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Leading Particulars

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NOTE TO READERS

The subject matter of this publication may be affected by Defence Council Instructions, Servicing Schedules or 'General Orders and Modifications Leaflets' in this AP, in the associated publications listed below, or even in some others. If possible, Amendment Lists are issued to correct this publication accordingly, but it is not always practicable to do so. When an Instruction, Servicing Schedule or leaflet contradicts any portion of this publication, the Instruction, Servicing Schedule or leaflet is to be taken as the overriding authority.

Each leaf bears the date of issue and, when applicable, the number of the Amendment List with which it was issued. New or amended technical information on new leaves which are inserted when this publication is amended will be indicated by a vertical line in the margin. This line merely denotes a change and is not a mark of emphasis. When a Section of Chapter is issued in a completely revised form, the line does not appear.

The reference number of this publication was altered from AP 4308A to AP 101B-5510-1 in April, 1972. No general revision of page captions has been undertaken, but the code number appears in place of the earlier AP reference on new or amended leaves issued subsequent to that date.

This publication is now unclassified; new or revised leaves will not carry a security marking. AL 62 called for all security markings to be deleted from pages already issued. Holders should take this action as soon as reasonably possible, and in any event before this publication or any part of it is disposed of as waste.

LIST OF ASSOCIATED PUBLICATIONS

				AP
Aircraft pneumatic equipment-miscellaneous	...	...	...	105C-0001-1B6
Electrical equipment manual	...	...	...	4343 Series
Engineer publications, list of	...	...	...	2462A
Engine handbook - Gipsy Major Mk.8	...	...	...	1500B
External finish of aircraft	...	...	...	119A-0601-1
Fuel pumps, Aero-engine	...	...	...	2241
Hobson carburettor, Type A.1 48H	...	...	...	2657 Series
Hydraulic equipment manual	...	...	...	1803 Series
Ignition equipment, Aero-engine	...	...	...	1374
Instrument manual, general instruments	...	...	...	1275A
Instruments, navigational	...	...	...	1275B
Propellers, Fairey-Reed	...	...	...	102P-1200-16A
Radio equipment, Concise details of	...	...	...	116A-0102-1
RAF Engineering				
Aero-engines and power plants	...	...	...	1464C
Aircraft	...	...	...	1464D
Ground equipment	...	...	...	1464G
Parachute and parachute harness	...	...	...	1182A
"S" Type cartridge starter (Chipmunk T Mk.10)	...	...	...	103D-0101-16C
Wheels equipment and haulage accessories	...	...	...	2337
Lifting equipment and haulage accessories	...	...	...	2817A

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AL 59, Apr.72

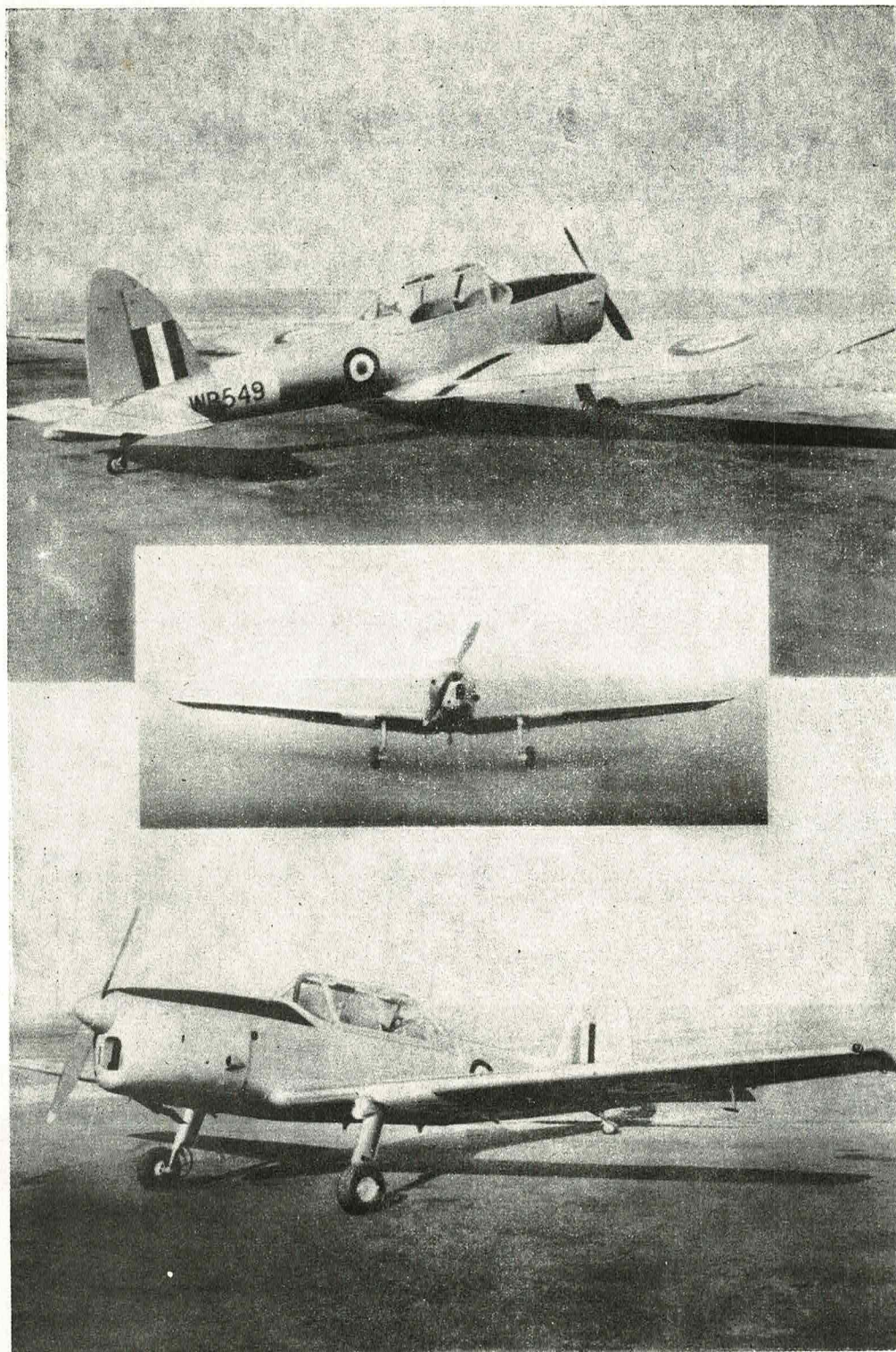
LAYOUT OF A.P.101B-5510-1

CHIPMUNK T MK.10 AIRCRAFT

<u>Code</u>	<u>Title</u>	<u>Previous designation</u>
101B-5510-1	Aircraft servicing manual	A.P.4308A, Vol.1
101B-5510-2	General orders and modifications	A.P.4308A, Vol.2
101B-5510-3A	Schedule of spare parts	A.P.4308A, Vol.3, Part 1
101B-5510-3B	Appendix 'A'	A.P.4308A, Vol.3, Part 2
101B-5510-3C	Scales of unit equipment	A.P.4308A, Vol.3, Part 3
101B-5510-3D	Scales of servicing spares	A.P.4308A, Vol.3, Part 4
101B-5510-4)	Servicing schedules	A.P.4308A, Vol.4
101B-5510-5)		A.P.4308A, Vol.5
101B-5510-6	Repair and reconditioning instructions	A.P.4308, Vol.6
101B-5510-12	Travelling servicing notes	A.P.4308A, T.S.N.
101B-5510-15	Pilots' notes	A.P.4308A, P.N.

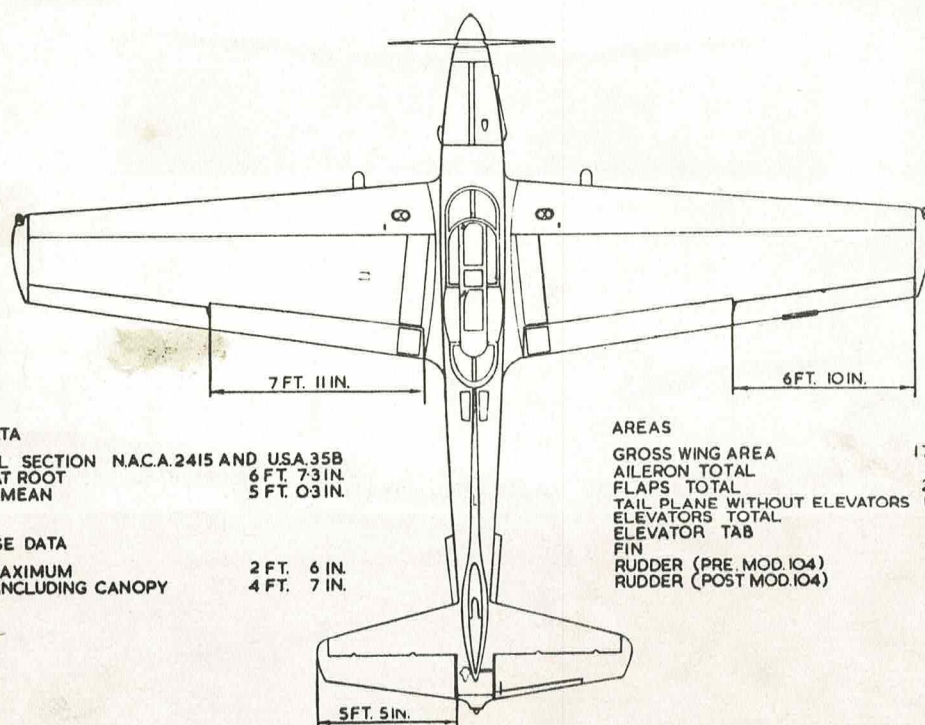
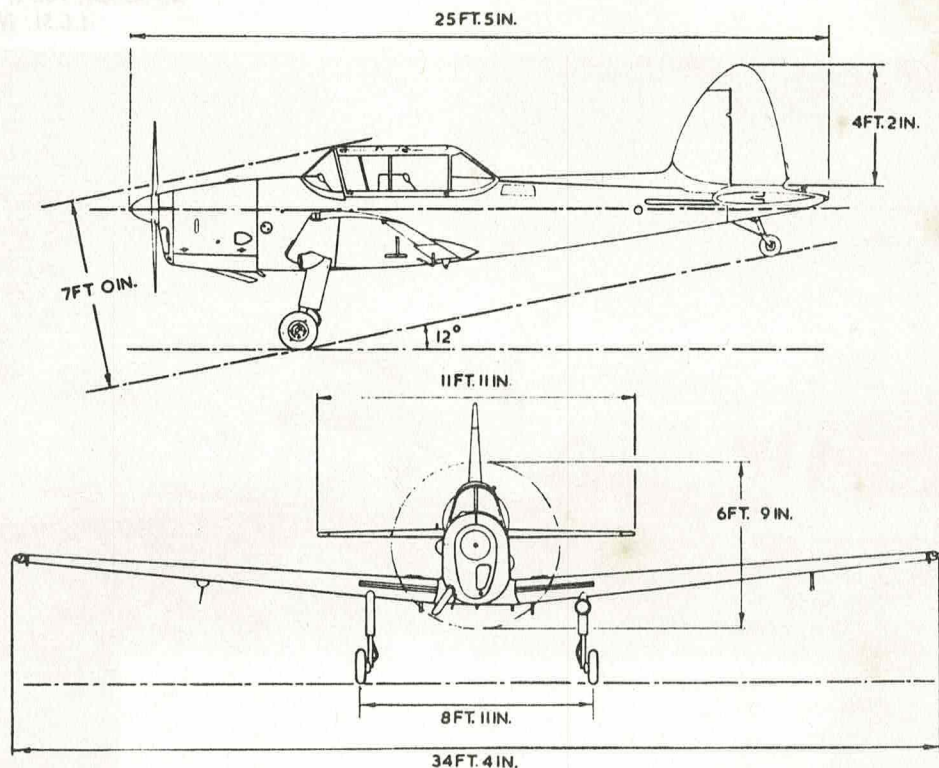
NOTE : Until notice of the changeover is promulgated in D.C.I's,
the required A.P. should be requisitioned under the old
A.P. number.

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Frontispiece (1)—Chipmunk T Mk. 10 Aircraft

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WING DATA

AEROFOIL SECTION N.A.C.A. 2415 AND U.S.A. 35B
 CHORD AT ROOT 6 FT. 7.3 IN.
 CHORD MEAN 5 FT. 0.3 IN.

FUSELAGE DATA

WIDTH MAXIMUM 2 FT. 6 IN.
 HEIGHT INCLUDING CANOPY 4 FT. 7 IN.

AREAS

GROSS WING AREA	172.5 SQ. FT.
AILERON TOTAL	13.9 SQ. FT.
FLAPS TOTAL	22.0 SQ. FT.
TAIL PLANE WITHOUT ELEVATORS	17.0 SQ. FT.
ELEVATORS TOTAL	14.0 SQ. FT.
ELEVATOR TAB	1.21 SQ. FT.
FIN	5.9 SQ. FT.
RUDDER (PRE. MOD. 104)	6.8 SQ. FT.
RUDDER (POST MOD. 104)	74.1 SQ. FT.

Frontispiece (2)—General Arrangement

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INTRODUCTION

1. The CHIPMUNK T Mk. 10 is a two-seater, low-wing cantilever monoplane of metal construction. It is powered with one de Havilland Gipsy Major Mk. 8 engine, driving a two-blade, Fairey-Reed metal propeller of fixed pitch. It is designed for duties of primary training, being equipped with dual control and stressed for aerobatics and can also be employed for glider towing when Mod. H. 197 is embodied.

2. The two fixed, metal, parachute-type seats, arranged in tandem, are enclosed by a fixed windscreen and a single, sliding canopy, the windscreen incorporating a crash pylon. A pilot, when flying solo, occupies the front cockpit and the aircraft must not be flown solo from the rear seat.

3. The dual flying controls are conventional with stick-type control columns, the rear column being detachable for solo or passenger flying. The rudder bars are adjustable for leg reach, on the ground only, to one of three alternative settings. The control runs comprise push-pull rods, cables and chains.

4. The metal fuselage is built up of two main sections, connected together by bolts and a riveted lap strap, the whole forming a semi-monocoque structure. The front section comprises four main long-erons, to which pressed formers are secured, together with a series of modified J-section stringers. The rear section is a straight-tapered structure, comprising a series of pressed formers and modified J-section stringers, covered with a stressed skin. With Mod. H231 embodied, strakes are riveted to the port and starboard sides of the fuselage, in line with the tailplane. The strakes are designed to increase stability and improve the spin recovery characteristics.

5. The main plane consists of separate port and starboard wing units, which are secured to the fuselage at the main spars and leading edges. Forwards of its

main spar, each wing has a metal D-shaped nose; aft of the spar, the wing is fabric covered except for panels at the root, which are metal skinned and rubber covered to form the walkway. Metal, internally mass-balanced, slotted ailerons are fitted, and manually-operated three-position, metal slotted flaps extend from the wing root fillets to the inboard end of the ailerons. The starboard aileron is fitted with a trim tab, adjustable on the ground only. The ailerons and flaps are fabric covered except for narrow metal panels at the inboard end of the flaps. Detachable, metal wing tips are fitted to each wing unit. One flexible fuel tank is housed in each wing, between the undercarriage mounting and the wing root.

6. The tail plane is an all-metal single cantilever structure comprising front and rear spars, ribs and stressed skin; the front spar is secured to the rear face of the aft bulkhead, and the rear spar, by two struts, to the lower part of the same bulkhead. The fin is of all-metal construction comprising front and rear channel-section spars and flanged ribs; the front spar is secured to the fuselage by three bolts, whilst the rear spar, forming the rudder post, extends downwards and reinforces the rear bulkhead, to which it is secured by five bolts. The rudder and elevators are fabric-covered metal structures, aerodynamically and mass balanced. Each elevator is mounted on the tail plane by two hinged fittings; the rudder is mounted on the fin, at the upper end by a hinge fitting and, at the base, by a ball-bearing bracket. The starboard elevator and the rudder incorporate trim tabs; the former being adjustable from the cockpit, but the latter is adjustable only on the ground.

7. The alighting gear consists of two single-wheel, non-retractable cantilever undercarriages and a fully-castering tail wheel. The main wheels are provided with hydraulically-operated brakes controlled by levers in the cockpits and, dif-

ferentially by the rudder bars, for ground manoeuvring. Provision is made for the substitution of a float or ski chassis for the normal alighting gear, if required.

8. The engine is mounted on two, triangulated, tubular steel, welded structures, each of which is secured by bolts to the upper and lower longerons on the front fuselage. A diagonal bracing strut is connected between each structure and a pick-up fitting at the top of the firewall. The engine bearer arms are secured to four rubber mountings to minimise the effect of engine vibration on the airframe. Engine-driven accessories are mounted directly on the rear cover and driven off the rear of the crank-shaft. A cartridge starter is also mounted on the rear cover.

9. Power for the electrical services is obtained from a Rotax B 1804, 500 watt,

29 volt, 17.5 amp., d.c., engine-driven generator, controlled by a regulator and cut-out. The two 12-volt accumulators, connected in series, are installed in a compartment behind the rear pilot's seat. The radio installation, either T. R. 1934, T. R. 1936 or T. R. 1985, provides a complete V.H.F. transmitting, receiving and intercommunication service for radio telephoning.

10. General equipment includes instrument-flying practice screens; taxiing, identification, navigation and cockpit lamps; one fire extinguisher and a first-aid outfit. To special order (Mod. H. 114) desert equipment may be carried; this comprises a set of signalling strips, a drinking water tank of one gallon capacity and, where Mod. H. 145 is included, a protective cover for each main wheel.

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MINISTRY OF DEFENCE

Air Publication 4308A
Volume 1

October, 1967

CHIPMUNK T MK.10 AIRCRAFT

ADVANCE INFORMATION LEAFLET NO.1/67

Insert this leaflet in A.P.4308A, Vol.1, to face the Leading
Particulars

Under the main heading "ENGINE" 5th line

FOR

OIL OM-270 (Ref.No.34A/9100554)

SUBSTITUTE

OIL OMD-370 (Ref.No.34A/2201097)

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.

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LEADING PARTICULARS

NAME	...	...	...	...	...	...	...	CHIPMUNK T Mk.10 AIRCRAFT
TYPE	...	...	...	...	...	...	...	SINGLE-ENGINED, LOW-WING MONOPLANE
DUTY	...	...	...	...	...	...	...	PRIMARY TRAINER
CREW	...	...	...	...	...	...	...	TWO

Note....

For principal dimensions and areas, refer to the General Arrangement facing these Particulars. The settings and ranges of movement of the control surfaces will be found in Part 2, Sect.3, Chap.1.

ALIGHTING GEAR

Undercarriage

Type ... Two non-retractable, single-wheel units with cantilever struts and axles

Track ... 8 ft. 11 in.

Shock-absorber struts ... Rubber-in-compression

Wheels

Type ... Dunlop A.H.9389

Tyres ... Dunlop 1A-TR 19

Tubes ... Dunlop 1A-3

Tyre pressure ... Refer to Servicing Schedule

Brakes

Type ... Dunlop hydraulic A.H.9230

Tail wheel unit

Type ... Non-retractable, fully castering

Shock-absorber strut ... Levered suspension with rubber blocks

Wheel

Type ... Dunlop AH0.5047 or A.H.9869

Tyre ... Dunlop WP-R11

Tube ... Dunlop W.P.2.

Tyre pressure ... Refer to Servicing Schedule

ENGINE

Name ... Gipsy Major Mk.8

Type ... Four-cylinder, in-line, inverted, air-cooled

Sparking plugs ... KLG/SBS/1 (Ref: 37B/5120)

Fuel ... 100/130 AVGAS F-18 (34A/9100444)

Minimum grade permissible 80 octane
as detailed in AP 1500B, Vol.1

Oil ... OMD-370 (34A/2201097)

Starter	...	...	...	...	...	S7 Mk.2 (Ref.No.37F/7964)
Type	...	...	...	...	...	Single stroke piston
Direction of rotation	...	...	...	...	...	Clockwise viewed on clutch jaw
Angular rotation under power	...	...	...	...	...	525 deg.
Duration of power stroke	...	...	...	...	...	0.3 to 0.5 sec.
Safety disc	...	...	...	...	...	CK 738 J
Breech	...	...	...	...	...	SA (Ref.No.37F/7271)
Type	...	...	...	...	...	Multiple barrel, hand indexed and fired (6 cartridges)
Cartridges	...	...	...	...	...	No.1 Mk.1 (Ref.No.12D/1188)
Operational limitations						
Minimum period between shots	...	...	...	...	...	30 sec.
Minimum period between each						
breech load (6 shots)	...	...	...	...	...	20 minutes
Wt. (excluding cartridges)	...	...	...	...	...	15.5 lb.

PROPELLER

Name	...	...	...	...	...	Fairey-Reed
Type	...	...	...	...	...	A.66753/X1, fixed pitch (Ref.No.25A/688)
Spinner	...	...	...	...	...	A.66870 (Ref.No.25D/103)

TANK CAPACITIES

Fuel

Mainplane						
Port wing tank	...	...	...	...	...	9 gall.
Starboard wing tank	...	...	...	...	...	9 gall.
Total	...	...	...	...	...	18 gall.

Oil

Absolute capacity (dry system)	...	...	...	...	...	2½ gall.
Air space	...	...	...	...	...	½ gall.
Effective capacity	...	...	...	...	...	2 gall.

HYDRAULIC, VACUUM AND ELECTRICAL SYSTEMS

Hydraulic system

Fluid	...	...	...	...	...	OM-15 (Ref.No.34B/9100572)
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Vacuum system

Pump	...	...	...	...	...	B3X Mk.1 (Ref.No.37J/4)
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AP 101B-5510-1, Part 1
AL 62, Oct.72

Electrical system

Wiring	...	...	...	...	...	...	...	...	Breeze
Voltage	...	...	...	...	...	...	...	...	24
Voltage regulator	...	...	...	...	...	...	...	...	Pre Mod.H27, F 0406 (Ref.No.5U/4944)
									Post Mod.H27, Carbon Pile (Ref.No.5U/5084)
Generator	...	...	...	...	...	...	...	Type 500 (Ref.No.5UA/4945)	
Tachometer generator	...	...	...	...	...	...	...	Mk.4 (Ref.No.6A/780)	



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