

# MAULE AEROSPACE TECHNOLOGY, INC.

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

FAA APPROVED *J. Rotunno*

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DATE: JUN 11 1997

## **SERVICE BULLETIN NO. 18**

3/20/97

**SUBJECT:** Auxiliary Fuel Tanks in Model M-4 (145 hp) and M-4-180C Airplanes.

**AIRCRAFT AFFECTED:** Maule Models M-4, M-4S, M-4T, and M-4C, s/n's 33-94, 1S-3S, 1T-3T, 1C-11C and M-4-180C s/n's 3001C-3006C.

**COMPLIANCE:** Before next flight. Considered mandatory.

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

**PURPOSE:** Auxiliary Fuel Tanks were approved for use in all M-4 series aircraft except in early s/n's 3-32. However, the Airplane flight Manual Supplements which were required for this modification were inadvertently omitted at that time. These Flight Manual Supplements must be included with AFM because of change in aft C.G. limits when using the auxiliary tanks. This Service bulletin provides correction procedures.

### **INSTRUCTIONS:**

NOTE: If aircraft **has** the auxiliary fuel tanks **installed:**

- a. Check ailerons for installation of the second balance weight required for the auxiliary tank installation. This balance weight is installed inside the aileron leading edge skin in the second rib bay from the outboard end. It is retained by a row of blind rivets in line with the row in the outboard bay which retain the original balance weight. If not there, the second balance weight must be installed and the aileron balance checked per Maule Drawing 2120X. Contact the factory for additional information.
- b. Check Equipment Change page in Weight and Balance Data of Airplane Flight Manual for entry of the Auxiliary fuel tank installation weight of 19.6 lbs. at Arm of 26.3 inches. If not completed, make entry.
- c. Install Quick Drains to fuel tank sumps per Maule Service Letter No. 32, if not already done.

IT'S PERFORMANCE THAT COUNTS!

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1. **MANUALS:** (To be placed in airplane before next flight)

- A. **M-4** Airplane flight Manual Supplement No. 4 or
- B. **M-4-180C** Airplane flight Manual Supplement No. 2

**AVAILABILITY OF PARTS:**

The AFM Supplement required to perform this Service Bulletin, if necessary, may be ordered from the Parts Department of Maule Air, Inc.: (Express shipping is to be paid by customer)

**DOCUMENTATION:**

Record compliance to this Service Bulletin in Aircraft Log Book and return the completed Compliance Record Sheet (Page 3) to Maule Engineering Records.

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## **COMPLIANCE RECORD SHEET**

Aircraft Model \_\_\_\_\_

Aircraft Serial No. \_\_\_\_\_

Aircraft Registration No. \_\_\_\_\_

Action taken: **(Please check if applicable)**

- ( ) Service Bulletin No. 18 completed. Auxiliary Fuel tanks **are** installed in this aircraft and the required AFM Supplement has been placed in airplane.
- ( ) Auxiliary Fuel Tanks are **not** installed in this airplane. (No further action is required.)

Note: If you no longer own this aircraft, please forward this information to the present owner/ operator and notify the factory of address/ ownership corrections. Include aircraft model, serial number, current owner's name and address. Corrections should be directed to factory address below.

Owner's Name \_\_\_\_\_

Owner's Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Certified by \_\_\_\_\_ Title \_\_\_\_\_  
Signature Owner, A&P, IA, etc.

Date performed \_\_\_\_\_

Please mail this Compliance Record Sheet to: Maule Aerospace Technology, Inc.  
Engineering Records  
2099 GA Hwy 133 South  
Moultrie, GA 31768

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## AIRPLANE FLIGHT MANUAL SUPPLEMENT NO. 2

FOR

### **MAULE M-4-180C**

Reg. No. \_\_\_\_\_

Ser. No. \_\_\_\_\_

This Supplement must be attached to the FAA Approved Airplane Flight Manual dated **October 20, 1970** when Auxiliary Fuel Tanks are installed in accordance with Maule Drawing **2120X**.

The information contained herein supersedes and supplements the information of the basic Airplane Flight Manual; for limitation, procedures and performance information not contained in this Supplement, consult the basic Airplane Flight Manual.

FAA APPROVED: \_\_\_\_\_

*John W. M. C. G.*  
Manager, Aircraft Certification Office  
Federal Aviation Administration  
Atlanta, Georgia

DATE: **JUN 11 1997** \_\_\_\_\_

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IT'S PERFORMANCE THAT COUNTS!

MAULE AEROSPACE TECHNOLOGY, INC.  
MOULTRIE, GEORGIA  
AFM SUPPLEMENT NO. 4  
FOR MAULE **M-4, M-4S, M-4T** and **M-4C**  
(S/N's 33-94, 1S-3S, 1T-3T, 1C-11C)

SECTION I

**OPERATING LIMITATIONS**

1.3 **MAXIMUM WEIGHT:** 2100 Lbs. Filling each auxiliary tank will add seventy (70) pounds per side at twenty-two (22) inches. Consult paragraph 8, "Center of Gravity Range" and the "Center of Gravity Envelope" on the "Weight and Balance Information" data sheets to assure proper aircraft loading.

1.4 **CENTER OF GRAVITY LIMITS:**

<u>With Fuel in Auxiliary Tanks</u>	<u>With Auxiliary Tanks Empty</u>	<u>Weight</u>
+15.0 to +18.0	+15.0 to +23.0	2100 lbs.
+11.0 to +18.0	+11.0 to +23.0	1400 lbs. or less

1.9 **PLACARDS:**

On Instrument Panel below auxiliary fuel tank gauges:

"AIRCRAFT LOADING RESTRICTED WITH FUEL IN AUXILIARY GAS TANKS - SEE LOADING INSTRUCTIONS"

SECTION II

**NORMAL OPERATING PROCEDURES**

2.3 **NORMAL FLIGHT OPERATIONS:**

E. **FUEL SYSTEM MANAGEMENT:**

Fuel is fed to the engine from the main (inboard) tanks and is controlled by the selector valve on the left kick panel. Auxiliary (outboard) tanks feed their respective main tanks via transfer pumps which are controlled by switches on the instrument panel. These transfer pumps transfer fuel at a rate of .4 gallons per minute, or approximately one half hour for a full auxiliary tank. Overfilling a main tank from an auxiliary tank will force excess fuel overboard through the tank vent system. Confirm fuel transfer by illumination of the transfer pump switch and an increase in the respective main tank fuel gauge.

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E. FUEL SYSTEM MANAGEMENT: Cont'd

Recommended fuel use sequence:

1. Use right main down to 1/2
2. Use left main down to 1/2
3. With left main selected, transfer one half of left aux. to left main
4. Select right main and transfer entire right aux. to right main
5. Select left main and transfer remaining aux. Fuel to left main
6. Use either main as necessary to maintain lateral trim.

SECTION III

**EMERGENCY PROCEDURES:**

3.1 **RECOVERY FROM INADVERTENT SPIN:**

Intentional spins are prohibited. If aircraft inadvertently enters a spin, leave power setting where it was when aircraft entered spin. Immediately use opposite rudder followed by forward elevator for recovery.

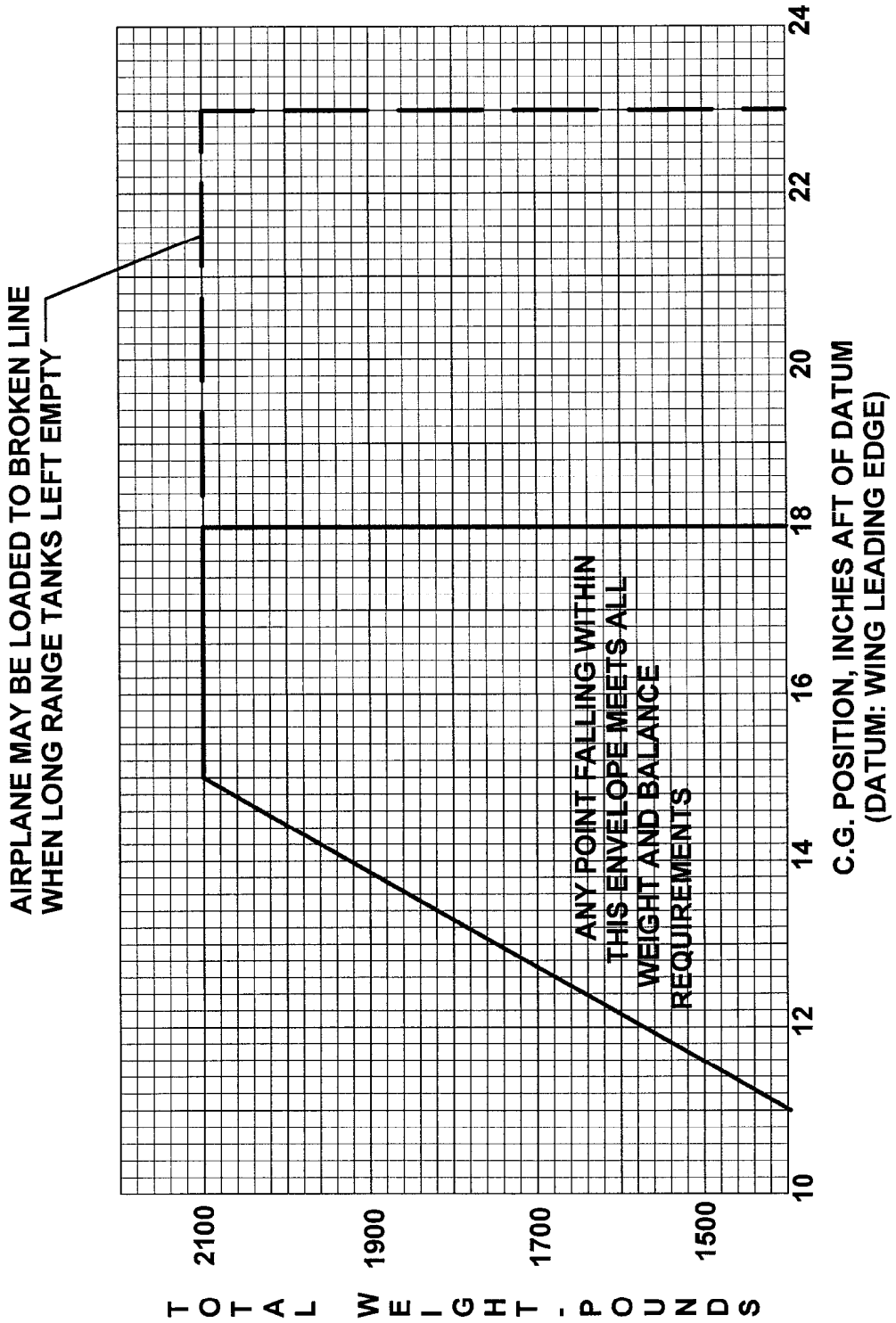
**WEIGHT AND BALANCE DATA:**

Page 4 of this supplement is in effect for this modification in lieu of the Center of Gravity Envelope on page 3 in Weight and Balance Data of the Airplane Flight Manual.

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