5 in.~~ 15 in.
Aft limit	... ...	~~23·0 in.~~ 21 in.

These limits are measured aft of the vertical C.G. datum line and parallel to the horizontal fuselage datum line. The C.G. must always be kept within these limits, even when fuel, oil and other expendable military load is wholly or partially expended.

LOADING AND C.G. DIAGRAM



ISSUE	CIVIL MOD. NO.	4072 INTERNAL MOD. NO.	APP.
A			

AUSTER 6A - POST MOD. 4085

PART No. JL 0375
DRG. No. AK 54 SHT. 1.

ITEMS OF REMOVABLE LOAD	ITEM NO.	LOAD 'A' * WEIGHT LB.	ARM IN.	MOMENT +LB.IN.	MOMENT -LB.IN.	LOAD 'B' * WEIGHT LB.	ARM IN.	MOMENT +LB.IN.	MOMENT -LB.IN.
PILOT	3	165	+22.0	3,630		165	+22.0	3,630	
PASSENGER - FRONT	4					165	+22.0	3,630	
FRONT SEAT - STED.	5					12	+29.0	348	
FUEL - 25 GALLONS	2	166	+25.0	4,150		166	+25.0	4,150	
OIL - 3 GALLONS	1	27	-19.5		527	27	-19.5		527
REAR SEAT	7					13	+58.0	754	
PASSENGER - REAR	6					165	+52.0	8,580	
TOTAL REMOVABLE ITEMS		358		7,253		713		20,565	
AIRCRAFT BASIC WEIGHT		1,370	16.4	22,468		1,370	16.4	22,468	
AIRCRAFT IN LOADED CONDITION		1,728	17.2	29,721		2,083	20.6	43,033	

* LOAD 'A' PILOT ONLY = LOAD 'B' PILOT AND 2 PASSENGERS =

NOTES

(1) The loadings quoted in this diagram are typical only, the actual aircraft basic weight shown on the weight schedule should be used when carrying out calculations.

(2) The limits of permissible C.G. travel are from 15.0" to 22.0" aft of the vertical datum, measured parallel to the horizontal datum line.

(3) The maximum permissible all up weight for all loadings is 2,350 lb.

(4) The basic weight includes:- wooden propeller, silencer, pilot's seat, cushions and harness, two 11½ gallon wing tanks and unusable fuel and oil.

(5) Fuel weight:- 7.2 lb. per Imperial Gallon.
Oil weight :- 9.0 lb. per Imperial Gallon.

= (6) This rear seat to Mod.4091. If the standard rear seat is fitted, the weights and C.G. are as follows:-
Rear seat 16lb. + 53.0"A.O.D. -848lb.in.
Passenger - Rear seat 165lb. + 44.0"A.O.D.+7260lb.in.

(7) The following are the weight effect of various special order modifications and should be added to the 'Basic Weight' if fitted:-

MODIFICATION	WEIGHT LB.	MOMENT LB.IN.	REMARKS
W.D.Generator, accumulator and starter.	+87.5	+1,372	Inc. cut-out suppressor, cables etc.
Glider Towing Beam	+11.3	+2,014	
Low Pressure Tyres	+ 3.2	+10	Mod.3851
Prestige tailwheel	+ 2.7	+548	Mod.3776

ISSUE	CIVIL MOD. NO.	4072 INTERNAL MOD. NO.	APP.
A			

AUSTER 6A - POST MOD. 4085

PART No. JL 0375
DWG. No. AK 54 SHT. 2

GROUND HANDLING AND PREPARATION FOR FLIGHT

CHAPTER 2

GROUND HANDLING AND PREPARATION FOR FLIGHT

LIST OF CONTENTS

LIST OF ILLUSTRATIONS

Ground handling

1. Special equipment is not needed to move the aircraft, as it can be conveniently man-handled. Handgrips may be obtained on the *front* lift strut, the rear fuselage lifting handles at the bottom longerons, and the leading edge of the tail plane. *On no account should the rear lift struts be used for pushing or pulling the aircraft along the ground.* The tail wheel is fully-castering, and may be pushed or pulled in any direction, but care must be taken not to run the tail wheel over kerbstones or other solid obstructions, particularly when the aircraft is being pushed tail-first.

Parking

2. A Bendix hand lever is provided below the instrument panel, on the port side, to enable the wheel brakes to be locked ON when parking the aircraft. It is necessary for both brake pedals to be depressed before the parking handle is pulled on aircraft pre-Mod. 338.

Picketing

3. Picketing rings are normally stowed in one of the door pockets, and, when used, they screw into the top attachments of the front wing bracing struts. The tail may be lashed down by the handgrips at the rear of the fuselage. The wheels should be chocked, the flying controls and surfaces locked (*para.* 4), the windows closed, and the weatherproof covers, which are provided for the propeller, engine, cabin, pressure head, and air-driven generator, fitted (*para.* 5). General information for picketing is contained in A.P.1464G, Vol. 1, Part 2.

Locking the flying controls and surfaces

4. The flying controls are locked by adjustable straps. The control column and rudder pedals should be set to neutral, and the locking straps fitted as shown in fig. 2; these are normally carried in one of the door pockets. The control surfaces are locked by clamps (*fig.* 1) which form part of the ground equipment and are not normally carried in the aircraft.

Weatherproof covers

5. Covers are provided for the propeller (made in two pieces), engine, cabin, pressure head, and the air-driven generator. These covers, when not in use, are stowed in the rear parts of the cabin. The method of fitting the covers is illustrated in fig. 1.

Fuel tank filling

6. The fuel specification is quoted in the Leading Particulars. The filler cap for each fuel tank is situated in the top surface of each main plane, near the leading edge, at the root end. The long-range fuel tank (this tank is fitted to special order only—Mod. No. 219) is on the starboard side of the aircraft, and the filler neck protrudes through the cabin side. On aircraft pre Mod. 265 a direct-reading fuel contents gauge is provided for each tank (*fig.* 3 *and* 4). On aircraft embodying this modification a float-actuated gauge is fitted to each tank. These gauges are bolted to the inboard face of the tanks and are visible from inside the cabin.

Oil tank filling

7. The oil specification is quoted in the Leading Particulars. The filler neck protrudes

through the engine cowling on the port side, just forward of the firewall, and contains a dipstick.

F.24 camera setting

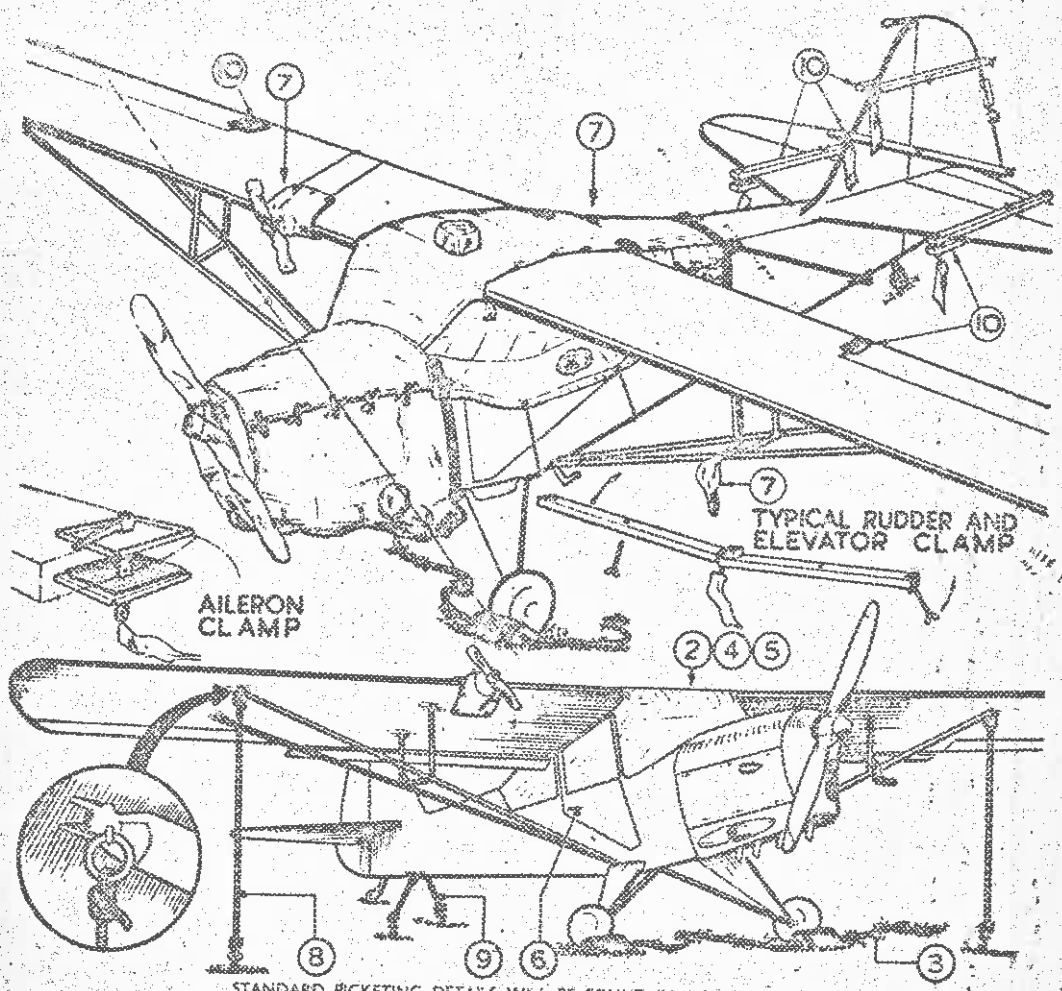
8. Some aircraft are equipped with a camera, Type F.24 (*Sect.* 11). This equipment cannot be adjusted while the aircraft is flying; therefore all preparations must be made whilst the aircraft is on the ground, prior to take-off.

9. For vertical photographic work, the cover plate which seals the aperture in the rear cabin floor must be removed and stowed in the bag on the starboard side of the fuselage. The camera must then be adjusted in its mounting and carrier so that it is directly above the floor aperture. With the camera locked in this attitude, the draught-excluder bag must be fitted around the camera lens and over the flange on the inside of the aperture. The cover plate on the fuselage port side aperture should not be removed.

10. For horizontal photography, the cover plate over the fuselage port side aperture must be removed and stowed in the bag provided. Reference should be made to the data plate adjacent to the camera, and the camera and sighting bead must be positioned to suit the type of photgraph required. The camera must be suitably positioned along the cross-beams of the carrier frame, and the cross-beams must also be raised or lowered, as necessary, in the frame. The draught-excluder bag can then be fitted. Finally, the bead sight must be correctly positioned along the port rear lift strut. If, for example, a 30 deg. angular setting is required for the camera, the bead sight assembly must be on the 30 deg. lift strut marking, and the bead sight itself adjusted horizontally so that its 30 deg. mark coincides with the cursor line on the clamping block.

Instrument-flying practice screens

11. Fixed fittings for this equipment are embodied in all aircraft, although the screens are only provided to special order. Amber screens are provided to Mod No 243, and blue screens to Mod No. 283, there being no difference between the two types other than the material. The screens are stowed in a special bag at the rear of the cabin and must be fitted when the aircraft is on the ground. Sect. 11, fig. 9, illustrates the various screens and their locations.



STANDARD PICKETING DETAILS WILL BE FOUND IN A.P. 1464G, VOL. 1

Quantity Reqd.	Equipment Required	Stores Ref.
Pair	Chocks, 6 in.	4G/2092
30 ft.	Cord, manilla, 1½ in.	32A/50
1 set	Control locking gear	26EN/584
	Clamps: -	
2	Aileron	26EN/2591
1	Elevator, port	26EN/2589
1	Elevator, starboard	26EN/2590
1	Rudder, lower	26EN/2587
1	Rudder, upper	26EN/2588
2	Ring, picketing	26EN/238
	Weatherproof covers: -	
1	Wind-driven generator	27D/2575
1	Cabin	27D/2500
1	Engine	27D/2501
1	Pressure head	27D/2576
1	Propeller	27D/2502
1	Propeller with spinner	27D/2503

PICKETING

*1 MOVE AIRCRAFT HEAD-TO-WIND

2 APPLY BRAKES AND LOCK ON WITH PARKING BRAKE HANDLE

3 CHOCK THE MAIN WHEELS

4 ENSURE ALL ELECTRICAL SWITCHES ARE OFF

5 LOCK THE FLYING CONTROLS (FIG. 2)

6 ENSURE THAT BOTH DOORS AND WINDOWS ARE CLOSED

7 FIT THE WEATHERPROOF COVERS

8 DRIVE IN A PICKET BENEATH EACH WING ANCHORAGE AND LASH ANCHORAGE TO PICKET

9 DRIVE IN A PICKET CLOSE TO EACH REAR FUSELAGE LIFTING HANDLE, AND LASH TO PICKET

10 FIT THE CONTROL SURFACE LOCKING CLAMPS AT THE LOCATING STENCILLED ON THE AIRCRAFT

*Not illustrated

FIG 1. PICKETING PROCEDURE

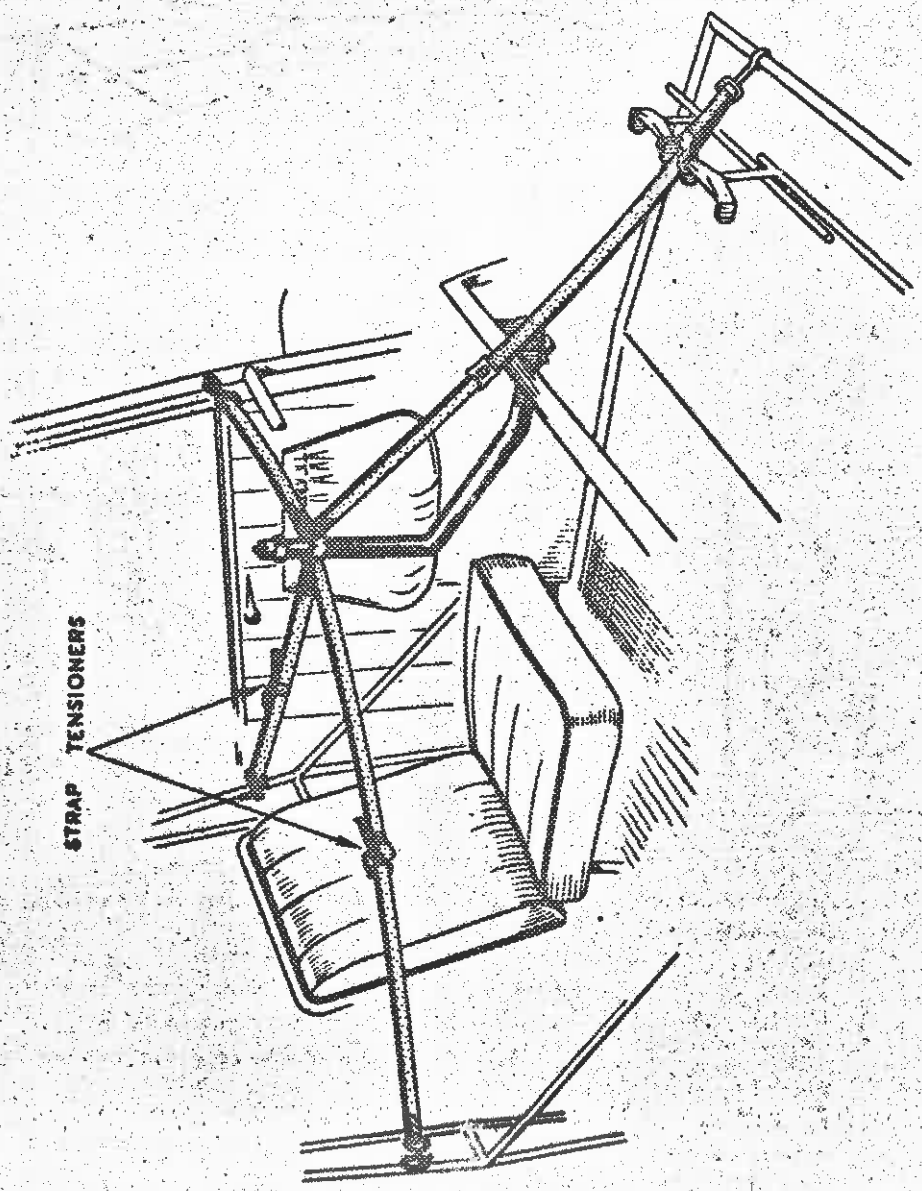
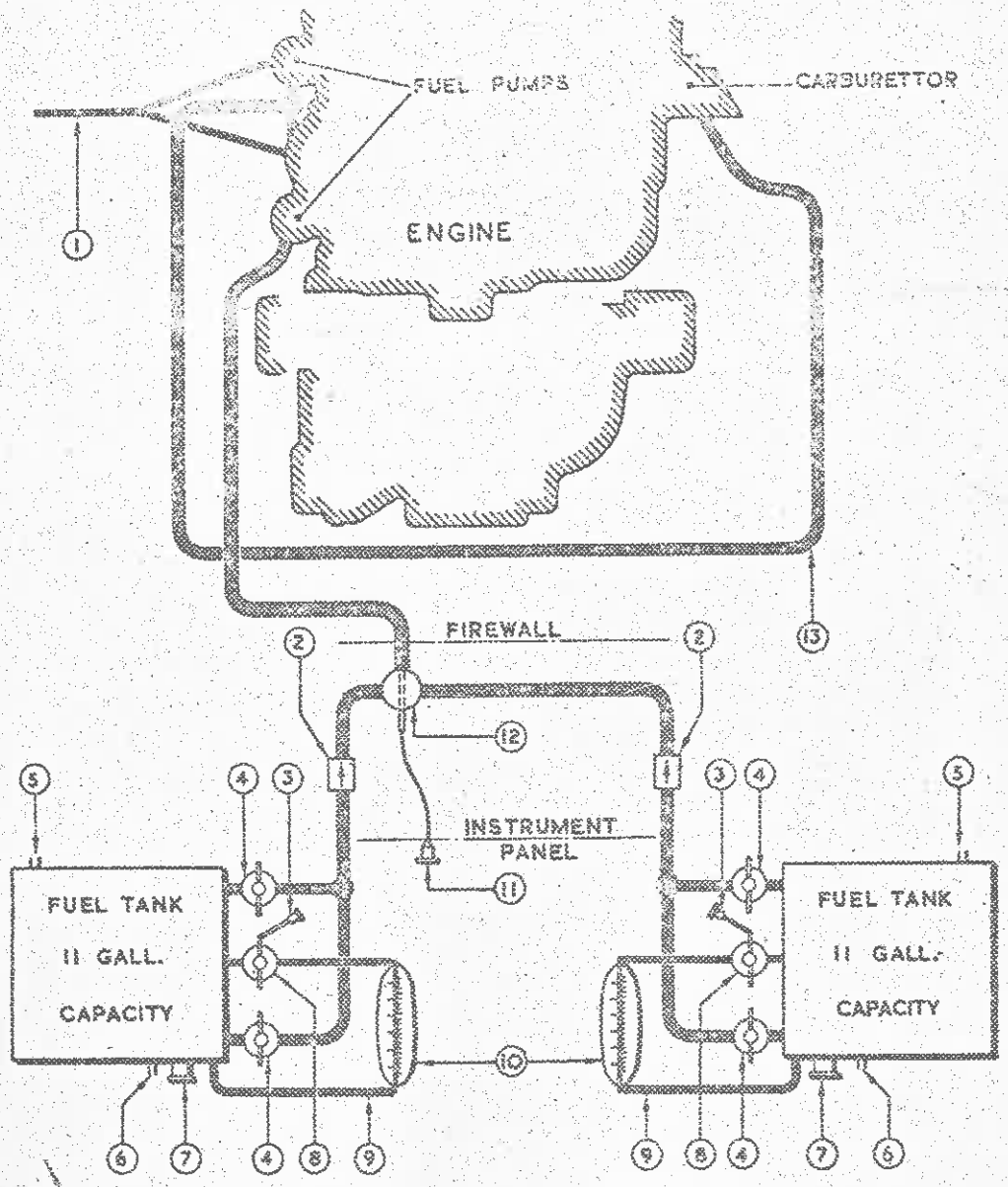


FIG. 2 **CONTROLS LOCKING** FIG. 2

PP7219 6/53 850 C&P Gp 959 (4)



1 FUEL PUMP DRAIN PIPE
2 NON-RETURN VALVE
3 FUEL GAUGE EMERGENCY SHUT-OFF CONTROL
4 SERVICING FUEL COCK (LOCKED 'ON')
5 DRAIN PLUG
6 VENT PIPE
7 FILLER NECK

8 EMERGENCY SHUT-OFF COCK
9 FUEL CONTENTS GAUGE BREATHER PIPE
10 FUEL CONTENTS GAUGE
11 MAIN FUEL COCK CONTROL
12 MAIN FUEL COCK
13 SUPPLY PIPE - PUMPS TO CARBURETTOR

FIG. 3 NORMAL FUEL SYSTEM FIG. 3

CHAPTER

3

GENERAL SERVICING

Chapter 3

GENERAL SERVICING

LIST OF CONTENTS

LIST OF ILLUSTRATIONS

Introduction

1. This chapter describes the servicing of the aircraft and is supplementary to the Servicing Schedule. Servicing of those components fitted to this aircraft which are in general use is not described in this publication, as they are fully dealt with in separate publications which are listed at the front of this book.

Special tools and equipment

2. A list of special tools is contained in Vol. 3, Part 1 of this publication, and special ground equipment is listed in the relevant M leaflet of Vol. 2, Part 1.

Jacking and trestling

3. For normal jacking and trestling, the aircraft has three jacking points, two at the front, and one at the rear. The front jacking points are one on each side of the aircraft, beneath the cross-member connecting the front hinges of the main wheel units. The rear point is just forward of the tail wheel pivot hinge point. These positions are all clearly stencilled on the aircraft. The tail may be lifted on to a trestle by means of handgrips provided on the lower longerons. For changing the main wheels, the aircraft may be jacked from the main wheel units, the jacks being placed under the stub axle on the inner side of the wheels (*fig.* 2). When the wheels are jacked clear of the ground, the aircraft should be steadied by supporting the main planes with trestles placed under the front lift strut attachment, or by means of the picketing rings and rope. Before a main plane is removed from the fuselage, the opposite main plane should be supported on a trestle at the points stencilled at the leading edge.

Access panels and drainage holes

4. The position of all access panels and drainage holes are clearly shown in fig. 1. The drainage holes must be kept clear and free from obstruction.

Lubrication

5. The lubrication points, the lubricants to be used, and method of application are all indicated in fig. 5 and 6. When lubricating the cable connections to the trim and balance tab control levers, ensure that the studs move freely within the levers; this will prevent continual bending and subsequent breaking of the control cables at these points.

Rigging

General

6. Rigging details are shown on the two rigging diagrams, fig. 3 and 4. The following should be checked:—

(1) Dihedral of main planes.
(2) Incidence of main planes and flaps.
(3) Incidence of tail plane—this should be zero.
(4) Diagonal measurements.

Rigging position

7. Prior to rigging, the aircraft must be jacked up, and levelled laterally and longitudinally to the rigging position. This is done by the use of the alignment jig shown in fig. 3. The jig should first be placed across the centre section, and, for aircraft pre-Mod. No. 228, rested on the main plane front spar attachment bolts; on aircraft which incorporate Mod. No. 228, the jig should be placed on the lifting eyes at the front spar attachment points. With a clinometer on the jig, the jacks should be adjusted until the reading is zero. The jig should then be turned over (about its own axis), and placed in the fore-and-aft position across the main plane front and rear spar attachments, on either the port or the starboard side. The jacks should then be carefully adjusted to obtain a clinometer reading of zero. When this is achieved, the jig should again be placed in the first position, athwart the centre section, and the clinometer reading checked. The aircraft is in the correct rigging position when both positions of the jig yield zero clinometer readings, ± 30 sec.

Main planes

8. The incidence can be adjusted by a screwed plug in the top end of the rear lift strut, where it attaches to the main plane. To adjust, remove the bolt attaching the strut to the main plane, and turn the screwed plug with a screwdriver, as required. Replace the bolt (*fig.* 3). The fittings which attach the jury strut to the main plane are also adjustable, and should be adjusted to suit the alteration of the rear bracing strut, after correcting the incidence.

Ailerons

9. With the control column in the neutral positions, the ailerons should be rigged so that their trailing edges are continuous with the wing trailing edges. Adjustment of the aileron movement can be made at the cable turnbuckle in the top, front, of the cabin, at the turnbuckles down the front door posts, and at the wing-to-aileron control connecting-rod. The connecting-rod is accessible through zip-fastened access panels in the upper and lower surfaces of the main plane, at the centre aileron hinge bracket.

Note . . .
Should the control rod require adjustment (on aircraft post Mod. 353) it is advisable to remove the control rod assembly from the spigot bolts, to prevent damage to the ball race dust covers. After the adjustment has been completed and the rod end bearings locked, the assembly must be replaced and secured to the spigot bolts.

Elevators and trimming tabs

10. With the control column in the neutral position, the elevators should be in line with the tail plane. Elevator movement is measured from this setting. Adjustment can be made at the cable turnbuckles, which are accessible through zip-fastened access holes, at the rear end of the fuselage. When Mod. 322 is incorporated, access to the elevator operating lever is obtained by removing the cover plates. The trimming tab is on the port elevator, and is manually controlled by a small crank handle in the centre of the cabin roof. The special trim tab on the starboard elevator is interconnected with the flap mechanism, and operates automatically. On aircraft in which Mod. No. 191 is not embodied, the trim tab on the port elevator can be adjusted by the turnbuckles at the control quadrant in the roof, and also by suitable movement of the two cable stops at fuselage frame 4; the special trim tab on the starboard elevator, however, is only adjustable at the points where the cables are attached to the tab itself. Aircraft which embody Mod. No. 191 are equipped with screw-thread cable adjusters at the rear end, where the cables enter the fuselage.

11. It should be noted that on aircraft which do not incorporate Mod. No. 191, there is no way of distinguishing between the cables which connect:—
(1) the port elevator trimming tab to the control quadrant in the cabin roof, and
(2) the starboard special trim tab to the flap operating linkage on the top, starboard, side of the cabin.
It is possible, therefore, that, in servicing, these cables may be inadvertently crossed, and it is essential that the tabs are tested for correct operation after the cables have been reassembled, or renewed. When the control handle in the roof is at the NOSE DOWN position, the port elevator trim tab must be up. When the flaps are fully DOWN, the special trim tab on the starboard elevator must also be down, and when the flaps are UP, the tab must be neutral. Any incorrect functioning must be rectified immediately.

12. On aircraft which embody Mod. No. 191, cables of different diameter are employed for each tab, and the guide tubes and fittings have

Nov. 1961 Air Publication 2144CF
Volume 1

AIR MINISTRY

AUSTER MK.6 AIRCRAFT

ADVANCE INFORMATION LEAFLET NO. 1/61

Insert this leaflet in A.P.2144CF, Vol.1, Sect.4, Chap.5, to face para.7.

Para.7. Last line should read:-

"clinometer readings ± 30 min."

Notes

(1) The information contained in this leaflet will be incorporated by normal amendment list action in due course.

(2) If, after receipt of this leaflet, an amendment list with a prior date and conflicting information is received, the information in the leaflet is to take precedence.

ENGINEER

bushed holes of such dimensions that the cables will only thread through the correct item. It should be noted that the smaller diameter cables commence one from the starboard turnbuckle at the control quadrant in the centre of the roof, and the other from the lower lug of the flap operating linkage.

Flaps

13. With the flap lever in its lowest position, the flaps should be in the normal flight position (*Leading Particulars and fig. 4*), and the starboard elevator trimmer, which is interconnected with, and operated by, the flap lever, should be in line with the elevator. When checking the flap incidence, it is essential that the rigging board be held against the trailing edge of the flap; the clinometer reading should be zero. The flap movement can be adjusted by screwing the plug attachment on the flap connecting rod, shown in fig. 4.

Rudder

14. With the rudder pedals in the neutral position (*fig. 4*), the rudder should be in line with the fin. The rudder movement should be checked in accordance with fig. 4, and, if necessary, adjusted by means of the adjustable screw stops on the fuselage stern-post, and the turnbuckles at the rear end of the rudder cables.

Engine alignment

15. The method of checking the alignment of the engine is given in fig. 7.

Undercarriage

Bolts

16. The undercarriage unit hinge bolts, and the bolt attaching the diagonal strut behind the stub axle, are all of high tensile steel. *Warning—The bolts are standard A.G.S. parts, and therefore, if replacement is necessary, care should be taken to ensure that new bolts of the same material are obtained; mild steel bolts are unsuitable, and might fail in use.*

Changing a main wheel

17. To change a main wheel, the aircraft should be jacked up as described in para. 3, and the wheel brakes should be off. The cover plate [illegible] removed, and the hexagonal nut [illegible] the axle, after which the wheel [illegible] drawn.

Shock absorbers

18. The elastic cords linking the inner extensions of the undercarriage units to the shock truss should be examined for fraying, and loss of elasticity, and renewed if necessary (*Sect. 5*).

Brake adjustment

19. The following is the procedure for adjusting the main wheel brakes:—

(1) Jack the aircraft.

(2) Check that the parking brake is off.

(3) Remove the dust cap at the back of the brake unit, insert a screwdriver in the slot thus exposed, and turn the star-wheel one tooth at a time, until it will no longer turn (i.e., until the brake shoes are fully expanded, and will not allow the wheel to turn).

(4) Repeat (3), above, on the other wheel.

(5) Unscrew the lock-nuts on the adjusters at each brake, and screw the adjusters until there is no slack in the brake cables; tighten the lock-nuts.

(6) Turn the star-wheels until the main wheels are just free.

(7) Check that maximum braking, sufficient to hold the aircraft against the engine, is obtained when the foot brake pedals are depressed.

Draining the fuel tanks

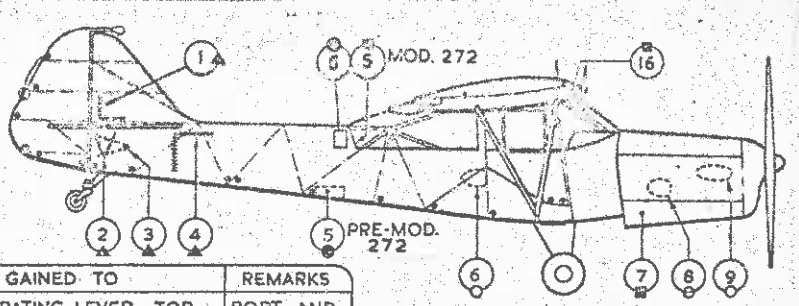
20. The drain plug for each tank is at the bottom rear of the tank, and is accessible from the underside of each main plane root-end. The drain plug for the long-range tank (if fitted) is situated just aft of the stub axle of the observer's seat, and is accessible from the underside of the aircraft.

Draining the oil tank

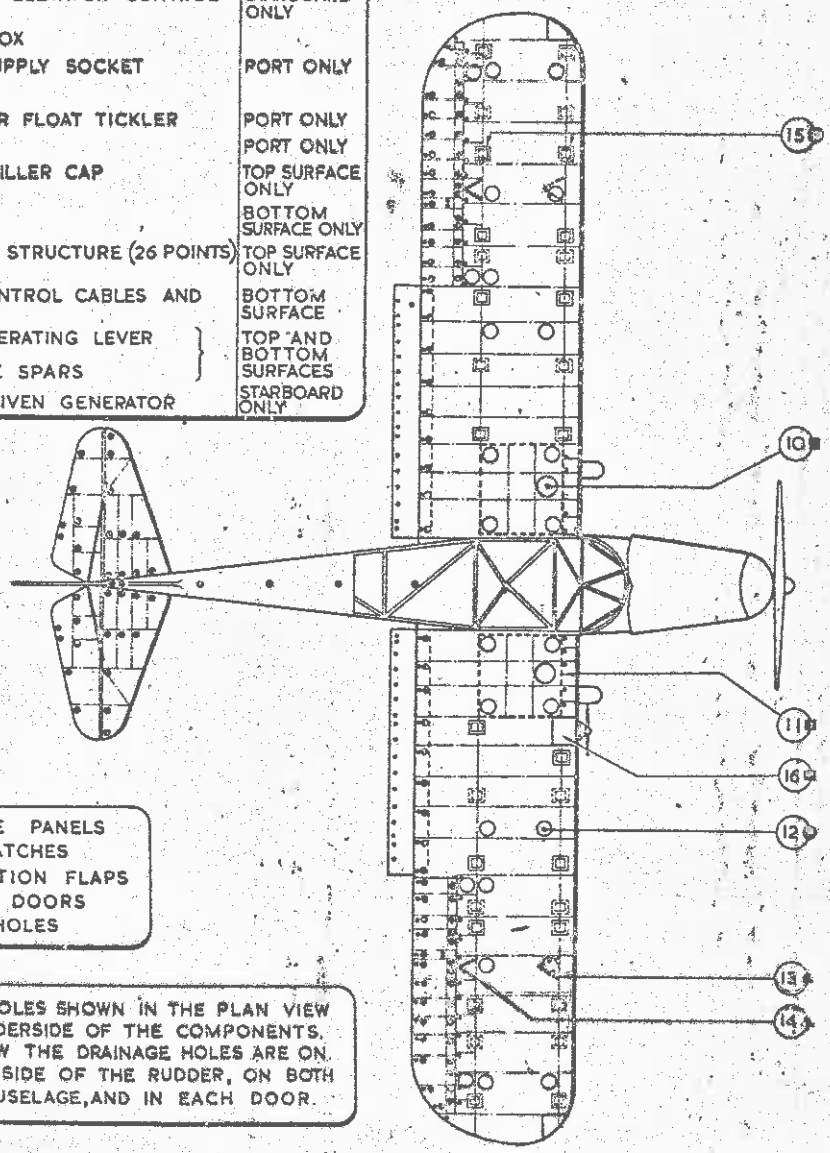
21. The oil tank is in the engine bay, at the bottom of the firewall, and the drain plug is at the bottom, centre, of the tank.

Pressure head

22. The Mk. 7A pressure head has a calibrating ring fitted to the head of the static tube, and in order to ensure correct A.S.I. readings it is essential that the ring is correctly positioned. Its aft face must be 0·156 in. forward of the centre of the forward hole in the static head (*Sect. 11, fig. 2*) and must be locked in this position by centre-punching the grub screw, Part No. H.80198, which retains it.



ITEM	ACCESS GAINED TO	REMARKS
1	ELEVATOR OPERATING LEVER - TOP	PORT AND STARBOARD
2	ELEVATOR OPERATING LEVER - BOTTOM	STARBOARD ONLY
3	TAIL WHEEL PIVOT ARM	PORT ONLY
4	RUDDER AND ELEVATOR CONTROL CABLES	STARBOARD ONLY
5	FIRST AID BOX	
6	EXTERNAL SUPPLY SOCKET	PORT ONLY
7	ENGINE	
8	CARBURETTOR FLOAT TICKLER	PORT ONLY
9	FUEL PUMPS	PORT ONLY
10	FUEL TANK FILLER CAP	TOP SURFACE ONLY
11	FUEL TANK	BOTTOM SURFACE ONLY
12	MAIN PLANE STRUCTURE (26 POINTS)	TOP SURFACE ONLY
13	AILERON CONTROL CABLES AND PULLEYS	BOTTOM SURFACE
14	AILERON OPERATING LEVER	TOP AND BOTTOM SURFACES
15	MAIN PLANE SPARS	
16	WINDMILL-DRIVEN GENERATOR	STARBOARD ONLY



- ■ DETACHABLE PANELS
- ● RIP-OFF PATCHES
- ▲ ZIP INSPECTION FLAPS
- ○ INSPECTION DOORS
- ◦ DRAINAGE HOLES

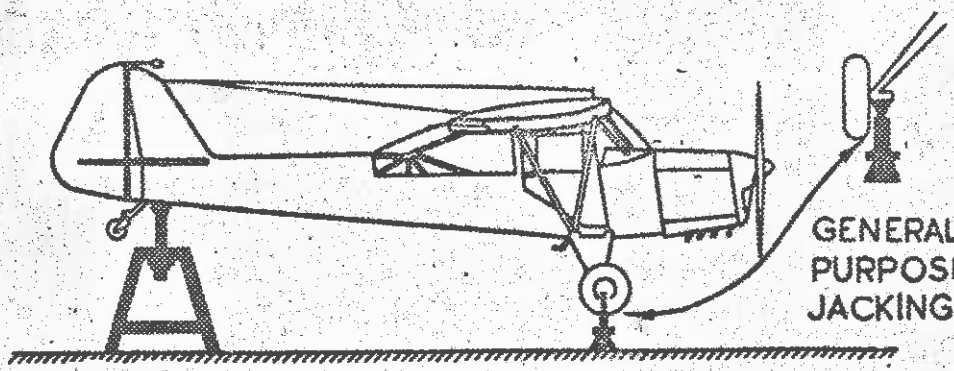
THE DRAINAGE HOLES SHOWN IN THE PLAN VIEW ARE ON THE UNDERSIDE OF THE COMPONENTS. IN THE SIDE VIEW THE DRAINAGE HOLES ARE ON THE STARBOARD SIDE OF THE RUDDER, ON BOTH SIDES OF THE FUSELAGE, AND IN EACH DOOR.

FIG. 1

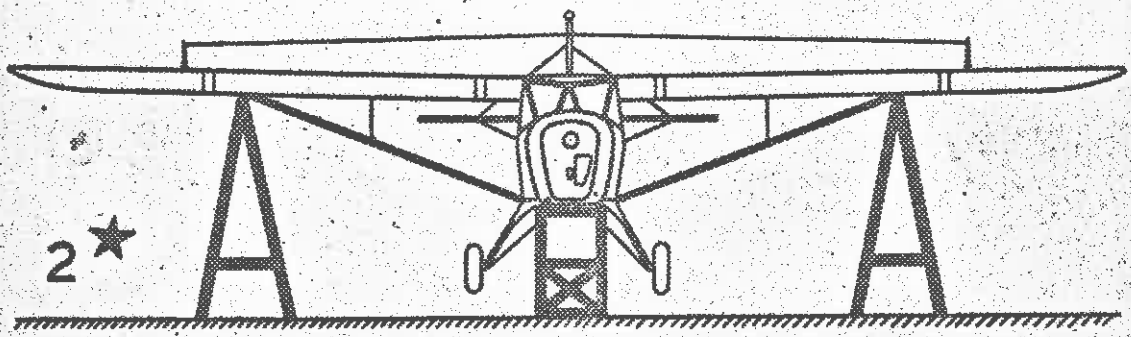
INSPECTION PANELS AND DRAINAGE HOLES

FIG. 1

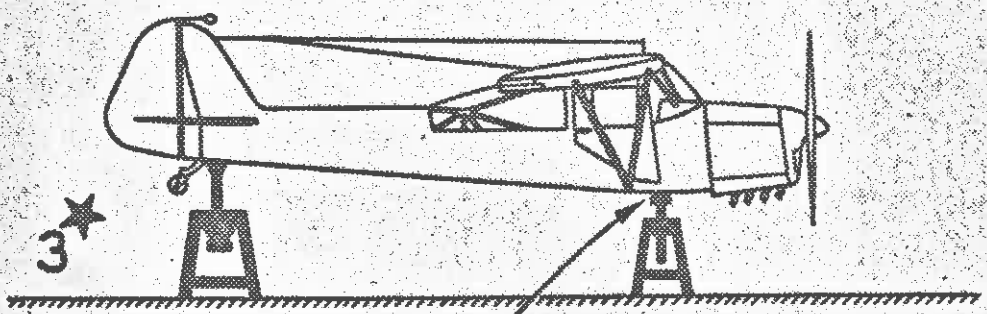
[illegible] 7/49 C.I.P. Gp. 959(a)



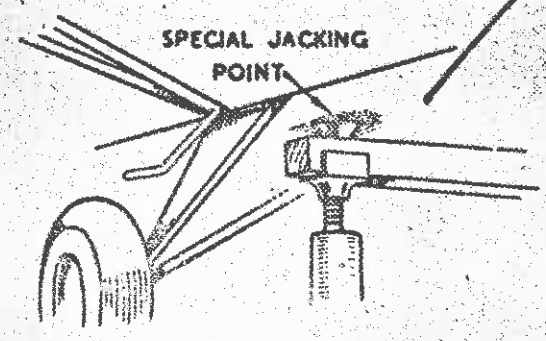
1 GENERAL PURPOSE JACKING



2 ★



3 ★

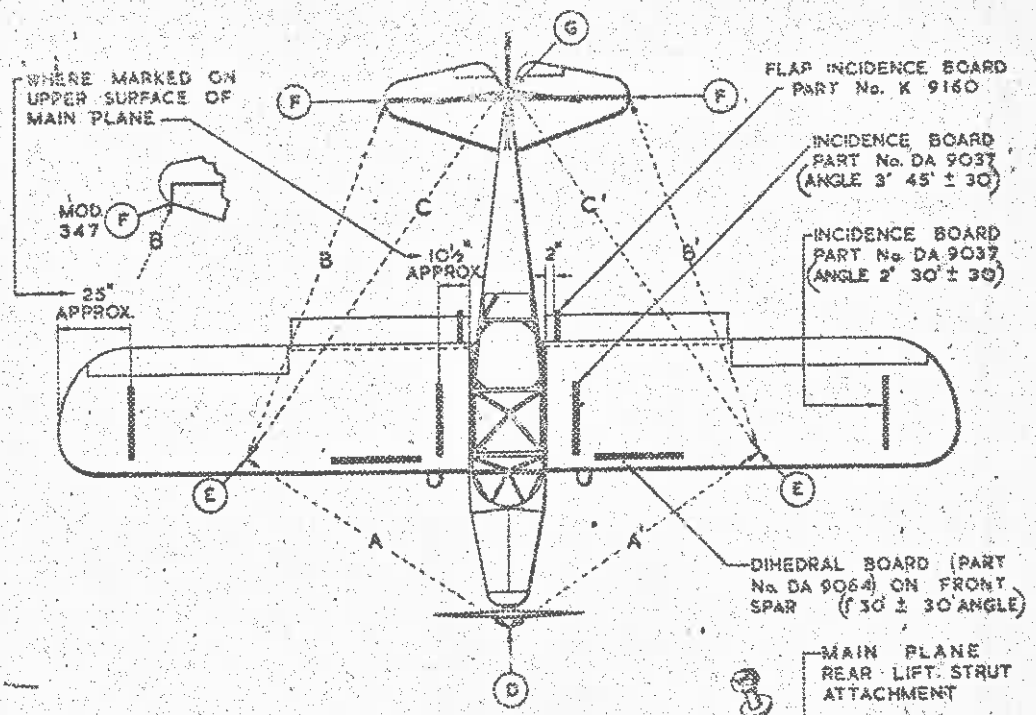


★ DETAILS 2 AND 3 APPLY TO THE REMOVAL OF THE UNDERCARRIAGE

FIG. 2

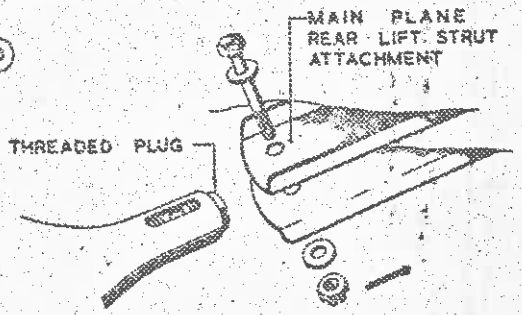
JACKING AND TRESTLING

FIG. 3

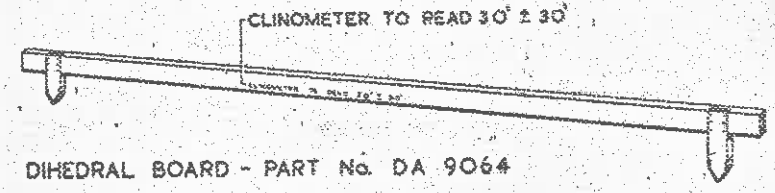


DIAGONALS A=A' WITHIN ± ·75"
DIAGONALS B=B' WITHIN ± 1·25"
DIAGONALS C=C' WITHIN ± 1·25"

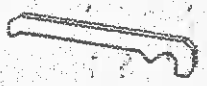
POINT D - FRONT CENTRE OF SPINNER
POINT E - PICKETING RING EYEBOLT HOUSING
POINT F - OUTBOARD END OF TAIL PLANE
POINT G - REAR FACE OF FINPOST



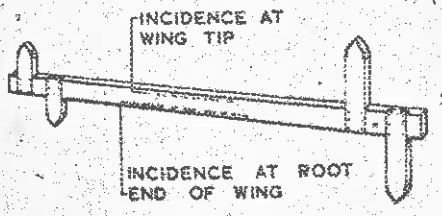
WING INCIDENCE ADJUSTMENT



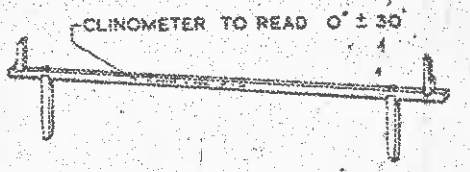
DIHEDRAL BOARD - PART No. DA 9064



FLAP INCIDENCE BOARD PART No. K 9160



INCIDENCE BOARD - PART No DA 9037

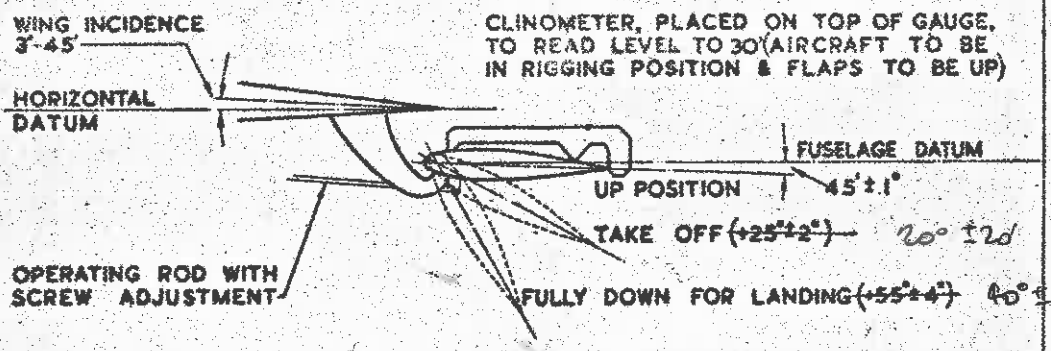


RIGGING ALIGNMENT JIG
PART No. DA 9058 (PRE-MOD. No. 228)
PART No. JA 9162 (MOD. No. 228)

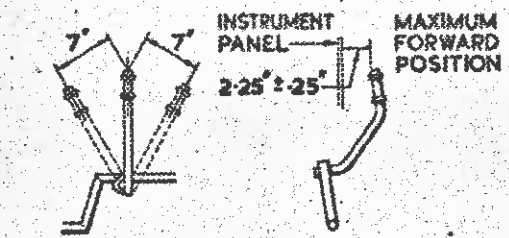
FIG. 3 — RIGGING DIAGRAM AND EQUIPMENT — FIG. 3

RESTRICTED

WING FLAPS

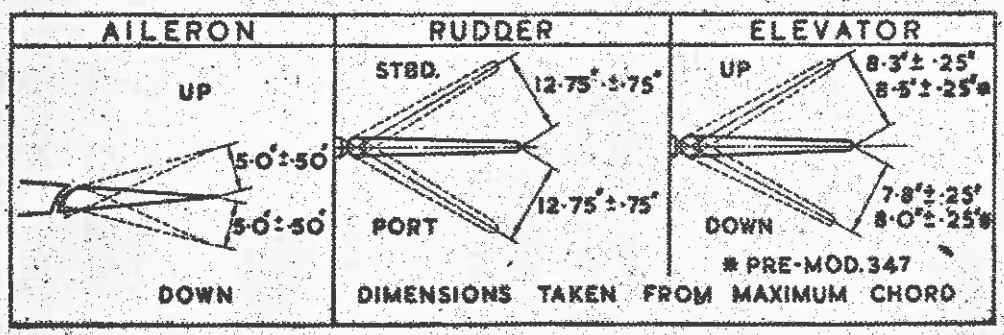


CONTROL COLUMN

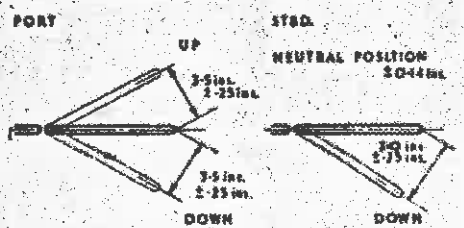


RUDDER BAR

WITH RUDDER AT NEUTRAL, THE UPPER PORTION OF THE PEDALS MUST BE IN LINE (AS VIEWED IN SIDE ELEVATION)



ELEVATOR TRIM TABS



ELEVATOR TRIM TABS (Mod. No. 347)

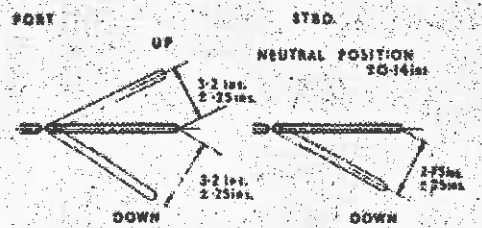
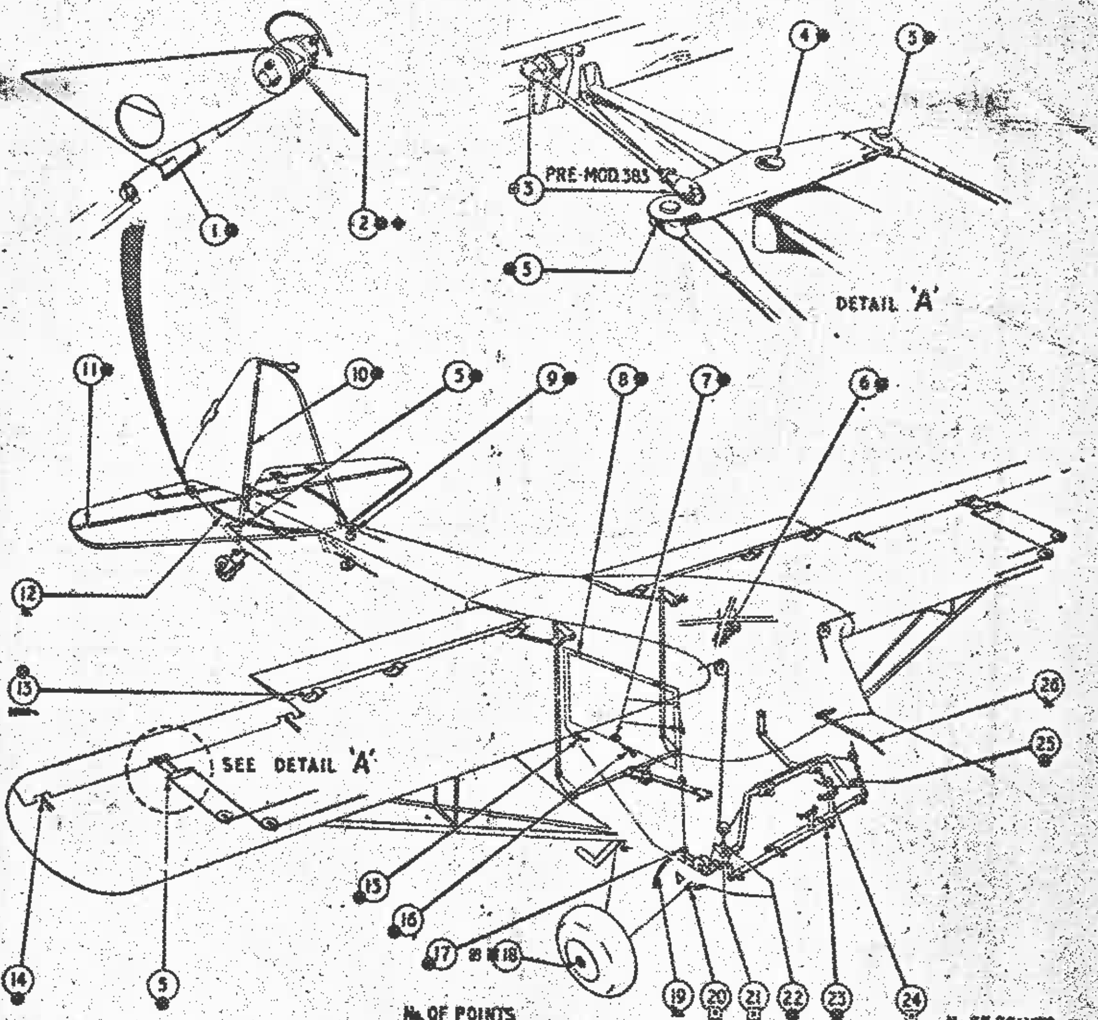


FIG. 4 RIGGING THE CONTROL SURFACES FIG. 4



		No. OF POINTS			No. OF POINTS
1	TRIM TAB HINGE BEARING	4	14	AILERON HINGE BEARING	6
2	TRIM TAB CABLE CONNECTION	4	15	DOOR HANDLE (OUTER)	2
3	BALL STUD (PRE-MOD.383 ONLY)	4	16	DOOR HANDLE (INNER)	2
4	AILERON CONTROL SHAFT	2	17	DOOR HINGE	4
5	CONTROL CABLE TO OPERATING LEVER JOINT	18	18	MAIN WHEEL HUB	2
6	TRIM TAB CONTROL QUADRANT	1	19	FOOT BRAKE CABLE	2
7	WINDOW OPENING LEVER AND WINDOW CATCH	6	20	UNDERCARRIAGE HINGE BEARING	4
8	DOOR WINDOW HINGE	6	21	AILERON PULLEY SWIVEL	2
9	ALL FLYING CONTROL PULLEYS	15	22	AILERON PULLEY SWIVEL LINK	2
10	RUDDER HINGE BEARING	3	23	RUDDER PEDAL LEVER BEARING	4
11	ELEVATOR HINGE BEARING	6	24	CONTROL STICK BEARING HOUSING	1
12	TRIM TAB CABLE BENEATH TAIL PLANE	2	25	CONTROL ARCH BEARING	2
13	FLAP HINGE	6	26	HAND BRAKE CABLE	1

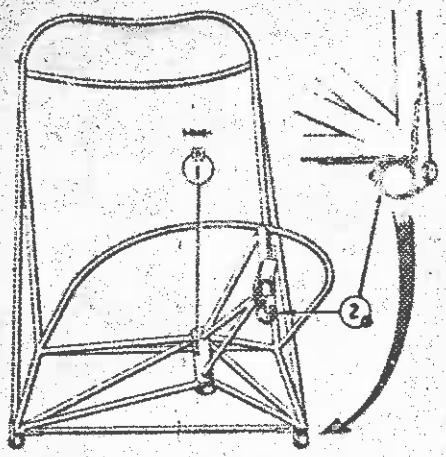
KEY TO SYMBOLS

Symbol		STORES REF.	N.A.T.O. CODE
●	OIL OM-150	~~34B/9100550~~	~~O-140~~
▲	~~GREASE XG-273~~	~~34B/9423151~~	—
■	GREASE ~~XG-279~~	~~34B/9100509~~	—
▣	GREASE ~~XG-275~~	~~34B/9100512~~	~~G-350~~
(gun symbol)	GUN LUBRICATION	⊡ PREPACKED BEARINGS	
◆	SPECIAL ATTENTION — REFER TO PARA. 5		

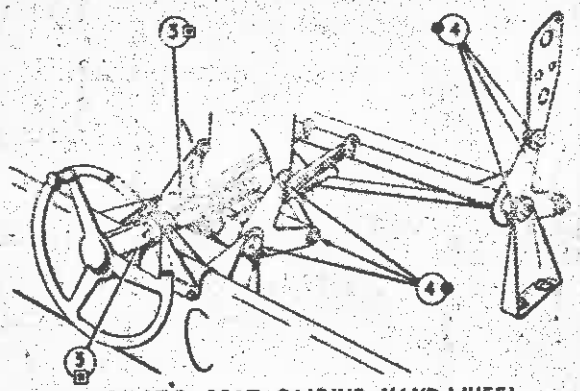
FIG. 5. LUBRICATION DIAGRAM

RESTRICTED

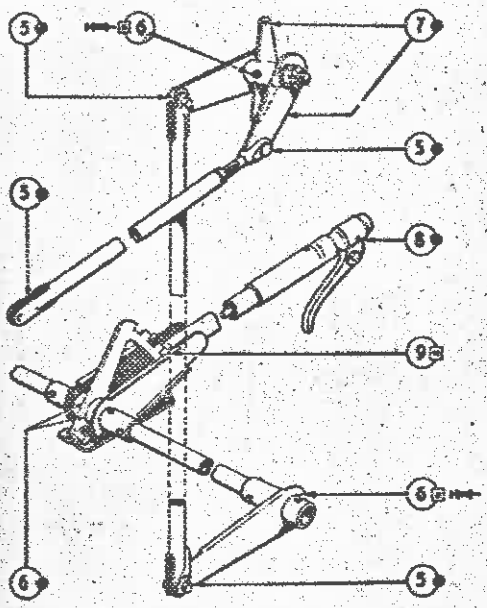
PP8173 182614/6103 5/57 750 C&P Gp.959 (4)



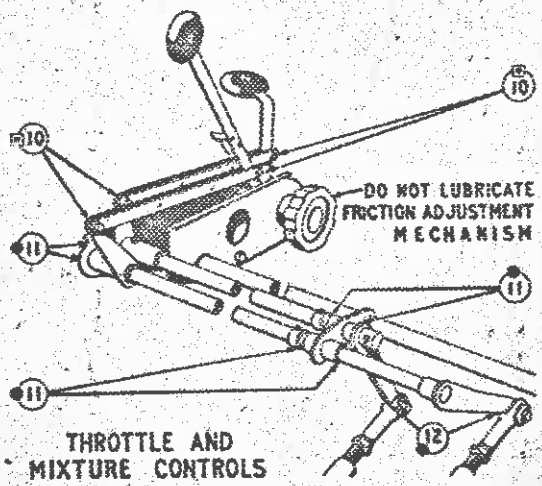
OBSERVER'S SEAT
(NOT APPLICABLE TO R.C.A.F. AIRCRAFT)



PILOT'S SEAT-RAISING HAND WHEEL

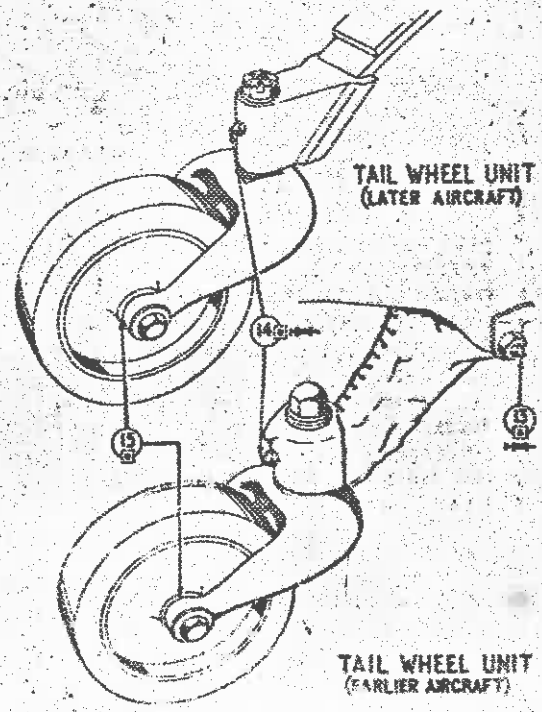


FLAP CONTROL



DO NOT LUBRICATE FRICTION ADJUSTMENT MECHANISM

THROTTLE AND MIXTURE CONTROLS



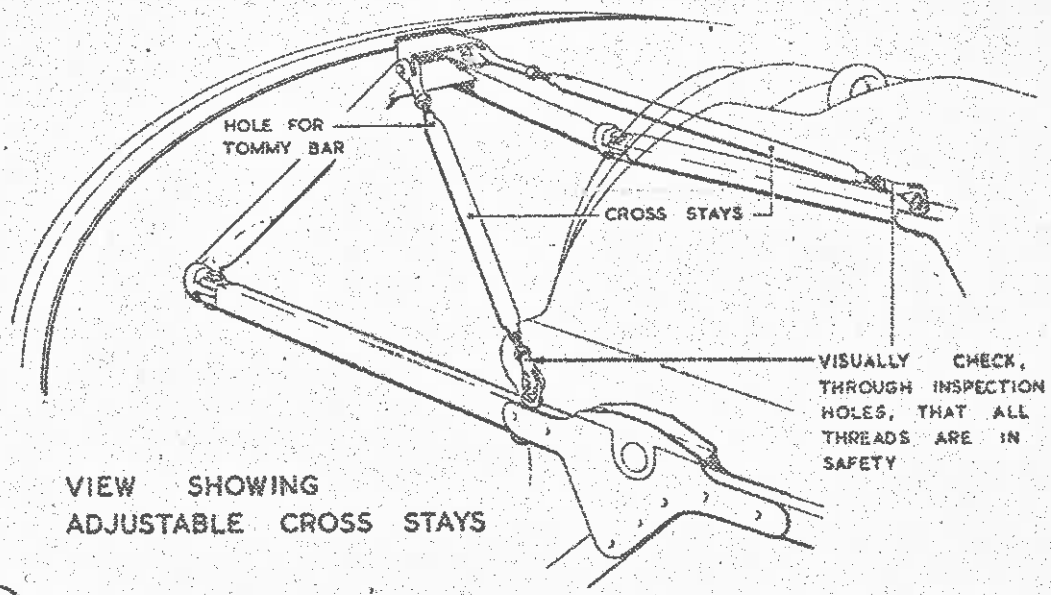
TAIL WHEEL UNIT
(LATER AIRCRAFT)

TAIL WHEEL UNIT
(EARLIER AIRCRAFT)

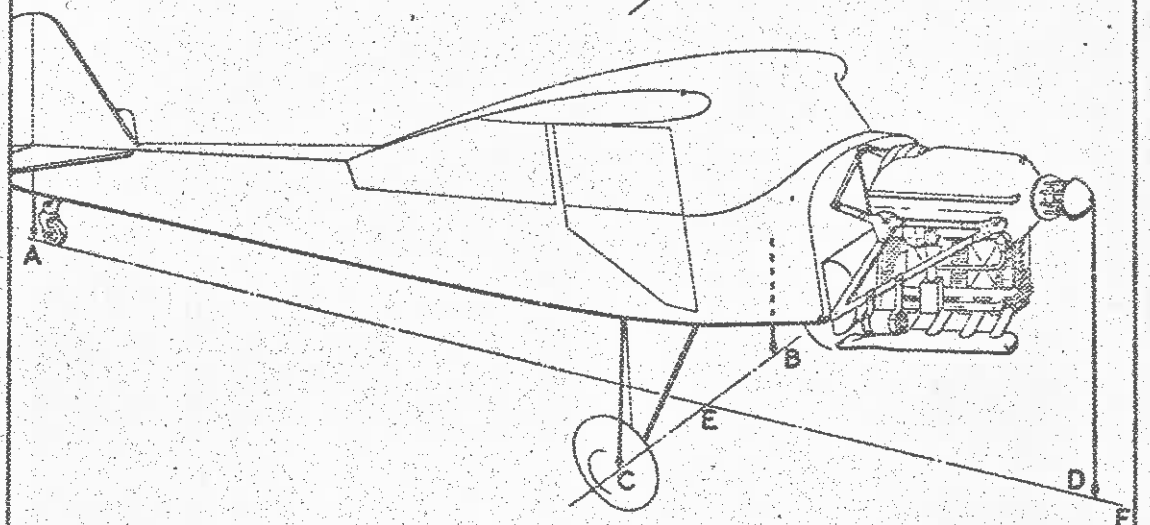
	No. OF POINTS
1 OBSERVER'S SEAT PILLAR	1
2 ROLLER AXLE	3
3 SEAT-RAISING HAND WHEEL SHAFT BEARINGS	3
4 PILOT'S SEAT PIN JOINTS	12
5 FLAP CONTROL PIN JOINTS	8
6 CONTROL SHAFT BEARINGS	6
7 JOINT BETWEEN BALANCE TAB LEVERS AND CONTROL CABLES	2
8 FLAP LEVER TRIGGER	1
9 FLAP LEVER QUADRANT	1
10 THROTTLE AND MIXTURE CONTROL LINK JOINTS	4
11 CROSS SHAFT BEARINGS	6
12 THROTTLE AND MIXTURE CONTROL ROD JOINTS	2
13 TAIL WHEEL HINGE BEARING	1
14 TAIL WHEEL PIVOT ARM	1
15 TAIL WHEEL BEARING	1

FOR KEY TO SYMBOLS SEE FIG. 5

FIG. 6 LUBRICATION DETAIL



VIEW SHOWING ADJUSTABLE CROSS STAYS



1 DROP PLUMB LINES FROM CENTRE-LINE OF STERNPOST, CENTRES OF PORT & STARBOARD REAR UNDERCARRIAGE ATTACHMENT BOLTS, & CENTRE-LINE OF ENGINE CRANKSHAFT. THIS WILL GIVE POINTS A, B, C & D RESPECTIVELY.

2 MARK CENTRE OF LINE B-C, GIVING POINT E.

3 PROJECT LINE A-E TO POINT F.

4 IF POINT D FALLS EXACTLY ON LINE A-E-F, THE ENGINE IS CORRECTLY ALIGNED; IF NOT, ADJUST THE CROSS STAYS (DETAIL VIEW) UNTIL CORRECT ALIGNMENT IS OBTAINED.

FIG. 7 | ALIGNMENT OF ENGINE | FIG. 7

CHAPTER 4

PROCEDURES FOLLOWING HAZARDOUS INCIDENTS

Chapter 4

PROCEDURE FOLLOWING HAZARDOUS INCIDENTS

Introduction

1. The information contained in this chapter and the subsequent appendices is to be applied when any one or more hazardous incidents have been reported.

2. For the purpose of these instructions, a hazardous incident is one which could result in damage to the aircraft, which might not be immediately apparent. The likely cause of such an incident could be flight through turbulent air, heavy landing, exceeding permitted 'g' during flying or excessive use of brakes etc.

3. In general, the type of damage which should be looked for during examination is as follows:—

(1) Insecurity of attachment
(2) Cracks or fractures
(3) Corrosion or contamination
(4) Any form of distortion
(5) Loose or missing rivets
(6) Chafing, scoring or fraying
(7) Broken lockings

4. When an aircraft has been subjected to such a condition, to a degree which warrants the Captain or Pilot of the aircraft reporting the incident on Form 700, it is essential that the checks, detailed in the relevant appendix and any necessary repairs and/or adjustments, are made before the aircraft is certified serviceable for flight.

Appendix 1

SERVICING AFTER A HEAVY LANDING

Introduction

1. This appendix describes the additional servicing to be carried out on aircraft which have been subjected to a heavy landing.

Servicing notes

2. (1) The examinations and checks called for in this servicing procedure are to be supervised by a Senior N.C.O. assisted by men as required.

(2) Unless otherwise stated, damage found during this servicing is to be categorised and repaired in accordance with A.P. 2440F & G, Pts. 3 and 4.

(3) This appendix has been compiled to cover damage resulting from any type of heavy landing and discretion is to be used in regard to the extent to which the servicing is applied.

(4) No replacements or adjustments are to be made until all examinations called for have been completed and the overall damage assessed.

Servicing sequence

Item No.	*Item*	*Operation*
1	Ground equipment	Trestle the aircraft clear of the ground.
2	Main undercarriage	Examine by feel for excessive fore-and-aft movement and side play.
3	Mainwheels	Remove.
4	Main undercarriage Structure	
	(*a*) Stub axles	(i) Examine welds at axle joints for cracks. (ii) Examine tubular members in vicinity of welds for cracks.
	(*b*) Fabric covering	Examine for wrinkling and damage.
	(*c*) Channel bracing members (*d*) Side bracing tubes (*e*) Radius rods (*f*) Top bracing tubes	(i) Examine for bowing (ii) Examine for cracks in vicinity of welds
	(*g*) Shock truss bobbins	Examine for damage and security of attachment.
5	Bolt securing undercarriage diagonal tube, attached to stub axle.	(i) Remove. (ii) Examine for damage or signs of shearing. (iii) Fit serviceable bolts.
6	Main undercarriage attachment fittings and bolts	Examine for cracks, distortion, damage and bolts for shearing.
7	Undercarriage shock absorber cords	Examination and security of attachment

also suggest engine bearers, feet, bearer bolts, radio tray, batt tray, seat, instruments,

Item No.	Item	Operation
8	Lift struts	
	(*a*) Lift struts	(i) Examine for bowing and cracks. Maximum bow is 0·3 in. **Note . . .** *Struts bowed up to 1 in. are to be cold straightened. Struts bowed in excess of 1 in. to be scrapped.*
	(*b*) Jury struts	(i) Examine by feel for movement. (ii) Examine for bowing and cracks.
	(*c*) Attachments bolts	Examine for signs of shearing.
9	Main planes (port and starboard)	
	(*a*) Fabric covering	Examine for wrinkling and damage.
	(*b*) Leading edge	Examine for dents distortion and damage.
	(*c*) Trailing edge	Examine for dents distortion and damage.
	(*d*) Ribs	Examine for damage.
	(*e*) Aileron attachment Brackets	Examine for cracks, distortion, damage and security of attachment.
	(*f*) Lift strut attachment lugs	Examine for cracks, distortion, damage and security of attachment to spar. **Note . . .** *Fabric is to be removed to facilitate this examination.*
	(*g*) Internal bracing wires	Examine for signs of slackness.
10	Main plane attachment bolts	Examine for signs of movement.
11	Fuselage covering	Examine fabric for signs of wrinkling and damage.
12	Fuselage tubular structure	Examine for bowing, cracks in vicinity of welds and damage.
13	Stern post	Examine for cracks and damage.
14	Tail wheel unit	(i) Examine for excessive movement in bearing block. (ii) Examine bearing block for cracks and damage. (iii) Examine tail wheel for freedom of rotation.
15	Tail shock absorber	(i) Examine by feel for excessive movement. (ii) Examine attachment bolts for signs of shearing.
16	Main wheels	(i) Fit serviced wheels. (ii) Check tyre pressures, 27 to 35 lb/sq. in.
17	Aircraft generally	Place aircraft in rigging position
18	Aircraft generally	Carry out a rigging check in accordance with Sect. 4, Chap. 3, Para. 5.
19	Aircraft generally	Carry out a symmetry check in accordance with Sect. 4, Chap. 3, fig. 3.
20	Ground equipment	Lower the aircraft off the trestles.
21	Cockpit fire extinguisher	Examine for signs of discharge.
22	Aircraft generally	Ensure that all tools, rags and other materials used during airframe servicing have been removed from the aircraft.
23	Form 700E	Sign for completing Heavy Landing Servicing.

SECTION

5

REMOVAL, ASSEMBLY AND DISMANTLING OPERATIONS

71666/7 M1555/3999 10/46 450 G & P Gp. 1

SECTION 5

REMOVAL, ASSEMBLY AND DISMANTLING OPERATIONS

LIST OF CONTENTS

LIST OF ILLUSTRATIONS

Introduction

1. This Section describes pictorially the recommended sequence of operations for the removal of the main components of the aircraft. Where there are special features in the assembly of a component, a separate sequence is given, otherwise assembly is a reversal of the removal sequence.

2. Where it is necessary to jack or trestle the aircraft, reference should be made to Sect. 4, Chap. 3.

Bonding, locking and sealing

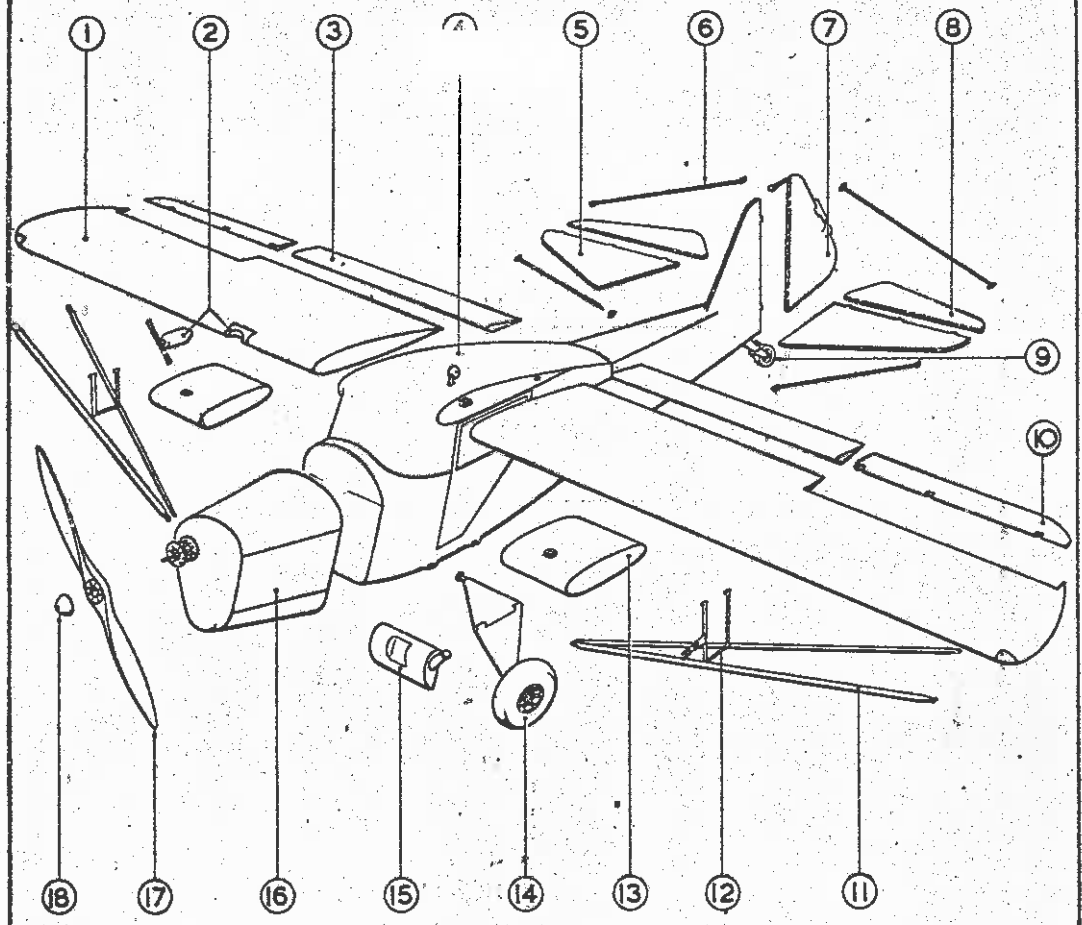
3. Any bonding, locking or sealing which may have been disturbed during removal operations must be restored when re-assembling although it may not be mentioned in the relevant list of operations.

Armour plating

4. To remove the armour plating which is only fitted to the pilot's seat, the upholstery should be removed and the four bolts securing the back armour should be extracted from the rear of the seat. The seat armour is removed by withdrawing the four bolts recessed in the upper surface.

Pilot's seat

5. The seat is removed by extracting the two rear and two front bolts which attach it to the raising mechanism.

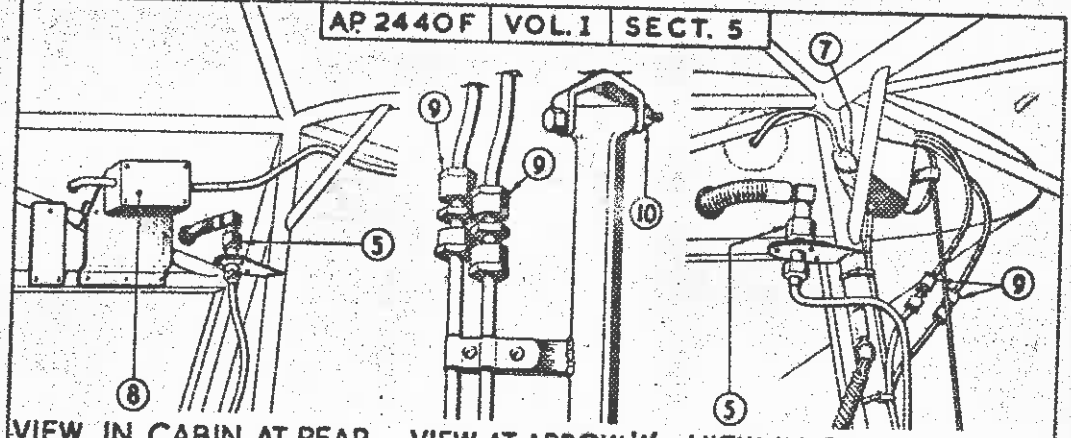


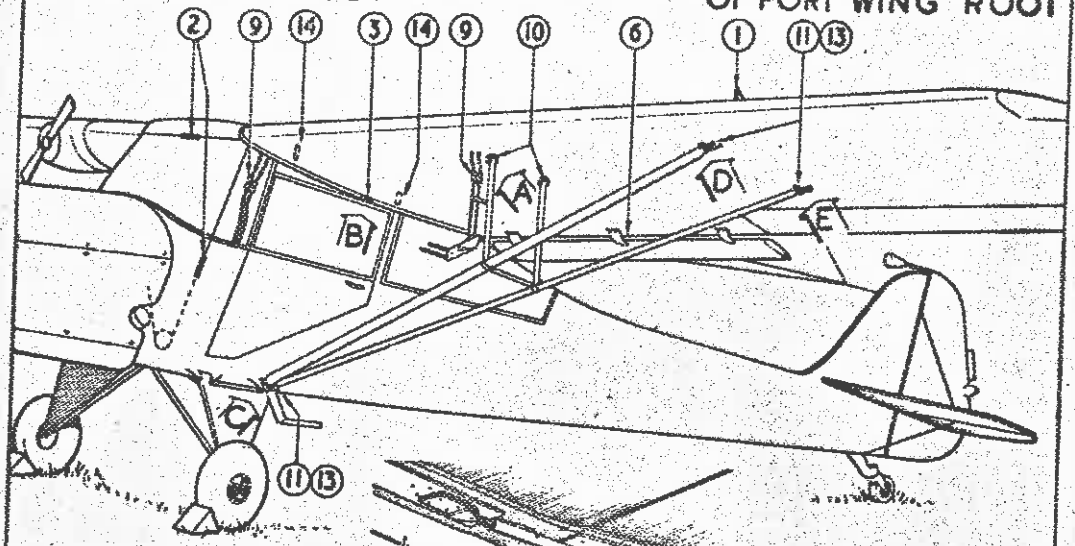
ITEM No.	DESCRIPTION
1	MAIN PLANES
2	GENERATOR & FAIRING
3	FLAPS
4	FUSELAGE
5	TAIL PLANES
6	TAIL PLANE BRACING WIRES
7	RUDDER
8	ELEVATORS
9	TAIL WHEEL UNIT

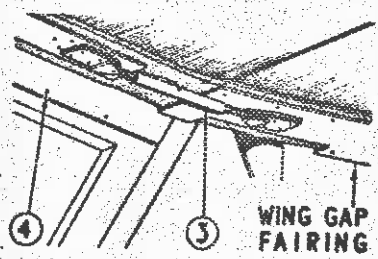
ITEM No.	DESCRIPTION
10	AILERONS
11	LIFT STRUTS
12	JURY STRUTS
13	FUEL TANKS
14	MAIN WHEEL UNIT
15	OIL TANK
16	ENGINE & COWLINGS
17	PROPELLER
18	SPINNER

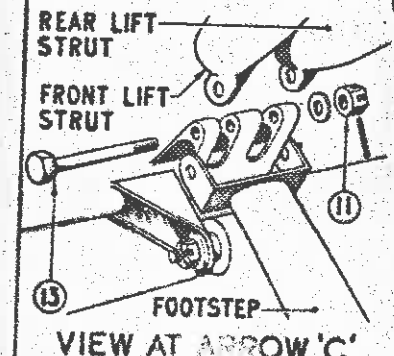
FIG. 1 MAJOR COMPONENTS DIAGRAM FIG. 1

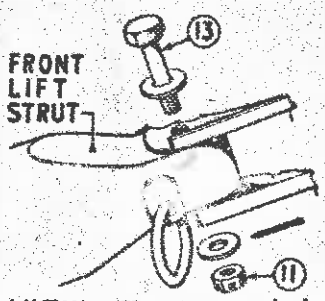
PP1066 61143.7075 12/52 850 C.A.P. Gp. 959 (4)











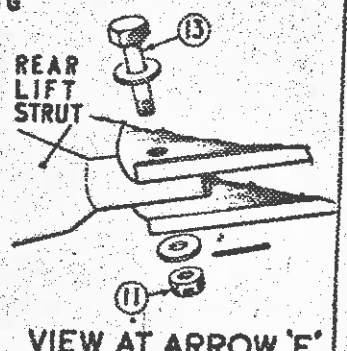


FIG. 2 MAIN PLANE FIG. 2

KEY TO FIG. 2 (MAIN PLANE)

1 Disconnect the aerial from the mast

2 Disconnect the aileron control cables at the turnbuckles inside the cabin

3 Remove the wing gap fairing

4 Unscrew the fairing strip above the door

5 Drain the fuel tank and disconnect the fuel supply pipes, gauge capillaries and the control rod for the gauge (*fig. 5*)

6 Disconnect the flap operating rod and, if desired, remove the flap (*fig. 3*)

7 Break the plug-and-socket joint in the navigation lamp cable

8 Disconnect the generator cable at the terminal block on the wing root (starboard wing only)

9 Disconnect the A.S.I. pipe lines at the low pressure unions on the jury strut and near the forward door frame (port wing only)

10 Disconnect the jury struts at the fork ends on the underside of the main plane

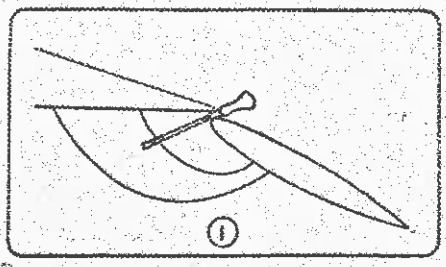
11 Unscrew the three nuts securing the attachment bolts for the lift struts

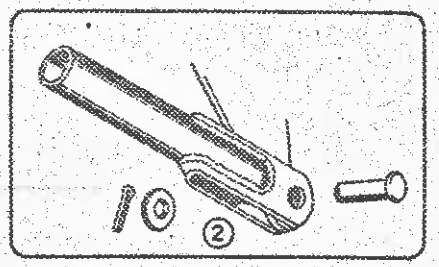
*12 Allocate personnel to support the main plane: two at the tip and one at the root end

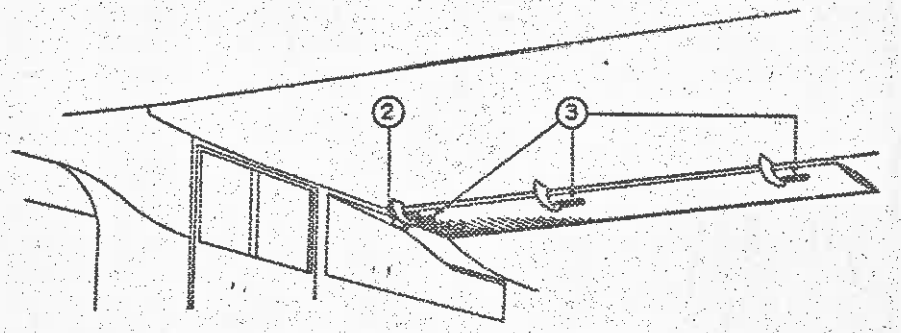
13 Withdraw the three bolts securing the lift struts and remove the struts, together with the footstep

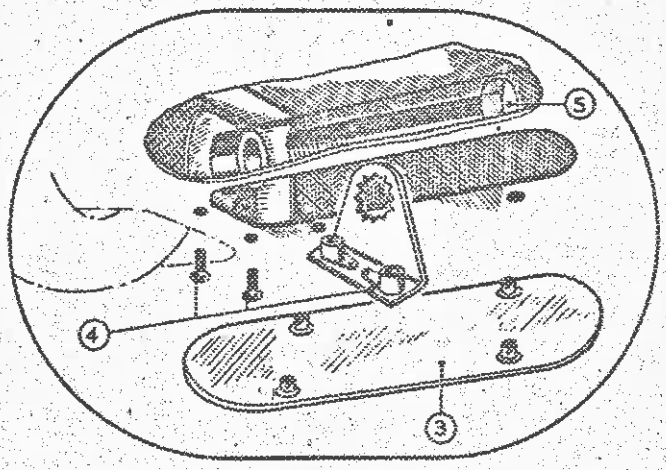
14 Remove the wing-to-fuselage attachment eyebolts at the root end, and carefully lower the main plane

* *Not illustrated*









(1) TO PREVENT DAMAGE TO THE FLAP SKIN BY EXCESSIVE DOWNWARD MOVEMENT OF THE FLAP DURING OPERATION 2, INSERT A SCREWDRIVER, FOR EXAMPLE, ADJACENT TO THE CENTRE HINGE BRACKET, IN THE ATTITUDE SHOWN

(2) DISCONNECT OPERATING ROD BY REMOVING THE SPLIT PIN & WITHDRAWING THE HINGE PIN

(3) REMOVE FLAP HINGE ACCESS PANELS BY UNLOCKING THE DZUS FASTENERS

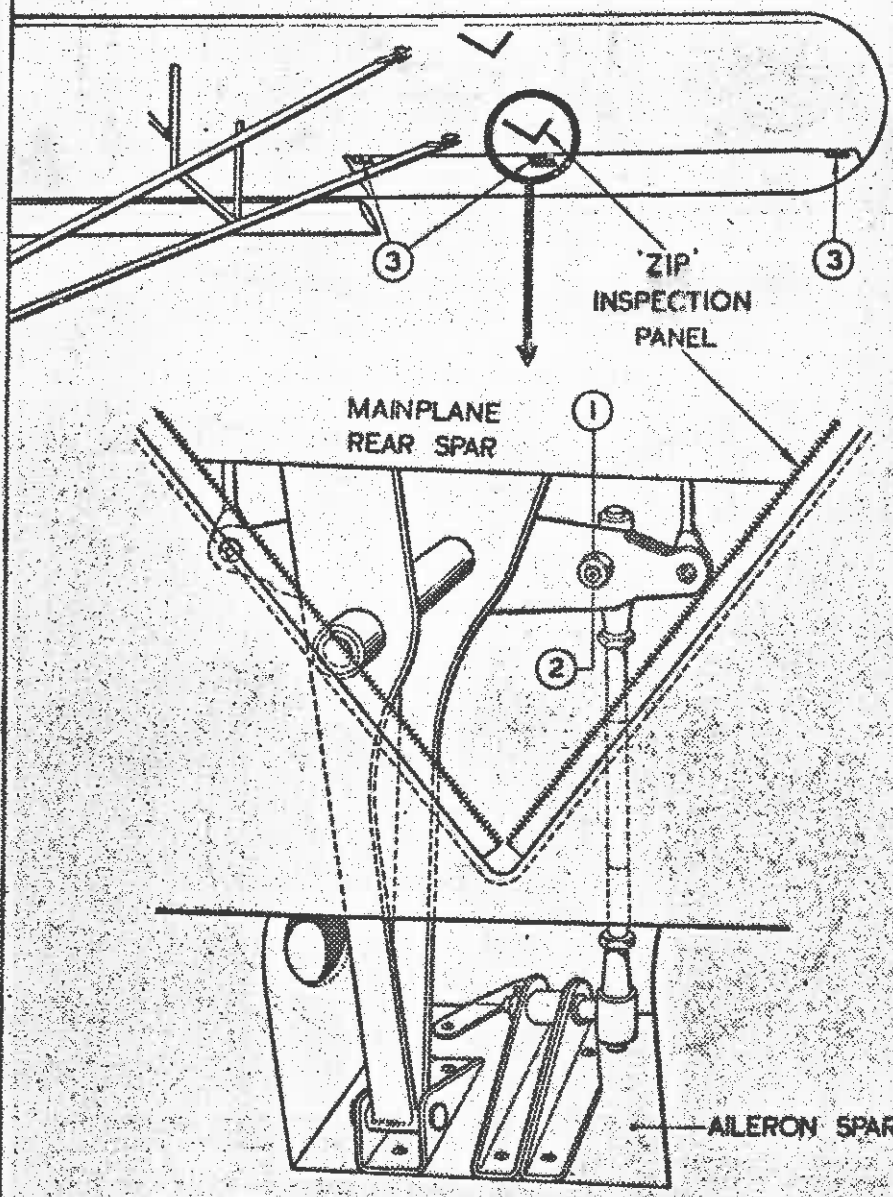
(4) REMOVE THE TWO BOLTS SECURING THE LOCKING PLATE; WITHDRAW PLATE

(5) ALLOCATE ONE MAN TO SUPPORT FLAP, THEN UNSCREW & WITHDRAW HINGE BOLTS

6 LIFT FLAP OFF HINGE BRACKETS

7 REMOVE, OR MAKE SECURE, THE LOOSE BUSHES IN EACH HINGE BRACKET

FIG. 3	FLAP	FIG. 3



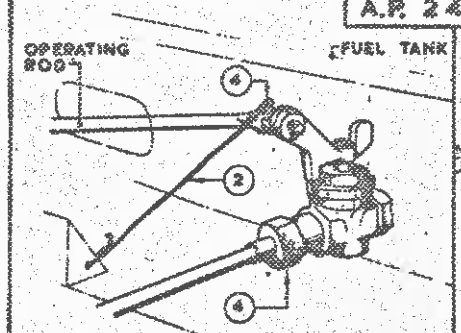
OPEN 'ZIP' INSPECTION PANEL

REMOVE NUT (1) AND WITHDRAW BALL STUD (PRE-MOD. 383) (2) / SPIGOT BOLT (POST-MOD. 383)

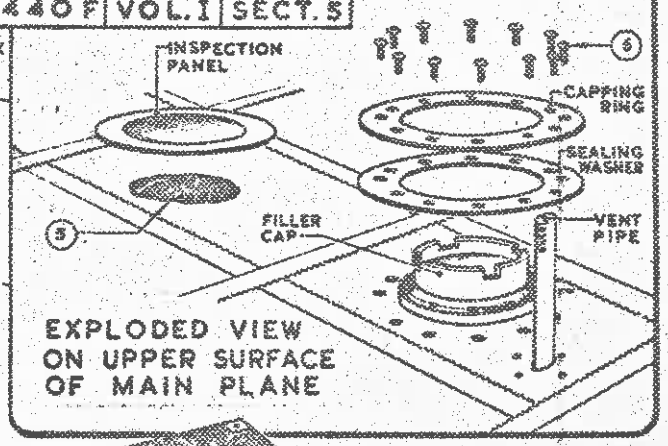
SUPPORT AILERON AND REMOVE THREE HINGE BOLTS (3)

FIG. 6

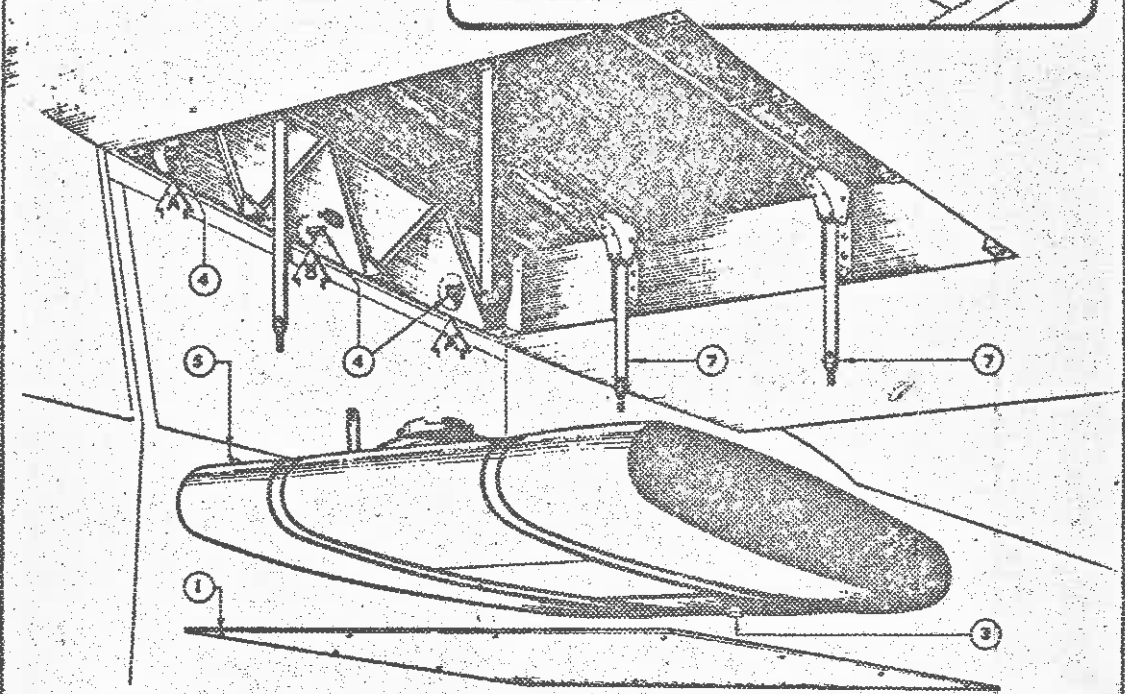
This leaf issued in reprint March, 1949

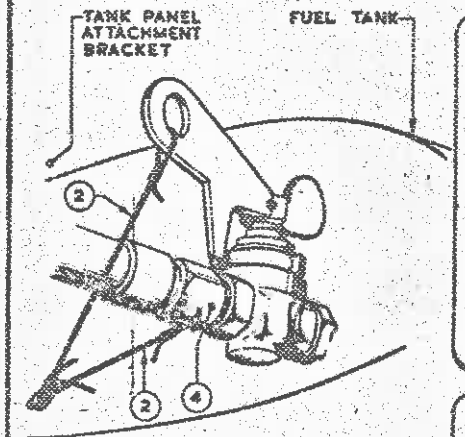


VIEW AT 'B' BEFORE DISCONNECTION



EXPLODED VIEW ON UPPER SURFACE OF MAIN PLANE





TYPICAL VIEW AT 'A' BEFORE DISCONNECTION

1. REMOVE WING GAP FAIRING, AND LOWER THE TANK PANEL AFTER UNSCREWING 12 FIXING BOLTS.
2. RELEASE LOCKING WIRES ON THE 3 FUEL COCKS AT THE ROOT END OF THE TANK; CLOSE COCKS.
3. DRAIN TANK INTO A SUITABLE RECEPTACLE BY UNSCREWING THE DRAIN PLUG.
4. DISCONNECT FUEL PIPES AND BONDING LEAD IN TANK BAY.
5. REMOVE INSPECTION PANEL FROM UPPER SURFACE OF MAIN PLANE AND DISCONNECT FUEL GAUGE VENT PIPE.
6. REMOVE 12 BOLTS AND WITHDRAW CAPPING RING AND SEALING WASHER FROM UPPER SURFACE OF MAIN PLANE.
7. ALLOCATE ONE MAN TO SUPPORT TANK, THEN DISCONNECT TANK STRAPS BY UNSCREWING THE TURNBUCKLES.
8. LOWER TANK AWAY FROM MAIN PLANE; WHEN LOWERING TANK, ENSURE THAT THE VENT PIPE AND THE RUBBER SEALING WASHER THROUGH WHICH THE VENT PIPE PASSES ARE NOT DAMAGED.

IMPORTANT — ON ASSEMBLY, THE FUEL GAUGE EMERGENCY COCK MUST BE LOCKED OPEN BY ONE STRAND OF 22 SWG. COPPER WIRE. (SEE VIEW AT 'B')

PORT TANK ILLUSTRATED; STARBOARD TANK REMOVAL IS SIMILAR.

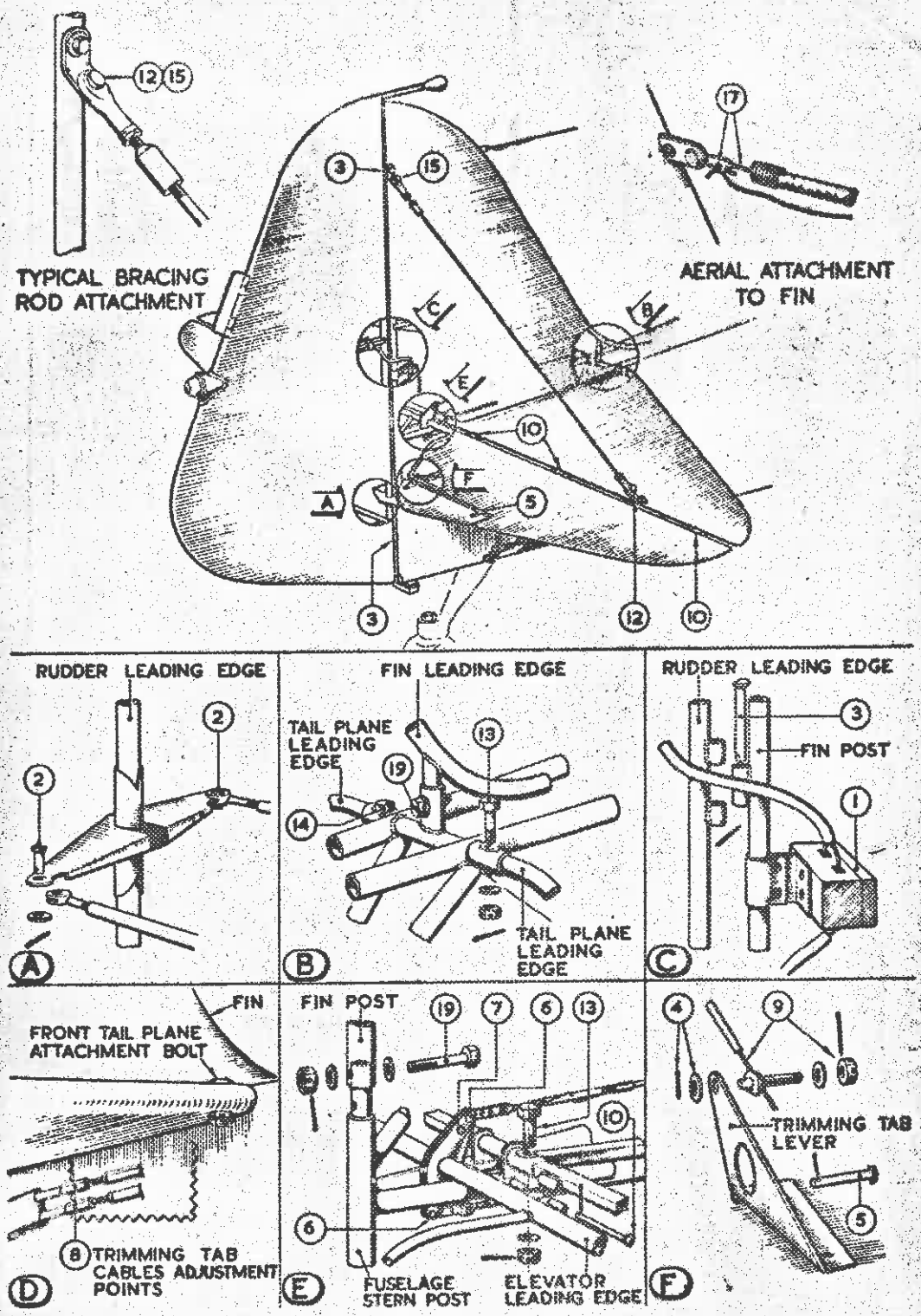


FIG. 7 TAIL UNIT

RESTRICTED

KEY TO FIG. 7 (TAIL UNIT)

REMOVAL INSTRUCTIONS

Rudder

(1) Through the zip access flap, disconnect the dusheath electrical cable from the terminal block.

(2) Remove both control cables from the operating lever.

(3) Support the rudder and withdraw the pins from the three hinges.

Elevator trimming and balance tabs

Note.—The same operations apply to both tabs.

(4) Release the control cable from the top and bottom operating levers by removing the split pin and washer.

(5) Support the tab and withdraw the pins from the two hinges.

Elevators

(6) Through the zip access flaps, withdraw the pins connecting the cables to the operating lever; temporarily secure the cables to an adjacent structure to prevent their falling out of reach. In aircraft incorporating Mod. No. 322, in lieu of opening the upper zip access flap, access to the elevator lever upper horn is obtained by removing the cover plates.

(7) Remove the two bolts interconnecting the operating levers.

(8) Unscrew the trimming and balance tabs cable adjusters (*Detail D*) on the fuselage beneath the tail plane. This applies only to aircraft embodying Mod. No. 191.

(9) Withdraw the tab cables from their retaining pins by slackening off the nuts.

(10) Support one elevator and withdraw the three hinge pins.

*(11) Repeat operation (10) for the other elevator.

Tail plane

(12) Disconnect the bracing rods from the top and bottom surfaces.

(13) Support one tail plane unit and remove the bolts from the front and rear attachment spigots.

(14) Repeat operation (13) for the other half of the tail plane unit.

Fin

(15) Disconnect the bracing rods from the fin post.

*(16) Carefully remove the fabric locally to gain access to the front and rear attachment spigots.

(17) Untie the aerial straining cord and unhook the aerial from the fin leading edge.

*(18) Carefully slit the fabric on both sides of the fin between the cuts made in operation (16).

(19) Support the fin and remove the bolts from the attachment spigots.

ASSEMBLY NOTES

(a) Care must be taken to ensure that, on re-assembling the elevator trimming and balance tabs, the operating wires are threaded through the correct guide tubes. Check this by operating the trimming handle and flap lever in the cabin (*Sect.* 4, *Chap.* 3, *para.* 10-12).

(b) Check all control surfaces for correct movement after assembly (*Sect.* 4, *Chap.* 3).

* denotes *Not illustrated*

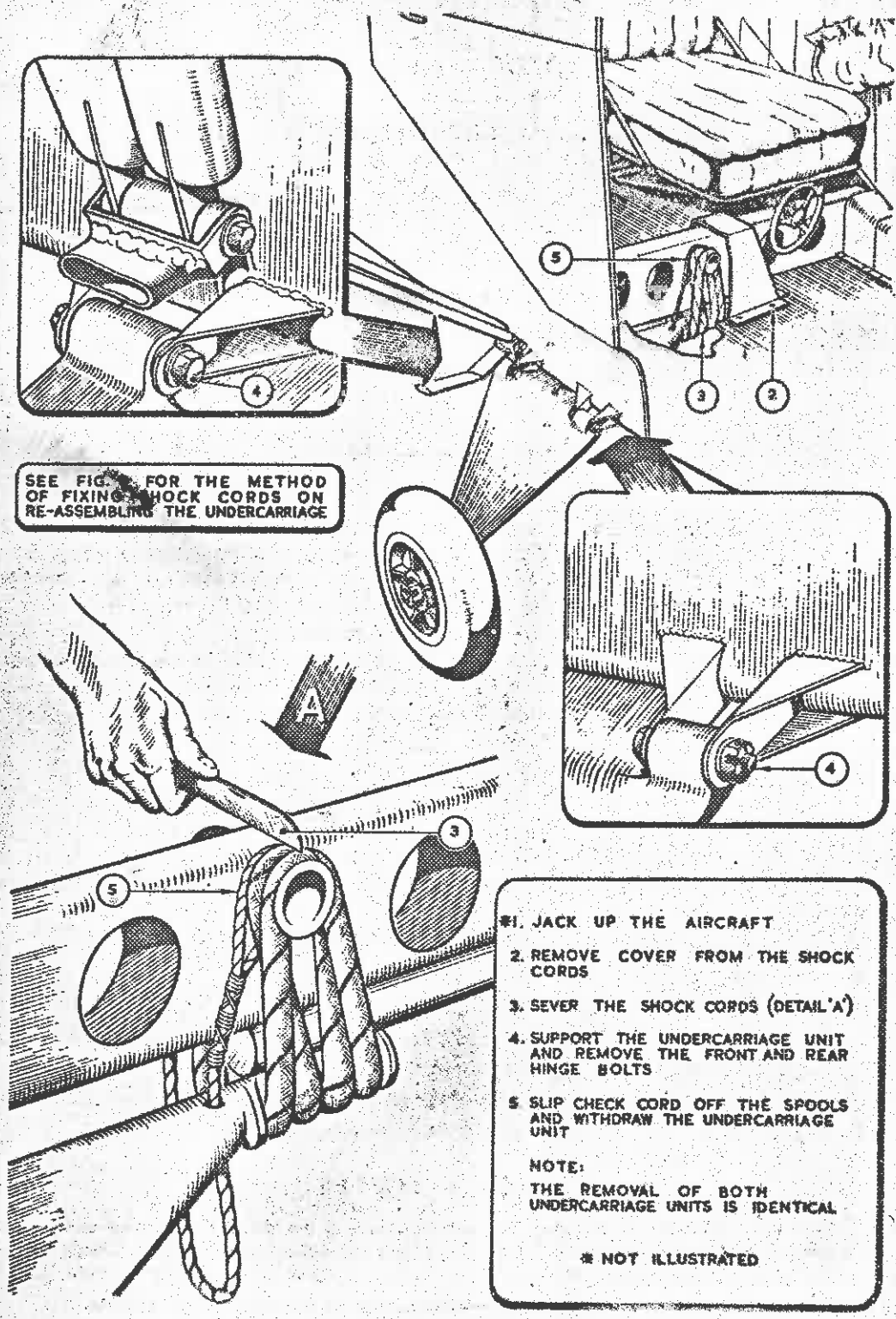
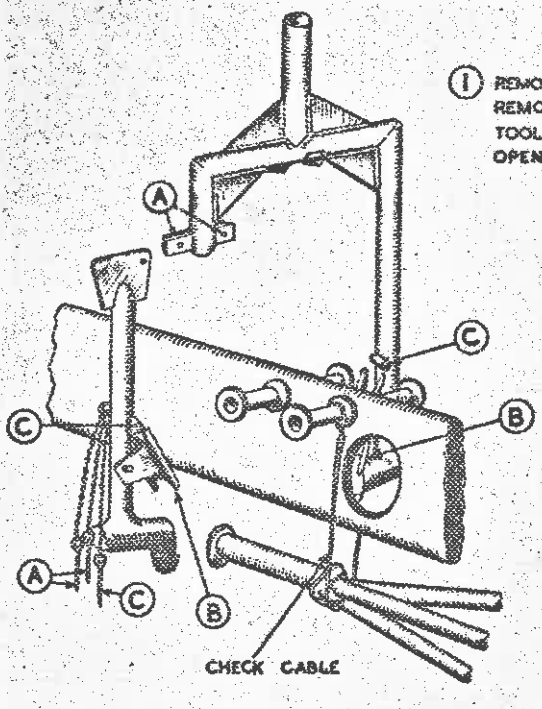
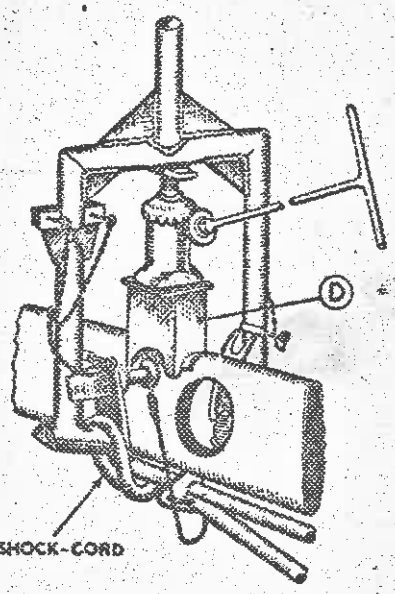
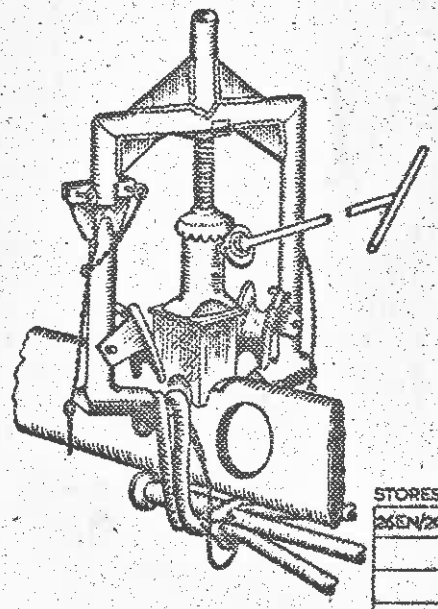


Fig. 8. Undercarriage



(1) REMOVE SHOCK-CORD COVER AND FRONT FLOORBOARDS. REMOVE PINS (A) AND DETACH LEG FROM FIXING TOOL. PLACE TOOL OVER SHOCK TRUSS AND OPEN LATCHES (B) BY WITHDRAWING PINS (C)





(2) PLACE SHOCK-CORD OVER STIRRUPS, CLOSE LATCHES, RE-INSERT PINS (C) AND JOIN UP LEG. PLACE ADAPTOR BRACKET (D) ON SHOCK TRUSS, PLACE JACK UNDER FIXING TOOL AND LOCATE BOSS ON ADAPTOR BRACKET

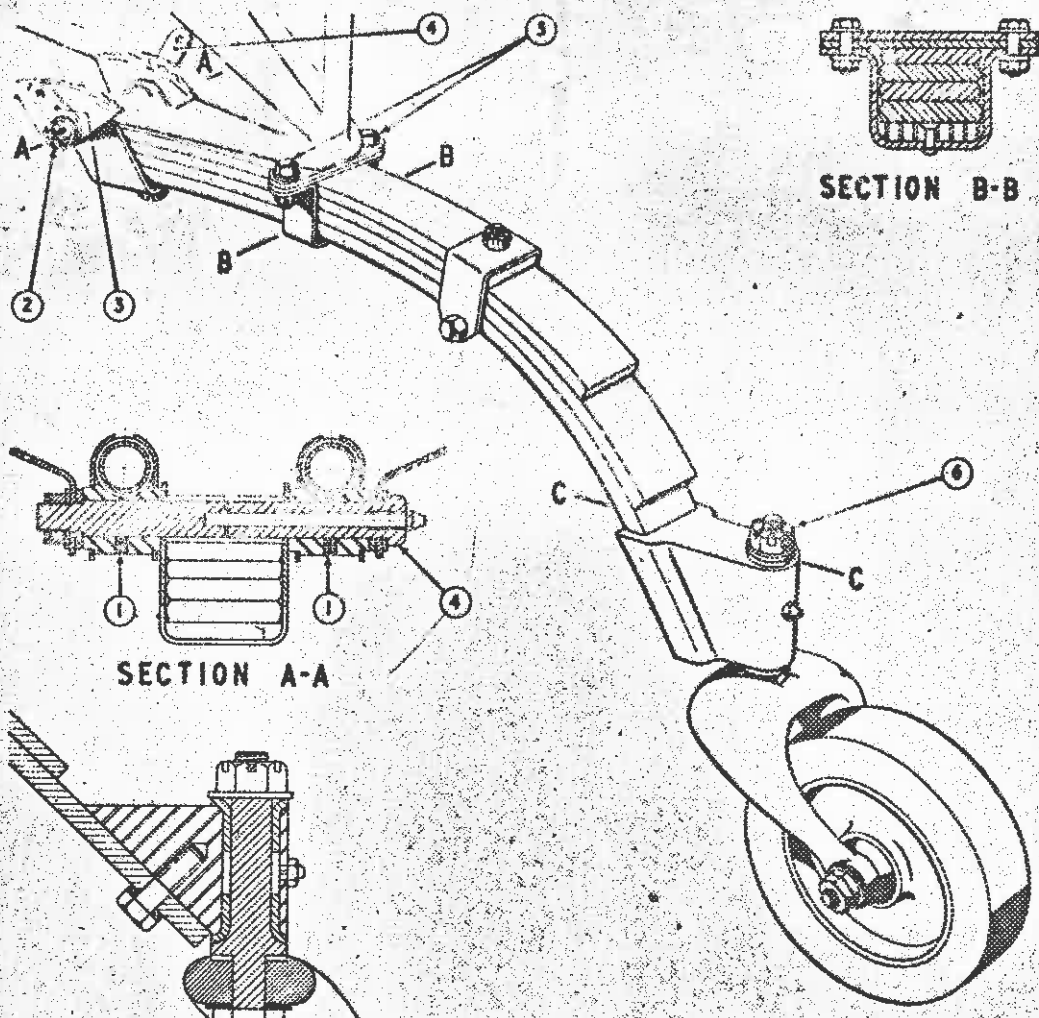
(3) STEADY FIXING TOOL AND RAISE JACK UNTIL STIRRUPS ARE ALIGNED WITH SHOCK-CORD BOBBINS. WITHDRAW PINS (C) TO ALLOW CORD TO PASS ON TO BOBBINS. EASE CORD OVER TO STUB END OF EACH BOBBIN

(4) REPEAT OPERATIONS (1) (2) & (3) FOR OTHER SHOCK CORDS

STORES REF

26EN/2064	KIT, SHOCK CORD FIXING, PT. No. KA 9377 COMPRISING:-	
	TOOL, SHOCK-CORD FIXING	PT. Nº KA. 9135
	BRACKET, ADAPTOR	PT. Nº KA. 9129
26EN/2556	JACK, SCREW	PT. Nº CA. 9119

FIG. 9 — # SHOCK-CORD FIXING — FIG. 9



SECTION B-B

SECTION A-A

SECTION C-C

★ TRESTLE REAR FUSELAGE

★ DISCONNECT TAIL PLANE TIE RODS AT FUSELAGE ATTACHMENT BRACKETS

1 REMOVE GRUB SCREWS

2 REMOVE SPLIT PIN AND NUT

3 REMOVE TIE ROD ATTACHMENT BRACKET

4 WITHDRAW BOLT AND REMOVE STARBOARD ATTACHMENT BRACKET

5 SUPPORT TAIL WHEEL UNIT AND REMOVE NUTS BOLTS AND WASHERS

★ LOWER TAIL WHEEL UNIT CLEAR OF FUSELAGE

TO REMOVE WHEEL AND FORK ASSEMBLY:

6 REMOVE SPLIT PIN AND NUT AND WITHDRAW WHEEL ASSEMBLY

★ NOT ILLUSTRATED

FIG. 10a TAIL WHEEL UNIT (TAIL WHEEL)

C&P Gp.959(4)

RESTRICTED

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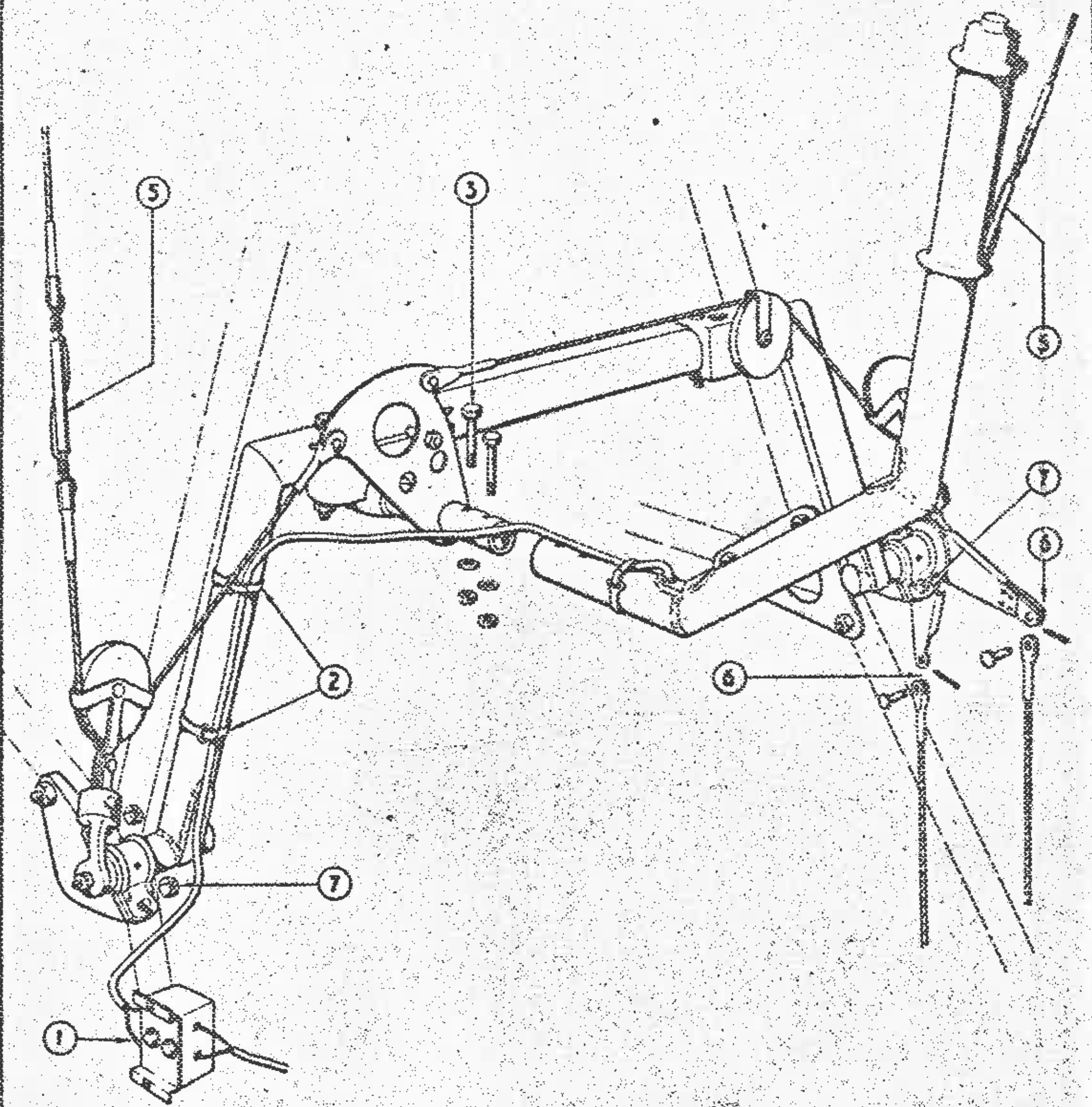


TO REMOVE CONTROL STICK:

1 DISCONNECT CABLE AT T.B. 8
2 DISCONNECT CABLE CLIPS
3 REMOVE TWO BOLTS
✱ 4 CAREFULLY WITHDRAW CONTROL STICK WITH CABLE

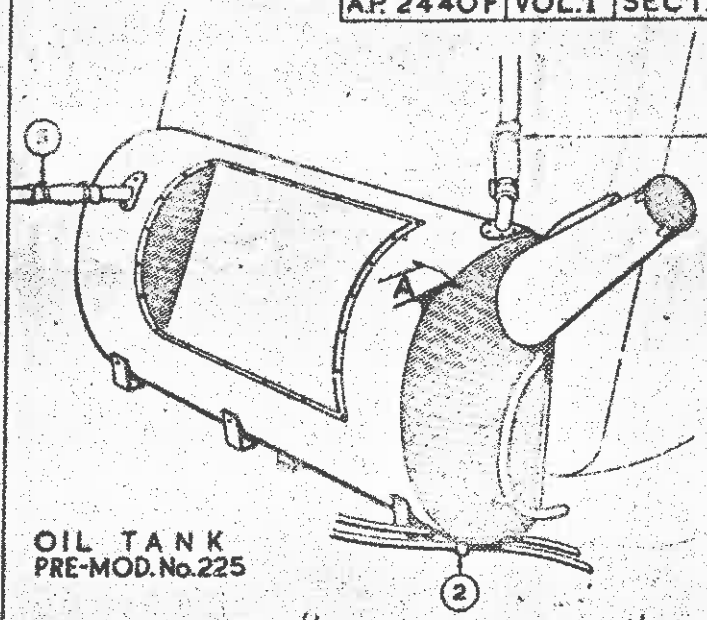
TO REMOVE CONTROL ARCH:

5 DISCONNECT AILERON CABLES AT TURNBUCKLES
6 DISCONNECT ELEVATOR CABLES
7 SUPPORT ARCH, AND LIFT OFF UPPER HALF OF EACH BEARING AFTER REMOVING TWO NUTS
✱ 8 CAREFULLY LIFT CONTROL ARCH AWAY

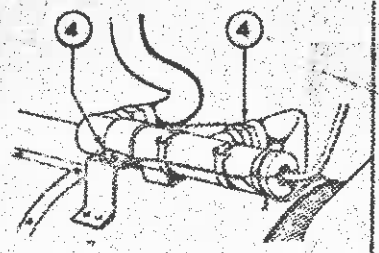
✱ NOT ILLUSTRATED

FIG. 11 CONTROL ARCH AND STICK FIG. 11

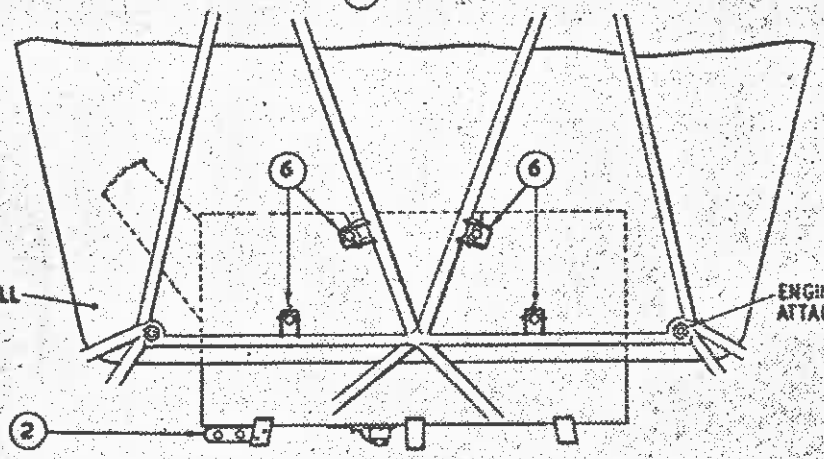
[illegible] 7/49 [illegible] C&P Gp. 959 [illegible]



OIL TANK
PRE-MOD. No. 225



VIEW AT 'A' SHOWING OIL TEMPERATURE THERMOMETER POCKET - MOD. No. 225



VIEW ON AFT FACE OF FIREWALL

NOTE: WHEN DISCONNECTING PIPES ENSURE THAT ANY OIL DRAINS OFF INTO A SUITABLE RECEPTACLE

* 1 REMOVE SIDE AND BOTTOM COWLINGS (FIG. 13)

2 REMOVE BRACKET FOR ENGINE DRAINS FROM ENGINE COWLING ATTACHMENT BRACKET (AIRCRAFT NOT EMBODYING MOD. No. 269)

3 DISCONNECT OIL SUPPLY PIPE, TANK TO FILTER, BY RELEASING JUBILEE CLIP (AIRCRAFT NOT EMBODYING MOD. No. 225)

4 REMOVE CLIP RETAINING OIL TEMPERATURE THERMOMETER POCKET, AND DISCONNECT THE LOCKING WIRE AND UNSCREW THE UNION NUT SECURING THE SUPPLY PIPE TO THE THERMOMETER POCKET (MOD. No. 225 ONLY)

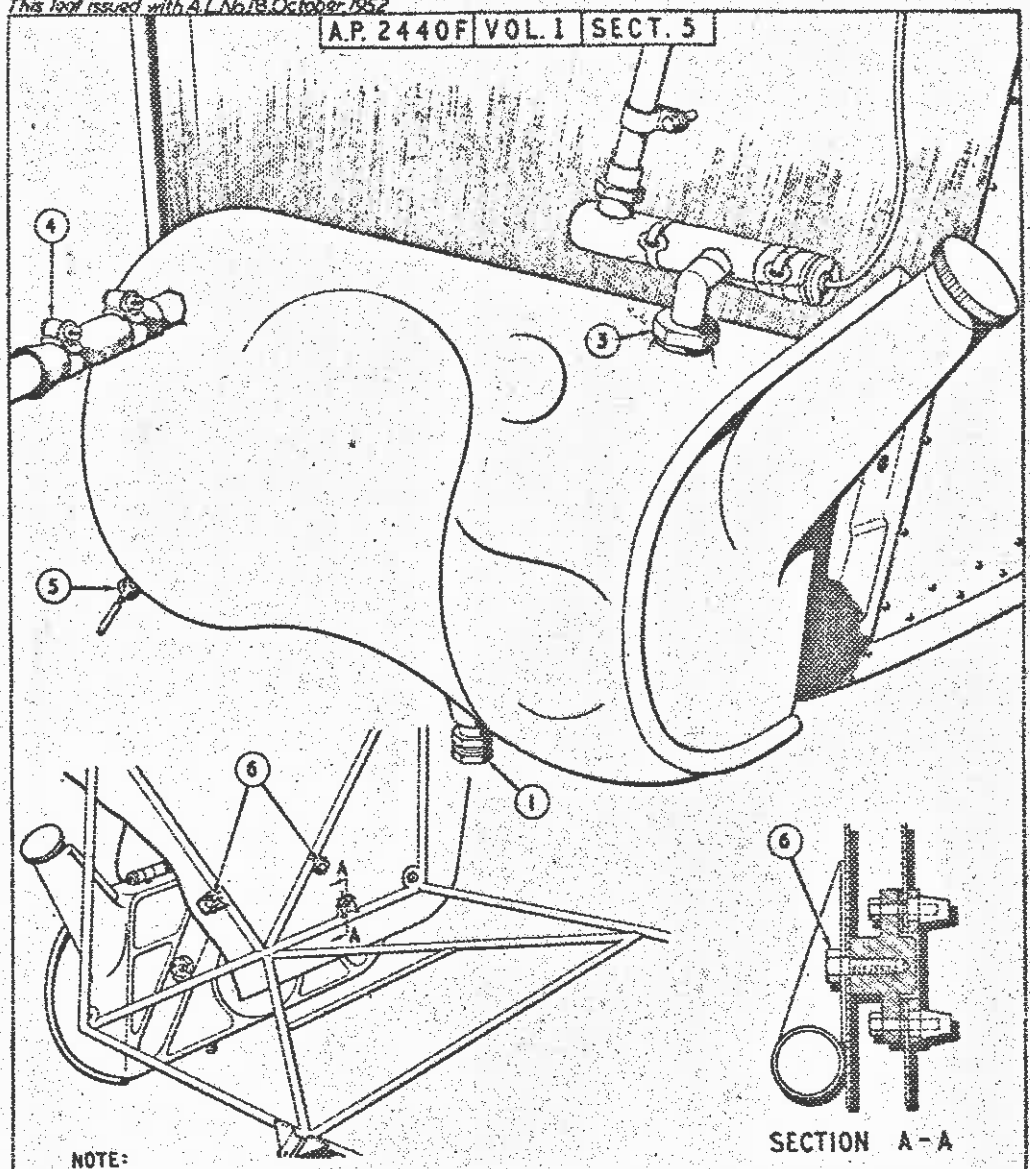
5 DISCONNECT OIL RETURN PIPE, COOLER TO TANK, BY RELEASING JUBILEE CLIP

6 SUPPORT TANK AND REMOVE FOUR BOLTS FROM AFT FACE OF FIREWALL

* 7 CAREFULLY LOWER TANK AWAY FROM FIREWALL TOWARDS THE STARBOARD SIDE

* NOT ILLUSTRATED

OIL TANK



SECTION A-A

NOTE:
WHEN DISCONNECTING PIPES ENSURE THAT ANY OIL DRAINS OFF INTO A SUITABLE RECEPTACLE

1 DRAIN OIL FROM TANK

* 2 REMOVE SIDE AND BOTTOM COWLINGS (FIG. 13)

3 DISCONNECT PIPE TO OIL TEMPERATURE THERMOMETER

4 DISCONNECT OIL RETURN PIPE, COOLER TO TANK, BY RELEASING JUBILEE CLIP

5 DISCONNECT BONDING LEAD

6 SUPPORT TANK AND REMOVE FOUR BOLTS FROM AFT FACE OF FIREWALL

* 7 CAREFULLY LOWER TANK AWAY FROM FIREWALL TOWARDS STARBOARD SIDE

* NOT ILLUSTRATED

FIG. 12A

OIL TANK - LATER TYPE

FIG. 12A

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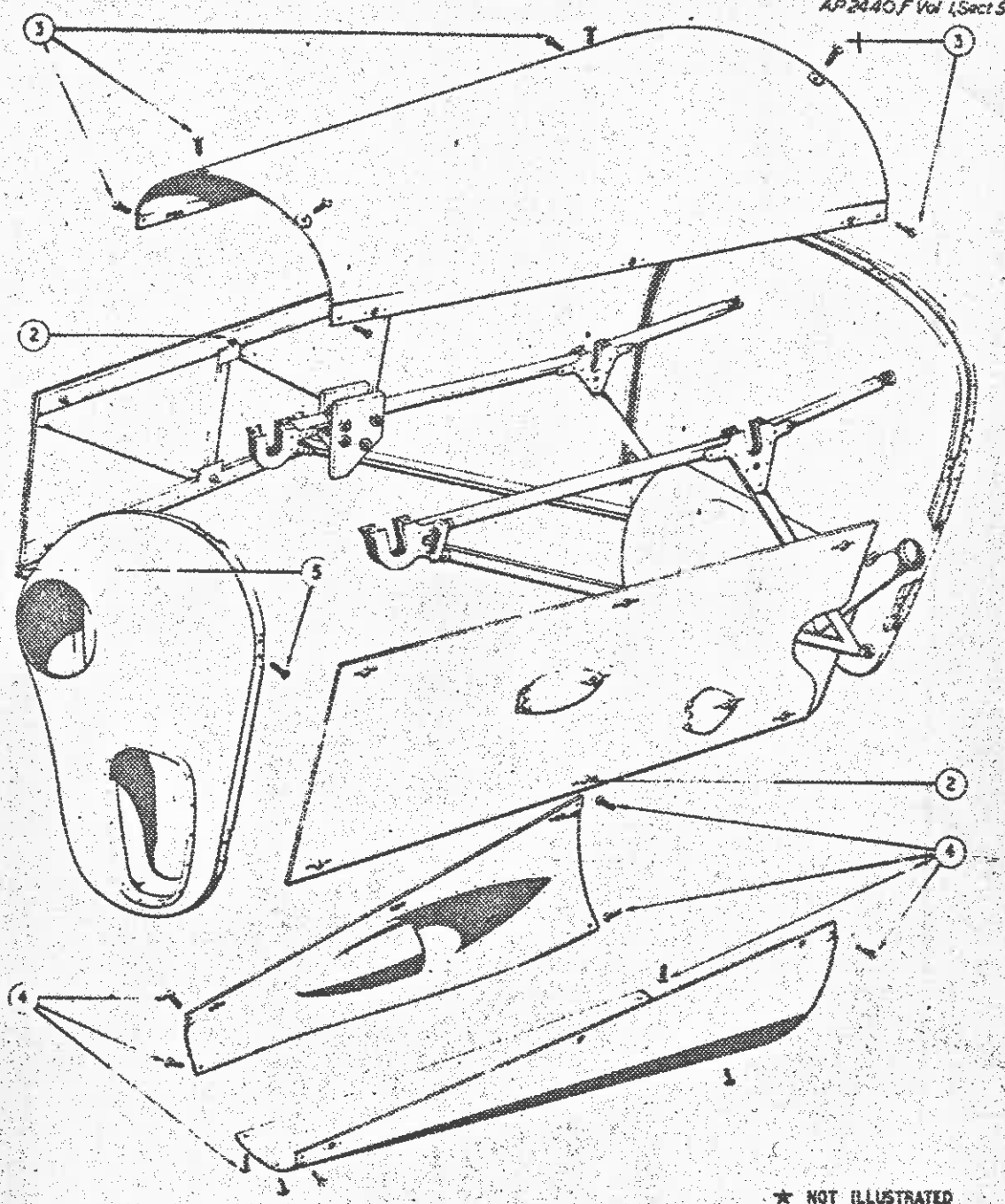


★ NOT ILLUSTRATED

★ 1 REMOVE PROPELLER
2 TO REMOVE PORT AND STARBOARD SIDE PANELS. DEPRESS AND QUARTER-TURN 6 FASTENERS SECURING EACH PANEL
3 TO RELEASE TOP COWLING. REMOVE 4 SCREWS AT THE FRONT AND 4 AT THE REAR
4 TO REMOVE PORT AND STARBOARD BOTTOM COWLINGS. UNSCREW 5 SCREWS AT THE FRONT AND 5 AT THE REAR
5 TO REMOVE NOSE COWLING. UNSCREW 2 REMAINING SCREWS AT BRACKETS ON ENGINE MOUNTINGS

FIG. 13 ENGINE COWLINGS

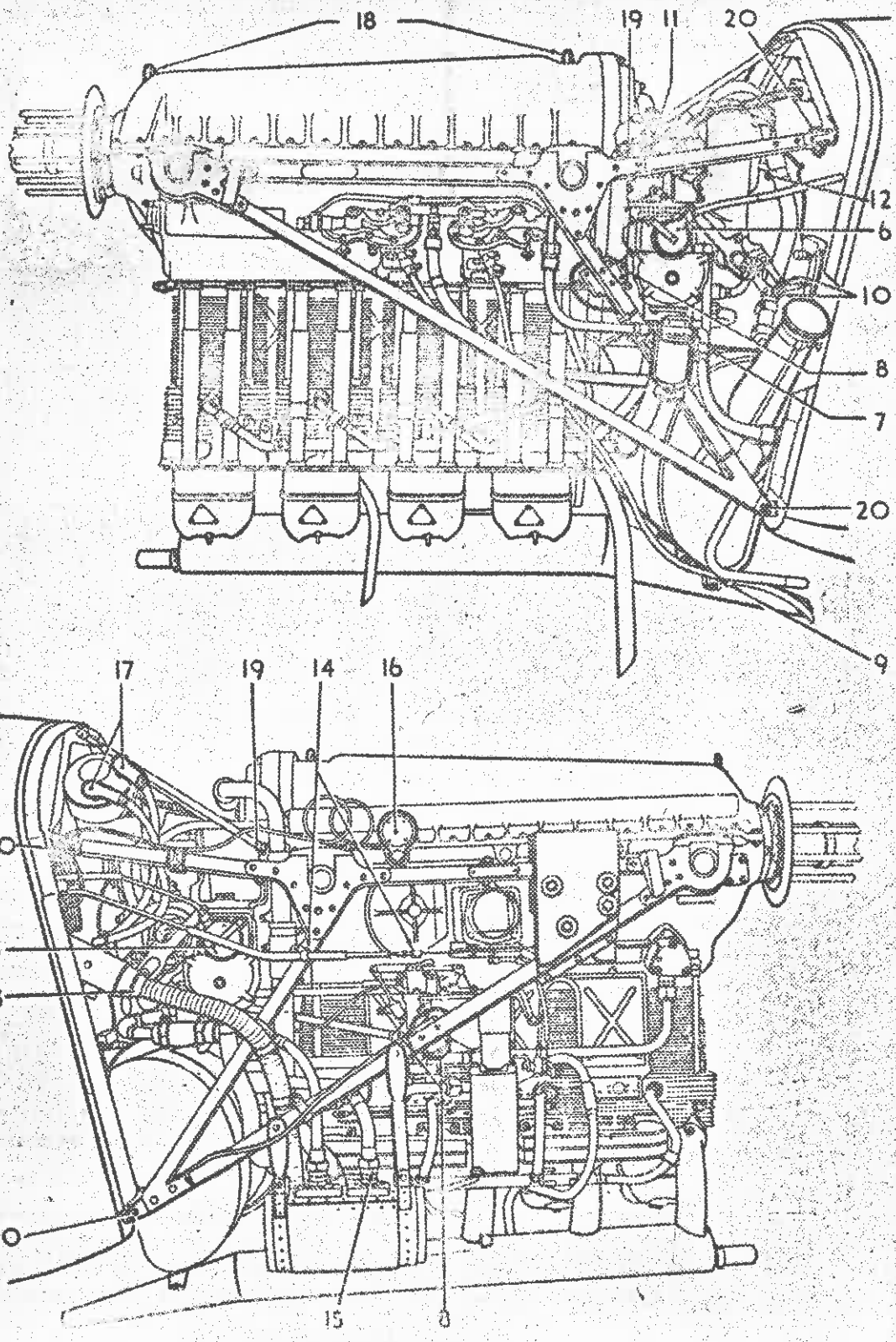


FIG. 14 ENG

KEY TO FIG. 14

Note . . .

Suitable and clean receptacles must be available to collect the fuel and oil from the pipe lines and unions which are disconnected. All open-ended unions and pipe lines must be immediately blanked to prevent the ingress of foreign matter, and suitable precautions against fire must be adopted.

*1. Ensure the L.T. ignition switches are in the "OFF" position.

*2. Ensure the fuel cock is in the "OFF" position.

*3. Ensure the parking brake handle is in the "ON" position and the wheels chocked back and front.

*4. Remove the spinner and propeller.

*5. Remove the engine cowlings.

6. Disconnect the L.T. ignition wires from the contact breaker cover terminals.

7. Disconnect the fuel supply pipe from the inlet side of the filter unit.

8. Remove the flame switches from the port and starboard engine mounting members and disconnect the clips securing the cables (*Mod. No. 195 only*).

9. Remove the fuel pump and induction manifold drain pipes from their point of attachment at the base of the oil tank.

10. Disconnect the engine control rods (throttle and altitude) from the engine countershaft.

11. Disconnect the tachometer drive from the engine.

12. Disconnect the main oil delivery pipe from the inlet union of the suction filter.

13. Remove the cabin heater tube, at the firewall.

14. Disconnect the carb. air control from the cable which passes around the pulley, situated below the cold air intake.

15. Disconnect the return pipe (cooler to tank) at the oil cooler.

16. Disconnect the oil pressure transmitter from the engine, and remove the clips securing the capillary tube.

17 Disconnect the positive and negative leads from the starting motor.

18. Fit the wire sling to the two eye-bolts provided on the engine crank-case.

19. Disconnect the engine alignment stays.

20. Remove the nuts which hold the engine mounting frame to the eye-bolts, and lift the engine with its mounting clear of the airframe.

* *Not illustrated.*

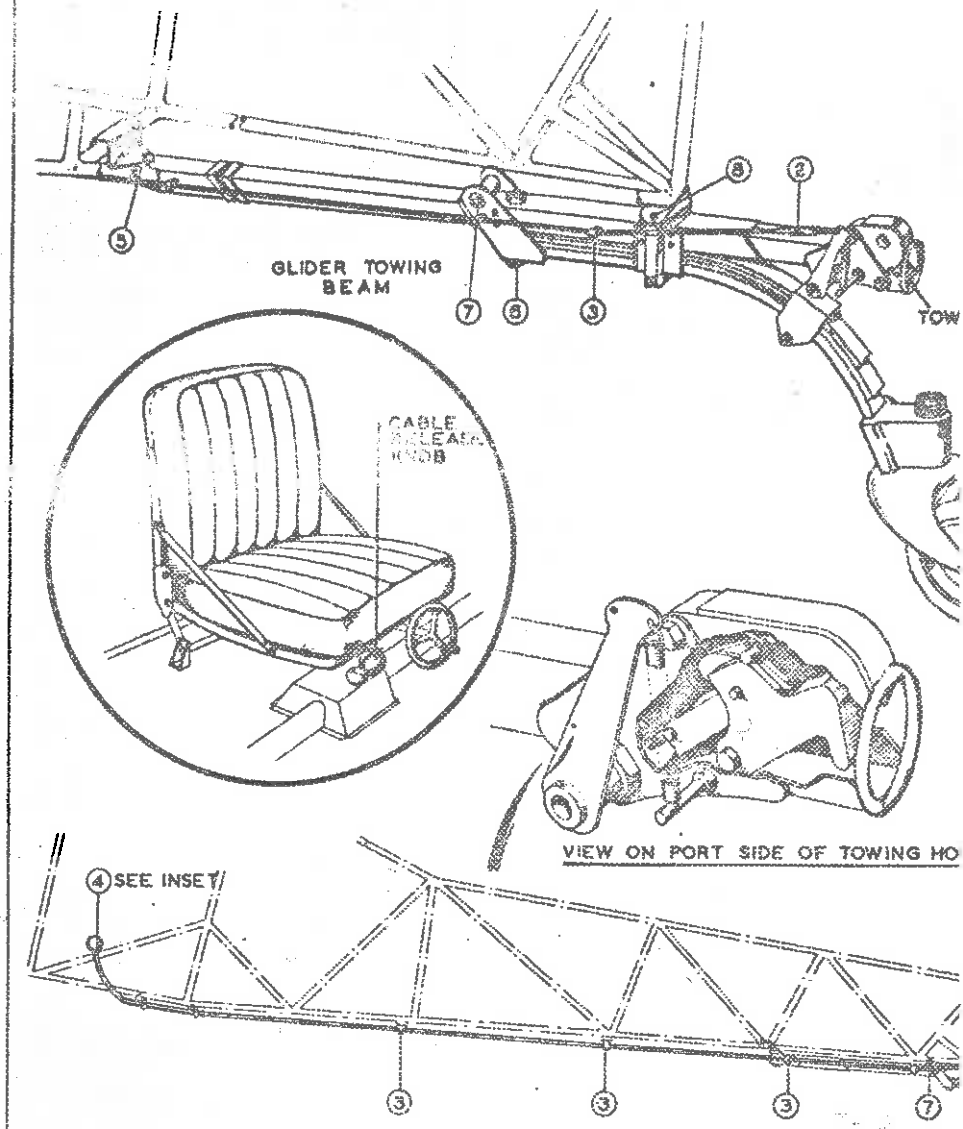
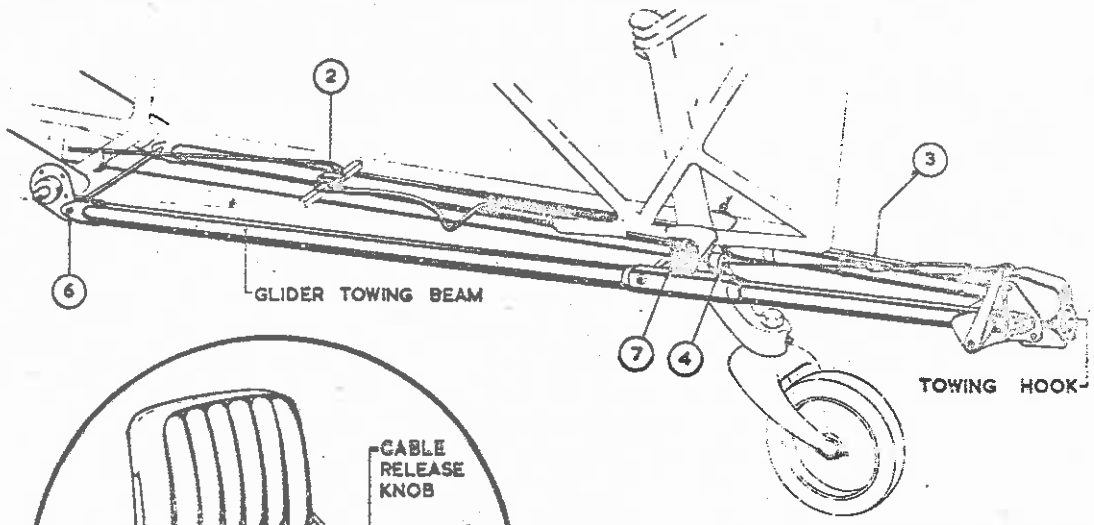
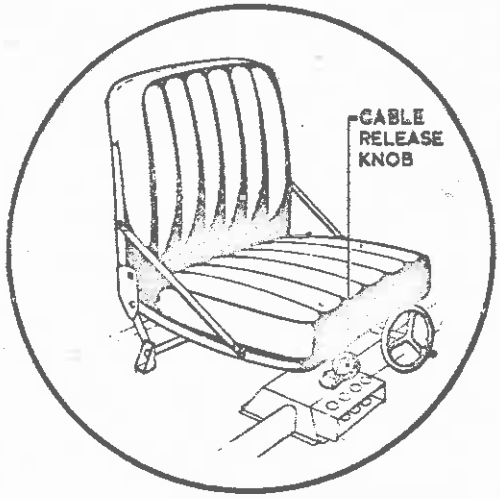
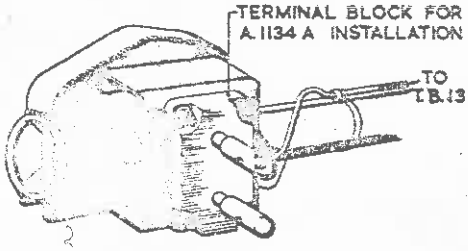


DIAGRAM OF GLIDER TOWING INSTALLATION

1 TRESTLE AIRCRAFT. (SECT 4 CHAP 3)
2 UNSCREW TURNBUCKLE.
3 REMOVE CIRCLIPS FROM FAIRLEAD BRACKETS & WITHDRAW SPLIT FIBRE BUSHES.
4 PULL CABLE OUT OF AIRCRAFT FROM CABLE RELEASE KNOB.
5 REMOVE BOLT FROM FORWARD FITTING.
6 REMOVE BOLT SECURING LEAF SPRING & TOW BEAM.
7 REMOVE CROSS BOLT FROM INTERMEDIATE BRACKET.
8 REMOVE TWO BOLTS FROM REAR BRACKET REMOVE LEAF SPRING ASSEMBLY & TOW BEAM.







VIEW ON STARBOARD SIDE OF TOWING HOOK

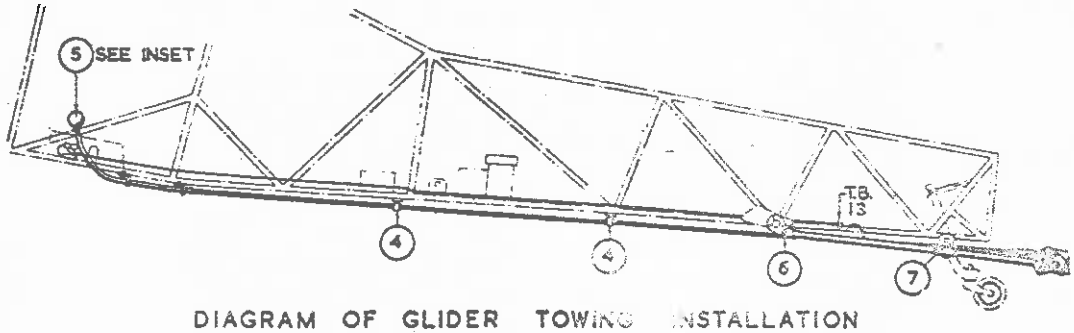


DIAGRAM OF GLIDER TOWING INSTALLATION

★1 TRESTLE AIRCRAFT (SECT. 4 CHAP. 3)
2 DISCONNECT A. 1134 A CABLE AT TERMINAL BLOCK (T.B. 13). PULL CABLE AFT OUT OF FUSELAGE
3 UNSCREW TURNBUCKLE
4 REMOVE CIRCLIPS FROM FAIRLEAD BRACKETS & WITHDRAW SPLIT FIBRE BUSHES
5 PULL CABLE OUT OF AIRCRAFT FROM CABLE RELEASE KNOB
6 REMOVE TWO NUTS AND WITHDRAW BOLT FROM CROSS TUBE
7 SUPPORT TOWING BEAM. REMOVE TWO NUTS AND EASE TOWING BEAM SIDE MEMBERS AWAY FROM TAIL WHEEL PIVOT ARM AXLE

★ NOT ILLUSTRATED

NOTE:-
IT IS NOT NECESSARY TO EFFECT OPERATIONS 4 & 5 IF THE TOWING BEAM IS TO BE REFITTED BEFORE THE AIRCRAFT IS AGAIN FLOWN
IF IT IS DESIRED TO FLY THE AIRCRAFT WITHOUT THE GLIDER TOWING BEAM THE TAIL WHEEL PIVOT ARM AXLE MUST FIRST BE REPLACED BY A SHORTER AXLE (PART No. K.12579). THE ORIGINAL SECURING NUTS CAN BE UTILISED

FIG. 18 GLIDER TOWING BEAM — MOD. 230

SECTION

6

ELECTRICAL AND RADIO WIRING AND SERVICING

See front of book

P16587 M15625/G980 10/46 450 C & P Gp. 1

SECTION

DESCRIPTION OF STRUCTURE

P1066/ 30/5625/0990 10/46 450 O & P Gp. 1

CHAPTER I

FUSELAGE

LIST OF CONTENTS

LIST OF ILLUSTRATIONS

General

1. The fuselage is constructed of welded steel tubing and is covered with doped fabric throughout with the exception of the cabin, where the roof sides and portions of the doors are of transparent sheet. The transparent sheet is supported on a wooden frame and light spruce battens which run longitudinally along the fuselage, for the attachment of the fabric covering.

Main structure

2. The fuselage is rectangular in cross-section, and comprises a longeron at each corner, and cross-members on the top, bottom and sides which form frames at intervals along its length. The structure is braced by diagonal tubing on the top, bottom, and sides, between the frames.

3. Beginning at the front of the fuselage, frame 1 is fitted with a steel firewall, and has four pick-up points for the engine bearers. Behind the firewall and between the bottom longerons are the fittings for the brake and rudder pedals. At frame 2, are the main plane front spar attachment fittings, hinge-fittings for the cabin doors, and the undercarriage attachment lugs. Frame 2 also embodies a welded frame for the instrument panel.

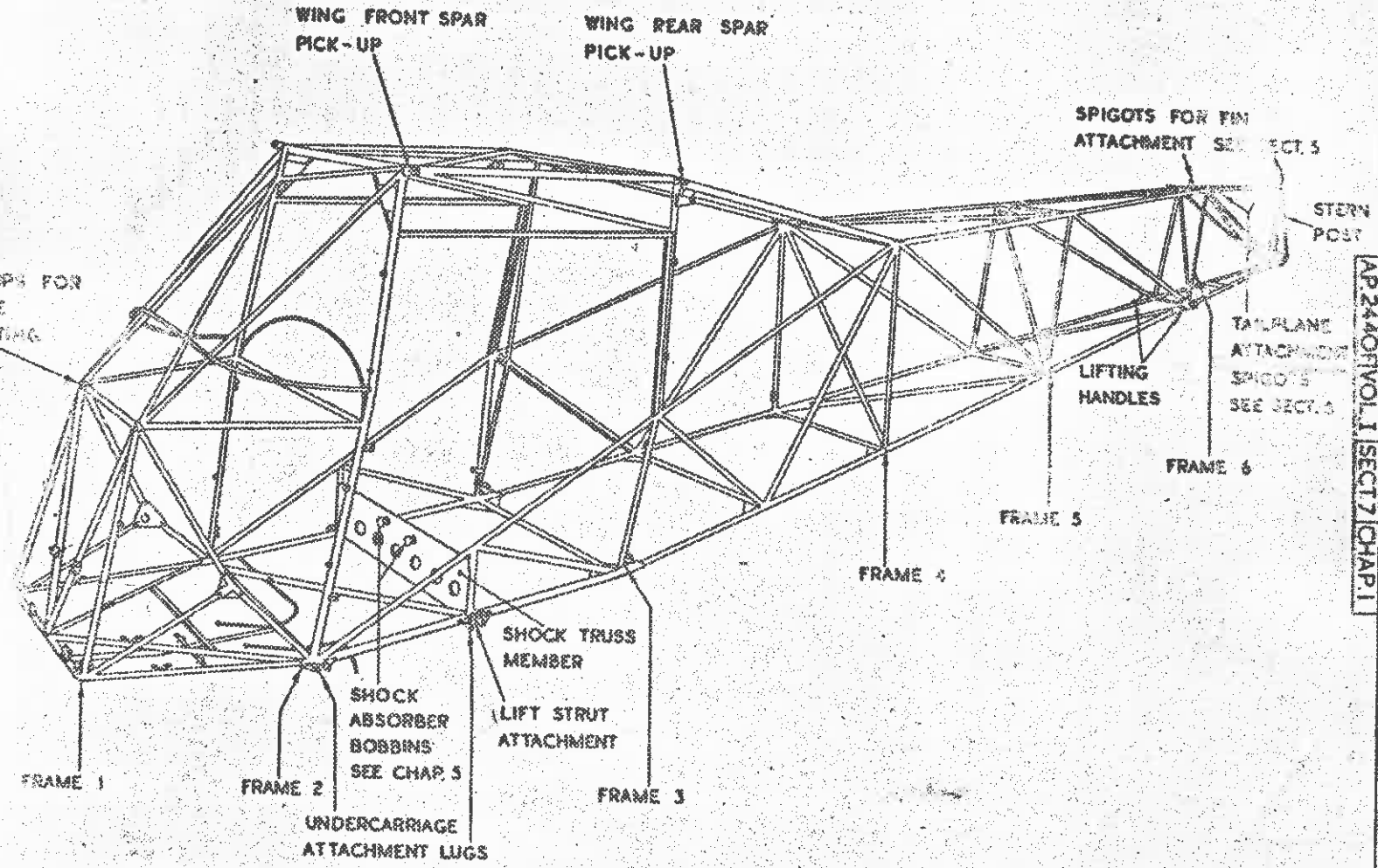
4. Between frames 2 and 3 there is the shock truss member situated between the bottom longerons. The shock truss member, which is of flat sided tubular construction, carries bobbins for the undercarriage shock absorber rubber cords, and also forms the front mounting for the seat-raising structure. At the base of the shock truss at both sides of the fuselage are lugs for the rear attachment of the undercarriage and integral with these lugs are the attachments for the wing lift struts. At the top of frame 3 are the main plane rear spar attachment fittings, and this frame also constitutes the rear door posts. From this frame, the fuselage height diminishes rapidly to frame 4.

Cabin

5. The cabin has a transparent roof, and this extends behind the main plane trailing edge down to frame 4 to form a rear window. The doors consist of a frame of welded steel tubing covered with fabric, and are fitted with windows.

Rear fuselage

6. At the rear of the structure (frame 6) and at the last bay, are horizontal spigots for the attachment of the tail plane. In the same bay, on top of frame 6, is the front vertical spigot for the fin attachment, the second spigot being an extension upwards of the stern post. The bottom of the stern post carries lugs for the attachment of the tail plane bracing wires. At the stern post, in the angles formed by the two top longerons and the diagonal members, there are gusset plates from which two arms extend forward holding between them a spool which carries the tail wheel shock absorber cords. The bottom longerons bear two plates extending downwards to form the bearings of the tail wheel strut.


WING FRONT SPAR PICK-UP
WING REAR SPAR PICK-UP
SPIGOTS FOR FIN ATTACHMENT SEE SECT. 5
STERN POST
PICK-UPS FOR ENGINE MOUNTING
TAILPLANE ATTACHMENT SPIGOTS SEE SECT. 5
LIFTING HANDLES
FRAME 6
FRAME 5
FRAME 4
SHOCK TRUSS MEMBER
SHOCK ABSORBER BOBBINS SEE CHAP. 5
LIFT STRUT ATTACHMENT
FRAME 1
FRAME 2
FRAME 3
UNDERCARRIAGE ATTACHMENT LUGS

FUSELAGE

Chapter 2

MAIN PLANE

LIST OF CONTENTS

LIST OF ILLUSTRATIONS

General

1. The main planes are strut-braced composite wood and metal structures, fabric covered and approximately rectangular in plan, with parallel leading and trailing edges. They have auxiliary aerofoil flaps. Each main plane has two wooden spars and metal ribs, the inboard end of each spar having lugs for attachment to the fuselage. The drag bracing comprises tubular steel compression struts, cross-braced by tie rods. The leading edge of the starboard main plane is adapted between ribs 2 and 3 to house a wind-driven generator. The two main fuel tanks are carried, one in each main plane at the inboard ends, between the spars.

Structure

2. Each main plane (*fig.* 1) has spruce spars of approximately rectangular section which are reinforced by spruce facings at the attachment points of the lift struts, and ply facings at the fuselage pick-up points. Two drag struts are situated in the outer portion of the wing opposite the aileron bay. The root end rib 1, the two ribs (No. 1B and 1C) which support the fuel tanks, and compression ribs 2 and 6, are constructed of welded steel square tubing; all other ribs are fabricated from light alloy strip. Ribs 1, 2 and 6 have attachment brackets for the flaps.

3. The attachment of the aileron gap fairing is strengthened by a number of T-section riblets which are interposed between the main ribs, and extend from the rear spar to the fairing. This fairing is a light-alloy curved sheet having three holes through which protrude aileron hinge brackets (1) and the aileron control rod, which is attached to the aileron lever (3). Approximately two-thirds along the length of each main spar, at rib 9, is a channel-section steel fitting (4) for the attachment of the lift struts. At rib 4 there is between the spars, a round tube carrying two lugs which act as attachment points for the jury struts. The main plane attachment brackets (5) are each formed of two flat steel plates bolted opposite one another on each side of the relevant spar, from which they extend outwards. A U-shaped stiffener is welded between the plates which are drilled to take a wing attachment bolt. Across the upper flanges of ribs 1B and 1C there is a plate through which the fuel tank filler neck protrudes.

Ailerons

4. Each aileron (*fig.* 2) is a fabric-covered composite wood and metal structure consisting of a rectangular section spruce spar, a light-alloy leading edge and light-alloy riblets. The latter terminate at the trailing edge which is formed by a drawn section of light-alloy sheet. Inside the curved leading edge, cast-iron balance weights are mounted between adjacent ribs and riblets, and secured by bolts and locking washers at each end. The aileron is carried on three hinge brackets, bolted to the aileron spar; these are connected to the oilite-bushed wing-to-aileron brackets by steel pins. A further bracket, bolted to the aileron spar just outboard of the centre hinge bracket, houses, either a ball

stud for the attachment of the socket joint, or, the spigot bolt (M.1.358) for connection of the aileron control rod.

Flaps

5. The auxiliary aerofoil flaps (*fig.* 3) are each constructed of a D-section tubular leading edge and a triangular section tubular trailing edge, which are joined together by 19 pressed steel ribs, covered with a light-alloy sheet. There are three hinges, each situated between two adjacent ribs, the hinge fitting consisting of a reinforced web riveted on each side of the relevant rib, through which passes a bolt carrying the flap arm. An elongated hole is provided in the flap skin opposite each hinge to enable the bolt to be withdrawn; the holes are covered by plates secured by Dzus fasteners.

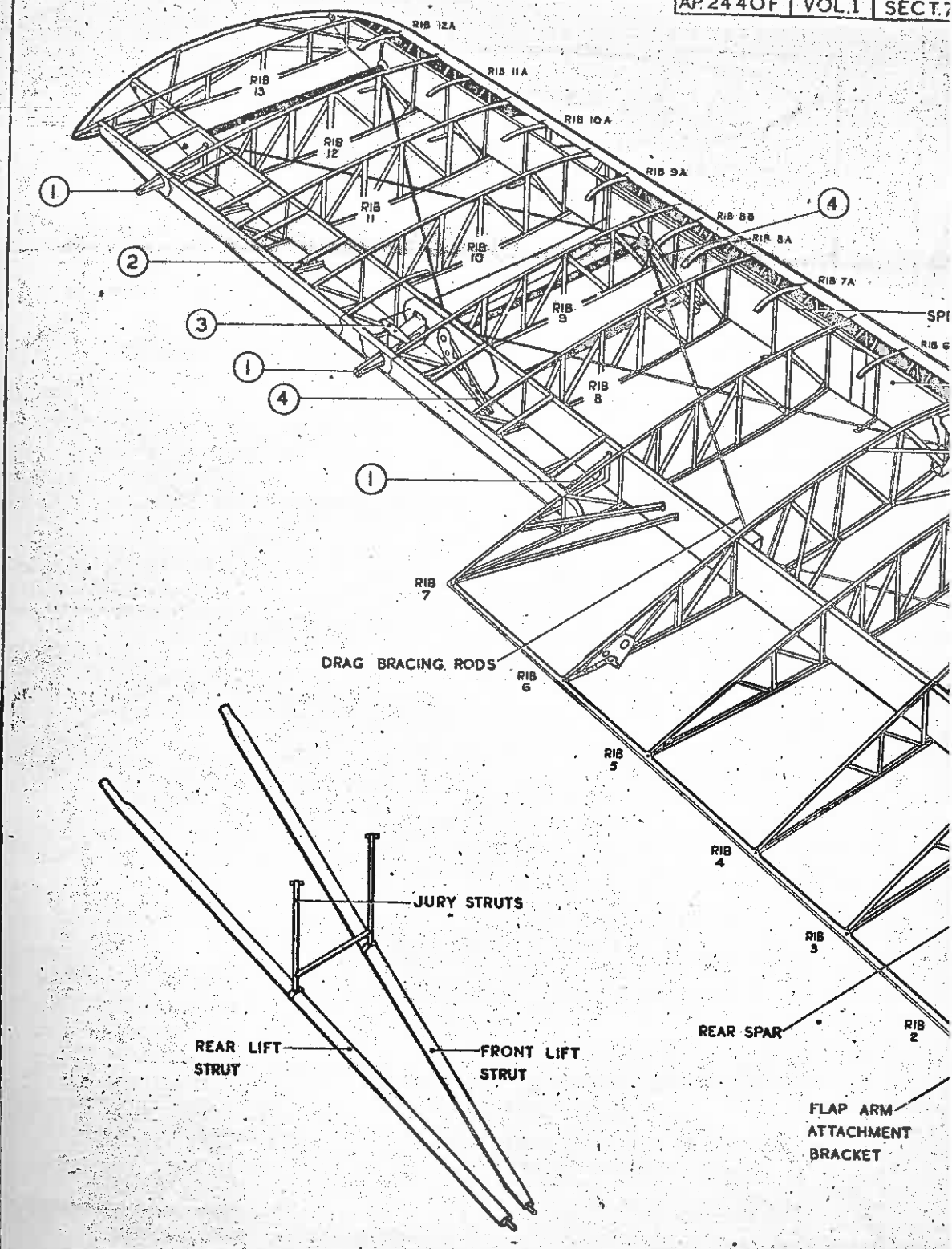
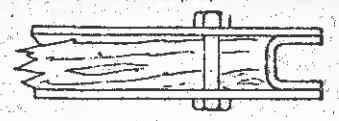
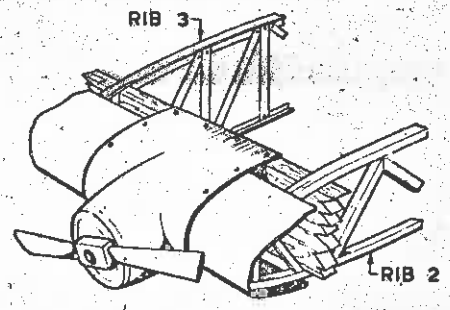


FIG. 1

MAINPLANE



TYPICAL DETAIL OF MAIN PLANE ATTACHMENT BRACKET (5)



LOCATION OF AIR-DRIVEN GENERATOR IN STBD. WING

MAINPLANE

FIG. 1

PP5676 M23427.G1047 7/69 300 C & P Gp. 959 (4)

FIG. 2

AILERON

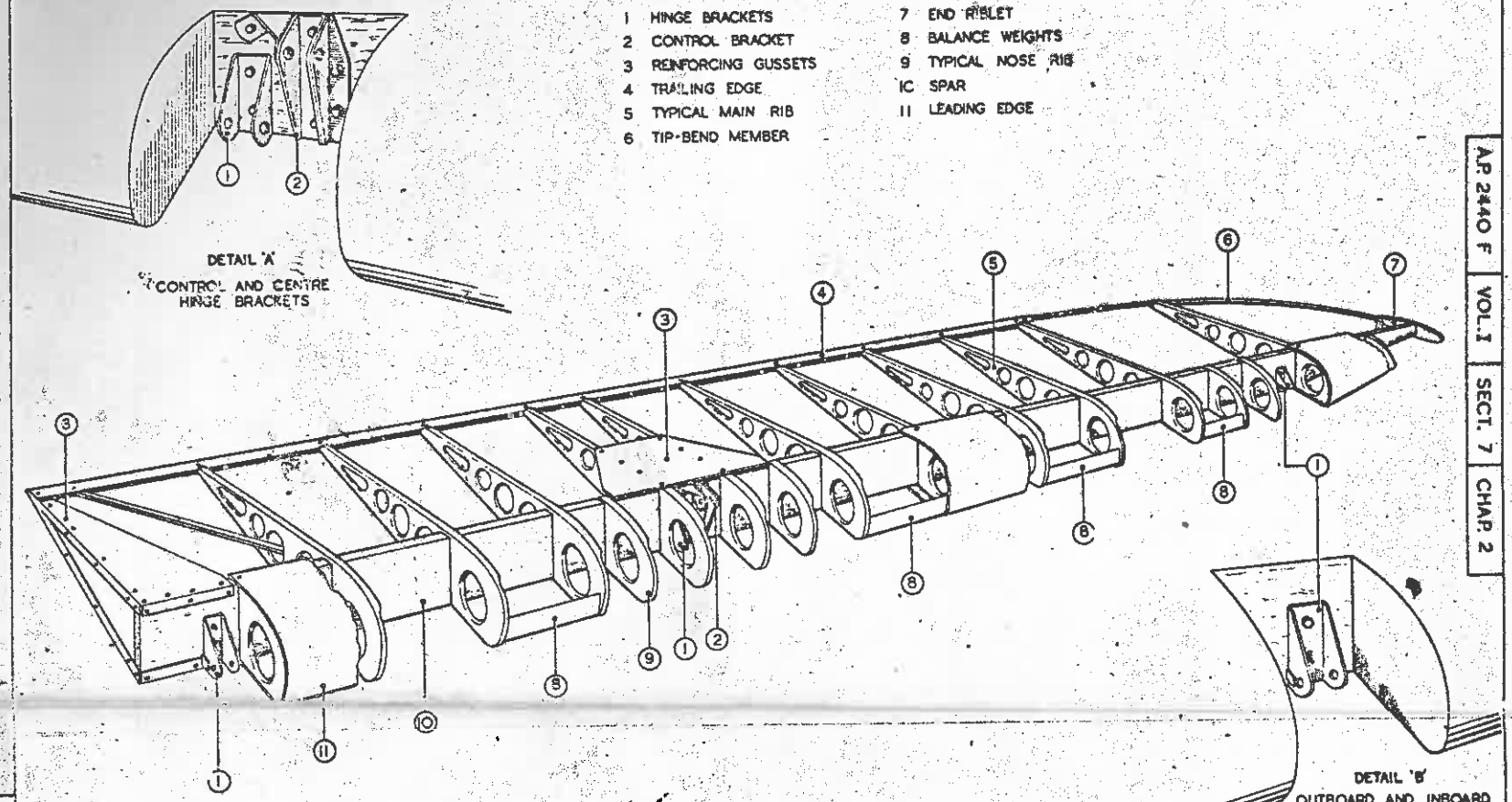
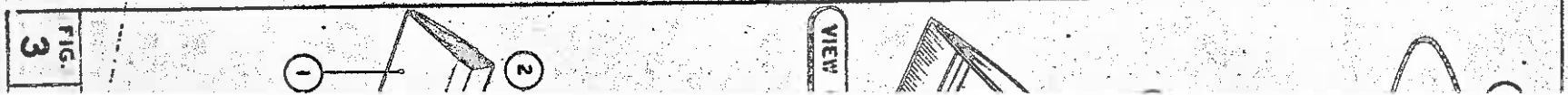
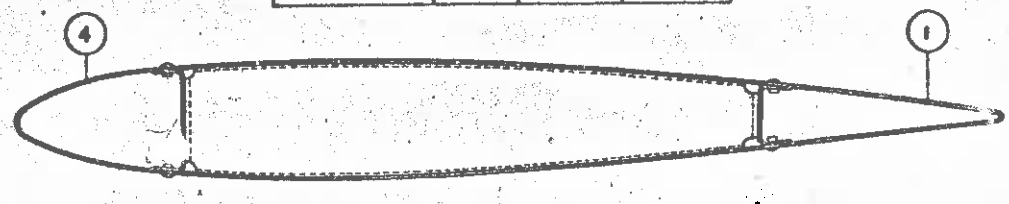


FIG. 2

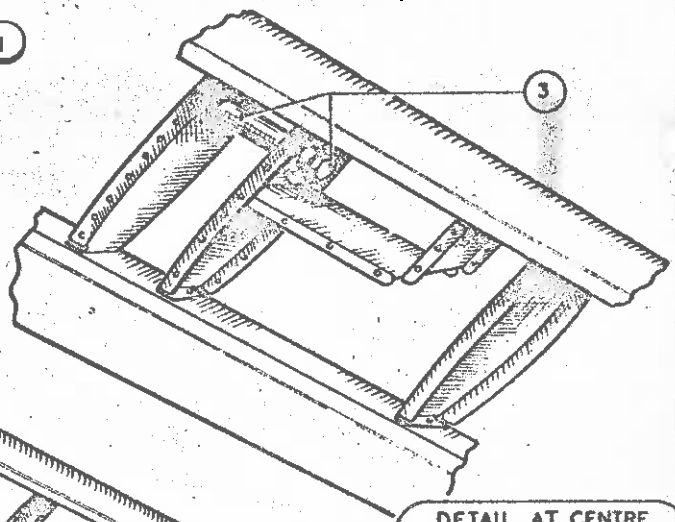
FIG. 3



DETAIL 'B'
OUTBOARD AND INBOARD HINGE BRACKET



TYPICAL SECTION



DETAIL AT CENTRE AND OUTBOARD HINGES

VIEW ON UNDERSIDE

DETAIL AT INBOARD HINGE

1 TRAILING EDGE TUBE
2 FLAP OPERATING LEVER
3 HINGE ATTACHMENT BOLT AND DISTANCE TUBE
4 LEADING EDGE TUBE
5 END BLANKING PLATES
6 INSPECTION COVER
7 CUT-OUT FOR FLAP HINGE BRACKET

FIG. 2

FIG. 3

FLAP

FIG. 3

Chapter 3

This Chapter supersedes that issued with A.L. No. 24

TAIL UNIT

LIST OF CONTENTS

ILLUSTRATIONS

General

1. The rudder, tailplane and elevator are constructed, in the main, of welded steel tubing. The fin and tailplane are braced to each other, and to lugs on the bottom of the fuselage, by four tie-rods. All components are covered with a doped fabric. Details of the attachments to the fuselage are shown in Sect. 5, Fig. 7.

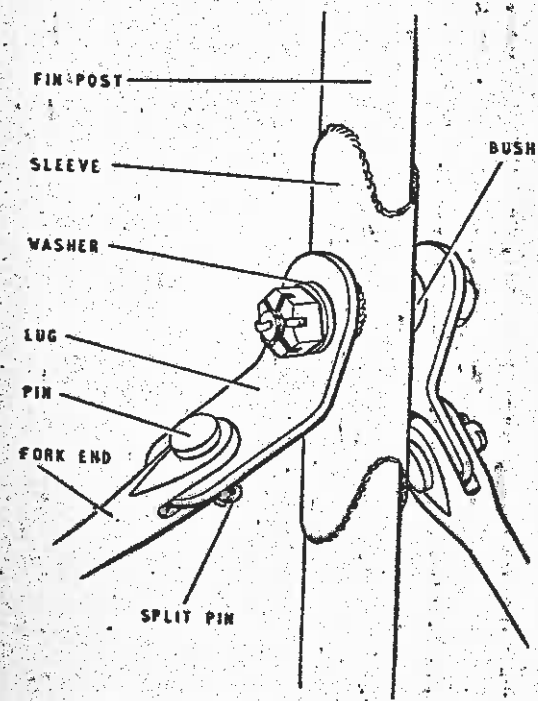


Fig. 1. Tie-rod attachment to fin

FIN

2. The fin is a welded structure with tubular steel contour members and channel-section steel ribs. The rear post locates over a spigot which is an upward extension of the stern-post, and a projection at the front of the fin is inserted into a tubular extension, which is welded to the fuselage at the first bay forward of the stern-post. A bush, welded to the rear fin-post, houses a bolt for the tie-rod bracing attachment lugs (*Fig.* 1). Two short tubes, each with oilite bushes, are also welded to the rear fin post and form the fixed portions of two of the three rudder hinges; the third hinge is on the fuselage stern-post. On aircraft embodying Mod. No. 322 a cover plate (*Fig.* 2) is located at the base of the fin. The cover plate is fitted to facilitate inspection and removal of elevator and control attachments, and is bolted to each side of the support which is riveted to the fin-post and the tail spigot.

RUDDER

3. The rudder is a welded steel structure with tubular steel contour members and channel-section steel ribs. The front tube carries three fittings, corresponding with

component, are bolted together to form one operating unit. For the purpose of carrying the operating cables, link plates are attached to the horns of the levers. A trimming tab is hinged to the recessed inboard trailing edge of the port elevator and a balance tab is hinged, likewise, to the starboard elevator. On aircraft featuring the unbalanced elevator, the forward tube, carrying the hinge lugs, extends uninterrupted from the operating lever at its inboard end to the extreme tip.

TRIMMING AND BALANCE TABS

6. The trimming tab on the port elevator is controlled from a crank handle located centrally in the cabin, near the roof, whilst the balance tab on the starboard elevator operates in conjunction with the flaps. Each tab is constructed of suitably lightened wood and covered with fabric. Brackets for the attachment of the control cables are riveted to the upper and lower surfaces near the inboard end of each tab (*Fig.* 6).

GAP SEALING

7. Serrated tape is doped into position to seal the gaps between the tailplane and elevator, elevator and trim tab and elevator and balance tab (*Fig.* 5).

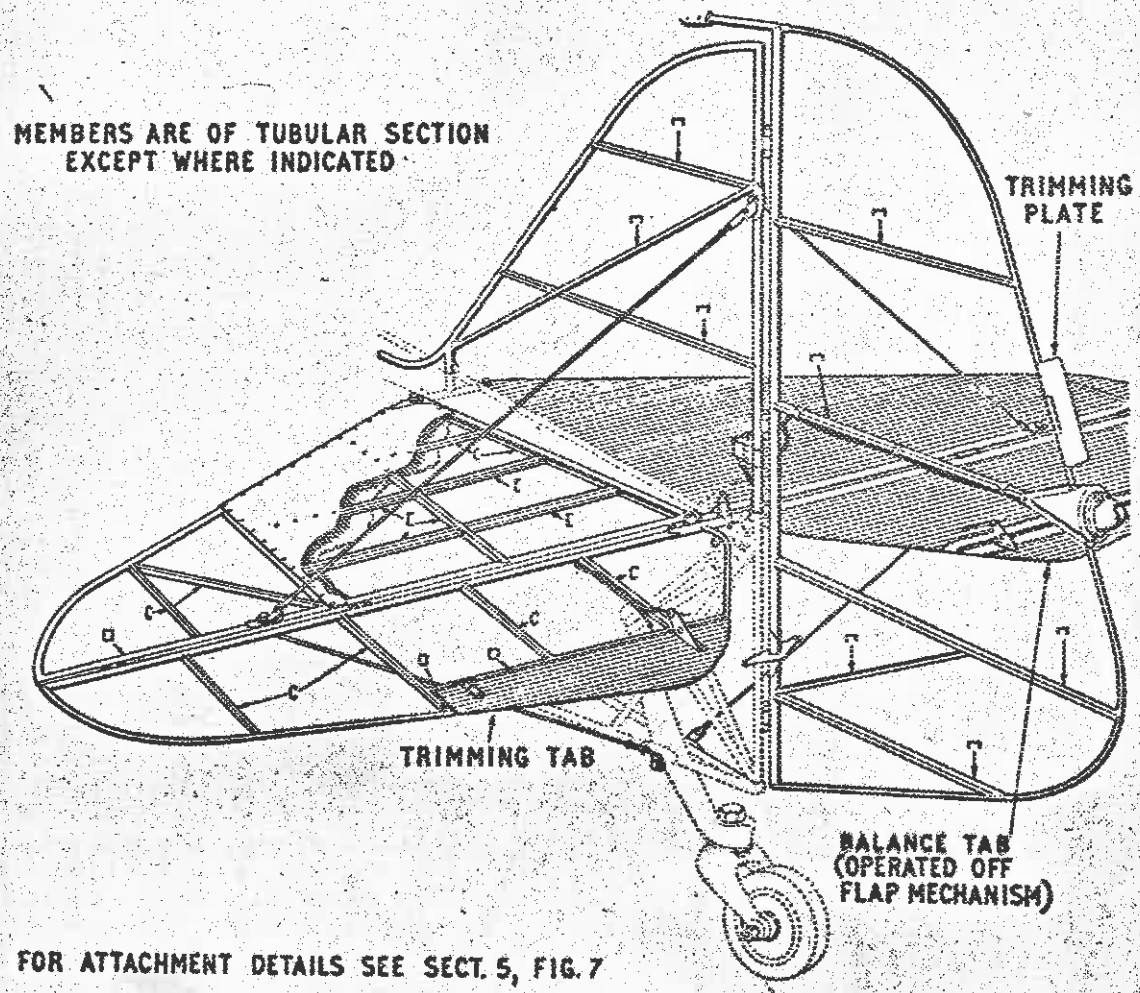


Fig. 6. Tail unit

Chapter 4

FLYING CONTROLS

LIST OF CONTENTS

LIST OF ILLUSTRATIONS

General

1. The main flying control surfaces of the aircraft are operated by conventional cockpit controls. Elevator trimming is effected by a crank handle in the cabin roof, which controls a tab on the port elevator. The starboard elevator embodies a special balance tab which is interconnected with, and automatically controlled by, the flap operating mechanism. The flaps are operated by a lever in the cabin which is coupled to a flap torque shaft. The pulleys over which the control cables run are all formed of impregnated fibre and have self-lubricating bushes.

Control arch

2. The ailerons and elevators are operated from a cross shaft which is arched to clear the pilot's legs. The arch is constructed of steel tube and is mounted at each end in a bearing, the lower half of which is bolted to diagonal side members of the cabin. A casting is bolted beneath the port side of the top member of the arch and carries a stub shaft for the attachment of a control stick. A segment lever is secured to the stub shaft and the aileron control cables are attached one to each side of this. The cable to the starboard aileron passes over a pulley mounted on a bracket on the starboard side of the top member of the arch. Lateral movement of the control stick is limited by a pin which is bolted to the starboard side of the segment lever, and which butts against two lugs welded to the top member of the arch.

3. A pulley is connected to each end of the control arch, outboard of the bearings, by a swivel link; around these pulleys pass the aileron cables from the segment lever. On the starboard side of the control arch, outboard of the bearing, is a two-armed lever. Each arm of this lever connects to an elevator cable, so that when the control arch is rocked in a fore-and-aft direction the elevators are correspondingly operated.

Control stick

4. The control stick is constructed of steel tube and is bolted to the stub shaft described in para. 2. The top of the stick houses the radio speech control switch, from which a cable is led down inside the stick to emerge on the upper side at the lower bend.

Ailerons

5. The aileron control cables pass from the pulleys at each end of the control arch (*para.* 3) upward to the cabin roof where each is led around another pulley and, through fairleads, into the main plane. Each cable then runs along the forward face of the front spar through guide plates, around a pulley and aft through the front and rear spars to

one end of a horizontal lever. This lever is pivoted about its centre on a bracket bolted to the rear spar, and also carries a universal coupling link (pre-Mod. 383) or control rod (post-Mod. 383) at one end which connects to a bracket on the aileron spar. The other end of the lever carries a balance cable which runs forward through both spars, around a pulley adjacent to the control cable pulley and thence inboard through the cabin, to the opposite aileron. Turnbuckles are provided for the control cables and are positioned above the pulleys at each end of the control arch; a turnbuckle for the balance cable is situated at the top of the cabin.

Elevators

6. From the two-armed lever on the starboard side of the control arch (*para.* 3) the elevator control cables run under two pulleys, and through fairleads along the bottom starboard side of the fuselage. At the last fuselage frame (frame 6) they pass over two pulleys and connect, one to the top and one to the bottom of the elevator control lever.

Elevator trim tab

7. The trim tab is fitted at the inboard trailing edge of the port elevator, and is controlled from a crank handle and quadrant assembly (*fig.* 3) mounted in the cabin roof. The two control cables run one from each end of the quadrant, through guide tubes, along the port side of the fuselage, beneath the tail plane and through the elevator to the operating levers on the trimming tab. On aircraft pre-Mod. No. 191 an adjustable stop is provided on each cable to butt against the guide tubes at fuselage frame 4 and prevent excessive movement; on later aircraft these stops are deleted and a stop is incorporated in the control quadrant assembly. Turnbuckles are provided for adjusting the cables on aircraft pre-Mod. No. 191 (*fig.* 3) and are positioned, one on each cable, adjacent to the quadrant. On later aircraft, screw-thread cable adjusters are provided at the point where the cables enter the fuselage beneath the tail plane (*fig.* 4), and turnbuckles are not fitted.

Elevator balance tab

8. This special balance tab is fitted at the inboard trailing edge of the starboard elevator and is controlled by the flap-operating mechanism. From the lugs on the link at the top starboard side of the cabin (*para.* 10, *and fig.* 2, 3 *and* 4), two cables are taken through short guide tubes, along the fuselage, beneath the tail plane and through the elevator on to the operating levers of the balance tab. When the flaps are moved to the fully DOWN position the link is rotated anti-clockwise and the lug securing the upper tab operating lever cable is also moved anti-clockwise; this causes downward movement of the tab. Selection of flaps UP has the opposite action on the balance tab and restores it to the neutral position. On aircraft pre-Mod. No. 191 (*fig.* 3), no special means of adjustment is provided for the cables and they can only be adjusted at the point where they connect to the tab. Later aircraft (*fig.* 4) are fitted with screw-thread cable adjusters at the point where the cables enter the fuselage beneath the tail plane.

Rudder

9. The rudder is controlled from two foot pedals on the port side of the cabin floor. The pedals are mounted on vertical stems welded to two transverse shafts, the left pedal being on the rear shaft and the right pedal on the front shaft. The shafts are mounted in bearings welded to the bottom fuselage structure, and have a lever at one end for the attachment of the rudder control cables; the left pedal shaft has the lever at its port end, while on the right pedal shaft it is at the starboard end. The control cables are deflected from the levers to the bottom of the cabin where they each pass around a pulley and then continue aft, one along each side of the fuselage, through guide bushes, tubes and fairleads to the rudder lever. Each pedal has a spring connection to the fuselage front lower cross-member to return the pedals to the neutral position.

Flaps

10. The flaps are operated by a lever (*fig.* 2) mounted on the cabin floor just starboard of the pilot's seat. The lever has two side plates at the base, which are pinned to a torque tube extending across the cabin floor, and embodies a ratchet which engages in one of three notches in a fixed quadrant, bolted to the floorboards, to give three positions for the flaps. The torque tube has a lever at each end which connects to the flaps via a system of links and connecting rods running up each side of the cabin and aft through the main plane root gap. The connecting rod immediately forward of each flap is adjustable for length. One of the links at the top starboard side of the cabin has two lugs for the attachment of the starboard elevator balance tab control cables (*para.* 8).

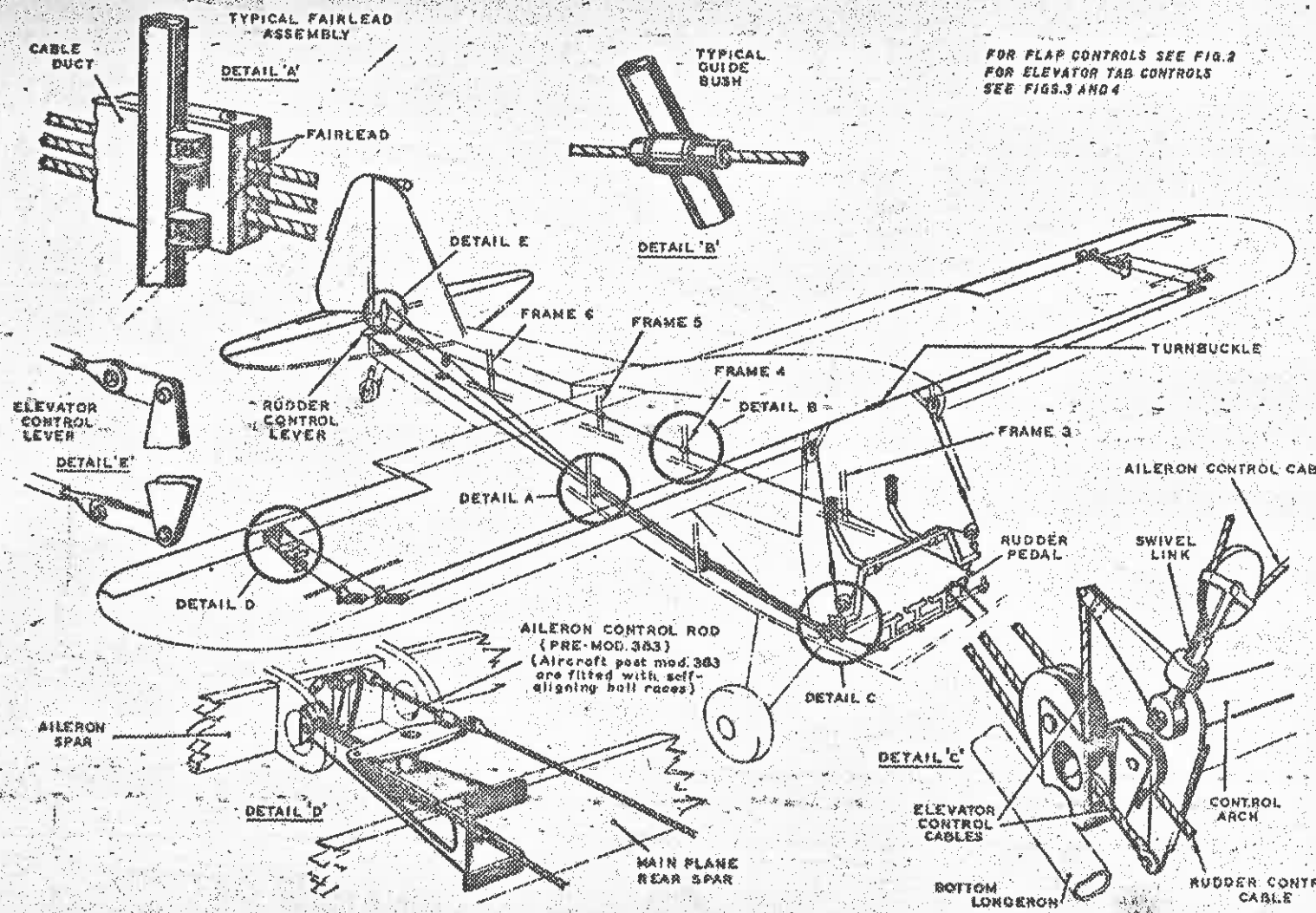


Fig.1 Flying controls

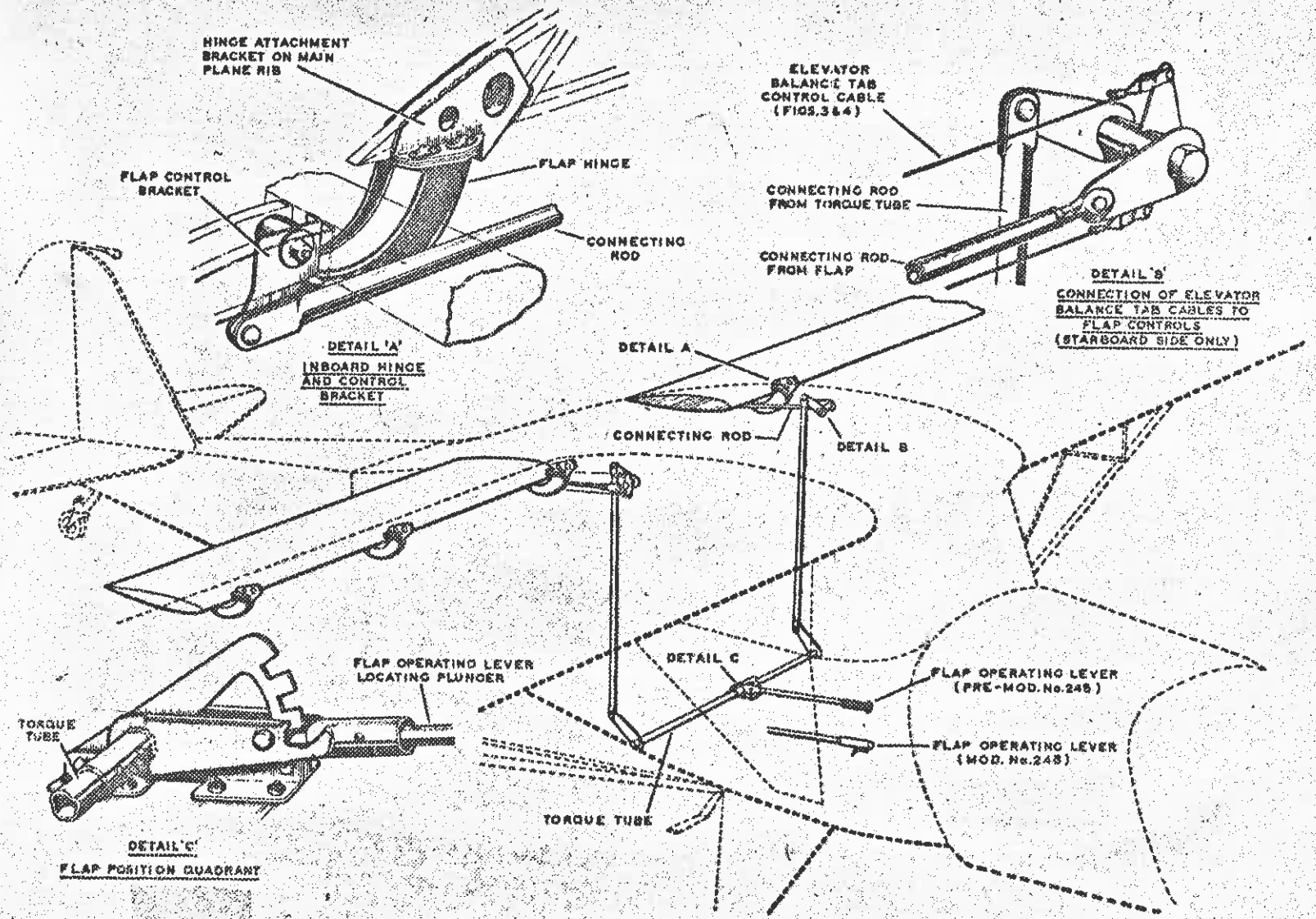


Fig.2. Flap controls

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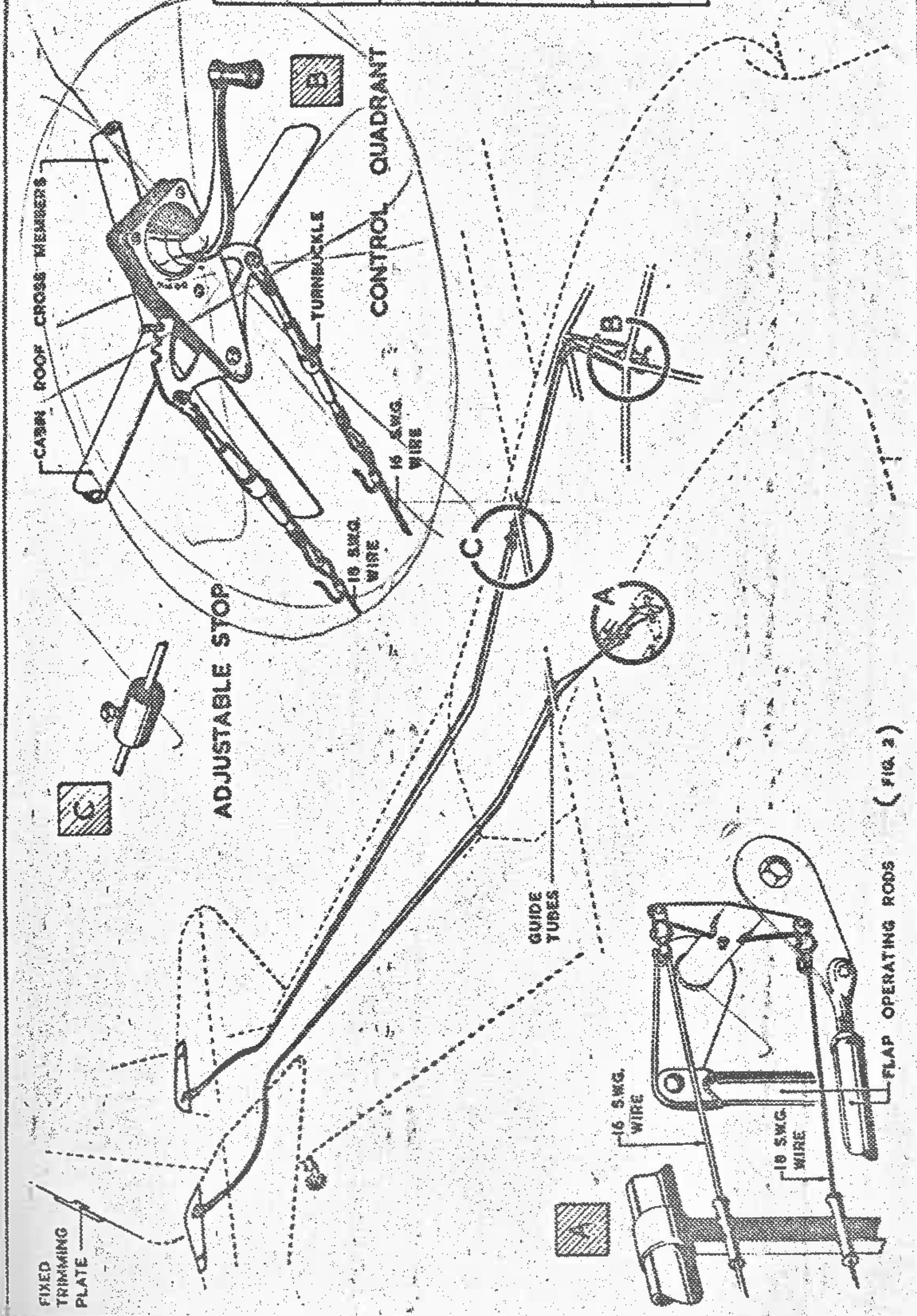
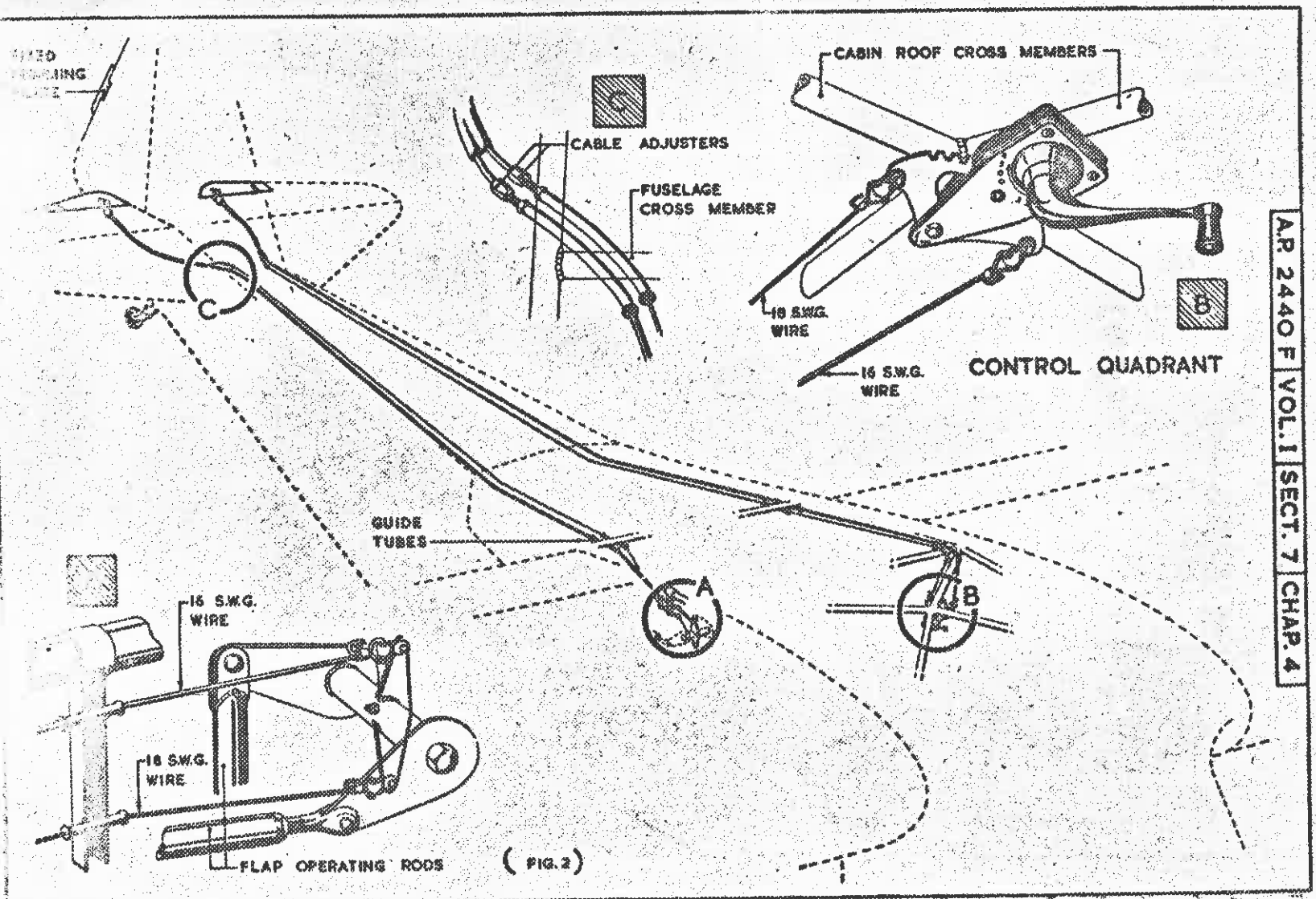


ELEVATOR TAB CONTROLS – PRE MOD. No. 191 — FIG. 3


CABIN ROOF CROSS MEMBERS
CABLE ADJUSTERS
FUSELAGE CROSS MEMBER
18 S.W.G. WIRE
16 S.W.G. WIRE
CONTROL QUADRANT
GUIDE TUBES
16 S.W.G. WIRE
18 S.W.G. WIRE
FLAP OPERATING RODS

(FIG. 2)

CHAPTER

5

ALIGHTING GEAR

Chapter 5

This chapter supersedes that issued with A.L. No. 1–11

ALIGHTING GEAR

LIST OF CONTENTS

LIST OF ILLUSTRATIONS

INTRODUCTION

1. The alighting gear comprises a non-retractable undercarriage and a fully castering tail wheel. The undercarriage consists of two independent main wheel units, which are welded steel structures and are partly fabric covered. Each unit is hinged, at two points, to the side of the fuselage and is connected to bobbins on the fuselage shock truss member by rubber bungee shock absorbers. Bendix mechanical wheel brakes are fitted and these are controlled by foot pedals, mounted adjacent to the rudder pedals, and a parking brake handle. On early aircraft the tail wheel is mounted on a pivot arm located forward of the fuselage stern-post, the shock being absorbed by a rubber bungee connected to the top of the pivot arm and the fuselage structure. On later aircraft (Mod. 315), the tail wheel is supported on a quadruple leaf spring which, in turn, is bolted to the bottom of the fuselage.

UNDERCARRIAGE

General

2. Each main wheel unit comprises a side bracing frame, top bracing frame, radius rod, and a wheel unit. The side bracing frame is a tubular structure of approximately inverted "A" formation, extending downwards from the fuselage hinge points and carrying, at the bottom, a stub axle for the wheel. The top bracing frame consists of two tubular members which extend inboard in "V" formation from the fuselage hinge points, and are welded to a diagonal radius rod and a bobbin at their juncture. At each hinge point the adjacent top and side bracing frame members are welded together around a short bearing tube embodying oilite bushes. The radius rod is bolted, at its lower end, to the wheel axle. The side and top bracing frames are fabric covered, and the radius rod is wrapped with fabric.

Shock-absorbers

3. Each undercarriage unit has two bungee rubber shock absorbers which connect the bobbin on the undercarriage to the adjacent bobbins on front and rear of the fuselage shock truss member. Each bungee is fitted over one shock truss bobbin, under the undercarriage unit bobbin and over the bobbin on the other face of the shock truss. A short length of cable connected between the bobbins acts as a check.

BRAKE CONTROLS

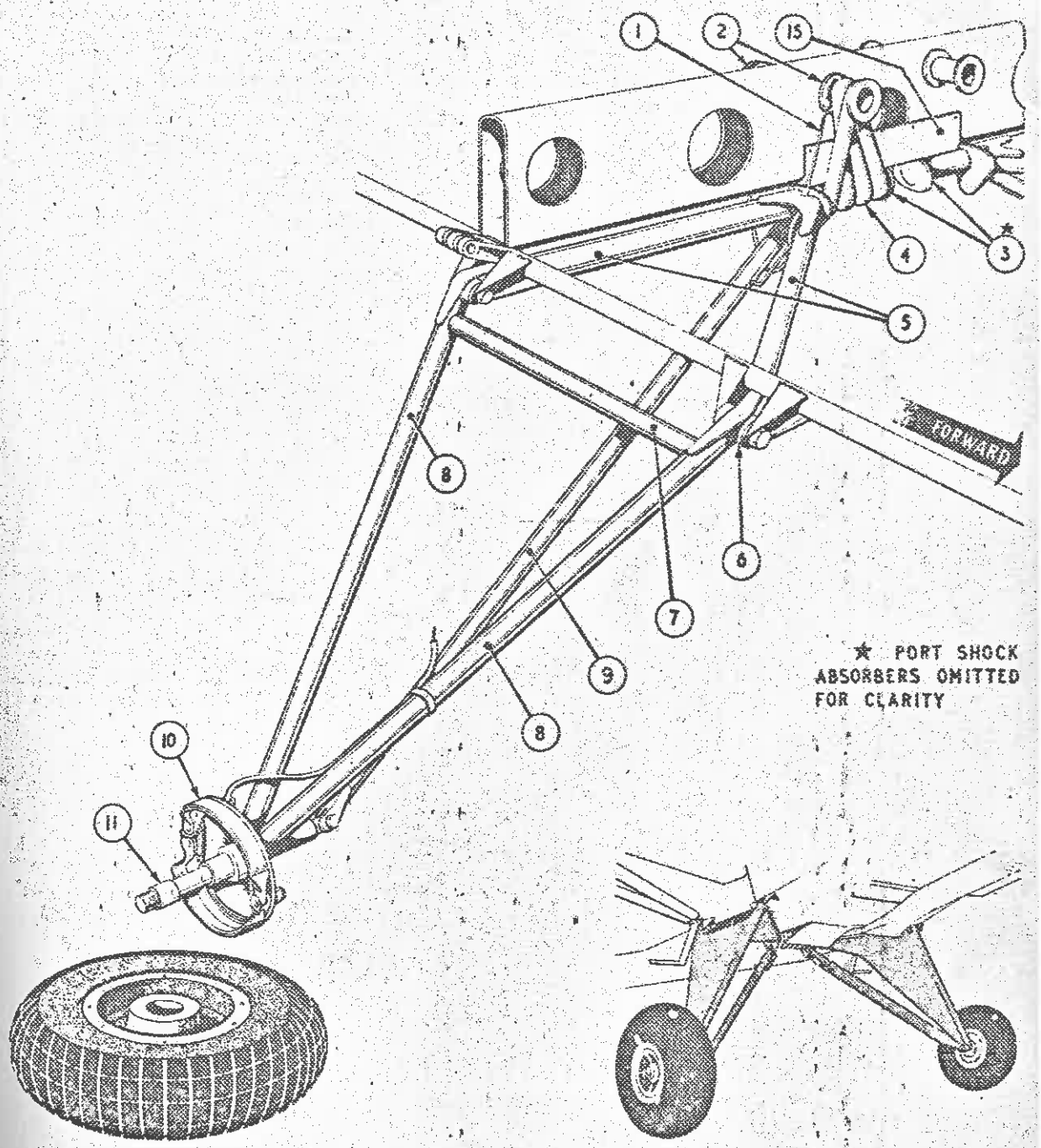
4. The brakes are operated, through cables, from two foot pedals and a parking brake handle in the cabin. The foot pedals are positioned on the port side of the cabin floor and each one is connected by cable to one of the wheel brakes, thereby giving differential action for ground steering. Pressure on only one pedal applies the relevant wheel brake but

allows the other wheel to remain free. Equal pressure on both foot pedals simultaneously applies equal braking action on both wheels. An adjuster is provided for each brake cable and is accessible through a removable panel in the floorboards, forward of the pilot's seat. The cable from the parking handle extends to a mechanism which is linked to the pedals, but it is not necessary to depress the pedals when applying the parking brake. On aircraft incorporating Mod. 339 an adjuster is also provided for the parking brake cable.

TAIL WHEEL UNIT

5. This unit may be either of two types. On aircraft pre Mod. 315 the unit comprises a pivot arm and a tail wheel, a rubber bungee providing the shock absorbing medium. The wheel fork is attached to the pivot arm (4) by means of a hinge pin (11) and has full castering action. The pivot arm is secured between the fuselage bottom longerons by the pivot pin (7). Around the top end of the [illegible] passed a rubber bungee (3), retained on a pulley (2) itself secured to the rear of the fuselage by strap plates (1). Fore-and-aft movement of the pivot arm is limited by rubber stops (5) and (10) respectively secured to fuselage diagonal members and the fuselage stern-post. A bolt (6), fitted in a screwed bush just below the upper rubber bumper, is provided to force the pivot arm forward for fitting or removal of the bumper when the bungee is in position. The pivot arm below the longerons is protected by a leather gaiter fastened by fine cord.

6. On aircraft incorporating Mod. 315, the tail wheel comprises a quadruple leaf spring (in lieu of the rubber bungee and pivot arm) and a fully castering tail wheel. The fork (9) casters on to a hinge (10) which passes through a steel bearing block (3) bolted (11) to the lower end of the leaf spring. At the forward end the leaf spring is secured by retaining plates (5), which, in turn, are bolted to lugs welded to the aft end of the fuselage bottom longerons. Brackets (1), to which are coupled the tail plane bracing rods, are secured to the front leaf spring attachment lugs.



1 – CHECK CABLE
2 – SHOCK TRUSS BOBBIN
3 – UNDERCARRIAGE BOBBINS
4 – RUBBER BUNGEE SHOCK ABSORBERS
5 – TOP BRACING TUBES
6 – HINGE BEARING
7 – CHANNEL BRACING MEMBER
8 – SIDE BRACING TUBES
9 – RADIUS ROD
10 – BRAKE UNIT
11 – STUB AXLE

FIG. 1 UNDERCARRIAGE

77053 S7625 G6770 11 52 850 C & P Gp. 959 (4)

RESTRICTED

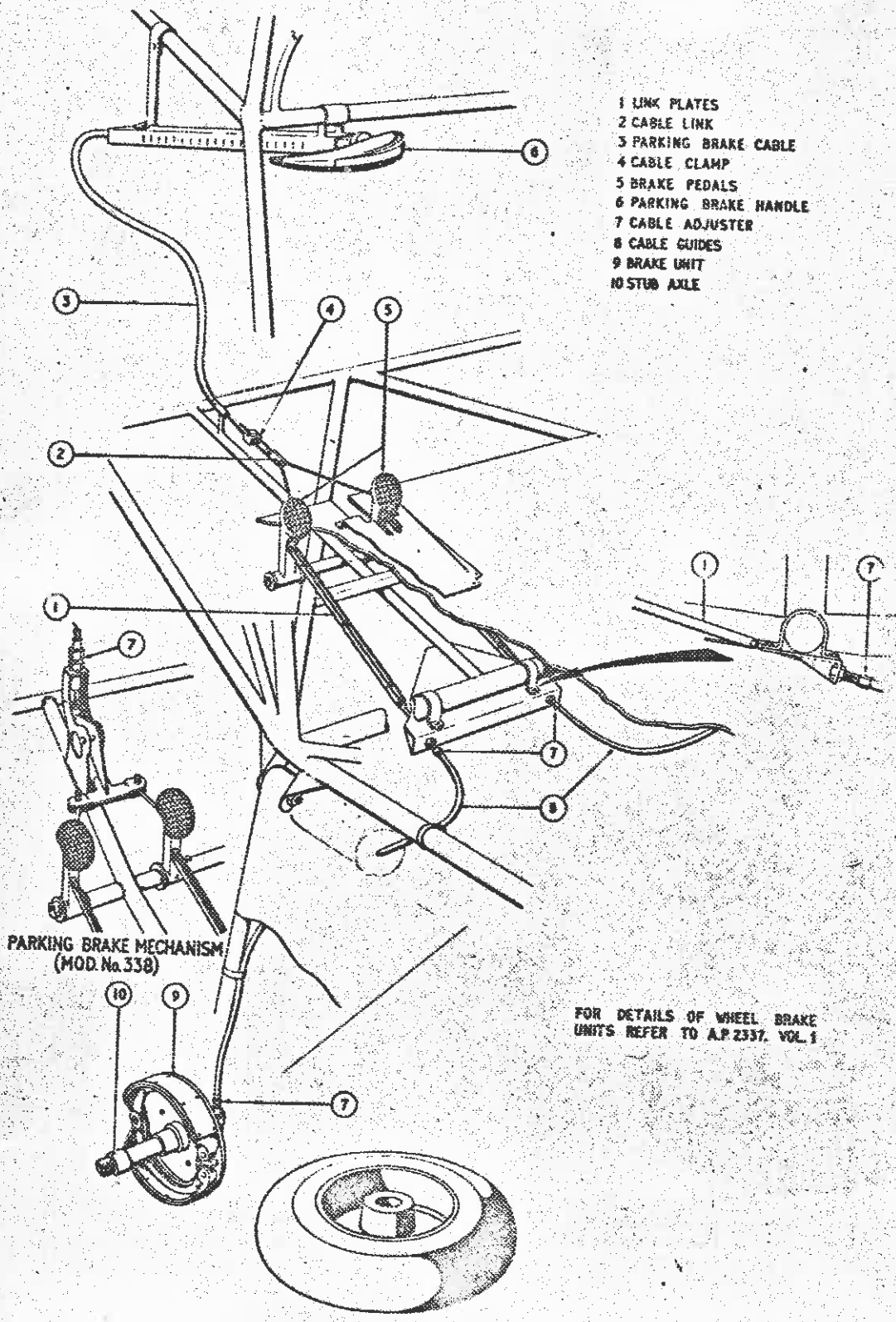
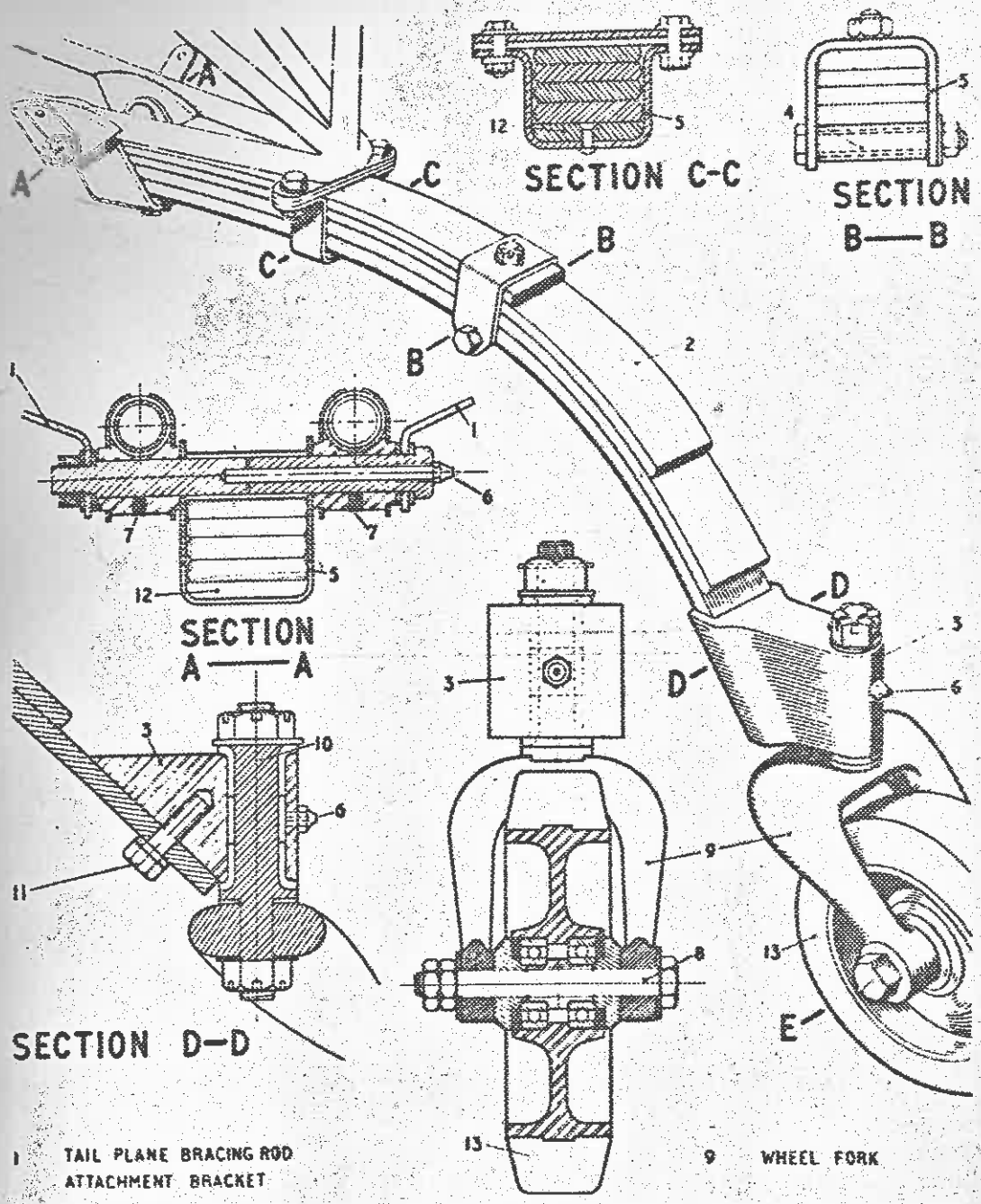


FIG. 2 BRAKE SYSTEM



1	TAIL PLANE BRACING ROD ATTACHMENT BRACKET	6	LUBRICATION NIPPLE	9	WHEEL FORK
2	SHOCK ABSORBER LEAF SPRINGS	7	GRUB SCREW	10	WHEEL FORK HINGE PIN
3	BEARING BLOCK	8	WHEEL AXLE	11	BEARING BLOCK ATTACHMENT BOLT
4	ROLLER DISTANCE PIECE			12	DISTANCE PLATE
5	RETAINING PLATES			13	STATIC-CONDUCTIVE SOLID TYRE

FIG. 4 TAIL WHEEL UNIT (LATER AIRCRAFT)

RESTRICTED

SECTION

8

ENGINE INSTALLATION

Section 8

ENGINE INSTALLATION

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LIST OF ILLUSTRATIONS

Introduction

1. The Auster Mk. 6 is powered by a Gipsy Major Mk. 7 four-cylinder, in-line, air-cooled, inverted type engine to which is fitted a fixed-pitch wooden propeller driven directly from the engine crankshaft. The engine is mounted in engine bearers formed by a square-section steel-tube structure, and is separated from the fuselage by a firewall. Fuel is carried in two tanks in the main planes, one on each side of the fuselage, but in aircraft embodying a long-range fuel system (Mod. No. 219) an additional tank is carried at the rear of the cabin. Oil is carried in a single tank mounted at the bottom forward face of the firewall. The tank differs in general design between early and later aircraft; on the later type (*fig.* 8) a self-sealing covering is fitted and an internal hot-well provided. The oil temperature thermometer bulb housing also varies between the two types of tank. An oil pressure gauge is mounted on the instrument panel and connected to the crankcase on early aircraft and to the oil pressure filter on later aircraft.

2. The engine throttle and mixture controls are mounted in a separate control box, in the centre of the instrument panel. The throttle lever is fitted with an inter-connecting device which helps to prevent misuse of the mixture control. The only other manual engine control is that for the carburettor hot/cold air-intake (*fig.* 10). In addition to giving a choice of hot or cold air to the carburetttor, this control also protects the engine from rising sand, etc., during take-off in sandy or dusty climates.

ENGINE COWLING PANELS (*fig.* 3)

General

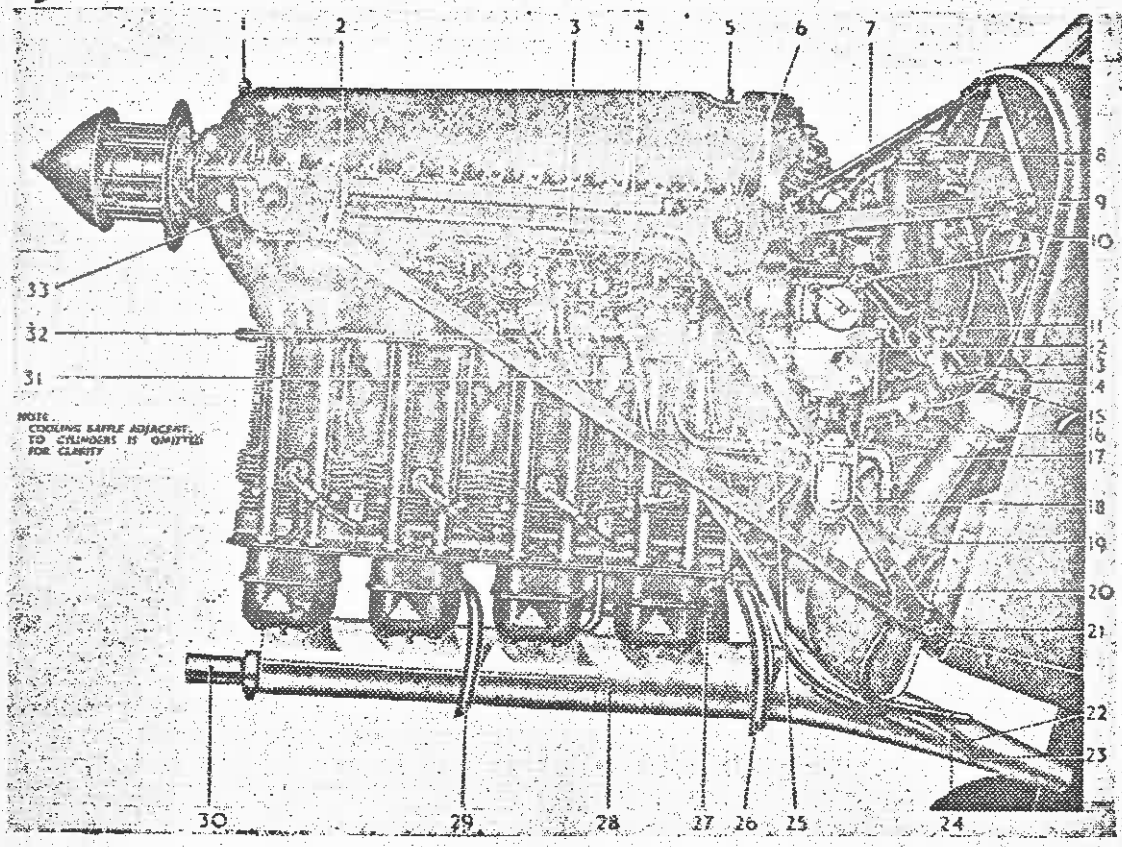
3. The engine is cowled with six panels. One panel covers the top of the engine, two cover the bottom, and two cover the port and starboard sides respectively. The sixth covers the nose of the engine.

4. The nose cowling is attached by screws to the front engine mounting brackets at each side. The two bottom cowlings are each secured by screws to the nose cowling, to

brackets on the oil tank (when Mod. No. 269 is not embodied) or brackets on the front fuselage underside cowling (Mod. No. 269) and to the firewall flange. The top panel is attached to the nose cowling and the firewall flange by screws. Each side cowling panel is secured to the panel above and below it by turn-button fasteners.

Cowling air ducts

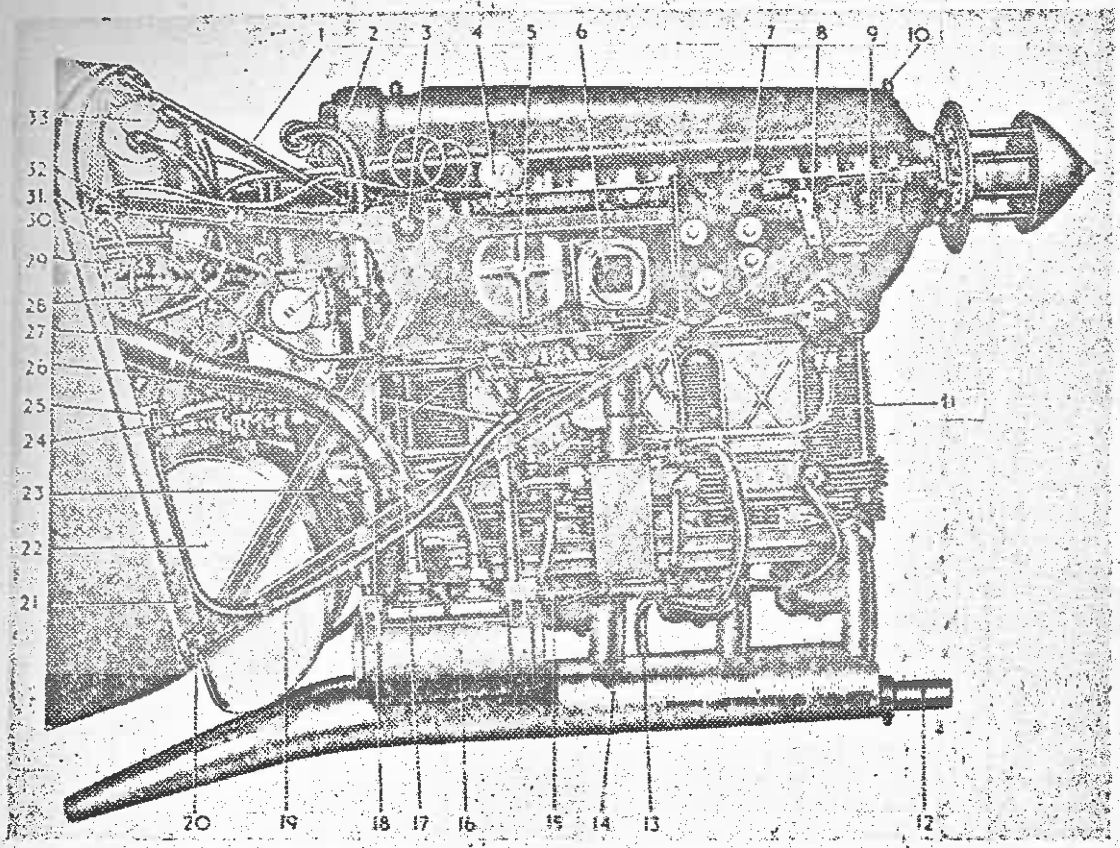
5. The main entry for air to cool the engine is through a large hole in the port side of the front nose cowling. An internal engine-cooling baffle mates with this hole and directs the air flow around the engine cylinders. Cooling air is vented between a gap in the centre of the bottom cowlings.



1 ENGINE LIFTING EYE-BOLT
2 NOSE COWLING ATTACHMENT BRACKET
3 ENGINE-OPERATED FUEL PUMPS
4 FUEL SUPPLY PIPE—PUMPS TO CARBURETTOR
5 ENGINE LIFTING EYE-BOLT
6 ENGINE REAR FOOT AND MOUNTING BRACKET
7 ENGINE ALIGNMENT STAY
8 TACHOMETER FLEXIBLE DRIVE
9 FIRE WALL
10 FLAME SWITCH
11 OIL DELIVERY PIPE (TANK TO SUCTION FILTER)
12 FLAME SWITCH
13 MIXTURE/ALTITUDE OPERATING ROD CONNECTION
14 THROTTLE OPERATING ROD CONNECTION
15 FLAME SWITCH
16 OIL THERMOMETER POCKET
17 OIL TANK FILLER NECK
18 MAIN FUEL FILTER
19 FUEL SUPPLY PIPE (COCK TO PUMP)
20 ENGINE MOUNTING FRAME
21 ENGINE MOUNTING FRAME, LOWER ATTACHMENT BOLT
22 INDUCTION MANIFOLD DRAIN PIPE
23 FUEL PUMPS, DRAIN PIPES OUTLET (THE TWO DRAIN PIPES (31) ARE JOINED AND HAVE A SINGLE OUTLET)
24 OIL TANK VENT PIPE
25 CARBURETTOR FLOAT TICKLER WIRE
26 CRANK-CASE BREATHER PIPE
27 CABIN HEATER FLEXIBLE TUBE
28 EXHAUST MANIFOLD
29 OULTET PIPE FROM CARBURETTOR HEATER JACKET
30 INTENSIFIER TUBE
31 FUEL PUMPS, DRAIN PIPES (*refer to item 23*)
32 FUEL PUMPS PRIMING LEVERS
33 ENGINE FRONT FOOT AND MOUNTING BRACKET

Fig. 1. Engine installation—port side

6. Air for the carburettor is obtained through a scoop in the starboard side cowling, which registers with the carburettor cold air-intake. A scoop in the bottom starboard panel directs air on to the oil cooler. Two pear-shaped hinged panels in



1 ENGINE ALIGNMENT STAY
2 CRANKCASE BREATHER PIPE
3 ENGINE REAR FOOT AND MOUNTING BRACKET
4 OIL PRESSURE GAUGE TRANSMITTER (ON AIRCRAFT EMBODYING MOD. 298. THIS IS CONNECTED TO THE OIL PRESSURE FILTER)
5 CARBURETTOR FLAMETRAP AND WARM AIR INTAKE
6 CARBURETTOR COLD AIR INTAKE
7 BALLAST WEIGHTS
8 NOSE COWLING ATTACHMENT BRACKET
9 ENGINE FRONT FOOT AND MOUNTING BRACKET
10 FRONT ENGINE LIFTING EYE-BOLT
11 FRONT SCAVENGE PIPE
12 INTENSIFIER TUBE
13 OULTET PIPE FROM CARBURETTOR HEATER JACKET
14 EXHAUST MANIFOLD
15 FLAME SWITCH
16 OIL COOLER
17 CARBURETTOR MIXTURE/ALTITUDE CONTROL ROD
18 OIL RETURN PIPE (COOLER TO TANK)
19 ENGINE MOUNTING FRAME
20 ENGINE MOUNTING FRAME, LOWER ATTACHMENT BOLT
21 COWLING RAIL
22 OIL TANK
23 H.T. IGNITION LEAD CONDUIT
24 OIL RETURN PIPE (SCAVENGE PUMP TO COOLER)
25 FLAME SWITCH
26 CABIN HEATER FLEXIBLE TUBE
27 CABIN HEATER CONTROL UNIT
28 L.T. IGNITION LEAD TO STARBOARD MAGNETO
29 FLAME SWITCH
30 CAPILLERY TUBE OF OIL PRESSURE GAUGE
31 CARBURETTOR HOT/COLD AIR CONTROL
32 ENGINE MOUNTING FRAME, UPPER ATTACHMENT BOLT
33 ENGINE ELECTRIC STARTING MOTOR

Fig. 2. Engine installation—starboard side

the port side cowling permit easy access to the fuel pump and carburettor float ticklers.

ENGINE MOUNTING (*fig. 1, 2 and 3*)

General

7. The engine mounting consists of a port and starboard frame. Each frame is an integral unit, consisting of a series of square sectional tubes welded together, with bearer plates secured at the intersection of the top tubes, for locating the engine feet. A ballast weight is securely positioned at the forward end of the starboard frame. The engine mounting frames are secured to the fuselage by fork-end fittings which are located at the rear end of the top and bottom tubes. These fork-ends are bolted to eye-bolts, which pass through steel bosses, welded at each corner of No. 1 fuselage frame.

Engine alignment stays

8. The top member of each side mounting frame is drilled just aft of the rear bearer plates to house an eye-bolt. From each of these eye-bolts a round tubular stay, having fork-end fittings by means of which the length of the stay can be adjusted to correct the alignment of the engine, extends aft and inboard, to a bracket formed integral with a bracing structure on the firewall. This bracing structure comprises two oval tubular members, assembled in inverted V formation, which are secured at their ends to the firewall by the top engine mounting attachment eye-bolts.

Engine bearer feet

9. The engine bearer feet are each carried in rubber blocks which fit into the bearer plates of the engine mounting. The engine feet and the rubber mounting blocks are retained within the bearer plates by caps each secured by two bolts.

FIREWALL

10. The firewall consists of a flanged sheet of terne plate, and is secured to the forward face of fuselage frame 1 by the engine mounting attachment eye-bolts. It supports the oil tank and is forward face and has a number of openings through which pass the engine control rods and fuel system pipes. A hole on the starboard side is provided for the passage of warm air for cabin heating (*para.* 34).

NORMAL FUEL SYSTEM (*fig. 4 and 5*)

General

11. The normal fuel system comprises basically two tanks mounted in the main planes, one on each side of the fuselage, an ON-OFF cock mounted on the bottom rear face of the firewall with a control on the instrument panel, and dual engine-driven fuel pumps mounted on the port side of the engine. Two supply pipes are led from each tank to ensure fuel supply to the engine when the aircraft is flying in a nose up or nose down attitude; these pipes each have a fuel cock near the tank for servicing purposes, and the cocks are wire-locked in the ON position. The supply pipes from each tank run down the cabin door and window frames, and, on each side, meet a T-junction at the

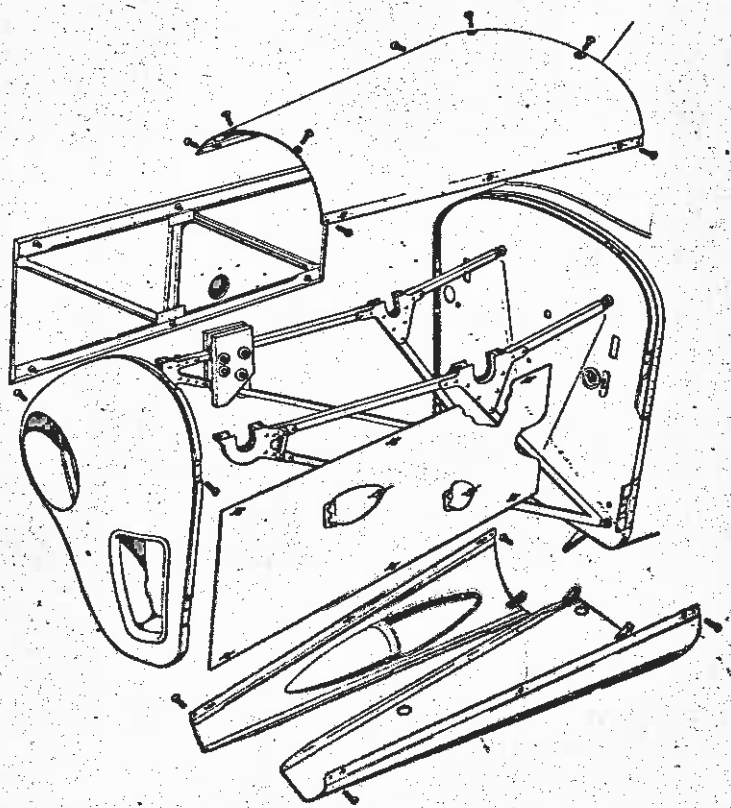
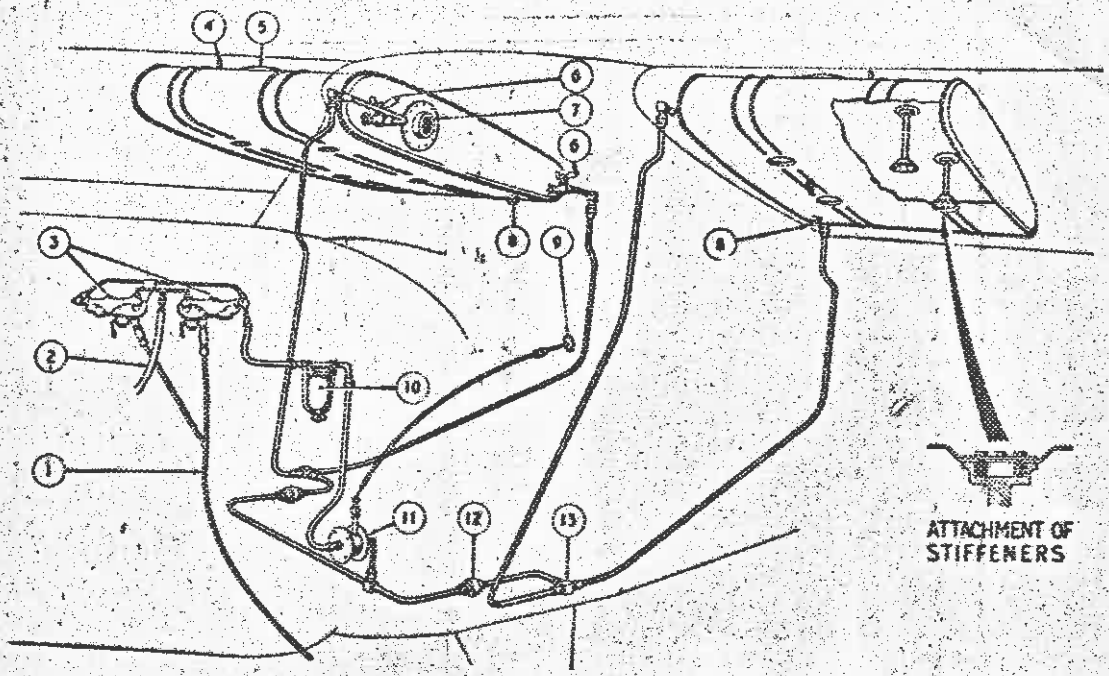
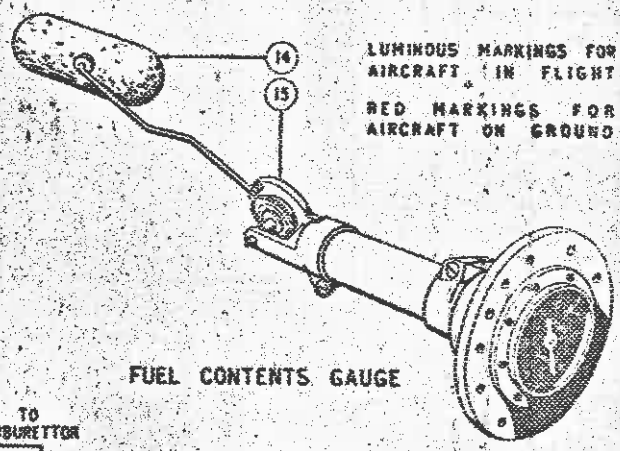
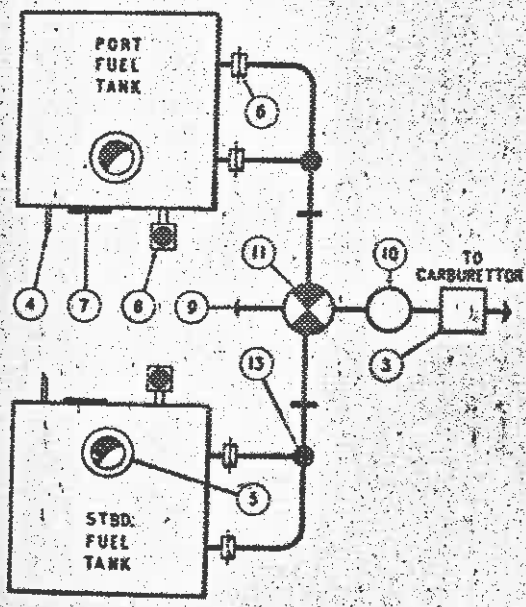


Fig. 3. Engine mounting, firewall and cowlings







1	FUEL PUMPS DRAIN
2	SUPPLY PIPE TO CARBURETTOR
3	ENGINE FUEL PUMPS
4	TANK VENT PIPE
5	TANK FILLER CAP
6	MAINTENANCE FUEL COCK
7	FUEL CONTENTS GAUGE
8	TANK DRAIN PLUG
9	MAIN FUEL COCK CONTROL
10	FUEL FILTER
11	MAIN FUEL COCK
12	NON-RETURN VALVE
13	"T" PIECE UNION
14	CORK FLOAT
15	INDICATOR GEARING MECHANISM

Fig. 5. Normal fuel system—later aircraft

bottom, from where they pass, via a non-return valve and T-piece to the main fuel cock. Another pipe connects with the fuel cock and passes through the firewall to a filter and the fuel pumps on the engine.

12. Two direct-reading fuel contents gauges are provided, and are mounted in the cabin one above the forward corner of each door. Each gauge is connected, at its base, to the bottom inboard side of the adjacent fuel tank from which it is supplied through a capillary. An ON-OFF cock is fitted in each capillary and connects, by a push-pull rod, to a control knob aft of the gauge; these cocks are normally in the ON position and should be operated, by pushing the adjacent knob, only when it is desired to cut off the fuel supply to a gauge, e.g. if the gauge is damaged, or is to be removed. The top of each gauge is vented through a capillary leading into the top of the fuel tank. On later aircraft the gauges are of the float actuated, direct-reading, magnetic type, calibrated from 0 to 11 gallons, and mounted directly on to the inboard face of each tank as illustrated in fig. 5.

Course of system

13. With the main fuel cock in the ON position fuel is drawn from both tanks simultaneously by the dual engine-driven fuel pumps, and passed thence to the carburettor. Both fuel pumps are provided with a drain pipe which leads to atmosphere aft of the oil tank. A drain pipe is also provided for the inlet induction manifold. Engine priming is effected by depressing either lever at the bottom of the fuel pumps and pulling the carburettor float tickler ring (*fig.* 1).

Fuel tanks, early aircraft

14. Each fuel tank is of approximately square form, constructed from terne plate with a protective covering to D.T.D.1053. The top, bottom and side faces are strengthened by small swaged troughs and are formed from a single sheet to which the end faces are sweated. Two transverse flanged baffles, provided with lightening holes, are riveted to the top and bottom internal faces of each tank. The inboard end face has three adapters riveted in position; the centre adapter is for the fuel gauge supply pipe, while those at each side are for the supply pipes to the main fuel cock. An adapter in the top of each tank, inboard of the forward adapter for the main fuel supply pipe, provides the [illegible] for the fuel gauge [illegible] neck is riveted to the top of the tank, at the forward end, and a vent pipe is fitted into the tank adjacent to this. A drain plug is secured to the bottom of the tank at the rear end.

Fuel tanks, later aircraft (*fig.* 5)

15. These tanks are constructed from four aluminium pressings (one top, one bottom and two end portions) and have a protective covering to specification D.T.D.1053. The top and bottom portions of the shell are interspaced by four cast stiffeners, bolted in position. An access panel is screwed to the top of the shell and a drain plug is provided at the underside rear inboard corner. The tank is vented by a pipe extending up from the top forward side, through the main plane adjacent to the filler neck.

16. The fuel tanks are each secured within the main planes by two straps having turnbuckle attachments, and bear on felt-padded brackets at the top of the main plane spars. The straps are secured to the spar brackets by means of a pin and split pin.

LONG-RANGE FUEL SYSTEM (*fig.* 6)

General

17. This system is provided to special order only, under Mod. No. 218 (fixed fittings) and Mod. No. 219 (removable fittings); it embodies most of the normal fuel system but has the piping changed slightly to incorporate a three-way fuel cock and connect to a long-range tank. This auxiliary tank is retained by two straps in a cradle bolted to the rear cabin floor. The delivery pipe from the bottom of the tank is led along the port side of the fuselage to the three-way cock on the forward face of the fuselage shock truss. The fuel cock may be either a Vickers' or Aircraftings' type, and the slight differences of installation are depicted in fig. 6.

18. Two pipes leading forward from the three-way cock connect one to the delivery pipes from the main plane tanks and one to the engine-driven fuel pumps. The latter pipe line incorporates the fuel cock of the normal system, the cock being locked ON and having its control removed from the instrument panel.

Fuel tank

19. The tank has two internal baffles, and a sump unit is riveted into the bottom. An extension adapter, for drainage purposes, is fitted to the sump unit and projects downwards to the underside of the fuselage. A vent pipe extends from the top port side of the tank through [illegible] discharges

to atmosphere near the filler cap. Both apertures can be sealed by blanking plates if the tank is removed.

OIL SYSTEM—Pre-MOD. No. 225

General

20. The engine lubricating system (*fig.* 7) is of the dry sump type, necessitating the use of an external oil tank situated on the bottom front face of the firewall. The engine pumps maintain the oil in constant circulation from the tank, through the engine and oil cooler, and back to the tank. There are no external filters, those incorporated in the engine being sufficient.

Course of system

21. Oil is fed from the top of the tank through an approximately vertical pipe which connects to the engine oil (suction) filter. After circulation around the engine, the oil from the front end of the crankcase is taken through a metal pipe along the starboard side of the engine to a T-piece where it is joined by the oil from the rear end of the crankcase and rear cover. This scavange oil is returned to the tank through an oil cooler bolted to stays extending downwards from the bottom member of the starboard engine mounting frame. The oil pressure is registered on a gauge in the instrument panel which is connected to the engine crankcase by means of a capillary. The system is vented through a pipe extending downwards and aft from the oil tank filler neck and another pipe extending downwards from the engine crankcase.

Oil tank, early type

22. The oil tank, of 3 gallons oil capacity and 1 gallon air space, is a riveted and soldered tinned brass or copper (Mod. No. 244), or aluminium alloy (Mod. No. 249) structure of the shape shown in fig. 7, and incorporates a filler neck with vent pipe, three internal baffles, connections for the oil supply and return pipes and a drain plug. The filler neck is soldered in at the port side of the tank, extends outboard and upward, and embodies a dipstick, graduated in gallons. The oil supply and return pipe connections are made to the ends of short tubes which are soldered to the top surface of the tank and extend down inside the tank to a point near the bottom. The drain plug is positioned at the bottom of the tank. Three brackets are soldered to the bottom outer surface of the tank on aircraft, note attachment points for the bottom engine embodying Mod. No. 269, and provide cowlings. On aircraft with Mod. No. 269 these cowling brackets are transfered to the fuselage structure.

Oil tank, later type (*fig.* 8)

23. This oil tank is a welded aluminium structure with a capacity of three gallons oil and one and a half gallons air space. Mod. 305 introduced a crash-proof covering. Internally the tank differs from the earlier types in that a hot-well replaces the internal baffles. This hot-well is in the form of a subsidary tank welded within the shell of the main tank and with a capacity of approximately three-quarters of a gallon. A baffle is provided at the inlet side of the hot-well to steady the oil flow to reduce the possibility of air bubbles forming. When the oil is warm it flows from the tank into the hot-well via a series of holes in the bottom sides of the well.

24. On tanks which embody Mod. 267 the vent pipe extends from the filler neck, around the front of the tank to the rear, and is open to atmosphere (*fig.* 8). The vent pipe extends from inside a dome at the top of the tank and passes through the base to atmosphere on aircraft incorporating Mod. 346.

OIL SYSTEM—Mod. No. 225

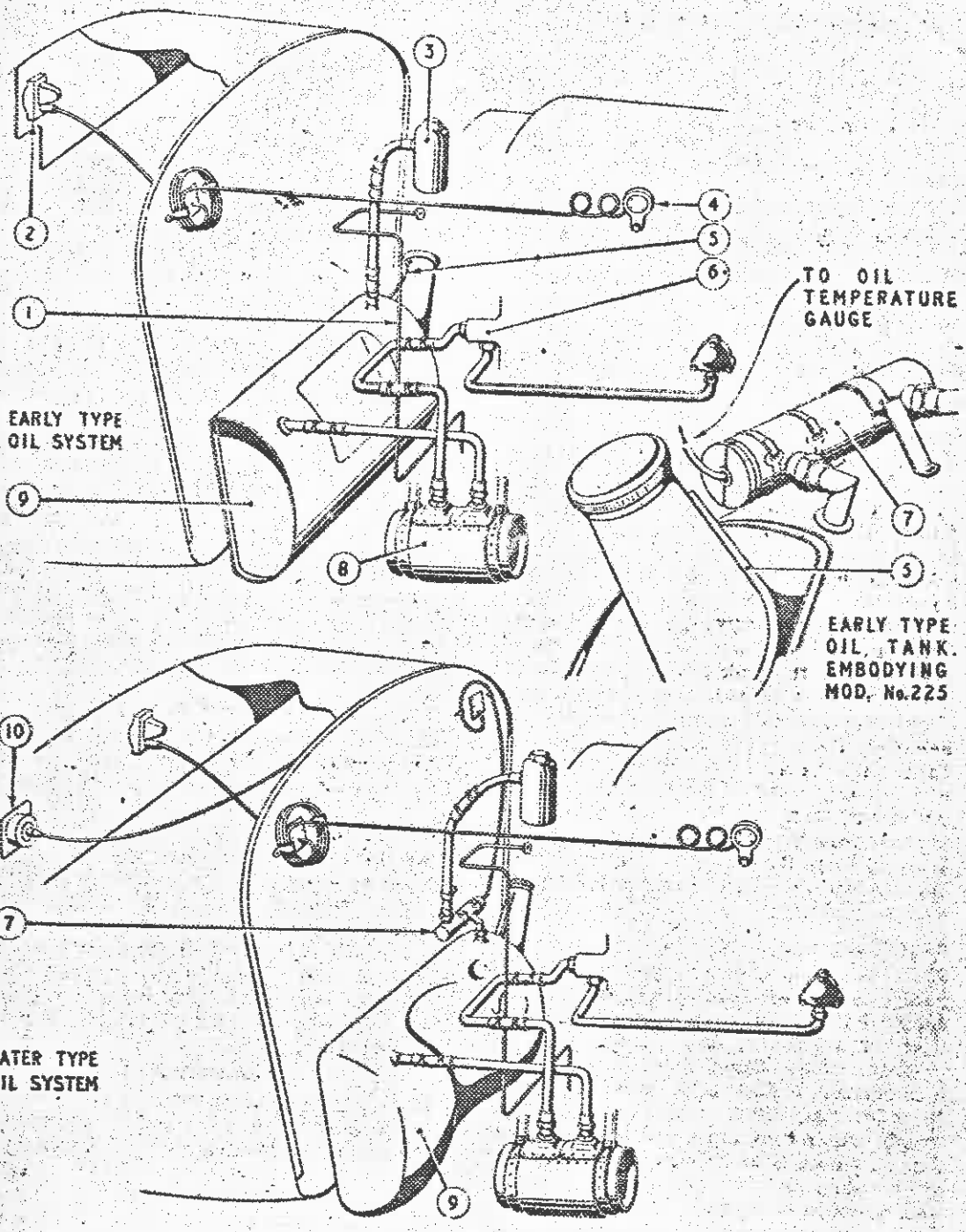
25. This system, installed in all later aircraft, embodies an oil temperature thermometer in the main oil feed pipe from the tank (*fig.* 7). The thermometer is fitted in a pocket secured to a bracket on the port top side of the oil tank, and its transmitting capillary leads off to a temperature gauge on the instrument panel. The thermometer pocket has two threaded connections on one side which pick up with a short pipe from the oil tank and a pipe to the engine suction filter, so that the oil being fed to the engine has to pass through the pocket and over the thermometer.

TACHOMETER

26. A tachometer is fitted to the port side of the instrument panel and is connected to the engine by a flexible drive, shown in fig. 1.

ENGINE CONTROLS

27. The engine controls consist of a throttle and a mixture control lever which are fitted in a separate control box (*para.* 29) mounted on the centre of the instrument panel. The control rods from this box extend forward through the firewall and connect to the engine carburettor linkage levers. The throttle control lever has a bracket which engages with the mixture control lever to ensure that the mixture is not excessively weakened at small throttle openings.



1... CRANKCASE BREATHER
2... OIL PRESSURE GAUGE
3... ENGINE SUCTION FILTER
... GAUGE BANJO
... VENT PIPE
6... ENGINE SCAVENGE PUMP
7... THERMOMETER POCKET
8... OIL COOLER
9... OIL TANK
10.. OIL TEMPERATURE GAUGE

Fig. 7. Oil system

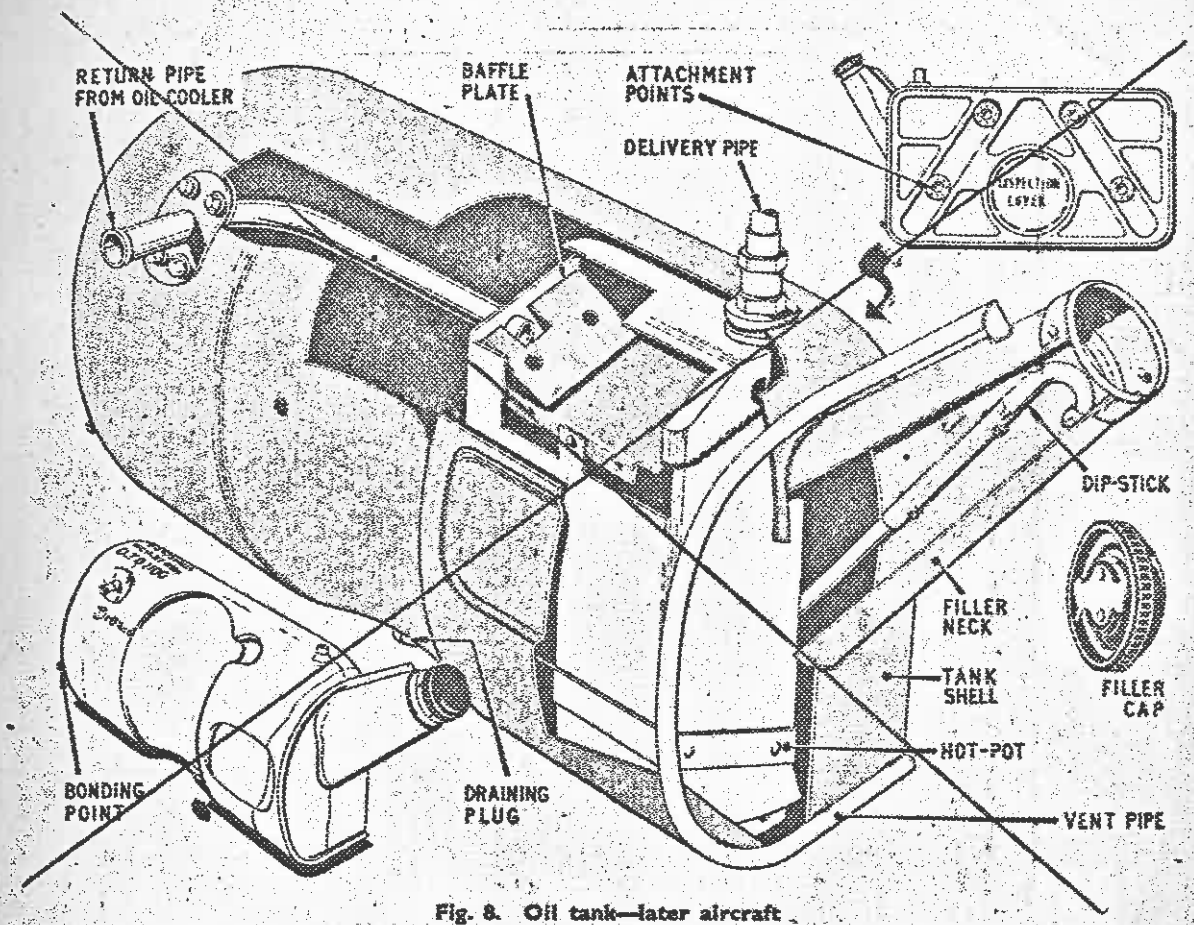


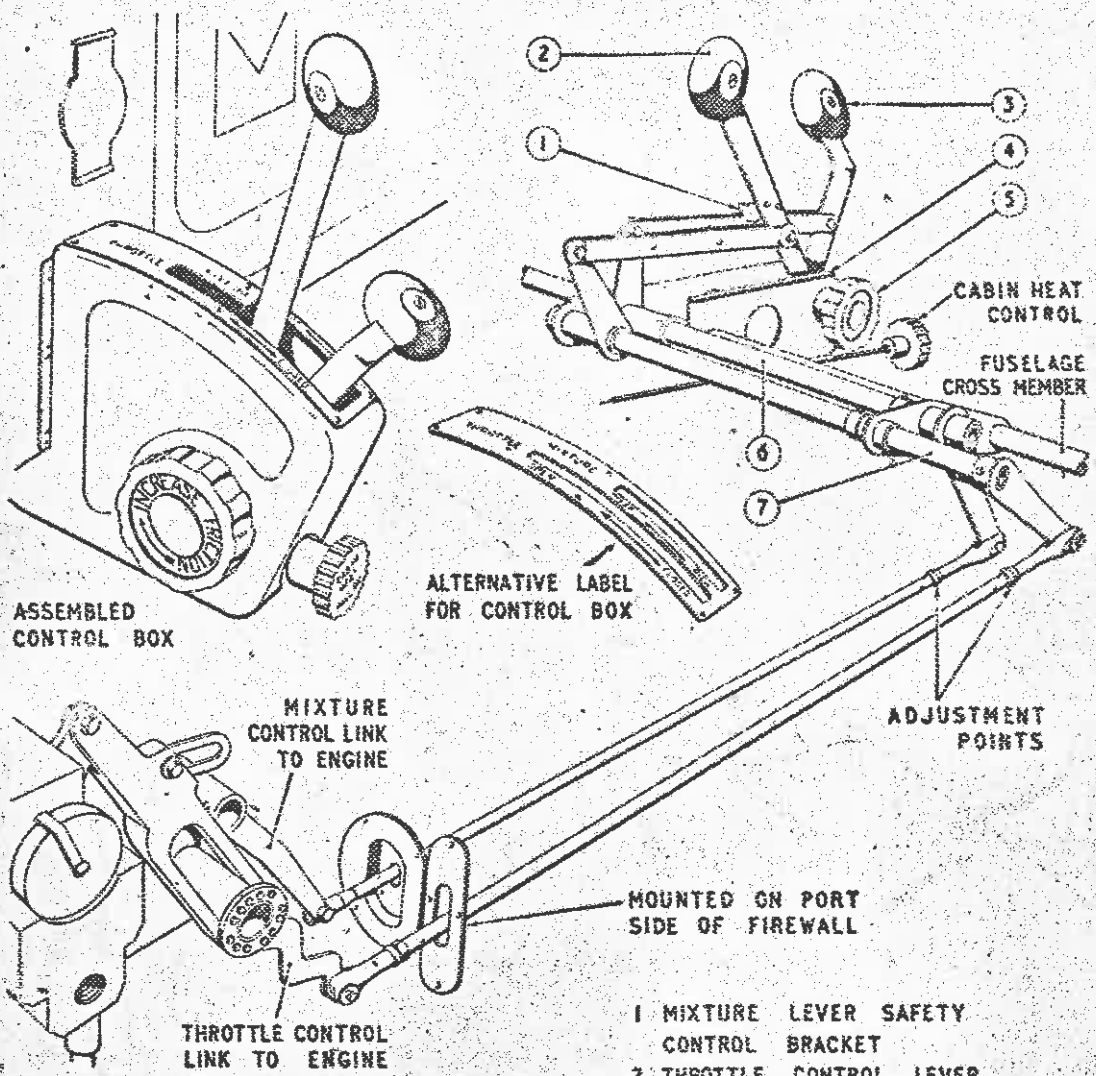
Fig. 8. Oil tank—later aircraft

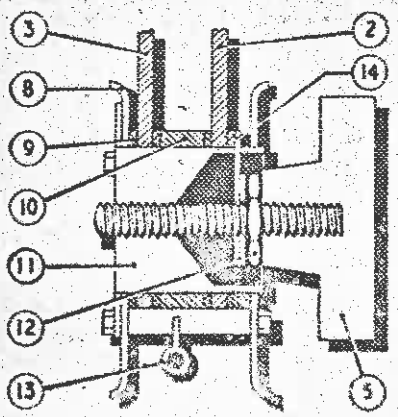
28. The magnetos are interconnected with the throttle control lever in such a manner that the ignition is fully advanced when the throttle has reached the one-third open position. The carburettor hot/cold air-intake control is situated on the instrument panel and is manually-operated. The layout of the control is illustrated in fig. 10.

Engine control box

29. The hand control box (*fig.* 9) embodies the throttle and mixture control levers, a friction adjuster, and a cabin heating control knob. It comprises two side plates, welded to the fuselage cross member positioned beneath the instrument panel, and a cover plate. The throttle and mixture control levers are fitted between the side plates and are interspaced by friction washers and a spacer, all of these items having a large hole by which they are mounted on a flanged barrel. The barrel is drilled, threaded and recessed internally, and is fixed by its flange, which is bolted to the starboard side plate. A star washer is fitted into slots in the recessed portion of the barrel, adjacent to the port side plate, and is held in position by a nut fitted on to a screwed rod. This screwed rod passes through the whole assembly and picks up on the threaded portion of the barrel at one end and a friction adjuster hand wheel at the other end.

30. Friction between the levers is adjusted by rotating the hand wheel. Clockwise rotation causes the screwed rod to extend beyond the starboard side plate, taking the star washer lock-nut with it. The star washer is thus forced along the slots in the barrel to tighten the control levers, and the shims between them, against the starboard side plate. The tightening action is limited by the star washer coming to the end of the slots in the barrel. Anti-clockwise rotation of the hand wheel gives a reverse effect.





1 MIXTURE LEVER SAFETY CONTROL BRACKET
2 THROTTLE CONTROL LEVER
3 MIXTURE CONTROL LEVER
4 SIDE PLATE
5 FRICTION ADJUSTER KNOB
6 MIXTURE CONTROL SHAFT
7 THROTTLE CONTROL SHAFT
8 SIDE PLATE
9 FRICTION WASHERS
10 SPACER
11 ADJUSTER BARREL
12 STAR WASHER LOCKNUT
13 GUIDE FOR CABIN HEAT CONTROL
14 STAR WASHER

Fig. 9. Engine controls

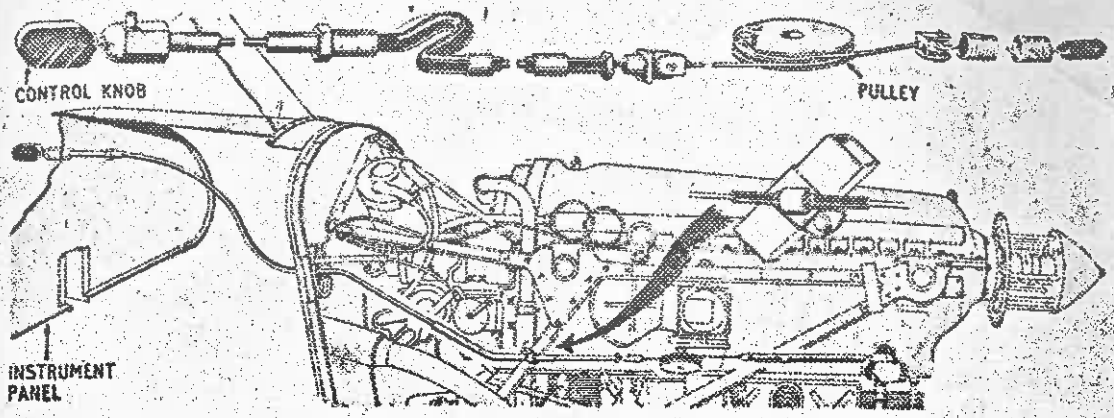


Fig. 10. Carburettor hot/cold air-intake

31. At the forward end of the side plates are holes which house two shafts extending to port, where they pass through two holes, in a bearing bracket welded to, and extending forward of, the fuselage cross-member (*fig.* 9). A short lever is fitted over the end of each shaft, between the control box side plates, and bolted in position. A similar lever is bolted to the other end of each shaft. The forward lever at the control box end connects to the throttle control lever, by a link; the rear lever similarly connects to the mixture control lever. The short levers at the other end of the control shaft connect to the main control rods running forward, through the firewall, to the engine.

32. A bracket is bolted to the throttle control lever, just above the connecting link, and projects across in front of the mixture lever. When the throttle lever is at CLOSED, this bracket bears on the mixture lever and retains it at the RICH position (*para.* 27); it will also move the mixture lever from WEAK to RICH as the throttle lever is moved from OPEN TO CLOSED.

33. A tube, welded to brackets between the bottom of the control box side plates, forms a guide for the push-pull control knob of the cabin heating system (*para.* 34). A flanged cover plate is fitted over the whole side plates and levers assembly, the flanges being secured under the starboard side instrument panel cubby hole frame, while the base is screwed to an anchor bracket on the cabin heating control tube.

CABIN HEATING SYSTEM

34. A warm air conveyor tube extends up from an intensifier tube in the exhaust system (*para.* 35) to a duct which is bolted around a hole in the starboard side of the firewall. The duct embodies a deflector plate on the cabin side of the firewall, and a tubular outlet and butterfly valve on the engine side of the firewall. The butterfly valve is connected to the cable from the cabin control knob, and when the latter is pulled the valve rotates through 90 deg. to allow warm air to enter the cabin, where it is diffused by the deflector plate.

EXHAUST SYSTEM

35. The exhaust system (*fig.* 11) is designed so that the exhaust gases are utilised to warm clean air for cabin heating purposes prior to it being guided to atmosphere. Four exhaust stub pipes, one from each cylinder, extend down to an exhaust manifold which is, in effect, a cabin heater muff. The manifold is fabricated in three sections, the forward two sections being attached to the stub pipes, while the aft section incorporates a "fish-tail" exhaust outlet and an outlet for an intensifier tube, which is attached to the cabin heat conveyor tube (*para.* 34). The intensifier tube extends forward through the manifold to project slightly forward of the forward manifold section. Cold atmospheric air enters the intensifier tube at the inlet forward of the manifold and, while passing through the tube, becomes warmed by the exhaust gases surrounding the tube inside the manifold. A pipe from the centre section of the manifold connects to the carburettor and acts as a carburettor heater exhaust inlet pipe. The carburettor heater exhaust outlet pipe is a separate item divorced from the main engine exhaust system.

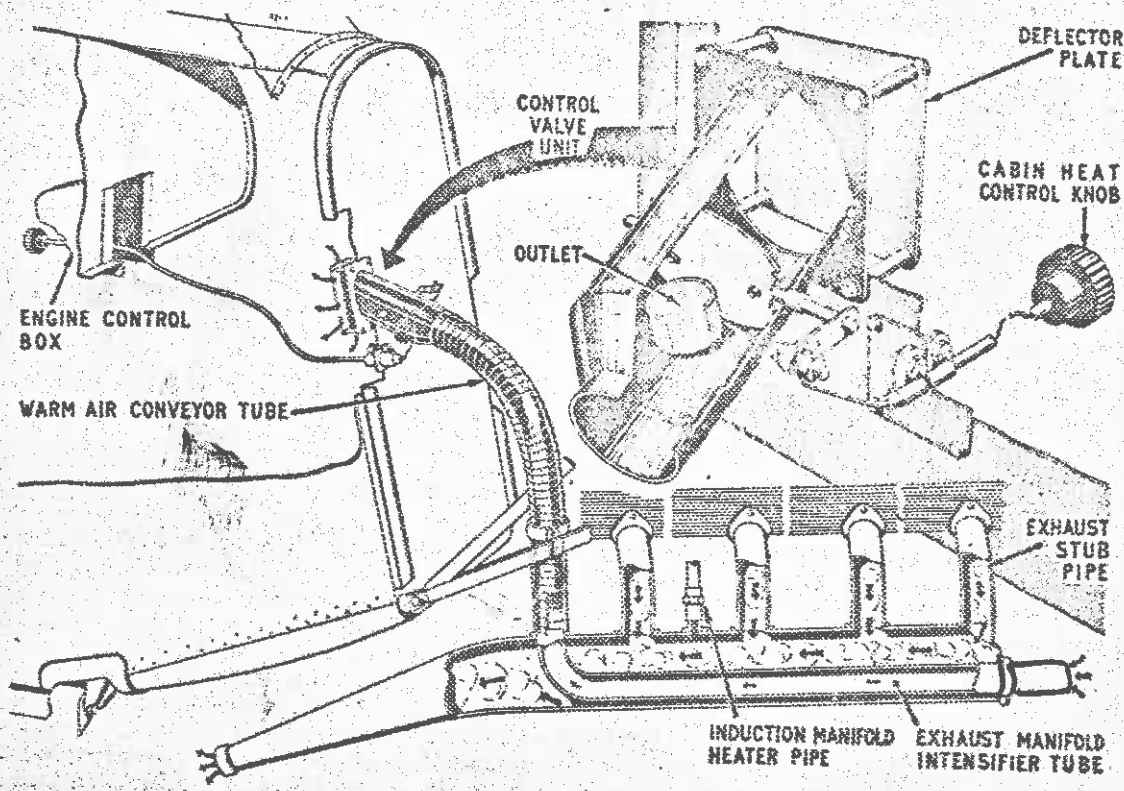


Fig. 11. Cabin heating and exhaust systems

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June, 1946

SECTION 11

EQUIPMENT INSTALLATIONS

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Section 11

EQUIPMENT

LIST OF CONTENTS

LIST OF ILLUSTRATIONS

Introduction

1. This Section deals with equipment that is not already described in the other Sections of this Volume, or in other Air Publications (*see the List of Associated Publications, at the beginning of this book*).

2. The Auster Mk. 6 is primarily used for army reconnaissance duties, but it can also be adapted for photographic work (Mod. 195, F.24 camera installation or Mod. 402 and 406, F.102 camera installation) glider towing (Mod. No. 230), and night flying training during daytime (Mod. No. 243 for Home Commands or Mod. No. 282 for Overseas Commands). Desert equipment can also be carried (Mod. No. 214). It should be noted that when either the F.24 camera, or an auxiliary fuel tank (Mod. No. 219), is fitted, the observer's seat is removed, and no other special equipment can be carried in the rear of the cabin. The disposition of this equipment is illustrated in fig. 1.

Instrument panel and mounting

3. The instrument panel (*Sect.* 1, *fig.* 1) is bolted to lugs on a bow-tube and cross-member of the fuselage. The panel assembly comprises a pressing in the form of a contour frame, having a main instrument panel on the port side, and a separate sub-panel on the starboard side, which fits into an aperture on the main pressing. The main panel incorporates the flying instruments, engine instruments, and general electrical switches. The sub-panel embodies an oil temperature gauge (Mod. No. 225), master change-over switch, voltmeter, and ammeter: R.C.A.F. aircraft have a power-failure warning lamp instead of the ammeter. The complete instrument panel can be illuminated by a cabin floodlamp mounted in the cabin roof, or, if this lamp fails, by an emergency lamp at the top of the panel itself.

Pressure head system

4. A Mk. 7A pressure head is fitted to the port main plane jury strut (*fig.* 2), at 0 deg. angular setting to the aircraft datum line. The pipes from it run up from the jury strut, into the main plane, inboard along the front face of the front spar, then down the forward frame of the port door and inboard to the instrument panel. The static line is connected to both the air-speed indicator and altimeter, and the pressure line is connected direct to the air-speed indicator. The static head is fitted with a special calibrating ring to ensure accurate A.S.I. readings, and the correct position of this ring (*fig.* 2) should always be maintained. The pipe joints between the main plane and the fuselage are at the top of the door post.

Venturi system

5. The suction connection at the bottom rear of the turn-and-bank indicator is connected by pipe line to a venturi which is on the port side of the fuselage, adjacent to the instrument panel.

PILOT'S SEAT

Seat

6. The pilot's seat is illustrated in fig. 3. It is a fabricated structure comprising a seat frame, squab frame, armour plating, and seat and squab cushions. The complete assembly is mounted, at three points, to a seat-raising mechanism attached to the floor.

7. The seat and squab frames are of welded steel-tube construction, and are bolted to side plates that form the two rear attachment points to the seat-raising mechanism. The frames are braced together by a diagonal bracing tube on each side of the seat. Threaded spigots are embodied in the frame tubing for the bolts which secure the side plates and the diagonal bracing tubes. A flanged bracket is welded centrally to the underside of the seat, near the front, and this forms the single forward attachment point of the seat to the seat-raising mechanism. A base plate is riveted to the seat frame, and this plate is drilled and provided with anchor nuts, for the attachment of the armour plating. A back plate is similarly riveted to the squab frame, to which the armour plate can be bolted. A guide tube for the shoulder straps is welded to the top of the squab frame.

8. The seat cushion has a flap at its forward underside, and this is trapped between the seat base plate and the armour plating, when the latter is fitted; when armour plating is not fitted, the seat is left loose on the base plate. The squab cushion also has a flap, which fits over the top of the squab frame, and thus secures the cushion in position; the flap has a cut-out to allow for the safety harness shoulder straps. On R.C.A.F. aircraft, a pad is clipped to the safety harness guide tube, at the top of the squab, to act as a crash-protection pad for the observer's head.

Seat-raising mechanism

9. The seat-raising mechanism is shown in fig. 3, and basically comprises a hand wheel which causes movement of a trunnion, and, via a series of bell-crank levers and two springs, moves the seat to various positions on a fore-and-aft arc.

10. The hand wheel (3) has a part-plain and part-threaded shaft, the plain length being held in a trunnion (13) which is secured between brackets on the fuselage shock truss, and the threaded length extends through a threaded trunnion (12). Movement of the threaded trunnion in an aft direction along the threads is limited by a washer secured at the end of the shaft. Two eyebolts are attached one on each side of the threaded trunnion, and are welded to a short cross-tube underneath. This tube has a bell-crank lever (14) welded to each end, and pivots between two brackets on the rear of the fuselage shock truss. The upper arm of each bell-crank lever connects to the flanged bracket beneath the front of the seat frame (*para.* 7), and the lower arms connect to the transverse tube of a link frame (16). The cross-tube has, additionally, two lugs on its aft side that each retain a coil spring (15). These springs extend aft to lugs (10) on another cross-tube, that forms part of a rear lifting-lever assembly.

11. The rear cross-tube is longer than the front one, and pivots between two brackets (9) bolted to the floor; these brackets, together with the trunnion (13) on the centre of the shock truss, form a three-point triangular fixture for the seat. A bell-crank lever is welded to each end of the tube, the top arms of which connect to the side plates of the seat frames. The lower arms connect to a transverse tube which forms the rear member of the link frame (16). The front and rear transverse tubes of the link frame are interconnected by welded diagonal members.

12. Rotation of the hand wheel in a clockwise direction moves the threaded trunnion aft, which rotates the front cross-tube and bell-crank levers (clockwise, viewed from port), so causing the front of the seat to be lowered in an aft direction. Simultaneously, the link frame will have turned slightly (clockwise, viewed from port) and moved the rear bell-crank levers in the same direction to lower the rear part of the seat by the same amount. During these motions, the coil springs will have expanded, and when the hand wheel is turned anti-clockwise, the coils contract to assist the raising of the seat.

OBSERVER'S SEAT

R.A.F. aircraft

13. The observer's seat (*fig.* 4) is a welded tubular structure upholstered by seat and squab

cushions. The seat portion is reinforced by diagonal tubular members which radiate from a central vertical tube beneath the seat, to terminate at three points where rollers are fitted. The central vertical tube fits over a spigot secured to the cabin floor, so that the complete seat can rotate on the rollers, about the spigot; a light alloy circular track is fitted to the floor, beneath the seat. Two Oilite bushes are embodied between the central tube of the seat, and the spigot.

14. The roller assembly on the front leg is specially adapted to act as a locking device, and the seat may be locked facing either of two positions. A spring-loaded catch lever is bolted to the leg, and depression of this lever, against its spring, causes the bottom part of the lever to withdraw a plunger towards the seat pivot point. When the lever is released, the plunger is returned by the spring to its normal position, so that its end projects beyond the front of the leg. Two brackets are fixed to the floor, around the circular track, and a hole in each of these engages the end of the plunger and locks the seat. The plunger, besides forming part of the seat lock, also acts as the axle for the roller.

R.C.A.F. aircraft

15. The observer's seat in R.C.A.F. aircraft is a welded tubular structure, having a semi-circular back frame, and a square seat frame. The seat frame is welded into the back frame at three corners of the square, and the fourth corner extends to the front of the seat. A short leg is provided at each corner of the seat frame, and has a circular foot which fits under an anchor plate bolted to the floor. The seat is fixed facing midway between starboard and aft. Upholstery comprises a seat cushion, secured to a seat plate which is screwed to gussets on the frame, and a back pad which is laced around the top members of the back frame.

Safety harness

16. Standard Mill's type, 4-strap safety harness (*fig. 3 and 4*) is provided for the pilot in all aircraft, and also for the observer in all R.A.F., and some R.C.A.F. aircraft. On the pilot's seat, the two shoulder straps are each attached to a lug at the rear base of the seat squab, by a cable, pin, and split pin; the two leg straps are each secured to the rear seat-mounting side plates by a shackle, pin, and safety pin. The shoulder, and leg, straps of the observer's seat harness are attached by a shackle, pin, and split pin to lugs welded to the seat back, and to the junction of the seat back and seat itself. When in use, the safety harness straps for both pilot and observer are secured by a quick-release pin assembly.

17. Either of two types of safety harness (*fig. 5*) may be fitted to the observer's seat in R.C.A.F. aircraft. As an alternative to the Mill's 4-strap harness described in para. 16, some aircraft have a Mill's lap strap harness, type D. Three lugs are welded to the seat structure for the attachment of both types of harness, but when the lap type is fitted, only two of the lugs are used.

Pyrotechnics

Signal pistol and cartridges

18. A signal pistol is carried in a mounting secured to the floor, to starboard of, and slightly behind, the pilot's seat. No blast tube is provided, and the pistol must be removed from its mounting before it can be fired. The mounting is a bayonet collar fixture from which the pistol can be removed by sliding the release catch on the pistol upward, twisting the pistol anti-clockwise, and then withdrawing. Four cartridges for the pistol are carried in a rack at the front face of the shock truss, adjacent to the pilot's seat.

F.24 camera installation

General

19. Some R.C.A.F. aircraft are equipped with a type F.24 camera, and the camera can also be fitted to R.A.F. aircraft to special order only, under Mod. No. 195. The equipment comprises the camera, a remote control unit, and associated electrical wiring. Details of the electrical wiring in the aircraft are included in Section 6, and the Air Publication which deals with the camera equipment itself is quoted in the List of Associated Publications, at the beginning of this book. The camera can be used for horizontal or vertical photography.

Installation

20. The camera (*fig. 6*) is mounted in an adjustable carrier at the rear of the cabin, in place of the observer's seat. It is electrically operated by a remote control unit (1) on the forward starboard side of the cabin, above the door, in conjunction with an electric motor (5) mounted adjacent to the camera. Apertures are provided in the rear cabin floor, and the port side of the fuselage, to enable the camera to be used vertically or horizontally; when the camera

is not in use, cover plates (7 and 12) are fitted over these apertures. When the camera is being prepared for use prior to take-off, the respective cover plate must be removed and stowed in a bag (3) at the rear of the cabin, on the starboard side. A draught-excluding bag (11) must also be fitted over the camera lens and around the inside frame of the aperture, as shown in fig. 6.

21. A data card (14) is provided adjacent to the camera, on the port top longeron, and this gives details of the correct camera position (vertically and horizontally) in the carrier, relative to the various camera lens which may be fitted. The carrier is a braced metal structure, bolted to the floor, and consists of two end frames and two cross-beams (6). The vertical members of the end frames have a series of holes (each one being numbered), and the cross-beams have a hole at each end to correspond with those of the vertical members; locking pins are attached by a cord to each corner of the carrier, for fixing the cross-beams at the desired height. The front cross-beam has lettered markings to indicate the correct transverse position for the camera, when it is fitted with different lens; the markings are at the port end of the beam, and the port extremity of the camera mounting forms a guide point for the transverse location.

22. The camera can be readily adjusted from a vertical to a horizontal position (or vice versa) by unlocking the clamping nut at the ratchet on the forward side, and turning the camera. The clamping nut must, of course, always be finally locked. The camera can be moved horizontally by sliding the camera mounting, as required. The method of removing the camera and its mounting from the carrier is illustrated in Section 5.

23. Angular setting and sighting points are provided on the port rear lift strut and on the port cabin window, adjacent to the pilot's seat, for horizontal photography only. The angular markings (9) are spaced along the lift strut, and range from 10 deg., towards the top of the strut, to 60 deg., near the bottom. A sighting bead assembly (10) is clamped to the lift strut, and can be moved along the strut after slackening the clamping screw. The sighting bead assembly comprises a clamping block and the bead sight itself. The latter is a flanged plate having a rod secured between each end, with a bead at both extremities, and a degree scale riveted to the upper face of the plate. The markings on the scale are similar to those on the lift strut. The rod passes through the clamping block, and the bead sight can be locked at any fore-and-aft position in the clamping block by a clamping screw which bears on the rod. A cursor line is etched on the centre of the clamping block, for use in conjunction with the angular markings on the scale. The sighting bead assembly is correctly located on the lift strut when all the angular markings are identical, that is, when the bead sight is positioned and locked in the clamp, say, at 30 deg., and the whole assembly is clamped over the same degree mark (30 deg.) on the lift strut.

24. Two sighting rings (2) are painted on the port cabin window, for use in conjunction with the sighting beads on the lift strut. The upper ring, with the forward bead, is used for all angular settings except the 60 deg. one; for a 60 deg. setting the lower ring must be used, in conjunction with the rear bead of the sight assembly.

K.20 camera—R.C.A.F. aircraft

25. This camera is provided on some R.C.A.F. aircraft, but it is not installed in those R.C.A.F. aircraft which have a type F.24 camera. The K.20 is a hand-held and hand-operated camera, and is stowed, when not in use, on a bracket on the starboard side of the cabin. The rear, port window embodies a sliding panel for use with the K.20 camera.

Glider towing installation

26. The aircraft can be equipped for glider towing to special order only, under Mod. No. 230. The equipment comprises a glider-towing beam, which incorporates a quick release hook cable-controlled from the cabin, and an A.1134A installation for inter-communication between the pilots of the towing aircraft and the glider. The A.1134A installation is described in Section 6.

27. The towing beam (*fig. 7*) is a braced, tubular structure in V-form, and has the towing cable release hook bolted to the junction of its members, at the rear. It is fitted beneath the fuselage, being bolted to spigots at the bottom of frame 6, and to the tail wheel pivot arm axle. For this purpose, the standard tail wheel axle is replaced by a longer axle.

28. Side plates (8) are welded to the aft end of the towing beam, which provide an attachment for both the cable release hook and a terminal block for the A.1134A system. The release

hook is a Slingsby type S.F. 11, which has been slightly modified by shortening the hook-operating lever, and by adding extra springs and levers. The release-hook unit comprises a welded casing which houses a cranked spring-loaded lever (11) connecting to a hook (9). The hook is bolted between the side plates of the casing so that it is free to pivot about the bolt, and the spring-loaded lever is secured to pivot about its cranked point. The rear end of the casing is recessed to house the ring from the end of the towing cable; it has a pin welded across the bottom of the recess to provide a more positive locking for the ring. A larger diameter ring is welded across the rear of the casing, to ensure that the towing cable is assembled and released in a true fore-and-aft direction.

29. The spring-loaded lever (11) is connected to an external slotted lever (13) by a pin and split pin, the pin being free to slide along the slot in the lever. The fixed end of the external lever is bolted to the spigot of another lever assembly forward of the hook, which pivots between the two lower side plates (8) of the towing beam. The lever arm (7) of this assembly extends upward and slightly aft, and has two holes at the top end, one for a coil spring, and the other for the operating cable. The opposite end of the coil spring is attached to a pin welded into the port member of the towing beam. The operating cable has a spring-loaded turnbuckle attachment (6) to the release hook lever, and runs forward, through guide bushes secured to the underside of the fuselage frames and a tube which extends up into the cabin, to a wooden ball control knob which rests in a dished seating just forward of the fuselage shock truss, to starboard of the pilot's seat.

30. When the control knob is pulled, the initial movement of the cable is absorbed by the spring inside the turnbuckle, until the energy of the spring is sufficient to spring the control lever forward; at the same time the slotted lever (13) is moved in the same direction. This causes the spring-loaded crank lever (11) in the hook casing to pivot and bear down on the hook, which pivots and releases the towing cable.

DESERT EQUIPMENT

31. Desert equipment is provided to special order only (Mod. No. 214), and the equipment can only be carried in place of an observer. It consists of emergency equipment for use when the aircraft makes a forced landing on uninhabited terrain. The equipment is packed in a single rectangular container in the rear of the cabin, bolted to the floor on the starboard side. Weatherproof covers are lashed to the rear seat. The contents of the container are illustrated and listed in fig. 8.

TWO-STAGE DAY/NIGHT EQUIPMENT

32. Amber or blue two-stage day/night equipment is supplied to special order only, under Mod. No. 243 (Home Commands) or Mod. No. 282 (Overseas Commands) respectively. It enables the pupil pilot to do night flying training during daylight, and comprises a number of transparent coloured panels, which (when in use) are fitted to the inside of the cabin windows, and a pair of contra-amber or contra-blue goggles for use by the pupil pilot. The instructor does not wear such goggles, and therefore has almost unrestricted vision. The arrangement of the panels is shown in fig. 9. When not in use, they are stowed in a bag at the rear of the cabin, on the starboard side, and the goggles are stowed opposite, in a bag on the port side.

F.102 CAMERA INSTALLATION

General

33. The F.102 camera may be fitted to this aircraft by the incorporation of Mods. 402 and 406; the former being the fixed fittings and the latter the removable items. The equipment comprises a remote control unit, a camera mounted in a pod, suspended from the lower edge of the fuselage just behind the port door (*fig.* 10), an adjustable bead sight mounted on the port rear lift strut, and the associated electrical wiring. Details of the electrical wiring are given in section 6 of this publication, and A.P.1355C, Vol. 1, Sect. 1, describes the camera, which may be used for horizontal and vertical photography.

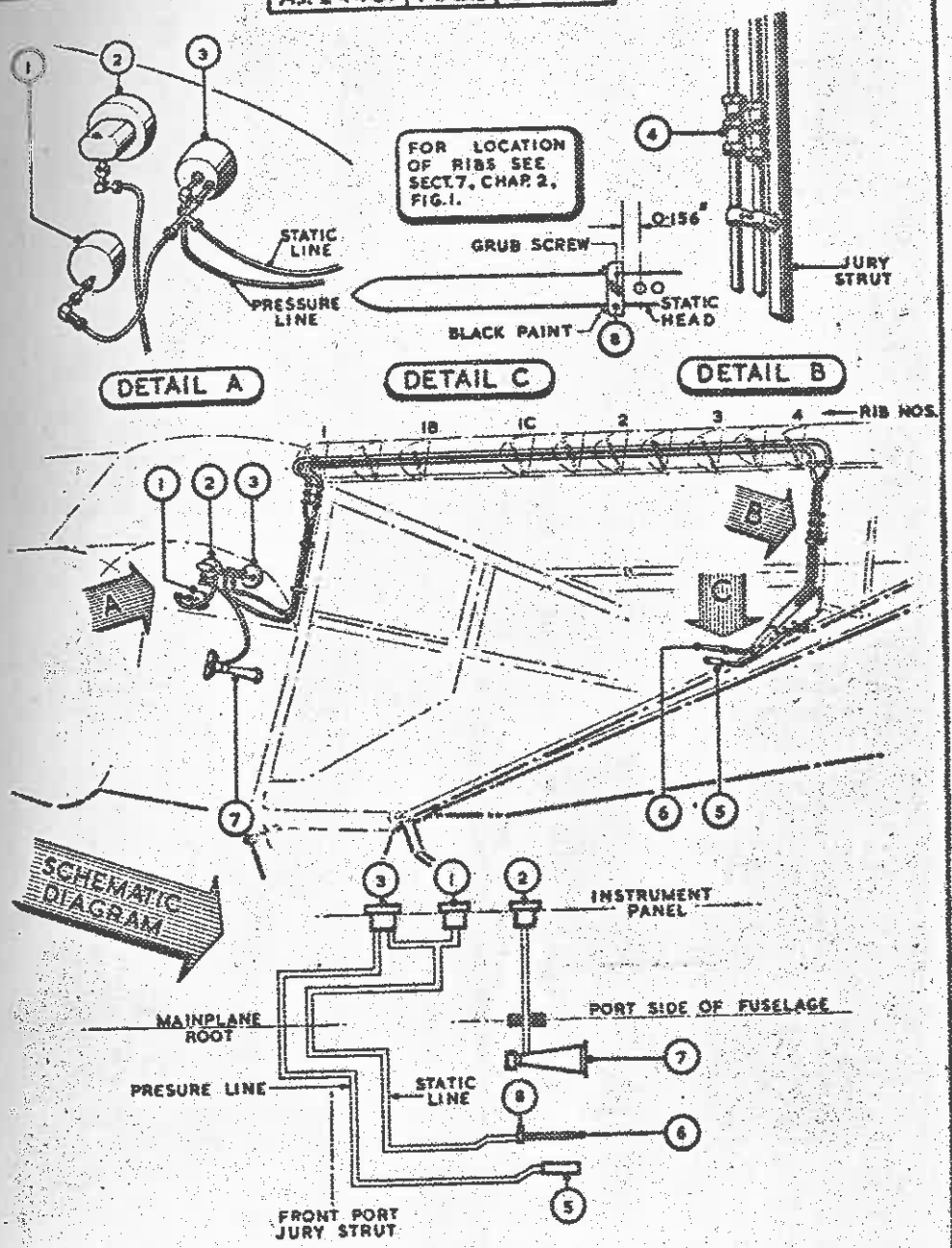
Installation

34. The camera is fitted in an anti-vibration mounting, inside a pod, which is slung from trunnions engaging slotted blocks on a beam at the lower edge of the fuselage aft of the port door. This beam is riveted to brackets which are clamped to the lower extremities of the port doorpost and the diagonal bracing member, immediatly to the rear of it. A triangular plate, riveted to the beam and clipped to the doorpost, carries a dummy

plug for stowing the camera cable when the pod is removed. The Type 35 No. 7 camera control unit is mounted above the starboard door, the electrical supply being taken from the positive terminal of T.B.6 via a 10 amp fuse and a switch on the instrument panel immediately to port of the engine controls. Angular setting of the camera between 0 deg. (horizontal) and 60 deg., in 10 deg. increments, is made by rotating the central portion of the pod and locking in position with a spring-loaded plunger. The camera may also be set at 90 deg. (vertical). To prevent mud and dust obscuring the camera window during take-off, a rip-off patch is fitted over the window and the rip-cord passed through the port door—this patch must be ripped off before attempting photography.

35. Angular setting and sighting points are provided on the port rear lift strut and on the port cabin window, adjacent to the pilot's seat, for horizontal photography only. The angular markings are spaced along the lift strut, and range from 10 deg. towards the top of the strut to 60 deg. near the bottom. A sighting head assembly is clamped to the lift strut, and can be moved along the strut after slackening the clamping screw. The sighting bead assembly comprises a clamping block and the bead sight itself. The latter is a flanged plate having a rod secured between each end, with a bead at both extremities, and a degree scale riveted to the upper surface of the plate. The markings on the scale are similar to those on the lift strut. The rod passes through the clamping block, and the bead sight can be locked at any fore-and-aft position in the clamping block by a screw. A cursor line, etched on the centre of the clamping block, is used in conjunction with the scale. The sighting bead assembly is correctly located on the lift strut when all the angular markings are identical, that is, with the camera pod set at say 30 deg. the bead sight is positioned and locked in the clamp at the 30 deg. line, and the whole assembly is clamped between the same degree markings (30 deg.) on the lift strut.

36. Four sighting rings are painted on the port cabin window, for use in conjunction with the sighting beads on the lift strut. A data plate is positioned on the fuselage woodwork above these rings and indicates which end of the bead sight and which ring to use for the appropriate camera angle.



1	ALTIMETER	5	PRESSURE HEAD
2	TURNING INDICATOR	6	STATIC HEAD
3	AIR-SPEED INDICATOR	7	VENTURI
4	CONNECTING UNIONS	8	CALIBRATING RING

FIG. 2 PRESSURE HEAD AND VENTURI SYSTEMS FIG. 2

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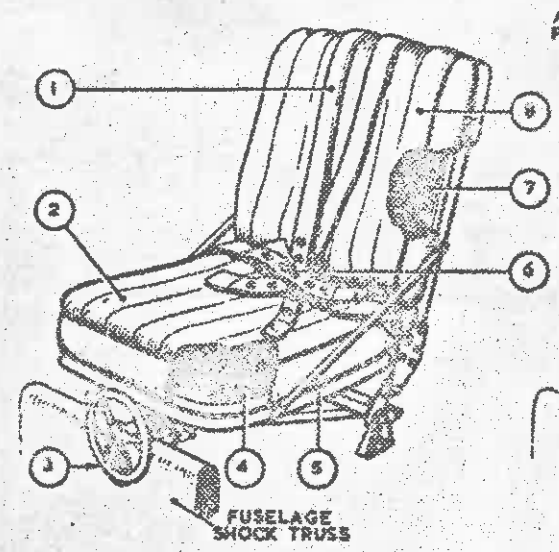
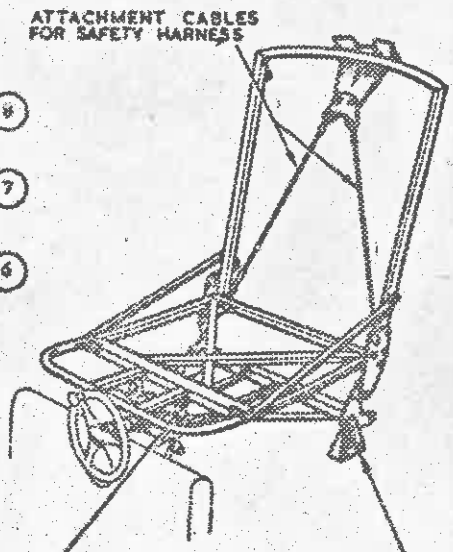
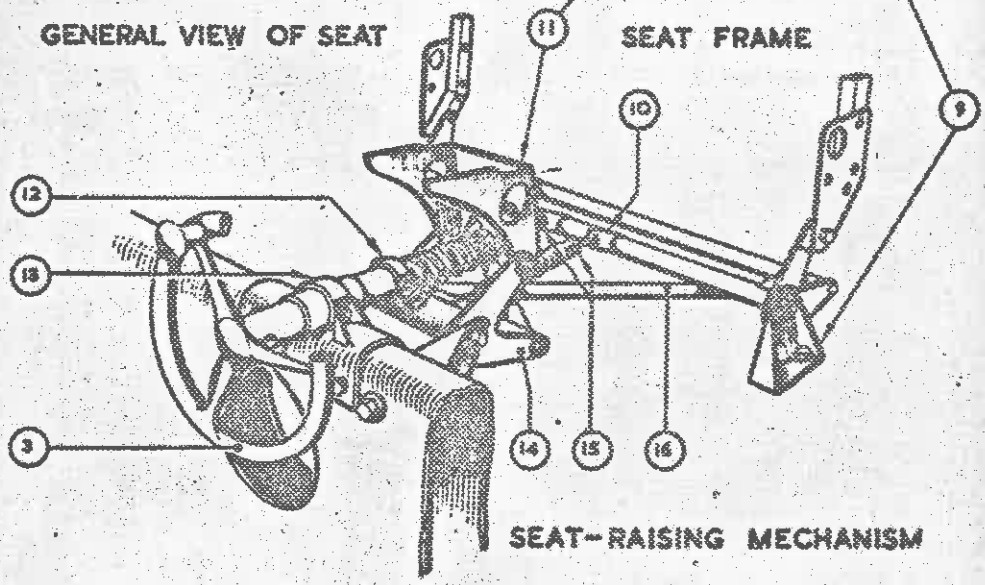


GENERAL VIEW OF SEAT



SEAT FRAME



SEAT-RAISING MECHANISM

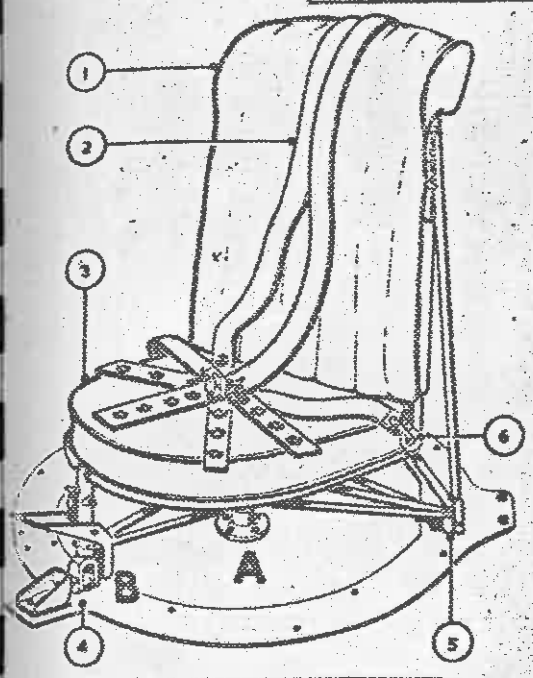
1 MILLS TYPE SAFETY HARNESS
2 SEAT CUSHION
3 SEAT-RAISING HANDWHEEL
4 SEAT ARMOUR PLATING
5 SEAT BASE PLATE
6 HARNESS RELEASE PIN
7 SQUAB ARMOUR PLATING
8 SQUAB CUSHION

9 REAR SUPPORT BRACKET
10 REAR LIFTING LEVER ASSEMBLY
11 FRONT SUPPORT BRACKET
12 BOTTOM TRUNNION
13 TOP TRUNNION
14 FRONT LIFTING LEVER ASSEMBLY
15 STRINGS
16 LINK FRAME

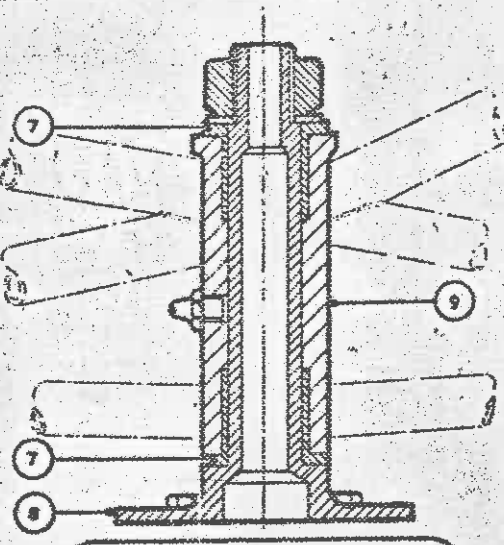
PILOT'S SEAT AND HARNESS

FIG. 3

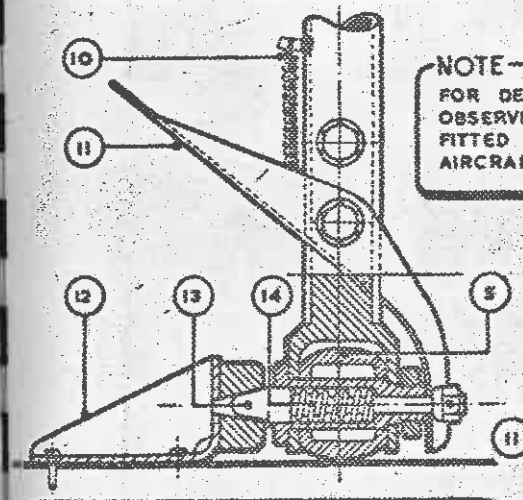
See "Conversion" Mark.



GENERAL VIEW OF SEAT

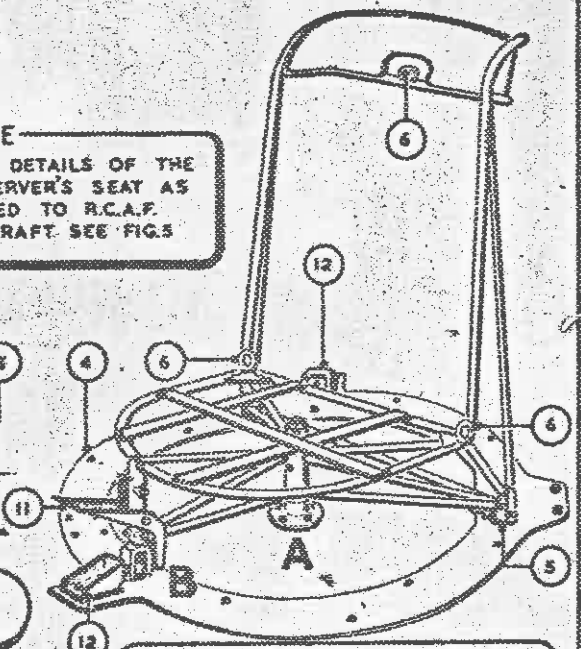


SECTION THROUGH CENTRE TUBE AT **A**



SECTION THROUGH ROLLER AND CATCH AT **B**

NOTE
FOR DETAILS OF THE OBSERVER'S SEAT AS FITTED TO R.C.A.F. AIRCRAFT SEE FIG.5

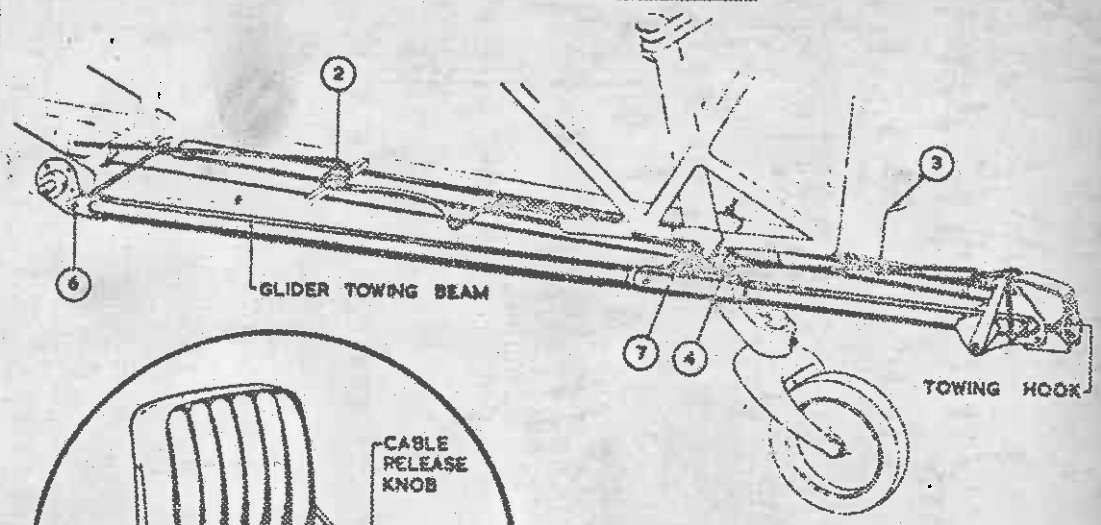


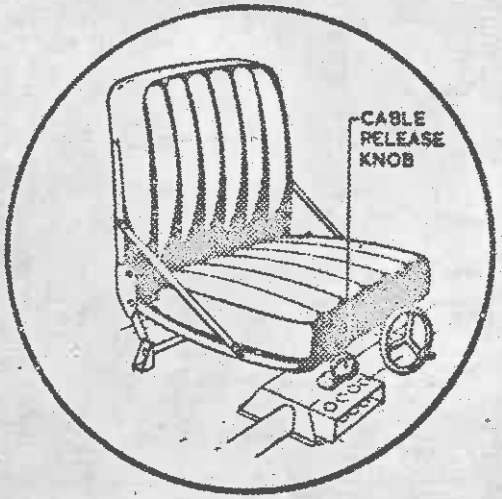
SEAT FRAME AND TRACK

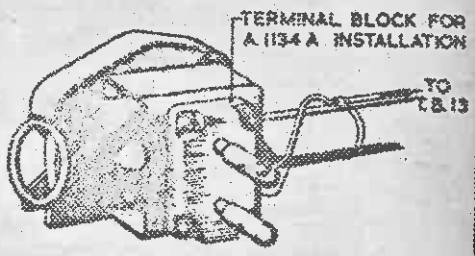
1 SQUAB CUSHION
2 MILLS TYPE SAFETY HARNESS
3 SEAT CUSHION
4 SEAT - ROTATING TRACK
5 ROLLER
6 SAFETY HARNESS ATTACHMENT LUGS
7 OILITE BUSHES

8 SPIGOT
9 SEAT - BEARING SLEEVE
10 LEVER RETURN SPRING
11 LOCKING CATCH LEVER
12 SEAT LOCKING BRACKET
13 SEAT LOCKING PLUNGER PIN
14 PLUNGER SPRING

FIG. 4 — OBSERVER'S SEAT AND HARNESS - R.A.F. — FIG. 4







VIEW ON STARBOARD SIDE OF TOWING HOOK

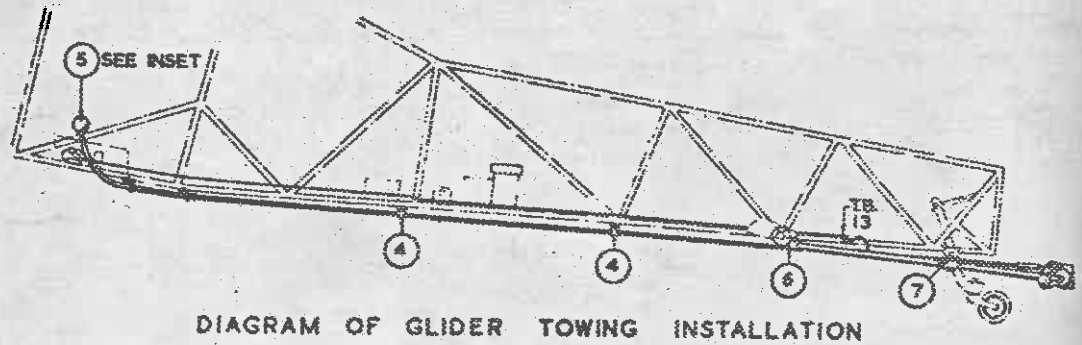


DIAGRAM OF GLIDER TOWING INSTALLATION

★1 TRESTLE AIRCRAFT (SECT. 4 CHAP. 3)
2 DISCONNECT A.1134 A CABLE AT TERMINAL BLOCK (T.B.13). PULL CABLE AFT OUT OF FUSELAGE
3 UNSCREW TURNBUCKLE
4 REMOVE CIRCLIPS FROM FAIRLEAD BRACKETS & WITHDRAW SPLIT PINNED BUSHES
5 PULL CABLE OUT OF AIRCRAFT FROM CABLE RELEASE KNOB
6 REMOVE TWO NUTS AND WITHDRAW BOLT FROM CROSS TUBE
7 SUPPORT TOWING BEAM, REMOVE TWO NUTS AND BASE TOWING BEAM SIDE MEMBERS AWAY FROM TAIL WHEEL PIVOT ARM AXLE

★ NOT ILLUSTRATED

NOTE:—
IT IS NOT NECESSARY TO EFFECT OPERATIONS 4 & 5 IF THE TOWING BEAM IS TO BE REFITTED BEFORE THE AIRCRAFT IS AGAIN FLOWN
IF IT IS DESIRED TO FLY THE AIRCRAFT WITHOUT THE GLIDER TOWING BEAM, THE TAIL WHEEL PIVOT ARM AXLE MUST FIRST BE REPLACED BY A SHORTER AXLE (PART No. K.12579). THE ORIGINAL SECURING NUTS CAN BE UTILISED

GLIDER TOWING BEAM — MOD. No. 230

FIG. 18

AMENDMENT RECORD SHEET

If you wish to be certain of receiving amendments to this Manual please complete, cut-out and post the appropriate card below, Do this on receipt of the Manual.

No. 23

Change of Address or Ownership

Holder's Name .....

Address .....

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AIR COMMODORE A. H. WHEELER,
WHISTLEY BRIDGE FIELD,
WHISTLEY GREEN,
READING, BERKS., RG10 0RA.
TEL: TWYFORD (STD 0734) 341220

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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. No.	AMENDED BY	DATE
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The introduction of any amendment or revision not certified in accordance with British Civil Airworthiness Requirements Chapter A6-2 will invalidate the statement of certification on the Frontispiece. Amendments or revisions embodied in this manual, which have been certified under an approval authorisation other than that applicable to the initial certification must be recorded on separate record sheets.