

MAULE

AEROSPACE
TECHNOLOGY, INC.

Approved
FAA: Curtis J. Graham
Date: Dec 29, 1999

MANDATORY

SERVICE BULLETIN NO. 20

Page 1 of 3

Date: 12/27/99

SUBJECT: Nicopress Sleeves on Control Cables.

AIRPLANES AFFECTED: All Maule Models

STATUS: This Service Bulletin should be considered a caution of a potential safety problem. This inspection and possible field fix is designed to reduce the possibility of loss of control due to a possible cable slipping out of Nicopress Sleeve.

BACKGROUND: Maule has received a report that during a recent landing roll-out, the aft right rudder cable slipped out of its nicopress sleeve. Both the pilot and passenger were not harmed after a minor ground loop. In this incident, a nicopress sleeve was found to be not adequately crimped and sleeve was slightly larger than the gauge dimension. We have determined after checking several airplanes that one crimping tool was not set correctly to specification on the elevator and rudder cables. However, we have load tested several cables with oversize nicopress sleeves crimped by same tool to over 1100 lb., (required by AC 43.13-1B for 1/8 cable) which resulted in the cables failing before the nicopress sleeves. (Maule has manufactured approximately 2200 airplanes in the last 37 years with about 27 nicopress sleeves per airplane (depending on model) which amounts to approximately 60,000 nicopress sleeves with no previous known problem.)

COMPLIANCE: It is recommended that this Service Bulletin be complied with before further flight for 1990 and later airplanes. For earlier airplanes it is recommended that this Service Bulletin be complied with at the next 100 Hour or Annual Inspection.

ACTION TO BE TAKEN AND TOOLS REQUIRED:

- 1) Inspect all 1/8" cable nicopress terminal ends to determine that they have been compressed the correct amount at all three compression locations per Nicopress gauge: (Note this type of terminal is used on all Elevator, Flap, Rudder, and Aileron control systems.)

The correct size for the 1/8" cable nicopress after compression is 0.345 to 0.355 inch at all three compressions. The use of a "go no-go" gauge (Size M) or a caliper will be required.

Locations of the terminals are as follows:

- A. Flap handle area (**3 each** on M-4, M-5 and **4 each** on M-6 and up)
- B. Control column area (**2 each** all models)
- C. Rudder pedal area (**2 each** all models)
- D. Headliner area (**12 each** on M-4, M-5 and **9 each** on M-6 and up)
- E. Tail cone door area (**2 each** on flap control cable and **1 each** on down spring)
- F. Inside rear of fuselage (**2 each** on elevator bellcrank all models)

ITS PERFORMANCE THAT COUNTS!

2099 Georgia Hwy. 133 South~Moultrie, GA 31768

Tel: 912-985-2045~Fax: 912-890-2402

MAULE AEROSPACE TECHNOLOGY, INC.

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Date: 12/27/99

- G. Rudder (**2 each** all models)
- H. Ailerons (**4 each** all models)
- 2) If all nicopress terminals are compressed satisfactory and are in good general condition, no further action is required (except to return Compliance Record Sheet, Page 3).
- 3) If any nicopress terminal compressions are outside limits, recrimp and then reinspect to Paragraph 1). Replace sleeve if condition is unsatisfactory.

NOTE: Refer to FAA AC 43.13-1B, Section 8, for additional requirements and information on Control Cable Assemblies.

Estimated inspection time to complete this Service Bulletin is 5 Hours.

This Service Bulletin is effective all Models/Serial Numbers except future production as listed below: (will be incorporated into factory manufacturing)

MXT-7-180 s/n 14096C and up, **MXT-7-420** s/n 16001C and up, **MT-7-235** s/n 18042C, 18043C, 18045C, 18046C, 18048C and up, **MXT-7-160** s/n 17009C and up, **MX-7-160** s/n 19047C and up, **MX-7-180A** s/n 20064C and up, **MXT-7-180A** s/n 21068C, 21069C, 21071C, 21073C - 21075C, 21078C, 21080C, 21082C and up, **MX-7-180B** s/n 22017C and up, **M-7-235B** s/n 23057C, 23060C and up, **M-7-235A** s/n 24002C and up, **M-7-235C** s/n 25038C, 25039C, 25042C, 25043C, 25045C and up, **M-7-260** s/n 26001C, 26008C and up, **MT-7-260** s/n 27002C, 27004C and up, **MX-7-180C** s/n 28012C and up, **M-7-420AC** s/n 29002C and up, **M-7-260C** s/n 30005C, 30006C, 30012C, 30015C and up, **MX-7-160C** s/n 34002C and up.

Note: Page 3 is the Service Bulletin Compliance Record Sheet and is to be completed and returned to Maule engineering records.



SERVICE BULLETIN NO. 20

COMPLIANCE RECORD SHEET

Aircraft Model _____

Aircraft Serial No. _____

Action taken (PLEASE CHECK WHATEVER APPLIES):

- () Inspection of the Nicopress sleeves per Service Bulletin #20 was performed and all were found correct. No further action was required.
- () Inspection of the Nicopress sleeves per Service Bulletin #20 was performed and the following were found incorrect and were recrimped and reinspected per this SB.

Flap handle area 1 2 3 4 (circle)

Control column area 1 2 (circle)

Rudder pedal area 1 2 (circle)

Headliner area 1 2 3 4 5 6 7 8 9 10 11 12 (circle)

Tail cone door area 1 2 (flap control cable) 1 (on down spring) (circle)

Inside rear of fuselage (on elevator bellcrank) 1 2 (circle)

Rudder 1 2 (circle)

Ailerons 1 2 3 4 (circle)

Owner's Name _____

Owner's Address _____

City _____ State _____ Zip _____

Certified by _____ Title _____

Signature

Owner, A & P. IA. Etc.

Date performed _____

If you no longer own this airplane, please fill in new owner's information and return to factory address below:

New Owner's Name _____

New Owner's Address _____

City _____ State _____ Zip _____

Please mail this Compliance Record to: Maule Air, Inc.~Engineering Records~2099 Georgia Highway 133 South~Moultrie, GA 31768 USA

ITS PERFORMANCE THAT COUNTS!

2099 Georgia Hwy. 133 South~Moultrie, GA 31768

Tel: 912-985-2045~Fax: 912-890-2402

[4910-13-U]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2000-CE-04-AD; Amendment 39-11715; AD 2000-09-06]

RIN 2120-AA64

Airworthiness Directives; Maule Aerospace Technology, Inc. M-4, M-5, M-6, M-7, MX-7, and MXT-7 Series Airplanes and Models MT-7-235 and M-8-235 Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule; request for comments.

SUMMARY: This amendment adopts a new airworthiness directive (AD) that applies to certain Maule Aerospace Technology, Inc. (Maule) M-4, M-5, M-6, M-7, MX-7, and MXT-7 series airplanes and Models MT-7-235 and M-8-235 airplanes. This AD requires you to inspect all Nicopress™ sleeve terminal ends for correct size compression, with adjustment or replacement, as necessary. This AD results from a report of the rudder cable slipping out of the Nicopress™ sleeve while one of the affected airplanes was landing. The actions specified by this AD are intended to detect and correct improper crimping of the Nicopress™ sleeve, which could cause a control cable to slip from the sleeve. This could result in loss of rudder, elevator, aileron, or flap control.

DATES: This AD becomes effective on May 30, 2000.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in the regulation as of May 30, 2000.

The Federal Aviation Administration (FAA) must receive any comments on this rule on or before June 23, 2000.

ADDRESSES: Submit comments in triplicate to FAA, Central Region, Office of the Regional Counsel, Attention: Rules Docket No. 2000-CE-04-AD, 901 Locust, Room 506, Kansas City, Missouri 64106.

You may get the service information referenced in this AD from Maule Aerospace Technology Inc., 2099 Georgia Highway 133 South, Moultrie, Georgia 31768; telephone: (912) 985-2045; facsimile: (912) 890-2402. You may examine this information at FAA, Central Region, Office of the Regional Counsel, Attention: Rules Docket No. 2000-CE-04-AD, 901 Locust, Room 506, Kansas City, Missouri 64106; or at the Office of the Federal Register, 800 North Capitol Street, NW, suite 700, Washington, DC.

FOR FURTHER INFORMATION CONTACT: Cindy Lorenzen, Aerospace Engineer, FAA, Atlanta Aircraft Certification Office, One Crown Center, 1895 Phoenix Boulevard, suite 450, Atlanta, Georgia 30349; telephone: (770) 703-6078; facsimile: (770) 703-6097.

SUPPLEMENTARY INFORMATION:

Discussion

What events have caused this AD? The FAA has received a report of the rudder cable slipping out of the Nicopress™ sleeve while a Maule Model M-7-235C airplane was landing. Investigation of this accident revealed that the Nicopress™ sleeve was not adequately crimped and was slightly larger than the gauge dimension.

What is the cause of the problem? Maule did not set a crimping tool to correct specification for the elevator and rudder cables that were installed on certain Maule airplane models on Type Certificate No. 3A23, Revision 26, dated April 6,

2000. Maule has no way of determining exactly what time frame the crimping tool was not set to specification. Each airplane utilizes approximately 27 Nicopress™ sleeves.

The airplane models affected are listed in the AD portion of this document.

What are the consequences if the condition is not corrected? An improperly crimped Nicopress™ sleeve, if not detected and corrected, could cause a control cable to slip from the sleeve. This could result in loss of rudder, elevator, aileron, or flap control.

Is there service information that applies to this subject? Maule has issued Mandatory Service Bulletin No. 20, dated December 27, 1999.

What are the provisions of this service bulletin? The service bulletin:

- includes procedures for inspection of all Nicopress™ sleeve terminal ends for correct size compression; and
- specifies provisions for adjustment or replacement, as necessary.

FAA's Determination and an Explanation of the Provisions of the AD

What has FAA decided? After examining the circumstances and reviewing all available information related to the incidents described above, including the relevant service information, FAA has determined that:

- an unsafe condition exists or could develop on certain Maule M-4, M-5, M-6, M-7, MX-7, and MXT-7 series airplanes and Models MT-7-235 and M-8-235 airplanes of the same type design; and
- AD action should be taken in order to detect and correct improper crimping of the Nicopress™ sleeve, which could cause a control cable to slip from the sleeve.

What does this AD require? This AD requires you to inspect all Nicopress™ sleeve terminal ends for correct size compression, with adjustment or replacement, as necessary.

Will I have the opportunity to comment prior to the issuance of the rule?

Because the unsafe condition described in this document could result in loss of rudder, elevator, aileron, or flap control, FAA finds that notice and opportunity for public prior comment are impracticable. Therefore, good cause exists for making this amendment effective in less than 30 days.

Comments Invited

Although this action is in the form of a final rule and was not preceded by notice and opportunity for public comment, FAA invites comments on this rule. You may submit whatever written data, views, or arguments you choose. You need to include the rule's docket number and submit your comments in triplicate to the address specified under the caption "ADDRESSES." The FAA will consider all comments received on or before the closing date. We may amend this rule in light of comments received. Factual information that supports your ideas and suggestions is extremely helpful in evaluating the effectiveness of the AD action and determining whether we need to take additional rulemaking action.

The FAA is re-examining the writing style we currently use in regulatory documents, in response to the Presidential memorandum of June 1, 1998. That memorandum requires federal agencies to communicate more clearly with the public. We are interested in your comments on whether the style of this document is clearer, and any other suggestions you might have to improve the clarity of FAA communications that affect you. You can get more information about the Presidential memorandum and the plain language initiative at <http://www.plainlanguage.gov>.

The FAA specifically invites comments on the overall regulatory, economic, environmental, and energy aspects of the rule that might suggest a need to modify the rule. You may examine all comments we receive before and after the closing date of the rule in the Rules Docket. We will file a report in the Rules Docket that summarizes each FAA contact with the public that concerns the substantive parts of this AD.

If you want us to acknowledge the receipt of your comments, you must include a self-addressed, stamped postcard. On the postcard, write "Comments to Docket No. 2000-CE-04-AD." We will date stamp and mail the postcard back to you.

Regulatory Impact

These regulations will not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, FAA has determined that this final rule does not have federalism implications under Executive Order 13132.

The FAA has determined that this regulation is an emergency regulation that must be issued immediately to correct an unsafe condition in aircraft, and is not a significant regulatory action under Executive Order 12866. We have determined that this action involves an emergency regulation under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979). If FAA determines that this emergency regulation otherwise would be significant under DOT Regulatory Policies and Procedures, we will prepare a final regulatory evaluation. You may obtain a copy of the evaluation (if required) from the Rules Docket.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, under the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. FAA amends Section 39.13 by adding a new airworthiness directive (AD) to read as follows:

2000-09-06 MAULE AEROSPACE TECHNOLOGY, INC.:

Amendment 39-11715; Docket No. 2000-CE-04-AD.

(a) **What airplanes are affected by this AD?** This AD affects the following airplane models and serial numbers, certificated in any category:

GROUP 1 AIRPLANES

Models	Serial Numbers
MX-7-160C	34001C.
M-7-260C	30001C through 30004C, 30007C through 30011C, 30013C, and 30014C.
M-7-420AC	29001C.
MX-7-180C	28001C through 28011C.
MT-7-260	27001C and 27003C.
M-7-260	26002C through 26007C.
M-7-235C	25001C through 25037C, 25040C, 25041C, and 25044C.
M-7-235A	24001C.
M-7-235B	23001C through 23056C, 23058C, and 23059C.

MX-7-180B	22001C through 22016C.
MXT-7-180A	21001C through 21067C, 21070C, 21072C, 21076C, 21077C, 21079C, and 21081C.
MX-7-180A	20001C through 20063C.
MX-7-160	19001C through 19046C.
MXT-7-160	17001C through 17008C.
MT-7-235	18001C through 18041C, 18044C, and 18047C.
M-8-235	15001C through 15005C.
MXT-7-180	14000C through 14095C.
MX-7-180	11066C through 11097C.
MX-7-235	10081C through 10122C.
M-7-235	4078C, 4080C, 4083C, 4086C, and 4089C through 4132C.
M-6-235	7508C, 7510C, 7516C, and 7518C through 7521C.

GROUP 2 AIRPLANES

Models	Serial Numbers
Bee Dee M-4	3 through 14.
M-4	3 through 94 (Bee Dee: 3-14; and M-4: 15-94).
M-4C	1C through 11C.
M-4S	1S, 2S, and 3S.
M-4T	1T, 2T, and 3T.
M-4-210	1001 through 1045.
M-4-210C	1001C through 1117C.
M-4-220C	2001C through 2190C.
M-4-220S	2001S.
M-4-180C	3001C through 3006C.
M-5-200	8015C and 8022C.
M-5-210C	6001C through 6206C.
M-5-220C	5001C through 5057C.
M-5-235C	7001C through 7248C, 7250C through 7353C, A7354C, A7355C, 7356C, 7357C, A7358C, 7359C, A7360C, A7361C, 7362C through 7365C, A7366C, A7367C, 7368C through 7376C, 7445C, 7451C, 7460C, 7467C, 7470C, 7478C through 7480C, 7484C through 7487C, and 7515C.

M-5-180C	8001C through 8014C, 8016C through 8019C, 8021C, 8023C through 8042C, 8044C through 8064C, and 8068C through 8094C.
M-5-210T	9001C through 9010C.
M-6-235	7249C, 7356C, 7379C through 7444C, 7446C through 7450C, 7452C through 7459C, 7461C through 7466C, 7468C, 7469C, 7471C through 7475C, 7488C through 7507C, 7509C, 7511C through 7514C, and 7517C.
M-6-180	8020C, 8043C, and 8065C through 8067C.
M-7-235	4001C through 4077C, 4079C, 4081C, 4082C, 4084C, 4085C, 4087C, and 4088C.
M-7-235	12001C and 12002C. These airplanes were manufactured as Model M-7-235 airplanes and then modified in accordance with STC SA2661SO. This modification changed the model designation of these airplanes to M-7-420.
MX-7-235	10001C through 10080C.
MX-7-180	11001C through 11065C.
MX-7-420	13001C through 13003C.

(b) **Who must comply with this AD?** Anyone who wishes to operate any of the above airplanes on the U.S. Register must comply with this AD.

(c) **What problem does this AD address?** The actions specified by this AD are intended to detect and correct improper crimping of the Nicopress™ sleeve, which could cause a control cable to slip from the sleeve. This could result in loss of rudder, elevator, aileron, or flap control.

(d) **What must I do to address this problem?** To address this problem, accomplish the following:

Action	Compliance Time	Procedures
Inspect all Nicopress™ sleeve terminal ends for correct size compression.	<p>For Group 1 airplanes: Within the next 25 hours time-in-service (TIS) after May 30, 2000 (the effective date of this AD); and</p> <p>For Group 2 airplanes: Within the next 100 hours TIS after May 30, 2000 (the effective date of this AD).</p>	Accomplish in accordance with the ACTION TO BE TAKEN AND TOOLS REQUIRED section of Maule Mandatory Service Bulletin No. 20, dated December 27, 1999.
Adjust or replace any terminal compressions that are outside of the limits specified in the service information.	Prior to further flight after the inspection required by this AD.	Accomplish in accordance with the ACTION TO BE TAKEN AND TOOLS REQUIRED section of Maule Mandatory Service Bulletin No. 20, dated December 27, 1999.
Do not install a Nicopress™ sleeve without assuring that the terminal compressions are within the limits specified in the service information.	As of May 30, 2000 (the effective date of this AD).	Accomplish in accordance with the ACTION TO BE TAKEN AND TOOLS REQUIRED section of Maule Mandatory Service Bulletin No. 20, dated December 27, 1999.

(e) Can I comply with this AD in any other way?

(1) You may use an alternative method of compliance or adjust the compliance time if:

(i) Your alternative method of compliance provides an equivalent level of safety; and

(ii) The Manager, Atlanta Aircraft Certification Office (ACO), approves your alternative. Submit your request through an FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Atlanta ACO.

(2) This AD applies to each airplane identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For airplanes that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (e)(1) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if you have not eliminated the unsafe condition, specific actions you propose to address it.

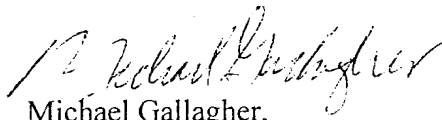
(f) Where can I get information about any already-approved alternative methods of compliance? Contact Cindy Lorenzen, Aerospace Engineer, FAA, Atlanta Aircraft Certification Office, One Crown Center, 1895 Phoenix Boulevard, suite 450, Atlanta, Georgia 30349; telephone: (770) 703-6078; facsimile: (770) 703-6097.

(g) What if I need to fly the airplane to another location to comply with this AD? FAA can issue a special flight permit under sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate your airplane to a location where you can accomplish the requirements of this AD .

(h) Are any service bulletins incorporated into this AD by reference?
You must accomplish the actions required by this AD in accordance with Maule Mandatory Service Bulletin No. 20, dated December 27, 1999. The Director of the Federal Register approved this incorporation by reference under 5 U.S.C. 552(a) and 1 CFR part 51. You can get copies from Maule Aerospace Technology, Inc., 2099 Georgia Hwy. 133 South, Moultrie, Georgia 31768. You can look at copies at FAA, Central Region, Office of the Regional Counsel, 901 Locust, Room 506, Kansas City, Missouri, or at the Office of the Federal Register, 800 North Capitol Street, NW, suite 700, Washington, DC.

(i) When does this amendment become effective? This amendment becomes effective on May 30, 2000.

Issued in Kansas City, Missouri, on April 27, 2000.


Michael Gallagher,
Manager, Small Airplane Directorate,
Aircraft Certification Service.

ATL

MUIA'S AVIATION INC

PAGE 01

To: David MAule		From: John Muia	
Co./Dept.		Co./Dept. MUIA's Aviation Inc	
Fax: 912 890 2402		Fax: 540 636 7751	
Phone: 912 985 2045		Phone: 540 636 7751	

Small Airplane Directorate
Aircraft Certification Office
1895 Phoenix Boulevard
One Crown Center, Suite 450
Atlanta, Georgia 30349



U.S. Department
of Transportation

Federal Aviation
Administration

JUL 24 2000

Mr. John E. Muia
Muia's Aviation, Inc.
233 Stokee Airport Road
Front Royal, VA 22630

Dear Mr. Muia:

This is in response to your fax dated July 21, 2000, regarding Airworthiness Directive (AD) 2000-09-06 for Maule airplanes. During inspection of the Nicopress sleeves on the cables you found sleeves that were crimped to a size less than the tolerance called out in Maule Service Bulletin No. 20. The service bulletin requires a reading of 0.345" to 0.355" and some cable sleeves you inspected were 0.335". Your fax also states that there is no physical damage to the cables or sleeves.

This amount of extra crimping (0.010") on the sleeves is acceptable and is approved as an alternate means of compliance with AD 2000-09-06.

Sincerely,


for Melvin D. Taylor, Manager,
Atlanta Aircraft Certification Office