

RESTRICTED

◀ AL No. 461.  
(Shear walls reinforced)  
(AL 451 Cancelled)

AP 101B-1801-2  
Leaflet No J57.  
(Alteration 1 incorporated) ▶

Gnat T Mk 1 Aircraft - Centre Fuselage - Shearwalls between Frames 16 and 22 - To make provision for and introduce L.A. reinforcing angles at the base of the Shearwalls.

(MOD No GNAT 734)

(Class C/3 on removal of rear fuselage and engine)

◀ (ADSM25/A/25428.21.6. 76) ▶

(ADP No GNC73400)

◀ NOTE: This revised leaflet supersedes AP 101B-1801-2, Leaflet No J57 and is the authority for cancelling AL No 451 ▶

1. INTRODUCTION

Corrosion of the lower shearwall which is formed of magnesium sheet has been a known problem for some time. Corrosion is caused mainly by the penetration of water thrown up from the main wheels. This modification introduces light alloy reinforcing angles to the inside of the lower shearwall flange and injects a de-watering oil (PX-24) into the hidden area.

(1) This modification does not supersede, partially supersede or satisfy the work called for by any other modification, Command Modification, SRIM or Special Instruction (Technical).

(2) This modification is also applicable to GNAT T 185D aircraft.

2. EMBODIMENT

This modification is to be embodied as directed by Command Headquarters.

3. APPROXIMATE TIME REQUIRED FOR EMBODIMENT

◀ The work will take approximately 170 man hours with rear fuselage and engine removed. ▶

4. DRAWINGS REQUIRED

The following drawings are required and are to be demanded in accordance with AP 3158, Vol 2 Leaflet No D7.

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<u>DRAWING NO</u>	<u>TITLE</u>
1809/4079	Reinforcing of Shearwall fr. 16 to 18 Port
1809/4080	Reinforcing of Shearwall fr. 16 to 18 Stbd

5. PARTS AND SPECIAL TOOLS REQUIRED

(1) Parts and Materials

(a) The Modification Kit which consists of the following items supplied by the Contractor will be assembled by No 16 Maintenance Unit under Ref No 26DN/100734:-

<u>REF NO</u>	<u>PART NO</u>	<u>NOMENCLATURE</u>	<u>QTY</u>	<u>CLASS OF EQUIPMENT</u>
26DN/-	1811/1357B	Reinforcing	1	
26DN/-	1811/1357C	Reinforcing	1	
26DN/-	1811/1357D	Reinforcing	1	
26DN/-	1811/1357E	Reinforcing	1	
26DN/-	1811/1357E	Reinforcing	1	
26DN/-	1811/1357G	Reinforcing	1	
26DN/-	1811/1357H	Packing	2	
26DN/-	1811/1357J	Reinforcing	1	
26DN/-	1811/1358B	Reinforcing	1	
26DN/-	1811/1358C	Reinforcing	1	
26DN/-	1811/1358D	Reinforcing	1	
26DN/-	1811/1358E	Reinforcing	1	
26DN/-	1811/1358F	Reinforcing	1	
26DN/-	1811/1358G	Reinforcing	1	
26DN/-	1811/1358H	Packing	1	
28D/9133012	A.25.3.C	Bolt 2 BA	7	C
28D/1200119	A.25.4.C	Bolt 2 BA	2	C
28DU/9419967	A.102.2.D	Bolt 10 UNF	7	C
28DU/9419566	A.102.3.D	Bolt 10 UNF	2	C
28Q/4660888	AS.161.507	Rivet	10	C
28Q/4661885	AS.164.403	Rivet	4	C
28Q/8147	AS.164.406	Rivet	16	C
28Q/8148	AS.164.407	Rivet	114	C
28Q/4661248	AS.164.409	Rivet	75	C
28Q/4675570	AGS.2065.409	Rivet Avdel	153	C
28Q/1032283	AGS.2065.411	Rivet Avdel	31	C
28Q/4675571	AGS.2065.413	Rivet Avdel	4	C
28Q/4675574	AGS.2065.512	Rivet Avdel	6	C
28Q/19278	AGS.2066.409	Rivet Avdel	64	C
28Q/19283	AGS.2066.411	Rivet Avdel	11	C

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All the above items will be issued on Issue Order to RAF Units at home and those overseas Units, on direct re-supply, no demands are to be submitted. Other RAF Units abroad and all other users are to demand separately their requirements of kits as listed above in accordance with current regulations.

(b) The following materials are to be provided under Unit arrangements.

<u>REF NO</u>	<u>PART NO</u>	<u>NOMENCLATURE</u>	<u>QTY</u>	<u>CLASS OF EQUIPMENT</u>
34B/1480	PX-24	Water displacing fluid	As Reqd	C
33B/9428748		Paint, finishing		C
		Aluminium	As Reqd	

(2) Special Tools and Test Equipment

No special tools or test equipment are required for the embodiment of this modification.

6. MODIFICATION OF SPARES

No spares are affected by this modification.

7. CHANGE OF REFERENCE, PART AND ASSEMBLY NUMBERS

There are no changes of Reference, Part or Assembly Numbers as a result of this modification.

8. SEQUENCE OF OPERATIONS

The following is the sequence of operations:-

NOTE: Before any electrical circuit is disturbed or disconnected, all electrical power supplies in, to or from the aircraft are to be disconnected. Power supplies are to be reconnected only when the person responsible for embodying or inspecting the modification is satisfied that all action has been taken to make the aircraft safe for reconnection.

(1) With the fuel system drained and with the rear fuselage and, engine removed, remove and retain the hatch panels and other access doors in the bottom of the fuselage between frames 16 and 22.

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(2) Remove number 2 and Number 3 centre tanks between frames 16 and 18 in accordance with AP 101B-1801-1A, Sect 4 Chap 2, para 87 and 92.

(3) Remove and retain the Hydraulic piping at frames 20 to 22, Port and Starboard Shearwalls. Remove and retain the Hydraulic cut-out valve together with its attachment bracket and associated piping. Disconnect and de-cleat electrical cables at Frames 18-22 and retain.

(4) Remove and retain together with their attachment bolts the access doors in the shear walls between frames 16 and 22 to give the necessary access to the shearwall rivetting.

(5) Remove and retain the stud plates, Part No 1211/1075 located at the bottom of the tank bay, Port and Starboard, adjacent to frame 17, by drilling out the two  $\frac{1}{8}$ " dia rivets.

(6) Locate the circular access hole on the starboard shear-wall between frames 18A and the engine mounting frame, and drill out the 5/32 rivets securing the nut ring using a 4.0 mm drill. Remove and retain the nut ring.

(7) Prior to the fitment of the new reinforcing plates refer to drawing Nos 1809/4079 and 1809/4080, and drill out the existing rivets using a 3.30 mm drill where 1/8 dia rivets are to be fitted and a 4.0 mm drill where 5/32 rivets are to be fitted.

(8) From the Kit of Parts take the reinforcing plate Part No 1811/1357B and locate it in position as shown on the drawing No 1809/4079, Drill or spot through the rivet holes into the reinforcing plate, remove the plate and drill all holes and deburr.

NOTE: Trimming allowance has been added to these reinforcements to allow for variations on structure and rivet positions. It may be necessary to trim to clear adjacent structure in order to let the reinforcing sit in place, but it is not necessary to trim the contour if the radius etc. around rivets exceeds the dimensions shown on the drawing.

(9) Repeat with all the reinforcements then assemble with the packings as shown on drawings Nos 1809/4079 and 1809/4080.

(10) Replace the 2 stud plates Part No 1211/1075 inside the tank bay using the Avdel countersunk rivets as shown on the drawings No H 1809/4079.

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(11) Replace the nut ring on the starboard shearwall together with the packing Part No 1811/1358H and rivet together as shown on drawing No H 1809/4080. Retape and Bostik the fuel tank bay in the areas affected.

(12) Apply water displacing fluid PX-24 into the area at the bottom and outboard of the shearwalls.

(13) Replace the No 2 and No 3 centre tanks in accordance with AP 101B-1801-1A, Sect 4, Chap 2 paras 90 and 96.

(14) Refit all access doors onto the shearwalls using the existing bolts, and the new bolts supplied for the circular door.

◀ (15) Refit the Hydraulic cut-out together with its attachment bracket and associated piping. Refit the Hydraulic piping at frames 20 to 22 and reconnect and re-cleat the electrical cables at Frames 18-22. ▶

(16) Record the mod number on the modification plate located on the outer face of the shearwall in the starboard wheel bay.

9. SPECIAL TESTS AFTER EMBODIMENT

◀ When this modification has been embodied and inspected, carry out functional tests of all systems which have been disturbed for the purpose of embodying this modification, in accordance with current testing instructions. ▶

10. RECORDING ACTION

When this modification has been embodied and inspected, in accordance with current authorised procedure the relevant entries are to be made in the appropriate aircraft records.

11. DISPOSAL OF REDUNDANT PARTS

No parts are rendered redundant by the embodiment of this modification.

12. EFFECT ON WEIGHT AND MOMENT

This modification causes a change in the basic weight of plus 2.4lbs with a change in moment of plus 566 lbs/inches about the C. G. datum.

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13. EFFECT ON AIRCRAFT OR EQUIPMENT OPERATION AND HANDLING

This modification does not affect the operation or handling of the aircraft or equipment.

14. EFFECT ON SERVICING AND ON GROUND SUPPORT EQUIPMENT

This modification does not affect servicing or ground support equipment.

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