ECLIPSE Service Bulletin

NUMBER: SB 500-27-004, Rev C

MODEL: ECLIPSE EA500

SUBJECT: Aileron Joint Assembly Inspection and Replacement

Alert

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1. PLANNING INFORMATION

A. Effectivity

Aircraft Serial Numbers: 500-000001 through 500-000278.

B. Reason

Possible corrosion of the Aileron joint assembly bearing or shaft resulting in aileron friction being out of tolerance. Corrective action is to inspect aileron joint and replace with redesigned parts.

Revision B of this Service Bulletin clarifies time compliance from 50 hours to 50 flight hours, and clarifies inspection procedures. Added steps to verify aileron zero and travel adjustment.

Revision C of this Service Bulletin updates the effectivity and company information.

C. Description

Aircraft to have aileron system friction checked within 50 flight hours from the issue date of this service bulletin, and every 100 flight hours subsequent: in accordance with AMM Section 27-00-01-071-A-701-008 or 27-00-01-071-B-701-008.

If friction is determined to be out of specification requirements (greater than 2 pounds), both left hand and right hand ailerons joints will be inspected for resistance.

Installation of the following redesigned components on both left *and* right ailerons shall remove the requirement for inspection at 50 flight hours and every 100 flight hours subsequent:

(1) Fitting Assy, Aileron Joint 27-105822-1004.

(2) Assembly, Bellcrank, Left Hand 27-105820-1003.

(3) Assembly, Bellcrank, Right Hand 27-109390-1003.

(4) Bushing, Aileron Control 27-113922-2002.

D. Relevant Publications

06-117751 – EA500 AMM, current revision

E. Compliance

Eclipse Aerospace Incorporated considers this to be a required inspection that must be accomplished within 50 flight hours from the issue date of this Service Bulletin, and every 100 flight hours subsequent, until the redesigned parts are installed.

Completion of section step 3D. (Part replacement) of Service Bulletin removes the inspection requirement and constitutes completion of Service Bulletin.

Compliance with revision A and B of this Service Bulletin constitutes compliance with revision C.

F. Approval

This Service Bulletin is based on engineering data that is FAA-approved, and the modification herein complies with the applicable regulations.

G. Labor Requirements

The following information is for planning purposes only.

(1) Estimated labor hours to perform: 12

Suggested number of personnel: 1

Set up and inspection: 1.5 Hours

Replace parts and function check: 9.0 Hours

Close up and return to service: 1.5 Hours

Total labor hours: 12

The above is an estimate based on properly equipped and experienced personnel complying with this Service Bulletin. Actual labor hours may vary depending on workforce experience, concurrent maintenance, discovery of other discrepancies, etc.

(2) Qualification of personnel:

- A person properly authorized under 14 CFR 43 to perform aircraft maintenance.

H. Weight and Balance Change

No change.

I. Electrical Load Data Change

No change.

J. Software Accomplishment Summary

No change.

K. References

06-117751 – EA500 AMM, current revision

06-117752 – EA500 IPC, current revision.

L. Publications Affected

None

M. Export Control

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. These commodities, technology or software are intended for use only in the End User's country. An export license from the U.S. Department of Commerce may be required before these products can be re-exported, transferred, transshipped on a non-continuous voyage, or otherwise disposed of in any other country, either in their original form or after being incorporated into an end item. Diversion of this end-item or its use contrary to any applicable U.S. government license or to U.S. law is prohibited.

2. MATERIAL INFORMATION

A. Materials

(1) Non-Kitted Parts

Order non-kitted parts if kit SB500-27-004A is not available. Non-Kitted parts to be ordered separately and on condition only.

NOTE: Use of non-kitted parts will *not* remove inspection requirement.

Part Number	Description	Qty	Unit of Issue
27-105822-1003	Fitting Assembly, Aileron Joint	as needed	EA
27-105820-1002	Assembly, Bellcrank, Left hand	as needed	EA
27-109390-1002	Assembly, Bellcrank, Right hand	as needed	EA
27-113922-2001	Bushing, Aileron Control Wing	as needed	EA
MS24665-132	Pin, Cotter	as needed	EA

(2) **Kit SB500-27-004A.**

NOTE: Installation of the following redesigned parts will remove inspection requirements.

Part Number	Description	Qty	Unit of Issue
27-105822-1004	Fitting Assembly, Aileron Joint	2	EA
27-105820-1003	Assembly, Bellcrank, Left hand	1	EA
27-109390-1003	Assembly, Bellcrank, Right hand	1	EA
27-113922-2002	Bushing, Aileron Control Wing	2	EA
MS24665-132	Pin, Cotter	6	EA

B. Consumables

The following consumables are required for this Service Bulletin.

Material	Specification	Use
ROYCO 27 or equivalent	MIL-PRF-23827 or equivalent	Corrosion prevention

C. Tooling

The following special tooling/support equipment is required to accomplish this Service Bulletin.

Nomenclature	Specification	Use
Push pull force gauge	LG-100, LG-050, or equivalent	Aileron force check
Rig Pin	0.25 Diameter Rig Pin with streamer	Aileron rigging
Inclinometer/Protractor	Macklanburg Duncan Pro-360 or equivalent	Aileron rigging
Travel Board, Aileron, Left and Right	EAC, 27T109846-RT-003	Aileron rigging

D. Interchangeability / Intermixability of Parts

N/A

E. Part Re-identification

None.

3. ACCOMPLISHMENT INSTRUCTIONS

A. Set-up

(1) Lower flaps for access. Refer to AMM 27-50-00 FLAPS-DESCRIPTION AND OPERATION.

(2) Make sure aileron trim is set to zero. Refer to SUBTASK AMM-27-00-00-081-871-002 TRIM OPERATION.

(3) Make aircraft safe for maintenance. Refer to AMM 20-00-01 MAKE SAFE FOR MAINTENANCE.

WARNING: INSTALL SAFETY DEVICES, WARNING SIGNS AND WARNING PLACARDS BEFORE WORKING ON OR AROUND FLIGHT CONTROLS, FLIGHT CONTROL SURFACES, AND COMPONENTS THAT MOVE. MAKE SURE THERE ARE NO PERSONS OR EQUIPMENT ON OR NEAR SURFACES OF FLIGHT CONTROLS. ACCIDENTAL MOVEMENT OF FLIGHT CONTROLS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

B. Inspection

(1) Perform friction Check on Aileron flight control system. Refer to AMM SUBTASK 27-00-01-071-A-701-008 or 27-00-01-071-B-701-008 depending on aircraft configuration. If friction check was within the allowable friction (2 lbs. or less) proceed to step 3C Corrosion Prevention, if out of specification continue to next step.

(2) If friction is determined to be out of specification requirements (greater than 2 pounds), both left hand and right hand ailerons joints will be inspected for resistance. Inspection shall be performed by isolating the left Aileron System. Disconnect the RH Position 4 pushrod from RH Aileron Position 4 Bellcrank. Refer to AMM SUBTASK 27-11-16-001-801.

NOTE: The right aileron will be disabled during the friction check, do not to allow disconnected push rod to interfere with surrounding structure during friction check.

(3) Once left Aileron System is isolated, re-perform friction check per 27-00-01-071-A-701-008 or 27-00-01-071-B-701-008. If found to be greater than 1.5 lbs of friction go to step 3D. (Part replacement) or 3E. (Alternate part replacement). If friction is within tolerance re-connect the RH position Pushrod that was disconnected in step B.(3) and proceed to step B.5.

NOTE: If partial replacement of parts is incorporated the aircraft shall maintain the requirement for aileron friction checks every 100 flight hours or if any of the alternate parts are incorporated the same inspection requirements shall be in place. Only installation of the following parts on both left *AND* right ailerons shall remove the requirement for the initial inspection and every 100 flight hours subsequent.

Fitting Assembly, Aileron Joint: 27-105822-1004.

Assembly, Bellcrank, Left Hand: 27-105820-1003.

Assembly, Bellcrank, Right Hand: 27-109390-1003.

Bushing, Aileron Control-Wing: 27-113922-2002 (2ea one left, one right).

(4) Isolate the Right Aileron System. Disconnect the LH Position 4 pushrod from LH Aileron Position 4 Bellcrank. Refer to AMM SUBTASK 27-11-16-001-801.

NOTE: The left aileron will be disabled during the friction check, do not to allow disconnected push rod to interfere with surrounding structure during friction check.

(5) Once right Aileron System is isolated, re-perform friction check per 27-00-01-071-A-701-008 or 27-00-01-071-B-701-008. If found to be greater than 1.5 lbs of friction go to step 3D. (Part replacement) or 3E. (Alternate part replacement).

NOTE: If partial replacement of parts is incorporated the aircraft shall maintain the requirement for aileron friction checks every 100 flight hours or if any of the alternate parts are incorporated the same inspection requirements shall be in place. Only installation of the following parts in full on both left *AND* right ailerons shall remove the requirement for the initial inspection and every 100 flight hours subsequent.

Fitting Assembly, Aileron Joint: 27-105822-1004.

Assembly, Bellcrank, Left Hand: 27-105820-1003.

Assembly, Bellcrank, Right Hand: 27-109390-1003.

Bushing, Aileron Control-Wing: 27-113922-2002 (2 each one left, one right).

C. Corrosion prevention

(1) Make sure bearing and pin is clean and dry, apply ROYCO 27 (MIL-PRF-23827 or equivalent) around the pin and bearing area (Figure 1) after initial inspection. Reapply every 100 hours subsequent. Refer to AMM 20-10-00-051-911-005 CORROSION PREVENTION.

NOTE: ROYCO 27 (MIL-PRF-23827) is not required for redesigned parts.

D. Part replacement

The following components when installed on both left AND right ailerons shall remove the requirement for inspection at 50 flight hours and every 100 flight hours there after, and will be the final action required to meet the full intent of the Service Bulletin.

(1) Obtain kit SB500-27-004A.

(2) Remove , AILERON JOINT P/N 27-105822-1003. Refer to AMM 27-11-18-001-801 AILERON JOINT-REMOVAL.

NOTE: Aileron Joint is located on left and right Aileron.

(3) Remove Bushing, Aileron Control Wing P/N 27-113922-2001 (one bushing per side). Refer to AMM 27-11-18-001-801 AILERON JOINT-REMOVAL.

(4) Install new AILERON JOINT P/N 27-105822-1004 and new Bushing, Aileron Control Wing P/N 27-113922-2002. Refer to AMM 27-11-18-041-801 AILERON JOINT- INSTALLATION.

NOTE: New Aileron Joint is required for Left and Right Aileron.

(5) Remove left Bellcrank assembly P/N 27-105820-1002. Refer to AMM 27-11-17-001-801 AILERON BELLCRANK- REMOVAL.

(6) Install left Bellcrank assembly P/N 27-105820-1003. Per SUBTASK AMM-27-11-17-041-411-001, SUBTASK AMM-27-11-17-041-921-002 steps A through E.

(7) Remove right Bellcrank assembly P/N 27-109390-1002. Refer to AMM 27-11-17-001-801 AILERON BELLCRANK- REMOVAL.

(8) Install right Bellcrank assembly P/N 27-109390-1003. Per SUBTASK AMM-27-11-17-041-411-001, SUBTASK AMM-27-11-17-041-921-002 steps A through E.

NOTE: If partial replacement of parts is incorporated the aircraft shall maintain the requirement for aileron friction checks every 100 hours or if any of the alternate parts are incorporated the same inspection requirements shall be in place. Only installation of the following parts in full on both left *AND* right ailerons shall remove the requirement for the initial inspection and every 100 hours subsequent.

(9) Install Aileron Travel Board, Left and Right on left and right wing at aileron.

(10) Install a 0.25 in. rig pin from the aileron rig pin location in aft aileron sector.

CAUTION: DO NOT FORCE RIG PINS. DAMAGE COULD RESULT. TIGHT FITTING RIG PINS MAY INDICATE IMPROPER RIGGING.

(11) Make sure that the aileron angle on each aileron is 0.0°± 0.25°.

(12) Remove the 0.25 in. rig pin from the aileron rig pin location in aft aileron sector.

(13) Move left sidestick to full right position.

(14) Make sure that control surface Trailing Edge Down (TED) angle on left aileron is 11.4-12.1° and right aileron Trailing Edge Up (TEU) is 15.3°-16.0°.

(15) Move left sidestick to full left position.

(16) Make sure that control surface TEU angle on left aileron is 15.3-16.0° and right aileron TED is 11.4-12.1°.

(17) Move right sidestick to full right position.

(18) Make sure that control surface TED angle on left aileron is 11.4-12.1° and right aileron TEU is 15.3-16.0°.

(19) Move right sidestick to full left position.

(20) Make sure that control surface TEU angle on left aileron is 15.3-16.0° and right aileron TED is 11.4°-12.1°.

(21) Remove Aileron Travel Board, Left and Right from left and right wing at aileron.

E. Alternate part replacement

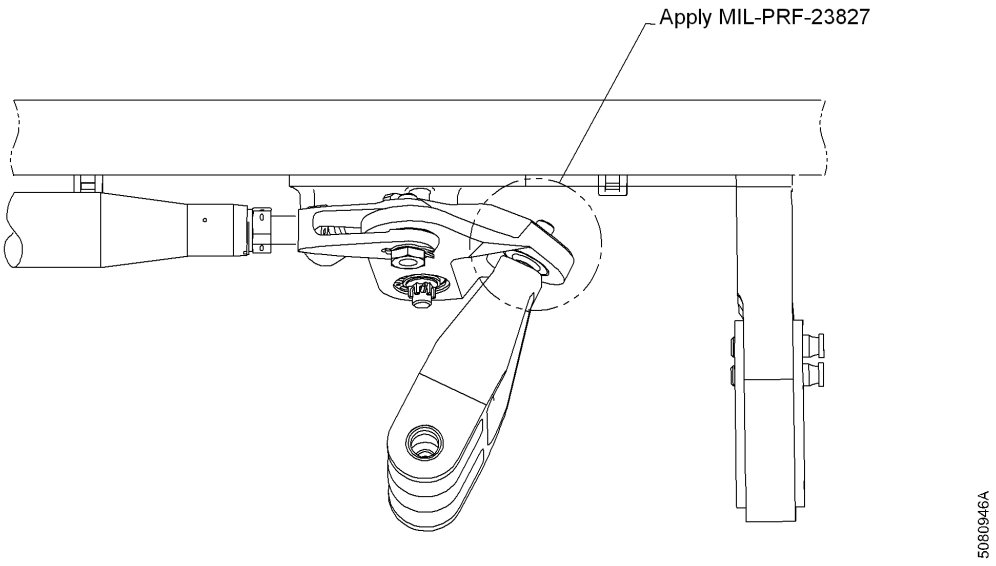
If replacement parts, as defined in step 3D. (Part replacement) are not available, the following parts may be installed. However, with the following parts installed, the friction inspection must be accomplished every 100 flight hours.

(1) Fitting Assembly, Aileron Joint: 27-105822-1003.

Assembly, Bellcrank, Left Hand: 27-105820-1002.

Assembly, Bellcrank, Right Hand: 27-109390-1002.

Bushing, Aileron Control: 27-113922-2001.



Aileron Joint
Figure 1

F. Close up

(1) Remove all tooling from aircraft.

CAUTION: ENSURE ALL RIG PINS ARE REMOVED AND ACCOUNTED FOR.

(2) Close all panels that may have been removed for access.

(3) If all other maintenance is complete, return aircraft to service. Refer to AMM 20-00-02-051-801 RETURN TO SERVICE (AFTER MAINTENANCE).

G. Limitations and Procedures

If step 3D. (Part replacement) is not accomplished, aircraft will require the initial inspection at 50 flight hours and reoccurring inspection every 100 flight hours.

H. Parts Disposition

Return to Eclipse Aerospace.

I. Cost

Contact Eclipse Aerospace Customer Care for cost and availability.

4. PART MARKING

None.

5. RECORD OF COMPLIANCE

Upon incorporation of this Service Bulletin, make an appropriate maintenance-record entry specifying the Service Bulletin number.

6. NOTIFYING ECLIPSE AEROSPACE

Upon incorporation of this service bulletin, the operator/maintainer shall complete the attached Compliance Record and send it to Eclipse Aerospace via regular mail, fax, or e-mail.

Mailing Address	Eclipse Aerospace Inc. ATTN: Customer Care 2503 Clark Carr Loop SE Albuquerque, NM 87106
Fax	1-505-241-8802
E-mail	sbcompliance@eclipse.aero

SERVICE BULLETIN COMPLIANCE RECORD

MODEL _____ AIRPLANE S/N _____ REG. NO. _____ TOTAL TIME _____ (HOURS)

OWNER NAME:
_____

ADDRESS: _____
_____

TELEPHONE NO. (___) _____ FAX NO. (___) _____

COMPLIANCE WITH SB 500-27-004, Rev C

Description of Work Performed

(Inspection | Modification | Repair | Option Installation | Defect or Damage Found, if applicable)

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_____

DATE _____

WORK PERFORMED

BY _____ (PRINTED)

_____ (SIGNATURE)

COMPANY _____

ADDRESS _____

_____

TELEPHONE _____ FAX_____