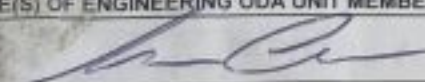


SPE
3/9/17

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION		STATEMENT OF COMPLIANCE WITH AIRWORTHINESS STANDARDS	
FAA Project No. NA		Piper Project No. Y12500	
AIRCRAFT OR AIRCRAFT COMPONENT IDENTIFICATION			
MAKE Piper Aircraft, Inc.	MODEL NO. PA-31-350	TYPE (Aircraft, Engine, Propeller, etc.) Aircraft	NAME OF APPLICANT/AUTHORIZATION NO. Piper Aircraft, Inc. ODA-510620-CE
LIST OF DATA			
IDENTIFICATION	TITLE		
REPAIR EO: PA-31-350(7405205)/01 Rev. -	<p>NOTE: This Data approval is in support of Organizational Designation Project No. <u>Y12500</u> and is not valid for any other purpose or application.</p> <p>REPAIR OF CORROSION DETECTED COMMON TO RH MAIN LOWER SPAR CAP AT APPROXIMATELY WS 58.50 TO WS 72.50</p> <p>NOTE:</p> <ol style="list-style-type: none"> 1) Only the structural engineering aspects of the above listed data are approved herein. This approval is only for the engineering data. It indicates the data listed above demonstrates compliance only with the regulations specified by paragraph and/or subparagraph listed below as "APPLICABLE REQUIREMENTS". 2) All aspects required for the repair are addressed. 3) Compatibility of this data with the aircraft configuration must be determined by the installer. 4) This approval is valid for aircraft model and serial number listed in the Purpose of Data block below. 5) Continued airworthiness instructions are not affected by this repair and remain unchanged. 6) Aircraft Data at time of repair approval: 14,118.2 Hours, UNK Landings. 		
<p>PURPOSE OF DATA To approve listed data for repair of the RH Wing Main Spar Lower Cap-structure between approximately WS 58.50 to WS 72.50 on Piper Aircraft Model PA-31-350, Registration Number N96342 (S/N 31-7405205).</p>			
<p>APPLICABLE REQUIREMENTS (List specific sections)</p> <p>CAR3 (Dated 05/15/1956) 3.171a, 3.172, 3.173, 3.174, 3.292, 3.293, 3.294, 3.295, 3.301, 3.307 and 3.317... thru amd. 3-8 effective 12/18/1962 per TCDS A20SO, Rev. 12.</p>			
<p>CERTIFICATION - As directed by the Administrator and in accordance with the conditions and limitations of authorization under 14 CFR, data listed above and on attached sheets numbered <u>NA</u> have been examined in accordance with established procedures and found to comply with applicable requirements of the Airworthiness Standards listed.</p> <p><input type="checkbox"/> Recommend approval of these data</p> <p>I (We) Therefore: <input checked="" type="checkbox"/> Approve these data</p>			
SIGNATURE(S) OF ENGINEERING ODA UNIT MEMBER(S)	NAME	CLASSIFICATION	DATE
	Andrew Olson	Structures	08MAR2017

REPAIR ENGINEERING ORDER



TITLE	EO NUMBER
REPAIR OF CORROSION DETECTED COMMON TO RH MAIN LOWER SPAR CAP AT APPROXIMATELY WS 58.50 TO WS 72.50	PA-31-350(7405205)/01
DESCRIPTION	MODEL NO
Upon inspection of the P/N 44677-001 RH Wing Main Spar Assembly, corrosion was detected common to the lower spar cap from approximately WS 58.50 to WS 72.50.	PA-31-350
The repair removes the corrosion via blending in accordance with the instructions shown within this engineering order.	SERIAL NO
	31-7405205

The following engineering data is FAA approved when accompanied by FAA form 8100-9 (showing Piper ODA approval) listing this Engineering Order and identifying the aircraft to be repair. Refer to Piper Aircraft model specific service documentation for additional information. All units of measure are in inches unless otherwise noted.

INSTRUCTIONS:

READ AND UNDERSTAND ALL INSTRUCTIONS PRIOR TO BEGINNING THE REPAIR. REPORT ANY DISCREPANCIES OR DIFFICULTIES OF INSTALLATION OF THE DESCRIBED PROCEDURE PRIOR TO START OF THE REPAIRS SHOWN

NOTES:

1. If hardware called out (including grip length) cannot be installed as described, contact Piper engineering with part number(s) required.
2. Alodine per Mil-C-5541, AMS-C-5541, or AMS-A-2473 and apply per manufacturer's instructions.
3. Epoxy prime parts per Mil-PRF-23377 or equivalent and apply per manufacturer's instructions.
4. Continued airworthiness inspections of the repaired area are to be conducted in accordance with the published model specific procedures. No changes to the published inspection procedures or timing are required by the installation of this repair.
5. All units of measure are in inches unless otherwise noted.
6. Structural substantiation of this repair is maintained with Piper Aircraft, Repair Stress Notes PA-31-350(7405205)/01.

REV: -	PRINTED	SIGNED	DATE
ENGINEER	A. Olson	<i>[Signature]</i>	06MAR2017
CHECK	E. Wright	<i>[Signature]</i>	06MAR2017
APPROVE	A. Olson	<i>[Signature]</i>	06MAR2017

REPAIR ENGINEERING ORDER



TITLE

EO NUMBER

REPAIR OF CORROSION DETECTED COMMON TO RH MAIN LOWER SPAR CAP AT APPROXIMATELY WS 58.50 TO WS 72.50

PA-31-350(7405205)/01

1. Prior to beginning repairs, jack and shore the aircraft in accordance with the methods shown in the PA-31-350 Service Manual (761-488).
 - a. As required to accomplish repairs, remove the RH main landing gear assembly as described by the PA-31-350 Service Manual.
2. For corrosion damage common to the RH Main Wing Spar Assembly (P/N 44677-001), remove damage as shown in Figures 1 thru 5.
 - a. Remove existing fasteners common to the area being reworked.
 - b. Use 180 grit sand paper or tool.
 - c. Minimum blend radius is 0.25 inch perpendicular to the part surface.
 - d. Blend only to the depth required to fully remove corrosion from the part.
 - e. The rework shall present a smooth and gradual transition between the reworked area and the non-reworked area (at an approximate 20:1 width to depth ratio).
 - f. For fastener locations common to blended area, ensure blend is perpendicular to fastener location (No tipped fasteners).
 - g. Measure reworked area to determine the amount of material removed. If the remaining material thicknesses are less than shown in Figure 5, Contact Piper engineering prior to continuing with repairs.
3. Surface eddy current inspect reworked area for cracks or other anomalies.
 - a. If cracks or other anomalies are detected, discontinue repairs and report findings to Piper Engineering.
 - b. If no cracks or other anomalies are detected, continue with repairs as described below.
4. Final polish the repair area (this operation shall remove a negligible amount of material, polish only).
 - a. Use 320 grit sand paper or tool.
 - b. Minimum blend radius is 0.25 inch perpendicular to the part surface.
 - c. The repair shall present a smooth and gradual transition between the reworked area and the non-reworked area (at an approximate 20:1 width to depth ratio).
 - d. The final surface finish is to be approximately RMS 63.
 - e. If the rework will exceed the minimum remaining material measurements shown in Figure 5, discontinue repairs and report estimated required blend depth to Piper Engineering.
 - f. Clean, Alodine and epoxy prime all bare areas.
5. For removed fastener locations, install the same size and type fasteners as previously installed.

TITLE	EO NUMBER
REPAIR OF CORROSION DETECTED COMMON TO RH MAIN LOWER SPAR CAP AT APPROXIMATELY WS 58.50 TO WS 72.50	PA-31-350 (7405205) /01

6. Upon completion of repairs, reinstall the RH Main Landing Gear Assembly and perform a gear swing as described by the PA-31-350 Service Manual.

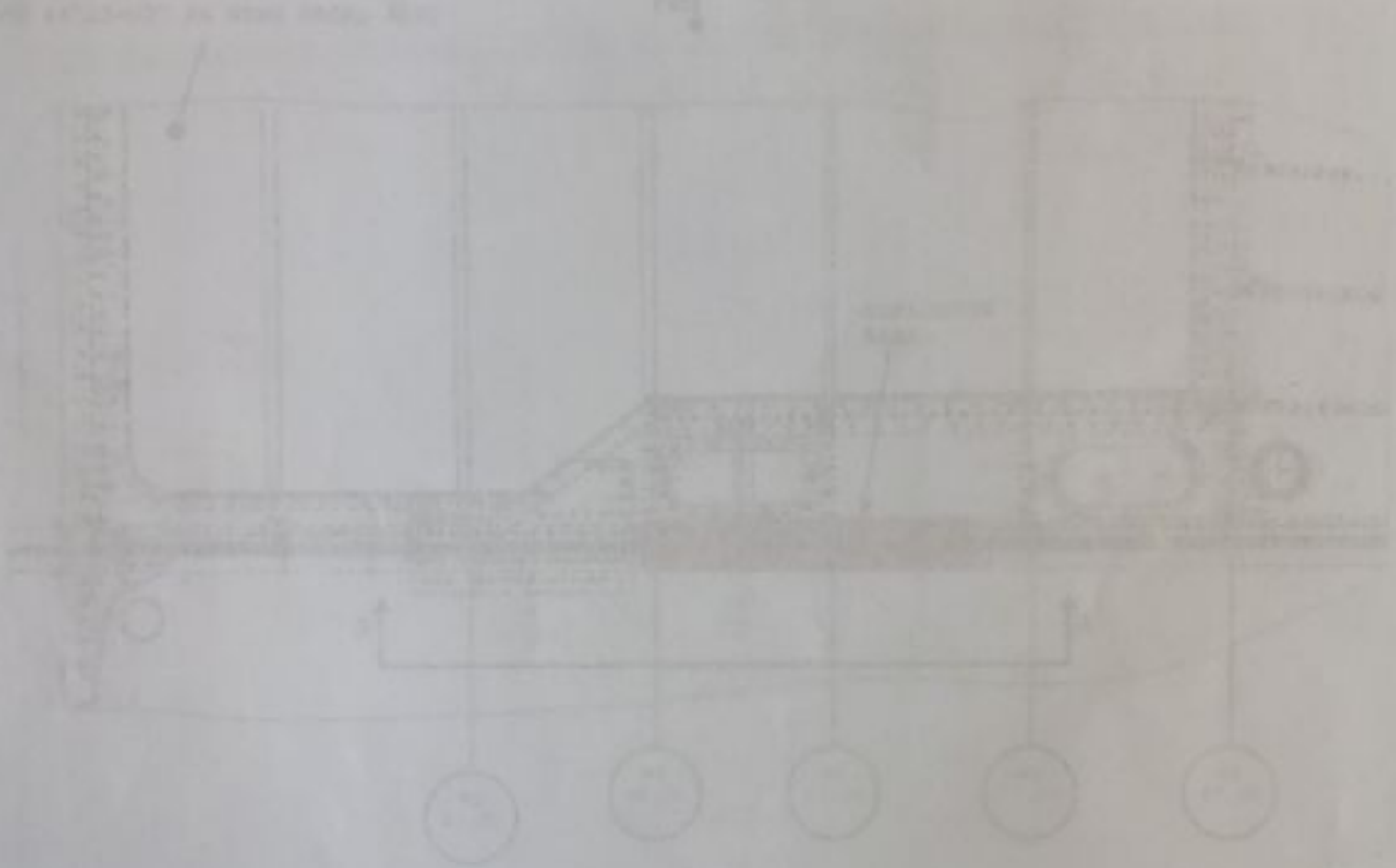


FIGURE 11 - CORROSION LOCATIONS

TITLE

EO NUMBER

REPAIR OF CORROSION DETECTED COMMON TO RH MAIN LOWER SPAR CAP AT APPROXIMATELY WS 58.50 TO WS 72.50

PA-31-350 (7405205) /01

P/N 44723-007 RH WING PANEL ASSY

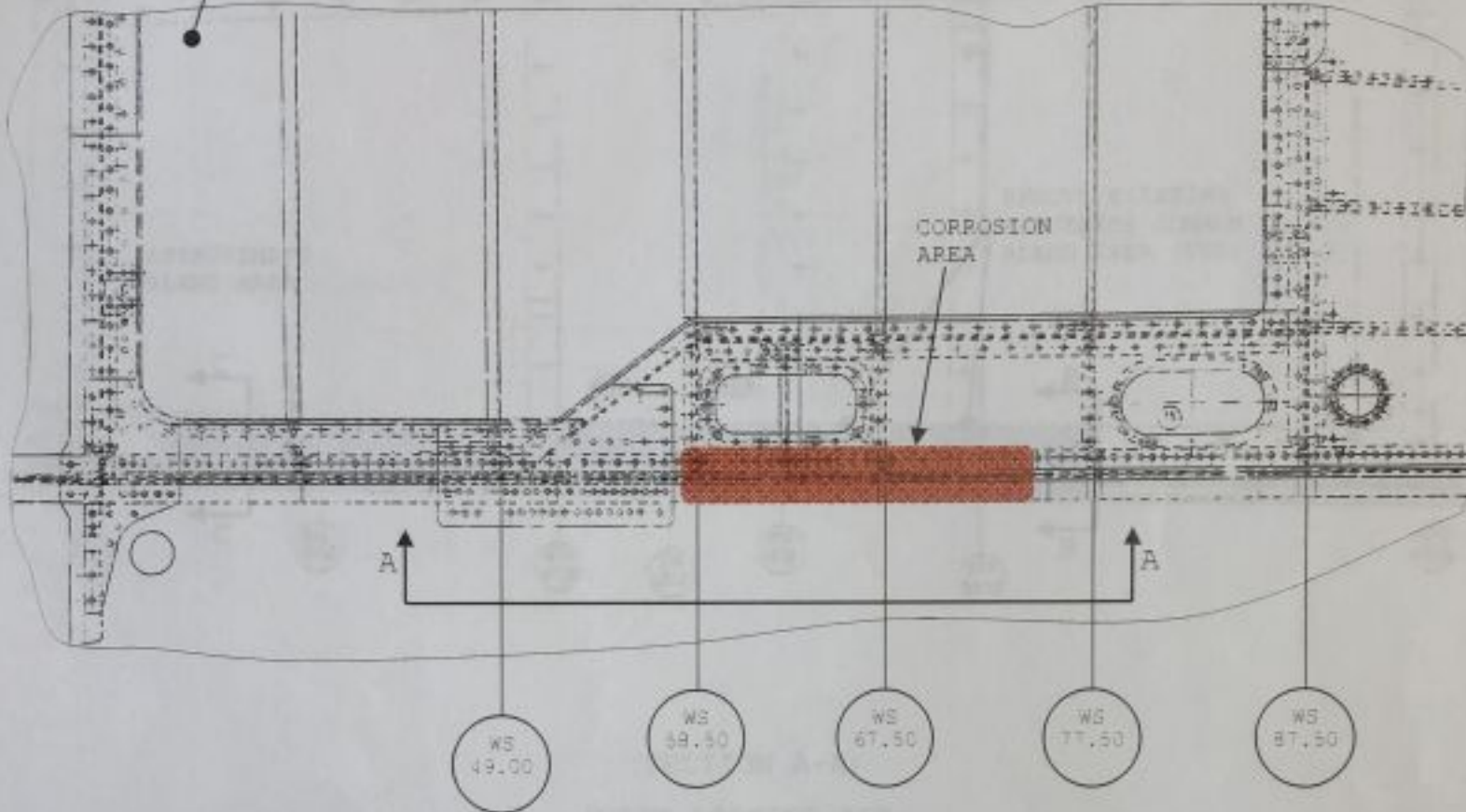
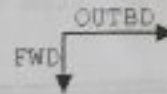


FIGURE 1: DAMAGE LOCATION (VIEW LOOKING UP)

FIGURE 1: DAMAGE LOCATION

REPAIR ENGINEERING ORDER

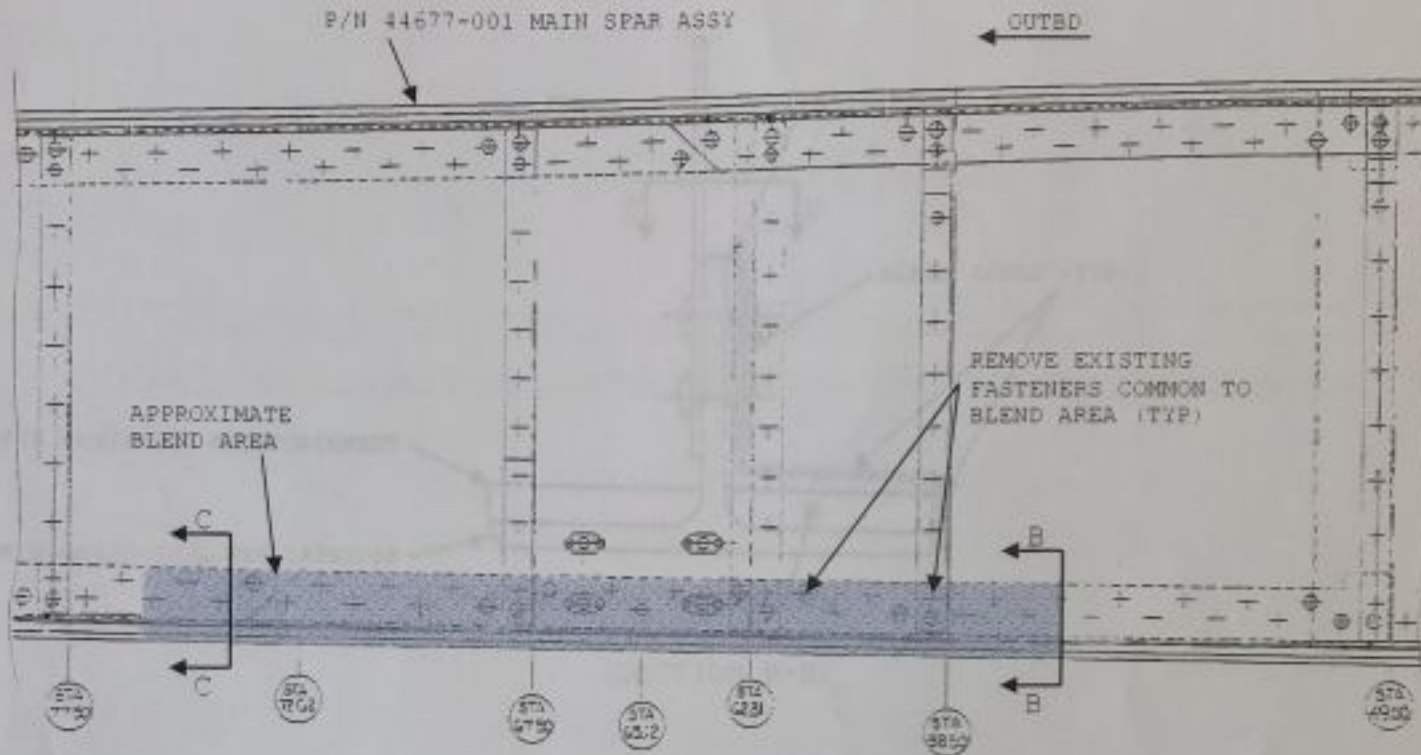


TITLE

EO NUMBER

REPAIR OF CORROSION DETECTED COMMON TO RH MAIN LOWER SPAR CAP AT APPROXIMATELY WS 58.50 TO WS 72.50

PA-31-350 (7405205) /01



(SECTION A-A)
(VIEW LOOKING AFT)

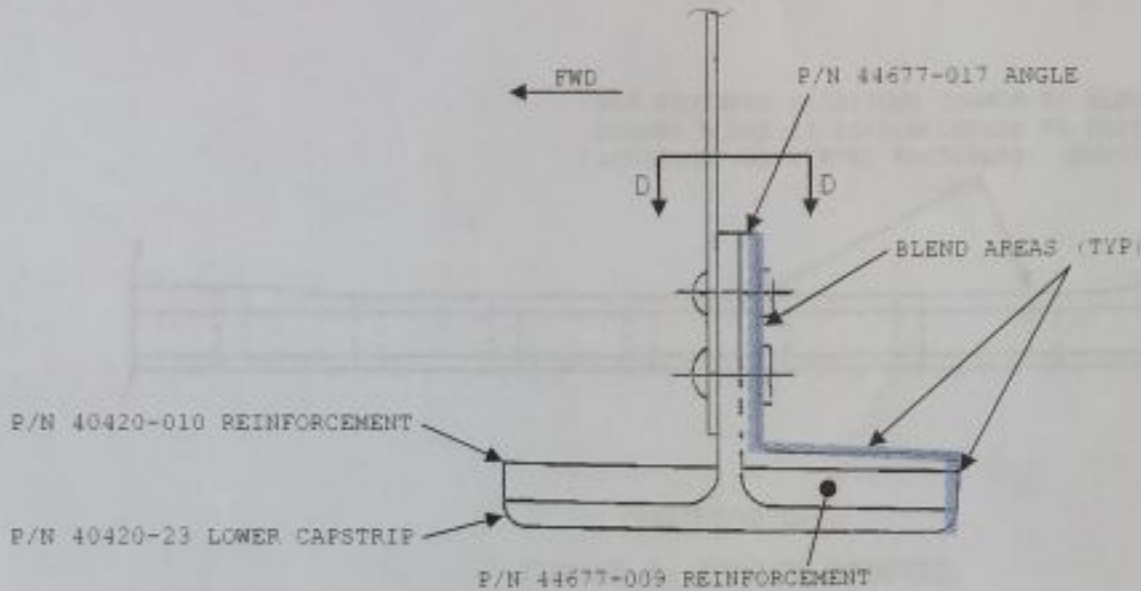
FIGURE 2: DAMAGE LOCATION

TITLE

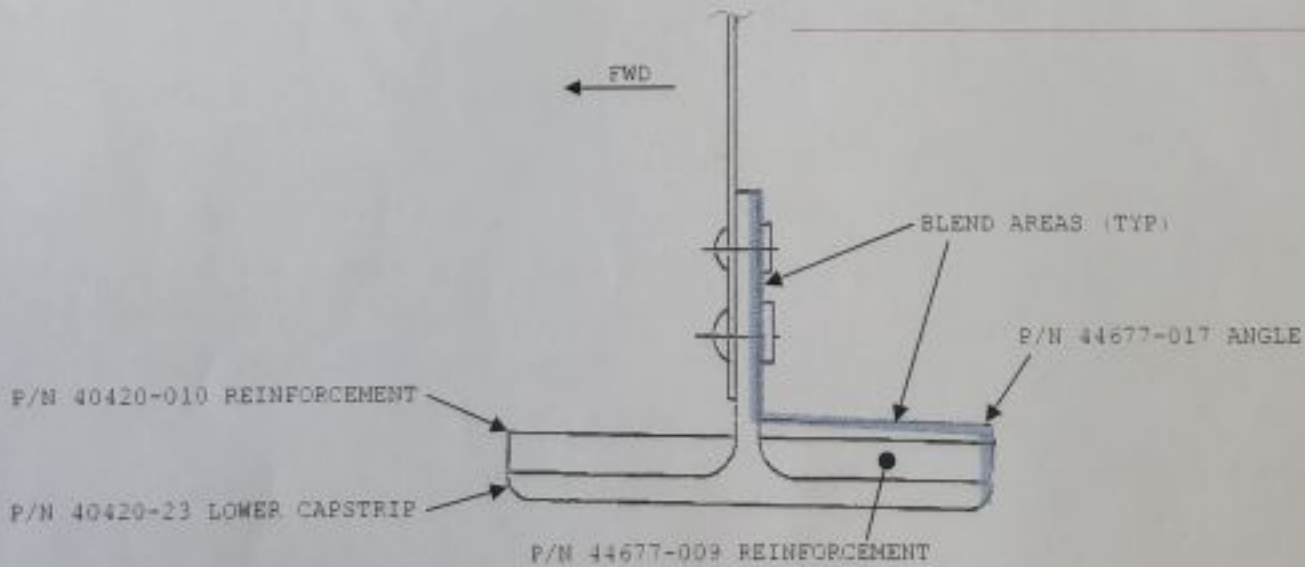
EO NUMBER

REPAIR OF CORROSION DETECTED COMMON TO RH MAIN LOWER SPAR CAP AT APPROXIMATELY WS 58.50 TO WS 72.50

PA-31-350(7405205)/01



(SECTION B-B)



(SECTION C-C)

FIGURE 3: DAMAGE REMOVAL

REPAIR ENGINEERING ORDER



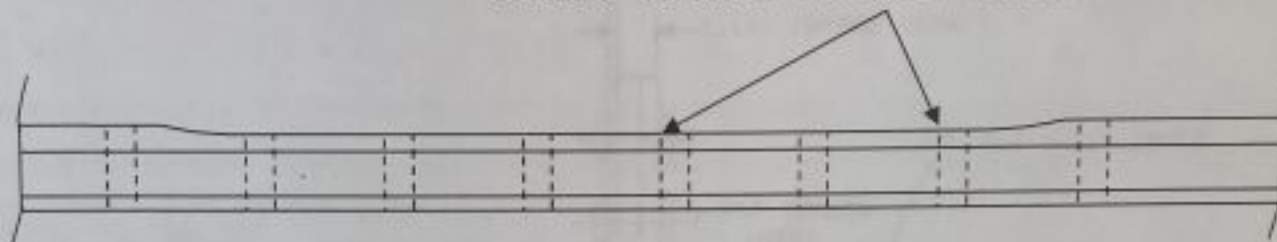
TITLE

EO NUMBER

REPAIR OF CORROSION DETECTED COMMON TO RH MAIN LOWER SPAR CAP AT APPROXIMATELY WS 58.50 TO WS 72.50

PA-31-350 (7405205) /01

FOR FASTENER LOCATIONS COMMON TO BLEND AREA,
ENSURE BLEND IS PERPENDICULAR TO FASTENER
LOCATION (NO TIPPED FASTENERS) (TYPICAL)



(SECTION D-D)

FIGURE 4: DAMAGE REMOVAL

REPAIR ENGINEERING ORDER

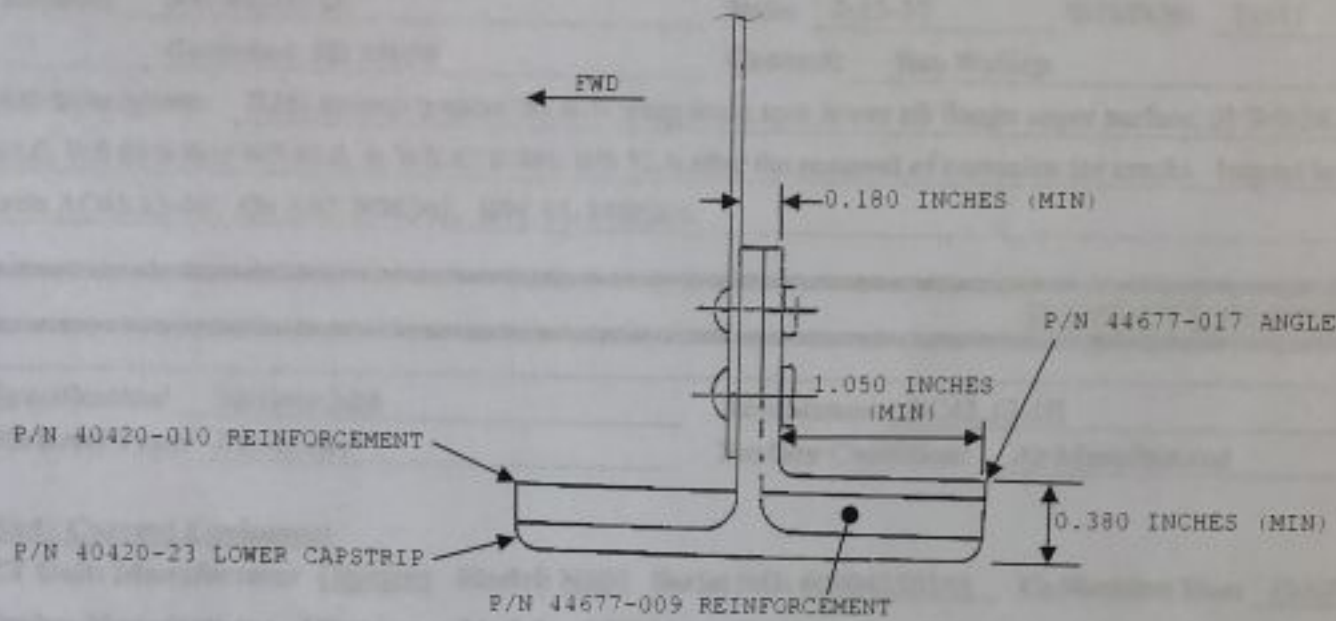


TITLE

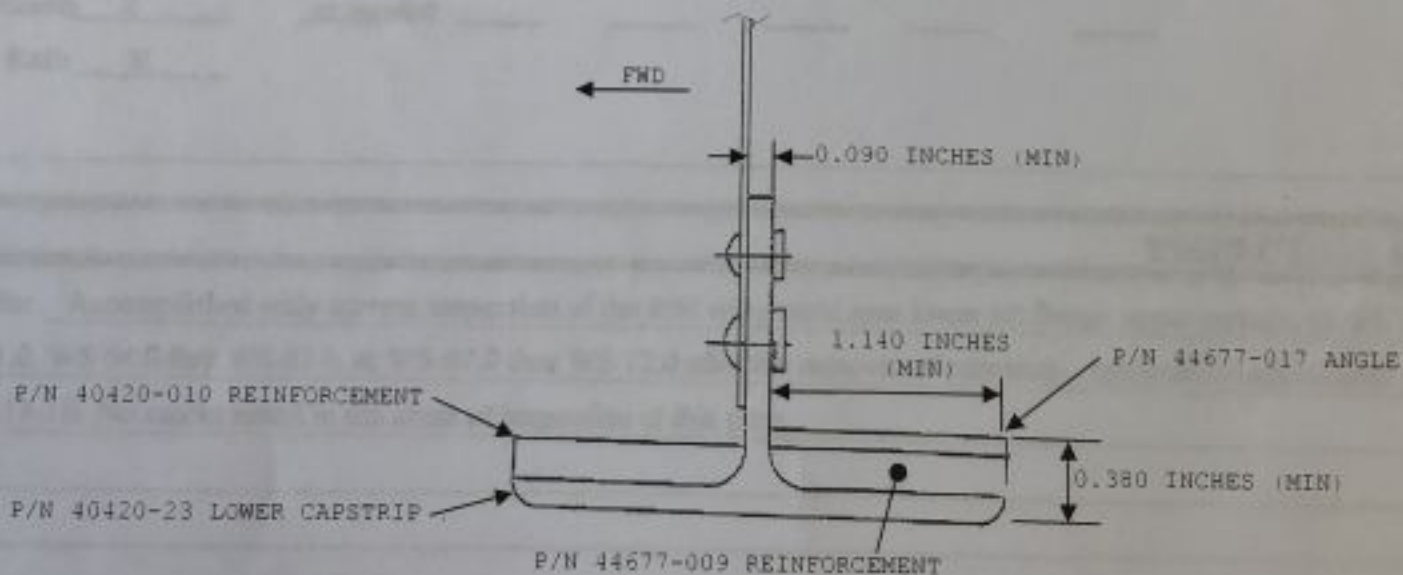
EO NUMBER

REPAIR OF CORROSION DETECTED COMMON TO RH MAIN LOWER SPAR CAP AT APPROXIMATELY WS 58.50 TO WS 72.50

PA-31-350 (7405205) /01



(SECTION B-B)



(SECTION C-C)

FIGURE 5: POST BLEND - MINIMUM ALLOWABLE SPAR CAP DIMENSIONS

TOLEDO JET CENTER, LLC.
FAA REPAIR STATION # 2TJR420B

EDDY CURRENT EXAMINATION REPORT

Client: Elite Air Service Technician: Cale Jones Level: II
Address: 300 Airport Dr. Date: 3-13-17 WO/PO#: 21511
Coldwater, MI 49036 Contact: Ben Walkup

Job Description: Eddy current inspect the R/H wing main spar lower aft flange upper surface, @ WS 58.0 thru WS 61.0, WS 64.0 thru WS 67.0, & WS 67.0 thru WS 72.0 after the removal of corrosion for cracks. Inspect in accordance with AC43.13-1B. On A/C N96342, S/N 31-7405205.

INSPECTION INFORMATION

Specification: <u>Sections 3&6</u>	Acceptance: <u>AC43.13-1B</u>
Material Type: <u>Aluminum</u>	Surface Condition: <u>As Manufactured</u>
Eddy Current Equipment	
ET Unit: Manufacturer <u>Olympus</u> Model: <u>N600</u> Serial NO: <u>60004150306</u> Calibration Due: <u>19APR17</u>	
Probe: Manufacturer <u>Olympus</u> Model: <u>9222164</u> Serial NO: <u>3180</u>	
Cable: Manufacturer <u>Olympus</u> Model: <u>CL/SC/6</u> Serial NO: <u>NSN</u>	
Calibration Standard: <u>Nortec</u> Model: <u>TB-S1</u> Serial NO: <u>N06531</u>	
Calibration Times	
Start: <u>X</u> <u>as needed</u> _____	
End: <u>X</u> _____	

INSPECTION RESULTS

Results: Accomplished eddy current inspection of the R/H wing main spar lower aft flange upper surface, @ WS 58.0 thru WS 61.0, WS 64.0 thru WS 67.0, & WS 67.0 thru WS 72.0 after the removal of corrosion. Inspected in accordance with AC43.13-1B. No cracks noted in the areas of inspection at this time.

Technician: Cale Jones Level II Form# TIC60021 REV0 12/31/2009

TOLEDO JET CENTER, LLC.

FAA REPAIR STATION # 2TJR420B

EDDY CURRENT EXAMINATION REPORT

Client: Elite Air Service Technician: Cale Jones Level: II
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INSPECTION INFORMATION

Specification: Sections 3&6 Acceptance: AC43.13-1B
Material Type: Aluminum Surface Condition: As Manufactured

Eddy Current Equipment

ET Unit: Manufacturer Olympus Model: N600 Serial NO: 60004150306 Calibration Due: 19APR17
Probe: Manufacturer Olympus Model: 9222164 Serial NO: 3180
Cable: Manufacturer Olympus Model: CL/SC/6 Serial NO: NSN
Calibration Standard: Nortec Model: TB-S1 Serial NO: N06531

Calibration Times

Start: X as needed
End: X

INSPECTION RESULTS

Results: Accomplished eddy current inspection of the R/H wing main spar lower aft flange upper surface, @ WS 58.0 thru WS 61.0, WS 64.0 thru WS 67.0, & WS 67.0 thru WS 72.0 after the removal of corrosion. Inspected in accordance with AC43.13-1B. No cracks noted in the areas of inspection at this time.

Technician: Cale Jones Level II Form# TJC60021 REV0 12/31/2009