Attachment 5

Major Repairs and Alterations

U.S Department of Transportation
Federal Aviation Administration

MAJOR REPAIR AND ALTERATION
(Airframe, Powerplant, Propeller, or Appliance)

Form Approved
OMB No. 2120-0020

For FAA Use Only

Office Identification

INSTRUCTIONS: Print or type all entries. See FAR 43.9, FAR 43 Appendix B, and AC 43.9-1 (or subsequent revision thereof) for instructions and disposition of this form. This report is required by law (49 U.S.C. 1421). Failure to report can result in a civil penalty not to exceed $1,000 for each such violation (Section 901 Federal Aviation Act 1958)

1. Aircraft	Make Grumman	Model G73T
	Serial No. J27	Nationality and Registration Mark N2969
2. Owner	Name *(As shown on registration certificate)* SeaPlane Leasing III, LLC	Address *(As shown on registration certificate)* 3240 Bird Ave. Ft. Lauderdale, Florida 33131

3. For FAA Use Only

4. Unit Identification				**5. Type**	
Unit	Make	Model	Serial No.	Repair	Alteration
AIRFRAME	*(As described in item 1 above)*				X
POWERPLANT					
PROPELLER					
APPLIANCE	Type				
	Manufacturer				

6. Conformity Statement

A. Agency's Name and Address	B. Kind of Agency	C. Certificate No.
Juan Heredia [redacted] Miami, Florida 33147	☒ U.S. Certified Mechanic ☐ Foreign Certified Mechanic ☐ Certified Repair Station ☐ Manufacturer	[redacted]

D. I certify that the repair and/or alteration made to the unit(s) identified in item 4 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 43 of the U.S. Federal Aviation Regulations and that the information furnished herein is true and correct to the best of my knowledge.

Date	Signature of Authorized Individual
July 6, 2000	[redacted]

7. Approval for Return to Service

Pursuant to the authority given persons specified below, the unit identified in item 4 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is ☒ APPROVED ☐ REJECTED

BY						
	☐	FAA Flt Standards Inspector	☐ Manufacturer	☐	Inspection Authorization	Other *(Specify)* FVYA015T
	☐	FAA Designee	☐ Repair Station	☐	Person Approved by Transport Canada Airworthiness Group	

Date of Approval or Rejection	Certificate or Designation No.	Signature of Authorized Individual
July 6, 2000	FVYA015T	James Kitti, Chief Inspecto[redacted]

FAA Form 337 (12-88)

NOTICE

Weight and balance or operating limitation changes shall be entered in the appropriate aircraft record. An alteration must be compatible with all previous alterations to assure continued conformity with the applicable airworthiness requirements.

8. Description of Work Accomplished

(If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work completed.)

July 6, 2000 N2969

Stringer repaired in Right Hand wing at Sta. 50.5, third stringer from aft. See attached Drawing and 8110 #RT-G7355720.6290. Wing fuel tank resealed and leak check carried out in accordance with Frakes Service Manual. Aircraft was reweighed prior to return to service.

END

☒ Additional Sheets Are Attached

U.S.GPO:1989-0-663-171

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

STATEMENT OF COMPLIANCE WITH THE FEDERAL AVIATION REGULATIONS

DATE: 6-30-00

AIRCRAFT OR AIRCRAFT COMPONENT IDENTIFICATION

MAKE	MODEL NO.	TYPE (Airplane, Radio, Helicopter, etc.)	NAME OF APPLICANT
GRUMMAN	G73T N2969	AIRPLANE	CONSULTANT

LIST OF DATA

IDENTIFICATION	TITLE
RT-G735720.6290) DTD 6/29/00 NO CHANGE	**DRAWING** "STRINGER CRACK REPAIR, WING BOX LOWER SKIN WS 50.5 G73T N2969."
END	END END END

PURPOSE OF DATA: TO SHOW COMPLIANCE OF THE DATA LISTED ABOVE TO THE FAR'S LISTED BELOW

APPLICABLE REQUIREMENTS (List specific sections)

25.301 25.601 25.607
25.603 25.609
25.613

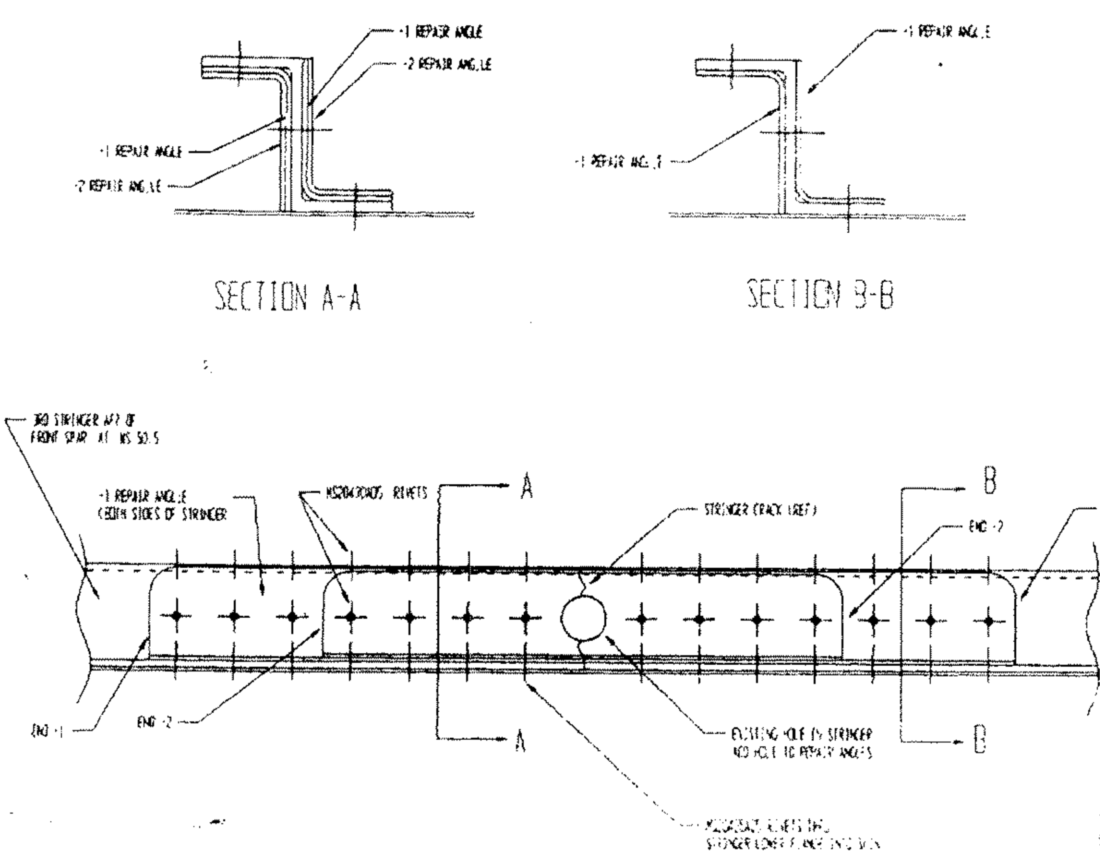
CERTIFICATION - Under authority vested by direction of the Administrator and in accordance with conditions and limitations of appointment under Part 183 of the Federal Aviation Regulations, data listed above and on attached sheets numbered as above have been examined in accordance with established procedures and found to comply with applicable requirements of the Federal Aviation Regulations.

I (We) Therefore
- [ ] Recommend approval of these data
- [x] Approve these data

SIGNATURE(S) OF DESIGNATED ENGINEERING REPRESENTATIVE(S)	DESIGNATION NUMBER(S)	CLASSIFICATION(S)
R. L. TORRES [redacted]	DERY-510397-CE	STRUCTURES
	—	

FAA Form 8110-3 (11-72) SUPERSEDES PREVIOUS EDITION

GPO 991-613



STRINGER CRACK REPAIR, WING BOX LOWER SKIN AT WS50.5 G73T N2969

GENERAL NOTES

1. THIS DRAWING PROVIDES DETAILS FOR REPAIR OF THE CENTER WING BOX LOWER SKIN STRINGER ON GRUMMAN MALLARD G73T N2969. THE CRACK IS LOCATED ON THE 3RD STRINGER AFT FROM THE WING FRONT SPAR AT WS 50.5. THE CRACK COMPLETELY SEVERS THE STRINGER AT AN EXISTING HOLE LOCATION.
2. INSTALL NESTED ANGLE REPAIR AS SHOWN HEREIN. PICK UP EXISTING FUEL PASSAGE HOLE IN REPAIR ANGLES.
3. BREAK ALL SHARP EDGES .020/.030 R.
4. FINISH ALUMINUM PARTS AND REWORKED AREAS USING ALODINE 1201S AND 2 COATS EPOXY PRIMER. REFER TO G73 SRM CHAPTER 51 FOR ADDITIONAL FINISH REQUIREMENTS.
5. DELETED
6. MAINTAIN MINIMUM 2D + 1/16 EDGE DISTANCE ON ALL FASTENERS UNLESS OTHERWISE SPECIFIED.
7. SHIM/TAPER SHIM AS REQUIRED
8. ALL FASTENERS ARE TO BE INSTALLED IN NET FIT HOLES. HOLE TOLERANCE PER NAS618
9. ALL FASTENER LENGTHS TO BE DETERMINED ON INSTALLATION.
10. INSTALL ALL REPAIR PARTS WET USING PR1436G TYPE III FAYING SURFACE SEAL (OR EQUIVALENT)
11. RELOCATE FASTENERS AS REQUIRED TO MAINTAIN MINIMUM 3D SPACING BETWEEN ADDED FASTENERS AND EXISTING HOLES IN FRAME WEB.
12. RE-SEAL FUEL TANK AREAS PER MAINTENANCE MANUAL INSTRUCTIONS.
13. REVISE AIRCRAFT WEIGHT AND BALANCE AS APPLICABLE.

QTY	DASH NO.	DESCRIPTION	PART NO.	SPECIFICATION	MATERIAL
1	-1	REPAIR ANGLE		[illegible]	[illegible]
2	-2	REPAIR ANGLE		[illegible]	[illegible]
1	-100	STRINGER CRACK REPAIR, GENERAL NOTES			

CHALKS INTERNATIONAL

AEROSPACE

TITLE: STRINGER CRACK REPAIR WING BOX LOWER SKIN WS 50.5 G73T N2969

SIZE: D — DWG NO. RT-G73572-0290

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

UNSPECIFIED TOLERANCE

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

MAJOR REPAIR AND ALTERATION
(Airframe, Powerplant, Propeller, or Appliance)

Form Approved
Budget Bureau No. 04-R060.1

FOR FAA USE ONLY
OFFICE IDENTIFICATION

INSTRUCTIONS: Print or type all entries. See FAR 43.9, FAR 43 Appendix B, and AC 43.9-1 (or subsequent revision thereof) for instructions and disposition of this form.

1. AIRCRAFT	MAKE: GRUMMAN	MODEL: G-73
	SERIAL NO.: J-27	NATIONALITY AND REGISTRATION MARK: N-2969
2. OWNER	NAME (*As shown on registration certificate*): FLYING BOAT, INC.	ADDRESS (*As shown on registration certificate*): 1100 LEE WAGENER BLVD. FT. LAUDERDALE, FL 33315

3. FOR FAA USE ONLY

4. UNIT IDENTIFICATION / 5. TYPE

UNIT	MAKE	MODEL	SERIAL NO.	5. TYPE: REPAIR	5. TYPE: ALTERATION
AIRFRAME	◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆ (*As described in item 1 above*) ◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆◆			X	
POWERPLANT					
PROPELLER					
APPLIANCE	TYPE:				
	MANUFACTURER:				

6. CONFORMITY STATEMENT

A. AGENCY'S NAME AND ADDRESS	B. KIND OF AGENCY	C. CERTIFICATE NO.
PATRICK L. FLYNN [redacted] FT. LAUDERDALE, FL 33314	X U.S. CERTIFICATED MECHANIC FOREIGN CERTIFICATED MECHANIC CERTIFICATED REPAIR STATION MANUFACTURER	AIRFRAME CERT. # [redacted]

D. I certify that the repair and/or alteration made to the unit(s) identified in item 4 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 43 of the U.S. Federal Aviation Regulations and that the information furnished herein is true and correct to the best of my knowledge.

DATE	SIGNATURE OF AUTHORIZED INDIVIDUAL
5-6-92	[redacted] PATRICK L. FLYNN

7. APPROVAL FOR RETURN TO SERVICE

Pursuant to the authority given persons specified below, the unit identified in item 4 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is [X] APPROVED [ ] REJECTED

BY					OTHER (*Specify*)
	FAA FLT. STANDARDS INSPECTOR	MANUFACTURER	INSPECTION AUTHORIZATION		135 AIR CARRIER #FVYA015T
	FAA DESIGNEE	REPAIR STATION	CANADIAN DEPARTMENT OF TRANSPORT INSPECTOR OF AIRCRAFT		

DATE OF APPROVAL OR REJECTION	CERTIFICATE OR DESIGNATION NO.	SIGNATURE OF AUTHORIZED INDIVIDUAL
5-6-92	[redacted]	[redacted] PETER R. BARRY

FAA Form 337 (7-67)

GPO : 1971 O - 410-878

(8320)

NOTICE

Weight and balance or operating limitation changes shall be entered in the appropriate aircraft record. An alteration must be compatible with all previous alterations to assure continued conformity with the applicable airworthiness requirements.

8. **DESCRIPTION OF WORK ACCOMPLISHED** *(If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work completed.)*

PERFORMED REPAIR TO LEFT LOWER WING SKIN ON AIRCRAFT N2969 S/N J-27. REPAIR WAS DONE IN ACCORDANCE WITH AIRCRAFT ENGINEERING AND MODIFICATION SERVICES DRAWING 9212221-01 REV IR. ALL WORK WAS DONE AT THE INTERSECTION OF WING AND FUSELAGE. DAMAGE WAS DONE BY CORROSION. SEE ATTACHED AEMS DRAWING FOR A DETAILED REPAIR. NEGLIABLE CHANGE TO WEIGHT AND BALANCE.

END

☒ ADDITIONAL SHEETS ARE ATTACHED

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

STATEMENT OF COMPLIANCE WITH THE FEDERAL AVIATION REGULATIONS

DATE: MAY 05, 1992

AIRCRAFT OR AIRCRAFT COMPONENT IDENTIFICATION

MAKE	MODEL NO.	TYPE (Airplane, Radio, Helicopter, etc.)	NAME OF APPLICANT
GRUMMAN	G-73T	AIRPLANE	CONSULTANT

LIST OF DATA

IDENTIFICATION	TITLE
9212221-01 REV IR DATED 05 MAY 92 END END END	A.E.M.SERVICES DRAWING, G-73T WING LOWER SKIN REPAIR AT FUSELAGE INTERSECTION END END END END END END END END

PURPOSE OF DATA: TO APPROVE AND PROVIDE A RECORD OF THE ABOVE REPAIR.

APPLICABLE REQUIREMENTS (*List specific sections*)

FAR 25.307(a), 25.601, 25.603, 25.605, 25.609, 25.613(a), 25.613(b), 25.625(a)

CERTIFICATION - Under authority vested by direction of the Administrator and in accordance with conditions and limitations of appointment under Part 183 of the Federal Aviation Regulations, data listed above ~~and on attached sheets numbered _____~~ have been examined in accordance with established procedures and found to comply with applicable requirements of the Federal Aviation Regulations.

I (~~We~~) Therefore
- ☐ Recommend approval of these data
- ☒ Approve these data

SIGNATURE(S) OF DESIGNATED ENGINEERING REPRESENTATIVE(S)	DESIGNATION NUMBERS(S)	CLASSIFICATION(S)
[signature]	SO-745	STRUCTURES
ROBERT M. HALVORSON		

FAA Form 8110-3 (11-70) SUPERSEDES PREVIOUS EDITION

A.E.M. SERVICES

Aircraft Engineering & Modification Services, Incorporated

2895 Biscayne Blvd., Suite 335 Miami, Florida 33137 (305) 940-4743 Fax: (305) 931-6201

9212221-12621

Mr. Donald T. Buckley
Manager, Airframe Branch ACE-120A
Atlanta Aircraft Certification Office
Federal Aviation Administration
1669 Phoenix Parkway, Suite 210C
Atlanta, Georgia 30349

5 May, 1992

Enclosures: (1) 8110-3 Form dated 05 May 1992, Approval of Repair
Drawing 9212221-01 rev IR, Grumman G-73T

Dear Mr. Buckley:

Enclosed please find the original of an 8110-3 form approving a repair procedure for the left wing lower skin at the intersection with the fuselage of a Frakes/Grumman G-73T aircraft, S/N J-27, N2969. The damage was due to corrosion. The repair will be accomplished by Chalks' International Airlines under their repair station operation.

The original of this drawing is on file at A.E.M. Services. Copies of the 8110-3 form and repair drawing have been provided to Chalks'.

Please include a copy of the attached form in my DER activity file.

Very truly yours,

Robert M. Halvorson, P.E.

FAA-DER SO-745

REVISIONS

LTR	DESCRIPTION (INCORPORATED DCN's)	DATE	APPROVED
IR	INITIAL RELEASE	5/5/92	[redacted]

APPROVALS

SIGNATURES BELOW CONVEY APPROVAL OF DRAWING INITIAL RELEASE ONLY

DRAWN ☒ [redacted]	DATE 5/5/92
CHECKED ☒ [redacted]	DATE 5/5/92
PROJECT ☐	DATE
ELECTRICAL ☐	DATE
SYSTEMS ☐	DATE
STRESS ☒ [redacted]	DATE 5/5/92
PRODUCTION ☐	DATE
QA ☐	DATE
DESIGN ☐	DATE
CUSTOMER ☐ [redacted]	DATE 5/5/92

DRAWING TITLE

G-73T WING LOWER SKIN REPAIR AT FUSELAGE INTERSECTION

UNLESS SPECIFIED OTHERWISE
ALL DIMENSIONS ARE IN INCHES
TOLERANCES: ANGLES ± 0°-30'
.X ± .06 .XX ± .03 .XXX ± .015

SIZE **A**

DRAWING NUMBER 921222-01

SCALE: AS NOTED

SHEET 1 OF 9

003L REV 07JUL89

TABLE OF CONTENTS & EFFECTIVE SHEETS

DRAWING TITLE
G-73T WING LOWER SKIN REPAIR AT FUSELAGE INTERSECTION

DRAWING NUMBER
921221-01

REV IR

SHEET 2

035L REV 13OCT89

DRAWN [redacted] DATE 5/5/92

CHECKED DATE

APPROVED [redacted] DATE 5/5/92

LIST OF MATERIALS

QUANTITY REQUIRED -3	QUANTITY REQUIRED -1	PART NUMBER	DESCRIPTION	MATERIAL	SPEC/VEND	HT	FIN	SHT
	—	-1	SKIN REPAIR					
—		-3	VERTICAL WEB REPAIR					
1		-5	ANGLE	.050 2024-T3	QQ-A-250/5		2	
-1		-9	CLIP	.050 2024-T3	QQ-A-250/5		2	
	1	-11	DOUBLER	.090 2024-T3	QQ-A-250/5		2	
	1	-13	BACKING PLATE	.050 2024-T3	QQ-A-250/5		2	
	1	-15	FILLER	.050 2024-T3	QQ-A-250/5		2	
	A/R	NAS1103-( )	BOLT					
		AN960K010	WASHER					
		NAS679A3W	NUT					
A/R		MS20470AD5	RIVET					
A/R		MS20470AD4	RIVET					

TITLE 6-73T WING LOWER SKIN REPAIR AT FUSELAGE INTERSECTION

NUMBER 921221-01 | REV 1R | DATA FILE NAME(S) | SHEET 3

APPLICATION DATA

PART NUMBER	QTY	NEXT ASSEMBLY	PART NUMBER	QTY	NEXT ASSEMBLY
-1	1	6-73T S/N	J-27		
-3	1	6-73T S/N	J-27		

NOTES:

1. ALL WORK PERFORMED I.A.W. SRM PRACTICES.
2. FINISH: WASH PRIME, ZINC CHROMATE PRIME OR MIL-P-23377, 2 COATS.
3. INSTALL ALL PARTS WET W/ PR1422 B½ SEALANT, FAYING SURFACES AND FASTENERS.
4. BOLTS INSTALL W/ CLOSE TOLERANCE FIT.
5. PRIOR TO INSTALLATION OF REPAIR PARTS, REMOVE ALL CORROSION, SMOOTH AND PRIME ALL EXPOSED METAL.
6. -11 DOUBLER REPLACES EXISTING SHIM AND DRAIN PLUG DOUBLER.

DRAWN	DATE	CHECKED	DATE	PROJECT	DATE
[redacted]	5/5/92			[redacted]	5/5/92

TITLE: 6-73T WING LOWER SKIN REPAIR AT FUSELAGE INTERSECTION

DWG NBR: 9212221-01

REV

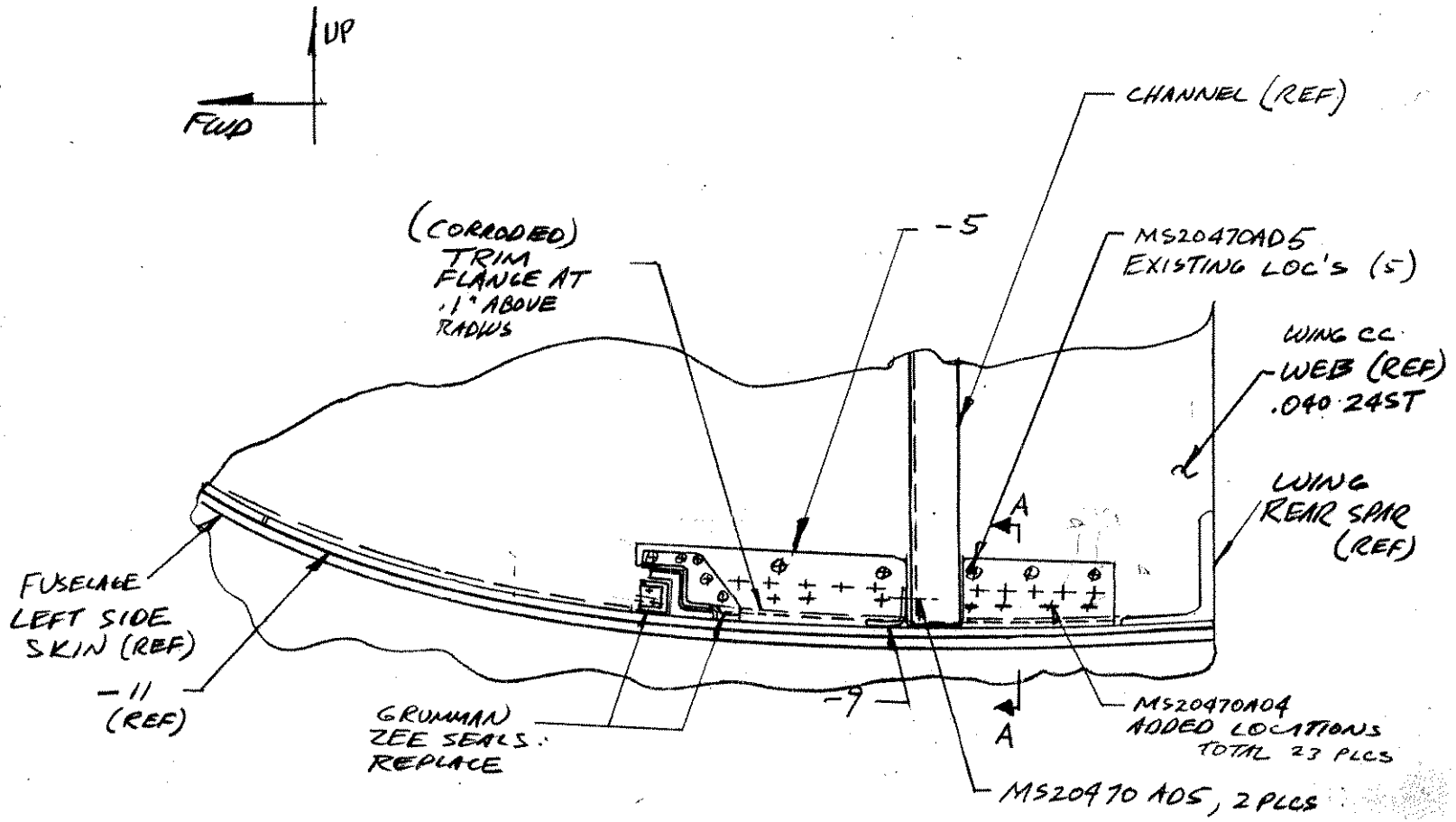
SHEET 4

003L REV 07JUL89

DRAWN [redacted] DATE 5/5/92

CHECKED DATE

APPROVED [redacted] DATE 5/5/92



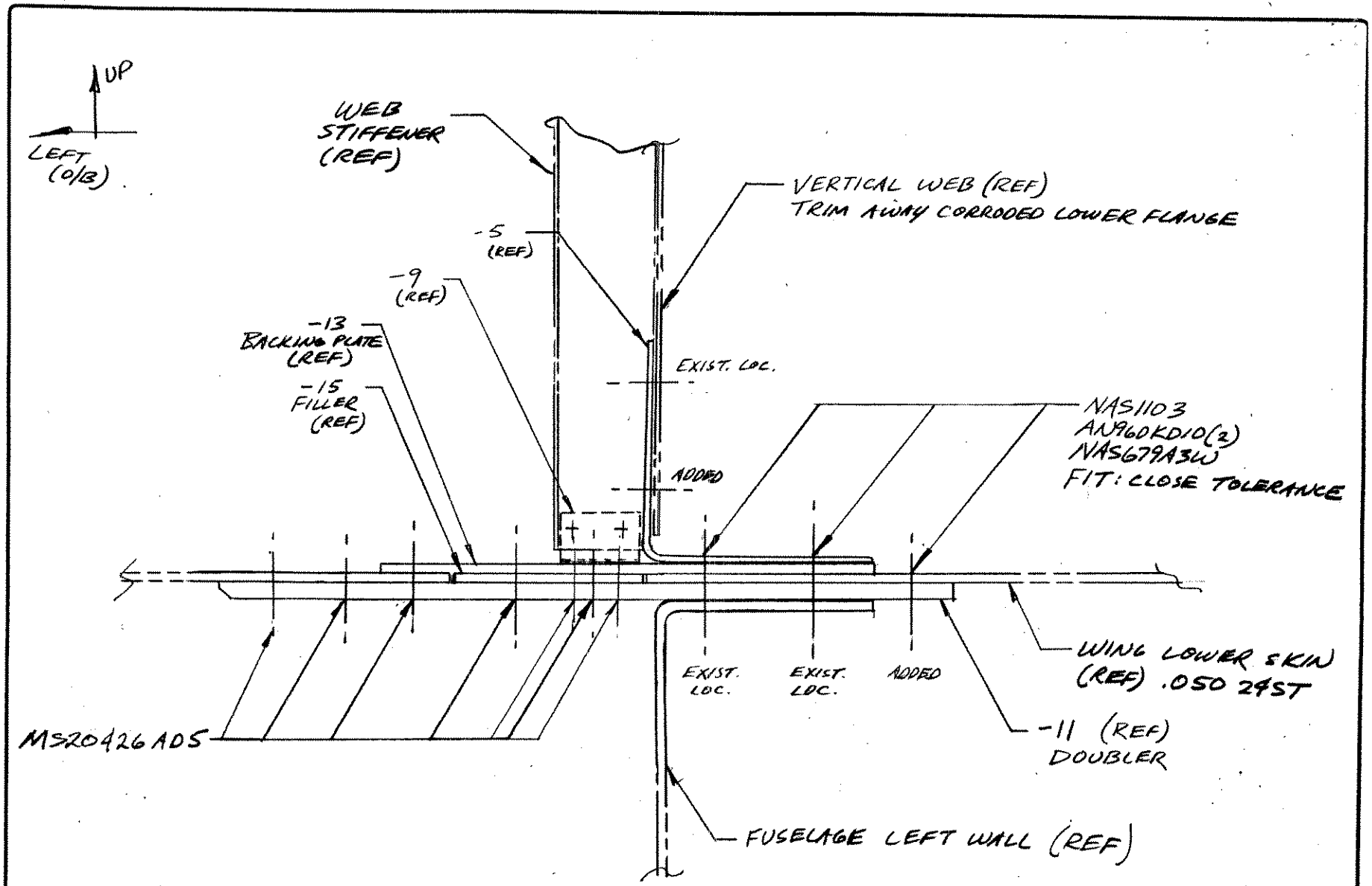
-3. VERTICAL WEB REPAIR

TITLE C-73T WING LOWER SKIN REPAIR AT FUSELAGE INTERSECTION	NUMBER 9217221-01	DIM SCL FACTOR	SCALE NONE	REV 1R	SHEET 5

DRAWN [redacted] DATE 5/5/92

CHECKED DATE

APPROVED [redacted] DATE 5/5/92

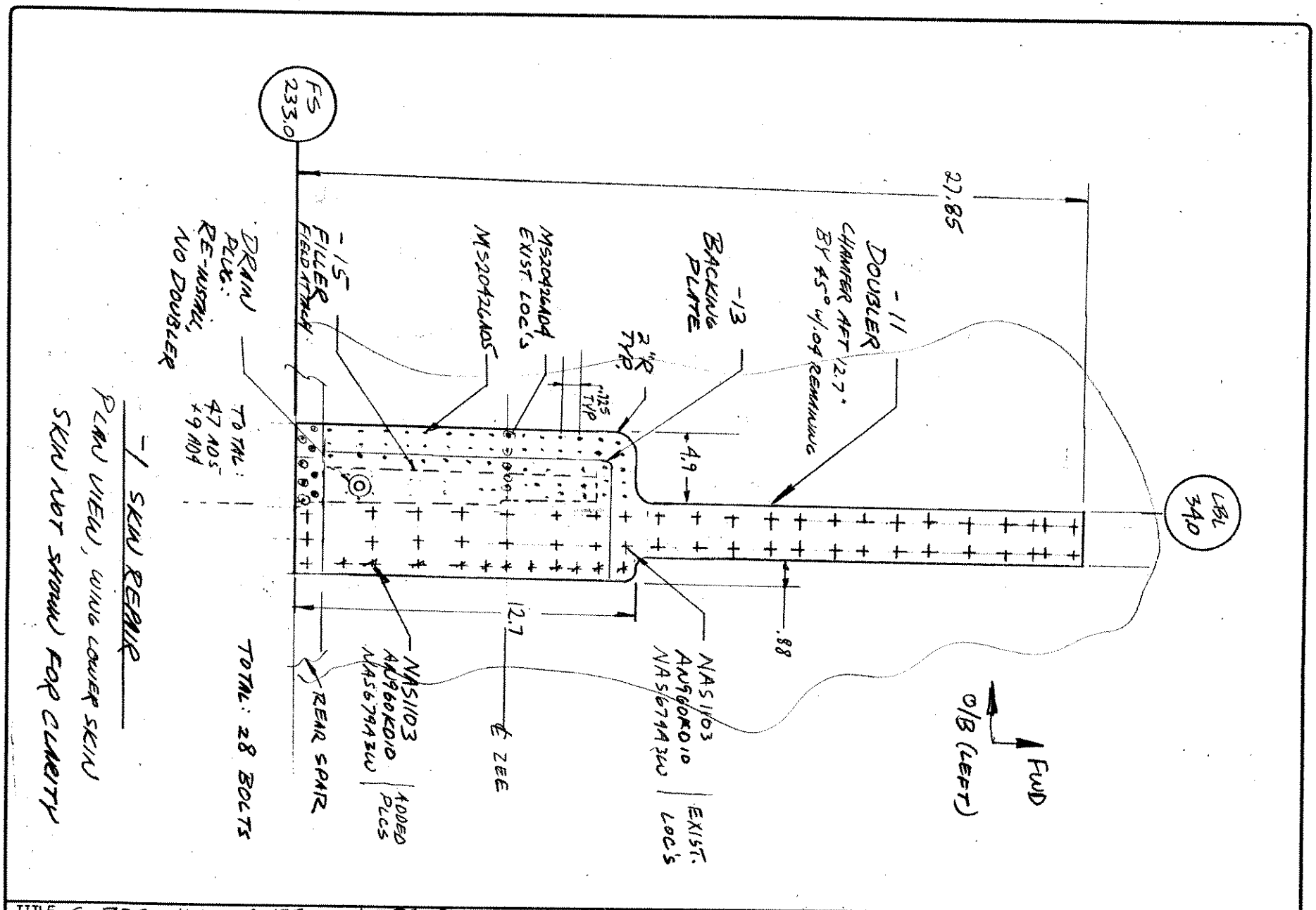


SECTION A-A

TITLE	NUMBER	DIM SCL FACTOR	SCALE	REV	SHEET
G-73T WING LOWER SKIN REPAIR AT FUSELAGE INTERSECTION	92/1221-01		NONE	1R	6

A.E.M. SERVICES

Aircraft Engineering & Modification Services, Incorporated • Miami, Florida



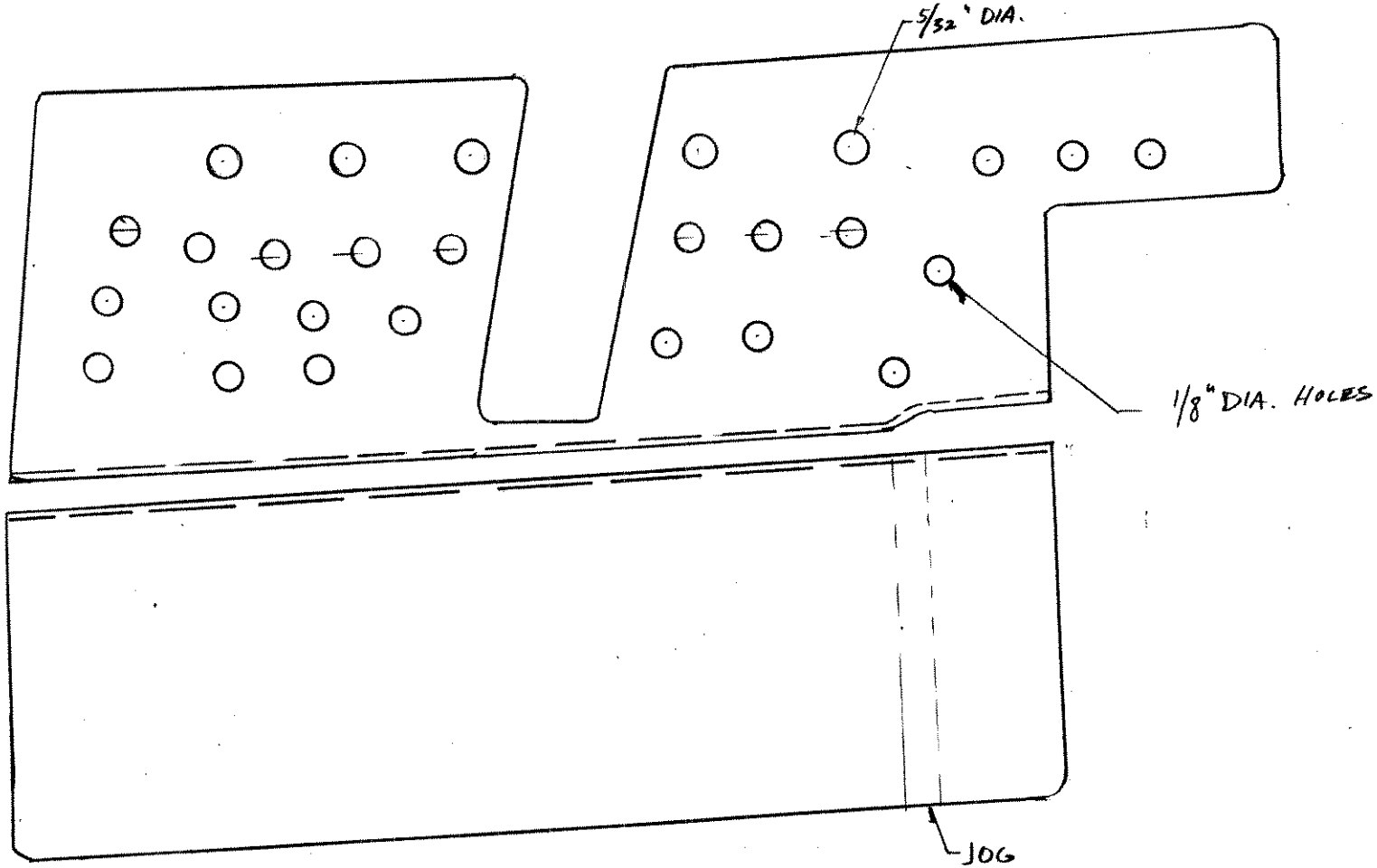
DRAWN	DATE	CHECKED	DATE	APPROVED	DATE
[redacted]	5/5/92			[redacted]	5/5/92

TITLE	NUMBER	DIM SCL FACTOR	SCALE	REV	SHEET
G-73T WING LOWER SKIN REPAIR AT FUSELAGE INTERSECTION	521222-01	—	NONE	1R	7

DRAWN [redacted] DATE 5/5/92

CHECKED DATE

APPROVED [redacted] DATE 5/5/92



(-5) ANGLE

MATL: .050 2024-T3 QQ-A-250/5

FINISH: WASH PRIMER

TITLE	NUMBER	DIM SCL FACTOR	SCALE	REV	SHEET
G-73T WING LOWER SKIN REPAIR AT FUSELAGE INTERSECTION	921221-01		FULL	1R	8

REPAIR, G-73T MALLARD WING LOWER SKIN AT DRY BAY AREA

Damage was caused by corrosion of a clip attaching a vertical web stiffener to the wing lower skin. Clip is replaced with -9 clip. Corroded wing skin and vertical web lower flange were removed, along with corroded shim strap and zee seal clips. Replacement strap was fabricated and widened to serve as a doubler; zee seals were replaced. Skin was repaired with this doubler and backing plate; vertical web was repaired with angle -5.

Skin strength out: [10.2" - (8 x .190") - (2 x .125")] x .050" x 64 ksi [F_{tu}, ref. MIL HDBK 5F, 3.2.3.0 (b_1)] = 26,976 lb.

Skin strength returned = [12.7 - (13 x .190")] x .090" x 64 ksi = 58,924 lb. M.S. = 58.9/27 - 1 = +1.18.

Transfer:

O/B Side: MS20426AD5 Rivet strength, shear = 596 lb x .995 = 593 lb [ref. MIL HDBK 5F, 8.1.2(b), 8.1.2.1(b)];
AD4 = 388 lb x 1.000 = 388 lb.
Bearing: 121 ksi [F_{bru}, ref. MIL HDBK 5F, 3.2.3.0 (b_1)] x 5/32" x .050" = 945 lb. =>crit.in shear.

Using min. 47 rivets, MS20426AD5, and 9 rivets, MS20426AD4,

M.S. = [(593 x 47)+(388 x 9)]/(26976 x 1.15) - 1 = +0.011.

I/B Side: Bolt strength, shear = 2694 lb [ref. MIL HDBK 5F, 8.1.5(a)]
Bearing: 121 ksi x .190" x .050" = 1149.5 lb. =>crit.in bearing.

Using min. 28 bolts, NAS1103,
M.S. = (1149.5 x 28)/(26976 x 1.15) - 1 = +0.044.

Web repair: Corrosion damage requires replacement of flange. Capacity of flange in shear is 39 ksi [F_{su}, ref. MIL HDBK 5F, 3.2.3.0 (b_1)] x .040" x 5.5" = 8,580 lb. Doubler is .050 2024-T3 clad.

Transfer: MS20470AD5 Rivet strength, shear = 596 lb x .964 = 574 lb [ref. MIL HDBK 5F, 8.1.2(b), 8.1.2.1(b)].
AD4 strength = 388 lb x .995 = 386 lb.
Bearing: 121 ksi [F_{bru}, ref. MIL HDBK 5F, 3.2.3.0 (b_1)] x 5/32" x .040" = 756 lb. =>crit.in shear.

Using min. 5 rivets, MS20470AD5, and 23 rivets, MS20470AD4,

M.S. = [(574 x 5)+(386 x 23)]/(8580 x 1.15) - 1 = +0.191.

TITLE	NUMBER	DIN SCL FACTOR	SCALE	REV	SHEET
G-73T WING LOWER SKIN REPAIR AT FUSELAGE INTERSECTION	92122-01		N/A	1R	4-1

DRAWN	DATE	CHECKED	DATE	APPROVED	DATE
[redacted]	5/6/92			[redacted]	5/5/92

FLYING

BOAT

INCORPORATED

PAGE: 55016

DATE: 6/15/90

REVISION: ORIGINAL

REPAIR REPORT PAGE 3 OF 3

REPAIR NUMBER 40292

DATE 4-13-92

AIRCRAFT N 2969 SERIAL # J-27

6. CONFORMITY STATEMENT

A. AGENCY'S NAME AND ADDRESS		B. KIND OF AGENCY	C. CERTIFICATE NO.
PATRICK L. FLYNN [redacted] FT. LAUDERDALE, FL 33314	X	U.S. CERTIFICATED MECHANIC	AIRFRAME CERT. # [redacted]
		FOREIGN CERTIFICATED MECHANIC	
		CERTIFICATED REPAIR STATION	
		MANUFACTURER	

D. I certify that the repair and/or alteration made to the unit(s) identified in item 4 above and described on the reverse of attachments hereto have been made in accordance with the requirements of Part 43 of the U.S. Federal Aviation Regulations and that the information furnished herein is true and correct to the best of my knowledge.

DATE: 4-13-92

SIGNATURE OF AUTHORIZED INDIVIDUAL: [redacted] PATRICK L. FLYNN

7. APPROVAL FOR RETURN TO SERVICE

Pursuant to the authority given persons specified below, the unit identified in Item 4 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is [X] APPROVED [ ] REJECTED

BY				
	FAA FLT. STANDARDS INSPECTOR	MANUFACTURER	INSPECTION AUTHORIZATION	OTHER (SPECIFY)
	FAA DESIGNEE	REPAIR STATION	DEPARTMENT OF TRANSPORT INSPECTOR OF AIRCRAFT	135 AIR CARRIER #FVYA015T

DATE OF APPROVAL OR REJECTION	CERTIFICATE OR DESIGNATION NO	SIGNATURE OF AUTHORIZED INDIVIDUAL
4-13-92	[redacted]	[redacted] PETER R. BARRY

FLYING

BOAT

INCORPORATED

PAGE: 55015

DATE: 6/15/90

REVISION: ORIGINAL

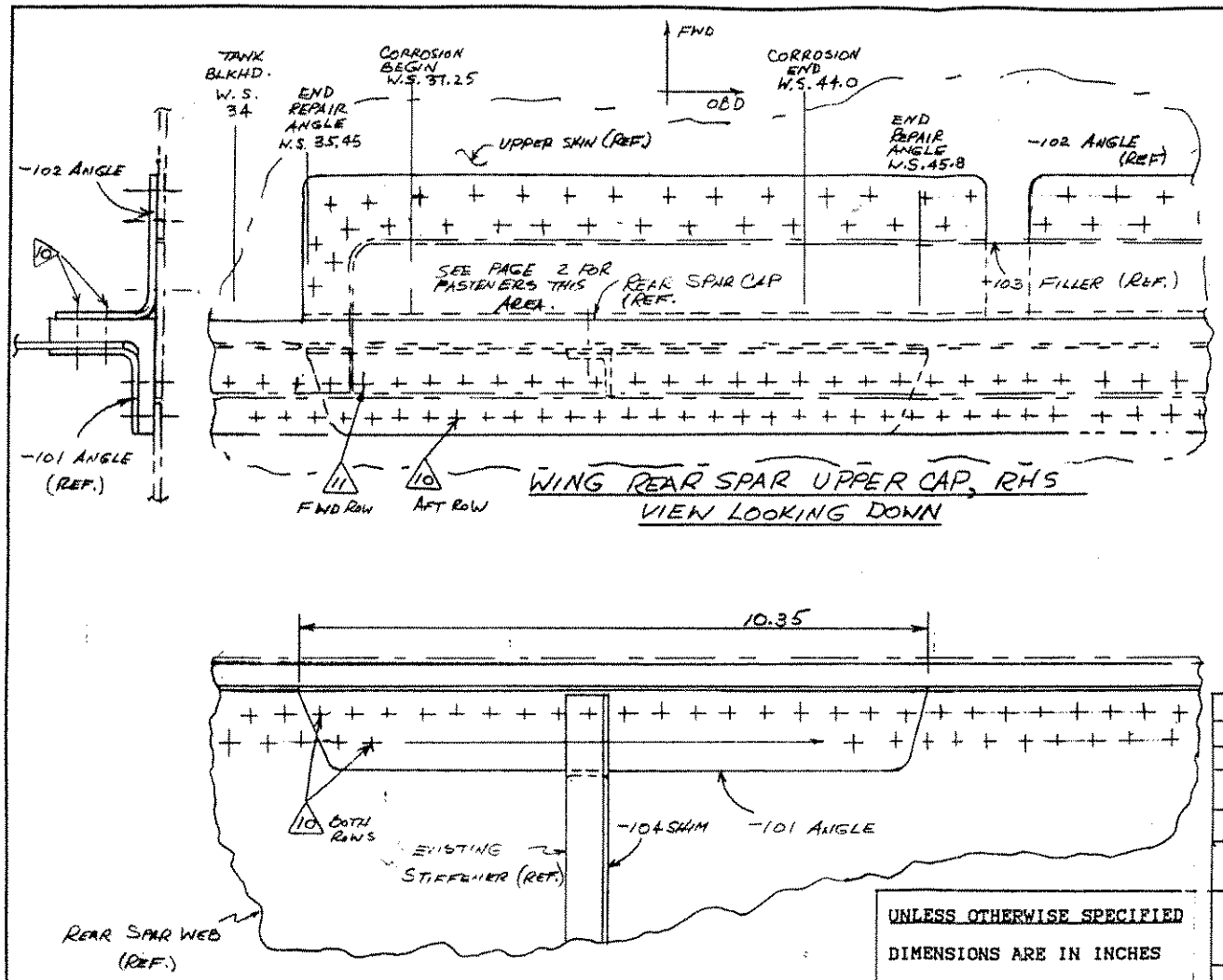
REPAIR REPORT PAGE 2 OF 3

REPAIR NUMBER 40292

DATE 4-13-92

WORK ORDER NUMBER

PERFORMED REPAIR TO RIGHT HAND WING REAR SPAR CAP ON AIRCRAFT N2969, S/N J-27. REPAIR WAS DONE IN ACCORDANCE WITH REPORT # 40292 AND A.T.E., INC. DRAWING NO. 40292. ALL WORK DONE AT STATION 34. SEE ATTACHED A.T.E., INC. DRAWING FOR A DETAILED REPAIR. NEGLIABLE CHANGE TO WEIGHT AND BALANCE.



15. SEAL INSIDE TANK WITH TANK SEALANT.
14. SEAL REPAIRS WITH PROSEAL OR EQUIVALENT.
13. APPLY TWO COATS EPOXY PRIMER THROUGHOUT REPAIR AREA.
12. SHIM AS REQUIRED TO AVOID PRELOADING REPAIR MEMBERS.
11. HL19PB-5 IN EXISTING FASTENER LOCATIONS
10. HL18PB-5 IN EXISTING FASTENER LOCATIONS.
9. MIN. 9 HI-LOKS OUTSIDE CORROSION AREA, EACH END OF -101 ANGLE.
8. FASTENER HOLES TO BE REAMED SMOOTH IN EXISTING AND REPAIR MEMBERS. NO NICKS OR SHARP EDGES.
7. PREPARE FASTENER HOLES IN ACCORDANCE WITH NAS618. MAXIMUM CLEARANCE .0015 ON DIA.
6. REMOVE ALL SHARP EDGES TO MIN. 02 RADIUS, SMOOTH.
5. MIN. EDGE DISTANCE OF REPAIR MEMBERS 2X FSTNR. DIA.
4. FORM -101 & -102 ANGLES FROM 7075-O AND HEAT TREAT TO 7075-T6.
3. FILL CORROSION REMOVAL AREAS WITH HYSOL EA9309.3NA.
2. REMOVE ALL CORROSION IN AREA. INSPECT FOR CRACKS IN AREA USING DYE PENETRANT & BOLT HOLE EDDY CURRENT.
1. ALL DIMENSIONS SHOWN ARE APPROXIMATE. FINAL DIMENSIONS TO BE DETERMINED ON INSTALLATION.

NOTES:

QTY.	DASH NO.	DESCRIPTION	SPECIFICATION	MATERIAL
1	-105	ANGLE	QQ-A-250/13	.071/7075-T6
1	-104	SHIM	QQ-A-250/13	.071/7075-T6
1	-103	FILLER	QQ-A-250/13	.071/7075-T6
1	-102	ANGLE	QQ-A-250/13	.071/7075-T6
1	-101	ANGLE	QQ-A-250/13	.071/7075-T6

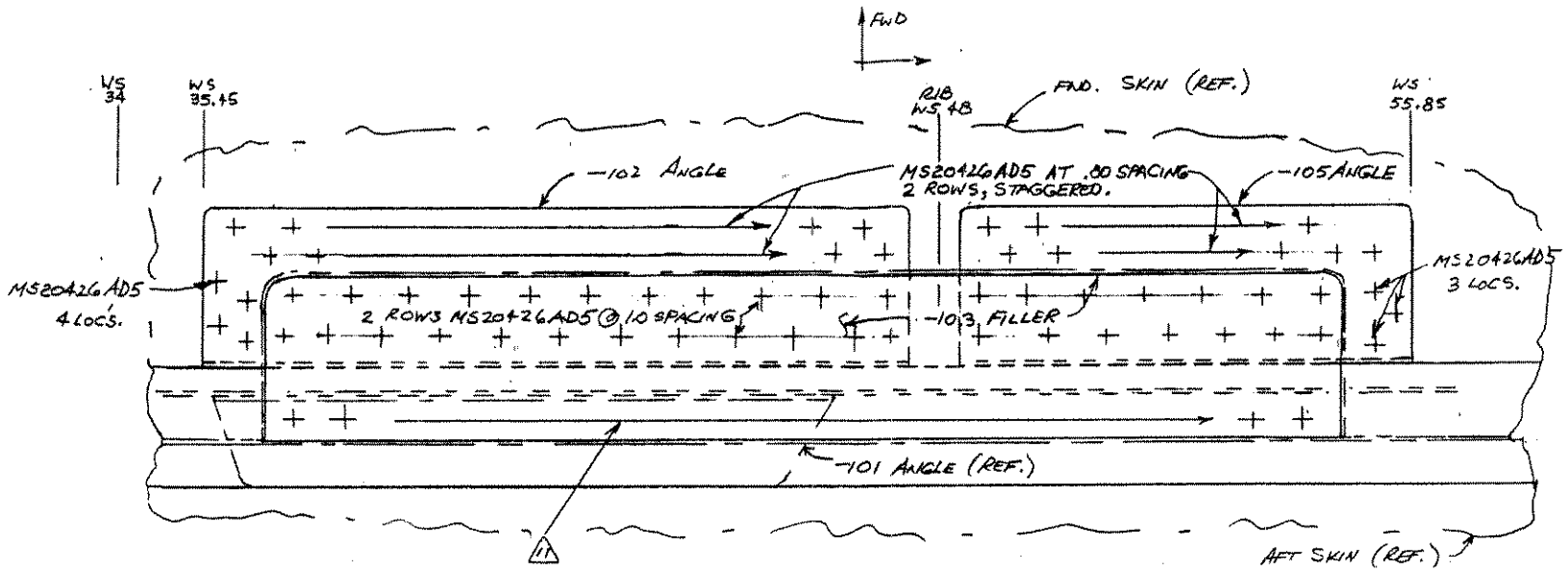
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
DIMENSIONAL TOLERANCES
3 PLACE DECIMAL +/-.010
2 PLACE DECIMAL +/-.03
ANGULAR +/- 0° 30'

AEROSPACE TESTING AND ENGINEERING, INC.
259 WOODLANDS ROAD PALM SPRINGS, FLORIDA 33461
(407) 642-9297

DRAWING NUMBER: 40292 SHEET 1 OF 3

DRAWING TITLE: GRUMMAN MALLARD J27
R.H. WING REAR SPAR UPPER CAP CORROSION REPAIR

SCALE: 20	APPROVED BY:	DRAWN BY:
DATE: 4-2-92	REVISION:	



WING REAR SPAR UPPER CAP, RHS
VIEW LOOKING DOWN

QTY.	DASH NO.	DESCRIPTION	SPECIFICATION	MATERIAL

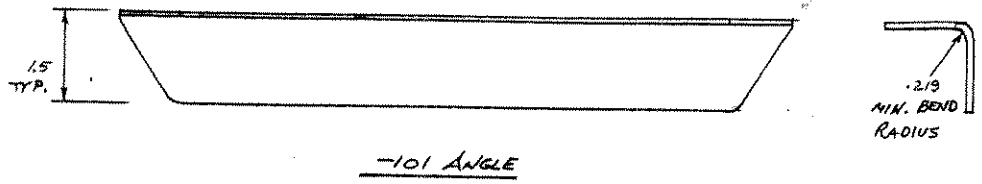
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
DIMENSIONAL TOLERANCES
3 PLACE DECIMAL +/-.010
2 PLACE DECIMAL +/-.03
ANGULAR +/- 0° 30'

AEROSPACE TESTING AND ENGINEERING, INC.
259 WOODLANDS ROAD PALM SPRINGS, FLORIDA 33461
(407) 642-9297

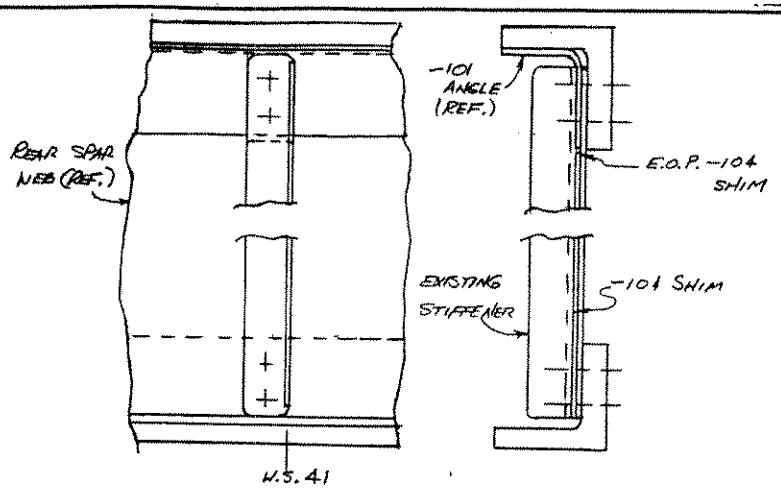
DRAWING NUMBER: 40292 SHEET 2 OF 3

DRAWING TITLE: GRUMMAN MALLARD J2T
R.H. WING REAR SPAR UPPER CAP CORROSION REPAIR

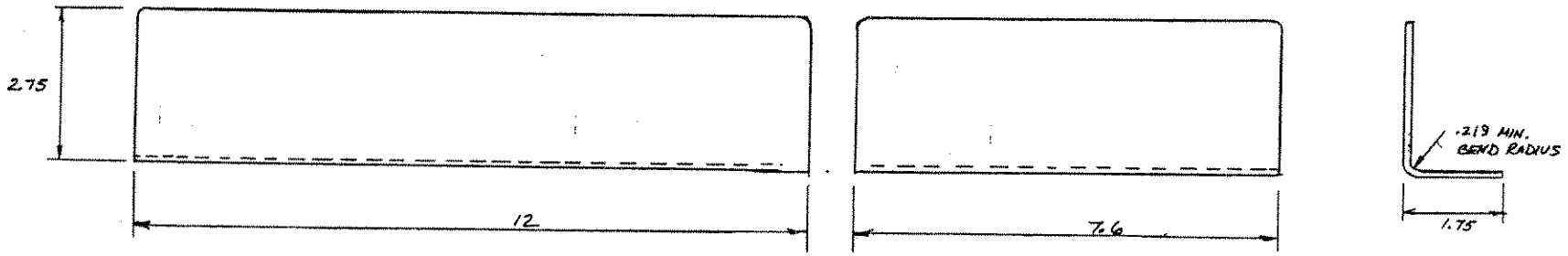
SCALE: 2o	APPROVED BY:	DRAWN BY:
DATE: 4-2-92	REVISION:	



-101 ANGLE



-104 SHIM INSTALL



-102 ANGLE

-105 ANGLE

QTY.	DASH NO.	DESCRIPTION	SPECIFICATION	MATERIAL

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
DIMENSIONAL TOLERANCES
3 PLACE DECIMAL +/-.010
2 PLACE DECIMAL +/-.03
ANGULAR +/- 0° 30'

AEROSPACE TESTING AND ENGINEERING, INC.
259 WOODLANDS ROAD PALM SPRINGS, FLORIDA 33461
(407) 642-9297

DRAWING NUMBER: 40292 SH 3 OF 3

DRAWING TITLE: GRUMMAN MALLARD J27
R.H. WING REAR SPAR UPPER CAP CORROSION REPAIR

SCALE: 20	APPROVED BY:	DRAWN BY:
DATE: 4-1-92	REVISION:	

Title: GRUMMAN MALLARD J27
R.H. WING REAR SPAR UPPER CAP CORROSION REPAIR

Prepared by: [redacted] Date: 4-1-92

Checked by:

TO MINIMIZE FIRST FASTENER EFFECT:

SINCE CORROSION DAMAGE IS SPREAD OVER ABOUT 7.0 INCHES, WITH 4 ROWS AND 9 FASTENERS PER ROW EACH SIDE OF CORROSION CENTER, A STEPPED REPAIR ANGLE WILL NOT BE USED. SINCE THE CORROSION DEPTH IS SMALL, 2 REPAIR ANGLES WILL BE USED, EACH OF WHICH WILL DEVELOP MORE THAN THE CAPABILITY LOST BY CORROSION (REF. PAGE 1, THIS REPORT). EACH REPAIR ANGLE BEGINS AND ENDS AT A DIFFERENT FASTENER LINE.

INSTEAD OF CUTTING AWAY THE ENTIRE CAP SEGMENT CONTAINING CORROSION, THE CORROSION AREA IS ENTIRELY REMOVED AND POLISHED SMOOTH. THIS AREA OF THE CAP IS CHECKED FOR CRACKS. THE CAPABILITY LOST BY CORROSION IS THEN REPLACED 2 TIMES CAPABILITY LOST. THIS MINIMIZES THE LIKELIHOOD OF CRACKS DEVELOPING AT ANY "FIRST FASTENER", IN SERVICE, BECAUSE THE REPAIR ANGLES PICK UP LESS LOAD THAN IF THE REPAIR ANGLES WERE DESIGNED TO DEVELOP THE ENTIRE ORIGINAL CAP LOAD CAPABILITY.

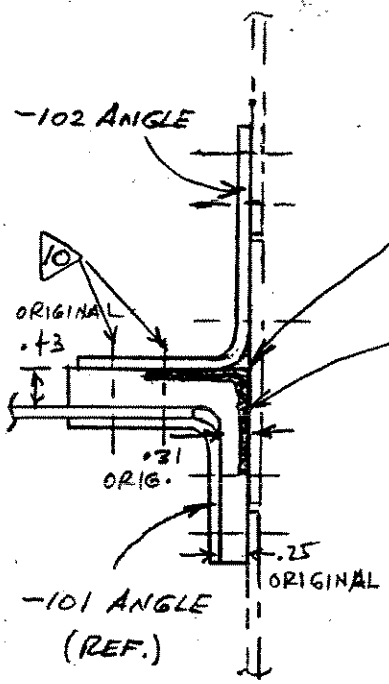
THIS REPAIR WILL BE USED ONLY IF THE REPAIR AREA, INCLUDING FASTENER HOLES, IS INSPECTED AND NO CRACKS FOUND.

AEROSPACE TESTING AND ENGINEERING. INC.

Title: GRUMMAN MALLARD J27
R.H. WING REAR SPAR UPPER CAP CORROSION REPAIR

Prepared by: [redacted]	Date: 4-1-92
Checked by:	P. 1/4

REF.: 1. A.T.E. INC. DRAWING NO. 40292.
2. SIKORSKY STRUCTURES MANUAL, GREEN.



UPPER REAR SPAR CAP ANGLE SECTION IS 2.0 x 1.9.
1 x 1 x .06
ASSUMED CORROSION DAMAGE; WORST SECTION IS .060 DEPTH. (THIS IS A CONSERVATIVE ASSUMPTION. MAX. DEPTH OF CORROSION IS .060, LOCALLY OVER APPROXIMATELY 1.0 INCH.) ASSUMED DAMAGE IS .06 X 2.0 INCH.

MATERIAL: 7075-T6 EXT.
F_{tu} = 81,000
F_{cy} = 72,000
"A" VALUES

CAPABILITY LOST BY CORROSION

$$P_L = (2.0)(.06)(72,000) = A F_{cy}$$

P_L = 8640 LB.

ORIGINAL CAP CAPABILITY

$$A_{CAP} = 2.0\left(\frac{.312 + .25}{2}\right) + 1.6(.43) = 1.25 \text{ IN}^2$$

$$P_o = 1.25(72,000) = 90,000 \text{ LB. (COMP.)}$$

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

STATEMENT OF COMPLIANCE WITH THE FEDERAL AVIATION REGULATIONS

DATE: April 13, 1992

AIRCRAFT OR AIRCRAFT COMPONENT IDENTIFICATION

MAKE	MODEL NO.	TYPE (*Airplane, Radio, Helicopter, etc.*)	NAME OF APPLICANT
Grumman	Mallard	Airplane	Chalk's Airlines

LIST OF DATA

IDENTIFICATION	TITLE
A.T.E. Inc. Dwg No. 40292	Grumman Mallard J27, R.H. Wing Rear Spar Upper Cap Corrosion Repair; Sh 1-3 Rev (-).
A.T.E. Inc. Structural Report No. 40292	Grumman Mallard J27, R.H. Wing Rear Spar Upper Cap Corrosion Repair.

These data apply only to Grumman Mallard Serial No. J27

PURPOSE OF DATA

To approve data for A/C Grumman Mallard Serial No. J27

APPLICABLE REQUIREMENTS (*List specific sections*)

CAR 4a (Structural Aspects)

CERTIFICATION - Under authority vested by direction of the Administrator and in accordance with conditions and limitations of appointment under Part 183 of the Federal Aviation Regulations, data listed above and on attached sheets numbered _____ _____ have been examined in accordance with established procedures and found to comply with applicable requirements of the Federal Aviation Regulations.

I (We) Therefore
- ☐ Recommend approval of these data
- ☒ Approve these data

SIGNATURE(S) OF DESIGNATED ENGINEERING REPRESENTATIVE(S)	DESIGNATION NUMBERS(S)	CLASSIFICATION(S)
H. Roberts [redacted]	SO-724	Structural

FAA Form 8110-3 (11-70) SUPERSEDES PREVIOUS EDITION

GPO 901-813