

SUBJECT: M20M LANDING GEAR RIGGING INSPECTION AND MODIFICATION.

MODEL/

S/N AFFECTED: **M20M - S/N 27-0107 THRU 27-0147** - (S/N's 27-0115, 27-0123, 27-0127, 27-0131, 27-0137, 27-0142, 27-0144, 27-0150 HAVE HAD INSTRUCTIONS OF SB ACCOMPLISHED).

TIME OF

COMPLIANCE: WITHIN NEXT 25 FLIGHT HOURS OR AT NEXT SCHEDULED MAINTENANCE.

INTRODUCTION: Some aircraft within the above S/N block have experienced landing gear inner-door malfunctions. This has not caused difficulty with the retraction/extension cycle in any of the cases. Maintenance inspections have found that some of the mechanism components have gone beyond normal tolerance. Replacement of some of the components is recommended. To eliminate the possibility of exceeding tolerances, a mechanical stop has been developed to be installed in the wheelwells. The instructions of this Service Bulletin and components of SB Kit will allow field personnel to retrofit applicable aircraft.

INSTRUCTIONS:

1. Raise aircraft on jacks per Service and Maintenance (S & M) manual, Section 71-10-00.
2. Remove composite belly skins per S & M manual, Section 53-30-00.
3. Perform Landing Gear Operational Inspection per S & M manual, Section 32-30-01, revised March, 1993.
4. On LH & RH main landing gear, replace bearings (B-47) and bushings (914020-161) in bellcrank (2). Replace rods (5), (6), attaching pins and hardware. Inspect **press fit** pins on bellcranks 2, 3 & 4; replace if worn.
5. Re-rig entire landing gear system per S & M manual, Section 32-30-02, revised March, 1993 if Operational Inspections show any discrepancies.

**NOTE**

**Instructions of this Service Bulletin are to be used in conjunction with M20M Service and Maintenance Manual, No. 150 , Chapter 32, revised, March, 1993.**

When landing gear system has been rigged and preload correctly set, the inboard landing gear door is to have a mechanical stop incorporated into the system per the following instructions:

6. Aircraft still on jacks. Landing gear down and locked.
7. Locate the two rivets on LH & RH wheelwells that are just forward of the inboard gear door hinge (9) attaching rivets (Ref. Fig M20-254-1). This is the location for the 550075-501 stops (7) to be installed.
8. Disconnect Inboard Gear doors. Carefully drill off the two rivet heads on LH & RH sides; punch rivets out.

**NOTE**

**550075-501 stop (7) has two #40 pilot holes in flange. In some instances, due to manufacturing tolerances, the pilot holes may not align exactly with both drilled holes in wing rib. If this is the case, determine which of the two holes in stop flange will create the better alignment of the stop bolt head (8) with the bellcrank (4) arm. Use this hole as the "primary" attachment hole.**

9. Drill "primary" attachment hole to size (#20 drill) in each stop. Cleco stops (7) in place, at "primary" attach hole only, so head of bolt (8) in stop aligns with arm of inboard gear door bellcrank (4) that spring (1) is attached to.

**NOTE**

**It is acceptable to chamfer rear edge of flange, on stop, that rests against wing rib if bucked heads of rivets interfere with proper alignment of stop bolt head and bellcrank arm. Chamfer only as required to clear rivet.**

10. When stop (7) is clecoed in proper position, drill second attach hole in stop flange to size (#20 drill), by back drilling through existing "non-primary" rivet hole. Deburr hole in flange and cleco in position. Make sure head of bolt (8) in stop aligns (directly centered) with arm of bellcrank (4).

INSTRUCTIONS: (con't.)

11. Rivet stops (7), P/N 550075-501, in each wheelwell at the location described in steps 8 & 9 above using rivets included in this kit. Re-attach Inboard Gear doors before cycling landing gear for following steps.
12. Leave spring (1) attached to clevis of inboard door bellcrank (4). Bolt head (8) should be screwed all the way in.

**NOTE**

**Two mechanics (personnel) may be required for the next several steps. One under the aircraft and the other inside the aircraft operating the landing gear switch.**

13. Retract landing gear using safety by-pass switch (See S & M, Section 32-30-01, steps 5, 6, 7) until inboard gear door has traveled as far as it will go during its retraction cycle. In this position, the pivot points of bellcrank (3) & center line of rod (5) will be in a straight line (Reference Figure M20-254-2). Components (2), (5) & (6) should now be in a loaded condition and feel very tight.
14. Adjust stop bolt head (8) OUT until it rests on bellcrank (4) arm. Continue to adjust bolt head OUT until rods (5) & (6) become loose (no load felt on either rod). Bellcrank (2) will also become loose when bolt head (8) is in correct position. Tighten jam nut on bolt (8) against tube on stop (7).
15. Repeat installation of stop (7) (Steps 7 thru 11) and adjustment procedures (Steps 12 thru 14) in other wheelwell.
16. Cycle landing gear through five complete retraction/extension cycles; inspect all components during and after cycles for any interference, binding or improper operation. Reference Operational Inspection in S & M, as done in Step No. 3.
17. Complete log book entry and return aircraft to service.

WARRANTY: Mooney Aircraft Corporation will allow 3.0 hours labor to comply with this Service Bulletin. Parts Kit will be ordered through Mooney Service Centers and credit will be issued upon receipt of warranty forms within 180 days of the issue date of this Service Bulletin.

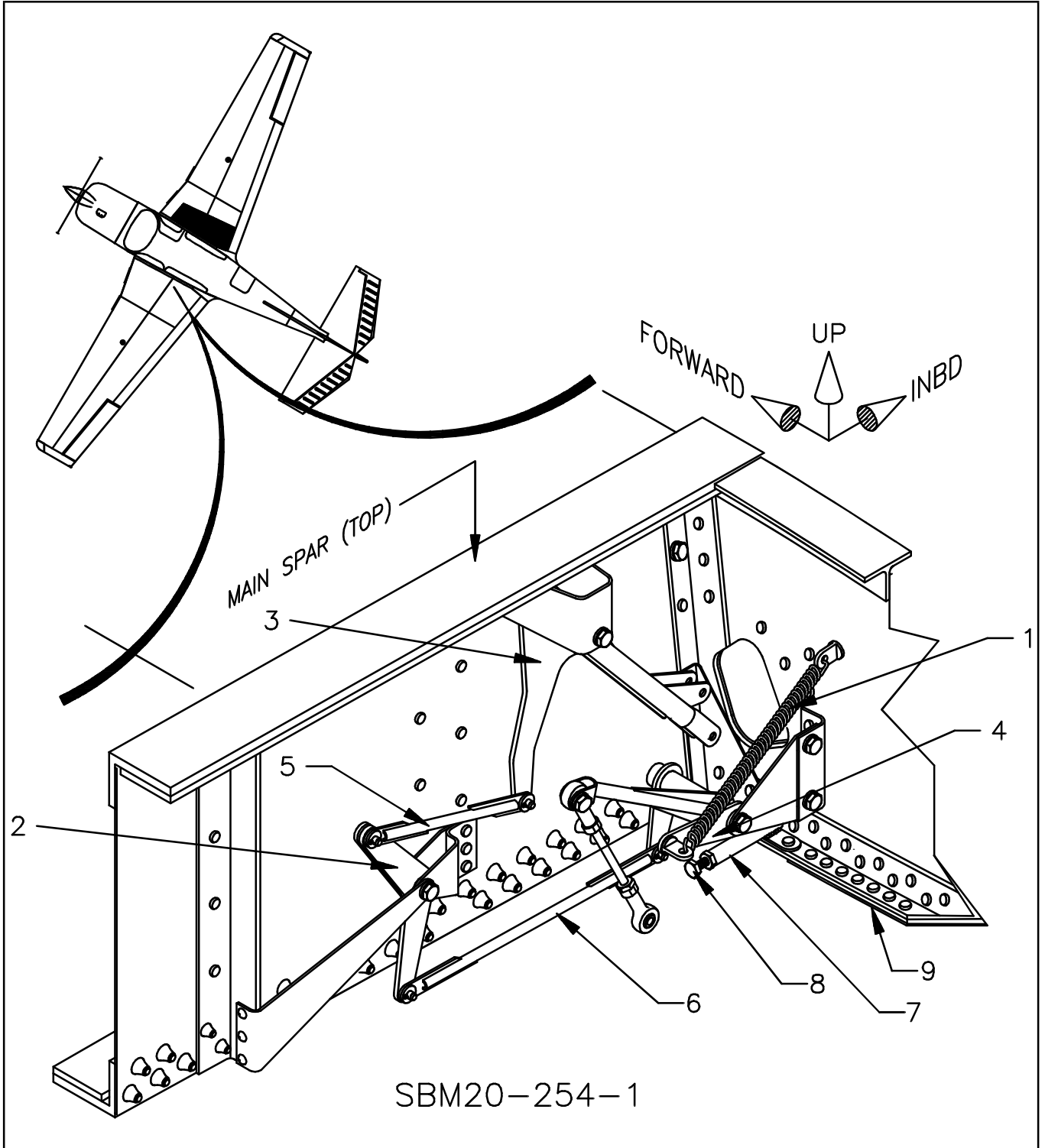
REFERENCE  
 DATA: N/A

PARTS LIST: KIT PART NUMBER SBM20-254-1

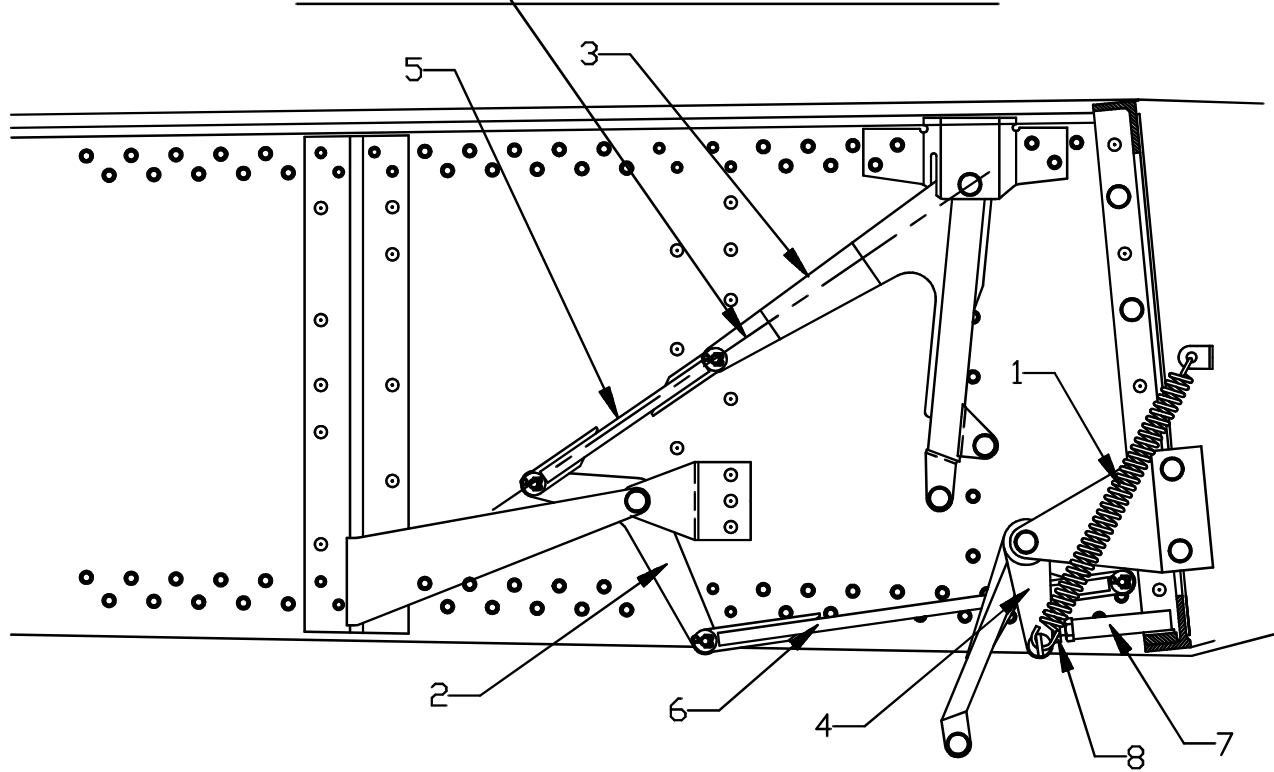
ITEM	P/N	DESCRIPTION	QTY
1	550075-501	STOP ASSY..	2
2	550082-503	ROD, LOWER	2
3	550082-505	ROD, UPPER	2
4	914020-161	BUSHING	2
5	B-47	BEARING	2
6	MS20392-2C7	PIN, CLEVIS (PRESS FIT-BELLCRANK 4)	2
7	MS20392-2C9	PIN, CLEVIS (PRESS FIT-BELLCRANK 2 & 3)	4
8	MS20392-2C17	PIN, CLEVIS	2
9	AN381-2-6	PIN, COTTER	8
10	AN470AD5-13	RIVET	4
11	* M20M S & M	Chapter 32, Revised 3-93	1

\* At some later date the complete S & M will be revised and Chapter 32, as revised in March, 1993, will be available to the field and may not be included in this Service Bulletin kit.

FIGURE/  
 TABLES: SEE NEXT PAGES FOR FIGURES - SBM20-254-1 AND SBM20-254-2



NOTICE  
THESE PIVOT POINTS ARE IN ALMOST A STRAIGHT LINE.  
THIS REPRESENTS THE MOST EXTREME TRAVEL THAT THESE  
COMPONENTS SHOULD BE.



SBM20-254-2