

MAULE AEROSPACE TECHNOLOGY, INC.

LAKE MAULE -- RT. 5, BOX 318 -- MOULTRIE, GA. 31768 -- PHONE (912) 985-2045 -- FAX: (912) 890-2402

SERVICE BULLETIN #16

Page 1 of 3
Date: 3/7/96

SUBJECT: Carburetor Heat Air Valve.

FAA APPROVED

REFERENCE: Service Letter No. 56

Date 3-8-96 Initials JCK

COMPLIANCE: At option of owner. Compliance is strongly recommended.

AIRPLANES AFFECTED: Maule airplanes manufactured before 1996 with Lycoming O-360-C1F, O-360-C4F, O-320-B4D, O-540-J1A5D, O-540-J3A5 and O-540-B4B5 engines.

STATUS: Service Letter No. 56, attached for reference, is a mandatory requirement for inspection of carburetor heat air box valve seal. This Bulletin provides a more durable material for seal replacement, requires inspection and possible replacement of attachment hardware and provides a repair for a loosened valve plate. (Current seals from the factory are made from a black nitrile rubber with cotton insert which is considerably tougher than the red silicone rubber and also the previously used black rubber without the reinforcing insert.) (Screw replacement provides for an unthreaded portion through shaft.)

AUTHORITY: The Technical contents of this Service Bulletin have been approved by the FAA.

BACKGROUND: See attached Service Letter No. 56 regarding the reported failure of the valve rubber seal. Another incident was reported recently where a repair station made an inspection per Service Letter No. 56 and related that the seal appeared to be in good condition. However, a complete engine failure occurred 8 1/2 hours later because a strip broke off the seal and blocked the air to the carburetor. A forced landing ensued and airplane was totally damaged.

Also, we have received two reports of worn screws and elongated holes in shafts which caused valve to malfunction.

ACTION TO BE TAKEN AND MATERIAL REQUIRED:

- 1) Request REPAIR KIT No. SB#16 from Maule Air, Inc. This Kit consists of the following parts: (No charge for kit)

| Quantity | Part# | Item | Item# | |
|----------|--------------|---------------------------------------|-------|---------|
| 1 ea. | 5286X-22 | Buna-N Rubber Sheet (w/cotton insert) | (22) |] SB#16 |
| 8 ea. | AD3-4 | Rivets | (16) | |
| 4 ea. | AD3-5 | Rivets | (17) | |
| 2 ea. | MS27039-0814 | Screw | (20) | |
| 2 ea. | AN365-832 | Nut | (21) | |

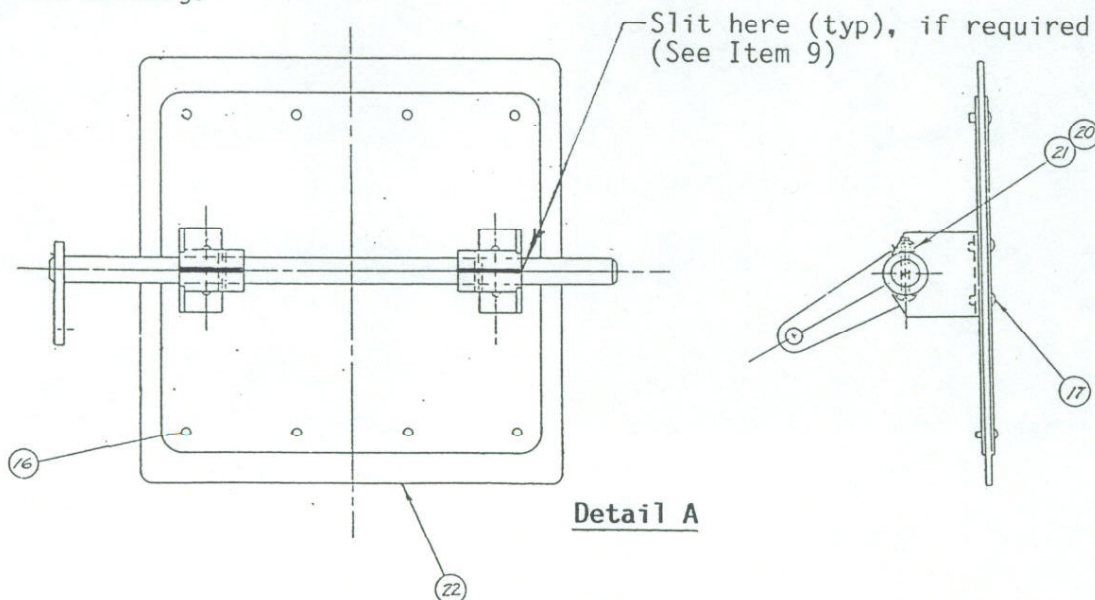
NOTE: A new redesigned, heavier air box is now available for -180/160 which is considerably more durable and has the new seal with cotton insert.

- 2) Remove the engine cowling. Remove the air filter.

IT'S PERFORMANCE THAT COUNTS!

ACTION TO BE TAKEN AND MATERIAL REQUIRED: Cont'd

- 3) Remove the air box from the carburetor.
- 4) Remove the valve plate from the air box. This is accomplished by removing two AN526-8 screws and Nuts (Items 20 and 21, Detail A) which retain the valve plate to the shaft. Withdraw the shaft from the air box, then remove the valve plate.
- 5) Drill out the eight (8) rivets which hold the valve plate assembly together and the four (4) rivets which hold the shaft brackets to valve plate assembly.
- 6) Remove the existing rubber seal and install a new part no. 5286X-22 Buna-N rubber seal (with cotton insert).
- 7) Reassemble the valve plate assembly using AD3-4 rivets and the brackets to valve plate assembly using AD3-5 rivets.
- 8) Trim the seal to fit the air box. The sides of the seal should clear the side walls of the air box by 1/32 inch maximum. The upper and lower ends of the seal should extend out from the metal plates by approximately 3/4 inch and lie against the upper and lower walls of the air box with valve in its extreme positions.
- 9) Reinstall the valve in the air box and secure with the two (2) new MS27039-0814 screws and AN365-832 self-locking nuts. **CAUTION: Replacement of the screws and nuts regardless whether seal is changed or not is strongly recommended. If screw holes are elongated, repair as follows:**
 - a. Slit top side of shaft brackets as shown in Detail "A" using a hacksaw blade (approximately 1/32" wide). Proceed with reinstalling valve and tighten securely. This will allow bracket to clamp shaft and prevent further wear.
- 10) The valve should work easily through the complete range of travel with no binding.



Return of the enclosed Compliance Record Sheet, page 3, is requested.

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COMPLIANCE RECORD SHEET

Airplane Serial Number _____

Airplane Registration Number _____

The following action was taken with respect to this Service Bulletin:

- () I have complied with this Service Bulletin by replacing my existing valve seal with new Buna N Rubber sheet with the cotton insert.
- () I have inspected the seal, found it to be in good condition, and decided not to replace it at this time.
- () I have replaced existing screws and nuts with new MS27039-0814 screws and AN365-832 nuts.
- () I inspected valve shaft and found valve attach holes to be elongated and I have repaired by slitting brackets and clamping shaft per this SB.
- () I no longer own this aircraft. It was sold to:

Name _____

Address _____

City _____ State _____ Zip _____

Certified By (Signature) _____

(Print Name) _____

Title (Owner, A & E, IA, etc.) _____

Date _____

In an effort to keep mailing list current, please fill in the following:

Owner's Name _____

Owner's Address _____

City _____ State _____ Zip _____

Please return this Compliance Record to: Maule Engineering Records
2099 GA Highway 133 South
Moultrie, Georgia 31768 USA

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