



SERVICE BULLETIN

MARSHALL AEROSPACE AND DEFENCE GROUP SERVICE BULLETIN SBM 200

MARSHALL AEROSPACE AND DEFENCE GROUP BRAKE MASTER CYLINDER PIVOT PIN
EXAMINATION

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Issued By
Marshall Aerospace and Defence Group
The Airport, Cambridge, CB5 8RX

LETTER OF TRANSMITTAL

Dated December 2015

This page transmits Initial Issue of Service Bulletin SBM 200

RECORD OF REVISIONS

Revision No.	Date	Reason for Change
0		Initial Issue
1	April 2015	Amendment to Compliance - Accomplishment Timescales.
2	December 2015	Amendment to accomplishment timescales and MADG contact information. Addition of removal of bonding adhesive requirement.

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BRAKE MASTER CYLINDER PIVOT PIN EXAMINATION

1. PLANNING INFORMATION

A. EFFECTIVITY

Slingsby T67 Firefly T67B, T67C Series, T67M, T67M MkII, T67M200, T67M260.

B. CONCURRENT REQUIREMENTS

None

C. REASON

A case has been reported of the failure of a brake master cylinder pivot pin part number T67M-45-539 (Figure 1). Two of these pivot pins are fitted per aircraft, one to the #1 pedal assembly and one to the #4 pedal assembly. The operator reported hearing a breaking noise from the rudder pedal area during taxiing. An investigation was carried out and it was discovered that the brake master cylinder pivot pin had broken on the #4 pedal assembly.

The pin was broken between the threaded section and the larger central barrel (Figure 2). The surface of the broken material was found to be dull, indicating a possible fatigue related fracture.

Unrelated to the pivot pin failure instances of dimensional differences to the brake master cylinder pivot pin design have been discovered (Figure 3).

D. DESCRIPTION

This Service Bulletin (SB) details the examination for damage and dimensional inconsistencies to the brake master cylinder pivot pin.

E. COMPLIANCE

(1) Classification

Essential

(2) Accomplishment Timescales

Before next flight, unless SBM 200 Revision 0 or 1 has been carried out. Thereafter at 300 flying hours in conjunction with SB187 or SB188 as applicable.

If the pivot pin is replaced the initial application of this instruction should be carried out at 1000 flying hours.

F. APPROVAL

Marshall Aerospace and Defence Group EASA Design Organization Approval No EASA.21J.181.

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G. MANPOWER

One person – approximate man-hours as follows:

Preparation	1
Inspection / Rectification	1 (excluding NDI inspection)
Testing	1
Re-assembly	1
Records	1
Total	5 (excluding NDI inspection)

H. WEIGHT AND BALANCE

No change.

I. ELECTRICAL LOAD DATA

No change.

J. SOFTWARE SUMMARY

Not Applicable.

K. REFERENCES

Marshall Aerospace and Defence Group
Firefly T67 Maintenance Manual.

L. OTHER PUBLICATIONS AFFECTED

Not Applicable.

M. INTERCHANGEABILITY/INTERMIXABILITY OF PARTS

Not Applicable.

2. MATERIAL INFORMATION

A. MATERIAL - PRICE AND AVAILABILITY

Not Available.

B. INDUSTRY SUPPORT INFORMATION

Not Applicable.

C. MATERIAL NECESSARY FOR EACH AIRCRAFT

Loctite 222.
Locking wire to DTD189A.
2 off Split Pins Pt. No. 120-15-132.

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D. MATERIAL NECESSARY FOR EACH SPARE

Not Applicable.

E. REIDENTIFIED PARTS

Not Applicable.

F. TOOLING - PRICE AND AVAILABILITY

Not Applicable.

3. ACCOMPLISHMENT INSTRUCTIONS

A. MAINTENANCE PRACTICES

WARNING: OBEY ALL WARNINGS, CAUTIONS AND MAINTENANCE PRACTICES. IF YOU DO NOT OBEY THIS WARNING THERE IS A RISK OF INJURY TO PERSONNEL AND/OR DAMAGE TO THE EQUIPMENT.

- (1) Observe all safety procedures.
- (2) All engineering and local procedures are to be observed whilst embodying this Service Bulletin.
- (3) After inspection ensure aircraft is clean and clear of tools and miscellaneous equipment and any removed parts are replaced.

B. PREPARATION

Prior to proceeding, ensure that the Service Bulletin has been read in its entirety and is understood.

C. INSPECTION

- (1) Rudder pedal assembly #1:
 - (a) Remove rudder pedal stop screw (1) and slide assembly aft from its housing.
 - (b) Remove and discard locking wire (2).
 - (c) Remove the split pin (3) and washer (4). Discard split pin.
 - (d) Slide off lower inner bracket from main brake cylinder pivot after removing bracket, attached with 2 off socket head screws.
 - (e) Displace brake cylinder (5) inboard to clear top pivot.
 - (f) Remove pivot pin (6) by unscrewing.

NOTE: The pivot pin is bonded in position.

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- (g) Ensure that all traces of old bonding adhesive are completely removed from pivot pin threads and brake link bush threads. Failure to remove old bond adhesive can prevent correct re-installation of pivot pin.
- (h) Carry out visual inspection of brake master cylinder pivot pin for damage, cracks or distortion (Reference Figure 1 and Figure 2).
- (i) Carry out visual inspection for dimensional accuracy of threaded portion of the brake master cylinder pivot pin (Reference Figure 1 and Figure 3). (Ensure that threaded portion is 5 mm in length, and adjacent shank is 2.5 mm in length).
- (j) Carry out NDI (fluorescent dye penetrant), using local regulations, of the brake master cylinder pivot pin threaded portion and shank where it enters the central barrel.
- (k) If any damage, crack or distortion to the brake master cylinder pivot pin is discovered or the pivot pin fails the dimensional requirement then it is considered to be unserviceable and is to be replaced.
- (l) If no damage, crack or distortion to the brake master cylinder pivot pin is found and the pivot pin meets the dimensional requirements, re-assemble in reverse of the removal procedure, using a new split pin. It is important to ensure that the pivot pin is fully tightened against the rudder pedal carriage mechanism. The pivot pin (6) is bonded in position using Loctite 222. Ensure that wire-locking does not foul on any adjacent structure or components.

(2) Repeat Para 3C. (1) to rudder pedal assembly #4.

D. MODIFICATION

Not applicable.

E. TESTING

- (1) Carry out operational check of the rudder control system for full and free movement.
- (2) Carry out operational check of the aircraft wheel brake control system, IAW Aircraft Maintenance Manual P4-44, 4.7, ensuring no binding at the brake master cylinder pivots.

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F. COMPLETION

- (1) Annotate airframe logbook or aircraft record with SBM 200 carried out (in accordance with local requirements).
- (2) Retain the damaged parts for further inspection and reported to Marshall Aerospace and Defence Group (MADG) using the User Experience Report (UER) system in accordance with the Aircraft Maintenance Manual.

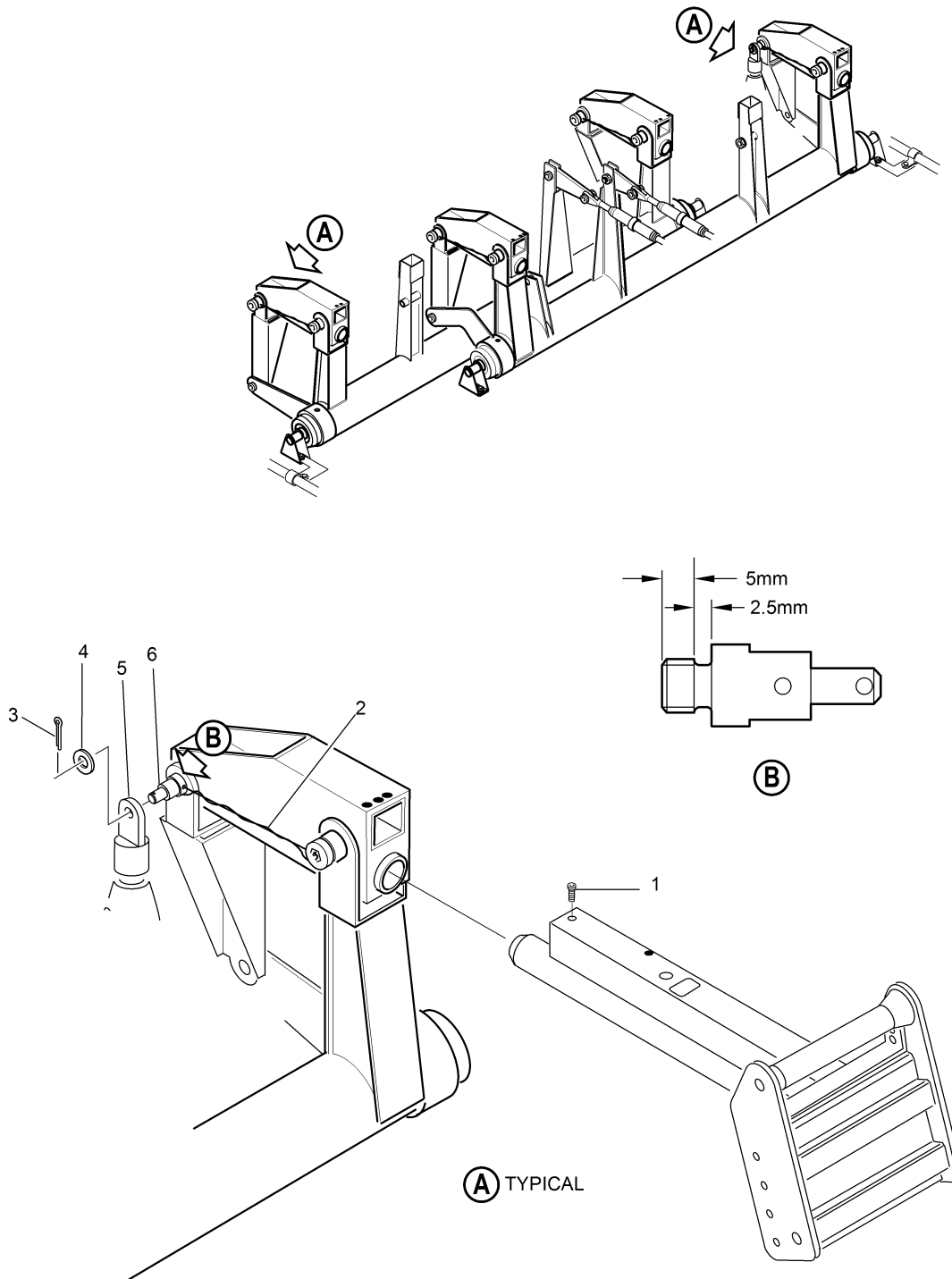
For any replaceable parts or materials contact Marshall Aerospace and Defence Group Product Support Department contact details as below:

Technical Support Group Engineer
Marshall ADG
The Airport
Cambridge
CB5 8RX
UK

Tel. No. +44 (0) 1223 399856
+44 (0) 7825365617

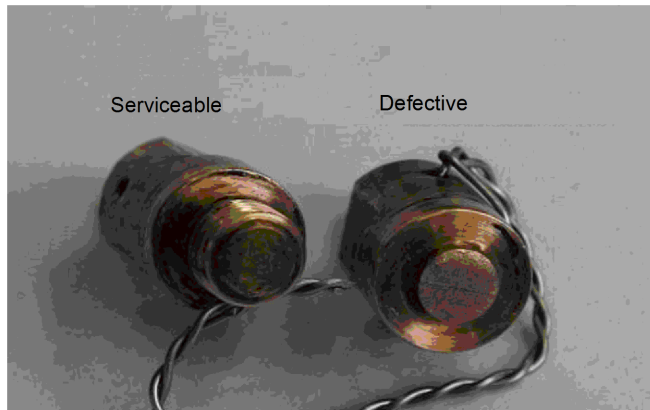
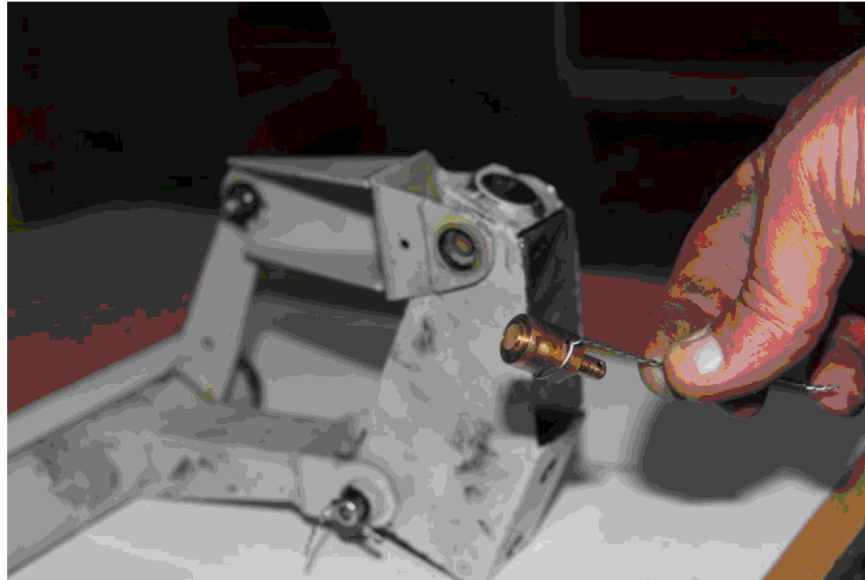
Email: ss.tsg@marshalladg.com

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Examination - Brake Master Cylinder Pivot Pin
Figure 1

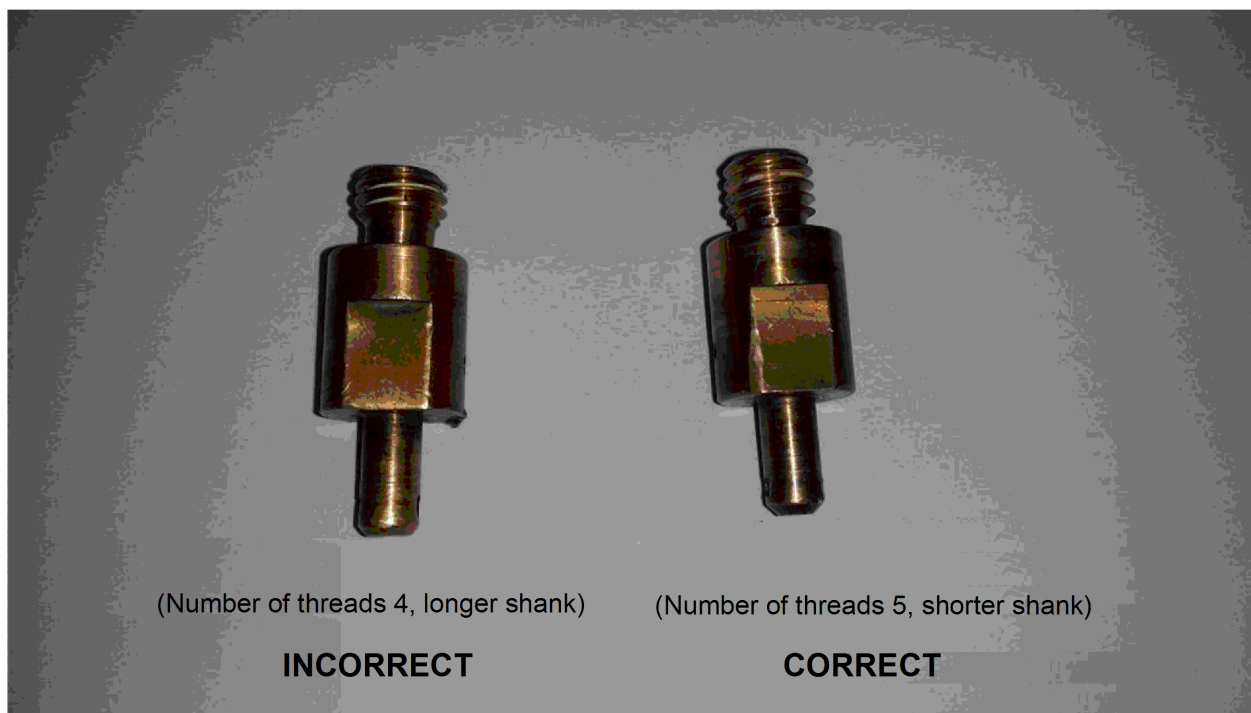
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SBM 200-I-002-A

Pivot pin
Figure 2

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SBM 200-I-003-A

**Pivot pin threads
Figure 3**

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SBM 200 ANNEX A

BRAKE MASTER CYLINDER PIVOT PIN EXAMINATION

This form is to be completed and submitted to the address below.

| Technical Support Group Engineer
Marshall ADG
The Airport
Cambridge
CB5 8RX
UK

| ss.tsg@marshalladg.com

Aircraft works number	
SBM 200 carried out	
Total Flight Hours	
Details of action required	
Reporters contact details i.e. Name, Address, e-mail, telephone etc	
Owner's details	

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