

THIS BULLETIN IS FAA APPROVED FOR ENGINEERING DESIGN

SB M20-252
DATE: 4-6-92

SUBJECT: MOONEY M20J RUDDER BALANCE WEIGHT INSPECTION

MODEL/

S/N AFFECTED: 24-3201, 24-3218 THRU 24-3256 (EXCLUDING 24-3239 & 24-3251)

TIME OF COMPLIANCE: WITHIN NEXT 15 FLIGHT HOURS

INTRODUCTION: The continual evaluation of data and testing of various systems on M20 Series aircraft models has led, among other things, to the introduction of the 2900 pound gross weight M20J aircraft. An analysis of computer data has determined that a slight change to the rudder static balance limits are necessary on the 2900 pound gross weight M20J. These new limits are listed in **INSTRUCTIONS** below. The possibility exists that the rudders on some of the affected aircraft listed herein may be outside these new limits. Therefore, it is mandatory that this Service Bulletin be complied with as indicated.

INSTRUCTIONS:

1. Remove rudder from empennage of the aircraft per M20J Service and Maintenance (S & M) manual, No. 121, Section 27-20-00, paragraphs 2, A, B, C,
2. Check rudder balance per M20J S & M, Section 27-92-00 thru 27-93-01 & Tables 27-18 and 27-19 (See **CAUTIONS** below).

CAUTION: Table 27-18 - Use GAUGE WEIGHT DISTANCE LIMITS of: **+6.69 in.** to +10.68 in. for 2900 pound aircraft. — The +3.37 in. to +10.68 in. limits remain in effect for 2740 pound gross weight aircraft.

CAUTION: Table 27-19 - Use ABSOLUTE BALANCE LIMITS of: **+15.50 in. lbs.** to +12.50 in. lbs. for 2900 pound aircraft. —The +18.00 in. lbs. to +12.50 in. lbs. limits remain in effect for 2740 pound gross weight aircraft.

3. If rudder balance **falls within the above limits**, re-install rudder on the aircraft per M20J S & M, Section 27-20-00, paragraph 2, D. Proceed to Step 8.

If rudder **does not fall within the above limits**, proceed to Step 4.

4. Temporarily add additional weight (washers or any other items) until static balance falls within limits. Remove temporary weights and weigh them to see approximately how much additional weight was needed to balance within limits. If 2.66 oz. or less is needed, the addition of washers described in Step 5 will provide the necessary added weight (ie. 16 each AN970-3 washers weigh 2.66 oz.)
5. If balance just exceeds limit, one method is to remove the balance weight attach screws, one at a time and add washers under screw head (up to two under each screw) as required to balance rudder within the 2900 pound limits. If necessary, proceed to each attaching screw and add washers. It is recommended that the washers be distributed among all 8 attaching screws for a neater appearance. Either AN960-10 or AN970-3 washers may be used. However, for **each washer** added under screw head, the length of the NAS623-3 screw **MUST BE** increased by one dash number. (See Service Bulletin Kit for Part Numbers. You will need to request the quantity of washers and/or screws desired)
6. If greater than 2.66 oz. is required, remove the balance weight and weigh it together with the temporary weights. The total weight of these should be the specified weight of the new 460011-503 balance weight ordered. The maximum 460011-503 balance weight available is 2.88 pounds.
7. Re-check rudder after each change to the balance weight per S & M manual procedures until within limits.
8. Enter compliance statement in Airframe log book and return aircraft to service.

WARRANTY: Mooney Aircraft Corporation will allow up to 2.5 hours labor to inspect the rudder balance. If the rudder is out of balance, up to an additional 2.0 hours will be approved to balance and repaint as necessary. The necessary weights and hardware can be ordered through the nearest Mooney Service Center. Warranty credit will be allowed for this Service Bulletin effort if necessary paperwork is received by Service Parts within 180 days of the date of this Service Bulletin.

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REFERENCE
DATA: N/A

PARTS LIST: KIT PART NUMBER - SB M20-252-1

ITEM	P/N	DESCRIPTION	QTY
1.	460011-503	WEIGHT, BALANCE	1*
2.	AN960-10	WASHER	16**
3.	AN970-3	WASHER, LARGE OD	16**
4.	NAS623-3-2	SCREW	8**
5.	NAS623-3-3	SCREW	8**

* Order weight as needed. 2.88 pounds is heaviest weight available from MAC.

** Use as required per Step 5

FIGURES/
TABLES: Refer to M20J Service and Maintenance Manual, No. 121, Chapter 27, FIGURE 27-18 and 27-19.

CAUTION

Use the limits depicted in this SB for 2900 pound gross weight aircraft until S & M can be revised.