



US Department
of Transportation
Federal Aviation
Administration

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

Form Approved
OMB No. 2120-0020
2/28/2011

Electronic Tracking Number

For FAA Use Only

INSTRUCTIONS: Print or type all entries. See Title 14 CFR §43.9, Part 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. §44701). Failure to report can result in a civil penalty for each such violation. (49 U.S.C. §46301(a))

1. Aircraft	Nationality and Registration Mark N95467	Serial No. 1161	
	Make Grumman	Model G-21A	Series
2. Owner	Name (As shown on registration certificate) Pemberton Addison J	Address (As shown on registration certificate) Address 5302 N Vista Ct	
		City Spokane	State WA
		Zip 99212-1639	Country USA

3. For FAA Use Only

THE DATA/ALTERATIONS IDENTIFIED HEREIN COMPLIES WITH APPLICABLE AIRWORTHINESS REQUIREMENTS AND IS APPROVED ONLY FOR THE ABOVE DESCRIBED AIRCRAFT SUBJECT TO CONFORMITY INSPECTION BY A PERSON AUTHORIZED IN PART 43.7

4/12/2017

Charles S. Roberts

DATE FAA INSPECTOR, SPOKANE FSDO

4. Type		5. Unit Identification			
Repair	Alteration	Unit	Make	Model	Serial No.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	AIRFRAME	_____	(As described in Item 1 above)	_____
<input type="checkbox"/>	<input type="checkbox"/>	POWERPLANT			
<input type="checkbox"/>	<input type="checkbox"/>	PROPELLER			
<input type="checkbox"/>	<input type="checkbox"/>	APPLIANCE	Type		
			Manufacturer		

6. Conformity Statement

A. Agency's Name and Address		B. Kind of Agency		C. Certificate No.	
Name	Western Aviation	<input type="checkbox"/>	U. S. Certificated Mechanic	<input type="checkbox"/>	Manufacturer
Address	E 6095 Rutter Ave STE 1	<input type="checkbox"/>	Foreign Certificated Mechanic	<input checked="" type="checkbox"/>	Certificated Repair Station
City	Spokane State WA	<input type="checkbox"/>	Certificated Maintenance Organization	GG6R560N	
Zip	99212 Country USA				

D. I certify that the repair and/or alteration made to the unit(s) identified in item 5 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.

Extended range fuel per 14 CFR Part 43 App. B <input type="checkbox"/>	Signature/Date of Authorized Individual <i>Barry P. Heuck</i> 4/13/2017
--	--

7. Approval for Return to Service

Pursuant to the authority given persons specified below, the unit identified in item 5 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is Approved Rejected

BY	FAA Fit. Standards Inspector	Manufacturer	Maintenance Organization	Persons Approved by Canadian Department of Transport
	FAA Designee <input checked="" type="checkbox"/>	Repair Station	Inspection Authorization	Other (Specify)

Certificate or Designation No. GG6R560N	Signature/Date of Authorized Individual <i>Barry P. Heuck</i> 4/13/2017
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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.)

N95467
Nationality and Registration Mark

4/13/2017
Date

INSTALLED:
Garmin GNS530W

Installed Garmin GNS530W into aircraft per STC No. SA01933LA-D, manufactures master drawing list, DOC # 005-C0221-01 REV K, installation manual P/N 190-00357-02 REV L, and AC 43.13 1B/2B

This is a follow on field approval for the installation as this aircraft is not included on the STC/AML

Summary of the modifications done to the aircraft is as follows

Installed GNS530W. System utilizing (2) 5 amp circuit breakers and is interfaced to Audio Panel, NAV Indicator, GDL88, Transponder, Mode C, VHF and NAV antennas.

Installed GA35 GPS antenna at station 5.0".

System approved for VFR only awaiting flight test and has been placarded as such.

Installed GNS530W AFMS P/N 190-00357-03 REV E into aircraft.

Instructions for continued airworthiness:

Included Garmin document P/N 190-00357-65 REV D. GNS530W Instructions for Continued Airworthiness in the aircraft maintenance records.

Electrical load analysis computed and does not exceed 80% of charging system capacity.

Ground checked system for EMI, found none.

Aircraft equipment list, weight and balance amended. Compass compensation checked. Garmin GNS 530W Pilot's Guide, placed into aircraft.

More details on file under Western Aviation Work Order #17882-06-2014.

Ground and operational flight check has been performed IAW Garmin installation Section 5.6. Placard stating "GPS NOT APPROVED FOR IFR" removed from the aircraft.

Date: _____ TT: _____ Signed _____

END

Additional Sheets Are Attached



1200 East 151st Street
Olathe, KS 66062
P: 913-397-8200 F: 913-397-8282

November 30, 2011

Subject: STC Permission to use STC SA01933LA-D for
Garmin Model 400W / 500W Series GPS-WAAS Navigation System
(See AML)

Consistent with Order 8110.4B and AC 21-40, Garmin International grants permission to Garmin dealers, installers, and owners of the Garmin Model 400W / 500W Series GPS-WAAS Navigation System units to use STC SA01933LA-D and the data associated with it, for the sole and express purpose of installation and approval of the installation of the Garmin Model 400W / 500W Series GPS-WAAS Navigation System, and associated interfaces to other previously approved equipment.

A handwritten signature in black ink, appearing to read "Emmett Griffith". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Emmett Griffith
Engineering Manager
GARMIN AT, INC.



US Department of Transportation
Federal Aviation Administration

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

Form Approved
OMB No. 2120-0020
2/28/2011

Electronic Tracking Number

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INSTRUCTIONS: Print or type all entries. See Title 14 CFR §43.9, Part 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. §44701). Failure to report can result in a civil penalty for each such violation. (49 U.S.C. §46301(a))

1. Aircraft	Nationality and Registration Mark N95467	Serial No. 1161	
	Make Grumman	Model G-21A	Series
2. Owner	Name (As shown on registration certificate) Pemberton Addison J		Address (As shown on registration certificate)
			Address 5302 N Vista Ct
			City Spokane State WA
			Zip 99212-1639 Country USA

3. For FAA Use Only

4. Type		5. Unit Identification			
Repair	Alteration	Unit	Make	Model	Serial No.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	AIRFRAME	_____	(As described in Item 1 above)	_____
<input type="checkbox"/>	<input type="checkbox"/>	POWERPLANT			
<input type="checkbox"/>	<input type="checkbox"/>	PROPELLER			
<input type="checkbox"/>	<input type="checkbox"/>	APPLIANCE	Type		
			Manufacturer		

6. Conformity Statement

A. Agency's Name and Address		B. Kind of Agency	
Name Western Aviation		<input type="checkbox"/> U. S. Certificated Mechanic	<input type="checkbox"/> Manufacturer
Address E 6095 Rutter Ave STE 1		<input type="checkbox"/> Foreign Certificated Mechanic	C. Certificate No. GG6R560N
City Spokane State WA		<input checked="" type="checkbox"/> Certificated Repair Station	
Zip 99212 Country USA		<input type="checkbox"/> Certificated Maintenance Organization	

D. I certify that the repair and/or alteration made to the unit(s) identified in item 5 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.

Extended range fuel per 14 CFR Part 43 App. B <input type="checkbox"/>	Signature/Date of Authorized Individual <i>Barry P. Hueck</i> 4/13/2017
--	--

7. Approval for Return to Service

Pursuant to the authority given persons specified below, the unit identified in item 5 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is Approved Rejected

BY	FAA Fit. Standards Inspector		Manufacturer	Maintenance Organization	Persons Approved by Canadian Department of Transport
	FAA Designee	<input checked="" type="checkbox"/>	Repair Station	Inspection Authorization	Other (Specify)

Certificate or Designation No. GG6R560N	Signature/Date of Authorized Individual <i>Barry P. Hueck</i> 4/13/2017
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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.)

N95467

4/13/2017

Nationality and Registration Mark

Date

INSTALLED:

Garmin GDL88 ADS-B UAT Transceiver System

Installed Garmin GDL88 into aircraft per STC/AML No. SA02119SE, manufactures master drawing list, P/N 005-00645-02 REV 11, installation manual P/N 190-01310-00 REV 9, and AC 43.13 1B/2B.

GDL88 installed behind instrument panel. Unit interfaced to A+ through a 3 amp circuit breaker. System interfaced to the Audio panel, Mode C, GTX327, and GNS530W. Installed CI-105 L-Band antenna under wing at station 70.0".

Instructions for continued airworthiness: Ref Garmin Document P/N 190-01310-01 REV 3. A copy of this document has been included in the aircraft maintenance records.

FAA approved Flight Manual Supplement for the GDL88 P/N 190-01310-02 REV 4, inserted into aircraft flight manual. GDL88 Pilots guide supplement must be accessible to the flight crew during flight.

Electrical load analysis computed and does not exceed 80% of charging system capacity.

Ground checked system for EMI, found none.

Aircraft equipment list, weight and balance amended. Compass compensation checked.

-----END-----

Additional Sheets Are Attached



1200 East 151st Street
Olathe, KS 66062
P: 913-397-8200 F: 913-397-8282

January 2, 2013

Subject: STC Permission to use STC SA02119SE for
Garmin GDL 88 ADS-B UAT Transceiver System (See AML)

Consistent with Order 8110.4B and AC21-40, Garmin International grants permission to Garmin dealers, installers, and owners of the Garmin GDL 88 ADS-B UAT Transceiver System to use STC SA02119SE and deliverable data associated with it, for the sole and express purpose of installation and approval of the installation of the Garmin GDL 88 ADS-B UAT Transceiver System and associated interfaces to other previously approved equipment.

A handwritten signature in black ink, appearing to read "Emmett Griffith". The signature is fluid and cursive, with a long horizontal line extending to the right.

Emmett Griffith
Engineering Manager
GARMIN AT, INC.



US Department of Transportation
Federal Aviation Administration

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

OMB No. 2120-0020
Exp: 5/31/2018

Electronic Tracking Number

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1. Aircraft	Nationality and Registration Mark N95467	Serial No. 1161	
	Make Grumman	Model G21	Series A
2. Owner	Name (As shown on registration certificate) Pemberton, Addison J		
	Address (As shown on registration certificate) Address 5302 N Vista Ct		
	City Spokane	State WA	
	Zip 99212	Country USA	

3. For FAA Use Only

THE DATA IDENTIFIED HEREIN COMPLIES WITH APPLICABLE AIRWORTHINESS REQUIREMENTS AND IS APPROVED ONLY FOR THE ABOVE DESCRIBED AIRCRAFT SUBJECT TO CONFORMITY INSPECTION BY A PERSON AUTHORIZED IN FAR 43.7

3/9/2017
DATE

Charles D. Stebeck
FAA INSPECTOR, SPOKANE FSDO

AM13-2231

4. Type		5. Unit Identification			
Repair	Alteration	Unit	Make	Model	Serial No.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	AIRFRAME	<u>Grumman</u>	(As described in Item 1 above)	<u>1161</u>
<input type="checkbox"/>	<input type="checkbox"/>	POWERPLANT			
<input type="checkbox"/>	<input type="checkbox"/>	PROPELLER			
<input type="checkbox"/>	<input type="checkbox"/>	APPLIANCE	Type		
			Manufacturer		

6. Conformity Statement

A. Agency's Name and Address		B. Kind of Agency		C. Certificate No.
Name <u>Addison Pemberton</u>	<input checked="" type="checkbox"/>	U. S. Certificated Mechanic	<input type="checkbox"/>	2169140
Address <u>5302 N Vista Ct</u>	<input type="checkbox"/>	Foreign Certificated Mechanic	<input type="checkbox"/>	
City <u>Spokane</u> State <u>WA</u>	<input type="checkbox"/>	Certificated Repair Station	<input type="checkbox"/>	
Zip <u>99212</u> Country <u>USA</u>	<input type="checkbox"/>	Certificated Maintenance Organization	<input type="checkbox"/>	

D. I certify that the repair and/or alteration made to the unit(s) identified in item 5 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.

Extended range fuel per 14 CFR Part 43 App. B <input type="checkbox"/>	Signature/Date of Authorized Individual <i>Addison Pemberton</i> 03-13-2017 2169140
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7. Approval for Return to Service

Pursuant to the authority given persons specified below, the unit identified in item 5 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is Approved Rejected

BY	FAA Flt. Standards Inspector	Manufacturer	Maintenance Organization	Persons Approved by Canadian Department of Transport
	FAA Designee	Repair Station	<input checked="" type="checkbox"/> Inspection Authorization	Other (Specify)

Certificate or Designation No. 2169140 A#P 1A	Signature/Date of Authorized Individual <i>Addison Pemberton</i> 03-13-2017
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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.)

Grumman G21A

N95467

12-23-2016

Nationality and Registration Mark

Date

Grumman G21A Goose Halon 1301 Fire bottle install 12-19-2016

Removed original CO2 fire bottle from cockpit side of station #7 bulkhead above, forward and to the right of the copilot's right rudder peddle. Original CO2 bottle from 1937 no longer supported. Installed at original CO2 bottle location replacement Halon 1301 Pacific Scientific HTL fire bottle part number 30600006-1 with PMA 24VDC Cartridge (squib) for remote activation. This fire bottle is approved for use on the Beechcraft King Air TC 3A20. Ball valve for engine select, circuit breaker and guarded switch with placard mounted above and behind pilot seats on cockpit side of station bulkhead # 13. Volume of original 6" dia X 12" height CO2 bottle 339 cubic inches. Volume of replacement Halon 10" sphere is 523 cubic inches.

Fabricated mounting 12" X 12" shelf from .093 2024-T3 aluminum plate with riveted 6061-T6 .125 X 1" angle stiffeners using 8ea AN470-4-5 rivets on 3 sides. Out board edge bolted to original aircraft stringer on aircraft side wall with 1ea AN4-6 bolt and AN365-428 nut and 2ea AN3-6 bolts and AN365-1032 nuts. Additional 1" .125 6061-T6 angle brace bolted to inboard side angle with 1EA AN4-7 bolt and AN365-428 nut at front corner extending up at 45-degree angle. Brace bolted with additional AN4-7 and AN365-428 nut to back side of station #7 bulkhead wall with 6061-T6 1" angle foot. Angle foot installed on cockpit side of station bulkhead #7 with .125 aluminum doubler placed under mounting hardware (2ea AN3-7 bolts and AN365-1032 nuts) on front side of bulkhead station #7. Front face of bracket bolted through station #7 with 3ea AN3-6 bolts with area washers and AN365-1032 nuts on front side of station #7. Rear, side, and front of fire bottle bolted through mounting bracket with 3ea additional AN4-7 bolts and AN365-428 nuts.

All original Grumman plumbing routing retained and fire control disbursement rings and carburetor discharge retained using 3/8 tubing. Work accomplished per AC 4313-2B chapter 1 and 2. Aircraft weighed after installation of fire control system and noted in aircraft records.

For continued airworthiness

Check gauge on fire bottle before each flight of the day for 600PSI charge. Perform required replacement of Cartridge squib at 10 year intervals and Hydro test bottle and recharge at 5 year intervals per manufactures specifications. Inspect for mounting security and plumbing damage at each required inspection.

-----END-----

5

Additional Sheets Are Attached

N95467

12-23-2016

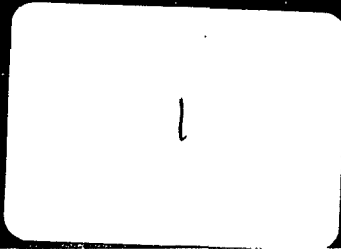


Pressure Gauge

Squib

Halon Fire Bottle

To Ball-valve Engine Sele



N95409

12-23-2016

SELECT ENGINE
SWITCH ON FOR
FIRE

HALON 1301

OFF

SELECT ENGINE THEN
DISCHARGE EXTINGUISHER

RIGHT
ENGINE
FIRE

LEFT
ENGINE
FIRE

OFF

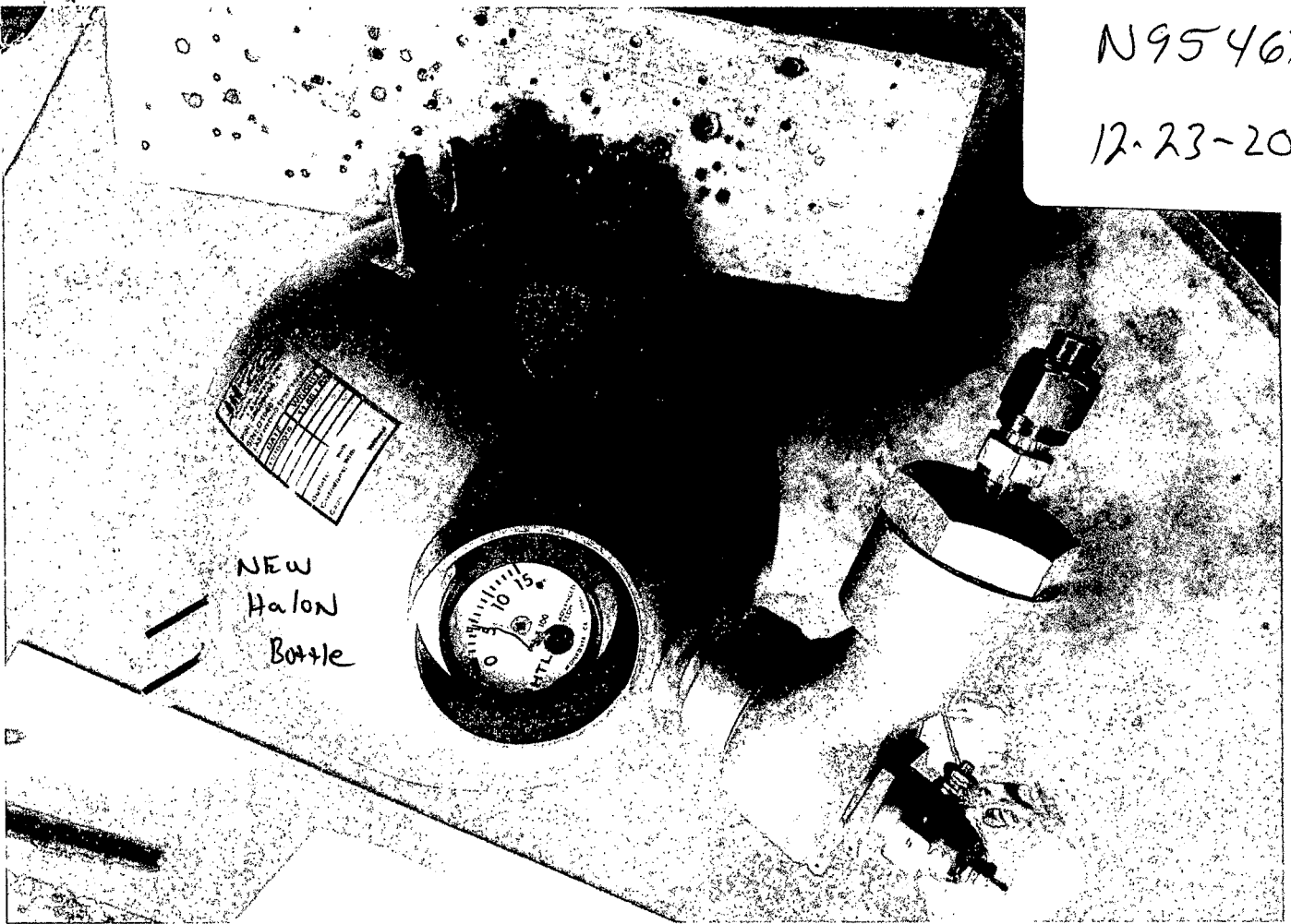
CROSS

CROSS NEED VALVE
DURING A
FIRE FROM ENGINE

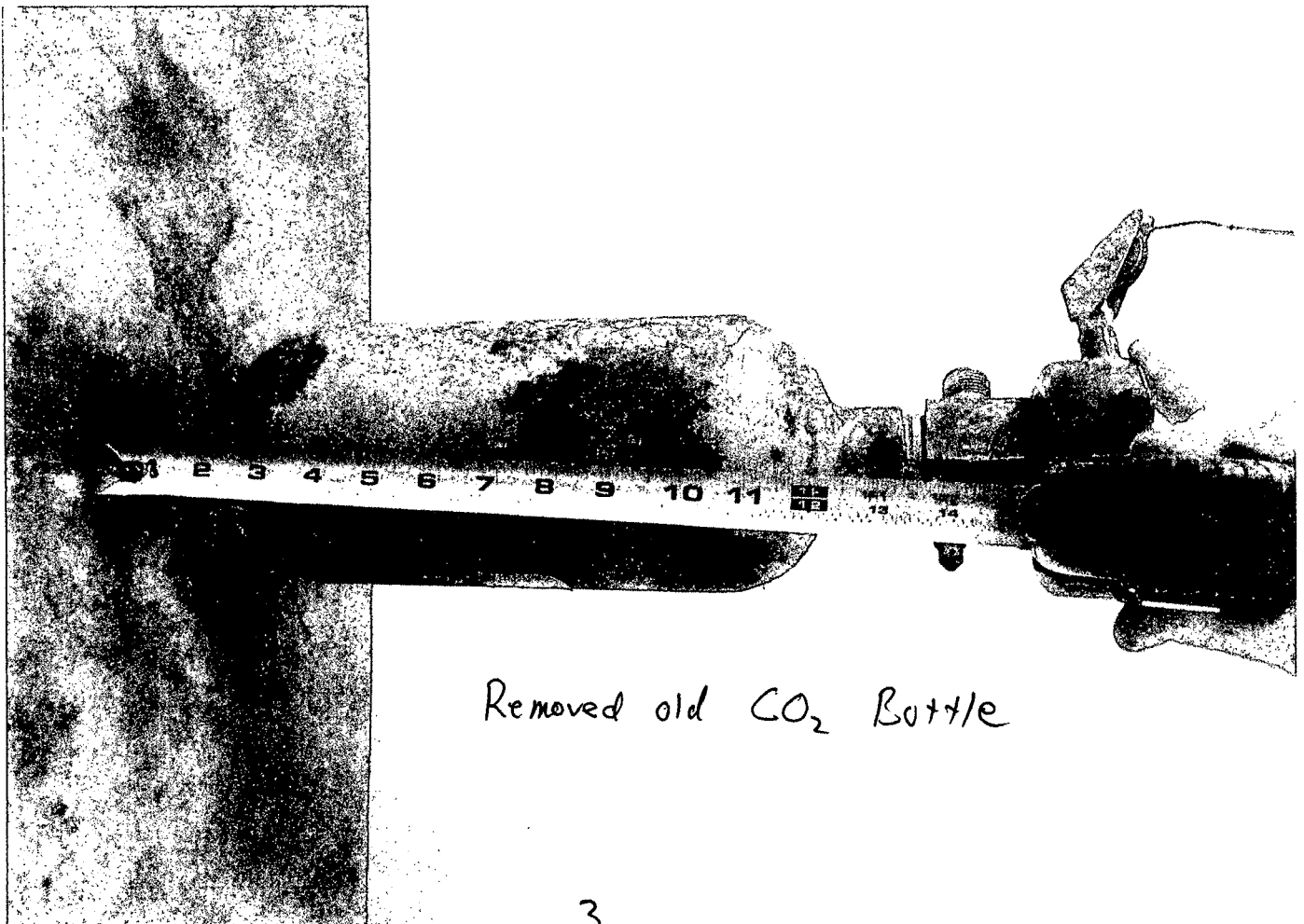
2

N95467

12-23-2016



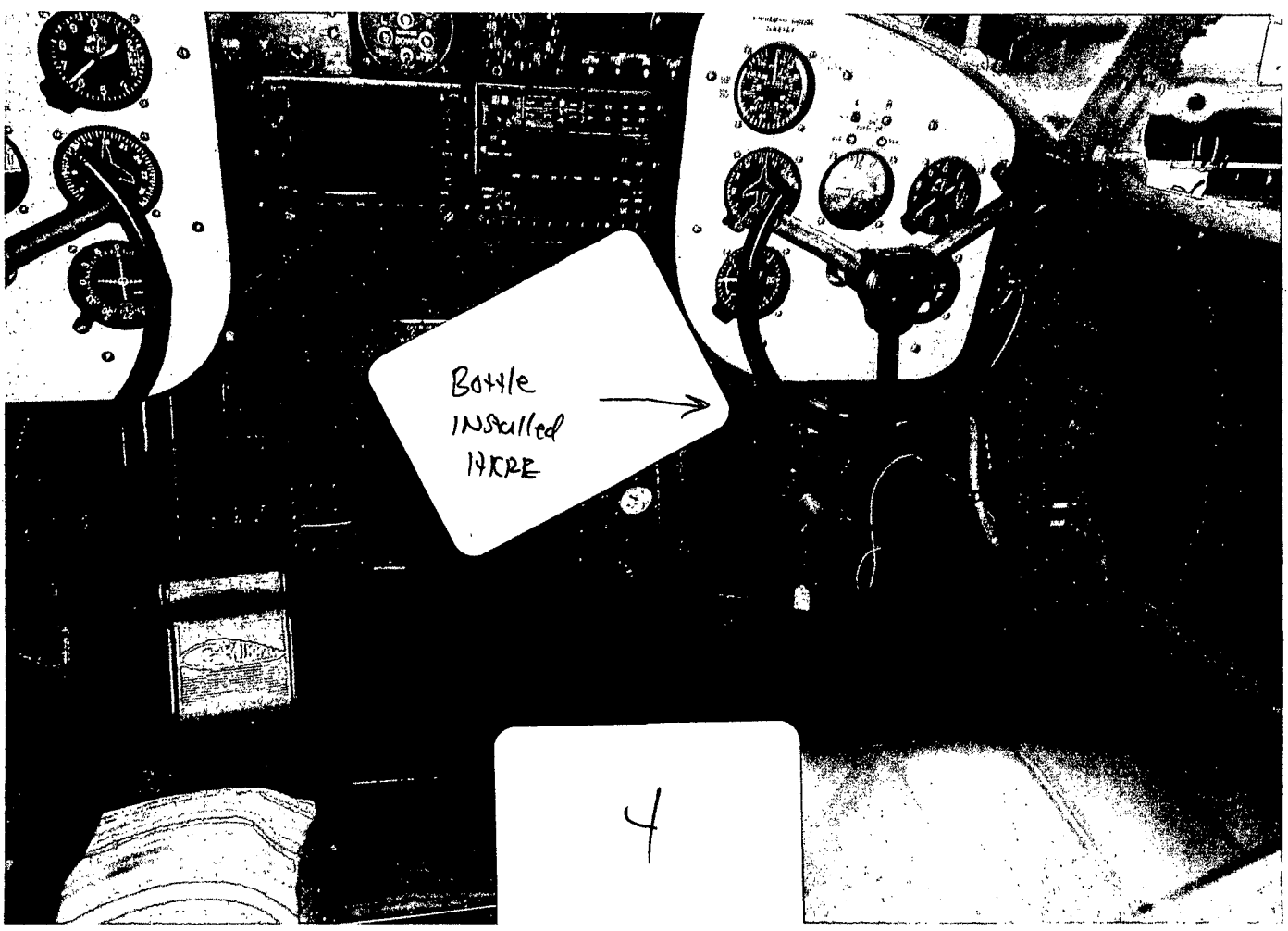
NEW
Halon
Bottle



Removed old CO₂ Bottle

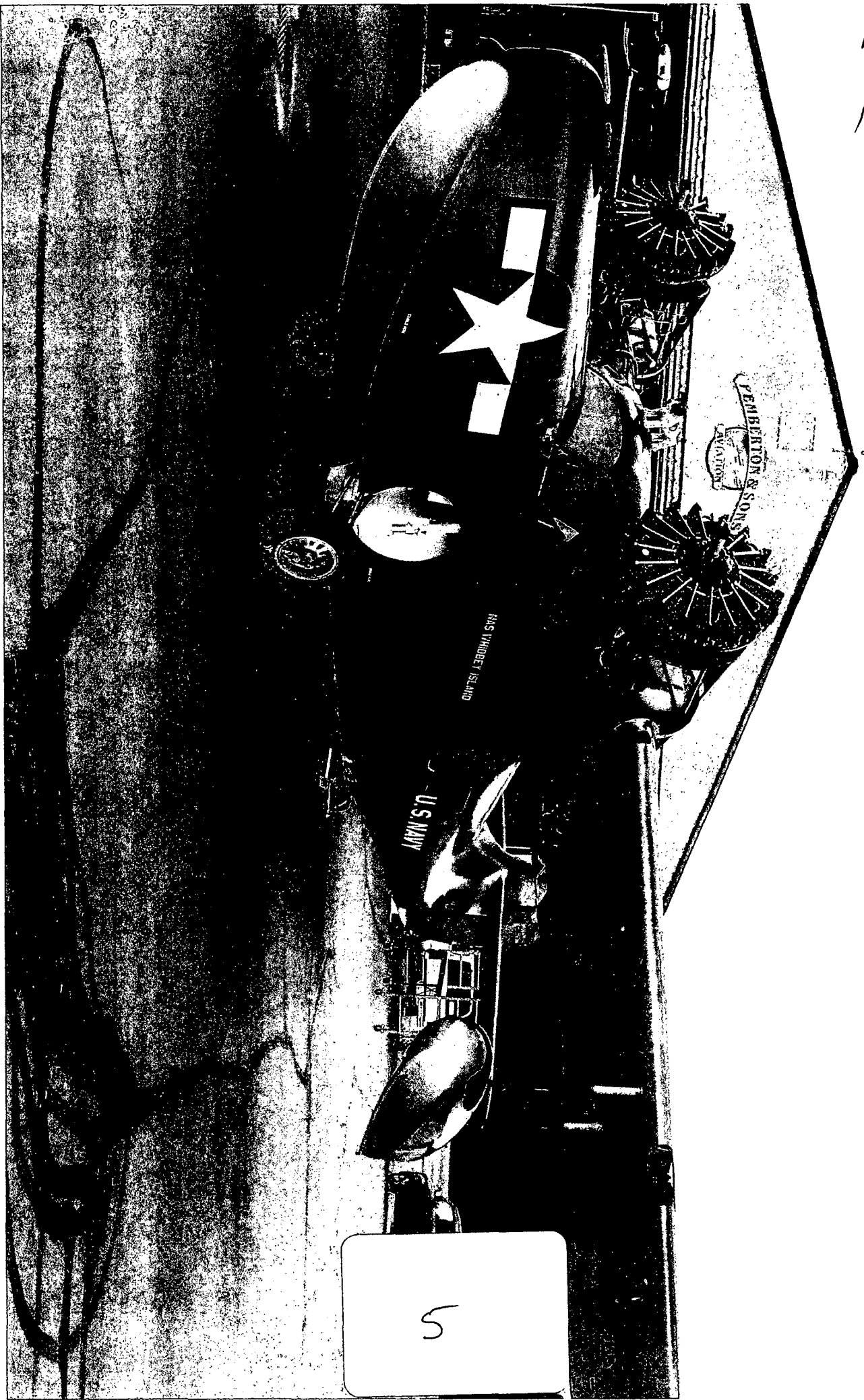
N95467

12-23-2016



N95467

12-23-2016



5



US Department of Transportation
Federal Aviation Administration

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

OMB No. 2120-0020
Exp: 5/31/2018

Electronic Tracking Number

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INSTRUCTIONS: Print or type all entries. See Title 14 CFR §43.9, Part 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. §44701). Failure to report can result in a civil penalty for each such violation. (49 U.S.C. §46301(a))

1. Aircraft	Nationality and Registration Mark N95467	Serial No. 1161		
	Make Grumman	Model G21	Series A	
2. Owner	Name (As shown on registration certificate) Pemberton, Addison J		Address (As shown on registration certificate) Address 5302 N Vista Ct	
			City Spokane Wa	State Wa
		Zip 99212	Country USA	

3. For FAA Use Only

4. Type		5. Unit Identification			
Repair	Alteration	Unit	Make	Model	Serial No.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	AIRFRAME	Grumman	(As described in Item 1 above)	1161
<input type="checkbox"/>	<input type="checkbox"/>	POWERPLANT			
<input type="checkbox"/>	<input type="checkbox"/>	PROPELLER			
<input type="checkbox"/>	<input type="checkbox"/>	APPLIANCE	Type		
			Manufacturer		

6. Conformity Statement

A. Agency's Name and Address		B. Kind of Agency		C. Certificate No. 2169140
Name Addison Pemberton		<input checked="" type="checkbox"/> U. S. Certificated Mechanic	Manufacturer	
Address 5302 N Vista Ct		<input type="checkbox"/> Foreign Certificated Mechanic		
City Spokane State Wa		<input type="checkbox"/> Certificated Repair Station		
Zip 99212 Country USA		<input type="checkbox"/> Certificated Maintenance Organization		

D. I certify that the repair and/or alteration made to the unit(s) identified in item 5 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.

Extended range fuel per 14 CFR Part 43 App. B <input type="checkbox"/>	Signature/Date of Authorized Individual <i>Addison Pemberton</i> 2169140 AFP 01-03-17
--	--

7. Approval for Return to Service

Pursuant to the authority given persons specified below, the unit identified in item 5 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is Approved Rejected

BY	FAA Fit. Standards Inspector	Manufacturer	Maintenance Organization	Persons Approved by Canadian Department of Transport
	FAA Designee	Repair Station	<input checked="" type="checkbox"/> Inspection Authorization	Other (Specify)

Certificate or Designation No. 2169140 AFP 1A	Signature/Date of Authorized Individual <i>Addison Pemberton</i> 01-03-2017
--	--



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.)

Grumman G21A

N95467

1-3-2017

Nationality and Registration Mark

Date

Wing repair, Spar cap repair and installation of new leading edges

Removed original leading edge sections for inspection. Cleaned, inspected, repaired (see below) and painted spars. Replaced leading edge sections on both wings with new fabricated formed parts made up with Aluminum 2024-T3 per Grumman drawings including 12820 and 12371. Replaced panel #6 on bottom left wing out board front between station 211 and 271.

Repaired wings in accordance "Grumman Handbook of instructions/Structural repair" for the JRF-6B/ G21A or in accordance with attached 8110-3 approved data and design review report 122116 dated 12-21-2016 pages 1-38 for Spar Cap Splices. Accomplished 2ea spar cap repairs on right wing and 16 spar cap repairs on left wing. See below summary of spar cap repair stations on left and right wing and attached detailed drawings for accomplished work. All spar cap repairs listed as case 1-18. Wings acid etched, alodined, epoxy primed and painted with tricolor navy paint scheme with polyurethane base and clearcoat. Wings installed on aircraft with all new attach hardware in accordance with Grumman assembly and erection manual.

Left wing

- Case 1) station 280 upper rear spar cap
- Case 2) Station 215 upper rear spar cap
- Case 3) station 198 upper rear spar cap
- Case 4) station 170 upper rear spar cap
- Case 5) station 158 upper rear spar cap
- Case 6) station 199 lower rear spar cap
- Case 7) station 184 lower rear spar cap
- Case 8) station 159 lower rear spar cap
- Case 9) Station 251 lower front spar cap
- Case 10) station 198 lower front spar cap
- Case 11) Station 188 lower front spar cap
- Case 12) Station 192 upper front spar cap
- Case 13) Station 149 lower front spar cap
- Case 14) Station 100 upper front spar cap
- Case 15) Station 98 lower front spar cap
- Case 16) Station 93 lower rear spar cap

Right wing

- Case 17) Station 192 lower rear spar cap
- Case 18) Station 209 lower rear spar cap

-----end-----

Additional Sheets Are Attached

40 Pages



U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION Statement of Compliance with Airworthiness Standards			1. DATE December 21, 2016
AIRCRAFT OR AIRCRAFT COMPONENT IDENTIFICATION			
2. MAKE Grumman	3. MODEL NO. G-21A	4. TYPE (Aircraft, Engine, Propeller, etc.) Aircraft	5. NAME OF APPLICANT Addison J Pemberton
LIST OF DATA			
6. IDENTIFICATION Pemberton and Sons Aviation Report 122116 Revision N/C	7. TITLE Design Review for Spar Cap Splices - Grumman G-21A, N95467, S/N 1161, Dated December 21, 2016.		
<p style="font-size: small;">This approval is for engineering design data only, and is not an installation approval. It indicates the data listed above demonstrates compliance only with the regulations by paragraph and subparagraph listed below as "APPLICABLE REGULATIONS." Compliance with additional regulations not listed here may be required. This form does not constitute FAA approval of all engineering data necessary for substantiation of compliance to necessary requirements for the entire alteration / repair.</p>			
8. PURPOSE OF DATA Structural Design Review for Spar Cap Splices on N95467			
9. APPLICABLE REQUIREMENTS (List specific sections) Aeronautics Bulletin Amendment 7a Sections 9 B, 10 B & D, and 24 F			
10. CERTIFICATION - Under authority vested by direction of the Administrator and in accordance with conditions and limitations of appointment under 14 CFR Part 183, data listed above and on attached sheets numbered None _____ have been examined in accordance with established procedures and found to comply with applicable requirements of the Airworthiness Standards listed. I (We) Therefore <input type="checkbox"/> Recommend approval of these data <input checked="" type="checkbox"/> Approve these data			
11. SIGNATURE(S) OF DESIGNATED ENGINEERING REPRESENTATIVE(S) Hugh G Evans <i>Hugh G Evans</i>	12. DESIGNATION NUMBER(S) DERT 635166-NM	13. CLASSIFICATION(S) Structures	



PEMBERTON & SONS AVIATION

REPORT 122116

DESIGN REVIEW

FOR

SPAR CAP SPLICES

GRUMMAN G-21A, N95467, S/N 1161

Revision N/C

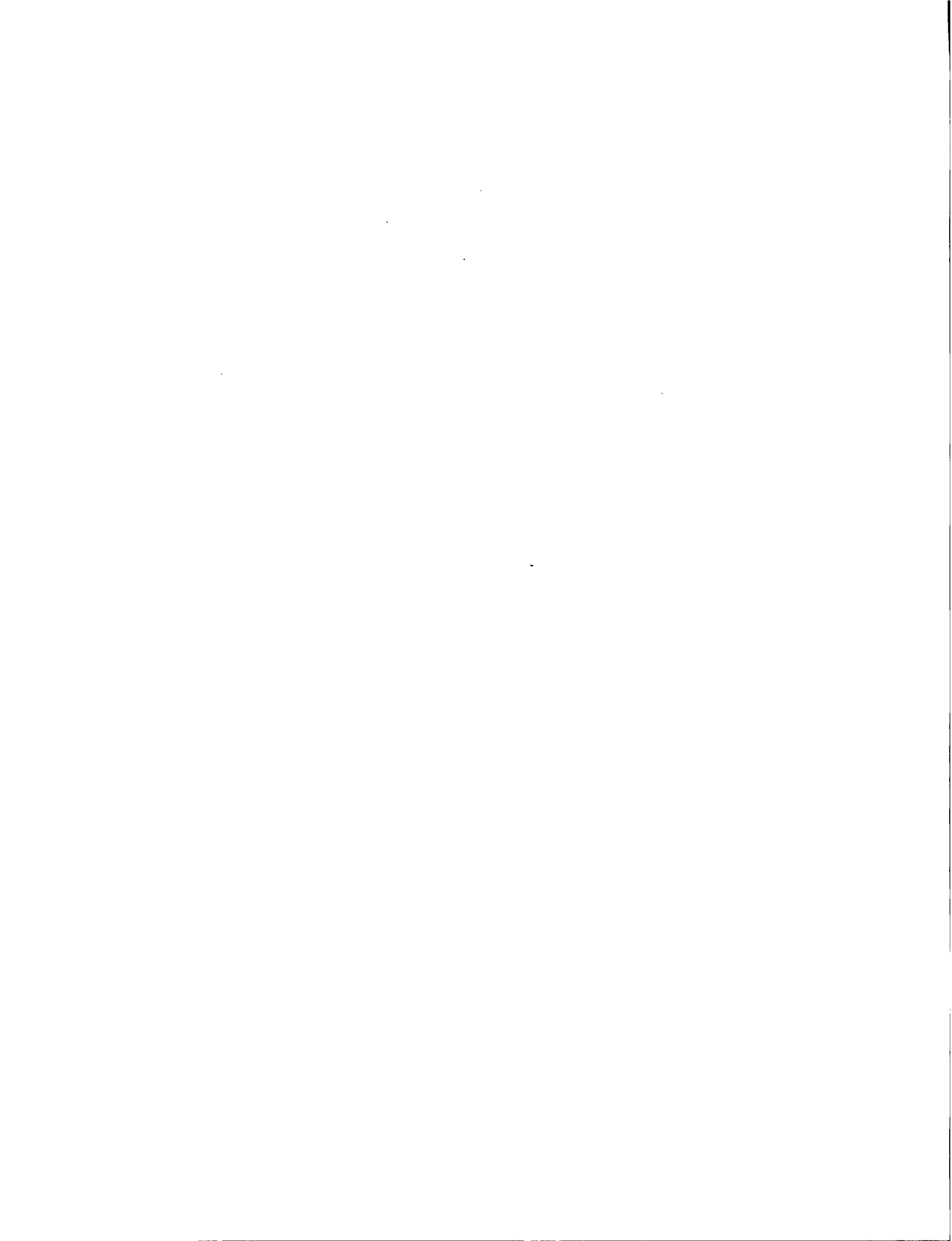
December 21, 2016



PEMBERTON AND SONS AVIATION
REPORT 122116**Summary:**

The basis of approval for all of the following spar cap splices is by comparison to the compressive/tensile strength of the original spar cap. The doublers added for each splice are shown to have adequate cross sectional area to carry the load across the joint. Each half of the splice is then examined to ensure that the rivets (and Hysol if applicable) have adequate shear strength, and the doublers and spar cap have adequate bearing strength, to transfer the load from the spar cap to the splice doubler(s). The Case #9, #11, #17, and #18 splices did not have the same strength as the original spar cap, but a wing loading analysis was used to show that they are acceptable. The attached drawings show each splice in detail including the doubler dimensions, doubler materials, rivets, and whether or not Hysol was used. The drawings show height dimensions of 7/8" or 1" for spar flange dimension for locations outboard of W.S. 166, but all calculations were done using a spar cap dimensions of 15/16" by 15/16" for the forward spars and 15/16" x 1.25" for the aft spars as shown on the Grumman Engineering drawings.

Calculations: Pages 2-20**Drawings:** Pages 21-38



Material Properties used for Calculations:

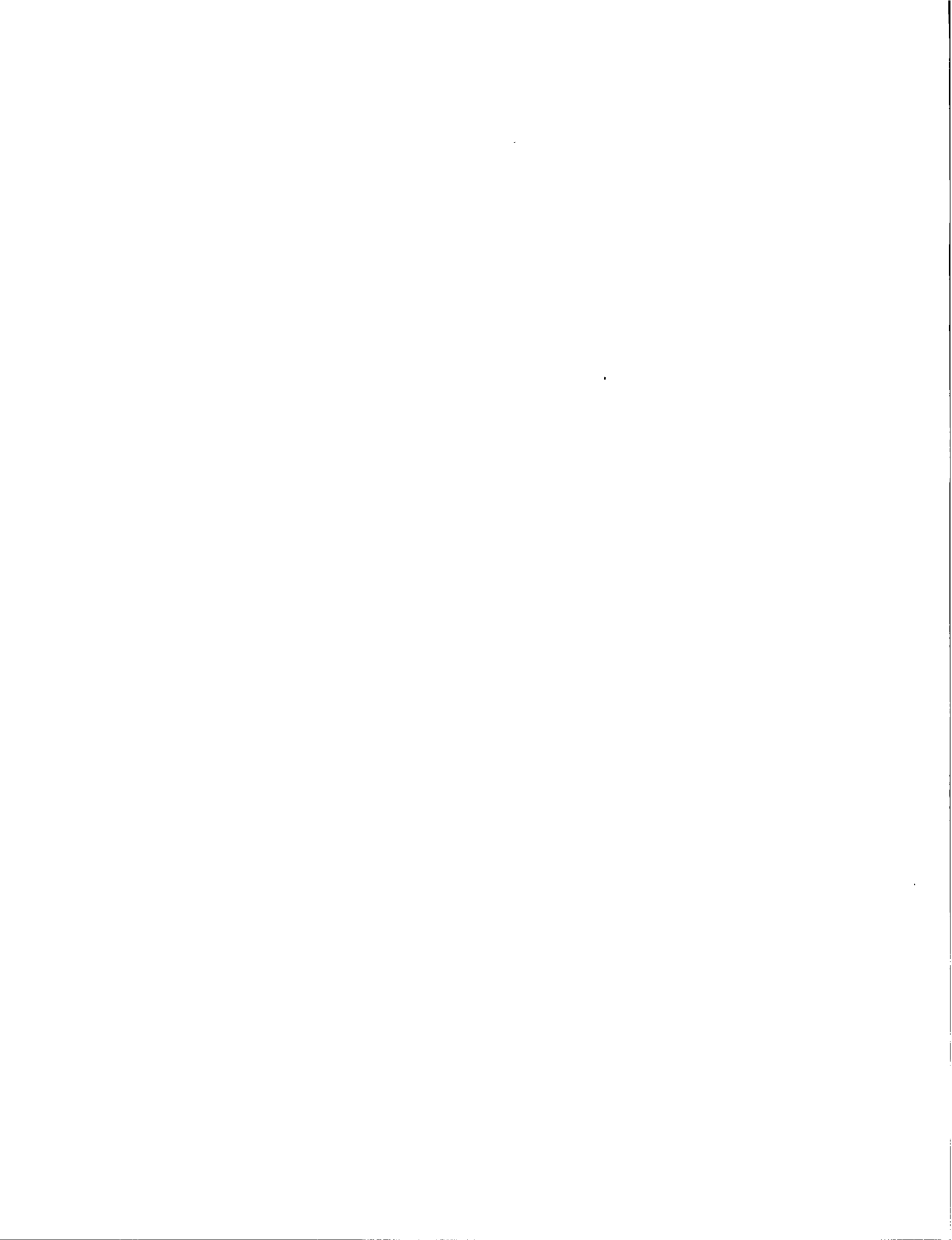
- Shear Strength of AD Rivet = 28,000 psi
- Bearing Strength of AD Rivet = 100,000 psi
- Tensile Strength of 2024-T4 = 42,000 psi
- Shear Strength of 2024-T4 = 28,000 psi
- Bearing Yield Strength of 2024-T4 = 64,000 psi
- Shear Strength of Hysol EA 9430 = 3500 psi Use 2,000 psi to be conservative
- Tensile Strength of AN525 Screw is 125ksi min.
- Shear Strength of bolt = .75 times the tensile strength.
- Shear strength of AN screw = 94ksi.
- Shear Strength of CR3523 Rivet (Monel Sleeve and 15-7 PH Cres Stem) = 75,000 psi
- Shear Strength of CR3213 Rivet (5056 Aluminum Sleeve and 8740 Alloy Steel Stem) = 50,000 psi

$$D_{3R} := .094 \quad D_{4R} := .125 \quad D_{5R} := .156 \quad D_{6R} := .188 \quad D_{3RH} := .098 \quad D_{4RH} := .1285$$

$$D_{5RH} := .159 \quad D_{6RH} := .191 \quad A_{3R} := \frac{\pi}{4} \cdot D_{3R}^2 \quad A_{4R} := \frac{\pi}{4} \cdot D_{4R}^2 \quad A_{5R} := \frac{\pi}{4} \cdot D_{5R}^2 \quad A_{6R} := \frac{\pi}{4} \cdot D_{6R}^2$$

$$A_{3RH} := \frac{\pi}{4} \cdot (D_{3RH})^2 \quad A_{4RH} := \frac{\pi}{4} \cdot (D_{4RH})^2 \quad A_{5RH} := \frac{\pi}{4} \cdot (D_{5RH})^2 \quad A_{6RH} := \frac{\pi}{4} \cdot (D_{6RH})^2$$

$28000 \cdot A_{3R} = 194.314$	$\frac{194.3}{64000 \cdot D_{3R}} = 0.032$	Material will fail from bearing load before #3 AD rivet shears if material is thinner than .032"
$50000 \cdot A_{3R} = 346.989$	$\frac{347}{64000 \cdot D_{3R}} = 0.058$	Material will fail from bearing load before #3 AL CherryMax rivet shears if material is thinner than .058"
$75000 \cdot A_{3R} = 520.483$	$\frac{520.5}{64000 \cdot D_{3R}} = 0.087$	Material will fail from bearing load before #3 Monel CherryMax rivet shears if material is thinner than .087"
$28000 \cdot A_{4R} = 343.612$	$\frac{343.6}{64000 \cdot D_{4R}} = 0.043$	Material will fail from bearing load before #4 AD rivet shears if material is thinner than .043"
$50000 \cdot A_{4R} = 613.592$	$\frac{613.6}{64000 \cdot D_{4R}} = 0.077$	Material will fail from bearing load before #4 AL CherryMax rivet shears if material is thinner than .077"
$75000 \cdot A_{4R} = 920.388$	$\frac{920.4}{64000 \cdot D_{4R}} = 0.115$	Material will fail from bearing load before #4 Monel CherryMax rivet shears if material is thinner than .115"
$28000 \cdot A_{5R} = 535.177$	$\frac{535.2}{64000 \cdot D_{5R}} = 0.054$	Material will fail from bearing load before #5 AD rivet shears if material is thinner than .054"
$50000 \cdot A_{5R} = 955.672$	$\frac{955.7}{64000 \cdot D_{5R}} = 0.096$	Material will fail from bearing load before #5 AL CherryMax rivet shears if material is thinner than .096"
$75000 \cdot A_{5R} = 1.434 \cdot 10^3$	$\frac{1434}{64000 \cdot D_{5R}} = 0.144$	Material will fail from bearing load before #5 Monel CherryMax rivet shears if material is thinner than .144"
$28000 \cdot A_{6R} = 777.255$	$\frac{777.3}{64000 \cdot D_{6R}} = 0.065$	Material will fail from bearing load before #6 AD rivet shears if material is thinner than .065"
$50000 \cdot A_{6R} = 1.388 \cdot 10^3$	$\frac{1388}{64000 \cdot D_{6R}} = 0.115$	Material will fail from bearing load before #6 AL CherryMax rivet shears if material is thinner than .115"
$75000 \cdot A_{6R} = 2.082 \cdot 10^3$	$\frac{2082}{64000 \cdot D_{6R}} = 0.173$	Material will fail from bearing load before #6 Monel CherryMax rivet shears if material is thinner than .173"



Case #1**Tension**

$$A_{\text{spar}} := .216 \quad t_{\text{spar}} := .125 \quad A_{\text{doubler}} := .263 \quad t_{\text{doubler}} := .125$$

$$A_{\text{B3RH}} := D_{\text{3RH}} \cdot t_{\text{spar}} \quad A_{\text{B4RH}} := D_{\text{4RH}} \cdot t_{\text{spar}} \quad A_{\text{B5RH}} := D_{\text{5RH}} \cdot t_{\text{spar}} \quad A_{\text{B6RH}} := D_{\text{6RH}} \cdot t_{\text{spar}}$$

$$A_{\text{ELPs}} := A_{\text{spar}} - A_{\text{B6RH}} \quad A_{\text{ELPs}} = 0.192 \quad T_{\text{allowS}} := 42000 \cdot A_{\text{ELPs}} \quad T_{\text{allowS}} = 8.069 \cdot 10^3$$

$$A_{\text{ELPd}} := A_{\text{doubler}} - A_{\text{B4RH}} \quad A_{\text{ELPd}} = 0.247 \quad T_{\text{allowD}} := 42000 \cdot A_{\text{ELPd}} \quad T_{\text{allowD}} = 1.037 \cdot 10^4$$

The doubler strength is greater than the Spar strength, so the doubler is adequate.

Shear

The material is thick enough that when all AD rivets are used, the rivet shear strength is the limiting factor.

$$\text{ShearA}_{\text{Routboard}} := 12 \cdot A_{\text{4R}} + A_{\text{6R}} + 5 \cdot A_{\text{5R}} \quad \text{ShearA}_{\text{Routboard}} = 0.271$$

$$\text{ShearA}_{\text{Rinboard}} := 20 \cdot A_{\text{4R}} + A_{\text{6R}} + 8 \cdot A_{\text{5R}} \quad \text{ShearA}_{\text{Rinboard}} = 0.426$$

$$\text{SurfaceA}_{\text{RHoutboard}} := 14 \cdot A_{\text{4RH}} + A_{\text{6RH}} + 5 \cdot A_{\text{5RH}}$$

$$\text{SurfaceA}_{\text{RHinboard}} := 20 \cdot A_{\text{4RH}} + A_{\text{6RH}} + 8 \cdot A_{\text{5RH}}$$

$$\text{SurfaceA}_{\text{outboard}} := (.375 + .8125) \cdot 4 - \text{SurfaceA}_{\text{RHoutboard}} \quad \text{SurfaceA}_{\text{outboard}} = 4.441$$

$$\text{Shear} := 28000 \cdot \text{ShearA}_{\text{Routboard}} + 2000 \cdot \text{SurfaceA}_{\text{outboard}} \quad \text{Shear} = 1.646 \cdot 10^4$$

The outboard half of the splice has less surface area and less rivet shear area, so it is the critical half. When bonded with Hysol, the outboard half of the joint can transfer more load than the doubler can carry, so the joint is adequate.

Case #2

Tensile Loads

$$A_{spar} := .216 \quad t_{spar} := .125 \quad A_{d1} := .2 \quad t_{d1} := .1 \quad A_{d2} := .09 \quad t_{d2} := .125 \quad A_{d3} := .09 \quad t_{d3} := .050$$

$$A_{B5RHs} := D_{5RH} \cdot t_{spar} \quad A_{B5RH1} := .159 \cdot t_{d1} \quad A_{B5RH2} := .159 \cdot t_{d2} \quad A_{B5RH3} := .159 \cdot t_{d3}$$

$$A_{ELPs} := A_{spar} - A_{B5RHs} \quad A_{ELPd1} := A_{d1} - 2 \cdot A_{B5RH1} \quad A_{ELPd2} := A_{d2} - 2 \cdot A_{B5RH2}$$

$$A_{ELPd3} := A_{d3} - 2 \cdot A_{B5RH3} \quad A_{ELPd} := A_{ELPd1} + A_{ELPd2} + A_{ELPd3}$$

$$T_{allowS} := 42000 \cdot A_{ELPs} \quad T_{allowS} = 8.237 \cdot 10^3 \quad T_{allowD} := 42000 \cdot A_{ELPd} \quad T_{allowD} = 1.229 \cdot 10^4$$

The total doubler strength is greater than the Spar strength, so the doublers are adequate.

Shear Loads

Doublers #1 and #2 are thick enough that the rivet shear is critical, but for doubler #3, the bearing stress in the doubler hole is critical.

$$\text{ShearA}_{Routboard1} := 11 \cdot A_{5R} \quad \text{ShearA}_{Rinboard1} := 20 \cdot A_{5R} \quad \text{Shear}_1 := 28000 \cdot \text{ShearA}_{Routboard1}$$

$$\text{Shear}_1 = 5.887 \cdot 10^3 \quad \frac{\text{Shear}_1}{A_{ELPd1}} = 3.5 \cdot 10^4$$

So rivets can transfer 5,887 lbs into the angle doubler, which translates to 35,000 psi stress in the doubler which is below the 42,000 yield strength.

$$\text{ShearA}_{Routboard2} := 8 \cdot A_{5R} \quad \text{ShearA}_{Rinboard2} := 15 \cdot A_{5R} \quad \text{Shear}_2 := 28000 \cdot \text{ShearA}_{Routboard2}$$

$$\text{Shear}_2 = 4.281 \cdot 10^3 \quad \frac{\text{Shear}_2}{A_{ELPd2}} = 8.52 \cdot 10^4 \quad T_{d2} := 42000 \cdot A_{ELPd2} \quad T_{d2} = 2.111 \cdot 10^3$$

Rivets can transfer 4,281 lbs into the internal flat doubler, which translates to 85,200 psi stress in the doubler which is above the 42,000 yield strength. This doubler is limited to the tensile load the doubler can carry which is 2,111 lbs.

$$A_{B5R3} := D_{5R} \cdot t_{d3} \quad \text{BearingA}_{outboard3} := 3 \cdot A_{B5R3} \quad \text{BearingA}_{inboard3} := 6 \cdot A_{B5R3}$$

$$\text{Bearing}_3 := 64000 \cdot \text{BearingA}_{outboard3} \quad \text{Bearing}_3 = 1.498 \cdot 10^3 \quad \frac{\text{Bearing}_3}{A_{ELPd3}} = 2.021 \cdot 10^4$$

So rivets can transfer 1,498 lbs into the external flat doubler, which translates to 20,210 psi stress in the doubler which is below the 42,000 yield strength.

$$T_{allowd} := \text{Shear}_1 + T_{d2} + \text{Bearing}_3 \quad T_{allowd} = 9.495 \cdot 10^3$$

The combination of the 3 doublers can take 9,495 lbs which is better than the spar's 8,237 lbs.

Case #3

$$\text{Tension} \quad A_s := .216 \quad t_s := .125 \quad A_{d1} := .18 \quad t_{d1} := .093$$

$$A_{d2} := .0625 \quad t_{d2} := .125 \quad A_{d3} := .0224 \quad t_{d3} := .032$$

$$A_{B6RHs} := D_{6RH} \cdot t_s \quad A_{B6RH1} := D_{6RH} \cdot t_{d1} \quad A_{B4RH2} := D_{4RH} \cdot t_{d2} \quad A_{B5RH3} := D_{5RH} \cdot t_{d3}$$

$$A_{ELPs} := A_s - A_{B6RHs} \quad T_{allowS} := 42000 \cdot A_{ELPs} \quad T_{allowS} = 8.069 \cdot 10^3$$

$$A_{ELPd1} := A_{d1} - A_{B6RH1} \quad A_{ELPd2} := A_{d2} - A_{B4RH2} \quad A_{ELPd3} := A_{d3} - A_{B5RH3}$$

$$T_{allowd1} := 42000 \cdot A_{ELPd1} \quad T_{allowd2} := 42000 \cdot A_{ELPd2} \quad T_{allowd3} := 42000 \cdot A_{ELPd3}$$

$$T_{allowD} := T_{allowd1} + T_{allowd2} + T_{allowd3} \quad T_{allowD} = 9.491 \cdot 10^3$$

The total doubler strength is greater than the Spar strength, so the doublers are adequate.

Shear

All material is thick enough that the rivet shear is critical for AD rivets. All material is thin enough that bearing strength is critical for Cherry rivets.

$$\text{SurfaceA}_{RHinboard2} := 2 \cdot A_{4RH} \quad \text{SurfaceA}_{inboard2} := (.5) \cdot 1.625 - \text{SurfaceA}_{RHinboard2}$$

$$\text{Shear}_{d1out} := 28000 \cdot (5 \cdot A_{4R}) + 64000 \cdot (4 \cdot D_{5R} \cdot t_{d1}) \quad \text{Shear}_{d1out} = 5.432 \cdot 10^3$$

$$\text{Shear}_{d1in} := 28000 \cdot (2 \cdot A_{6R}) + 64000 \cdot (3 \cdot D_{5R} \cdot t_{d1} + 3 \cdot D_{4R} \cdot .063) \quad \text{Shear}_{d1in} = 5.852 \cdot 10^3$$

$$\text{Shear}_{d2out} := 64000 \cdot 4 \cdot D_{4R} \cdot .063 \quad \text{Shear}_{d2out} = 2.016 \cdot 10^3$$

$$\text{Shear}_{d2in} := 28000 \cdot 2 \cdot A_{4R} + 2000 \cdot \text{SurfaceA}_{inboard2} \quad \text{Shear}_{d2in} = 2.26 \cdot 10^3$$

$$\text{Shear}_{d3out} := 64000 \cdot (4 \cdot D_{5R} \cdot t_{d3}) \quad \text{Shear}_{d3out} = 1.278 \cdot 10^3$$

$$\text{Shear}_{d3in} := 64000 \cdot (3 \cdot D_{5R} \cdot t_{d3}) \quad \text{Shear}_{d3in} = 958.464$$

$$T_{allowd1} = 6.814 \cdot 10^3 \quad T_{allowd2} = 1.95 \cdot 10^3 \quad T_{allowd3} = 727.104$$

$$\text{Shear}_{d1out} + T_{allowd2} + T_{allowd3} = 8.11 \cdot 10^3$$

Shear into the outboard part of doubler #1 is the critical load for doubler #1. All other shear loads are greater than the tensile strength of the doubler, so the doubler load is critical. The sum of the critical shear and doubler loads is greater than the original spar load, so the joint is adequate.

Case #4

Tension

$$A_{\text{spar}} := .216 \quad t_{\text{spar}} := .125 \quad A_{\text{doubler}} := .27 \quad t_{\text{doubler}} := .156$$

$$A_{\text{ELPs}} := A_{\text{spar}} - D_{6R} H t_{\text{spar}} \quad T_{\text{allowS}} := 42000 \cdot A_{\text{ELPs}} \quad T_{\text{allowS}} = 8.069 \cdot 10^3$$

$$A_{\text{ELPd}} := A_{\text{doubler}} - D_{6R} H t_{\text{doubler}} \quad T_{\text{allowD}} := 42000 \cdot A_{\text{ELPd}} \quad T_{\text{allowD}} = 1.009 \cdot 10^4$$

The doubler strength is greater than the Spar strength, so the doubler is adequate.

Shear

All material is thick enough that the rivet shear is critical.

$$\text{Shear}_{\text{in}} := 28000 \cdot (3 \cdot A_{6R} + 4 \cdot A_{5R} + 3 \cdot A_{4R}) + 75000 \cdot 3 \cdot A_{4R} \quad \text{Shear}_{\text{in}} = 8.264 \cdot 10^3$$

$$\text{Shear}_{\text{out}} := 28000 \cdot (4 \cdot A_{6R} + 5 \cdot A_{5R} + 4 \cdot A_{4R}) + 50000 \cdot (4 \cdot A_{4R}) \quad \text{Shear}_{\text{out}} = 9.614 \cdot 10^3$$

The shear strength of the rivets in both the inboard and outboard half of the joint is greater than the original spar strength, so the joint is adequate,

Case #5

Tension

$$A_{\text{spar}} := .23 \quad t_{\text{spar}} := .125 \quad A_{\text{doubler}} := .23 \quad t_{\text{doubler}} := .125$$

$$A_{\text{ELPs}} := A_{\text{spar}} - D_{6R} H t_{\text{spar}} \quad T_{\text{allowS}} := 42000 \cdot A_{\text{ELPs}} \quad T_{\text{allowS}} = 8.657 \cdot 10^3$$

$$A_{\text{ELPd}} := A_{\text{doubler}} - D_{6R} H t_{\text{doubler}} \quad T_{\text{allowD}} := 42000 \cdot A_{\text{ELPd}} \quad T_{\text{allowD}} = 8.657 \cdot 10^3$$

The doubler strength is equal to the Spar strength, so the doubler is adequate.

Shear

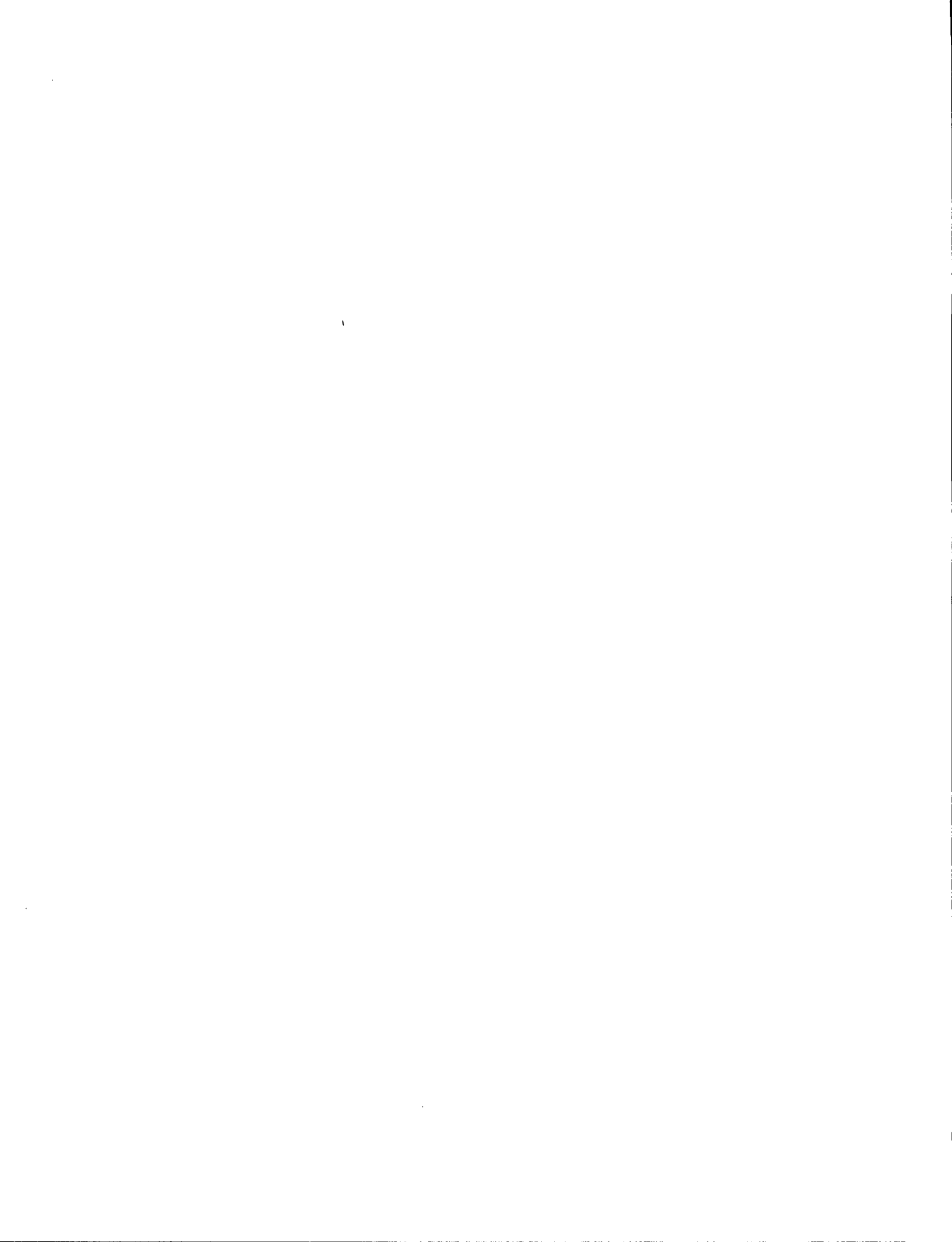
$$75000 \cdot \left(\frac{\pi}{4} \cdot .141^2 \right) = 1.171 \cdot 10^3 \quad \frac{1171}{64000 \cdot D_{4R}} = 0.146$$

Material will fail from bearing load before oversize #4 Monel CherryMax rivet shears if material is thinner than .146", so material bearing strength is critical for these rivets only.

$$\text{Shear}_{\text{in}} := 28000 \cdot (5 \cdot A_{6R} + 5 \cdot A_{5R} + 3 \cdot A_{4R}) + 50000 \cdot 5 \cdot A_{4R} \quad \text{Shear}_{\text{in}} = 1.066 \cdot 10^4$$

$$\text{Shear}_{\text{out}} := 28000 \cdot (3.5 \cdot A_{6R} + 3 \cdot A_{4R} + 5 \cdot A_{5R}) + 64000 \cdot 2 \cdot t_{\text{doubler}} \cdot .141 \quad \text{Shear}_{\text{out}} = 8.683 \cdot 10^3$$

The shear strength of the rivets in both the inboard and outboard half of the joint is greater than the original spar strength, so the joint is adequate,



Case #6

Tension

$$A_{\text{spar}} := .216 \quad t_{\text{spar}} := .125 \quad A_{\text{doubler}} := .20 \quad t_{\text{doubler}} := .125$$

$$A_{\text{B3RH}} := D_{\text{3RH}} \cdot t_{\text{spar}} \quad A_{\text{B4RH}} := D_{\text{4RH}} \cdot t_{\text{spar}} \quad A_{\text{B5RH}} := D_{\text{5RH}} \cdot t_{\text{spar}} \quad A_{\text{B6RH}} := D_{\text{6RH}} \cdot t_{\text{spar}}$$

$$A_{\text{ELPs}} := A_{\text{spar}} - A_{\text{B6RH}} - A_{\text{B5RH}} \quad T_{\text{allowS}} := 42000 \cdot A_{\text{ELPs}} \quad T_{\text{allowS}} = 7.234 \cdot 10^3$$

$$A_{\text{ELPd}} := A_{\text{doubler}} - A_{\text{B4RH}} \quad T_{\text{allowD}} := 42000 \cdot A_{\text{ELPd}} \quad T_{\text{allowD}} = 7.725 \cdot 10^3$$

The doubler strength is greater than the Spar strength, so the doubler is adequate.

Shear

The material is thick enough that when all AD rivets are used, the rivet shear strength is the limiting factor.

$$\text{Shear} A_{\text{Routboard}} := A_{\text{6R}} + 13 \cdot A_{\text{5R}} \quad \text{Surface} A_{\text{RHoutboard}} := A_{\text{6RH}} + 14 \cdot A_{\text{5RH}}$$

$$\text{Shear} A_{\text{Rinboard}} := 3 \cdot A_{\text{6R}} + 3 \cdot A_{\text{5R}} \quad \text{Surface} A_{\text{RHinboard}} := 4 \cdot A_{\text{6RH}} + 6 \cdot A_{\text{5RH}}$$

$$\text{Surface} A_{\text{inboard}} := (.347 + .545) \cdot 2.94 - \text{Surface} A_{\text{RHinboard}} \quad \text{Surface} A_{\text{inboard}} = 2.389$$

$$\text{Shear} := 28000 \cdot \text{Shear} A_{\text{Rinboard}} + 2000 \cdot \text{Surface} A_{\text{inboard}} \quad \text{Shear} = 8.715 \cdot 10^3$$

The inboard half of the splice has less surface area and less rivet shear area, so it is the critical half. When bonded with Hysol, the inboard half of the joint can transfer more load than the doubler can carry, so the joint is adequate.

Case #7

Tension

$$A_{\text{spar}} := .216 \quad t_{\text{spar}} := .125 \quad A_{\text{doubler}} := .222 \quad t_{\text{doubler}} := .125$$

$$A_{\text{B3RH}} := D_{\text{3RH}} \cdot t_{\text{spar}} \quad A_{\text{B4RH}} := D_{\text{4RH}} \cdot t_{\text{spar}} \quad A_{\text{B5RH}} := D_{\text{5RH}} \cdot t_{\text{spar}} \quad A_{\text{B6RH}} := D_{\text{6RH}} \cdot t_{\text{spar}}$$

$$A_{\text{ELPs}} := A_{\text{spar}} - A_{\text{B6RH}} \quad T_{\text{allowS}} := 42000 \cdot A_{\text{ELPs}} \quad T_{\text{allowS}} = 8.069 \cdot 10^3$$

$$A_{\text{ELPd}} := A_{\text{doubler}} - A_{\text{B6RH}} \quad T_{\text{allowD}} := 42000 \cdot A_{\text{ELPd}} \quad T_{\text{allowD}} = 8.321 \cdot 10^3$$

The doubler strength is greater than the Spar strength, so the doubler is adequate.

Shear

The material is thick enough that when all AD rivets are used, the rivet shear strength is the limiting factor.

$$\text{ShearA}_{\text{Routboard}} := 5 \cdot A_{6R} + 5 \cdot A_{5R} \qquad \text{SurfaceA}_{\text{RHoutboard}} := 5.5 \cdot A_{6RH} + 5 \cdot A_{5RH}$$

$$\text{ShearA}_{\text{Rinboard}} := 3.5 \cdot A_{6R} + 4 \cdot A_{5R} \qquad \text{SurfaceA}_{\text{RHinboard}} := 4.5 \cdot A_{6RH} + 4 \cdot A_{5RH}$$

$$\text{SurfaceA}_{\text{inboard}} := (.347 + .545) \cdot 3.265 - \text{SurfaceA}_{\text{RHinboard}} \qquad \text{SurfaceA}_{\text{inboard}} = 2.704$$

$$\text{Shear} := 28000 \cdot \text{ShearA}_{\text{Rinboard}} + 2000 \cdot \text{SurfaceA}_{\text{inboard}} \qquad \text{Shear} = 1.027 \cdot 10^4$$

The inboard half of the splice has less surface area and less rivet shear area, so it is the critical half. When bonded with Hysol, the inboard half of the joint can transfer more load than the doubler can carry, so the joint is adequate.

Case #8

Tension

$$A_{\text{spar}} := .23 \qquad t_{\text{spar}} := .125 \qquad A_{\text{doubler}} := .23 \qquad t_{\text{doubler}} := .125$$

$$A_{\text{ELPs}} := A_{\text{spar}} - D_{5RH} \cdot t_{\text{spar}} \qquad T_{\text{allowS}} := 42000 \cdot A_{\text{ELPs}} \qquad T_{\text{allowS}} = 8.825 \cdot 10^3$$

$$A_{\text{ELPd}} := A_{\text{doubler}} - D_{5RH} \cdot t_{\text{doubler}} \qquad T_{\text{allowD}} := 42000 \cdot A_{\text{ELPd}} \qquad T_{\text{allowD}} = 8.825 \cdot 10^3$$

The doubler strength is equal to the Spar strength, so the doubler is adequate.

Shear

All material is thick enough that the rivet shear is critical except the CR2313-4 Rivets through the thin spar cap section where the bearing strength of the spar cap is critical.

$$\text{Shear}_{\text{in}} := 28000 \cdot (3 \cdot A_{4R} + 6.5 \cdot A_{5R}) + 75000 \cdot (3 \cdot A_{4R}) + 64000 \cdot (5 \cdot .06 \cdot D_{4R}) \qquad \text{Shear}_{\text{in}} = 9.671 \cdot 10^3$$

$$\text{Shear}_{\text{out}} := 28000 \cdot (3 \cdot A_{4R} + 7 \cdot A_{5R}) + 75000 \cdot (4 \cdot A_{4R}) + 64000 \cdot (2 \cdot .06 \cdot D_{4R}) \qquad \text{Shear}_{\text{out}} = 9.419 \cdot 10^3$$

The shear strength of the rivets in both the inboard and outboard half of the joint is greater than the original spar strength, so the joint is adequate,



Case #9

Tension

$$A_{\text{spar}} := .207 \quad t_{\text{spar}} := .125 \quad A_{\text{doubler}} := .179 \quad t_{\text{doubler}} := .125$$

$$A_{\text{ELPs}} := A_{\text{spar}} - D_{5R} \cdot t_{\text{spar}} \quad T_{\text{allowS}} := 42000 \cdot A_{\text{ELPs}} \quad T_{\text{allowS}} = 7.859 \cdot 10^3$$

$$A_{\text{ELPd}} := A_{\text{doubler}} \quad T_{\text{allowD}} := 42000 \cdot A_{\text{ELPd}} \quad T_{\text{allowD}} = 7.518 \cdot 10^3$$

Shear

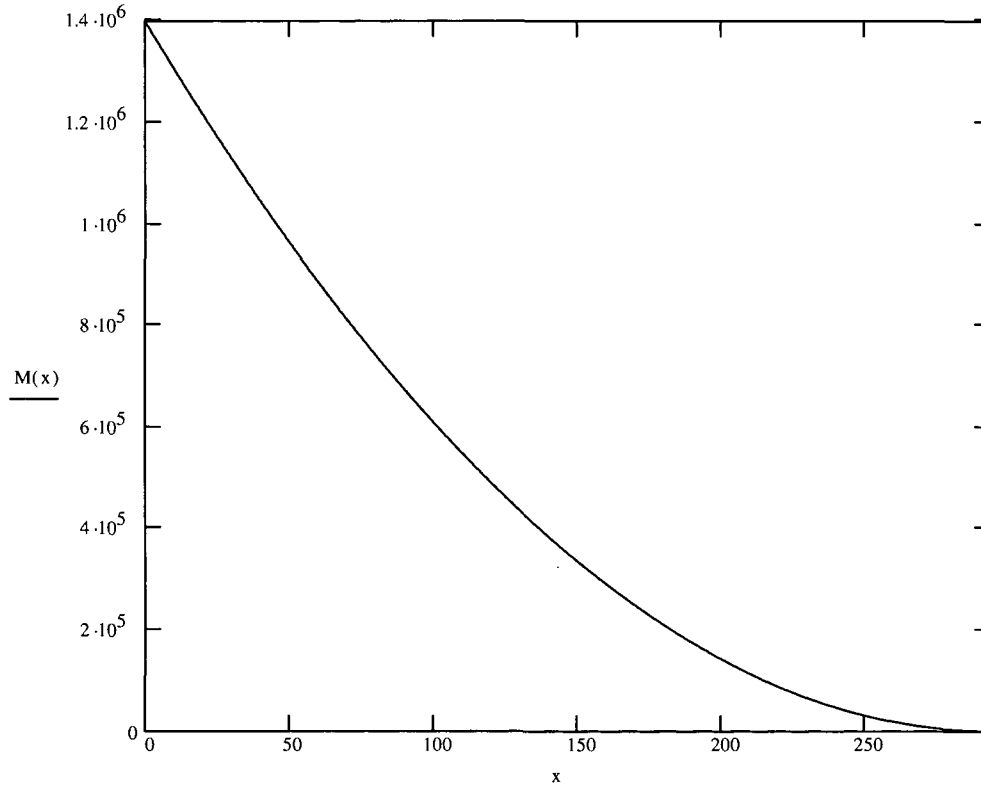
All material is thick enough that the rivet shear is critical.

$$\text{Shear}_{\text{in}} := 28000 \cdot (7 \cdot A_{4R} + 8 \cdot A_{5R}) \quad \text{Shear}_{\text{in}} = 6.687 \cdot 10^3$$

$$\text{Shear}_{\text{out}} := 28000 \cdot (17 \cdot A_{5R}) \quad \text{Shear}_{\text{out}} = 9.098 \cdot 10^3$$

The doubler strength is greater than the shear strength of the rivets, so the rivet shear is the limiting factor of the joint and is less than the strength of the spar cap.

$$b := 49 \cdot 12 \quad n := 3.5 \quad W := 8000 \quad M(x) := .085 \cdot n \cdot b \cdot W \cdot \left(1 - \frac{x}{294}\right)^2$$



$$t_{\text{fs}}(x) := 15.4981 - .0336 \cdot x \quad t_{\text{rs}}(x) := 19.537 - .0523 \cdot x$$



Equation for W.S. 196 to 271

$$\text{Load}_{fs(x)} := \frac{.19995 \cdot M(x)}{.5 \cdot t_{fs}(x) - .5} \quad \text{Load}_{fs}(196) = 7.859 \cdot 10^3 \quad \text{Load}_{fs}(251) = 1.974 \cdot 10^3$$

The structure in the wing is the same from W.S. 196 outboard, but the loading decreases substantially, so a wing loading analysis was done to show the the rivet shear is adequate for this location. The 6,687 pound capacity of the rivets exceeds the load of approximately 2,000 and the joint is adequate.

Case #10

Spar Loads

$$\begin{aligned} A_{spar} &:= .207 & t_{spar} &:= .125 & A_{d1} &:= .261 & t_{d1} &:= .125 \\ A_{d2} &:= .016 & t_{d2} &:= .032 & A_{d3} &:= .126 & t_{d3} &:= .063 & A_{d4} &:= .063 & t_{d4} &:= .063 \\ A_{ELPs} &:= A_{spar} - D_{5RH} \cdot t_{spar} & A_{ELPd1} &:= A_{d1} - 2 \cdot D_{5RH} \cdot t_{d1} & A_{ELPd2} &:= A_{d2} - D_{5RH} \cdot t_{d2} \\ A_{ELPd3} &:= A_{d3} - 2 \cdot D_{5RH} \cdot t_{d3} & A_{ELPd4} &:= A_{d4} - D_{5RH} \cdot t_{d4} \\ T_{allowS} &:= 42000 \cdot A_{ELPs} & T_{allowS} &= 7.859 \cdot 10^3 \end{aligned}$$

Doubler Loads

Material is thinner than .144", so bearing stress in material is critical, not rivet shear for CR3523-5 rivets. .032" internal doubler is bearing stress limited. All other rivets are limited by rivet shear stress.

$$\begin{aligned} \text{Shear}_{A_{Rout1}} &:= 3 \cdot A_{4R} + 2.5 \cdot A_{5R} & \text{Load}_{out1} &:= 28000 \cdot \text{Shear}_{A_{Rout1}} & \text{Load}_{out1} &= 2.369 \cdot 10^3 \\ \text{Shear}_{A_{Rin1}} &:= 2 \cdot A_{4R} + 3 \cdot A_{5R} & \text{Shear}_{d1} &:= 28000 \cdot \text{Shear}_{A_{Rin1}} & \text{Shear}_{d1} &= 2.293 \cdot 10^3 \\ \frac{\text{Shear}_{d1}}{A_{ELPd1}} &= 1.036 \cdot 10^4 & \frac{\text{Load}_{out1}}{A_{ELPd1}} &= 1.071 \cdot 10^4 \end{aligned}$$

So rivets can transfer 2,293 lbs into the angle doubler, which translates to 10,360 psi stress in the doubler which is below the 42,000 yield strength.

$$\begin{aligned} \text{Bearing}_{A_{out2}} &:= 2.5 \cdot D_{5R} \cdot t_{d2} + 3 \cdot D_{4R} \cdot t_{d2} & \text{Load}_{out2} &:= 64000 \cdot \text{Bearing}_{A_{out2}} & \text{Load}_{out2} &= 1.567 \cdot 10^3 \\ \text{Bearing}_{A_{in2}} &:= 3 \cdot D_{5R} \cdot t_{d2} + 2 \cdot D_{4R} \cdot t_{d2} & \text{Load}_{in2} &:= 64000 \cdot \text{Bearing}_{A_{in2}} & \text{Load}_{in2} &= 1.47 \cdot 10^3 \\ \frac{\text{Load}_{in2}}{A_{ELPd2}} &= 1.348 \cdot 10^5 & T_{d2} &:= 42000 \cdot A_{ELPd2} & T_{d2} &= 458.304 \end{aligned}$$

So rivets can transfer 1,470 lbs into the internal flat doubler, which translates to 137,800 psi stress in the doubler which is above the 42,000 yield strength. This doubler is limited to the tensile load the doubler can handle which is 458 lbs.

Treat both external doublers as a single doubler .125" thick with an effective width of 1":

$$\text{Bearing}_{in3} := 64000 \cdot 5 \cdot (t_{d3} + t_{d4}) \cdot D_{5R} \quad \text{Bearing}_{in3} = 6.29 \cdot 10^3 \frac{\text{Bearing}_{in3}}{(t_{d3} + t_{d4}) \cdot 1} = 4.992 \cdot 10^4$$

$$T_{d3} := 42000 \cdot (t_{d3} + t_{d4}) \cdot 1 \quad T_{d3} = 5.292 \cdot 10^3$$

The rivets can transfer 6,290 lbs total into the doublers which translates to 49,920 psi stress which is higher than the 42,000 psi yield strength. Using a 1" effective width, both doublers can carry 5,292 lbs total.

$$T_{allowd} := \text{Shear}_{d1} + T_{d2} + T_{d3} \quad T_{allowd} = 8.043 \cdot 10^3$$

The combination of the 4 doublers can carry 8,043 lbs which is greater than the spar.

Case #11

$$\text{Spar Loads} \quad A_{spar} := .207 \quad t_{spar} := .125 \quad A_{d1} := .261 \quad t_{d1} := .125$$

$$A_{d2} := .016 \quad t_{d2} := .032 \quad A_{d3} := .1 \quad t_{d3} := .050 \quad A_{d4} := .063 \quad t_{d4} := .063$$

$$A_{ELPs} := A_{spar} - D_{5RH} \cdot t_{spar} \quad A_{ELPd1} := A_{d1} - 2 \cdot D_{5RH} \cdot t_{d1} \quad A_{ELPd2} := A_{d2} - D_{5RH} \cdot t_{d2}$$

$$A_{ELPd3} := A_{d3} - 2 \cdot D_{5RH} \cdot t_{d3} \quad A_{ELPd4} := A_{d4} - D_{5RH} \cdot t_{d4}$$

$$T_{allowS} := 42000 \cdot A_{ELPs} \quad T_{allowS} = 7.859 \cdot 10^3$$

Doubler Loads

Material is thinner than .144", so bearing stress in material is critical, not rivet shear for CR3523-5 rivets. .032" internal doubler is bearing stress limited. All other rivets are limited by rivet shear stress.

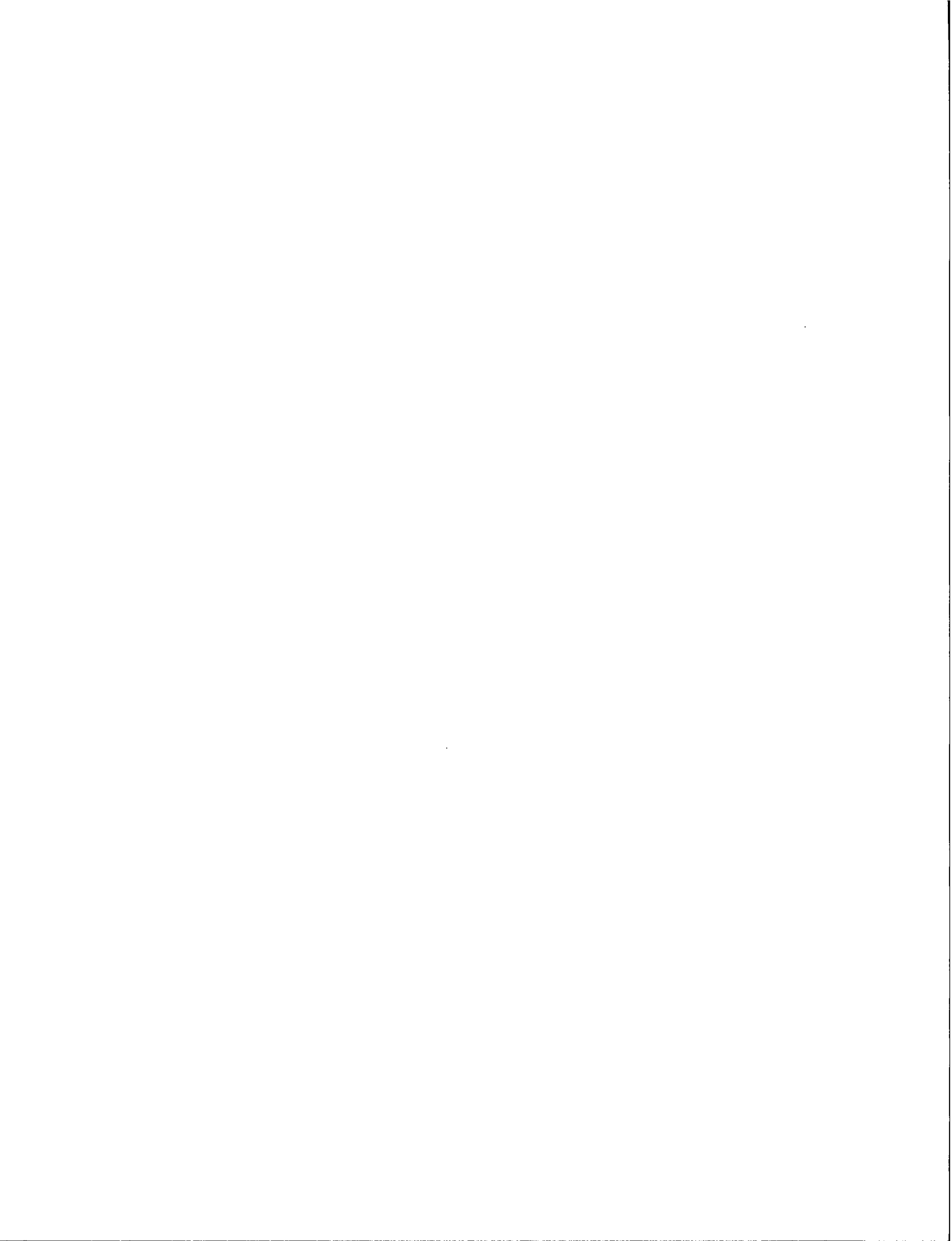
$$\text{Shear}_{A_{Rout1}} := 6 \cdot A_{5R} \quad \text{Load}_{out1} := 28000 \cdot \text{Shear}_{A_{Rout1}} \quad \text{Load}_{out1} = 3.211 \cdot 10^3$$

$$\text{Shear}_{A_{Rin1}} := 6 \cdot A_{5R} \quad \text{Shear}_{d1} := 28000 \cdot \text{Shear}_{A_{Rin1}} \quad \text{Shear}_{d1} = 3.211 \cdot 10^3$$

$$\frac{\text{Shear}_{d1}}{A_{ELPd1}} = 1.451 \cdot 10^4$$

$$\frac{\text{Load}_{out1}}{A_{ELPd1}} = 1.451 \cdot 10^4$$

So rivets can transfer 3,211 lbs into the angle doubler, which translates to 14,510 psi stress in the doubler which is below the 42,000 yield strength.



$$\text{BearingA}_{\text{out2}} := 6 \cdot D_{5R} \cdot t_{d2} \quad \text{Load}_{\text{out2}} := 64000 \cdot \text{BearingA}_{\text{out2}} \quad \text{Load}_{\text{out2}} = 1.917 \cdot 10^3$$

$$\text{BearingA}_{\text{in2}} := 6 \cdot D_{5R} \cdot t_{d2} \quad \text{Load}_{\text{in2}} := 64000 \cdot \text{BearingA}_{\text{in2}} \quad \text{Load}_{\text{in2}} = 1.917 \cdot 10^3$$

$$\frac{\text{Load}_{\text{in2}}}{A_{\text{ELPd2}}} = 1.757 \cdot 10^5 \quad T_{d2} := 42000 \cdot A_{\text{ELPd2}} \quad T_{d2} = 458.304$$

So rivets can transfer 1,917 lbs into the internal flat doubler, which translates to 175,700 psi stress in the doubler which is above the 42,000 yield strength. This doubler is limited to the tensile load the doubler can handle which is 458 lbs.

Treat both external doublers as a single doubler .113" thick with an effective width of 1":

$$\text{Bearing}_{\text{in3}} := 64000 \cdot 3 \cdot (t_{d3} + t_{d4}) \cdot D_{5RH} \quad \text{Bearing}_{\text{in3}} = 3.45 \cdot 10^3 \quad \frac{\text{Bearing}_{\text{in3}}}{(t_{d3} + t_{d4}) \cdot 1} = 3.053 \cdot 10^4$$

The rivets can transfer 3,450 lbs total into the doublers which translates to 30,530 psi stress which is below the 42,000 psi yield strength.

$$T_{\text{allowd}} := \text{Shear}_{d1} + T_{d2} + \text{Bearing}_{\text{in3}} \quad T_{\text{allowd}} = 7.119 \cdot 10^3$$

The combination of the 4 doublers can carry 7,119 lbs which is less than the spar, so the wing loading from Case 9 is again used.

Equations for W.S. 181 to 196

$$\text{Load}_{f_s(x)} := \frac{.15997 \cdot M(x)}{.5 \cdot t_{f_s(x)} - .5} \quad \text{Load}_{f_s(181)} = 7.859 \cdot 10^3 \quad \text{Load}_{f_s(188)} = 7.114 \cdot 10^3$$

The structure in the wing is the same from W.S. 181 to W.S. 196, but the loading decreases, so a wing loading analysis was done to show that the doubler load capacity is adequate for this location. The 7,119 pound capacity of the doublers exceeds the load of 7,114 pounds and the joint is adequate.

Case #12

$$\text{Area}_{\text{removed}} := .5 \cdot .055 \quad \text{Area}_{\text{removed}} = 0.028 \quad \text{Area}_{\text{doubler}} := .75 \cdot .125 \quad \text{Area}_{\text{doubler}} = 0.094$$

Doubler Area is greater than Spar Cap area removed, so it is adequate.

$$42000 \cdot \text{Area}_{\text{removed}} = 1.155 \cdot 10^3 \quad \text{Shear} := 28000 \cdot 2 \cdot A_{5R} + 2000 \cdot (2 \cdot .5 - 2 \cdot A_{5RH})$$

$$42000 \cdot A_{\text{doubler}} = 7.518 \cdot 10^3 \quad \text{Shear} = 2.991 \cdot 10^3$$

The doubler strength and shear strength between the spar and doubler are both much greater than the strength of the removed spar material, so the joint is adequate.

Case #13 Inboard

Tension

$$A_s := .293 \quad t_s := .125 \quad A_{d1} := .234 \quad t_{d1} := .125 \quad A_{d2} := .095 \quad t_{d2} := .063$$

$$A_{ELPs} := A_s - D_{6RH} \cdot t_s \quad T_{allowS} := 42000 \cdot A_{ELPs} \quad T_{allowd1} := 42000 \cdot (A_{d1} - 2 \cdot D_{5RH} \cdot t_{d1})$$

$$T_{allowd2} := 42000 \cdot (A_{d2} - D_{5RH} \cdot t_{d2}) \quad T_{allowD} := T_{allowd1} + T_{allowd2} \quad T_{allowS} = 1.13 \cdot 10^4$$

$$T_{allowd1} = 8.159 \cdot 10^3 \quad T_{allowd2} = 3.569 \cdot 10^3 \quad T_{allowD} = 1.173 \cdot 10^4$$

The total doubler strength is greater than the Spar strength, so the doublers are adequate.

Shear

All material is thick enough that the rivet shear is critical.

$$\text{Shear}_{Rout1} := 9 \cdot A_{5R} \quad \text{Shear}_{Rin1} := 11 \cdot A_{5R}$$

$$\text{Shear}_{Rout2} := 4 \cdot A_{5R} \quad \text{Shear}_{Rin2} := 5 \cdot A_{5R}$$

$$\text{Surface}_{RHout1} := 9 \cdot A_{5RH} \quad \text{Surface}_{RHin1} := 11 \cdot A_{5RH}$$

$$\text{Surface}_{RHout2} := 4 \cdot A_{4RH} \quad \text{Surface}_{RHin2} := 5 \cdot A_{4RH}$$

$$\text{Surface}_{out1} := (.687 + .687) \cdot 2.88 - \text{Surface}_{RHout1}$$

$$\text{Surface}_{in1} := (.687 + .687) \cdot 3.25 - \text{Surface}_{RHin1}$$

$$\text{Surface}_{out2} := 1.5 \cdot 2.88 - \text{Surface}_{RHout2}$$

$$\text{Surface}_{in2} := (1.5) \cdot 3.25 - \text{Surface}_{RHin2}$$

$$\text{Shear}_{out1} := 28000 \cdot \text{Shear}_{Rout1} + 2000 \cdot \text{Surface}_{out1} \quad \text{Shear}_{out1} = 1.237 \cdot 10^4$$

$$\text{Shear}_{in1} := 28000 \cdot \text{Shear}_{Rin1} + 2000 \cdot \text{Surface}_{in1} \quad \text{Shear}_{in1} = 1.438 \cdot 10^4$$

$$\text{Shear}_{out2} := 28000 \cdot \text{Shear}_{Rout2} + 2000 \cdot \text{Surface}_{out2} \quad \text{Shear}_{out2} = 1.068 \cdot 10^4$$

$$\text{Shear}_{in2} := 28000 \cdot \text{Shear}_{Rin2} + 2000 \cdot \text{Surface}_{in2} \quad \text{Shear}_{in2} = 1.23 \cdot 10^4$$

The shear strength of the rivets plus Hysol is greater than the strength of each of the doublers, so the joint is adequate.

Case #13 Outboard

Tension

$$A_s := .293 \quad t_s := .125 \quad A_{d1} := .234 \quad t_{d1} := .125 \quad A_{d2} := .095 \quad t_{d2} := .063$$

$$A_{ELPs} := A_s - D_{6RH} \cdot t_s \quad T_{allowS} := 42000 \cdot A_{ELPs} \quad T_{allowd1} := 42000 \cdot (A_{d1} - 2 \cdot D_{5RH} \cdot t_{d1})$$

$$T_{allowd2} := 42000 \cdot (A_{d2} - D_{5RH} \cdot t_{d2}) \quad T_{allowD} := T_{allowd1} + T_{allowd2} \quad T_{allowS} = 1.13 \cdot 10^4$$

$$T_{allowd1} = 8.159 \cdot 10^3 \quad T_{allowd2} = 3.569 \cdot 10^3 \quad T_{allowD} = 1.173 \cdot 10^4$$

The total doubler strength is greater than the Spar strength, so the doublers are adequate.

Shear

All material is thick enough that the rivet shear is critical.

$$\text{ShearA}_{Rout1} := 8 \cdot A_{5R} \quad \text{ShearA}_{Rin1} := 8 \cdot A_{5R}$$

$$\text{ShearA}_{Rout2} := 4 \cdot A_{5R} \quad \text{ShearA}_{Rin2} := 4 \cdot A_{5R}$$

$$\text{SurfaceA}_{RHout1} := 8 \cdot A_{5RH} \quad \text{SurfaceA}_{RHin1} := 8 \cdot A_{5RH}$$

$$\text{SurfaceA}_{RHout2} := 4 \cdot A_{4RH} \quad \text{SurfaceA}_{RHin2} := 4 \cdot A_{4RH}$$

$$\text{SurfaceA}_{out1} := (.687 + .687) \cdot 2.8 - \text{SurfaceA}_{RHout1}$$

$$\text{SurfaceA}_{in1} := (.687 + .687) \cdot 2.8 - \text{SurfaceA}_{RHin1}$$

$$\text{SurfaceA}_{out2} := 1.5 \cdot 2.8 - \text{SurfaceA}_{RHout2}$$

$$\text{SurfaceA}_{in2} := (1.5) \cdot 2.8 - \text{SurfaceA}_{RHin2}$$

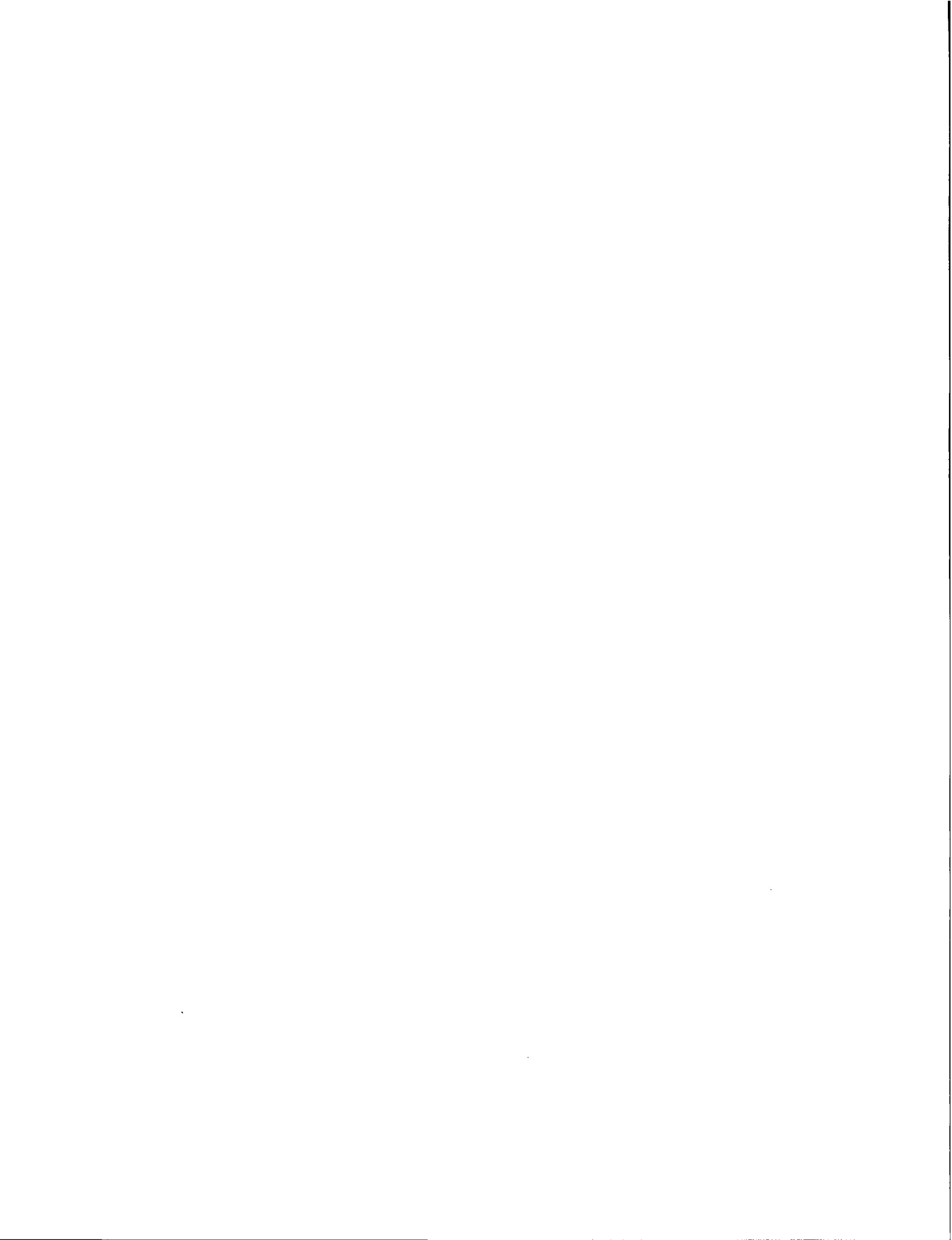
$$\text{Shear}_{out1} := 28000 \cdot \text{ShearA}_{Rout1} + 2000 \cdot \text{SurfaceA}_{out1} \quad \text{Shear}_{out1} = 1.166 \cdot 10^4$$

$$\text{Shear}_{in1} := 28000 \cdot \text{ShearA}_{Rin1} + 2000 \cdot \text{SurfaceA}_{in1} \quad \text{Shear}_{in1} = 1.166 \cdot 10^4$$

$$\text{Shear}_{out2} := 28000 \cdot \text{ShearA}_{Rout2} + 2000 \cdot \text{SurfaceA}_{out2} \quad \text{Shear}_{out2} = 1.044 \cdot 10^4$$

$$\text{Shear}_{in2} := 28000 \cdot \text{ShearA}_{Rin2} + 2000 \cdot \text{SurfaceA}_{in2} \quad \text{Shear}_{in2} = 1.044 \cdot 10^4$$

The shear strength of the rivets plus Hysol is greater than the strength of each of the doublers, so the joint is adequate.



Case #14

Tensile Loads

$$A_{spar} := .358 \quad t_{spar} := .125 \quad A_{d1} := .262 \quad t_{d1} := .125 \quad A_{d2} := .071 \quad t_{d2} := .063 \quad A_{d3} := .197 \quad t_{d3} := .063$$

$$A_{B5RHs} := D_{5RH} \cdot t_{spar} \quad A_{B5RH1} := .159 \cdot t_{d1} \quad A_{B5RH2} := .159 \cdot t_{d2} \quad A_{B5RH3} := .159 \cdot t_{d3}$$

$$A_{ELPs} := A_{spar} - 2 \cdot A_{B5RHs} \quad A_{ELPd1} := A_{d1} - A_{B5RH1} - 2 \cdot D_{5RH} \cdot t_{d1} \quad A_{ELPd2} := A_{d2} - 2 \cdot A_{B5RH2}$$

$$A_{ELPd3} := A_{d3} - 4 \cdot A_{B5RH3} \quad A_{ELPd} := A_{ELPd1} + A_{ELPd2} + A_{ELPd3}$$

$$T_{allowS} := 42000 \cdot A_{ELPs} \quad T_{allowS} = 1.337 \cdot 10^4 \quad T_{allowD} := 42000 \cdot A_{ELPd} \quad T_{allowD} = 1.757 \cdot 10^4$$

The total doubler strength is greater than the Spar strength, so the doublers are adequate.

Shear Loads

All material is thick enough that the rivet shear is critical.

$$Shear_{A_{Routboard1}} := 16 \cdot A_{5R} \quad Shear_{A_{Rinboard1}} := 14 \cdot A_{5R} \quad Shear_1 := 28000 \cdot Shear_{A_{Rinboard1}}$$

$$Shear_1 = 7.492 \cdot 10^3 \quad \frac{Shear_1}{A_{ELPd1}} = 3.562 \cdot 10^4$$

So rivets can transfer 7,492 lbs into the angle doubler, which translates to 35,620 psi stress in the doubler which is below the 42,000 yield strength.

$$Shear_{A_{Routboard2}} := 12 \cdot A_{5R} \quad Shear_{A_{Rinboard2}} := 12 \cdot A_{5R} \quad Shear_2 := 28000 \cdot Shear_{A_{Routboard2}}$$

$$Shear_2 = 6.422 \cdot 10^3 \quad \frac{Shear_2}{A_{ELPd2}} = 1.26 \cdot 10^5 \quad T_{d2} := 42000 \cdot A_{ELPd2} \quad T_{d2} = 2.141 \cdot 10^3$$

Rivets can transfer 6,422 lbs into the internal flat doubler, which translates to 126,000 psi stress in the doubler which is above the 42,000 yield strength. This doubler is limited to the tensile load the doubler can carry which is 2,141 lbs.

$$Shear_{A_{Rout3}} := 12 \cdot A_{5R} \quad Shear_{A_{Rin3}} := 30 \cdot A_{5R} \quad Shear_3 := 28000 \cdot Shear_{A_{Rout3}}$$

$$Shear_3 = 6.422 \cdot 10^3 \quad \frac{Shear_3}{A_{ELPd3}} = 4.092 \cdot 10^4$$

So rivets can transfer 6,422 lbs into the external flat doubler, which translates to 40,920 psi stress in the doubler which is below the 42,000 yield strength.

$$T_{allowd} := Shear_1 + T_{d2} + Shear_3 \quad T_{allowd} = 1.606 \cdot 10^4$$

The combination of the 3 doublers can take 16,060 lbs which is better than the spar's 13,370 lbs.

Case #15

Tension

$$A_s := .358 \quad t_s := .125 \quad A_{d1} := .322 \quad t_{d1} := .125 \quad A_{d2} := .095 \quad t_{d2} := .063$$

$$A_{ELPs} := A_s - 2 \cdot D_{5RH} \cdot t_s \quad T_{allowS} := 42000 \cdot A_{ELPs} \quad T_{allowd1} := 42000 \cdot (A_{d1} - 4 \cdot D_{5RH} \cdot t_{d1})$$

$$T_{allowd2} := 42000 \cdot A_{d2} \quad T_{allowD} := T_{allowd1} + T_{allowd2} \quad T_{allowS} = 1.337 \cdot 10^4$$

$$T_{allowd1} = 1.018 \cdot 10^4 \quad T_{allowd2} = 3.99 \cdot 10^3 \quad T_{allowD} = 1.417 \cdot 10^4$$

The total doubler strength is greater than the Spar strength, so the doublers are adequate.

Shear

All material is thick enough that the rivet shear is critical.

$$\text{Shear}_{A_{Rout1}} := 11 \cdot A_{5R} \quad \text{Shear}_{A_{Rin1}} := 11 \cdot A_{5R}$$

$$\text{Shear}_{A_{Rout2}} := 6 \cdot A_{5R} \quad \text{Shear}_{A_{Rin2}} := 6 \cdot A_{5R}$$

$$\text{Surface}_{A_{RHout1}} := 11 \cdot A_{5RH} \quad \text{Surface}_{A_{RHin1}} := 11 \cdot A_{5RH}$$

$$\text{Surface}_{A_{RHout2}} := 6 \cdot A_{4RH} \quad \text{Surface}_{A_{RHin2}} := 6 \cdot A_{4RH}$$

$$\text{Surface}_{A_{out1}} := (.937 + .937) \cdot 2.35 - \text{Surface}_{A_{RHout1}}$$

$$\text{Surface}_{A_{in1}} := (.937 + .937) \cdot 2.35 - \text{Surface}_{A_{RHin1}}$$

$$\text{Surface}_{A_{out2}} := 1.5 \cdot 2.35 - \text{Surface}_{A_{RHout2}}$$

$$\text{Surface}_{A_{in2}} := (1.5) \cdot 2.35 - \text{Surface}_{A_{RHin2}}$$

$$\text{Shear}_{out1} := 28000 \cdot \text{Shear}_{A_{Rout1}} + 2000 \cdot \text{Surface}_{A_{out1}} \quad \text{Shear}_{out1} = 1.426 \cdot 10^4$$

$$\text{Shear}_{in1} := 28000 \cdot \text{Shear}_{A_{Rin1}} + 2000 \cdot \text{Surface}_{A_{in1}} \quad \text{Shear}_{in1} = 1.426 \cdot 10^4$$

$$\text{Shear}_{out2} := 28000 \cdot \text{Shear}_{A_{Rout2}} + 2000 \cdot \text{Surface}_{A_{out2}} \quad \text{Shear}_{out2} = 1.011 \cdot 10^4$$

$$\text{Shear}_{in2} := 28000 \cdot \text{Shear}_{A_{Rin2}} + 2000 \cdot \text{Surface}_{A_{in2}} \quad \text{Shear}_{in2} = 1.011 \cdot 10^4$$

The shear strength of the rivets plus Hysol is greater than the strength of each of the doublers, so the joint is adequate.

Case #10

Tension

$$A_{spar} := .396 \quad t_{spar} := .125 \quad A_d := .395 \quad t_d := .135 \quad D_{4BH} := .266$$

$$A_{ELPs} := A_{spar} - D_{4BH} \cdot t_{spar} \quad T_{allowS} := 42000 \cdot A_{ELPs} \quad T_{allowS} = 1.524 \cdot 10^4$$

$$A_{ELPd} := A_d - 1.5 \cdot D_{5RH} \cdot t_d \quad T_{allowD} := 42000 \cdot A_{ELPd} \quad T_{allowD} = 1.524 \cdot 10^4$$

The doubler strength is equal to the Spar strength, so the doubler is adequate.

Shear

$$A_{4B} := \frac{\pi}{4} \cdot \left(\frac{1}{4}\right)^2 \quad A_{4BH} := \frac{\pi}{4} \cdot (D_{4BH})^2 \quad \text{SurfaceA}_{RHout} := 15 \cdot A_{5RH}$$

$$\text{SurfaceA}_{RHin} := 12 \cdot A_{5RH} + 5 \cdot A_{4BH}$$

$$\text{SurfaceA}_{in} := (1.052 + 1.302) \cdot 3.9 - \text{SurfaceA}_{RHin}$$

$$\text{SurfaceA}_{out} := (1.052 + 1.302) \cdot 3.5 - \text{SurfaceA}_{RHout}$$

$$\text{Shear}_{in} := 28000 \cdot (10 \cdot A_{5R}) + 90000 \cdot 4 \cdot A_{4B} + 2000 \cdot \text{SurfaceA}_{in} \quad \text{Shear}_{in} = 4.035 \cdot 10^4$$

$$\text{Shear}_{out} := 28000 \cdot (15 \cdot A_{5R}) + 2000 \cdot \text{SurfaceA}_{out} \quad \text{Shear}_{out} = 2.391 \cdot 10^4$$

The shear strength of the rivets/bolts plus Hysol is greater than the strength of the doubler and spar, so the joint is adequate.

Case #17

Spar Loads

$$A_s := .216 \quad t_s := .125 \quad A_{d1} := .23 \quad t_{d1} := .125 \quad A_{d2} := .047 \quad t_{d2} := .063$$

$$A_{d3} := .085 \quad t_{d3} := .050 \quad A_{d4} := .086 \quad t_{d4} := .100 \quad A_{B5RHs} := D_{5RH} \cdot t_s \quad A_{B6RHs} := D_{6RH} \cdot t_s$$

$$A_{B5RHd1} := D_{5RH} \cdot t_{d1} \quad A_{B6RHd1} := D_{6RH} \cdot t_{d1} \quad A_{B5RHd2} := D_{5RH} \cdot t_{d2} \quad A_{B6RHd2} := D_{6RH} \cdot t_{d2}$$

$$A_{B5RHd3} := D_{5RH} \cdot t_{d3} \quad A_{B4RHd4} := D_{4RH} \cdot t_{d4} \quad A_{B5RHd4} := D_{5RH} \cdot 0.4$$

$$A_{ELPs} := A_s - A_{B6RHs} \quad A_{ELPd1} := A_{d1} - A_{B6RHd1} - A_{B5RHd1} \quad A_{ELPd2} := A_{d2} - A_{B6RHd2}$$

$$A_{ELPd3} := A_{d3} - 2 \cdot A_{B5RHd3} \quad A_{ELPd4} := A_{d4} - A_{B5RHd4} - A_{B4RHd4} \quad T_{allowd1} := 42000 \cdot A_{ELPd1}$$

$$T_{allowd2} := 42000 \cdot A_{ELPd2} \quad T_{allowd3} := 42000 \cdot A_{ELPd3} \quad T_{allowd4} := 42000 \cdot A_{ELPd4}$$

$$T_{allowd1} = 7.822 \cdot 10^3 \quad T_{allowd2} = 1.469 \cdot 10^3 \quad T_{allowd3} = 2.902 \cdot 10^3 \quad T_{allowd4} = 2.805 \cdot 10^3$$

$$T_{allowD} := T_{allowd1} + T_{allowd2} + T_{allowd3} + T_{allowd4} \quad T_{allowS} := 42000 \cdot A_{ELPs}$$

$$T_{allowS} = 8.069 \cdot 10^3 \quad T_{allowD} = 1.5 \cdot 10^4$$



DOUBLER LOADS

The internal doublers are thick enough that the rivet shear stress is critical. The thin external doubler is limited by material bearing stress for all rivets. The total material thickness is thinner than .096" where the external doublers overlap, so bearing stress is critical, not rivet shear for CR3213-5 rivets.

$$\text{Load}_{in1} := 28000 \cdot (6 \cdot A_{6R}) \quad \text{Load}_{in1} = 4.664 \cdot 10^3 \quad \text{Load}_{out1} := 28000 \cdot (5 \cdot A_{5R}) \quad \text{Load}_{out1} = 2.676 \cdot 10^3$$

So rivets can transfer 2,676 lbs into the outboard angle doubler, which is less than the allowable load for the doubler, so the rivet shear is the critical load.

$$\text{Load}_{in2} := 28000 \cdot (6 \cdot A_{6R}) \quad \text{Load}_{in2} = 4.664 \cdot 10^3 \quad \text{Load}_{out2} := 28000 \cdot (5 \cdot A_{5R}) \quad \text{Load}_{out2} = 2.676 \cdot 10^3$$

So rivets can transfer 2,676 lbs into the outboard internal doubler, which is more than the allowable load for the doubler, so the doubler strength is the critical load.

$$\text{Load}_{in3} := 64000 \cdot 3 \cdot D_{5R} \cdot t_{d3} \quad \text{Load}_{in3} = 1.498 \cdot 10^3 \quad \text{Load}_{out3} := 64000 \cdot 4 \cdot D_{5R} \cdot t_{d3} \quad \text{Load}_{out3} = 1.997 \cdot 10^3$$

So rivets can transfer 1,498 lbs into the inboard external doubler, which is less than the allowable load for the doubler, so the rivet shear is the critical load.

$$\text{Load}_{in4} := 28000 \cdot 4 \cdot A_{4R} + 42000 \cdot [.04 \cdot (1.31 - .563) - A_{B5RHd4}] \quad \text{Load}_{in4} = 2.362 \cdot 10^3$$

$$\text{Load}_{out4} := 28000 \cdot 5 \cdot A_{4R} + 64000 \cdot 4 \cdot D_{5R} \cdot .04 \quad \text{Load}_{out4} = 3.315 \cdot 10^3$$

So rivets can transfer 2,362 lbs into the inboard secondary external doubler, which is less than the allowable load for the doubler, so the rivet shear is the critical load.

$$T_{allowd} := \text{Load}_{out1} + T_{allowd2} + \text{Load}_{in3} + \text{Load}_{in4} \quad T_{allowd} = 8.004 \cdot 10^3$$

The combination of the 4 doublers can carry 8,004 lbs which is less than the spar, so the wing loading from Case 9 is again used.

Equations for W.S. 181 to 196

$$\text{Load}_{rs}(x) := \frac{.17702 \cdot M(x)}{.5 \cdot t_{rs}(x) - .5} \quad \text{Load}_{rs}(181) = 8.069 \cdot 10^3 \quad \text{Load}_{rs}(192) = 7.02 \cdot 10^3$$

The structure in the wing is the same from W.S. 181 to W.S. 196, but the loading decreases, so a wing loading analysis was done to show that the doubler load capacity is adequate for this location. The 8,004 pound capacity of the doublers exceeds the load of 7,020 pounds and the joint is adequate.

Case #18

Spar Loads

$$A_s := .216 \quad t_s := .125 \quad A_{d1} := .23 \quad t_{d1} := .125 \quad A_{d2} := .047 \quad t_{d2} := .063$$

$$A_{d3} := .085 \quad t_{d3} := .050 \quad A_{d4} := .100 \quad t_{d4} := .125 \quad A_{B5RHs} := D_{5RH} \cdot t_s \quad A_{B6RHs} := D_{6RH} \cdot t_s$$

$$A_{B5RHd1} := D_{5RH} \cdot t_{d1} \quad A_{B6RHd1} := D_{6RH} \cdot t_{d1} \quad A_{B5RHd2} := D_{5RH} \cdot t_{d2} \quad A_{B6RHd2} := D_{6RH} \cdot t_{d2}$$

$$A_{B5RHd3} := D_{5RH} \cdot t_{d3} \quad A_{B4RHd4} := D_{4RH} \cdot t_{d4} \quad A_{B5RHd4} := D_{5RH} \cdot .04$$

$$A_{ELPs} := A_s - A_{B6RHs} \quad A_{ELPd1} := A_{d1} - A_{B6RHd1} - A_{B5RHd1} \quad A_{ELPd2} := A_{d2} - A_{B6RHd2}$$

$$A_{ELPd3} := A_{d3} - 2 \cdot A_{B5RHd3} \quad A_{ELPd4} := A_{d4} - A_{B5RHd4} - A_{B4RHd4} \quad T_{allowd1} := 42000 \cdot A_{ELPd1}$$

$$T_{allowd2} := 42000 \cdot A_{ELPd2} \quad T_{allowd3} := 42000 \cdot A_{ELPd3} \quad T_{allowd4} := 42000 \cdot A_{ELPd4}$$

$$T_{allowd1} = 7.822 \cdot 10^3 \quad T_{allowd2} = 1.469 \cdot 10^3 \quad T_{allowd3} = 2.902 \cdot 10^3 \quad T_{allowd4} = 3.258 \cdot 10^3$$

$$T_{allowD} := T_{allowd1} + T_{allowd2} + T_{allowd3} + T_{allowd4} \quad T_{allowS} := 42000 \cdot A_{ELPs}$$

Doubler Loads

$$T_{allowS} = 8.069 \cdot 10^3 \quad T_{allowD} = 1.545 \cdot 10^4$$

The internal doublers are thick enough that the rivet shear stress is critical. The thin external doubler is limited by material bearing stress for all rivets. The total material thickness is thinner than .144" where the external doublers overlap, so bearing stress is critical, not rivet shear for CR3523-5 rivets. Also, bearing stress is critical in thin spar cap section for CR3523-4 rivets.

$$Load_{out1} := 28000 \cdot (3 \cdot A_{4R} + A_{5R}) \quad Load_{out1} = 1.566 \cdot 10^3 \quad \text{Inboard is much greater.}$$

So rivets can transfer 1,566 lbs into the outboard angle doubler, which is less than the allowable load for the doubler, so the rivet shear is the critical load.

$$Load_{out2} := 28000 \cdot (3 \cdot A_{4R} + A_{5R}) \quad Load_{out2} = 1.566 \cdot 10^3 \quad \text{Inboard is much greater.}$$

So rivets can transfer 1,566 lbs into the outboard internal doubler, which is more than the allowable load for the doubler, so the doubler strength is the critical load.

$$Load_{in3} := 64000 \cdot 3 \cdot D_{5R} \cdot t_{d3} \quad Load_{in3} = 1.498 \cdot 10^3 \quad Load_{out3} := 64000 \cdot 3 \cdot D_{5R} \cdot t_{d3} \quad Load_{out3} = 1.498 \cdot 10^3$$

So rivets can transfer 1,498 lbs into the outboard external doubler, which is less than the allowable load for the doubler, so the rivet shear is the critical load.

$$Load_{in4} := 42000 \cdot [.04 \cdot (.748) - A_{B5RHd4}] + 64000 \cdot 4 \cdot D_{4R} \cdot .063 \quad Load_{in4} = 3.006 \cdot 10^3$$

$$Load_{out4} := 42000 \cdot [.04 \cdot (.748) - A_{B5RHd4}] + 64000 \cdot 4 \cdot D_{4R} \cdot .063 \quad Load_{out4} = 3.006 \cdot 10^3$$

So rivets can transfer 3,006 lbs into the outboard secondary external doubler, which is less than the allowable load for the doubler, so the rivet shear is the critical load.

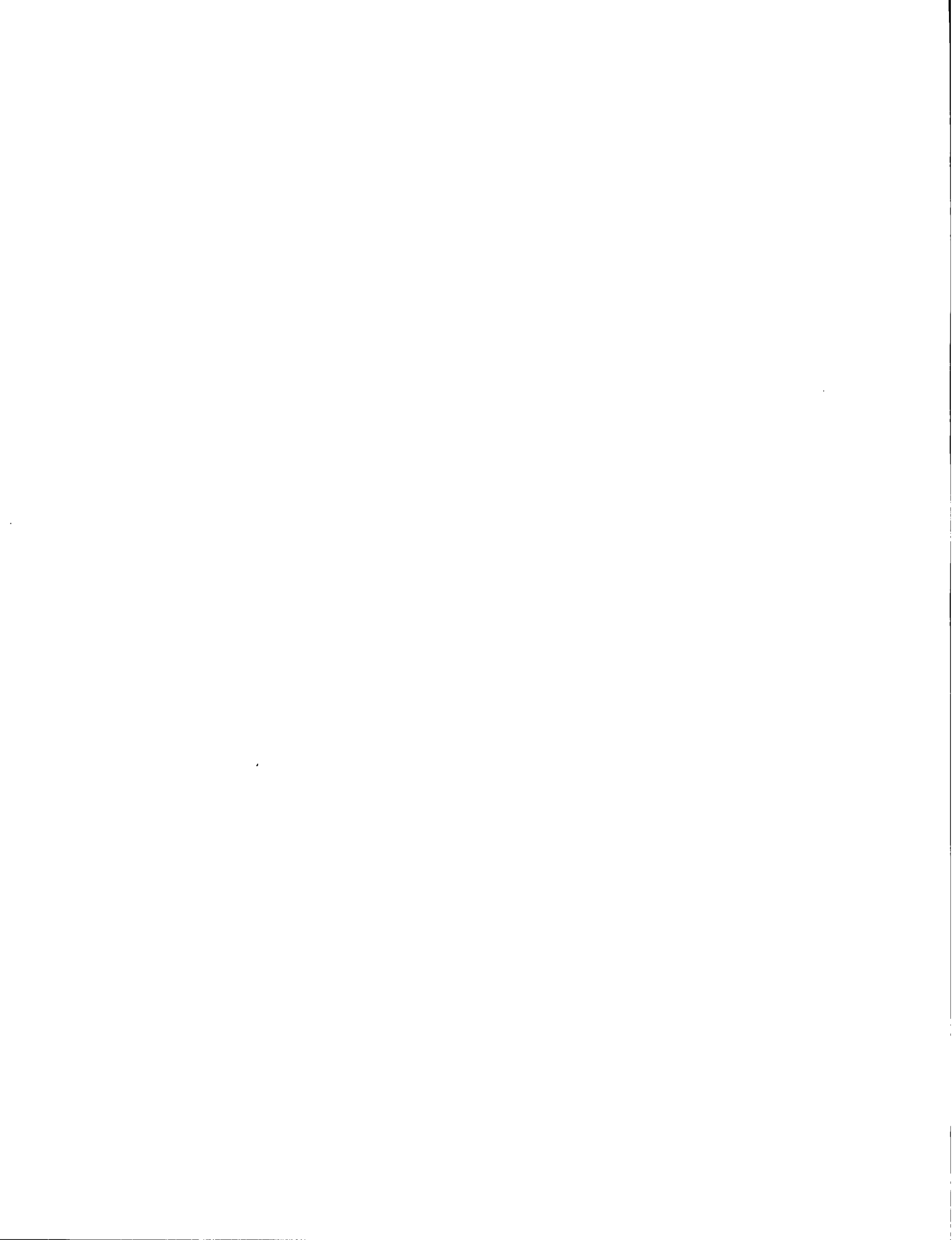
$$T_{\text{allowd}} := \text{Load}_{\text{out1}} + T_{\text{allowd2}} + \text{Load}_{\text{out3}} + \text{Load}_{\text{out4}} \quad T_{\text{allowd}} = 7.538 \cdot 10^3$$

The combination of the 4 doublers can carry 7,538 lbs which is less than the spar, so the wing loading from Case 9 is again used.

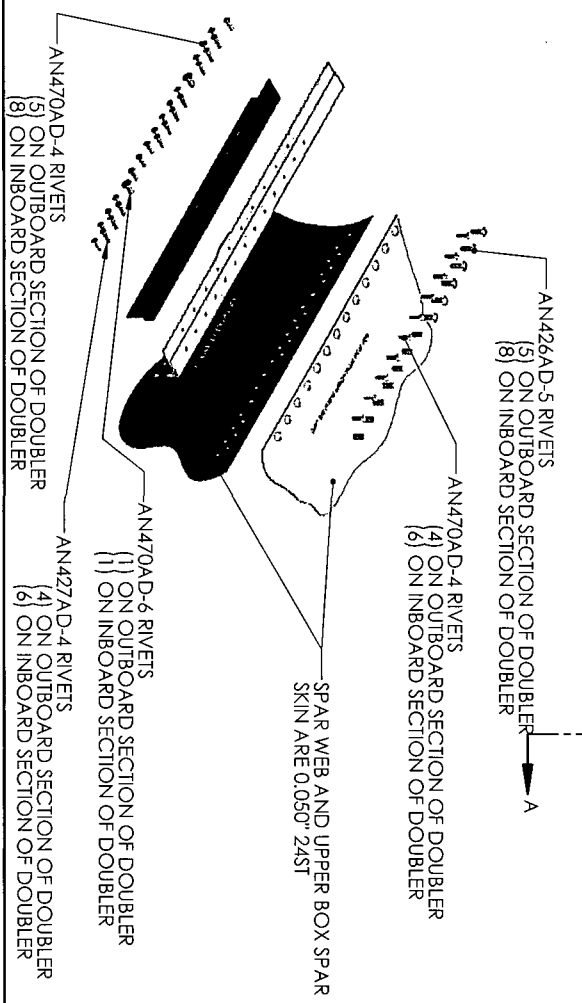
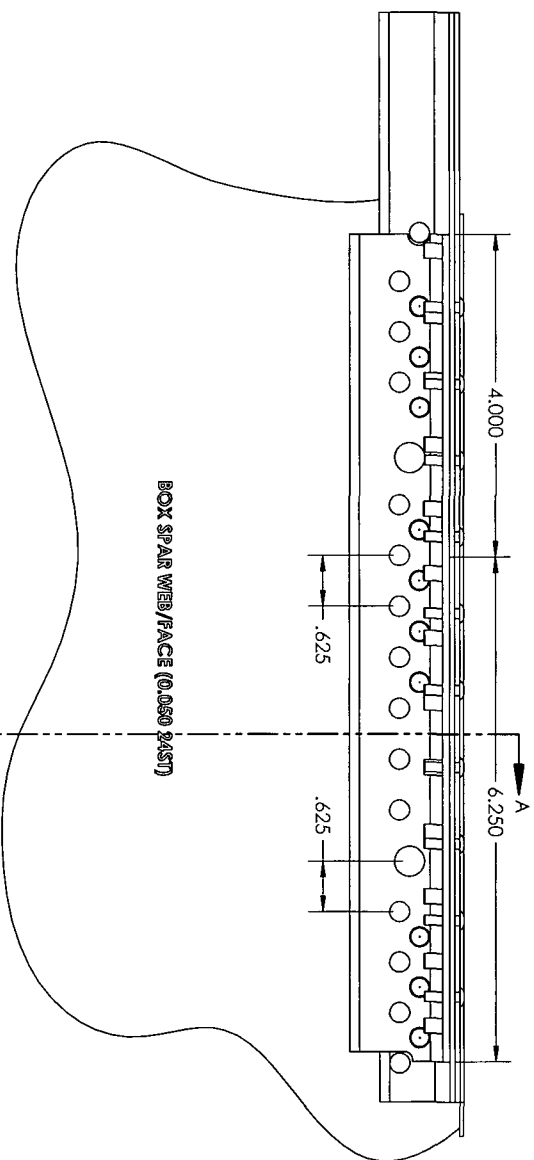
Equation for W.S. 196 to 271

$$\text{Load}_{\text{rs}}(x) := \frac{.215 \cdot M(x)}{.5 \cdot t_{\text{rs}}(x) - .5} \quad \text{Load}_{\text{rs}}(196) = 8.069 \cdot 10^3 \quad \text{Load}_{\text{rs}}(209) = 6.613 \cdot 10^3$$

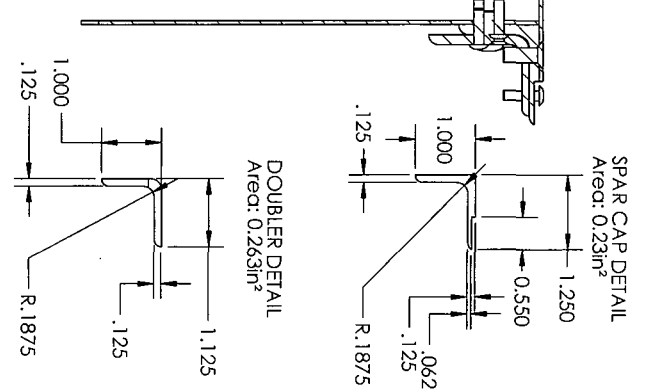
The structure in the wing is the same from W.S. 196 to W.S. 271, but the loading decreases, so a wing loading analysis was done to show that the doubler load capacity is adequate for this location. The 7,538 pound capacity of the doublers exceeds the load of 6,613 pounds and the joint is adequate.



- NOTES:
- 1) 280 INCHES FROM CENTER OF SPURCE TO DATUM
 - 2) LOCATED ON UPPER REAR SPAR CAP, LEFT WING
 - 3) VIEWED FROM REAR, WING ROOT TO THE RIGHT
 - 4) DOUBLER BONDED ON WITH HYSOL 9430



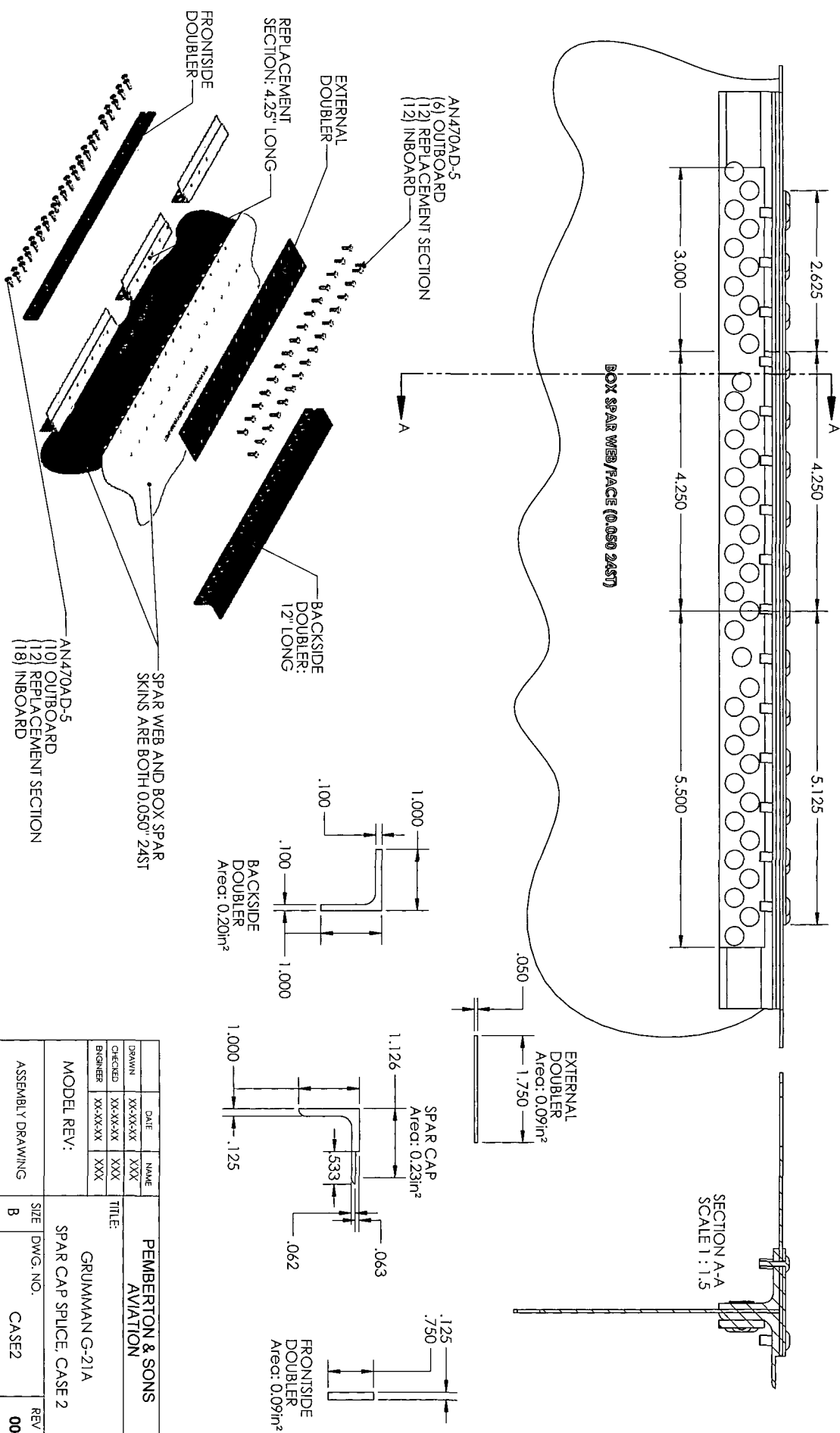
SECTION A-A
SCALE 1:1.5



DATE	NAME	PEMBERTON & SONS AVIATION	
XX-XX-XX	XXX	TITLE: GRMMAN G-21A	
CHECKED	XXX-XX-XX	SPAR CAP SPURCE, CASE 1	
ENGINEER	XX-XX-XX	SIZE	DWG. NO.
XX-XX-XX	XXX	B	CASE1
MODEL REV:		SCALE:	N/A ERO#:
			SHEET 1 OF 1
ASSEMBLY DRAWING		REV	00
CAD: SOLIDWORKS 2014			



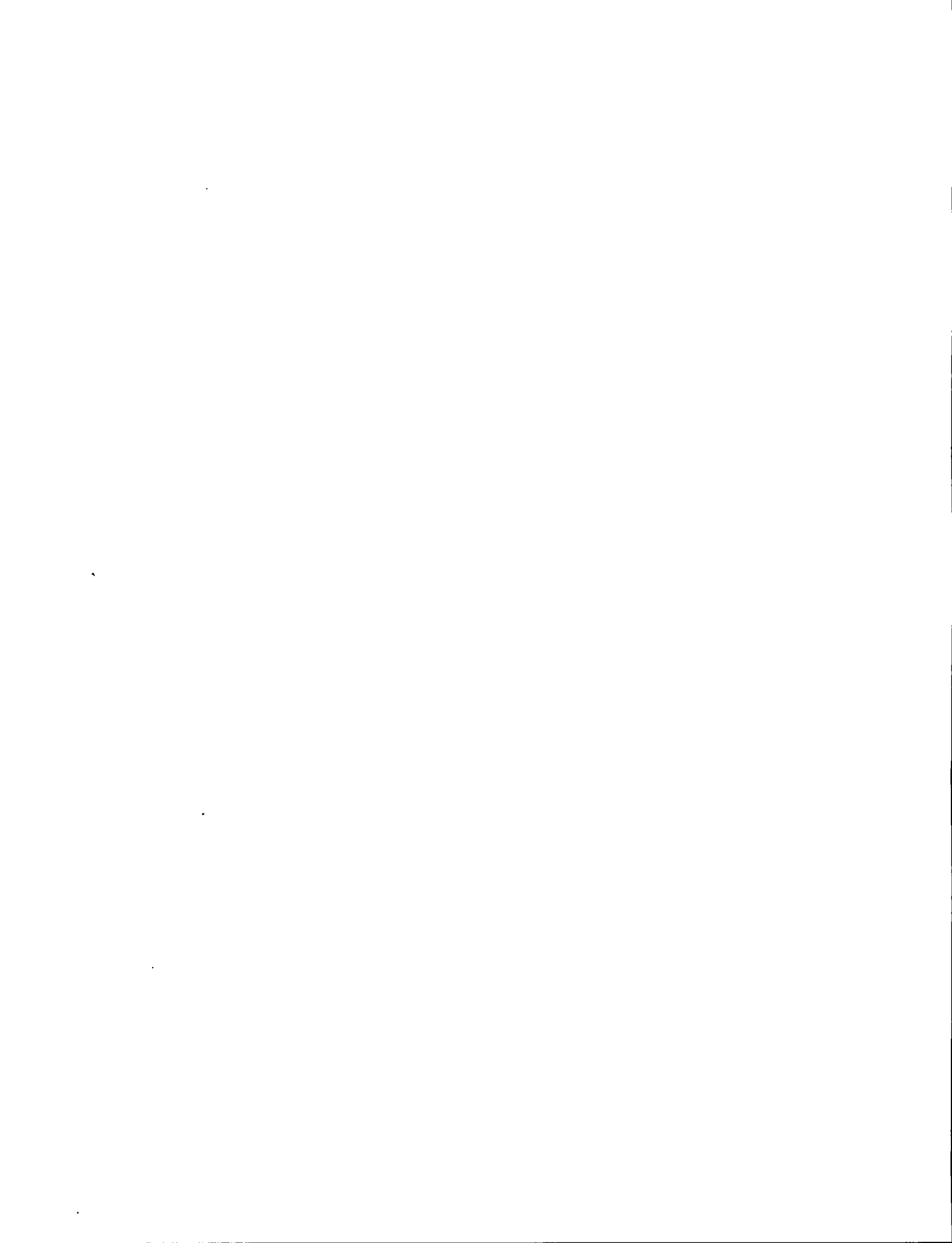
- NOTES:
 1) 1.215 INCHES FROM CENTER OF SPLICE TO DATUM
 2) LOCATED ON UPPER REAR SPAR CAP, LEFT WING
 3) VIEWED FROM REAR, WING ROOT TO THE RIGHT



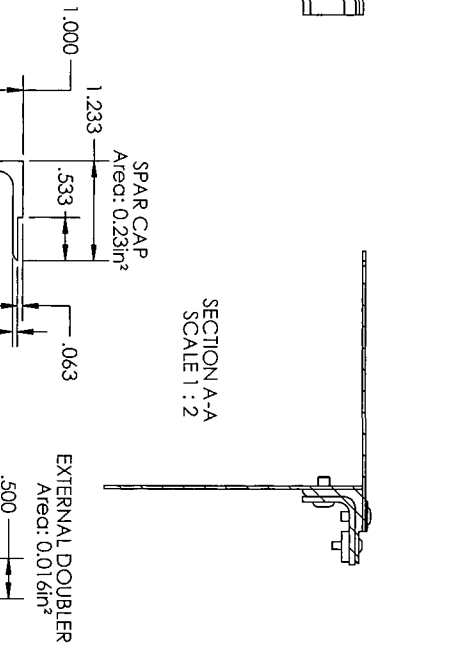
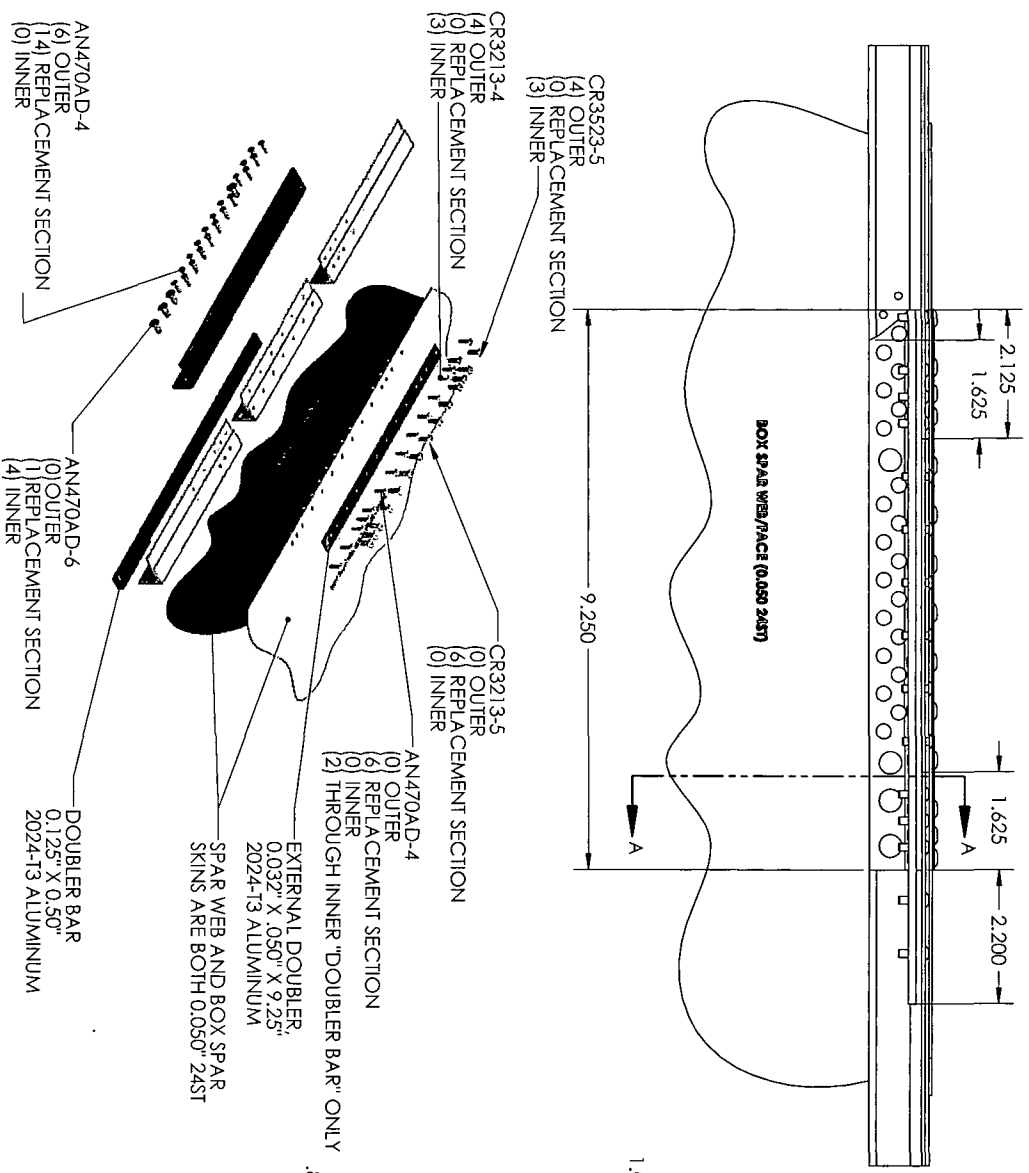
22

DRAWN		XX-XXXX	XXX	DATE		NAME
CHECKED		XX-XXXX	XXX	DATE		NAME
ENGINEER		XX-XXXX	XXX	DATE		NAME
MODEL REV: SPAR CAP SPLICE, CASE 2						
ASSEMBLY DRAWING						
SIZE		DWG. NO.		CASE		REV
B				CASE2		00
CAD: SOLIDWORKS 2014			SCALE: N/A		SHEET 1 OF 1	
PEMBERTON & SONS AVIATION GRUMMAN G-21A						

DOCUMENT #



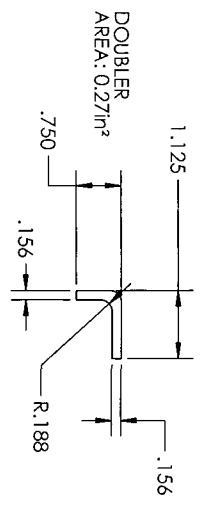
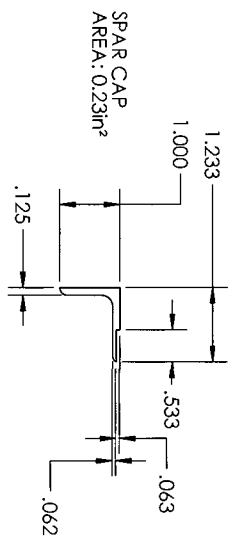
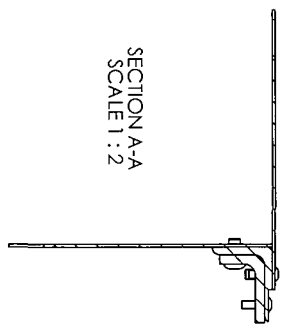
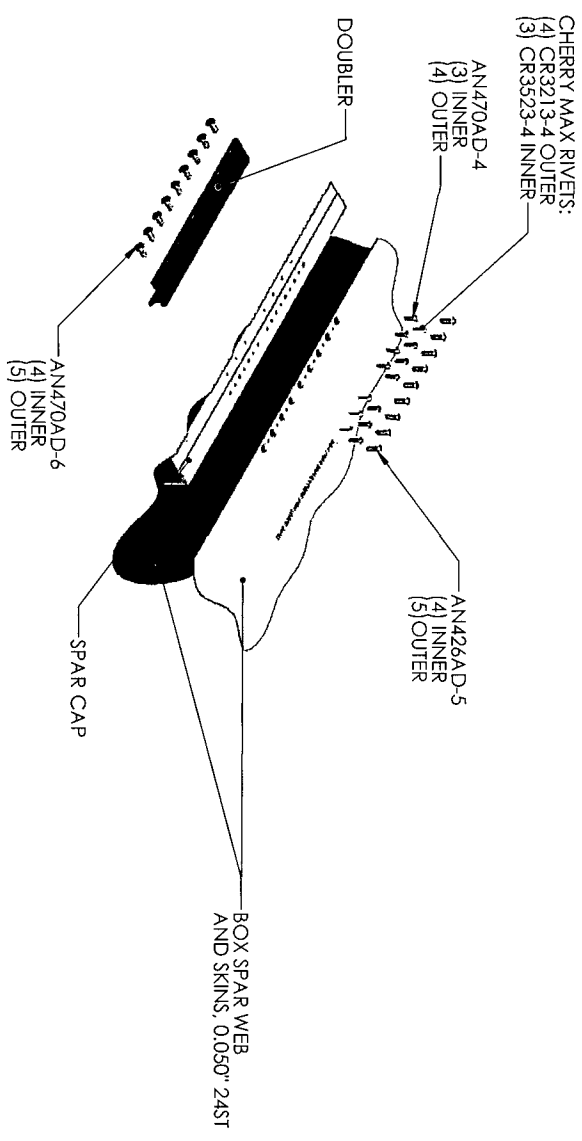
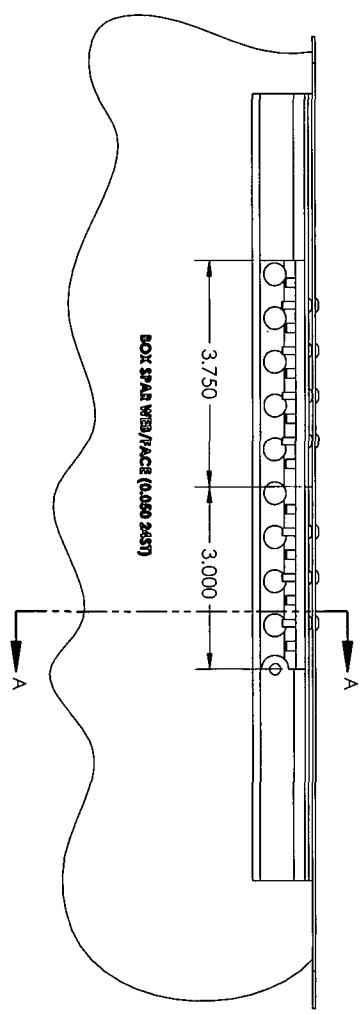
- NOTES:
- 1) 198 INCHES FROM CENTER OF SPUCE TO DATUM
 - 2) LOCATED ON UPPER REAR SPAR CAP, LEFT WING
 - 3) VIEWED FROM REAR, WING ROOT TO THE RIGHT
 - 4) DOUBLER BAR BONDED ON WITH HYSOL 9430



DATE	NAME	PERMERTON & SONS AVIATION
CHECKED		
DESIGNED		
MODEL REV:	GRUMMAN G-21A SPAR CAP SPLICE, CASE 3	
ASSEMBLY DRAWING	SIZE DWG. NO.	REV
	B Core3	00
CAD: SOLIDWORKS 2014 SCALE: N/A ERO#: SHEET 1 OF 1		



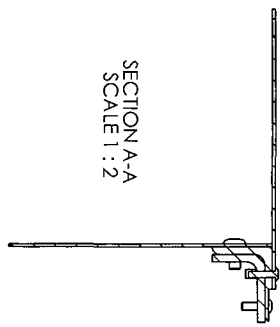
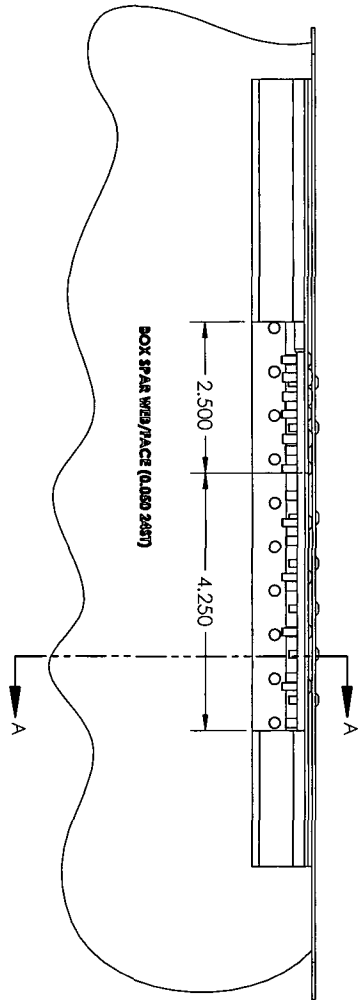
- NOTES:
 1) 170 INCHES FROM CENTER OF SPLICE TO DATUM
 2) LOCATED ON UPPER REAR SPAR CAP, LEFT WING
 3) VIEWED FROM REAR, WING ROOT TO THE RIGHT



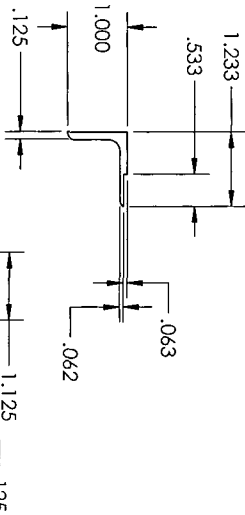
DATE	NAME	TITLE: PEMBERTON & SONS AVIATION
DRAWN		
CHECKED		
ENGINEER		
MODEL REV:		GRUMMAN G-21A
		SPAR CAP REPAIR, CASE 4
ASSEMBLY DRAWING	SIZE	DWG. NO.
	B	Cos64
		REV
		00
CAD: SOLIDWORKS 2014		SCALE: N/A ERO#:
		SHEET 1 OF 1



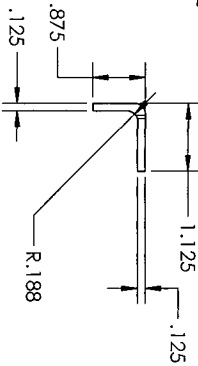
- NOTES:
 1) 158 INCHES FROM CENTER OF SPLICE TO DATUM
 2) LOCATED ON UPPER REAR SPAR CAP, LEFT WING
 3) VIEWED FROM REAR, WING ROOT TO THE RIGHT



SPAR CAP
 Area: 0.23in²



DOUBLER
 Area: 0.23in²



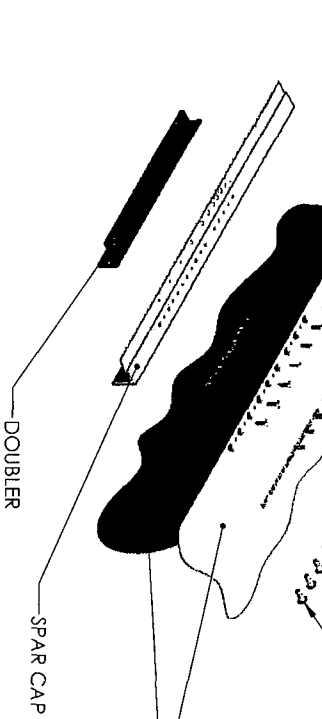
CHERRY MAX RIVETS:
 (5) CR3213-4 INNER
 (2) CR3553-4 OVERSIZED OUTER

AN426A-D-5
 (6) INNER
 (3) OUTER

AN470A-D-5
 (0) INNER
 (3) OUTER

AN470A-D-4
 (4) INNER
 (3) OUTER

AN470A-D-6
 (6) INNER
 (4) OUTER

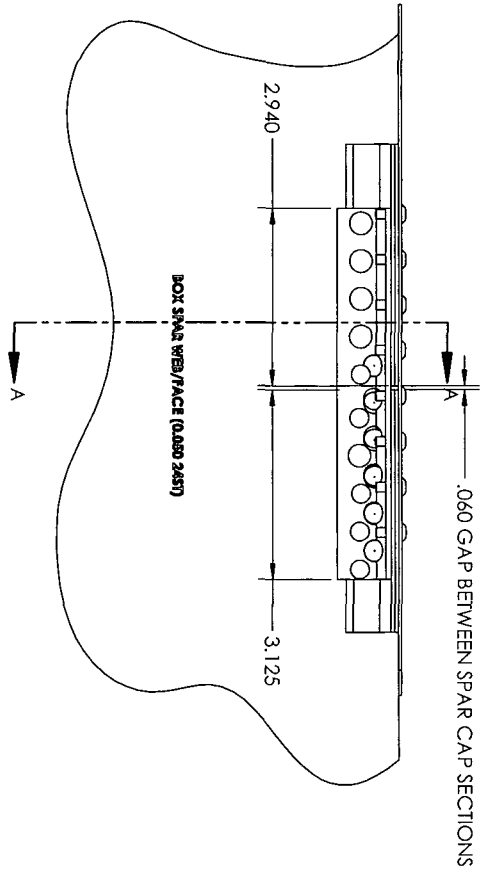


SPAR WEB AND BOX SPAR
 SKINS ARE BOTH 0.050" 24ST

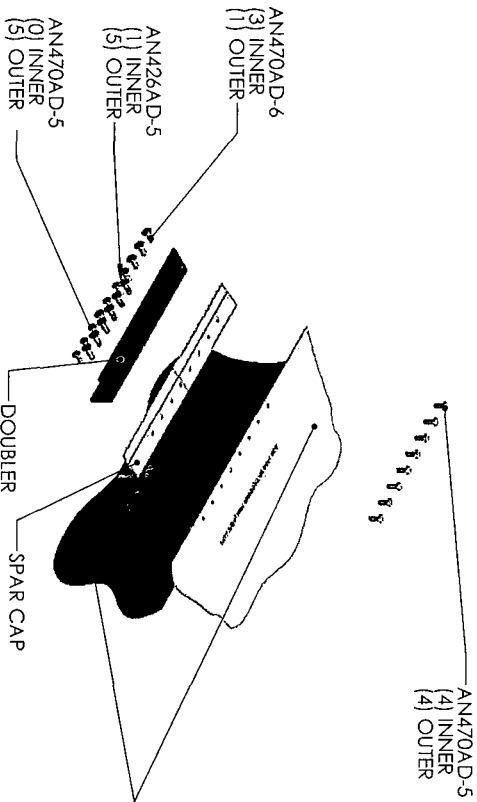
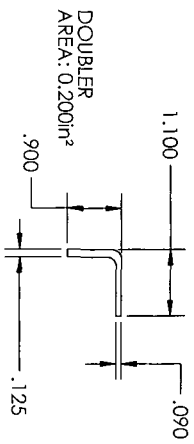
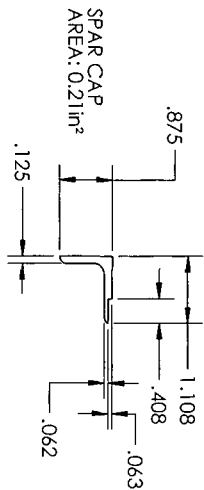
DATE	NAME	PEMBERTON & SONS AVIATION	
DRAWN	CHECKED	TITLE: GRUMMAN G-21A	
ENGINEER		MODEL REV: SPAR CAP REPAIR, CASE 5	
ASSEMBLY DRAWING		SIZE B	DWG. NO. Case5
CA.D: SOLIDWORKS 2014		SCALE: N/A	REV 00
		ERG#:	SHEET 1 OF 1



- NOTES:
- 1) 199 INCHES FROM CENTER OF SPICE TO DATUM
 - 2) LOCATED ON LOWER REAR SPAR CAP, LEFT WING
 - 3) VIEWED FROM REAR, WING ROOT TO THE LEFT
 - 4) DOUBLER BONDED ON WITH HYSOL 9430

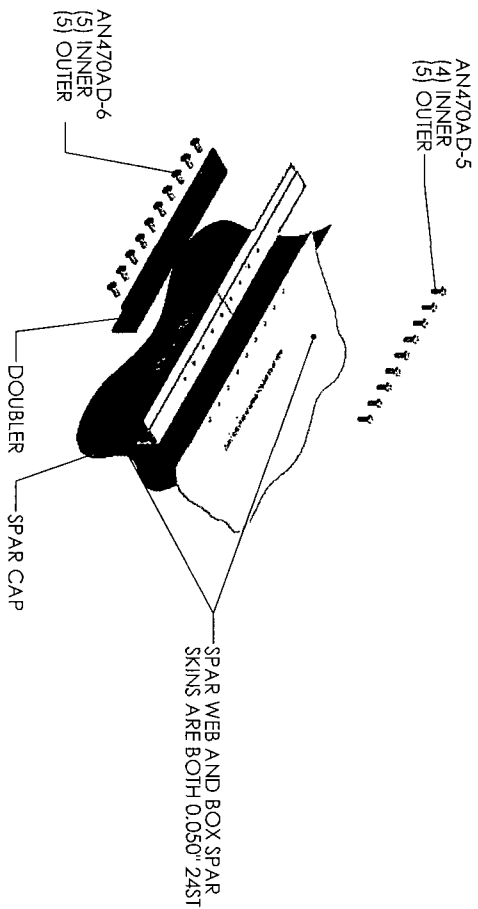
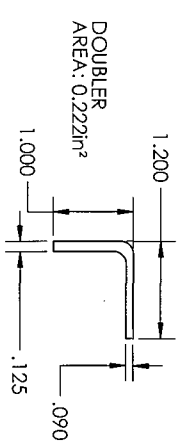
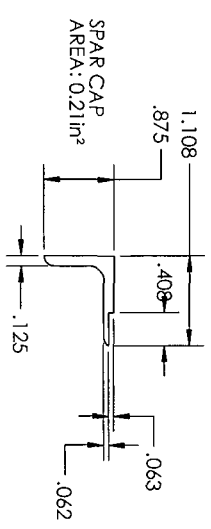
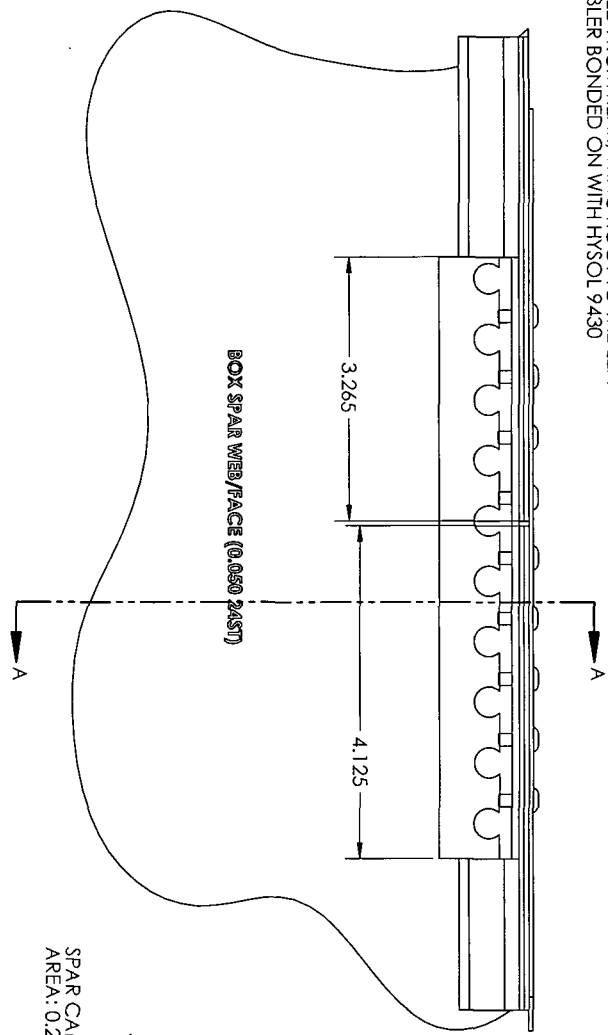


SECTION A-A
SCALE 1 : 2



DRAWN		DATE	NAME	TITLE: GRUMMAN G-21A SPAR CAP REPAIR, CASE 6
CHECKED		XX-XX-XX	XXX	
BENCHER		XX-XX-XX	XXX	
MODEL REV:				PEMBERTON & SONS AVIATION
ASSEMBLY DRAWING				
SIZE	DWG. NO.	CASE 6	REV	
B			00	
CAD: SOLIDWORKS 2014		SCALE: N/A	ERO#:	SHEET 1 OF 1

- NOTES:
- 1) 1.84 INCHES FROM CENTER OF SPLICE TO DATUM
 - 2) LOCATED ON LOWER REAR SPAR CAP, LEFT WING
 - 3) VIEWED FROM REAR, WING ROOT TO THE LEFT
 - 4) DOUBLER BONDED ON WITH HYSOL 9430

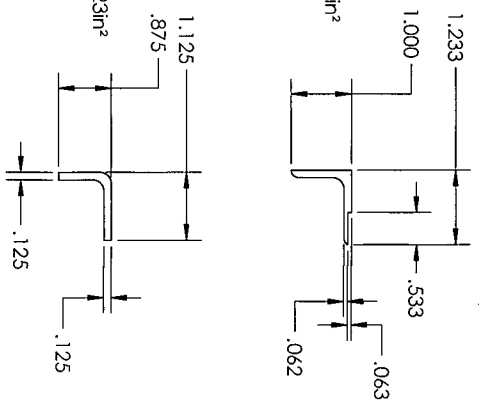
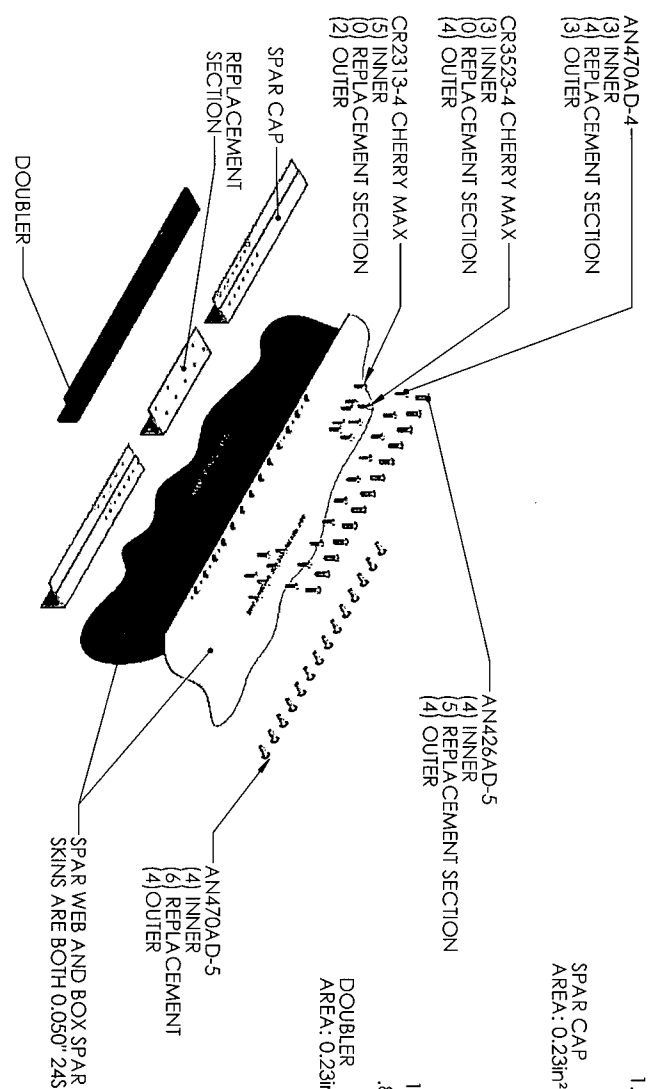
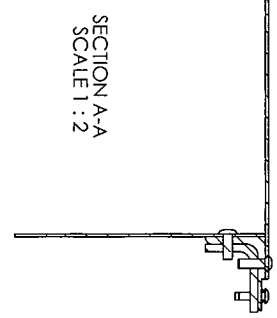
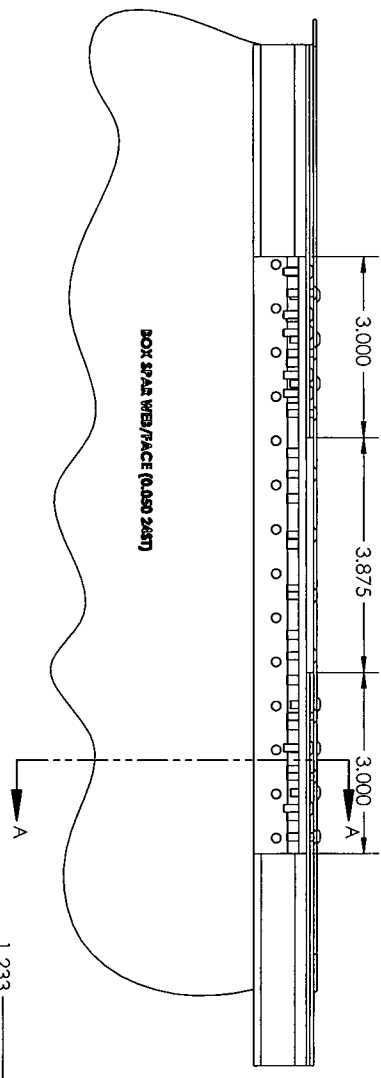


SECTION A-A
SCALE 1:1.5

DRAWN		XX-XX-XX	XXX	TITLE: GRUMMAN G-21A SPAR CAP REPAIR, CASE 7
CHECKED		XX-XX-XX	XXX	
ENGINEER		XX-XX-XX	XXX	
MODEL REV:				SIZE DWG. NO. Case7 REV 00
ASSEMBLY DRAWING				
CAD: SOLIDWORKS 2014				
SCALE: N/A		ERO#:		SHEET 1 OF 1



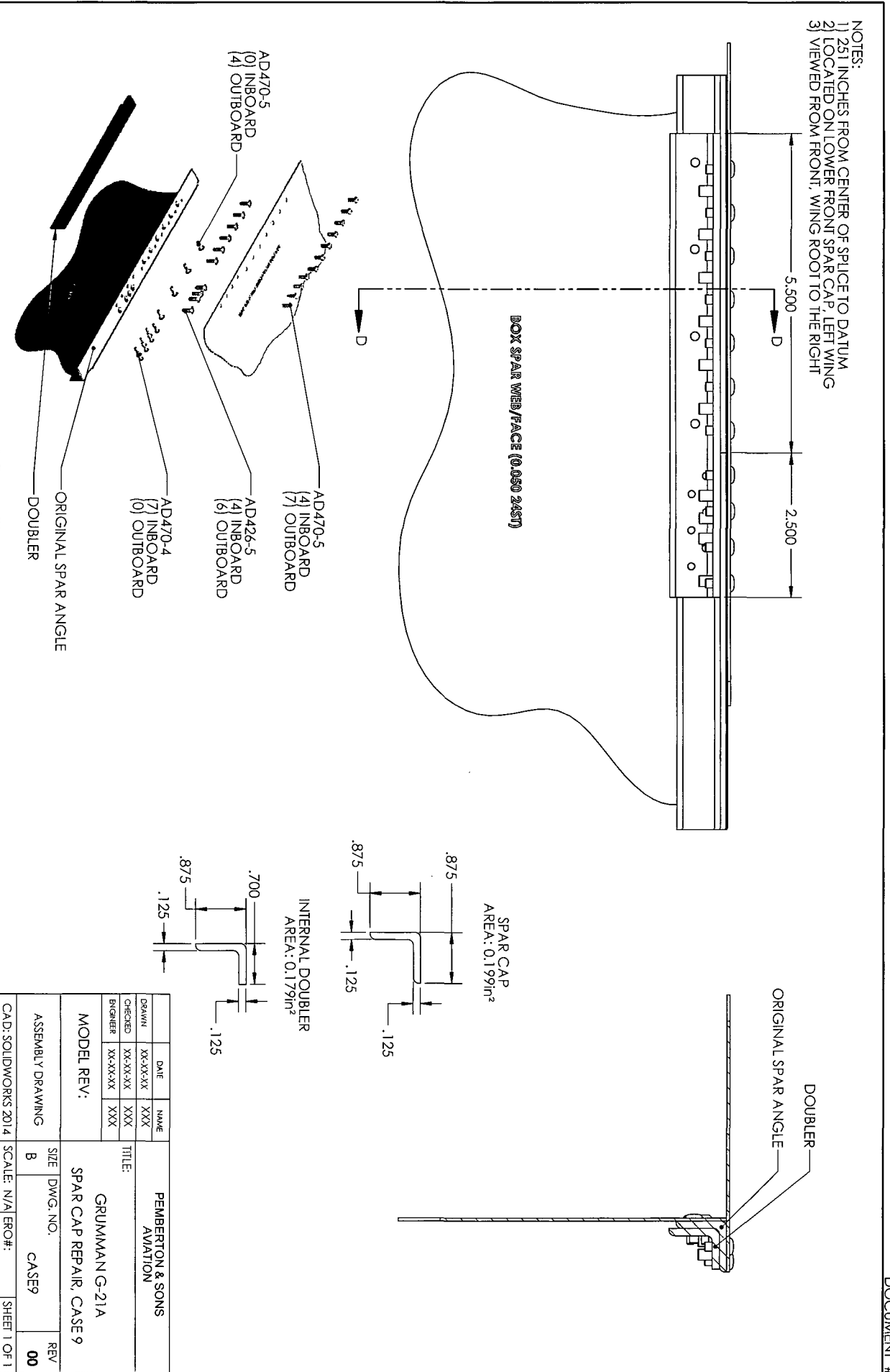
- NOTES:
 1) 1.59 INCHES FROM CENTER OF SPLICE TO DATUM
 2) LOCATED ON LOWER REAR SPAR CAP, LEFT WING
 3) VIEWED FROM REAR, WING ROOT TO THE LEFT



DATE	NAME	DRAWN	ENGINEER	TITLE: GRUMMAN G-21A SPAR CAP REPAIR, CASE 8	SIZE	DWG. NO.	REV
CHECKED							
MODEL REV:							
ASSEMBLY DRAWING				SCALE: N/A	EROF#:	CASE 8	00
CAD: SOLIDWORKS 2014				SHEET 1 OF 1			



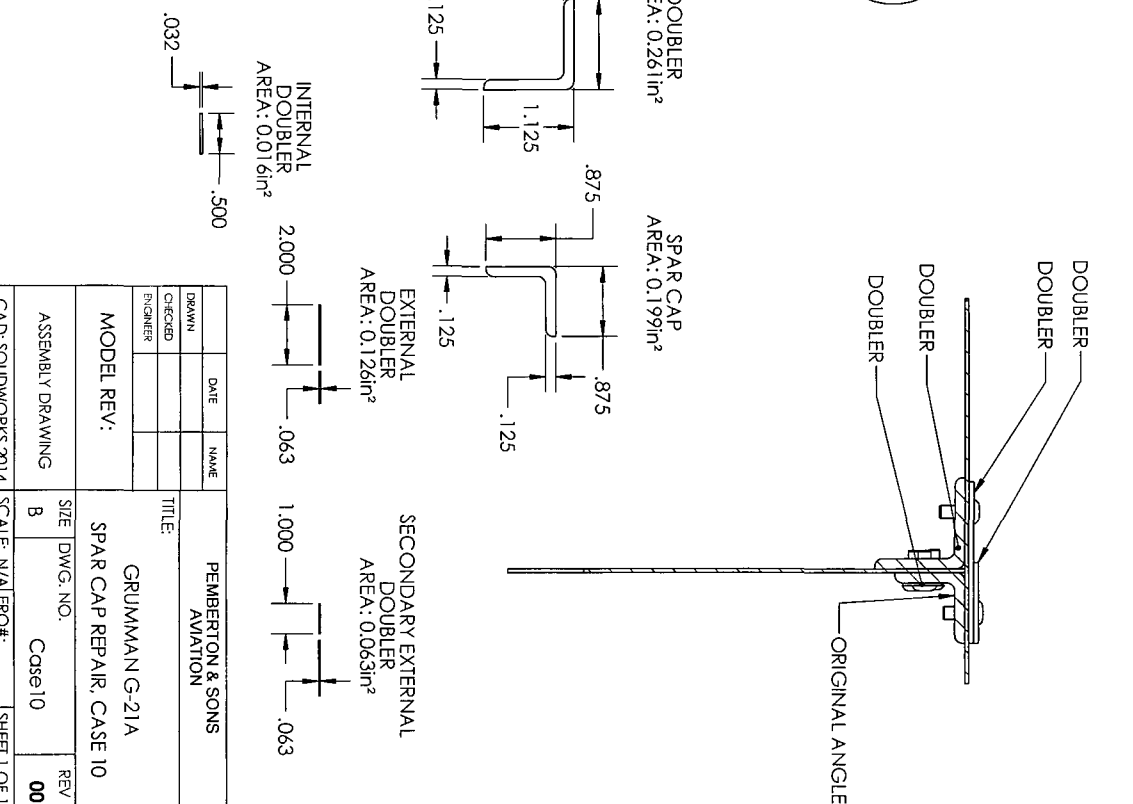
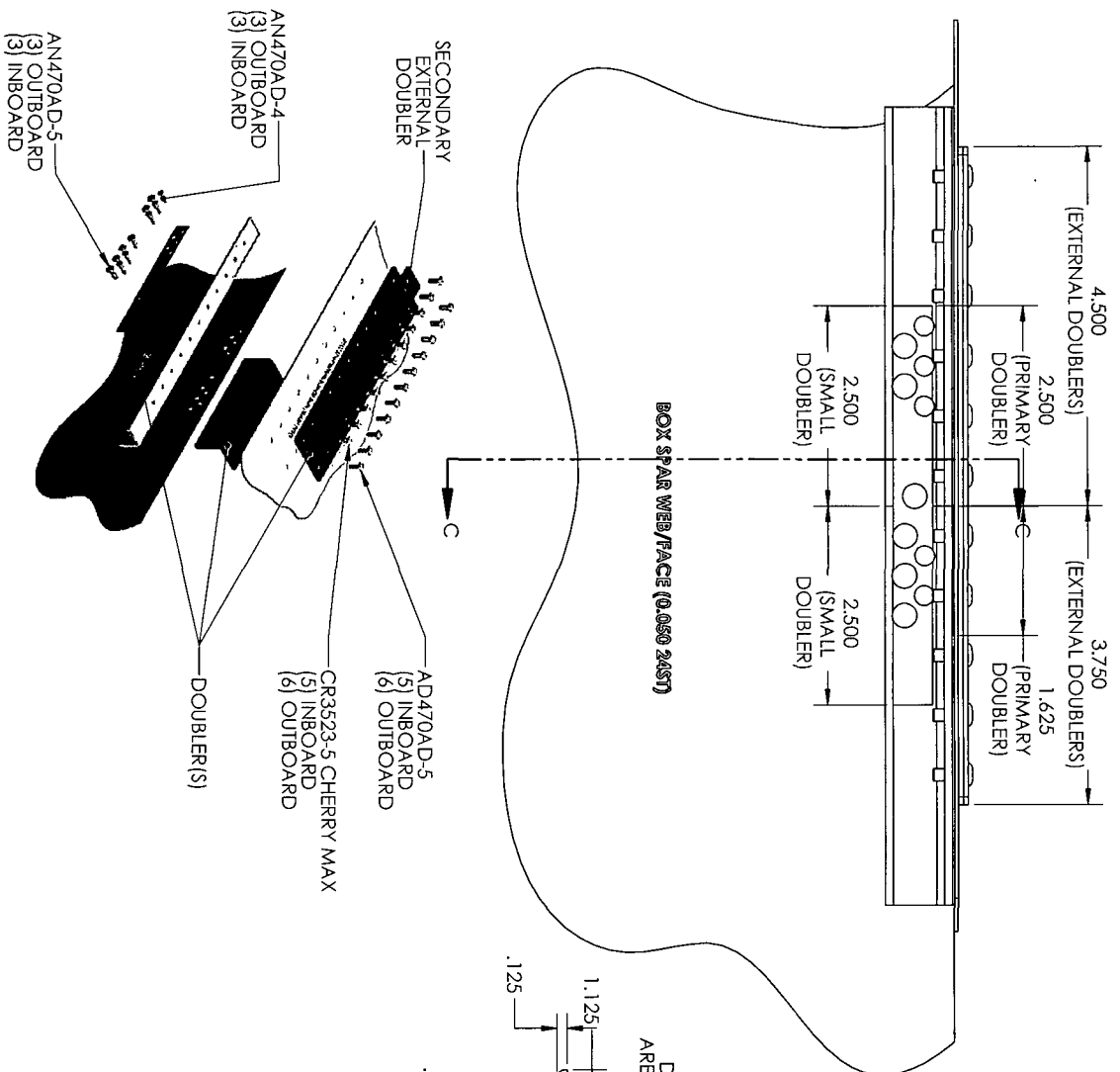
- NOTES:
 1) 251 INCHES FROM CENTER OF SPLICE TO DATUM
 2) LOCATED ON LOWER FRONT SPAR CAP, LEFT WING
 3) VIEWED FROM FRONT, WING ROOT TO THE RIGHT



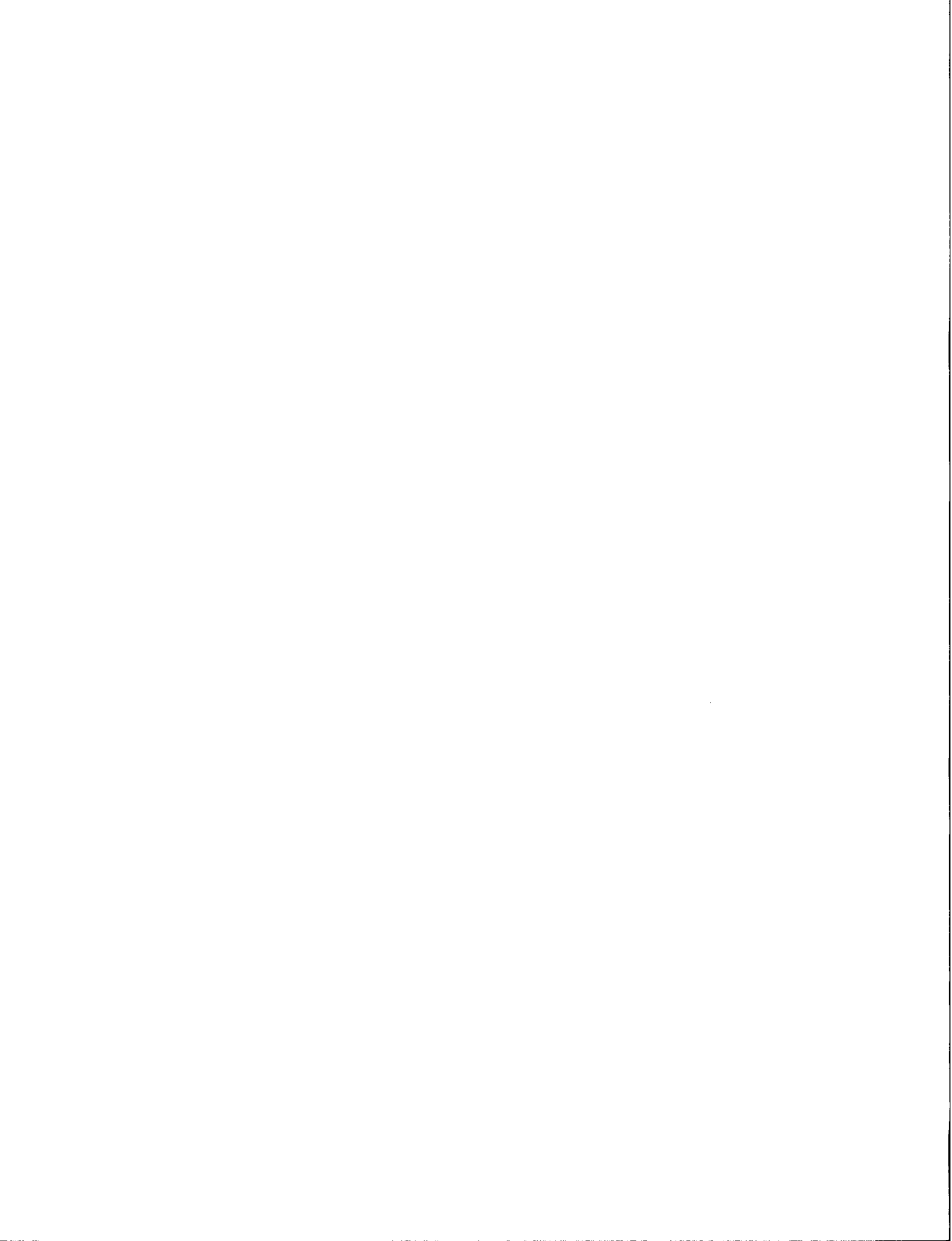
DOCUMENT #



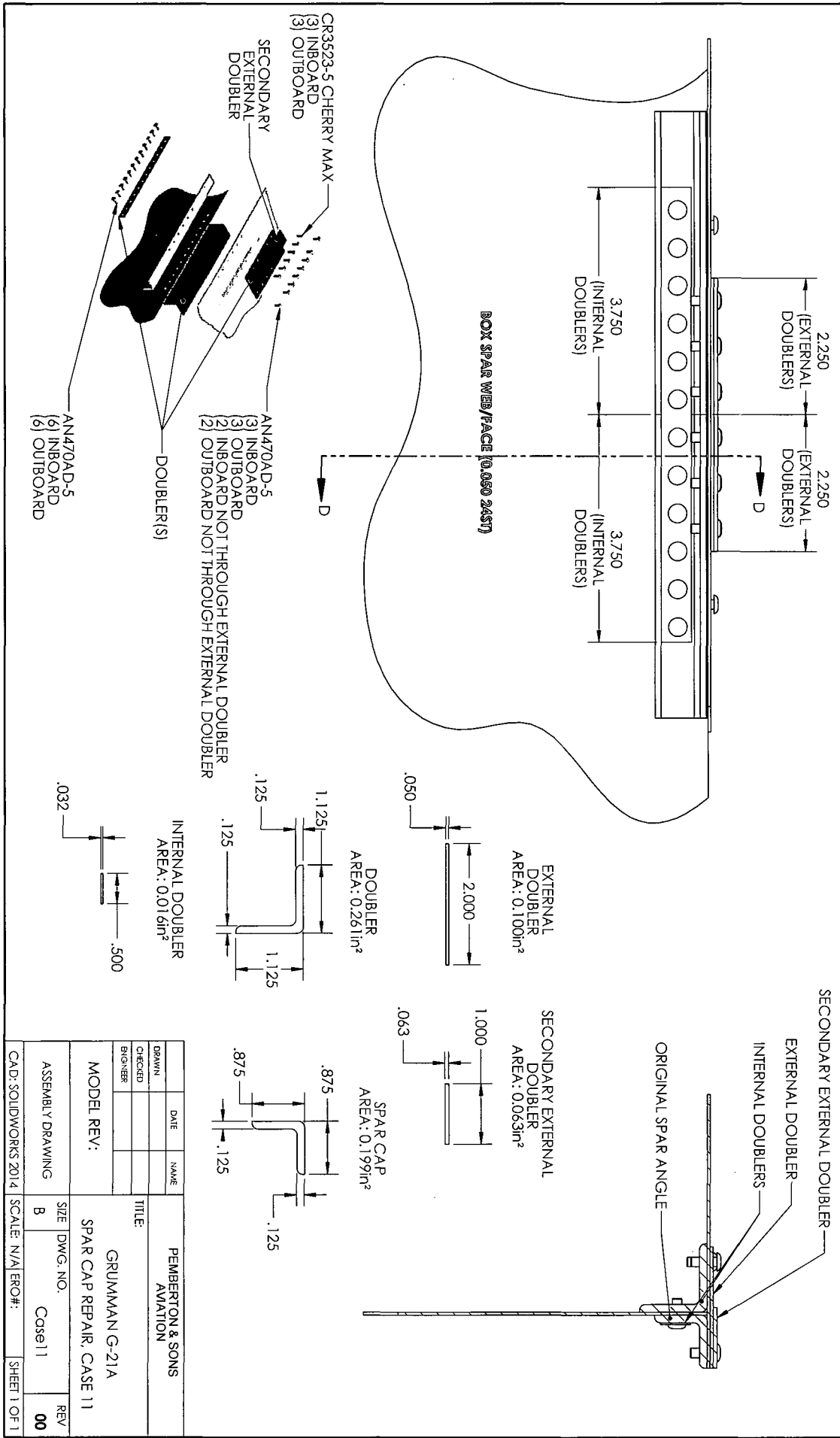
- NOTES:
 1) 1.98 INCHES FROM CENTER OF SPLICE TO DATUM
 2) LOCATED ON LOWER FRONT SPAR CAP, LEFT WING
 3) VIEWED FROM FRONT, WING ROOT TO THE RIGHT



DRAWN		DATE	NAME	PEMBERTON & SONS AVIATION
CHECKED				
ENGINEER				
MODEL REV:		GRUMMAN G-21A		
ASSEMBLY DRAWING		SPAR CAP REPAIR, CASE 10		
SIZE	DWG. NO.	SCALE	REV	
B	Case 10	N/A	00	
CAD: SOLIDWORKS 2014		SHEET 1 OF 1		



- NOTES:
 1) 188 INCHES FROM CENTER OF SPICE TO DATUM
 2) LOCATED ON LOWER FRONT SPAR CAP, LEFT WING
 3) VIEWED FROM FRONT, WING ROOT TO THE RIGHT

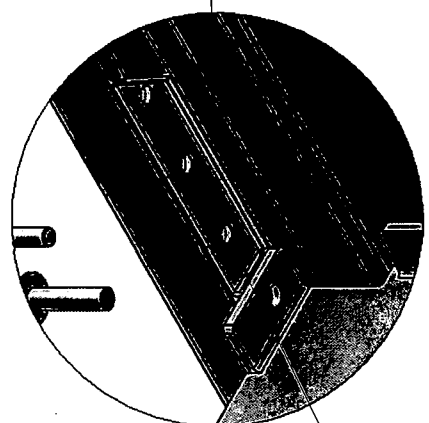
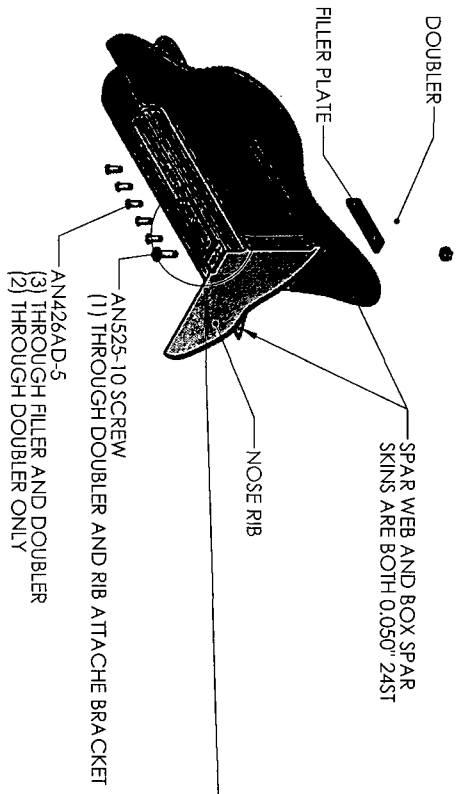
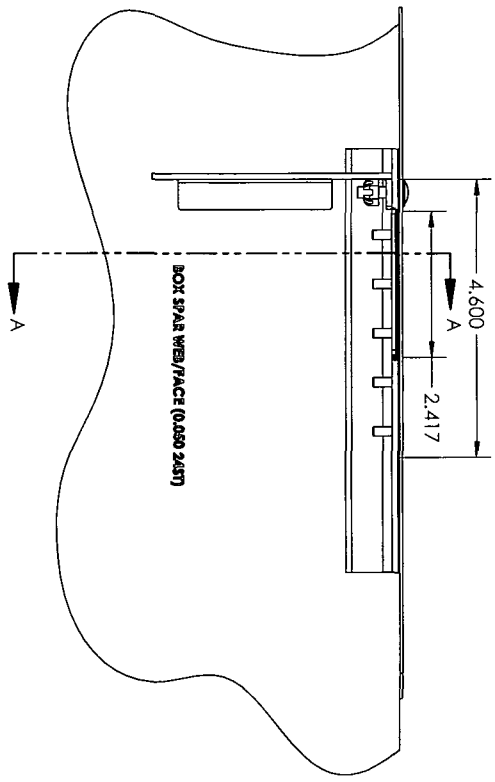


DOCUMENT #

DRAWN		DATE	NAME	PEMBERTON & SONS AVIATION
CHECKED				
ENGINEER				
MODEL REV:		TITLE: GRUMMAN G-21A SPAR CAP REPAIR, CASE 11		
ASSEMBLY DRAWING		SIZE	DWG. NO.	REV
		B	Case 11	00
CAD: SOLIDWORKS 2014		SCALE:	N/A	ERO#: SHEET 1 OF 1

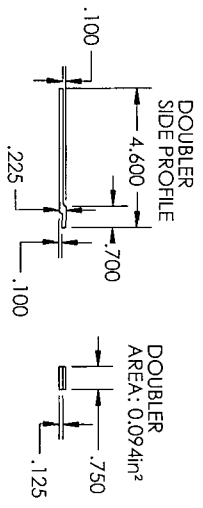
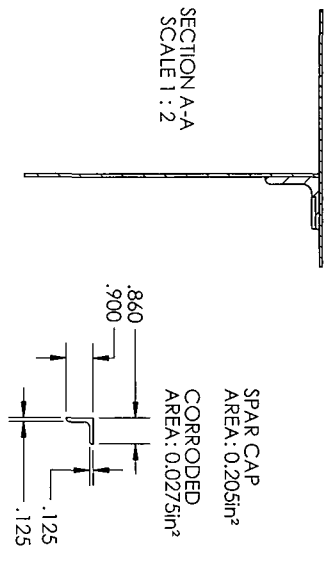


- NOTES:
 1) 1.92 INCHES FROM CENTER OF SPLICE TO DATUM
 2) LOCATED ON UPPER FRONT SPAR CAP, LEFT WING
 3) VIEWED FROM FRONT, WING ROOT TO THE LEFT
 4) FILLER PLATE AND DOUBLER BONDED ON WITH HYSOL 9430



AREA OF REMOVED CORROSION APPROXIMATELY 2.500" X .500" X 0.050"

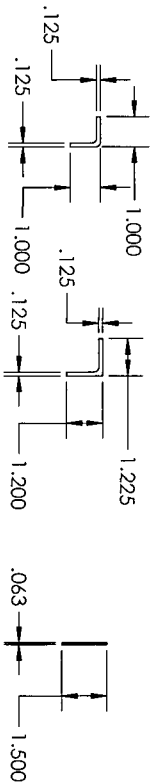
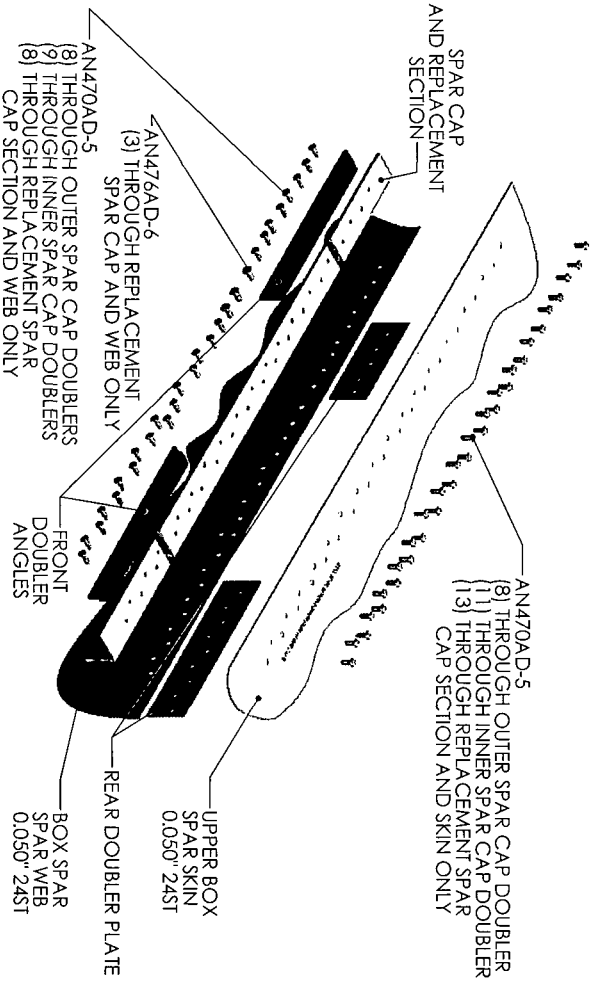
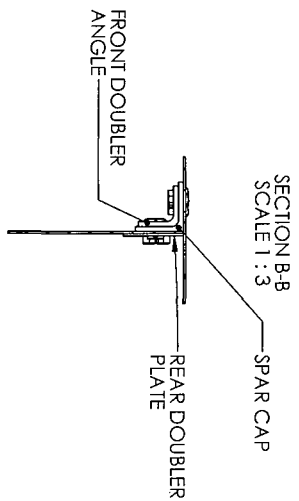
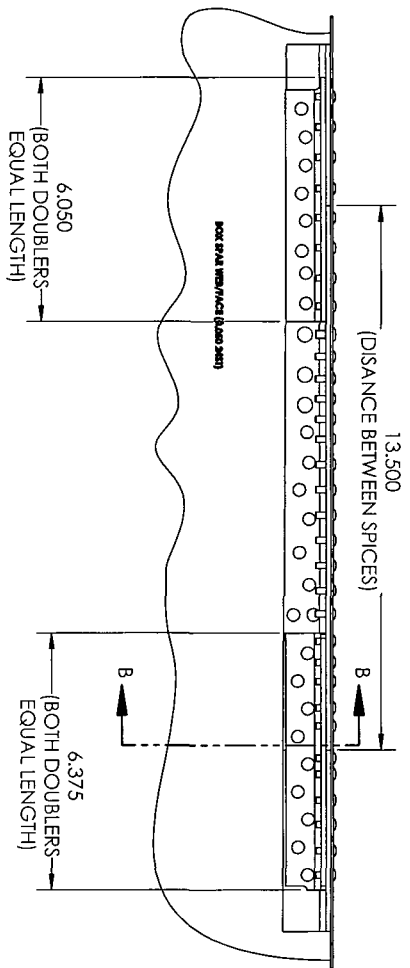
SECTION A-A SCALE 1:2



DATE	NAME	PEMBERTON & SONS AVIATION
3/17/2016	RAP	
TITLE:		
GRUMMAN G-21A		
MODEL REV: SPAR CAP REPAIR, CASE 12		
ASSEMBLY DRAWING	SIZE	DWG. NO.
	B	Case 12
REV	00	
CAD: SOLIDWORKS 2014 SCALE: N/A ERO#: SHEET 1 OF 1		



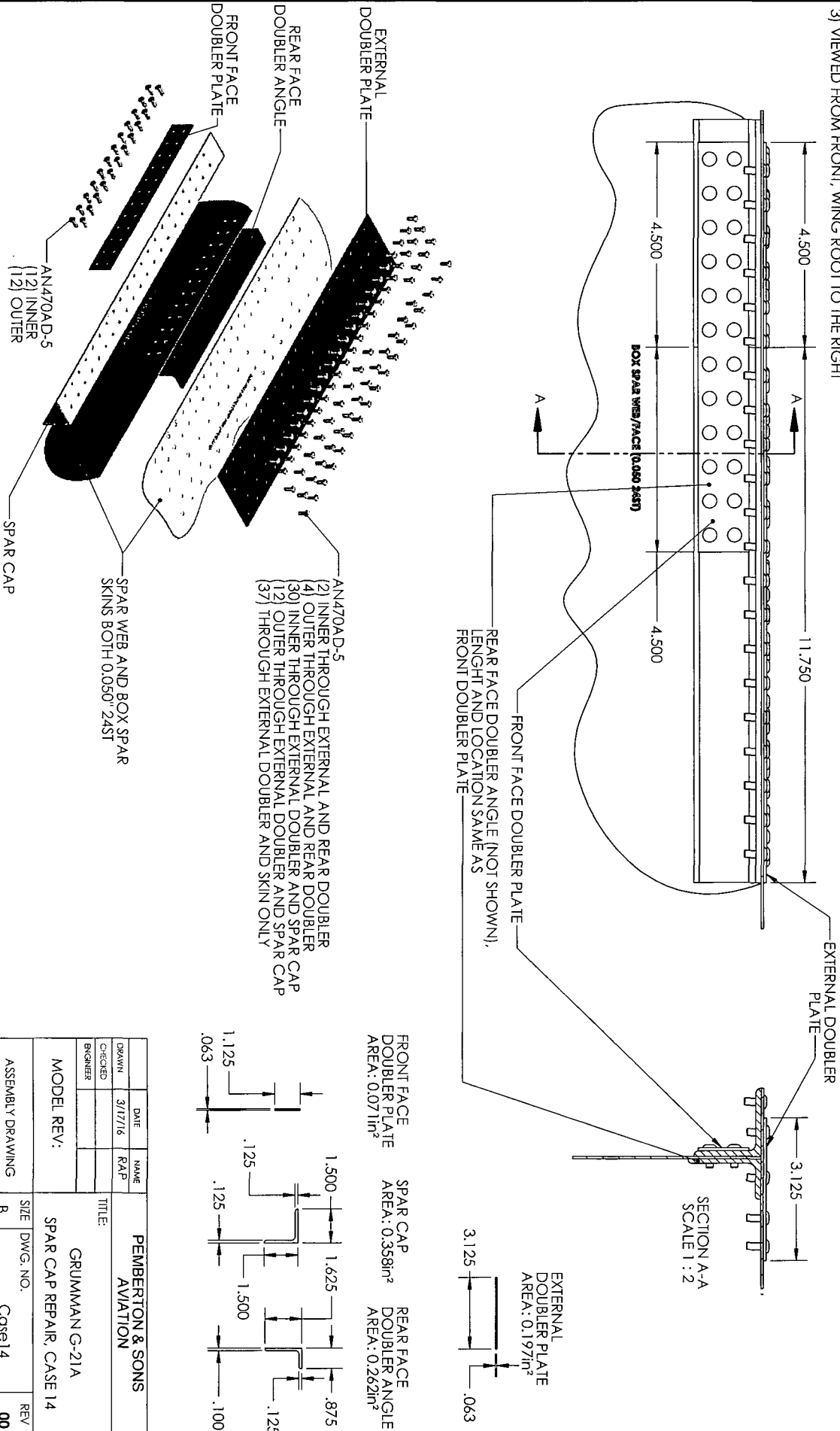
- NOTES:
- 1) 1.49 INCHES FROM CENTER OF SPICE TO DATUM
 - 2) LOCATED ON LOWER FRONT SPAR CAP, LEFT WING
 - 3) VIEWED FROM FRONT, WING ROOT TO THE RIGHT
 - 4) DOUBLERS AND REPLACEMENT SECTION OF SPAR CAP BONDED ON WITH HYSOL 9430



DATE	NAME	PEMBERTON & SONS AVIATION
3/18/2016	RAP	
CHECKED	ENGINEER	
MODEL REV:		TITLE:
ASSEMBLY DRAWING		GRUMMAN G-21A SPAR CAP REPAIR, CASE 13
SIZE	DWG. NO.	REV
B	Case 13	00
CAD: SOLIDWORKS 2014		SHEET 1 OF 1



- NOTES:
 1) 100 INCHES FROM CENTER OF SPLICE TO DATUM
 2) LOCATED ON UPPER FRONT SPAR CAP, LEFT WING
 3) VIEWED FROM FRONT, WING ROOT TO THE RIGHT

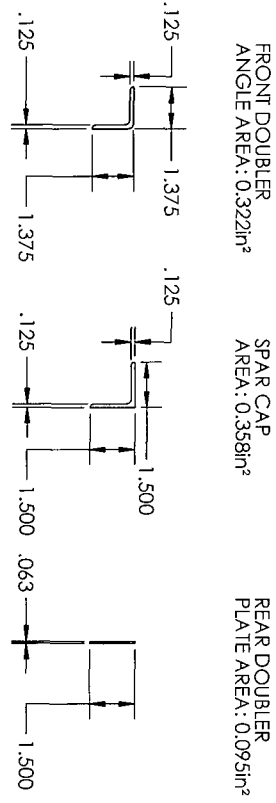
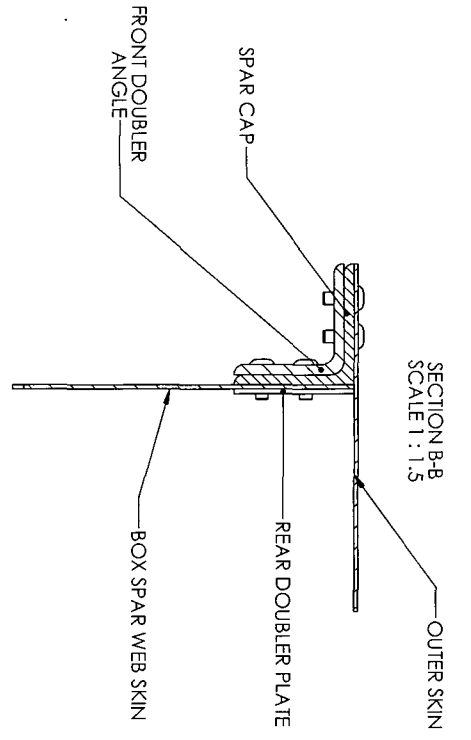
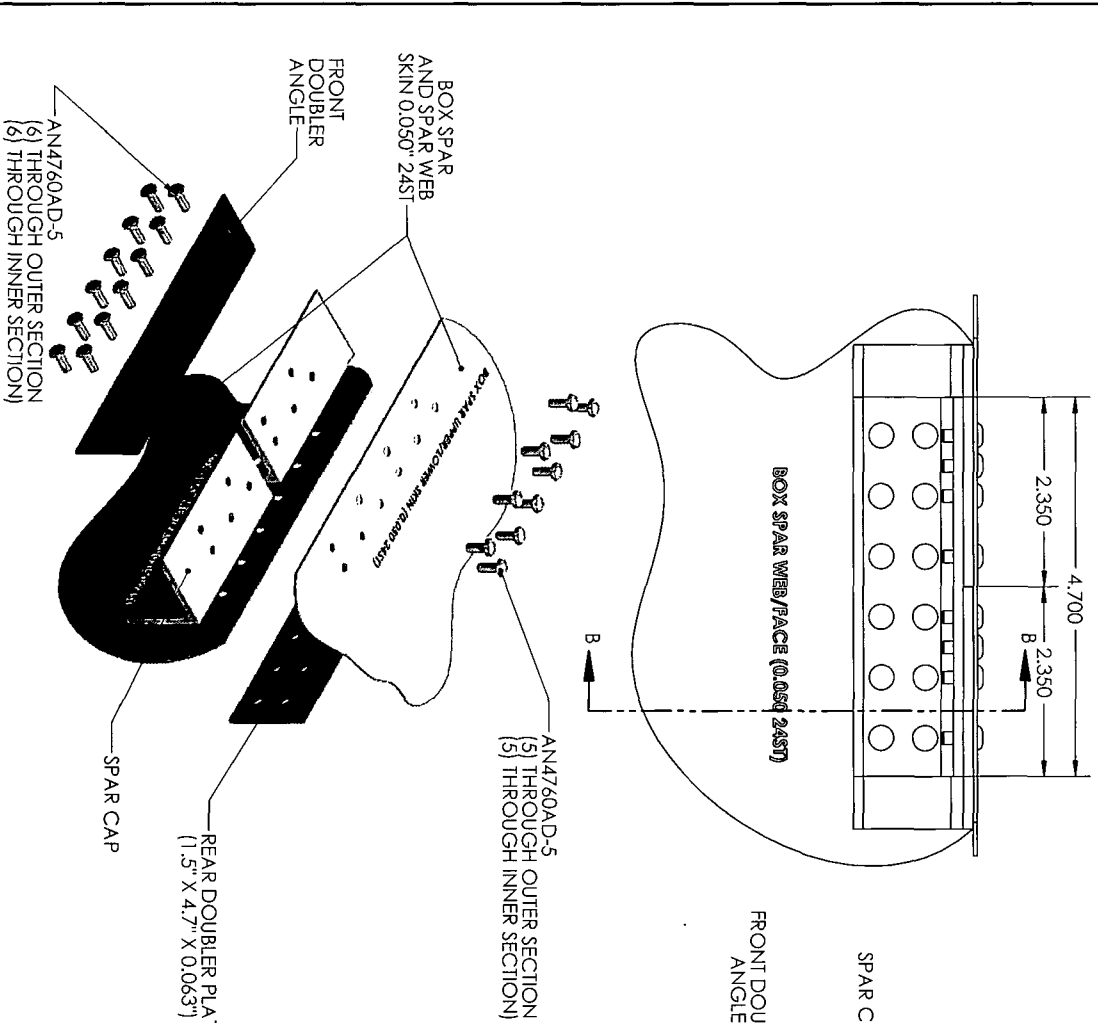


DOCUMENT #

DRAWN		DATE	NAME	PEMBERTON & SONS AVIATION
CHECKED		3/17/16	RAP	
ENGINEER				
MODEL REV:				
		GRUMMAN G-21A		
		SPAR CAP REPAIR, CASE 14		
ASSEMBLY DRAWING		SIZE	DWG. NO.	REV
		B	Case14	00
CAD: SOLIDWORKS 2014		SCALE:	N/A	ERR#:
				SHEET 1 OF 1



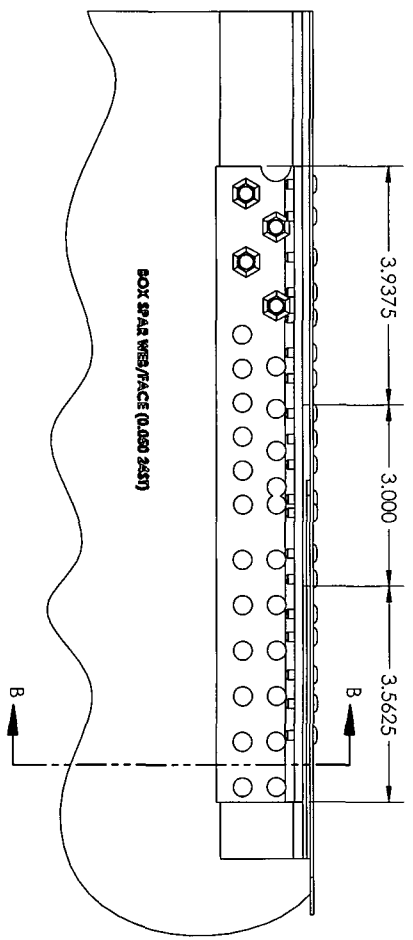
- NOTES:
 1) 98 INCHES FROM CENTER OF SPURCE TO DATUM
 2) LOCATED ON LOWER CENTER FRONT SPAR CAP, LEFT WING
 3) VIEWED FROM FRONT, WING ROOT TO THE RIGHT
 4) DOUBLERS BONDED ON WITH HYSOL 9430



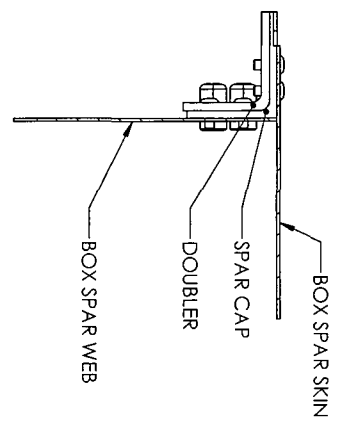
DRAWN		DATE	NAME	TITLE:	
CHECKED		3/18/2016	RAP	PEMBERTON & SONS	
ENGINEER				AVIATION	
MODEL REV:					
GRUMMAN G-21A					
SPAR CAP REPAIR, CASE 15					
ASSEMBLY DRAWING		SIZE	DWG. NO.	Case15	REV
		B			00
CAD: SOLIDWORKS 2014					
SCALE: N/A		ERO#:		SHEET 1 OF 1	



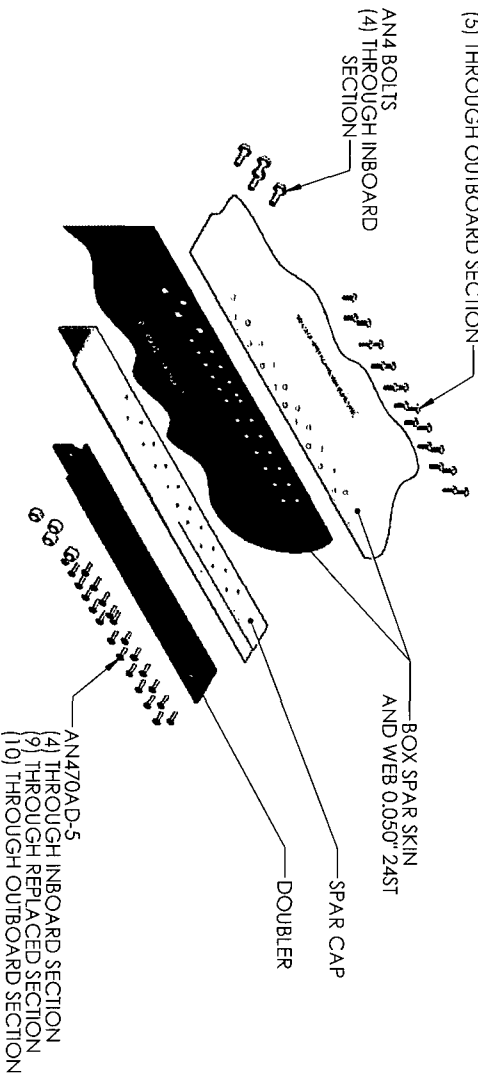
- NOTES:
- 1) 93 INCHES FROM CENTER OF SPLICE TO DATUM
 - 2) LOCATED ON LOWER REAR SPAR CAP, LEFT WING
 - 3) VIEWED FROM FRONT, WING ROOT TO THE LEFT



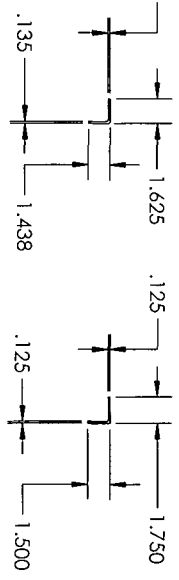
SECTION B-B
SCALE 1 : 2



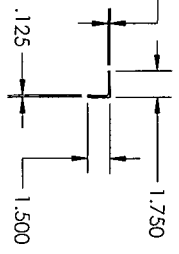
- AN470AD-5
 (7) THROUGH INBOARD SECTION
 (7) THROUGH REPLACED SECTION
 (5) THROUGH OUTBOARD SECTION



DOUBLER
AREA: 0.395in²



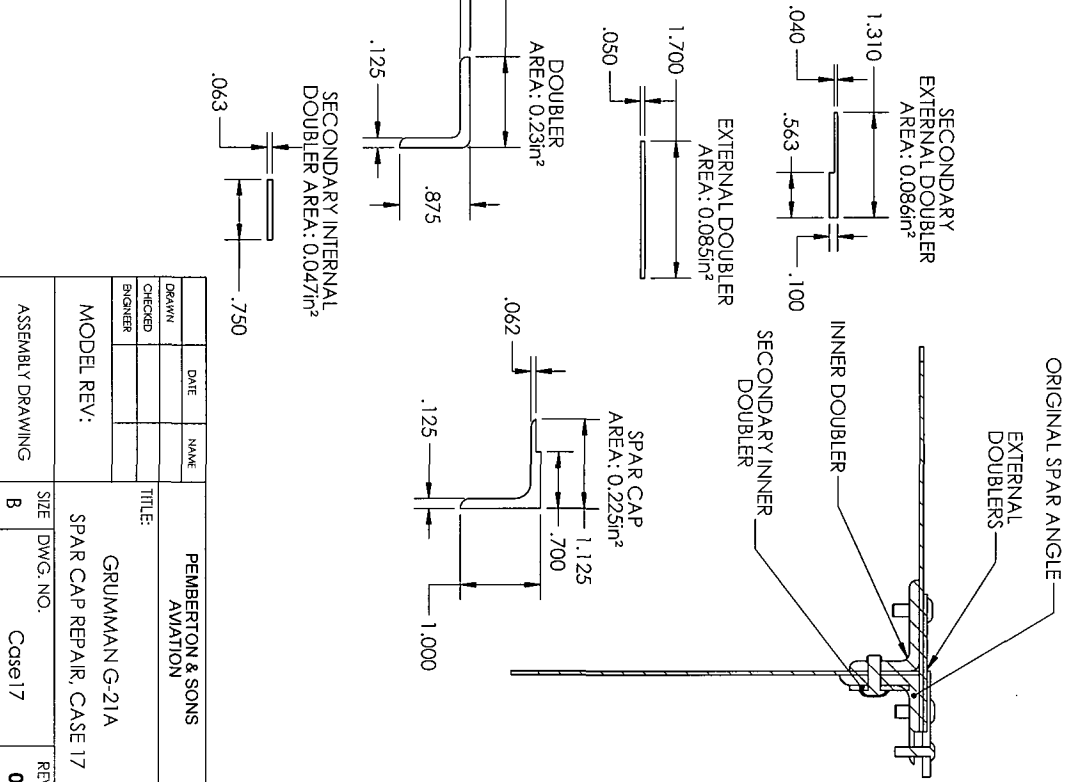
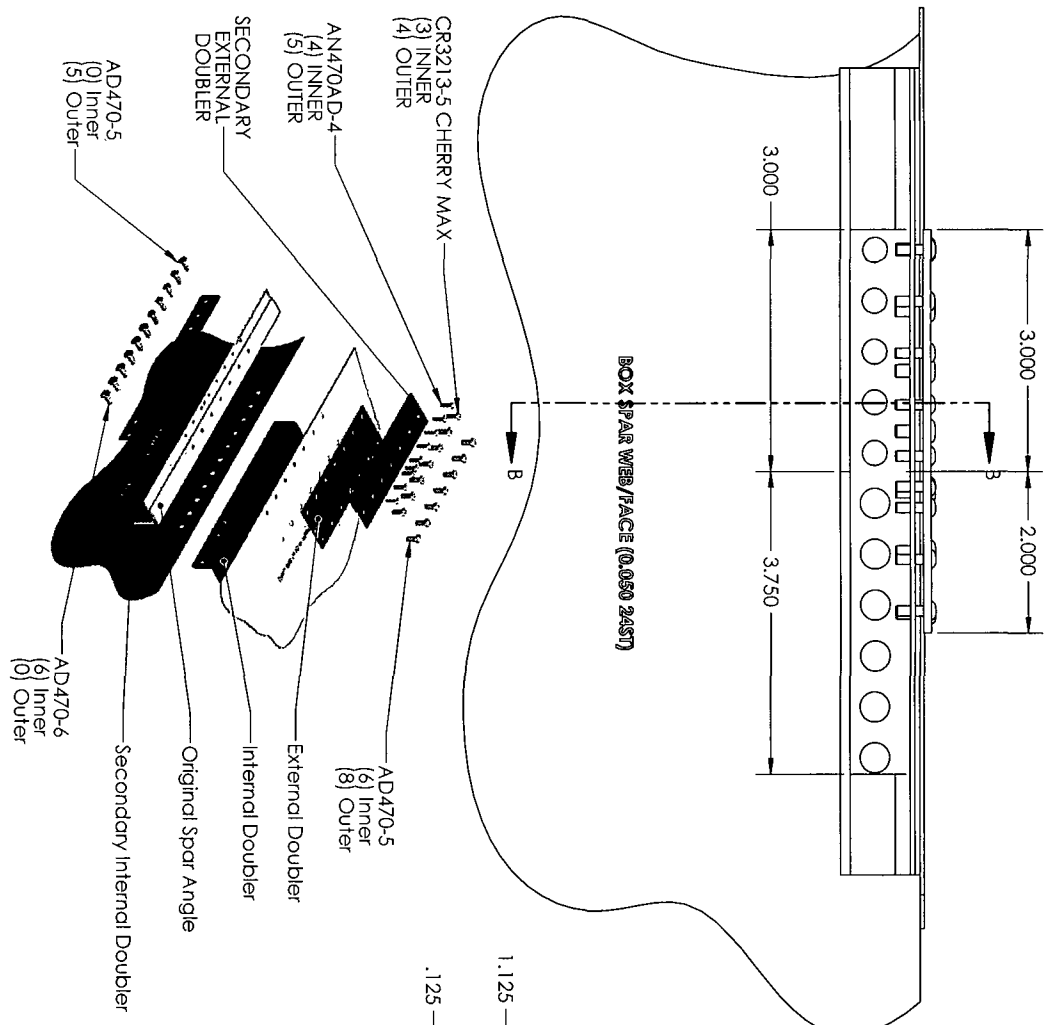
SPAR CAP
AREA: 0.396in²



DATE	NAME	TITLE:	PEMBERTON & SONS AVIATION
DRAWN	RAP		
CHECKED			
DESIGNED		MODEL REV:	GRUMMAN G-21A SPAR CAP REPAIR, CASE 16
ASSEMBLY DRAWING		SIZE	DWG. NO.
		B	Case 16
CAD: SOLIDWORKS 2014		SCALE	REV
		N/A	00
SHEET 1 OF 1		ERO#:	



- NOTES:
 1) 192 INCHES FROM CENTER OF SPLICE TO DATUM
 2) LOCATED ON LOWER REAR SPAR CAP, RIGHT WING
 3) VIEWED FROM REAR, WING ROOT TO THE RIGHT



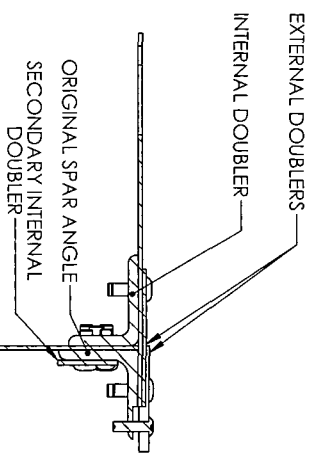
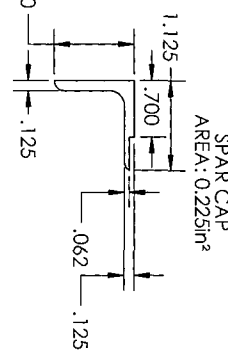
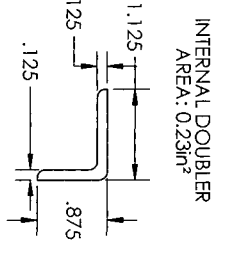
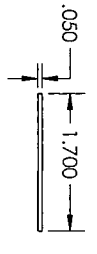
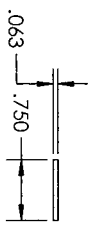
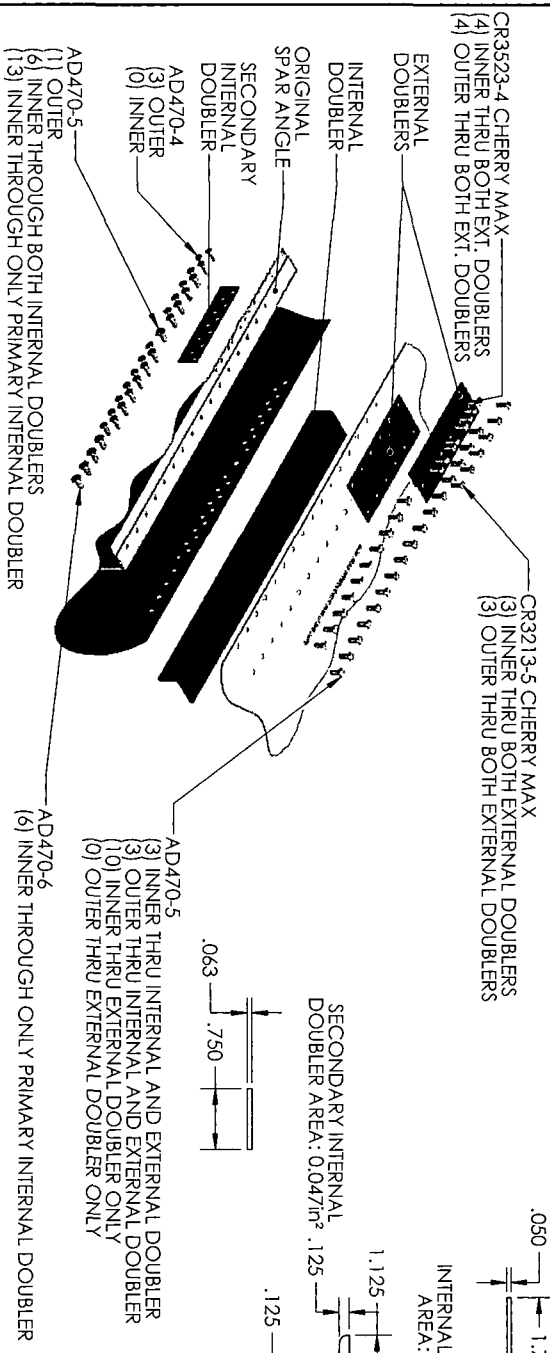
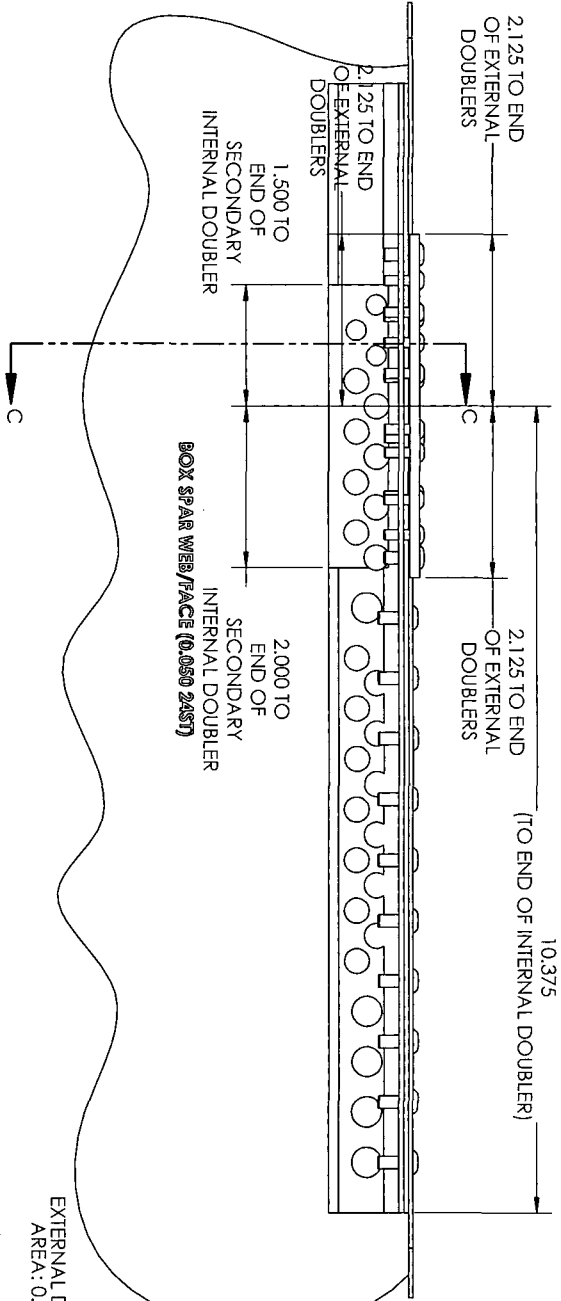
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DATE	NAME	TITLE: GRUMMAN G-21A SPAR CAP REPAIR, CASE 17
DRAWN	PEMBERTON & SONS AVIATION	
CHECKED		
ENGINEER		MODEL REV: SPAR CAP REPAIR, CASE 17
ASSEMBLY DRAWING	SIZE DWG. NO. B Cgse17	REV 00
CAD: SOLIDWORKS 2014	SCALE: N/A	PROJ. SHEET 1 OF 1

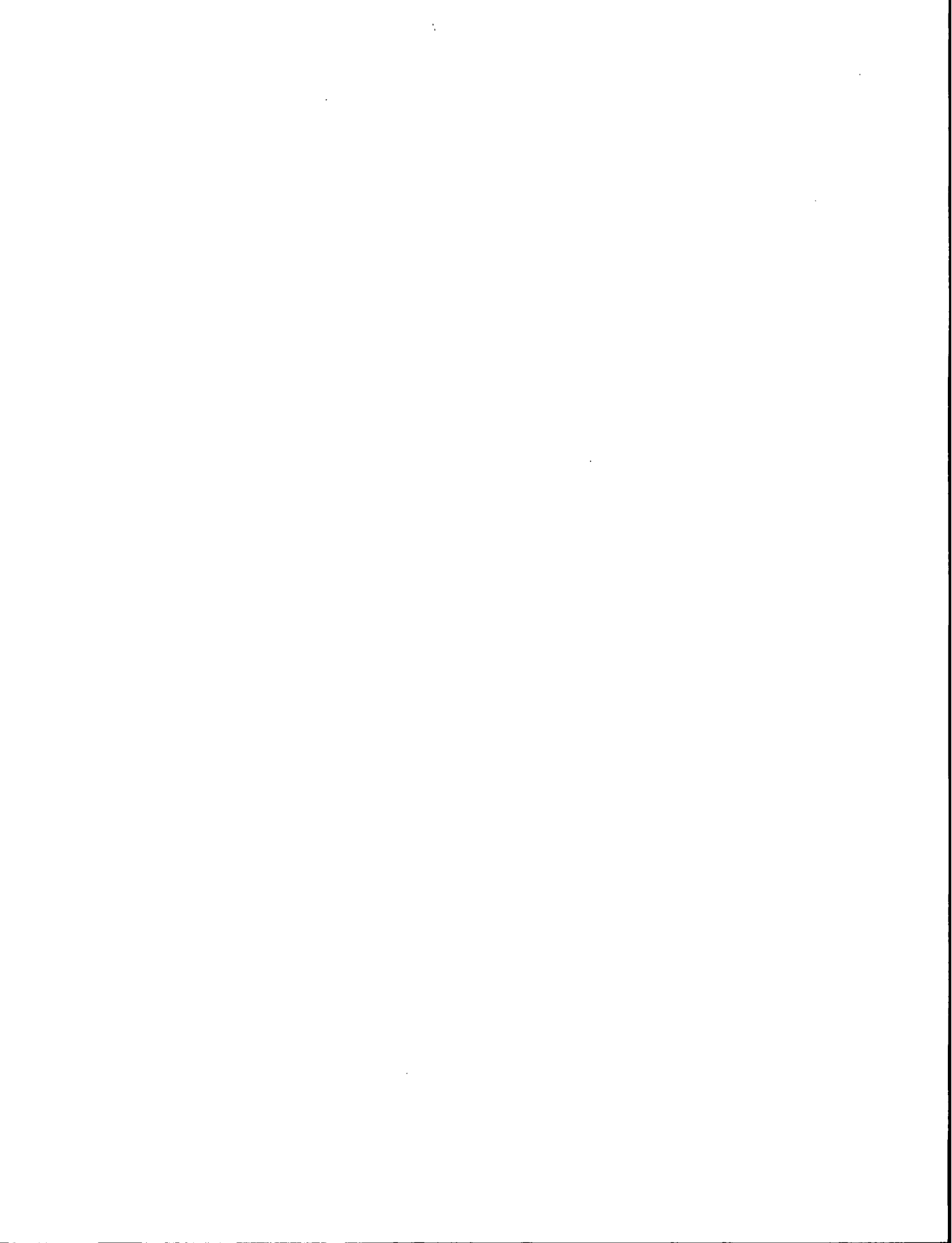
DOCUMENT #




- NOTES:
 1) 209 INCHES FROM CENTER OF SPICE TO DATUM
 2) LOCATED ON LOWER REAR SPAR CAP RIGHT WING
 3) VIEWED FROM REAR, WING ROOT TO THE RIGHT



DATE	NAME	TITLE: PEMBERTON & SONS AVIATION
DRAWN		
CHECKED		
ENGINEER		
MODEL REV:		GRUMMAN G-21A
ASSEMBLY DRAWING		SPAR CAP REPAIR, CASE 18
SIZE	DWG. NO.	REV
B	Case 18	00
CAD: SOLIDWORKS 2014	SCALE: N/A	ERR#:
SHEET 1 OF 1		



 US Department of Transportation Federal Aviation Administration		MAJOR REPAIR AND ALTERATION (Airframe, Powerplant, Propeller, or Appliance)		OMB No. 2120-0020 Exp: 5/31/2018	Electronic Tracking Number For FAA Use Only
INSTRUCTIONS: Print or type all entries. See Title 14 CFR §43.9, Part 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. §44701). Failure to report can result in a civil penalty for each such violation. (49 U.S.C. §46301(a))					
1. Aircraft	Nationality and Registration Mark N95467		Serial No. 1161		
	Make Grumman		Model G21	Series A	
2. Owner	Name (As shown on registration certificate) Pemberton, Addison J		Address (As shown on registration certificate) Address 5302 N Vista Ct City Spokane State Wa Zip 99212 Country USA		
	3. For FAA Use Only				
4. Type		5. Unit Identification			
Repair	Alteration	Unit	Make	Model	Serial No.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	AIRFRAME	<u>Grumman</u>	<i>(As described in Item 1 above)</i>	<u>1161</u>
<input type="checkbox"/>	<input type="checkbox"/>	POWERPLANT			
<input type="checkbox"/>	<input type="checkbox"/>	PROPELLER			
<input type="checkbox"/>	<input type="checkbox"/>	APPLIANCE	Type		
			Manufacturer		
6. Conformity Statement					
A. Agency's Name and Address Name <u>Addison Pemberton</u> Address <u>5302 N Vista Ct</u> City <u>Spokane</u> State <u>Wa</u> Zip <u>99212</u> Country <u>USA</u>			B. Kind of Agency <input checked="" type="checkbox"/> U. S. Certificated Mechanic <input type="checkbox"/> Foreign Certificated Mechanic <input type="checkbox"/> Certificated Repair Station <input type="checkbox"/> Certificated Maintenance Organization		
			C. Certificate No. 2169140 A&P		
D. I certify that the repair and/or alteration made to the unit(s) identified in item 5 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.					
Extended range fuel per 14 CFR Part 43 App. B <input type="checkbox"/>		Signature/Date of Authorized Individual <i>Addison Pemberton 2169140 A&P 07-27-2016</i>			
7. Approval for Return to Service					
Pursuant to the authority given persons specified below, the unit identified in item 5 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Rejected					
BY	FAA Fit. Standards Inspector	Manufacturer	Maintenance Organization	Persons Approved by Canadian Department of Transport	
	FAA Designee	Repair Station	<input checked="" type="checkbox"/> Inspection Authorization	Other (Specify)	
Certificate or Designation No. 2169140 IA		Signature/Date of Authorized Individual <i>Addison Pemberton 2169140 A&P IA 07-27-2016</i>			



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.)

Grumman G21A

N95467

7-27-2016

Nationality and Registration Mark

Date

Removed Fuselage chine from station 1-17 on both side of fuselage. Resealed and installed with Flame master CS3204-B2 sealant using AN470AD rivets. Fabricated new fuselage skins panel #29 between fuselage hull and chines on both sides installed with Flame master CS3204-B2 sealant and AD470AD rivets. Removed keel strip from station 1-29 and reinstalled with Flame master CS3204-B2 sealant and new AN470AD rivets. Keel splice accomplished per Grumman approval structural repair manual between station 27 and 28. Riveted and sealed landing gear well between station 11 and 13 both sides.

Installed new windshields using 3/8 tempered glass, installed all new side windows with new 1/4" Plexiglas and rubber seal track.

Reinstalled lifting eye and required structure to center section. Removed all engine mounts for inspection. Reinstalled with all new hardware and AN470AD rivets as required. Re Riveted 70% of center section top and 50% of center section bottom with AN470AD rivets and Flame master CS3204-B2 sealant in wet fuel cell bays. Resealed with Flame master CS3204-B1 and CS3600 sealant. Preformed pressure leak down test and no leaks found.

Installed center section to fuselage per Grumman erection Manuel with all new hardware.

Fabricated new fuselage skins between front and back of center section to fuselage to mate to existing structure per original Grumman drawings.

All work accomplished in accordance with AC 43:13-1B Chapter 4 section 4 and the Grumman "Handbook of instructions for structural repair for the JRF-1, 2,3,4,5 and 6B"

-----END-----

Additional Sheets Are Attached

SHEET 1 of 3

195467

7-27-2016

RESTRICTED

NOTE:
ALL SKIN JOINTS OR REPAIRS MADE
FORWARD OF STATION # 9 OR IN SHADED
AREA AS SHOWN ARE TO BE WATERTIGHT.

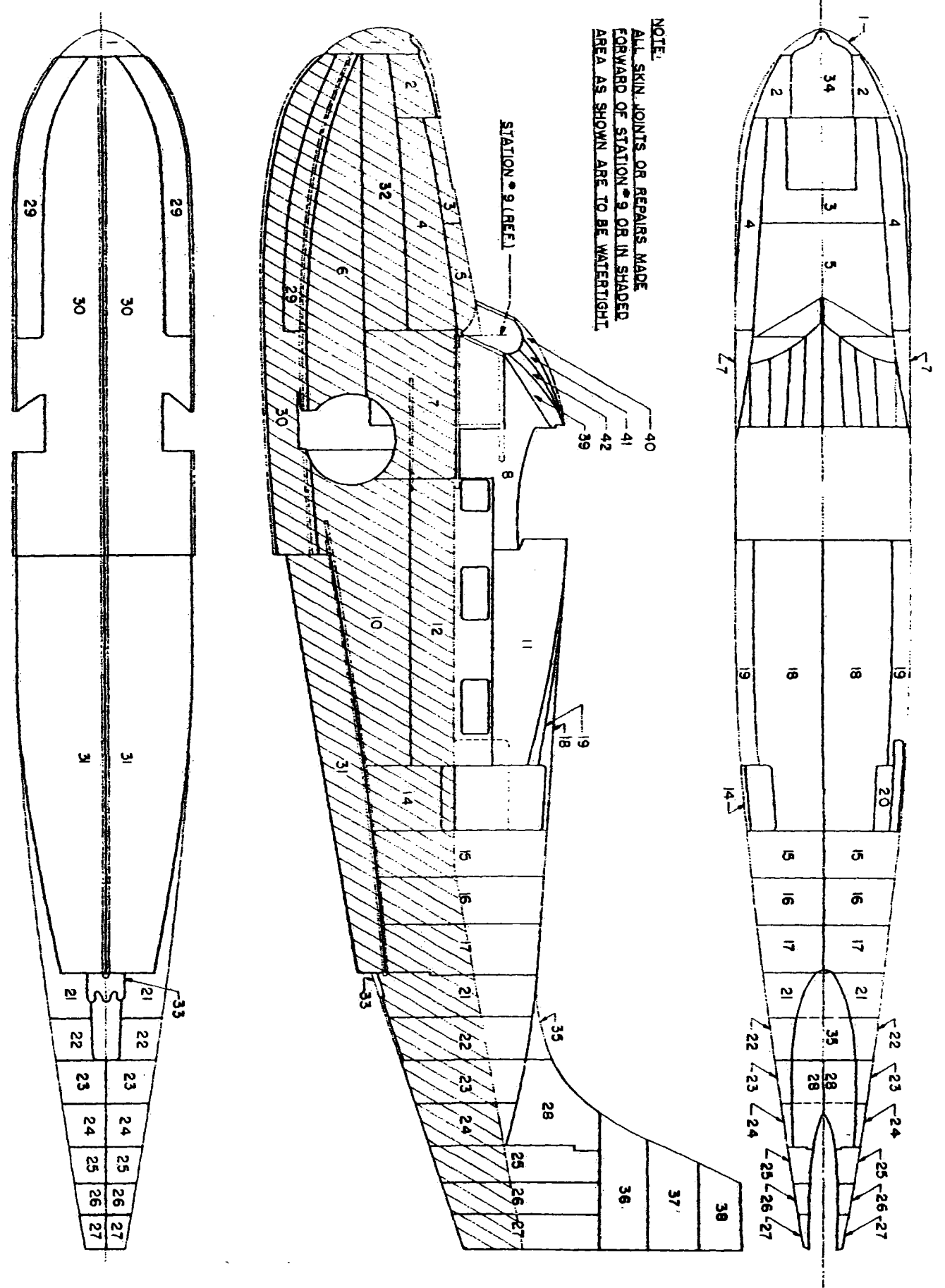


Figure 62 - Hull Skin Plating Diagram (Sheet 1)

Nav. Aer. 01-85V-3

RESTRICTED

Sheet 2 of 3

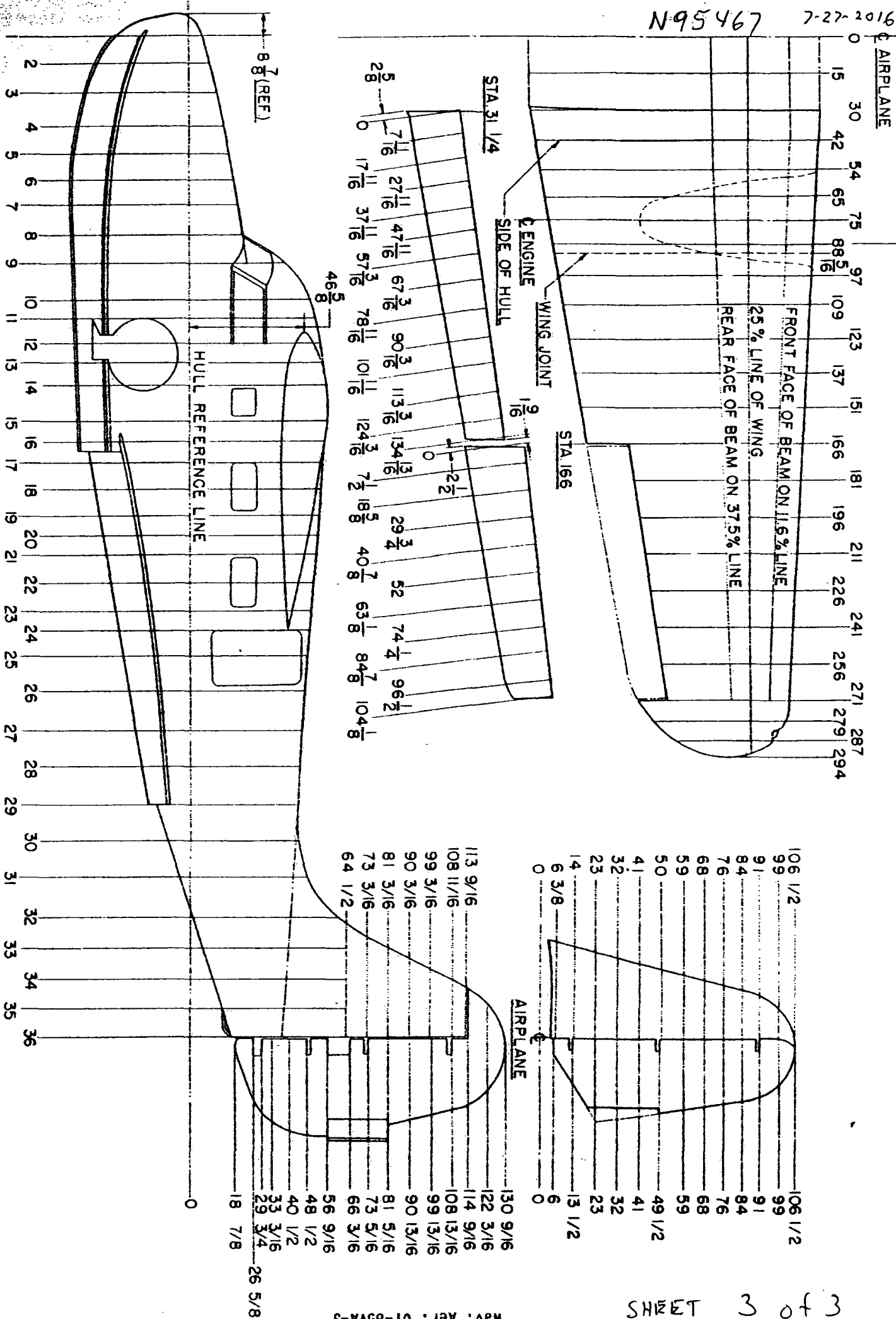



Figure 3 - Stations Diagram



 US Department of Transportation Federal Aviation Administration	MAJOR REPAIR AND ALTERATION (Airframe, Powerplant, Propeller, or Appliance)	OMB No. 2120-0020 Exp: 5/31/2018	Electronic Tracking Number
		For FAA Use Only	

INSTRUCTIONS: Print or type all entries. See Title 14 CFR §43.9, Part 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. §44701). Failure to report can result in a civil penalty for each such violation. (49 U.S.C. §46301(a))

1. Aircraft	Nationality and Registration Mark N95467	Serial No. 1161	
	Make Grumman	Model G21	Series A
2. Owner	Name (As shown on registration certificate) Pemberton, Addison J		Address (As shown on registration certificate)
			Address 5302 n Vista Ct
			City Spokane State Wa
			Zip 99212 Country USA

3. For FAA Use Only

THE DATA IDENTIFIED HEREIN COMPLIES WITH APPLICABLE AIRWORTHINESS REQUIREMENTS AND IS APPROVED ONLY FOR THE ABOVE DESCRIBED AIRCRAFT SUBJECT TO CONFORMITY INSPECTION BY A PERSON AUTHORIZED IN FAR 43.7

9/30/2015

[Signature]

DATE FAA INSPECTOR, SPOKANE FSDO

NM13-2087

4. Type		5. Unit Identification			
Repair	Alteration	Unit	Make	Model	Serial No.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	AIRFRAME	Grumman	(As described in Item 1 above)	1161
<input type="checkbox"/>	<input type="checkbox"/>	POWERPLANT			
<input type="checkbox"/>	<input type="checkbox"/>	PROPELLER			
<input type="checkbox"/>	<input type="checkbox"/>	APPLIANCE	Type		
			Manufacturer		

6. Conformity Statement			
A. Agency's Name and Address		B. Kind of Agency	
Name Addison Pemberton		<input checked="" type="checkbox"/>	U. S. Certificated Mechanic
Address 5302 n Vista Ct			Manufacturer
City Spokane State Wa			Foreign Certificated Mechanic
Zip 99212 Country USA			C. Certificate No.
		<input type="checkbox"/>	Certificated Repair Station
		<input type="checkbox"/>	Certificated Maintenance Organization
		2169140 A&P	

D. I certify that the repair and/or alteration made to the unit(s) identified in item 5 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.

Extended range fuel per 14 CFR Part 43 App. B <input type="checkbox"/>	Signature/Date of Authorized Individual [Signature] 2169140 A&P 9-10-15
--	--

7. Approval for Return to Service

Pursuant to the authority given persons specified below, the unit identified in item 5 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is Approved Rejected

BY	FAA Fit. Standards Inspector	Manufacturer	Maintenance Organization	Persons Approved by Canadian Department of Transport
	FAA Designee	Repair Station	<input checked="" type="checkbox"/>	Inspection Authorization
				Other (Specify)

Certificate or Designation No. 2169140 A&P IA	Signature/Date of Authorized Individual [Signature] 2169140 A&P IA
--	---

THE UNIVERSITY OF CHICAGO
DEPARTMENT OF CHEMISTRY
5708 SOUTH WOODLAND AVENUE
CHICAGO, ILLINOIS 60637
TEL: 773-936-3700
FAX: 773-936-3701
WWW: WWW.CHEM.UCHICAGO.EDU

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.)

Grumman	G21A
N95467	09-10-2015
Nationality and Registration Mark	Date

Removed obsolete and no longer supported bilge pumps from aircraft. Installed 3ea 24 volt marine bilge pumps. 2ea 24 volt 1000 gallon/hour marine bilge pumps installed at station 7 and 18. Part number Johnson Marine L650 UC-1000, 1000 gallon/hour pumps incorporating an automatic level switch and Manuel mode switch installed at both station 7 and 18. These pumps were installed using an angle brackets fabricated from .050 5052 Aluminum and fastened existing aircraft bullhead at station 7 and 18 with aircraft hardware. Pumps discharge on right side of aircraft with 3/4 inch diameter marine bide pump discharge hose above water line. Additional 24 Volt Marine bilge pump Wale Gulper 220 gallon per hour incorporating remote automatic level switch and pick up installed ahead of station 26 with aluminum .050 5052 aluminum brackets with aircraft hardware to existing aircraft bullhead. Remote pick up and level switch assembly required ahead of station 26 to insure safe clearance from primary flight controls beneath aircraft floor.

Control panel fabricated with 15 amp circuit protection installed on right side of cockpit above co-pilot window. Control panel provided with master switch to source aircraft buss power or Axillary power from back up battery. 3 switches installed and wired from master source to select off, manual or automatic mode for each of the three pumps. Axillary power source allows pumps to be operated when aircraft is at rest during water operation when aircraft is moored to prevent discharge of main aircraft batteries. LED lights indicate pump activity for each of the three pumps visible from cockpit

All three pumps require 3 amps at 24 volts during operation. All three pumps wired with #14 gauge Tefzel Milspec aircraft wire. Pumps mounted with aircraft hardware and wired to MS 35058-21 aircraft switches. See attached schematic and pictures attached. . All wiring and installation accomplished per AC 43.13-1B chapter 11

Hinged cockpit floor door panels above each pump installation enable quick visual inspection for aircraft water leak prior to each flight at station 7, 18 and 26. Doors open and latch without tools. Aircraft floor and panels constructed from 1/4 Marine plywood per original aircraft construction.

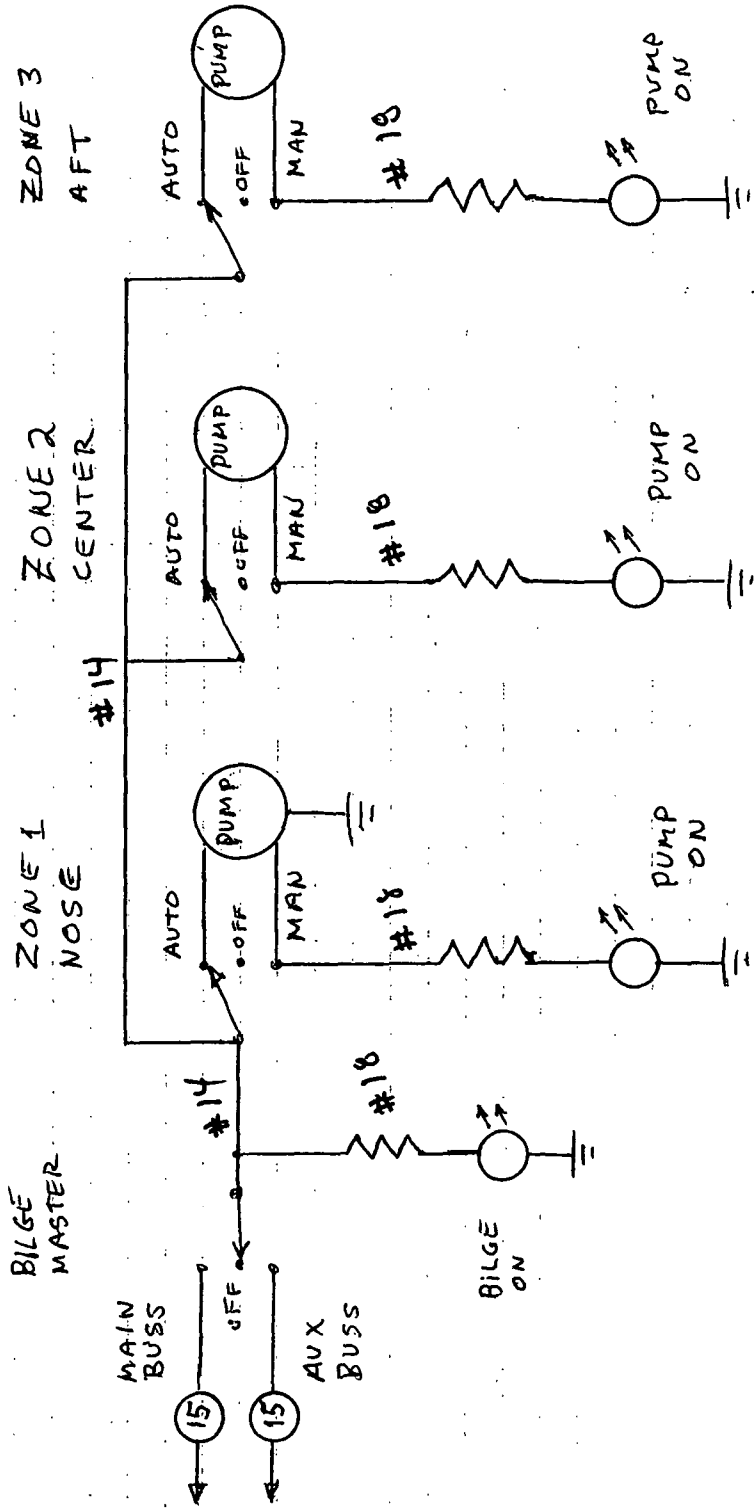
Instructions for continued airworthiness

The above pumps to be inspected for mounting integrity and function at each required inspection. Pumps to be cleaned and filters inspected at each annual or 100 hour inspection. Inspections to be accomplished in accordance with FAR 43 appendix "D". Floor inspection panels to be opened and inspected for unsafe water level water leakage prior to each flight.

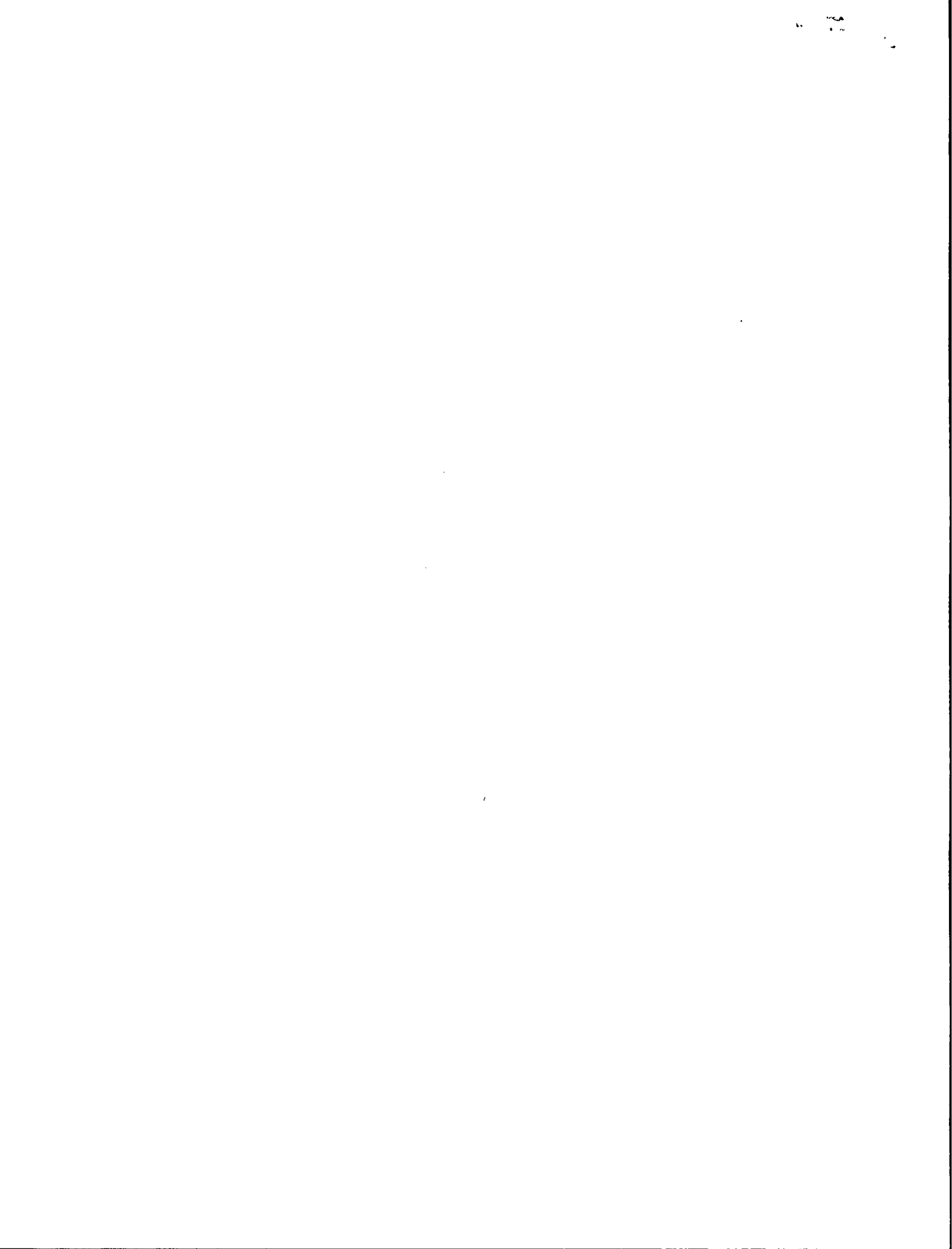
----- END -----

Additional Sheets Are Attached

GRUMMAN G-21A N95467



BILGE PUMPS



Chuck 9-10-2015

Find 2ea 337 field approval proposals for the Goose project. One is for the bilge pump installation that you reviewed for me last week. The second is for an updated 24 volt electrical system with 2ea 70 amp Jasco Alternators.

Let me know how it goes and if I need to make more changes. I will be out of the country on Scanivalve business working on a Wind Tunnel project in Holland and England from Sept 25 through Oct 13th.

Note: the aircraft was configured for 24 volts prior to restoration and has an STC 337 on file for the landing gear retraction motor already.

I will have e-mail access during my travel.

apemberton@scanivalve.com

Addison Pemberton 509 8919970 days or 509 9956240 cell

Standard Data Package Instructions – Spokane, WA FSDO NM-13

FIELD APPROVAL CHECKLIST

Instructions: Print or type all entries. This information should be as complete as possible prior to your initial discussion with the FAA.

1. Aircraft	Make GRUMMAN	Model G21A
	Registration Number N 95467	Serial Number 1161
2. Owner	Name Pemberton, Addison	Address/Telephone Number 5302 N VISTA CT SPOKANE WA 99212 509-8919970 days
	3. Type of Product and Type Certificate Number	Certification Basis TC 654

- Airframe Engine Appliance Other
- Part 23 Part 25 Part 27 Part 29 Part 31 Part 33 CAR 3 CAR (4)(a) CAR 4(b) CAR 6 CAR 7 CAR 8 CAR 13 **AERO Bulletin 7A**

4. Brief Description of Project

① **INSTALLATION OF MARINE BILGE PUMPS AT STATION 7, 18 and 26**

② **INSTALLATION OF JACO 24 VOLT ALTERNATORS AND UPDATE TO AIRCRAFT ELECTRICAL SYSTEM**

(attach additional pages if required)

5. Schedule for Completion of Project

Date when field approval is needed: **DEC OF 2015**

Projected completion date for alteration: **OCT OF 2015**

Date aircraft will be available for inspection: **OCT 2015**

6. Who Will Perform the Alteration or Repair?

Mechanic's name: **Addison Pemberton** or Repair station:

Certificate no: **2169140** Contact Person:

Telephone number: **509-8919970 days** Fax number: **509-8919487**

Location where alteration/repair will be accomplished: **HANGER 66 FELTS FIELD SPOKANE**

7. Designees (DARs and DERs) None

Names and telephone numbers of the Designated Engineering Representatives, (DER) and/or Designated Airworthiness Representatives (DAR) who are helping with the project:


Name: Telephone number:

Name: Telephone number:



Standard Data Package Instructions – Spokane, WA FSDO NM-13

FIELD APPROVAL CHECKLIST (Continued)			
<p>8. Compliance statement and compliance checklist. Attach the compliance checklist that you completed.</p>	<p align="right">(See Compliance Checklist on page 5)</p> <p align="center" style="font-size: 2em;">✓</p>		
<p>9. Previous alterations or repairs that may be affected by this alteration (attach copies of Form 337 or maintenance record entries for package evaluation)</p>	<p align="center" style="font-size: 2em;">✓</p>		
<p>10. Instructions for Continued Airworthiness (ICA) (See ICA checklist on pages 6 & 7)</p> <p><input checked="" type="checkbox"/> ICAs attached Include relevant ICAs in block 8 of the FAA Form 337</p>			
<p>11. Aircraft Flight Manual Supplement (AFMS)</p> <p>Do you have an AFMS? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, attach a copy.</p>			
<p>12. Data Attached</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"> <input checked="" type="checkbox"/> Proposed FAA Form 337 <input type="checkbox"/> Description of alteration, including ICA <input type="checkbox"/> Drawings, schematics, and diagrams <input type="checkbox"/> Material list <input type="checkbox"/> Processes <input type="checkbox"/> Specifications <input type="checkbox"/> Previous field approvals <input type="checkbox"/> FAA Form(s) 8110-3 <input type="checkbox"/> Serviceable tags <input type="checkbox"/> Placards <input type="checkbox"/> Test data and/or flight test data <input type="checkbox"/> Load analysis (electrical and/or structural) <input type="checkbox"/> Weight & Balance Report </td> <td style="width: 50%; border: none;"> <input type="checkbox"/> Other <hr/><hr/><hr/><hr/><hr/><hr/><hr/><hr/><hr/><hr/> </td> </tr> </table>		<input checked="" type="checkbox"/> Proposed FAA Form 337 <input type="checkbox"/> Description of alteration, including ICA <input type="checkbox"/> Drawings, schematics, and diagrams <input type="checkbox"/> Material list <input type="checkbox"/> Processes <input type="checkbox"/> Specifications <input type="checkbox"/> Previous field approvals <input type="checkbox"/> FAA Form(s) 8110-3 <input type="checkbox"/> Serviceable tags <input type="checkbox"/> Placards <input type="checkbox"/> Test data and/or flight test data <input type="checkbox"/> Load analysis (electrical and/or structural) <input type="checkbox"/> Weight & Balance Report	<input type="checkbox"/> Other <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
<input checked="" type="checkbox"/> Proposed FAA Form 337 <input type="checkbox"/> Description of alteration, including ICA <input type="checkbox"/> Drawings, schematics, and diagrams <input type="checkbox"/> Material list <input type="checkbox"/> Processes <input type="checkbox"/> Specifications <input type="checkbox"/> Previous field approvals <input type="checkbox"/> FAA Form(s) 8110-3 <input type="checkbox"/> Serviceable tags <input type="checkbox"/> Placards <input type="checkbox"/> Test data and/or flight test data <input type="checkbox"/> Load analysis (electrical and/or structural) <input type="checkbox"/> Weight & Balance Report	<input type="checkbox"/> Other <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>		
<p>13. FAA Use Only</p> <p>Date: _____</p> <p>Assigned inspector: _____</p> <p>FAA office: _____</p> <p>Additional information required: _____</p>			

 US Department of Transportation Federal Aviation Administration	MAJOR REPAIR AND ALTERATION (Airframe, Powerplant, Propeller, or Appliance)		OMB No. 2120-0020 Exp: 5/31/2018	Electronic Tracking Number
				For FAA Use Only
INSTRUCTIONS: Print or type all entries. See Title 14 CFR §43.9, Part 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. §44701). Failure to report can result in a civil penalty for each such violation. (49 U.S.C. §46301(a))				
1. Aircraft	Nationality and Registration Mark N95467		Serial No. 1161	
	Make Grumman		Model G21	Series A
2. Owner	Name (As shown on registration certificate) Pemberton, Addison J		Address (As shown on registration certificate) Address 5302 n Vista Ct City Spokane State Wa Zip 99212 Country USA	
THE DATA/REPAIR IDENTIFIED HEREIN COMPLES WITH APPLICABLE AIRWORTHINESS REQUIREMENTS AND IS APPROVED ONLY FOR THE ABOVE DESCRIBED AIRCRAFT SUBJECT TO CONFORMITY INSPECTION BY A PERSON AUTHORIZED IN FAR 43 <i>9/30/2015</i> <u>Charles F. Hokeets</u> DATE FAA INSPECTOR, SPOKANE FSDO <div style="text-align: right; font-size: 1.2em;"><i>NM 13-2088</i></div>				
4. Type		5. Unit Identification		
Repair	Alteration	Unit	Make	Model
<input type="checkbox"/>	<input checked="" type="checkbox"/>	AIRFRAME	Grumman	(As described in Item 1 above)
<input type="checkbox"/>	<input type="checkbox"/>	POWERPLANT		
<input type="checkbox"/>	<input type="checkbox"/>	PROPELLER		
<input type="checkbox"/>	<input type="checkbox"/>	APPLIANCE	Type	
			Manufacturer	
6. Conformity Statement				
A. Agency's Name and Address			B. Kind of Agency	
Name Addison Pemberton			<input checked="" type="checkbox"/> U. S. Certificated Mechanic	
Address 5302 n Vista Ct			<input type="checkbox"/> Foreign Certificated Mechanic	
City Spokane State Wa			<input type="checkbox"/> Certified Repair Station	
Zip 99212 Country USA			<input type="checkbox"/> Certified Maintenance Organization	
			2169140 A&P	
D. I certify that the repair and/or alteration made to the unit(s) identified in item 5 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.				
Extended range fuel per 14 CFR Part 43 App. B <input type="checkbox"/>		Signature/Date of Authorized Individual <i>Addin Pemberton 2169140 A&P 9-10-15</i>		
7. Approval for Return to Service				
Pursuant to the authority given persons specified below, the unit identified in item 5 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Rejected				
BY	FAA Flt. Standards Inspector	Manufacturer	Maintenance Organization	Persons Approved by Canadian Department of Transport
	FAA Designee	Repair Station	<input checked="" type="checkbox"/> Inspection Authorization	Other (Specify)
Certificate or Designation No. 2169140 A&P IA		Signature/Date of Authorized Individual <i>Addin Pemberton 2169140 A&P IA</i>		

THE DATA/STATION IDENTIFIED HEREIN COMPLIES WITH
APPLICABLE AIRCRAFT/ENGINE REQUIREMENTS AND IS APPROVED
ONLY FOR THE ABOVE DESCRIBED AIRCRAFT SUBJECT TO
CONFORMITY INSPECTION BY A PERSON AUTHORIZED IN TABLE 1.

FAA INSPECTOR, SIGNATURE

DATE

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.)

Grumman	G21A
N95467	09-10-2015
Nationality and Registration Mark	Date

Installed 2ea 35 amp hour 12 volt Concord (or equivalent) batteries behind each engine firewall per original factory installation. Batteries wired in series to make up a 24 volt aircraft buss source. A 12 volt master relay for the left engine battery and 24 volt relay function from a single master switch ground to insure aircraft buss is disconnected from both batteries for emergency operations. 2ea 70 amp Jasso 24 volt alternators installed on each engine and installed per attached instructions from Jasco (Skytronics). Both Pratt and Whitney R985 engines modified per Jacso instructions with 100 AMP high speed drives. Jasso Alternators carry STC approval for the Grumman AgCat using the same Pratt and Whitney R985 engine reference number SA2015WE. Both alternators supply aircraft buss in parallel outputs are balanced per attached Jasco instructions.

2 ea. Odyssey PMA batteries wired in series and mounted to the back side station 26 bulkhead to provide an axillary power source for bilge pumps, mooring light and cabin dome lights when aircraft is on the ground or on the water with engines and main aircraft buss turned off.

Fabricated from .090 aluminum a switch panel mounted to aircraft cabin roof structure above pilot seat. Fabricated from .090 aluminum circuit breaker panel mounted to aircraft cockpit roof structure above co-pilot seat. Fabricated from aluminum bilge pump control panel mounted to cockpit window and roof structure above co-pilot side window .Fabricated alternator buss output panel from .090 aluminum and mounted in original factory location behind co-pilot seat on forward face of station 13 bulkhead.

Installed aircraft LED indicator lights for low fuel and oil pressure in each pilot instrument panel. Installed LED indicator lights in instrument panel center to indicate Bilge pump master, tail wheel lock, cabin doors and nose hatch door open, landing gear motor in up transit and landing gear position. Landing gear and seat belt warning LED's installed on back side of station 13 in view of passengers in main cabin.

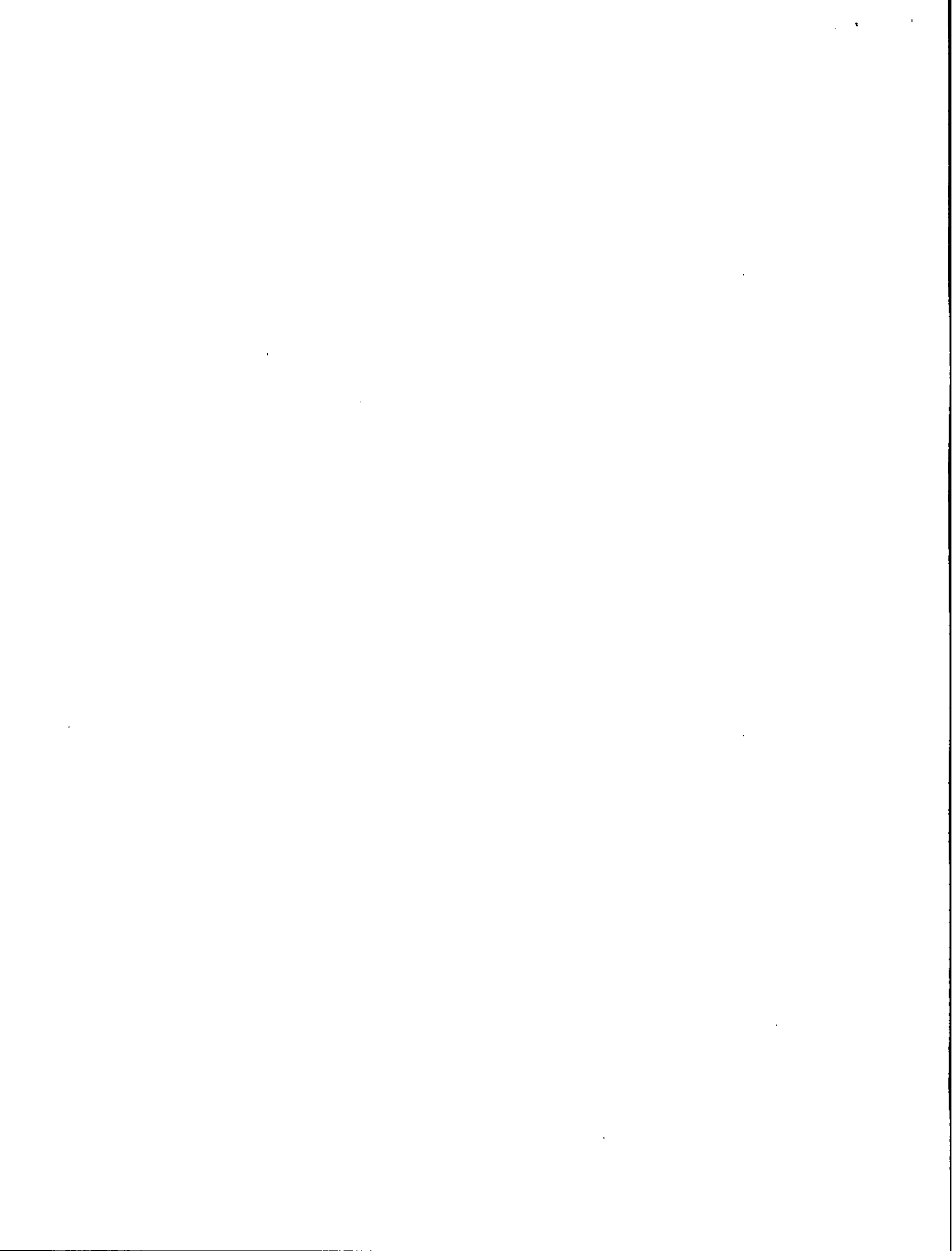
Electrical system installation incorporates PMA approved Tyco series W23-X1A-16 curcuit breakers and series MS35058-21 aircraft switches. Tefzel Mil Spec spec aircraft wire used with wire gage equal or greater described in AC 43.13-1B chapter 11 figure 11-12. All wiring and installation accomplished per AC 43.13-1B chapter 11. See attached 6 aircraft schematics for aircraft installation.

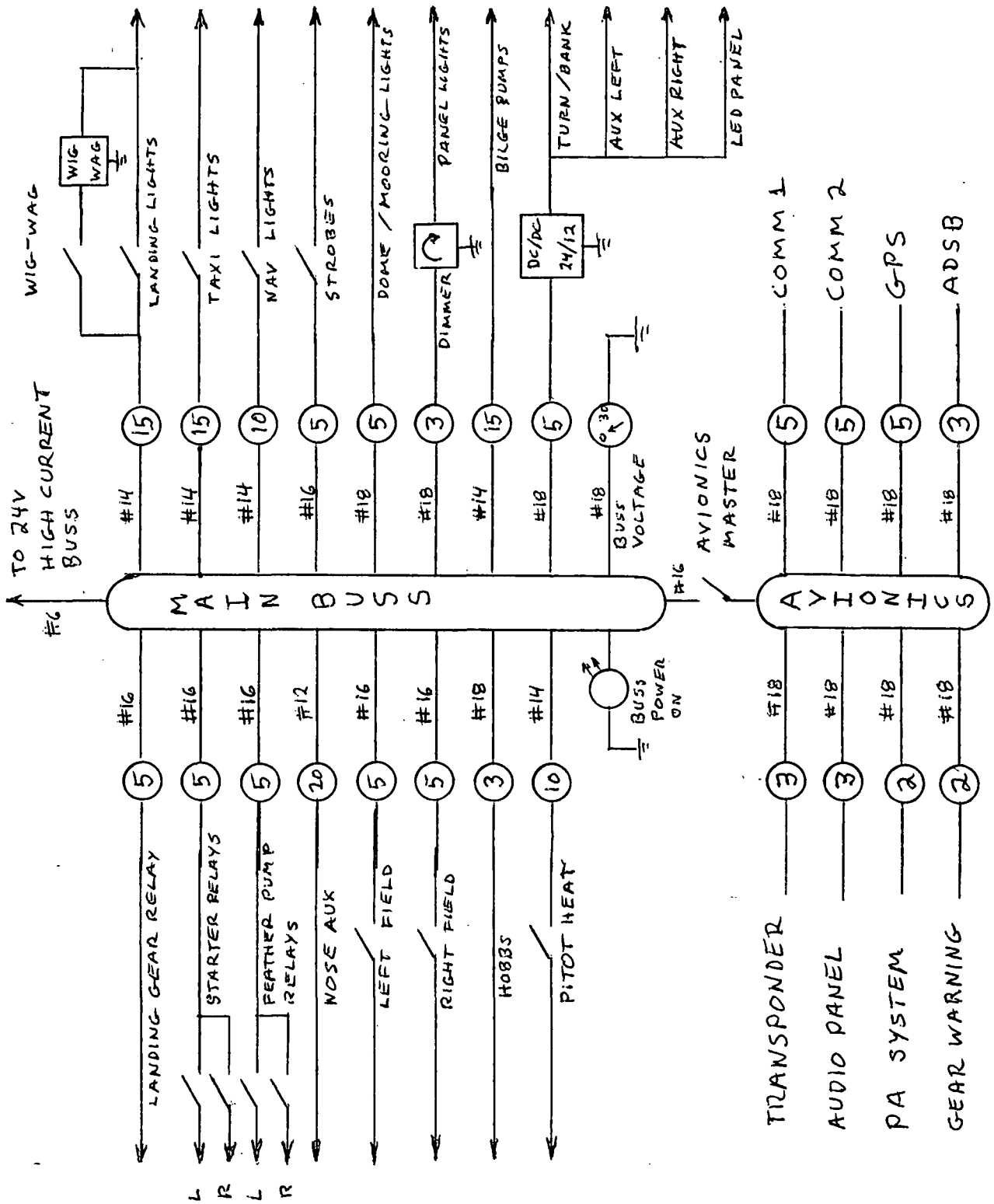
Instructions for continued airworthiness

Inspect aircraft electrical system for function and airworthiness at each requited inspection per FAR 43 Appendix "D". Inspect and maintain Alternator installation per attached Jasco instructions.

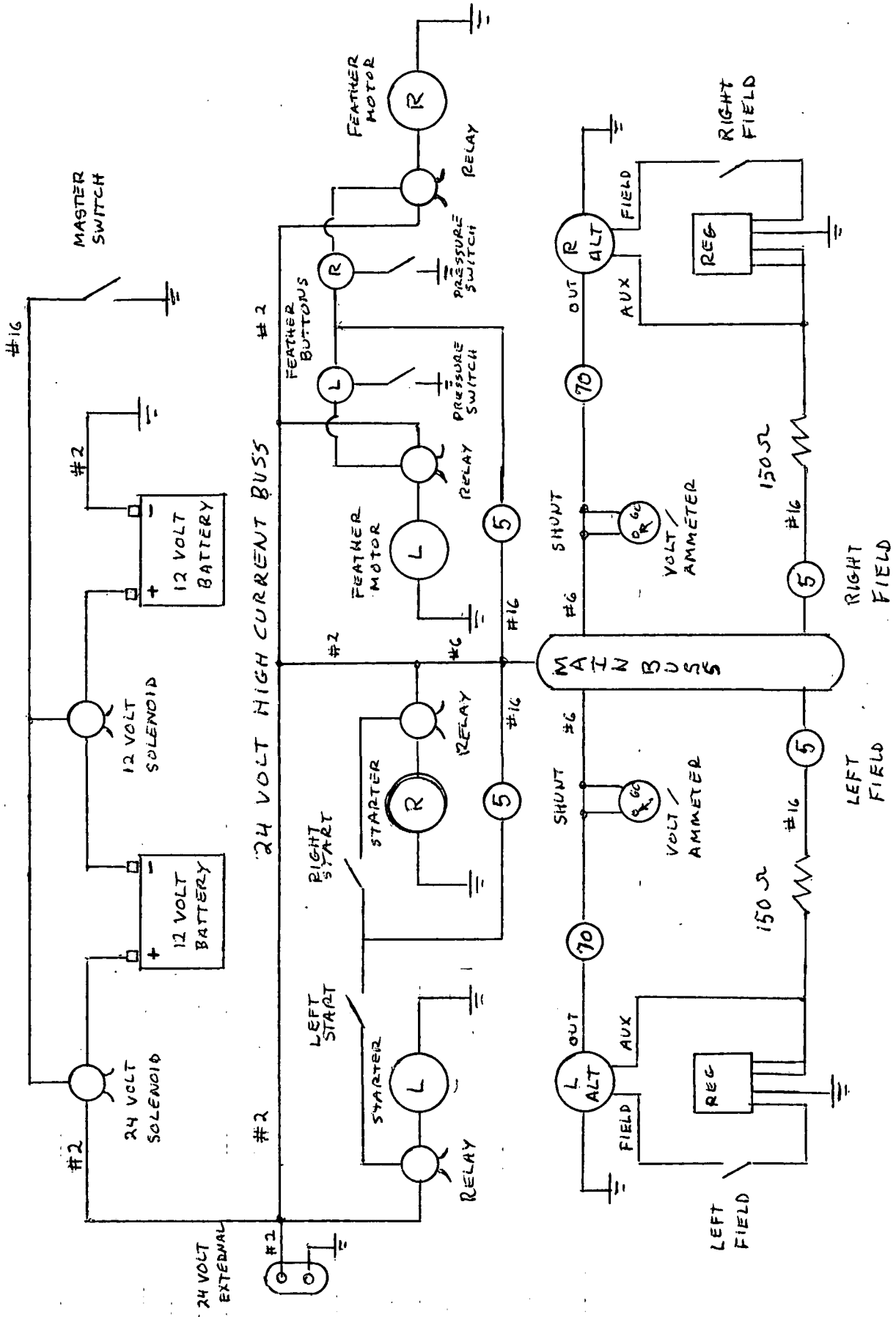
END

Additional Sheets Are Attached

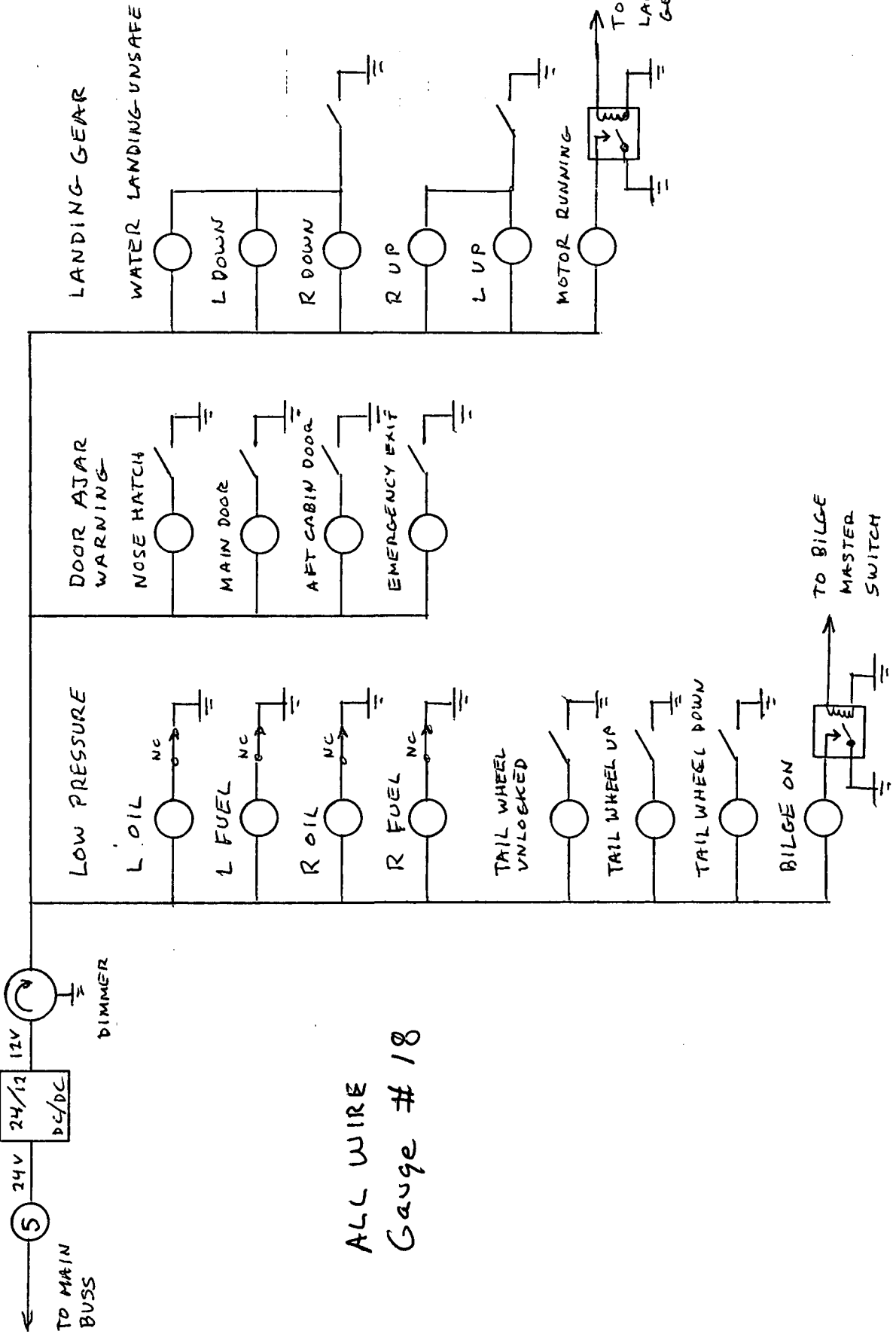




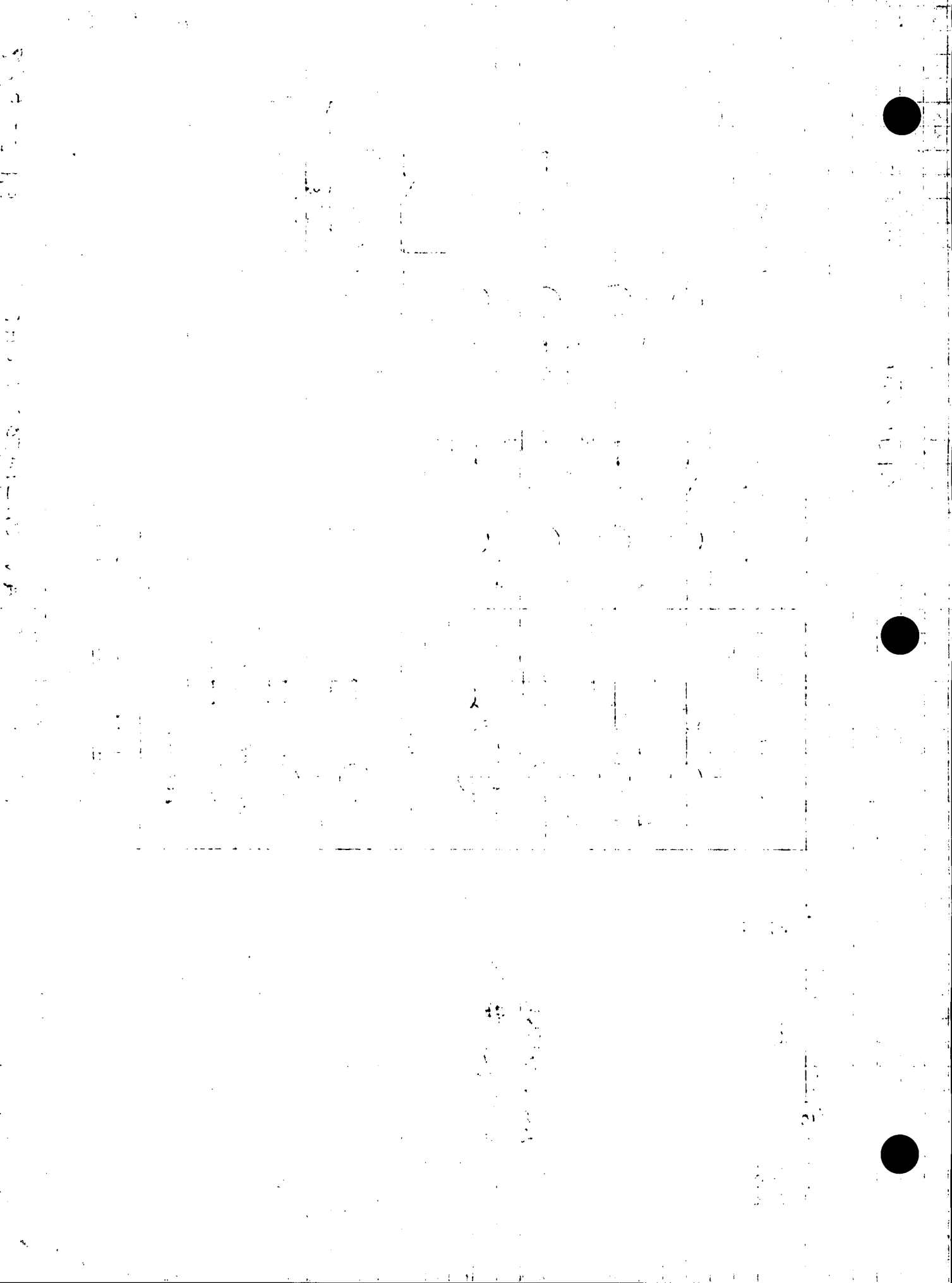


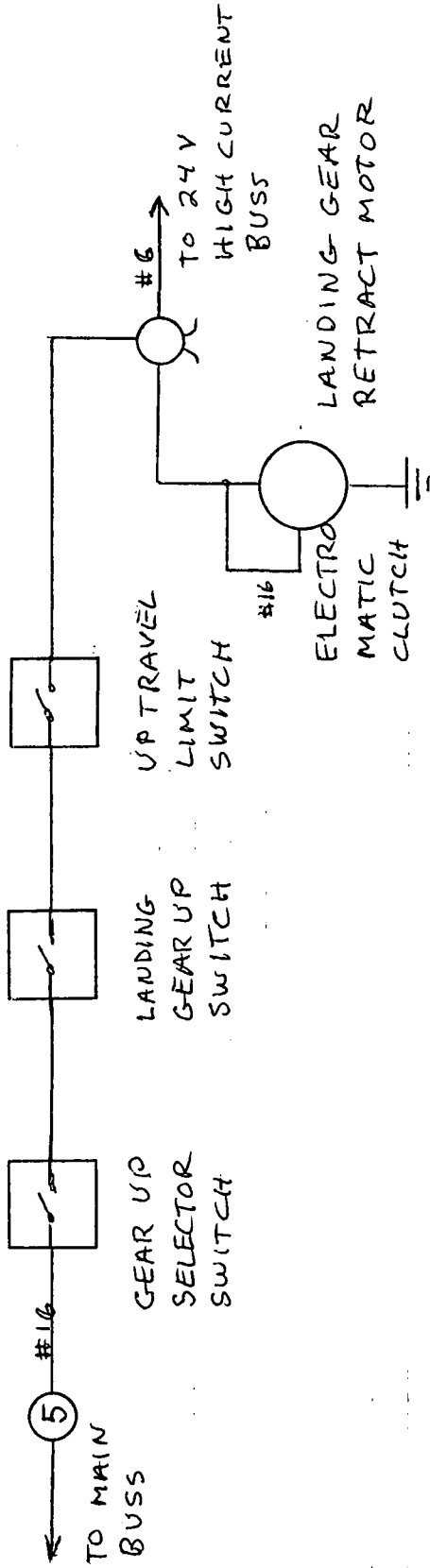






ALL WIRE
Gauge # 18





NOTE:

o LANDING GEAR MOTOR IS ONLY USED FOR GEAR RETRACT.

o LOWERING THE GEAR IS DONE BY SETTING THE GEAR SELECTOR TO THE DOWN POSITION AND USING THE CRANK.

o WHEN LANDING GEAR IS DOWN THE LIMIT SWITCH IS CLOSED.

o WHEN GEAR SELECTOR IS IN THE UP POSITION, AND THE LIMIT SWITCH IS CLOSED, AND THE LANDING GEAR MOTOR SWITCH IS SET TO THE UP POSITION - THE RETRACT MOTOR WILL RUN TO 80% RETRACT. THEN THE LIMIT SWITCH OPENS AND FINAL RETRACTION IS DONE BY CRANKING

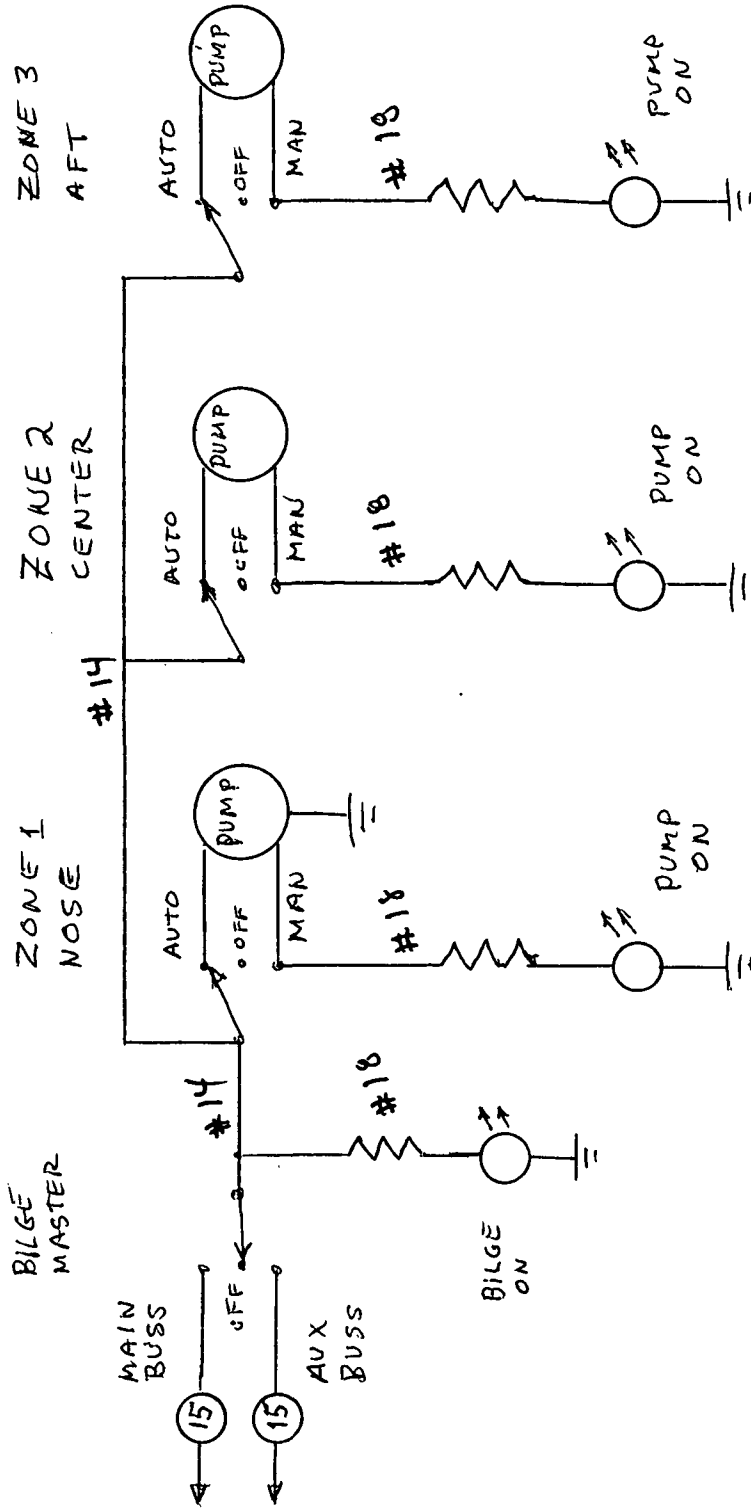
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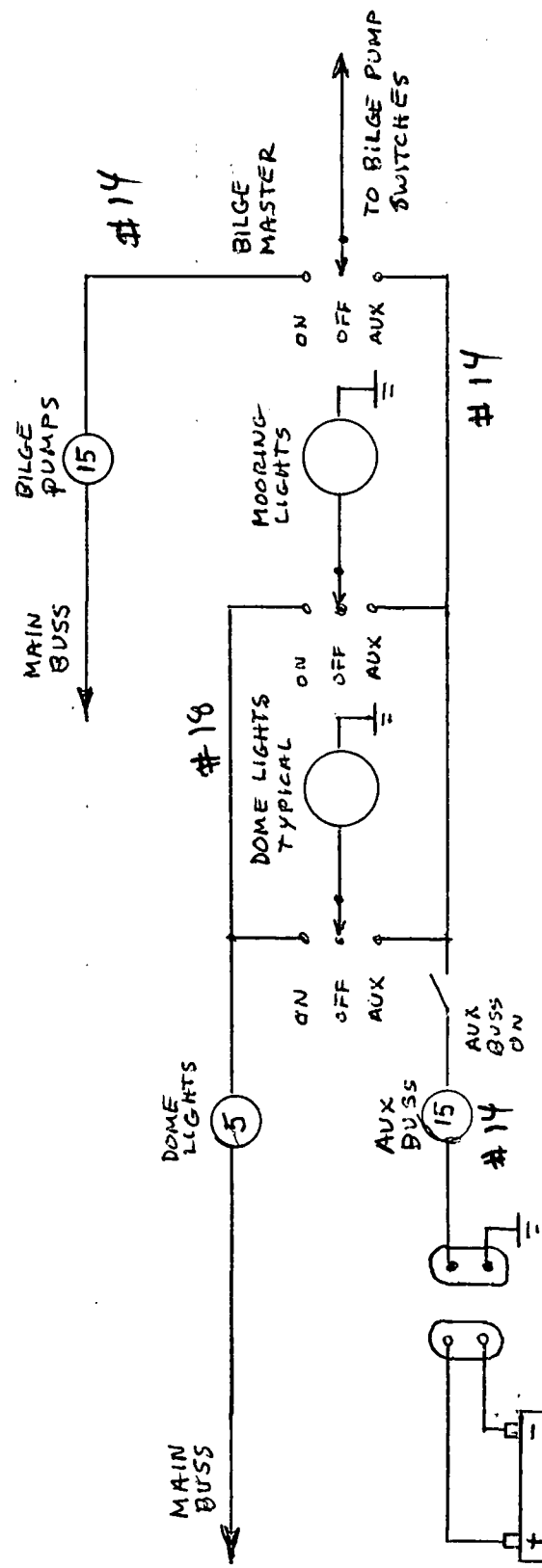
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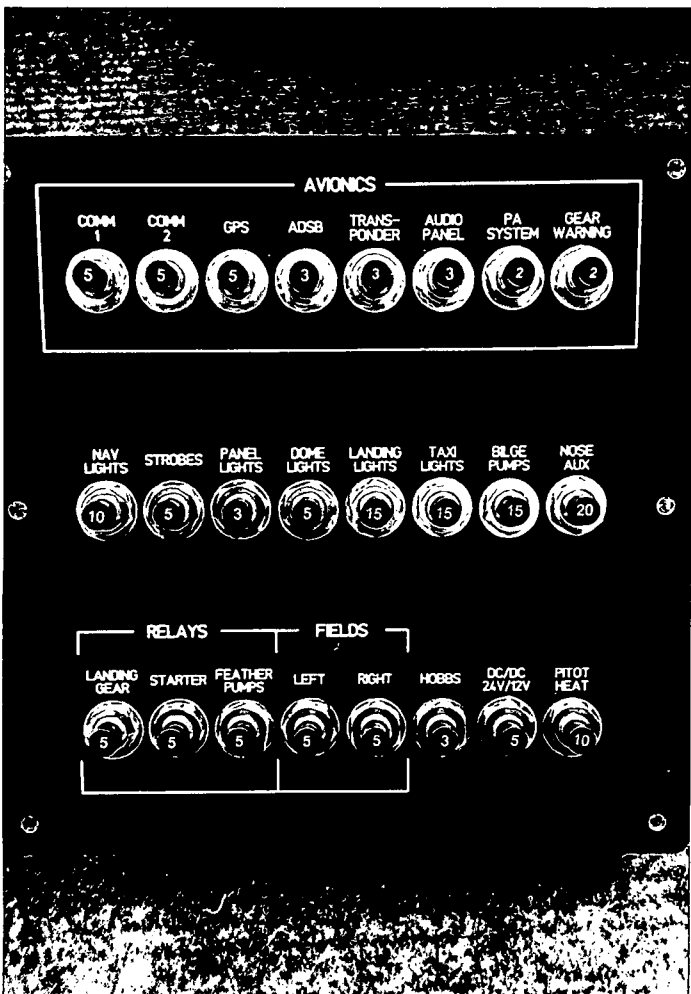
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N95467

ELECTRICAL PANNELS



Maintenance Instructions for the Jasco Alternator System

Compared to the best generator, the Jasco Alternator is lighter, more reliable, delivers more power, and requires less maintenance. In addition, you can extend the life of your Jasco charging system by following these basic maintenance instructions.

1. Inspect ram air inlet for obstructions prior to flight as part of your walk around.
2. Remove gear driven alternators every 250 hours and inspect rubber drive gear bushings for alignment, wear, or deformity. If damage is discovered, these inexpensive parts can be purchased from Skytronics to extend the life of your charging system.
3. Minor adjustment of system charging and voltage can be accomplished by adjusting the regulator variable resistor, located under the white protective cap on your Jasco Regulator. The variable resistor is very sensitive and requires only slight adjustment to bring system voltage to required levels. Your Jasco charging system is factory set, and should require no adjustment out of the box.
4. For abnormal operation including blown circuit breakers, failed fuses, erratic charging, no output or over voltage problems, contact the Skytronics, Inc. service department at 1-800-421-6846. We offer FREE factory evaluation including bench check of both alternator and regulator. In addition, our factory repair of your Jasco charging system carries the same warranty as a new system. Skytronics, Inc. is the only factory authorized repair station for your Jasco charging system, accept no substitute for repair.

Trouble shooting and general information is available Monday through Friday, 7:00 a.m. to 4:30 p.m. Pacific Standard Time by calling 310-322-6284.



- 24V, 50 AMP SYSTEM WITH CONTROLLER
- 24V, 70 AMP SYSTEM WITH CONTROLLER
- 24V, 100 AMP SYSTEM WITH CONTROLLER

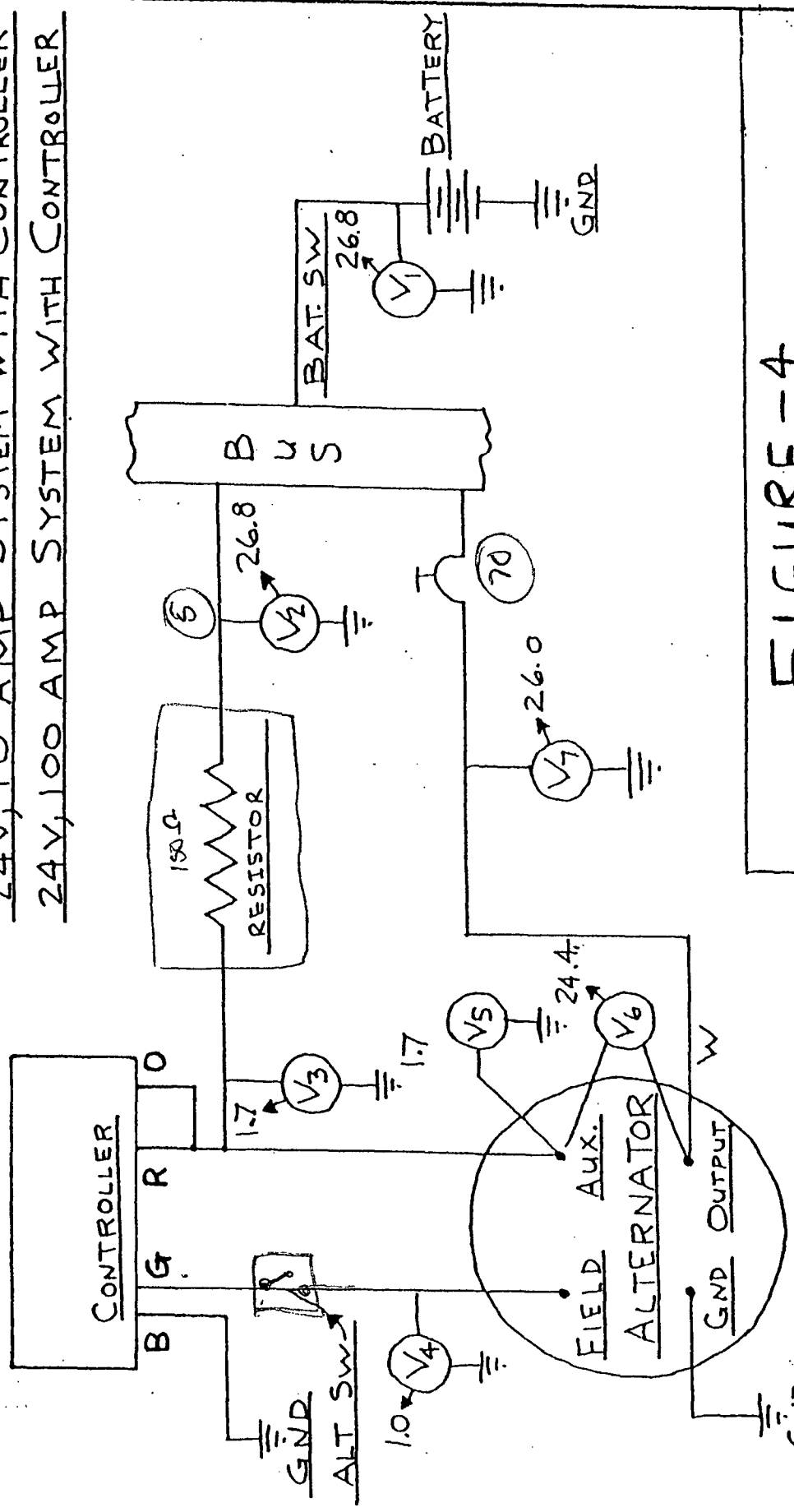


FIGURE - 4



DRAWN BY K.B.F.
REVISED 6-24-92

VOLTMETER LOCATION FOR TROUBLE
SHOOTING MEASUREMENTS

LEGEND

(V_x) = VOLTMETER, LOCATION FOR FIELD TROUBLE SHOOTING MEASUREMENTS

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that proper record-keeping is essential for transparency and accountability, particularly in financial matters. The text notes that without clear documentation, it becomes difficult to track expenses and revenues, which can lead to misunderstandings and disputes.

2. The second section focuses on the role of technology in modern record-keeping. It highlights how digital tools and software solutions have revolutionized the way data is stored and accessed. These technologies not only improve efficiency but also reduce the risk of human error and data loss. The document suggests that organizations should invest in reliable digital systems to ensure their records are secure and easily retrievable.

3. The third part of the document addresses the legal and regulatory requirements surrounding record-keeping. It outlines various laws and standards that govern how records must be maintained, stored, and disposed of. Compliance with these regulations is crucial to avoid legal penalties and ensure the integrity of the organization's data. The text provides a brief overview of key regulatory frameworks and offers practical advice on how to stay up-to-date with changing requirements.

4. The final section discusses the importance of regular audits and reviews of records. It explains that periodic audits help identify any discrepancies or areas where records may be incomplete or inaccurate. This process is vital for maintaining the overall health and accuracy of the organization's data. The document recommends implementing a structured audit schedule and involving relevant stakeholders to ensure thorough and effective reviews.

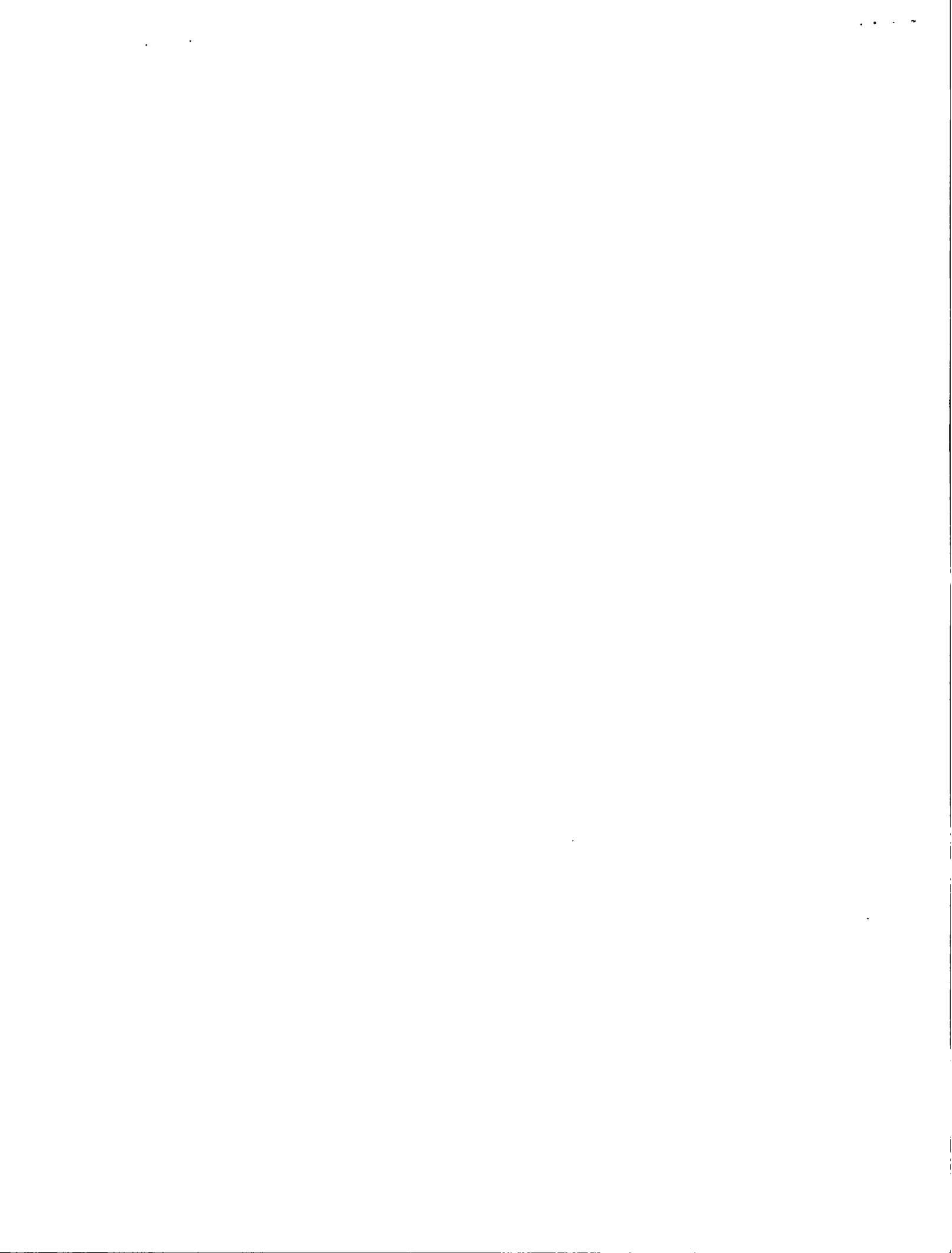
PARALLELING OF ALTERNATORS

On Dual Engine Aircraft, where two alternators provide electrical power to a common bus, it is necessary to balance the output of the alternators so that both contribute approximately the same amount of power to the bus load. This balancing procedure is called "Paralleling" of alternators.

To accomplish the load balancing or paralleling procedure, an accurate ammeter, either of the shunt type or direct reading type should be installed in the output line of each alternator. It does not have to be a permanent installation if so desired, as the ammeters are a must only for the paralleling procedure. The more accurate the ammeter the more perfect the load balancing. However, for practical purposes, ± 10 to 20% load balancing between alternators is satisfactory.

With both engines off, start one engine and allow it to stabilize. Adjust regulators to 14.5 volts for a 12 volt system, and 29 volts for a 24 volt system. Shut the engine down and repeat this procedure for the other engine. This establishes a common voltage datum.

Place a load on the system bus, roughly one-half ($\frac{1}{2}$) the operational load is ideal, lights or any applicable load is satisfactory. Start both engines and allow them to stabilize. Now the paralleling operation will be done with one regulator only. It does not make any difference which one you choose to use. Do not adjust the other regulator, using one regulator makes life simple! Observe the ammeter readings of both alternators and adjust (one) regulator until both alternators outputs are approximately the same. As you slowly adjust the regulator, you will see a rise in current from one of the alternators, and a drop in current from the other. Do not panic, adjust the regulator slowly, as it is a sensitive adjustment. Adjust the one regulator until both alternators are providing approximately the same output to the bus.



MAJOR REPAIR AND ALTERATION (Airframe, Powerplant, Propeller, or Appliance)	OMB No. 2120-0020 Exp: 8/31/2014	Electronic Tracking Number
	For FAA Use Only	

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1. Aircraft	Nationality and Registration Mark N95467	Serial No. 1161	
	Make Grumman	Model G21	Series A
2. Owner	Name (As shown on registration certificate) Pemberton, Addison J		
	Address (As shown on registration certificate) Address 5302 N Vista Ct		
	City Spokane	State WA	
	Zip 99212	Country USA	

3. For FAA Use Only

THE DATA IDENTIFIED HEREIN COMPLIES WITH APPLICABLE AIRWORTHINESS REQUIREMENTS AND IS APPROVED ONLY FOR THE ABOVE DESCRIBED AIRCRAFT SUBJECT TO CONFORMITY INSPECTION BY A PERSON AUTHORIZED IN FAR 43.7

1/29/2015
DATE

Charles J. Hake
FAA INSPECTOR, SPOKANE FSDO

NM132022

4. Type		5. Unit Identification			
Repair	Alteration	Unit	Make	Model	Serial No.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	AIRFRAME	_____	(As described in Item 1 above)	_____
<input type="checkbox"/>	<input type="checkbox"/>	POWERPLANT			
<input type="checkbox"/>	<input type="checkbox"/>	PROPELLER			
<input type="checkbox"/>	<input type="checkbox"/>	APPLIANCE	Type		
			Manufacturer		

6. Conformity Statement			
A. Agency's Name and Address		B. Kind of Agency	
Name Addison Pemberton	Address 5302 N Vista Ct	<input checked="" type="checkbox"/> U. S. Certificated Mechanic	Manufacturer
City Spokane State WA	Zip 99212 Country USA	<input type="checkbox"/> Foreign Certificated Mechanic	C. Certificate No.
		<input type="checkbox"/> Certificated Repair Station	2169140
		<input type="checkbox"/> Certificated Maintenance Organization	

D. I certify that the repair and/or alteration made to the unit(s) identified in item 5 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.

Extended range fuel per 14 CFR Part 43 App. B <input type="checkbox"/>	Signature/Date of Authorized Individual
	<i>Cedelin Pemberton</i> 2169140 A7P 02-10-15

7. Approval for Return to Service

Pursuant to the authority given persons specified below, the unit identified in item 5 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is Approved Rejected

BY	FAA Fit. Standards Inspector	Manufacturer	Maintenance Organization	Persons Approved by Canadian Department of Transport
	FAA Designee	Repair Station	<input checked="" type="checkbox"/> Inspection Authorization	Other (Specify)

Certificate or Designation No. 2169140 A7P/1A	Signature/Date of Authorized Individual
	<i>Cedelin Pemberton</i> 2169140 A7P/1A 02-10-2015

THE DATA IS ONLY VALID FOR THE DATE AND TIME OF THE INSPECTION.
APPLICABLE AIRBORNE INSPECTION PROCEDURES SHOULD BE USED.
ONLY FOR THE ABOVE DESCRIBED AIRBORNE INSPECTION.
CONFORMITY INSPECTED BY A PERSON AUTHORIZED BY FAA.

FAA INSPECTOR, SPOKANE FSDO

DATE

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.)

N95467 Grumman G21A

1-27-2015

Nationality and Registration Mark

Date

Altered Piper Aircraft PA-28 pilot seats so as to be installed onto PMA approved Brownline seat tracks .Brownline seat tracks previously installed per 337 to aircraft cabin floor per STC SA1969WE and McKinnon Drawing MPD 5024 .Provision for up to 3 seats to be installed on left side of aircraft cabin between stations 15 and 23 and 4 seats to be installed on right side of aircraft cabin between station 15 and 26 (total of 7 seats).Original aircraft approved for up to 8 cabin seats to be installed.Brownline seat rail design allows for easy seat reconfiguration, removal and installation.Brownline system provides for forward or rear facing seat configurations as desired.

Piper PA-28 pilot seats altered in the following manor.

- 1) Removed front Piper seat pin lock assemblies
- 2) Removed wheel roller at each attach point by removing AN4-15 bolts, washer and AN 365 fiber lock nuts.
- 3) Cut bottom of steel seat feet to a length of .750" from bottom of seat structure tubes.
- 4) Cut original Piper pin lock tube guide from front seat bottoms at each attach point.
- 5) Fabricated 1" X 1" X .750 adaptor blocks from Aluminum 2024-T3 and bored a .920" hole through block about the .750" height dimension.
- 6) Installed McFarlane PMA MC41528-14 Anchor Quick Release seat foot assembly for use with Brownline seat tracks into adaptor block .920" bore.
- 7) Aligned assembly and matched drilled .250" though adaptor block and MC41528-14 through existing Piper seat track roller holes in 4ea seat bottom feet.
- 8) Fasted assembly's to 4 each Piper seat foot with AN4-15A bolt.AN960 washer and AN 365 fiber lock nut.

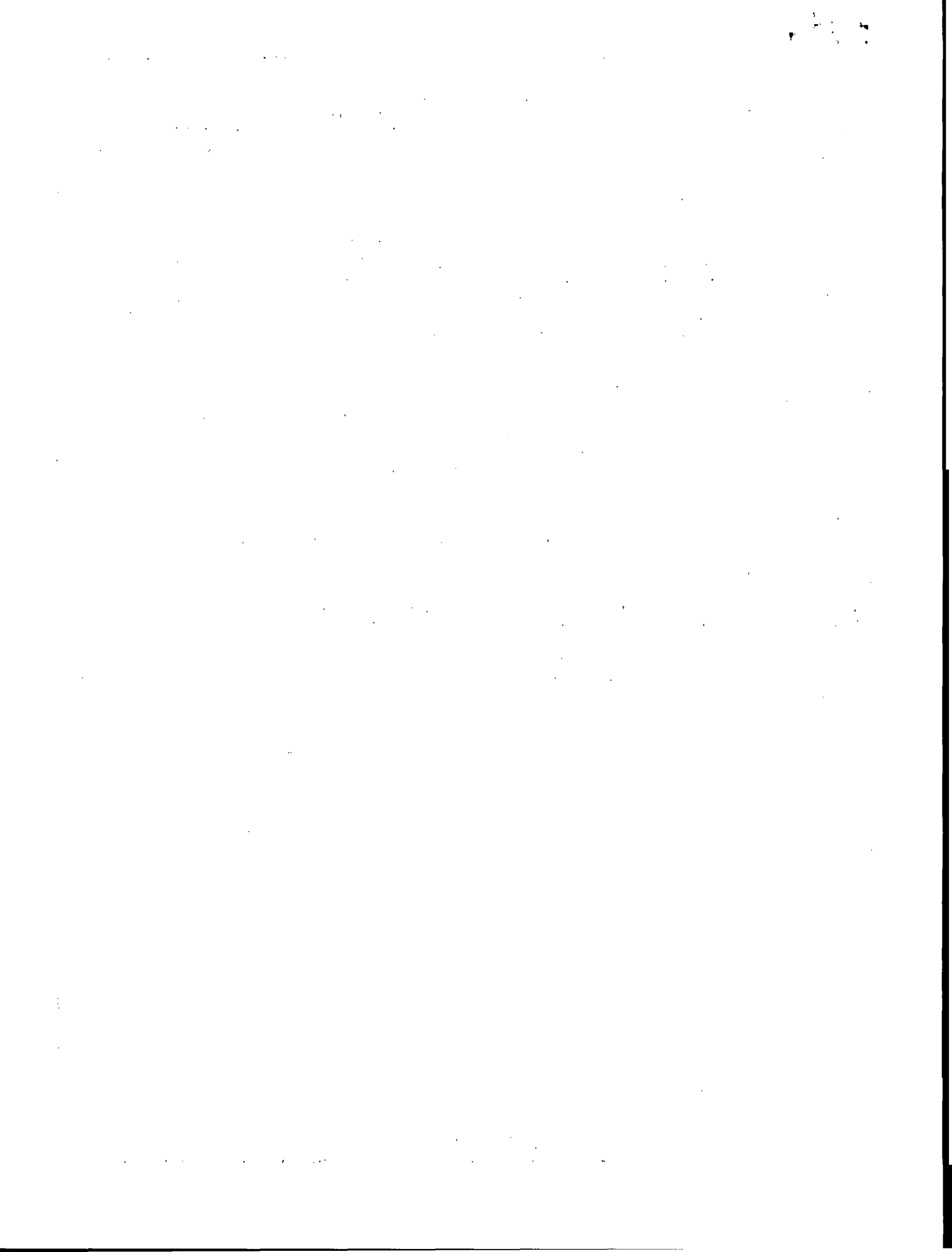
Note: TSO approved Seat belts for each seat to be fastened to Brwonline seat track with PMA McFarlane 32401 Fitting rated for 2,666 lbs. All seat belt loads carried to aircraft floor and aircraft primary structure.

Instructions for continued air worthiness

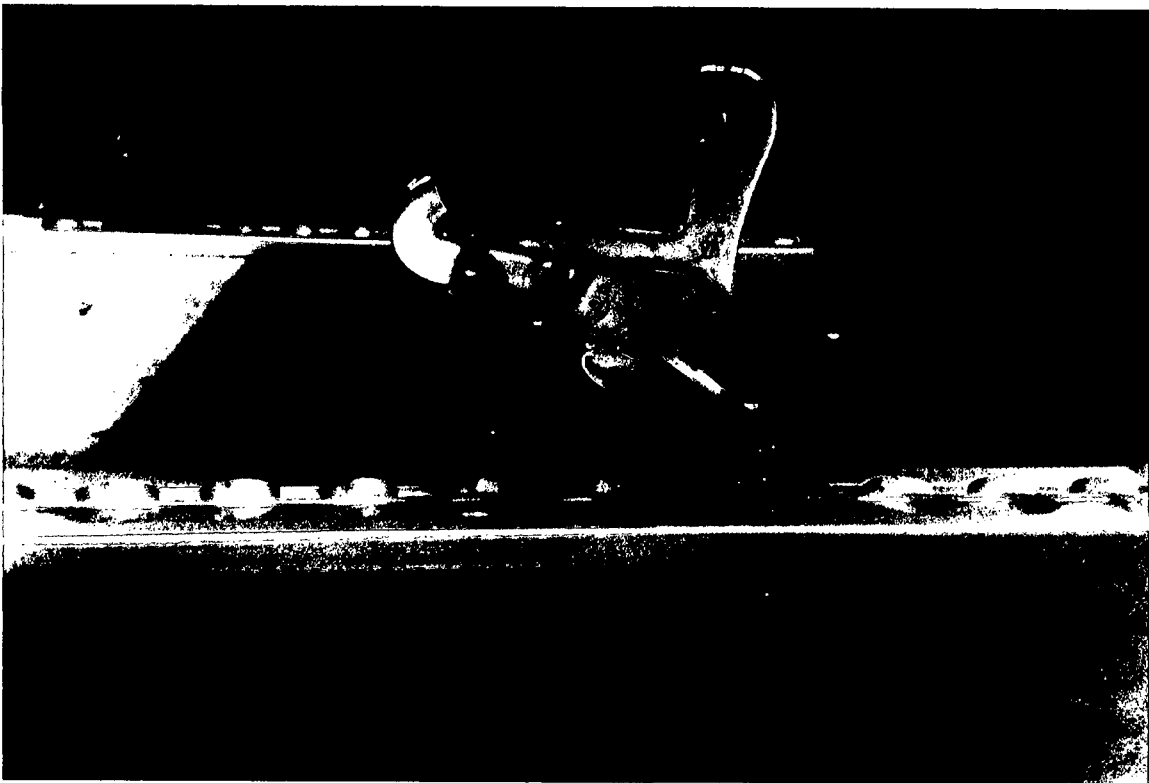
The above seats, seat belts and seat belt attachments shall be inspected at each 100 hour inspection/annual inspection in accordance with FAR Part 43 Appendix "D".

END

Additional Sheets Are Attached



N95467 1-27-2015



1. The first part of the document discusses the importance of maintaining accurate records of all transactions.

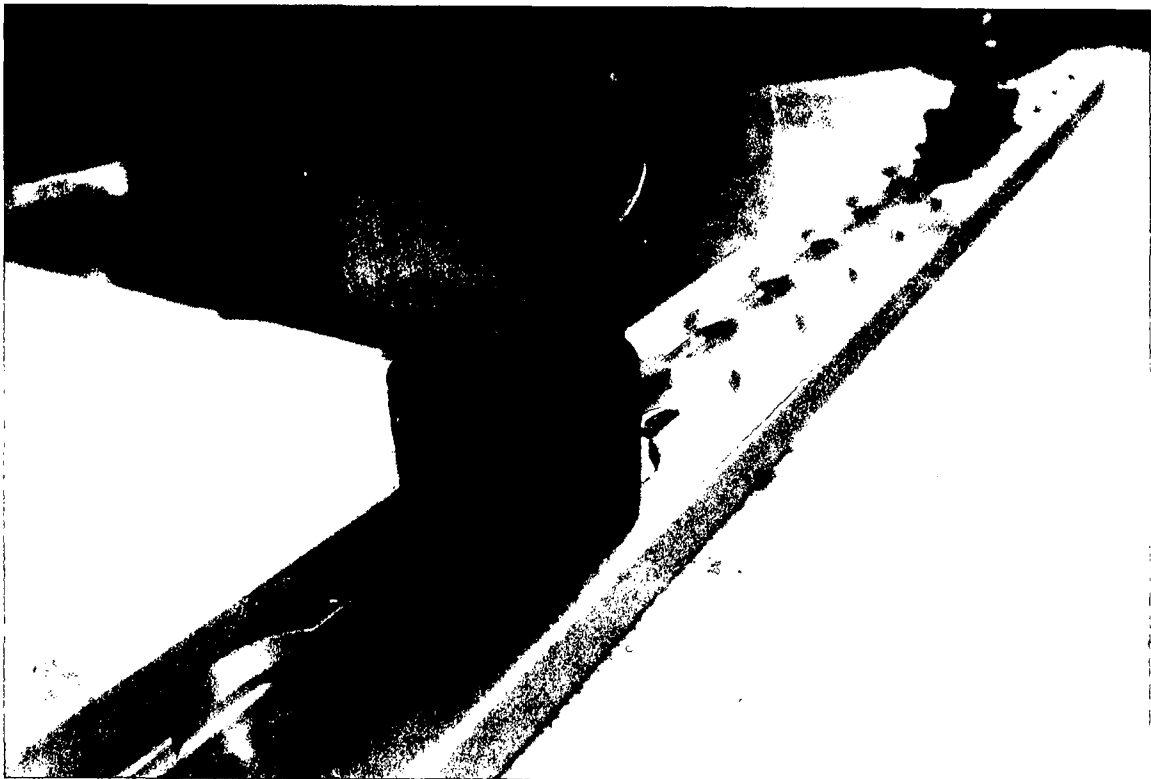
2. It is essential to ensure that all data is entered correctly and that the system is regularly updated.


3. The second part of the document outlines the various methods used to collect and analyze data.

4. These methods include surveys, interviews, and focus groups, each with its own strengths and weaknesses.

5. The final part of the document provides a summary of the findings and offers recommendations for future research.

N95467 1-27-2015



 US Department of Transportation Federal Aviation Administration	MAJOR REPAIR AND ALTERATION (Airframe, Powerplant, Propeller, or Appliance)	OMB No. 2120-0020 Exp: 8/31/2014	Electronic Tracking Number
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1. Aircraft	Nationality and Registration Mark N95467	Serial No. 1161			
	Make Grumman	Model G21	Series A		
2. Owner	Name (As shown on registration certificate) Pemberton, Addison J		Address (As shown on registration certificate)		
			Address 5302 N Vista Ct		
			City Spokane	State WA	
			Zip 99212	Country USA	

3. For FAA Use Only

THE DATA IDENTIFIED HEREIN COMPLIES WITH APPLICABLE AIRWORTHINESS REQUIREMENTS AND IS APPROVED ONLY FOR THE ABOVE DESCRIBED AIRCRAFT SUBJECT TO CONFORMITY INSPECTION BY A PERSON AUTHORIZED IN FAR 43.7

1/29/2015 *Charles P. Roberts*
 DATE FAA INSPECTOR, SPOKANE FSDO

MM132023

4. Type		5. Unit Identification			
Repair	Alteration	Unit	Make	Model	Serial No.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	AIRFRAME	_____	(As described in Item 1 above)	_____
<input type="checkbox"/>	<input type="checkbox"/>	POWERPLANT			
<input type="checkbox"/>	<input type="checkbox"/>	PROPELLER			
<input type="checkbox"/>	<input type="checkbox"/>	APPLIANCE	Type		
			Manufacturer		

6. Conformity Statement			
A. Agency's Name and Address		B. Kind of Agency	
Name Addison Pemberton	Address 5302 N Vista Ct City Spokane State WA Zip 99212 Country USA	<input checked="" type="checkbox"/>	U. S. Certificated Mechanic
		<input type="checkbox"/>	Foreign Certificated Mechanic
		<input type="checkbox"/>	Certificated Repair Station
		<input type="checkbox"/>	Certificated Maintenance Organization
		C. Certificate No. 2169140	

D. I certify that the repair and/or alteration made to the unit(s) identified in item 5 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.

Extended range fuel per 14 CFR Part 43 App. B <input type="checkbox"/>	Signature/Date of Authorized Individual <i>Cedelin Pemberton</i> 2169140 A#P 02-10-15
--	---

7. Approval for Return to Service

Pursuant to the authority given persons specified below, the unit identified in item 5 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is Approved Rejected

BY	FAA Fit. Standards Inspector	Manufacturer	Maintenance Organization	Persons Approved by Canadian Department of Transport
	FAA Designee	Repair Station <input checked="" type="checkbox"/>	Inspection Authorization	Other (Specify)

Certificate or Designation No. 2169140 A#P/1A	Signature/Date of Authorized Individual <i>Cedelin Pemberton</i> 02-10-2015
---	---

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ONLY FOR THE ABOVE DESCRIBED AIRCRAFT SUBJECT TO
CONFORMITY INSPECTION BY A PERSON AUTHORIZED IN PAR 43.7

DATE

FAA INSPECTOR, SPOKANE FSDO

NOTICE

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8. Description of Work Accomplished

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

N95467 Grumman G21A

1-27-2015

Nationality and Registration Mark

Date

Cover

Recovered Ailerons, Elevators and Rudder with AirTech Coatings Inc. covering process using Ceconite 101 heavy 3.4 ounce fabric. Fabric attached with AirTech UA55 Fabric adhesive and coated with 2 coats of AirTech PFU 1030-F primer. Finished with 3 coats of ATCHSM polyurethane paint Air Force Blue 000768, Light Blue 000771 or Juneau White 000015. All work accomplished per:

MANUAL AT 101 REVISION 8 June 1 1997
ORIGINAL ISSUE DATE: SEPT. 19, 1989
COPYRIGHT: JUNE 1, 1997
AIRTECH COATINGS
1 PARADISE PARK RD.
JACKSONVILLE, AR 72076


Follow on to Air Tech Coatings Inc. STC SA7965SW for the Beechcraft D18A and and Beechcraft S18A with similar operating speeds and performance as the Grumman G21A "Goose"

Instructions for continued airworthiness

Aircraft fabric and cover to be inspected at 100 hr./annual inspections per FAR Part 43 appendix "D"

END

Additional Sheets Are Attached

 US Department of Transportation Federal Aviation Administration	MAJOR REPAIR AND ALTERATION (Airframe, Powerplant, Propeller, or Appliance)	OMB No. 2120-0020 Exp: 8/31/2014	Electronic Tracking Number
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1. Aircraft	Nationality and Registration Mark N95467	Serial No. 1161	
	Make Grumman	Model G21	Series A
2. Owner	Name (As shown on registration certificate) Pemberton, Addison J		
	Address (As shown on registration certificate) Address 5302 N Vista Ct		
	City Spokane	State Wa	
	Zip 99212	Country USA	

3. For FAA Use Only

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11/19/2014 DATE Charles D. Hakala SIGNATURE
FAA INSPECTOR, SPOKANE FSDO

NM13 2003

4. Type		5. Unit Identification			
Repair	Alteration	Unit	Make	Model	Serial No.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	AIRFRAME	<u>Grumman G21A</u>	(As described in Item 1 above)	<u>1161</u>
<input type="checkbox"/>	<input type="checkbox"/>	POWERPLANT			
<input type="checkbox"/>	<input type="checkbox"/>	PROPELLER			
<input type="checkbox"/>	<input type="checkbox"/>	APPLIANCE	Type		
			Manufacturer		

6. Conformity Statement

A. Agency's Name and Address		B. Kind of Agency		C. Certificate No.	
Name <u>Addison Pemberton</u>	Address <u>5302 N Vista Ct</u> City <u>Spokane</u> State <u>Wa</u> Zip <u>99212</u> Country <u>USA</u>	<input checked="" type="checkbox"/>	U. S. Certificated Mechanic	2169140	
		<input type="checkbox"/>	Foreign Certificated Mechanic		
		<input type="checkbox"/>	Certificated Repair Station		
		<input type="checkbox"/>	Certificated Maintenance Organization		

D. I certify that the repair and/or alteration made to the unit(s) identified in item 5 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.

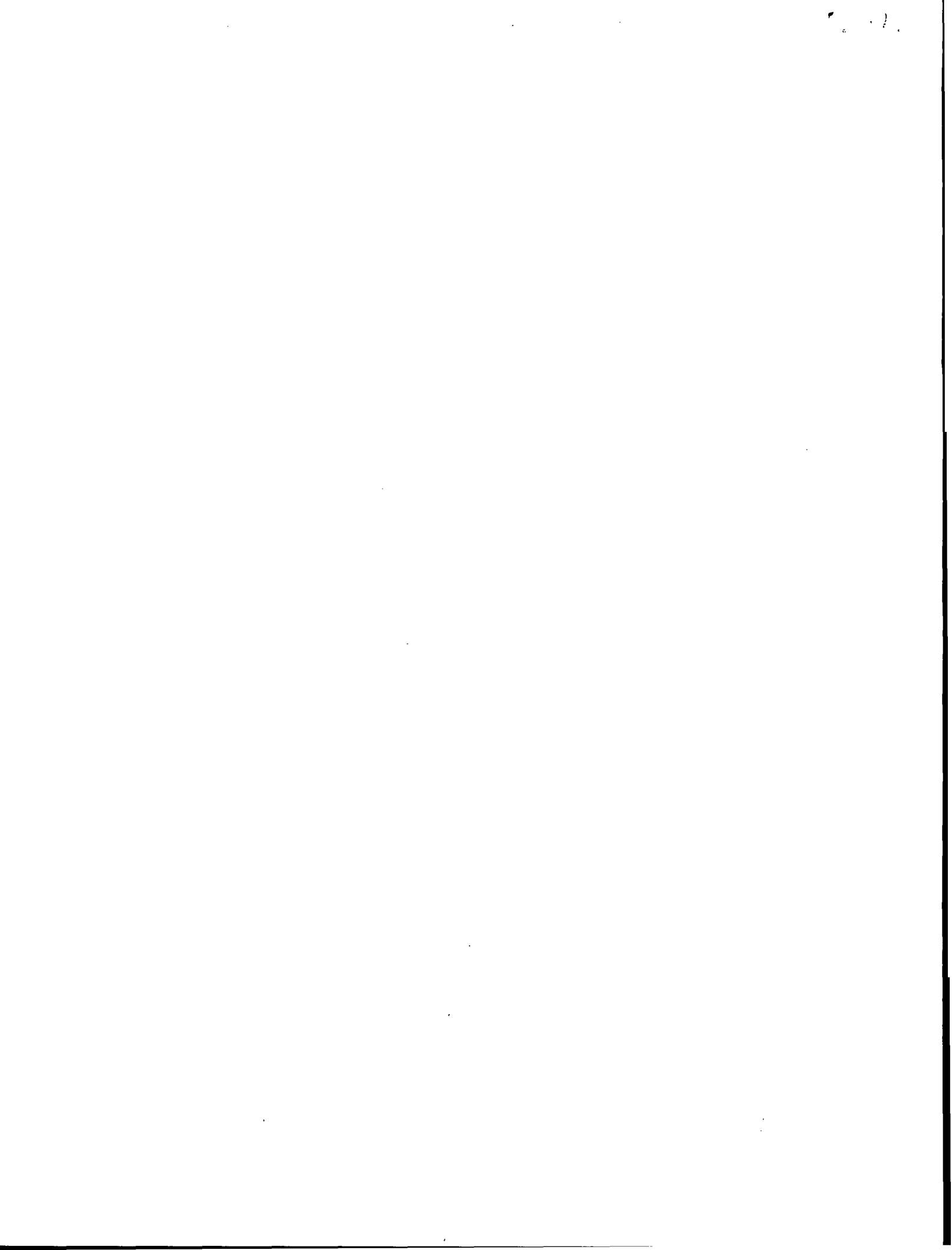
Extended range fuel per 14 CFR Part 43 App. B <input type="checkbox"/>	Signature/Date of Authorized Individual <u>Charles D. Hakala</u> 2169140 A7P 1-20-2015
--	--

7. Approval for Return to Service

Pursuant to the authority given persons specified below, the unit identified in item 5 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is Approved Rejected

BY	FAA Flt. Standards Inspector	Manufacturer	Maintenance Organization	Persons Approved by Canadian Department of Transport
	FAA Designee	Repair Station	<input checked="" type="checkbox"/> Inspection Authorization	Other (Specify)

Certificate or Designation No. 2169140 A7P/1A	Signature/Date of Authorized Individual <u>Charles D. Hakala</u> 1-20-2015
---	--



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.)

N95467

11-19-2014

Nationality and Registration Mark

Date

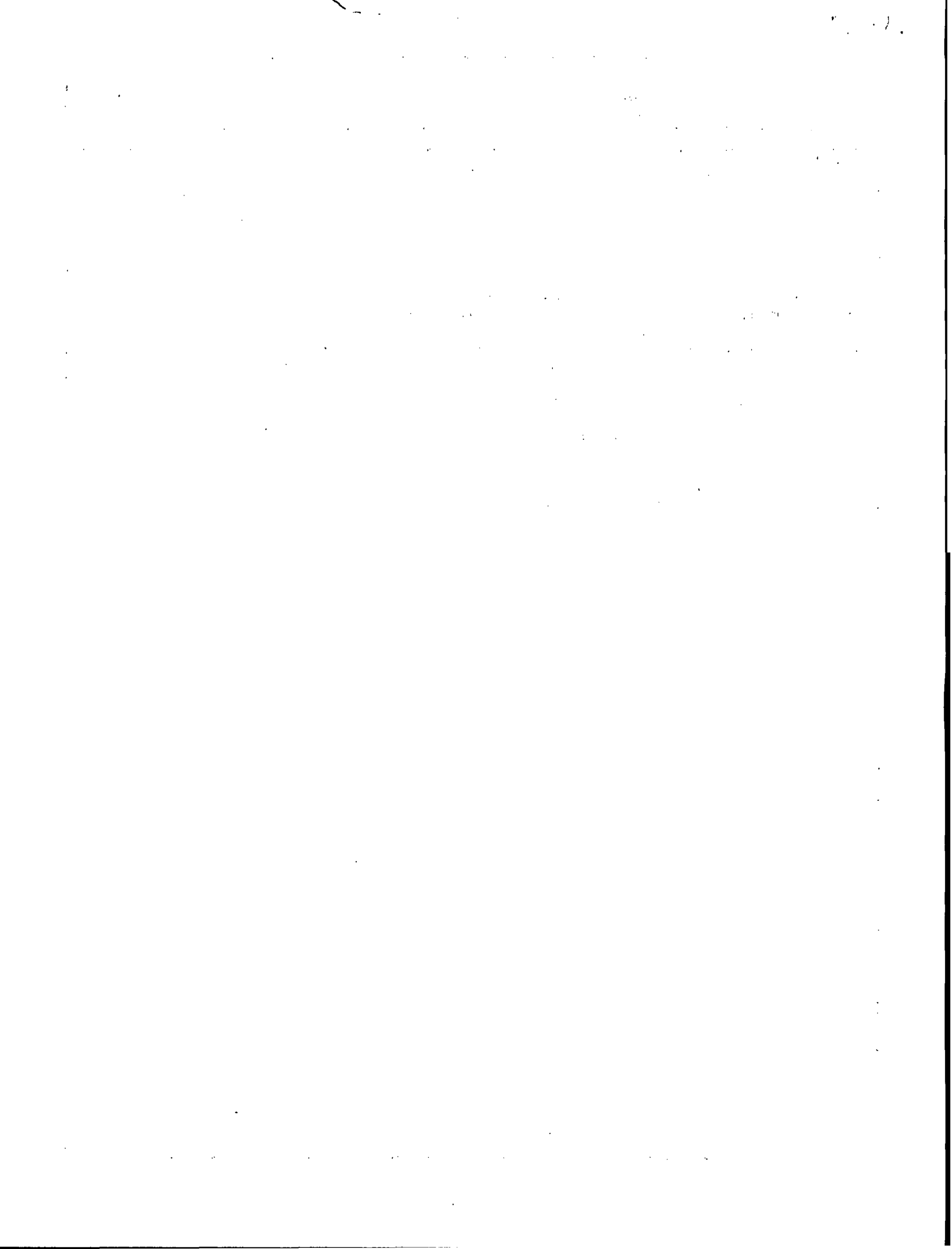
Brake Master cylinder 337 field approval proposal for Grumman G21A N95467 Serial number 1161

Original 7/8 bore Grumman brake master cylinders Bendix part number 56324 no longer available or supported by manufacturer reference Grumman drawing number 12684. Installed Grove Aircraft 7/8 bore master cylinders part number 679-2 using existing Grumman linkage and hardware configuration. Installed Grove Aircraft remote hydraulic reservoir part number 067-054 to bulk head in front of pilot rudder pedals. All original Grumman G21A brake plumbing retained. Extended Grove master cylinder piston rod 3" with .437 OD aluminum 2014 -T3 shaft per original Grumman part. This was accomplished by drilling and threading the extension end of the original Grumman piston rod to accommodate the 5/16-24 Grove master cylinder piston rod and jam nut. Installed using original Grumman linkage and hardware. Reworked top mounting .500 boss on Grove master cylinder to flat sided .375 so as to mate to original Grumman rudder pedal link. Master Cylinder functions with already approved 337 for Cleveland brake STC SA99GL compatible with 5606 hydraulic fluid. All work performed in accordance with AC 43.13-1B and good aircraft practice.

Instructions for Continued airworthiness. Inspect brake system in accordance with Cleveland brake inspection requirements and STC per each required inspection for airworthiness, operation and safety.

End

Additional Sheets Are Attached



N95467

11/19/14

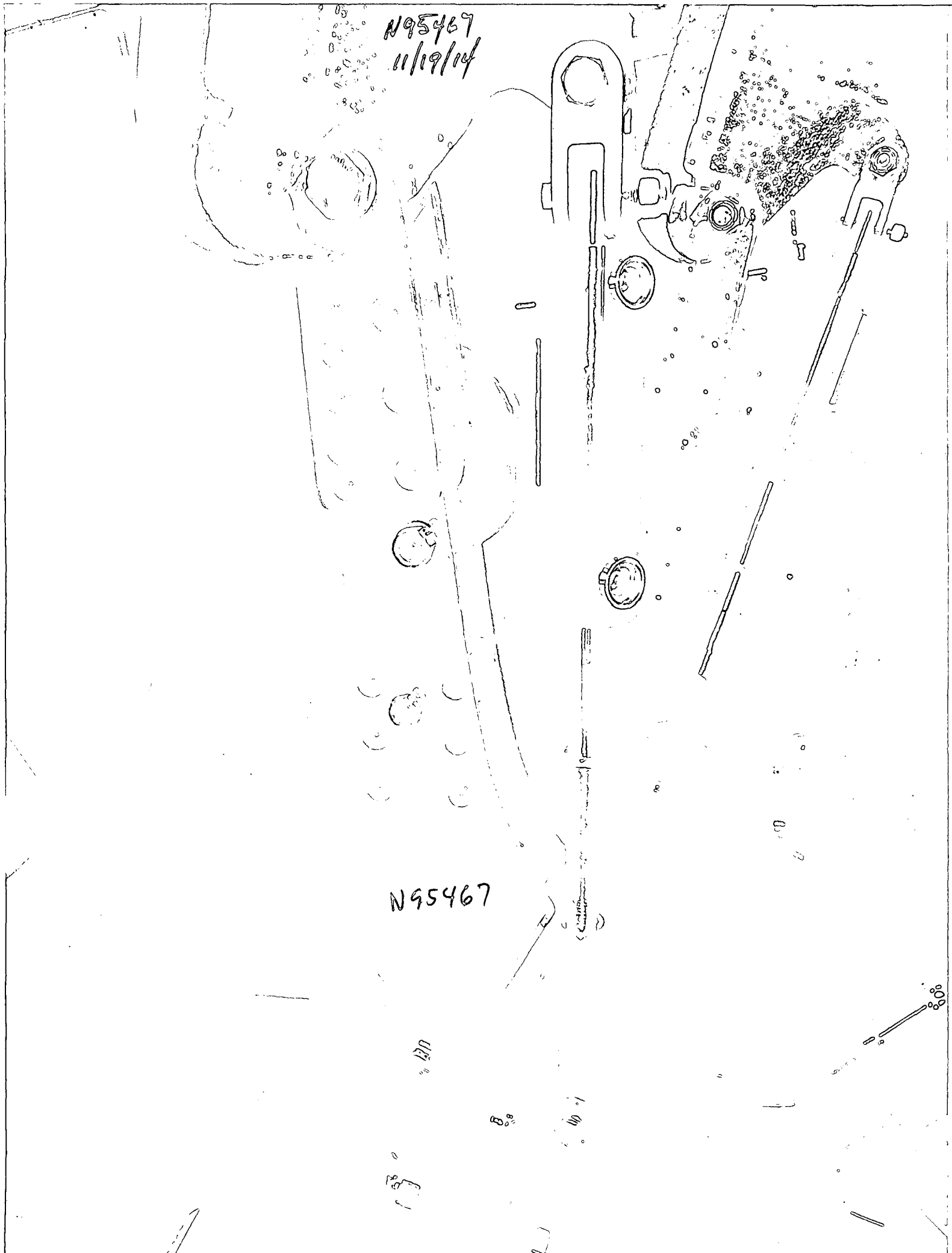
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N95467 11/19/14

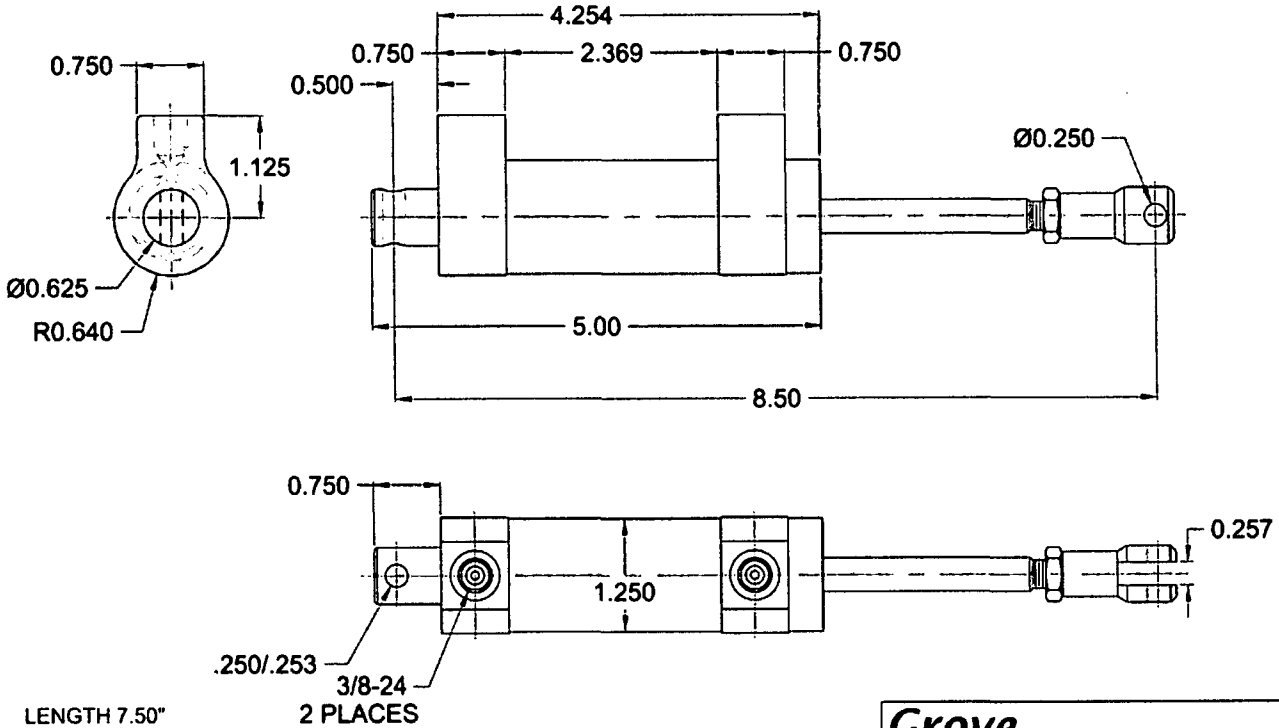
Grove

Aircraft Landing Gear Systems Inc.

679-2 MASTER CYLINDER

1800 Joe Crosson Drive
El Cajon, CA 92020
619.562.1268

HOME | WHEELS & BRAKES | LANDING GEAR | ACCESSORIES | STC's | PRODUCT CATALOG | PLACE AN ORDER | CONTACT US | SEARCH



LENGTH 7.50"
BORE .875"
STROKE 1.02
PORTS 3/8-24 MS PORT
WEIGHT .75 LBS
USE MIL-H-5606 HYD FLUID
DISPLACEMENT 0.62 CU. IN.
MAX OPERATING PRESS 1,200 PSI

Grove

Aircraft Landing Gear Systems Inc.
1800 JOE CROSSON DRIVE, ELCAJON, CA 92020

MASTER CYLINDER

TOLERANCE DECIMAL .XX = +/- .030 DECIMAL .XXX = +/- .010 DECIMAL .XXXX = +/- .005 ANGLE = 0.25 DEGREES			
DRAWN BY R.P.GROVE	DWG/PART NO. 679-2	REV IR	
FINAL ASSY	DATE 7/16/09	SCALE NONE	SHEET 1 OF 1

N95467

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US Department of Transportation Federal Aviation Administration

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

OMB No. 2120-0020 Exp: 8/31/2014

Electronic Tracking Number

For FAA Use Only

INSTRUCTIONS: Print or type all entries. See Title 14 CFR §43.9, Part 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. §44701). Failure to report can result in a civil penalty for each such violation. (49 U.S.C. §46301(a))

1. Aircraft: Nationality and Registration Mark N95467, Serial No. 1161, Make Grumman, Model G21, Series A. 2. Owner: Name (As shown on registration certificate) Pemberton, Addison J, Address (As shown on registration certificate) 5302 N Vista Ct, City Spokane, State Wa, Zip 99212, Country USA.

3. For FAA Use Only

4. Type: Repair, Alteration. 5. Unit Identification: Unit AIRFRAME, Make Grumman G21A, Model (As described in Item 1 above), Serial No. 1161.

6. Conformity Statement

A. Agency's Name and Address: Addison Pemberton, 5302 N Vista Ct, Spokane, Wa, 99212. B. Kind of Agency: U. S. Certificated Mechanic. C. Certificate No. 2169140.

D. I certify that the repair and/or alteration made to the unit(s) identified in item 5 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.

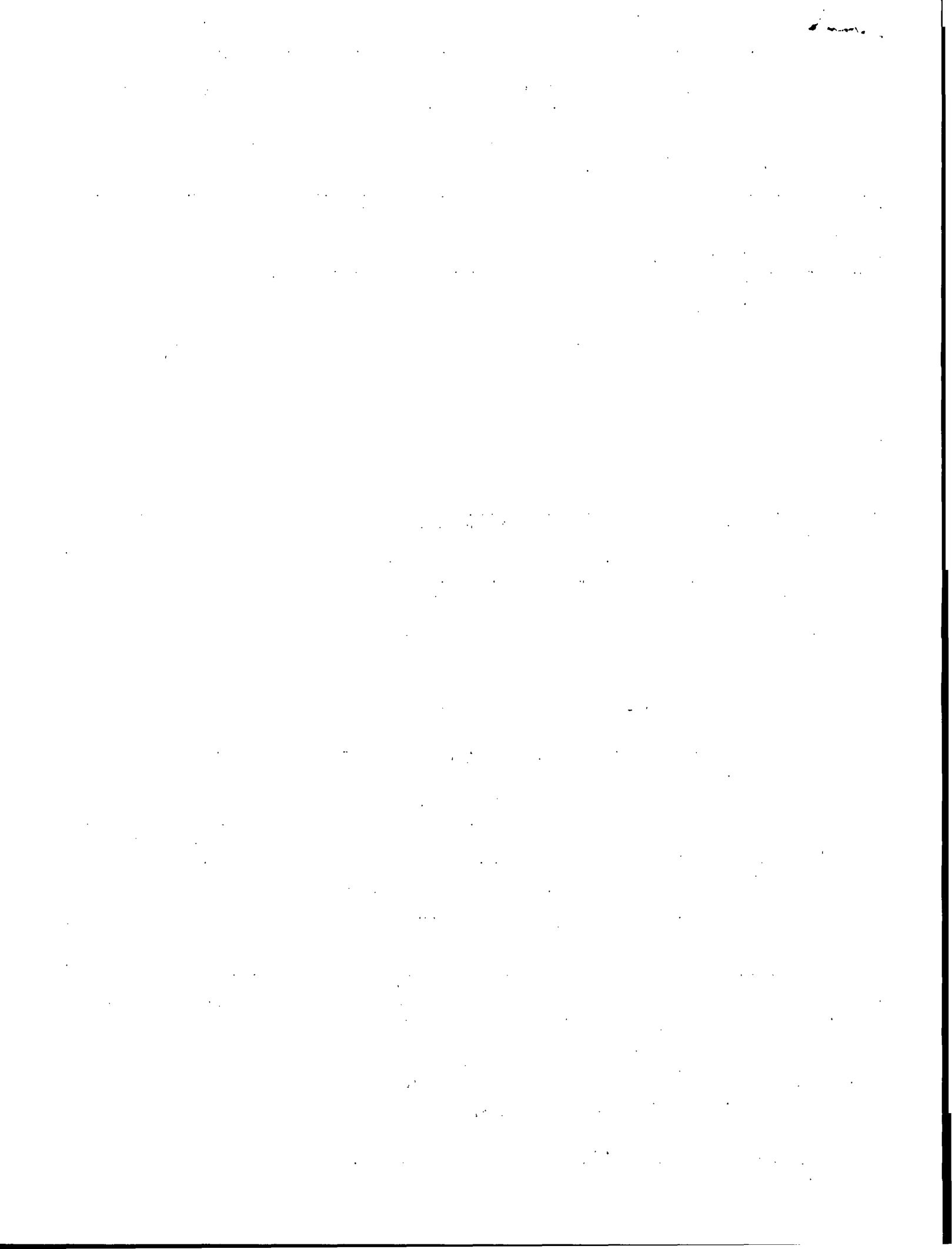
Extended range fuel per 14 CFR Part 43 App. B. Signature/Date of Authorized Individual: [Signature] 2169140 AEP 1-22-2015.

7. Approval for Return to Service

Pursuant to the authority given persons specified below, the unit identified in item 5 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is [X] Approved [] Rejected.

BY: FAA Fit. Standards Inspector, Manufacturer, Maintenance Organization, Persons Approved by Canadian Department of Transport, FAA Designee, Repair Station, Inspection Authorization, Other (Specify).

Certificate or Designation No. 2169140 AEP/1A. Signature/Date of Authorized Individual: [Signature] 2169140 1-22-2015.



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.)

N95467 SN 1161

1-20-2015

Nationality and Registration Mark

Date

Amphibian landing Gear Position Advisory System Installed Wipaire Inc.

Amphibian landing gear Position Advisory System installed

Per STC SA39CH applicable for the Grumman G21A "Goose"

Installation accomplished per WipAire Inc. Installation manual Report number 9600-1A dated July 23 1992 Revised August 29 2012.

Instructions for continued Airworthiness

System to be inspected for continued airworthiness and tested at each required inspection per WipAire Inc. operations manual.

END

Additional Sheets Are Attached

The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry should be supported by a valid receipt or invoice. This ensures transparency and allows for easy verification of the data.

In the second section, the author details the various methods used to collect and analyze the data. This includes both manual and automated techniques. The goal is to ensure that the information gathered is both reliable and comprehensive.

The third section provides a detailed breakdown of the results. It shows how the data points correlate with the initial hypotheses. The findings indicate that there are significant trends in the data that were not initially apparent.

Finally, the document concludes with a series of recommendations based on the analysis. These suggestions are aimed at improving the efficiency of the data collection process and ensuring that future studies can build upon the current findings.



US Department of Transportation
Federal Aviation Administration

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

OMB No. 2120-0020 Exp: 8/31/2014	Electronic Tracking Number
For FAA Use Only	

INSTRUCTIONS: Print or type all entries. See Title 14 CFR §43.9, Part 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. §44701). Failure to report can result in a civil penalty for each such violation. (49 U.S.C. §46301(a))

1. Aircraft	Nationality and Registration Mark N95467	Serial No. 1161	
	Make Grumman	Model G21	Series A
2. Owner	Name (As shown on registration certificate) Pemberton, Addison J	Address (As shown on registration certificate)	
		Address 5302 N Vista Ct City Spokane State Wa Zip 99212 Country USA	

3. For FAA Use Only

4. Type		5. Unit Identification			
Repair	Alteration	Unit	Make	Model	Serial No.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	AIRFRAME	<u>Grumman G21A</u>	<i>(As described in Item 1 above)</i>	<u>1161</u>
<input type="checkbox"/>	<input type="checkbox"/>	POWERPLANT			
<input type="checkbox"/>	<input type="checkbox"/>	PROPELLER			
<input type="checkbox"/>	<input type="checkbox"/>	APPLIANCE	Type		
			Manufacturer		

6. Conformity Statement

A. Agency's Name and Address		B. Kind of Agency		C. Certificate No. 2169140 A&P
Name <u>Addison Pemberton</u>	Address <u>5302 N Vista Ct</u> City <u>Spokane</u> State <u>WA</u> Zip <u>99212</u> Country <u>USA</u>	<input checked="" type="checkbox"/>	U. S. Certificated Mechanic	
		<input type="checkbox"/>	Foreign Certificated Mechanic	
		<input type="checkbox"/>	Certificated Repair Station	
		<input type="checkbox"/>	Certificated Maintenance Organization	

D. I certify that the repair and/or alteration made to the unit(s) identified in item 5 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.

Extended range fuel per 14 CFR Part 43 App. B <input type="checkbox"/>	Signature/Date of Authorized Individual <i>Addison Pemberton</i> 2169140 A&P 1-22-2015
--	---

7. Approval for Return to Service

Pursuant to the authority given persons specified below, the unit identified in item 5 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is Approved Rejected

BY	FAA Flt. Standards Inspector	Manufacturer	Maintenance Organization	Persons Approved by Canadian Department of Transport
	FAA Designee	Repair Station	<input checked="" type="checkbox"/> Inspection Authorization	Other (Specify)

Certificate or Designation No. 2169140 A&P/IA	Signature/Date of Authorized Individual <i>Addison Pemberton</i> 2169140 A&P/IA 1-22-2015
--	--

The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry should be supported by a valid receipt or invoice. This ensures transparency and allows for easy verification of the data.

In the second section, the author outlines the various methods used to collect and analyze the data. This includes both manual and automated techniques. The goal is to ensure that the information gathered is both reliable and comprehensive.

The third section provides a detailed breakdown of the results. It shows that there is a significant correlation between the variables being studied. This finding is supported by statistical analysis and is consistent with previous research in the field.

Finally, the document concludes with a series of recommendations for future research. It suggests that further studies should be conducted to explore the underlying causes of the observed trends. This will help to refine the current model and provide more accurate predictions.

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.)

N95467

1-22-2015

Nationality and Registration Mark

Date

Brown line seat rail installation Grumman N95467 serial number 1161

Installed "McFarlane Aviation Products" Brownline (previously "Burns") seat track PMA part number 6656 per McKinnon STC SA1969WE.

Aircraft altered per McKinnon drawing MPD 5024 to retain seat rails to excising and added aircraft structure. 2ea Seat tracks installed between station 15 and 23 on left side of cabin floor and 2ea seat tracks between Stations 15 and 26 on right side of cabin floor. Seat tracks mounted on 11 inch centers equally spaced on both sides of aircraft cabin floor.

Instructions for continued air worthiness

The above seat tracks and attachment shall be inspected at each 100 hour inspection/annual inspection in accordance with FAR Part 43 Appendix "D".

END

Additional Sheets Are Attached

The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry should be supported by a valid receipt or invoice. This ensures transparency and allows for easy verification of the data.

In the second section, the author details the various methods used to collect and analyze the data. This includes both manual and automated processes. The goal is to ensure that the data is as accurate and reliable as possible.

The third section provides a comprehensive overview of the results obtained from the analysis. It highlights key trends and patterns that have emerged from the data. These findings are crucial for understanding the underlying dynamics of the system being studied.

Finally, the document concludes with a series of recommendations based on the findings. These suggestions are intended to help improve the efficiency and accuracy of the data collection and analysis process in the future.



US Department of Transportation
Federal Aviation Administration

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

OMB No. 2120-0020
Exp: 8/31/2014

Electronic Tracking Number

For FAA Use Only

INSTRUCTIONS: Print or type all entries. See Title 14 CFR §43.9, Part 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. §44701). Failure to report can result in a civil penalty for each such violation. (49 U.S.C. §46301(a))

1. Aircraft	Nationality and Registration Mark N95467	Serial No. 1161	
	Make Grumman	Model G21	Series A
2. Owner	Name (As shown on registration certificate) Pemberton, Addison J		
	Address (As shown on registration certificate) Address 5302 N Vista Ct		
	City Spokane	State Wa	
	Zip 99212	Country USAX	

3. For FAA Use Only

4. Type		5. Unit Identification			
Repair	Alteration	Unit	Make	Model	Serial No.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	AIRFRAME	<u>Grumman G21A</u>	<i>(As described in Item 1 above)</i>	<u>1161</u>
<input type="checkbox"/>	<input type="checkbox"/>	POWERPLANT			
<input type="checkbox"/>	<input type="checkbox"/>	PROPELLER			
<input type="checkbox"/>	<input type="checkbox"/>	APPLIANCE	Type		
			Manufacturer		

6. Conformity Statement

A. Agency's Name and Address		B. Kind of Agency		C. Certificate No. 2169140
Name <u>Addison Pemberton</u>		<input checked="" type="checkbox"/> U. S. Certificated Mechanic	Manufacturer	
Address <u>5302 N Vista Ct</u>		<input type="checkbox"/> Foreign Certificated Mechanic		
City <u>Spokane</u> State <u>Wa</u>		<input type="checkbox"/> Certificated Repair Station		
Zip <u>99212</u> Country <u>USA</u>		<input type="checkbox"/> Certificated Maintenance Organization		

D. I certify that the repair and/or alteration made to the unit(s) identified in item 5 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.

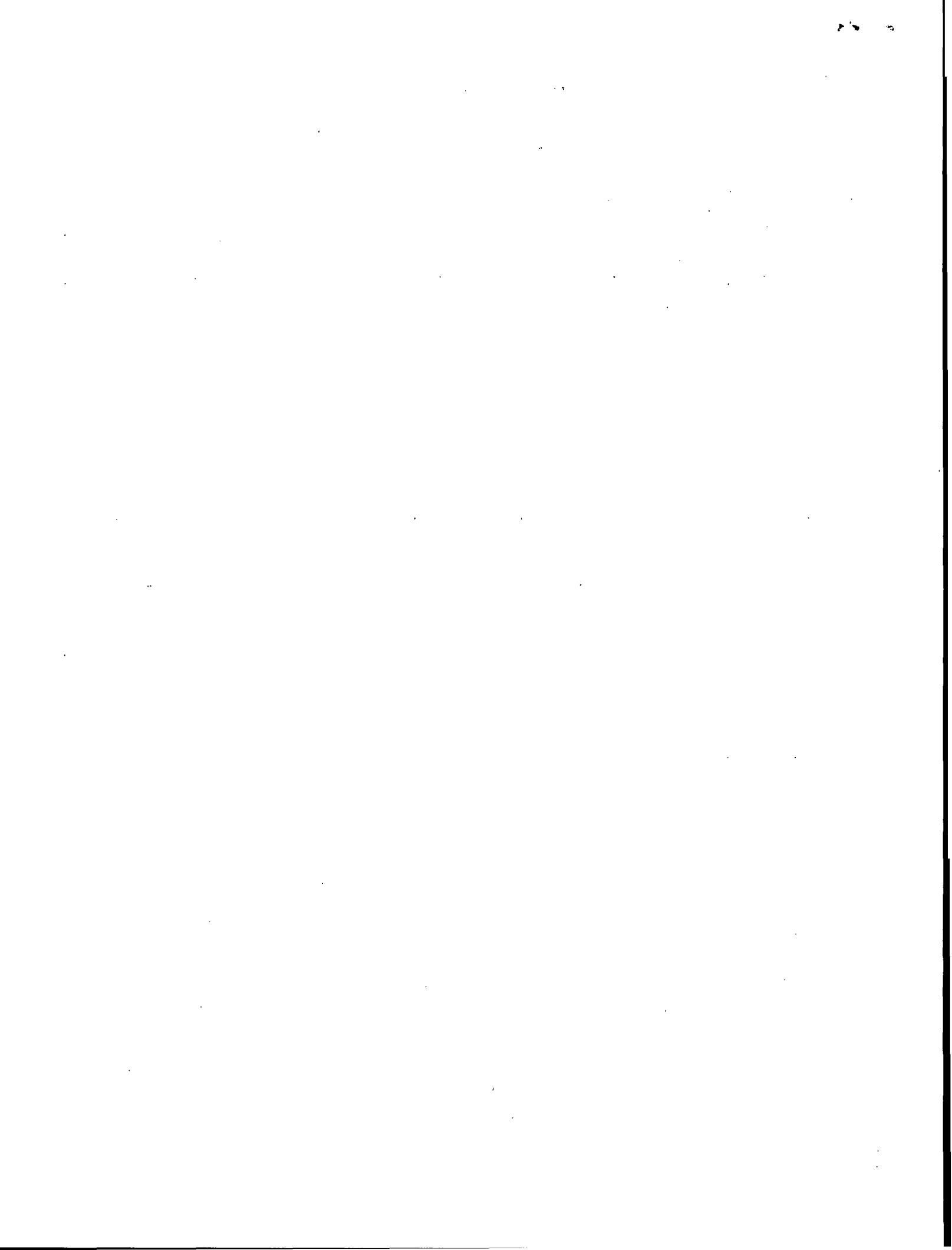
Extended range fuel per 14 CFR Part 43 App. B <input type="checkbox"/>	Signature/Date of Authorized Individual 10-30-2014
--	--

7. Approval for Return to Service

Pursuant to the authority given persons specified below, the unit identified in item 5 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is Approved Rejected

BY	FAA Fit. Standards Inspector	Manufacturer	Maintenance Organization	Persons Approved by Canadian Department of Transport
	FAA Designee	Repair Station	<input checked="" type="checkbox"/> Inspection Authorization	Other (Specify)

Certificate or Designation No. 2169140	Signature/Date of Authorized Individual 10-3-2014
---	---



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.)

N95467

10-30-2014

Nationality and Registration Mark

Date

Windows, lights, station 26, wing metallization, rudder balance and wing tip floats aircraft alteration

Grumman G21A serial number 95467 serial number 1161

Cabin windows modified between station 13 and 26 and added between station 26 and 29 per McKinnon STC SA4-677. Station 26 aircraft bulkhead removed and structure added per McKinnon STC SA108WE. Rudder Counter balance modified per McKinnon drawing MPD-4003. Wings metalized per McKinnon STC SA4-1109. Retractable wing tip floats added per Pan Air STC SA138SW. These alterations accomplished by unknown parties. All work conforms to approved data STC's or McKinnon drawings and was accomplished in accordance with good aircraft practice.

Retractable wing tip floats removed and original serviceable Grumman stock wing tips reinstalled Reference Grumman wing tip drawing 12420. Fixed wing tip floats reattached per Grumman Drawings 12302 wing assembly and Drawing 13002 Float assembly. Floats modified back to stock configuration per Grumman Drawing 13002. In board of wing tip Pan Air structural wing modifications retained internal to wing and reskinned where necessary.

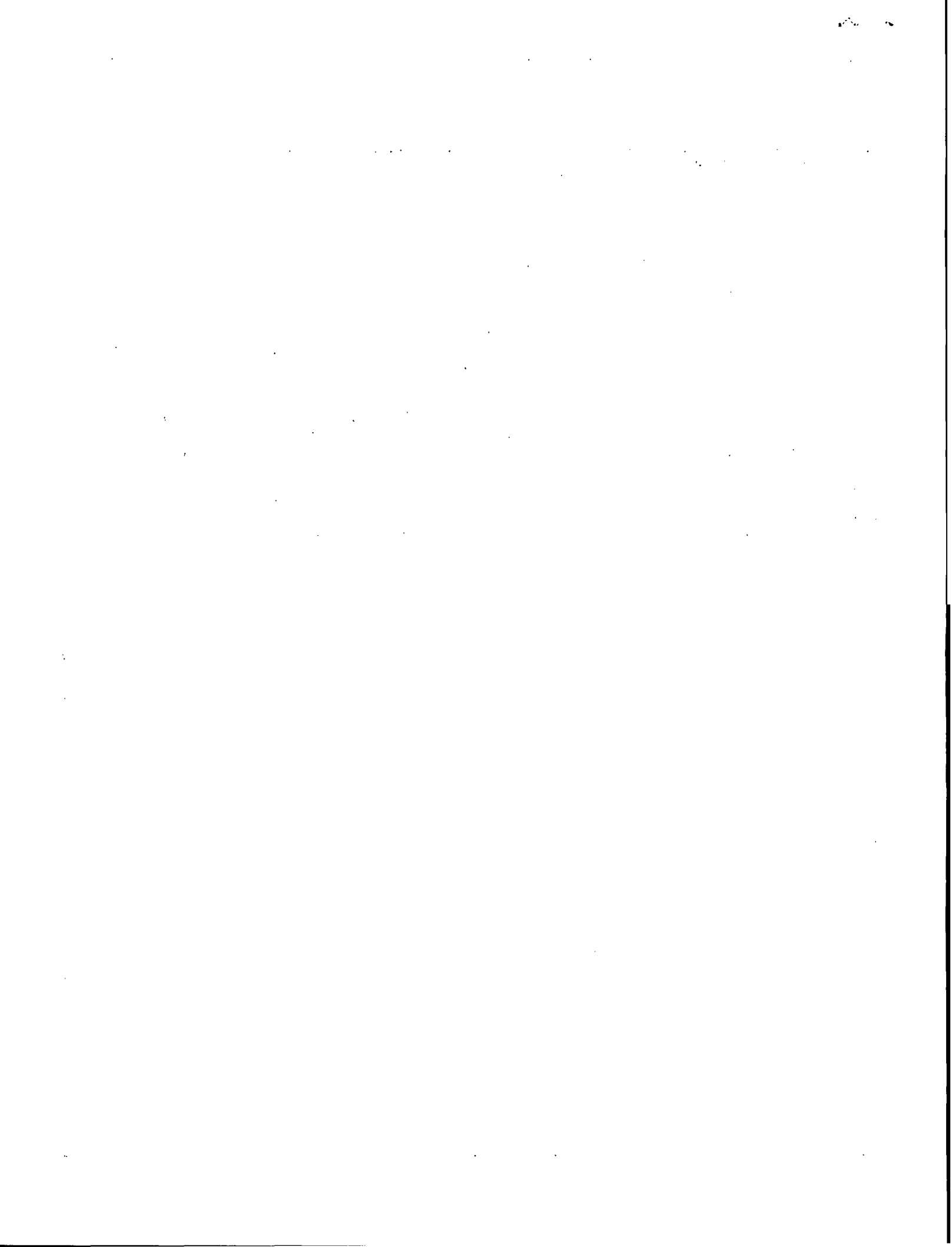
Fabricated and installed new bulkhead at station 26 per Grumman Drawing 12066. Retained fuselage structural alterations to station 26 through 29 per McKinnon STC SA108WE. Reinstalled original servable Grumman factory water tight door to station 26.

Installed leading edge landing lights per McKinnon drawing and installation procedure MPD-9206

All work done in accordance with good aircraft practice and AC 43.13-1B

End

Additional Sheets Are Attached





US Department of Transportation
Federal Aviation Administration

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

OMB No. 2120-0020
Exp: 8/31/2014

Electronic Tracking Number

For FAA Use Only

INSTRUCTIONS: Print or type all entries. See Title 14 CFR §43.9, Part 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. §44701). Failure to report can result in a civil penalty for each such violation. (49 U.S.C. §46301(a))

1. Aircraft	Nationality and Registration Mark N95467	Serial No. 1161	
	Make Grumman	Model G21	Series A
2. Owner	Name (As shown on registration certificate) Pemberton, Addison J		
	Address (As shown on registration certificate) Address 5302 N Vista Ct		
	City Spokane	State Wa	
	Zip 99212	Country USA	

3. For FAA Use Only

4. Type		5. Unit Identification			
Repair	Alteration	Unit	Make	Model	Serial No.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	AIRFRAME	<u>Grumman G21A</u>	<i>(As described in Item 1 above)</i>	<u>1161</u>
<input type="checkbox"/>	<input type="checkbox"/>	POWERPLANT			
<input type="checkbox"/>	<input type="checkbox"/>	PROPELLER			
<input type="checkbox"/>	<input type="checkbox"/>	APPLIANCE	Type		
			Manufacturer		

6. Conformity Statement

A. Agency's Name and Address		B. Kind of Agency		
Name <u>Addison Pemberton</u>		<input checked="" type="checkbox"/>	U. S. Certificated Mechanic	Manufacturer
Address <u>5302 N Vista Ct</u>		<input type="checkbox"/>	Foreign Certificated Mechanic	C. Certificate No. 2169140
City <u>Spokane</u> State <u>Wa</u>		<input type="checkbox"/>	Certificated Repair Station	
Zip <u>99212</u> Country <u>USA</u>		<input type="checkbox"/>	Certificated Maintenance Organization	

D. I certify that the repair and/or alteration made to the unit(s) identified in item 5 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.

Extended range fuel per 14 CFR Part 43 App. B <input type="checkbox"/>	Signature/Date of Authorized Individual <i>Addison Pemberton</i> <u>10-30-2014</u>
--	---

7. Approval for Return to Service

Pursuant to the authority given persons specified below, the unit identified in item 5 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is Approved Rejected

BY	FAA Fit. Standards Inspector	Manufacturer	Maintenance Organization	Persons Approved by Canadian Department of Transport
	FAA Designee	Repair Station <input checked="" type="checkbox"/>	Inspection Authorization	Other (Specify)

Certificate or Designation No. 2169140	Signature/Date of Authorized Individual <i>Addison Pemberton</i> <u>10-30-2014</u>
---	---

THE HISTORY OF THE
CITY OF BOSTON

The city of Boston, situated on a neck of land between the harbor and the bay, was first settled in 1630 by a group of Puritan settlers from England. The city grew rapidly and became one of the most important centers of commerce and industry in the New England region. In 1773, the city was the site of the Boston Tea Party, a significant event in the American Revolution. The city was then the center of the American Revolution, and it was here that the Declaration of Independence was signed in 1776. The city was the site of the Battle of the Clouds in 1780, a major battle of the American Revolution. The city was the site of the Boston Massacre in 1770, a significant event in the American Revolution. The city was the site of the Boston Tea Party in 1773, a significant event in the American Revolution. The city was the site of the Boston Tea Party in 1773, a significant event in the American Revolution.

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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.)

N95467

10-30-2014

Nationality and Registration Mark

Date

Grumman Goose N95467 SN 1161 Propeller 337 aircraft alteration

Aircraft reconfigured per July 7 1950 configuration using Hamilton Standard 22D30 feathering propellers and feathering system components. Previous configuration recorded in FAA aircraft airworthiness records (page 101-113 see 337 attached).

22D30 propellers installed with 6531-15 blades. 6181 and 6381 blades approved on Grumman G21 TCDS#654; 6531-15 blades approved by TCDS # P-736, note 6, blade interchangeability.

Feathering components installed for both engines include Hamilton Standard 4B2 governors or equivalent, Instrument panel mounted Push button feather switches 54267 or equivalent, Pesco 66166-12 feather pumps or equivalent, AN3371-2 relays or equivalent, valve and cut out switches 63921 or equivalent. Oil tanks modified to incorporate 1 gallon oil reserve stand pipe. All above installed per Hamilton Standard "22D30-22D40 Hydromantic Propellers Maintenance Manuel #145." System configured per page 30, Figure 3-4 in referenced manual. All work completed in accordance with AC 43.13-1B and standard aircraft practice.

Continued airworthiness to be accomplished per Hamilton Standard "22D30-22D40 Hydromantic Propellers Maintenance Manual #145" and FAR part 43 Appendix D at each required aircraft inspection.

end

Additional Sheets Are Attached

The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry should be supported by a valid receipt or invoice. This ensures transparency and allows for easy verification of the data.

In the second section, the author outlines the various methods used to collect and analyze the data. This includes both primary and secondary data collection techniques. The primary data was gathered through direct observation and interviews, while secondary data was obtained from existing reports and databases.

The third section provides a detailed description of the data analysis process. This involves identifying trends, patterns, and anomalies within the dataset. Statistical tools and software were used to facilitate this process, ensuring that the results are both accurate and reliable.

Finally, the document concludes with a summary of the findings and their implications. It highlights the key insights gained from the study and offers recommendations for future research and practice. The author notes that while the current study provides valuable information, there are still several areas that require further investigation.

DEPARTMENT OF COMMERCE CIVIL AERONAUTICS ADMINISTRATION				Form Approved Budget Form No. 4-282.1	
REPAIR AND ALTERATION FORM (AIRCRAFT, PROPELLERS, ENGINES, INSTRUMENTS)					
3. FILL IN INFORMATION IN THIS ITEM ONLY FOR THE UNIT REPAIRED AND/OR ALTERED					
1. AIRCRAFT MAKE	MODEL	SERIAL NO.	RATIONALITY AND REGISTRATION MARK		
Grumman	G-21A	1161	N95467		
2. OWNER NAME (Firm, name, loc)	ADDRESS (Street and number, city, state, and State)				
V.A. Crockett	5208 Wilson Ave. Fresno, Calif.				
a. AIRCRAFT	UNIT		MAKE	MODEL	SERIAL NO.
NATURE OF WORK (Check)					
MAJOR REPAIR					
MAJOR ALTERATION					
b. PROPELLER BLADE OR HUB	H.S.P.		22D30-201 PL10602 2-6533A-18	165584 T 40174 & 76	X X
c. ENGINE	TYPE AND MANUFACTURER				
d. INSTRUMENT	TYPE AND MANUFACTURER				
4. AIRCRAFT WEIGHT AND BALANCE DATA					
This item must be completed by repair or alteration agency. However, in the case of a spare component, it will not be completed until such component is installed in an aircraft. At this time, it will be completed by the installing agency, if applicable.					
EMPTY WEIGHT (Pounds)*		EMPTY CENTER OF GRAVITY (Inches from datum)*		USEFUL LOAD (Pounds)*	
*AFTER the repairs and/or alterations described below were made.					
5. KIND OF AGENCY WHICH MADE REPAIRS AND/OR ALTERATIONS (Check)					
<input checked="" type="checkbox"/> MANUFACTURER <input type="checkbox"/> APPROVED REPAIR STATION NO. _____ (Specify) <input type="checkbox"/> CERTIFIED MECHANIC					
6. AGENCY NAME		ADDRESS (Street and number, city, state, and State)		DATE WORK ACCOMPLISHED	
Airport Dept. Pratt & Whitney Div. United Aircraft Corp.		400 South Main St. East Hartford, Conn.		7-3-50	
7. DESCRIPTION OF WORK (ALL WORK MUST BE ACCOMPLISHED IN ACCORDANCE WITH PART 18 OF THE CIVIL AIR REGULATIONS AND ITS ASSOCIATED CIVIL AERONAUTICS MANUAL 18)					
The Hub Assy. is now. Blades were converted from 6101A-18 to 6533A-18 and overhauled. Propeller inspected, built & tested to Hamilton Standard Propellers Specifications.					
If more space is needed, continue on reverse, or attach separate sheets bearing aircraft registration mark.					
<input type="checkbox"/> FORWARDED FOR ENGINEERING APPROVAL					
I CERTIFY that the above statements are true and correct to the best of my knowledge.					
Signature of supervisor (metallic)		Inspector in Charge		Date	
Arthur L. Cahill		7-3-50			
TO BE COMPLETED BY CAA REPRESENTATIVES					
<input checked="" type="checkbox"/> APPROVED	DESIGNER SIGNATURE	NO.	DATE		
<input type="checkbox"/> REJECTED	CAA AGENT SIGNATURE	167	8/3/50		
		<input type="checkbox"/> ACCEPTED	DATE		
		<input type="checkbox"/> REINSPECTED			

N95467
10-30-2014

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that this is essential for ensuring transparency and accountability in the organization's operations.

2. The second part of the document outlines the various methods and techniques used to collect and analyze data. It highlights the need for a systematic approach to data collection and the importance of using reliable sources of information.

3. The third part of the document focuses on the analysis and interpretation of the collected data. It discusses the various statistical and analytical tools that can be used to identify trends and patterns in the data.

4. The fourth part of the document discusses the importance of communicating the results of the analysis to the relevant stakeholders. It emphasizes that clear and concise communication is essential for ensuring that the findings are understood and acted upon.

5. The fifth part of the document discusses the importance of monitoring and evaluating the effectiveness of the data collection and analysis process. It highlights that this is an ongoing process that requires regular review and adjustment.

6. The sixth part of the document discusses the importance of ensuring the confidentiality and security of the data. It emphasizes that this is a critical aspect of the data management process and that appropriate measures must be taken to protect the data from unauthorized access and disclosure.

7. The seventh part of the document discusses the importance of ensuring the accuracy and reliability of the data. It highlights that this is a key factor in the validity of the analysis and that appropriate measures must be taken to minimize errors and biases.

8. The eighth part of the document discusses the importance of ensuring the integrity of the data. It emphasizes that this is a key factor in the credibility of the analysis and that appropriate measures must be taken to prevent tampering and manipulation of the data.

9. The ninth part of the document discusses the importance of ensuring the transparency of the data collection and analysis process. It highlights that this is a key factor in the trustworthiness of the analysis and that appropriate measures must be taken to ensure that the process is open and accessible to all stakeholders.

10. The tenth part of the document discusses the importance of ensuring the ethical use of the data. It emphasizes that this is a key factor in the responsible management of the data and that appropriate measures must be taken to ensure that the data is used in a way that respects the privacy and rights of the individuals involved.

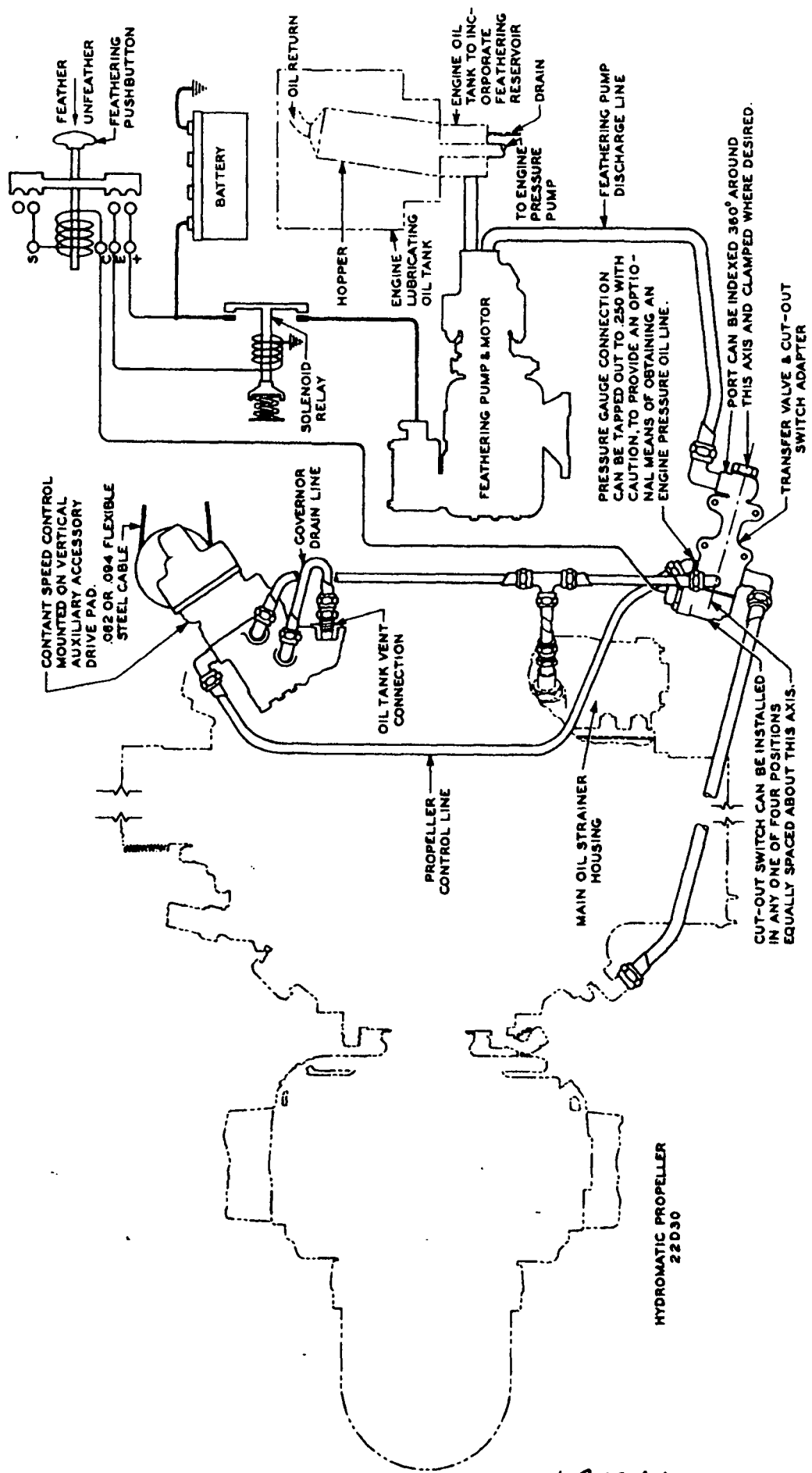


Figure 3-4. Suggested Hydraulic and Electrical Systems Installation

N95467
10-30-2014

The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry, no matter how small, should be recorded to ensure the integrity of the financial statements. This includes recording all sales, purchases, and expenses in a timely and accurate manner.

The second part of the document provides a detailed breakdown of the company's revenue. It shows the total revenue for each quarter and year, along with a comparison to the budgeted amounts. This analysis helps identify any variances and provides insights into the company's performance over time.

The third part of the document focuses on the company's expenses. It details the various categories of expenses, such as salaries, rent, utilities, and marketing. This breakdown allows for a more granular understanding of the company's cost structure and helps in identifying areas where costs can be reduced.

The fourth part of the document discusses the company's profit margins. It calculates the gross profit, operating profit, and net profit for each period. This information is crucial for assessing the company's overall profitability and its ability to generate sustainable growth.

The fifth part of the document provides a summary of the company's financial position. It includes a balance sheet showing the company's assets, liabilities, and equity. This summary provides a snapshot of the company's financial health at a specific point in time.

Finally, the document concludes with a series of recommendations for future financial management. It suggests ways to improve the company's financial performance, such as implementing more rigorous budgeting practices and seeking opportunities for cost reduction.

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JUN 12 1990

Form Approved
Budget Bureau No. 04-R060.1

FOR FAA USE ONLY

OFFICE IDENTIFICATION

NM-FS00-01

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

SEA-FSDO-AW

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 G21A
	SERIAL NO. 1161	NATIONALITY AND REGISTRATION MARK N95467
2. OWNER	NAME (As shown on registration certificate) AIRPAC	ADDRESS (As shown on registration certificate) 4215-21st Av Seattle, WA 98199

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	X
POWERPLANT					
PROPELLER					
APPLIANCE	TYPE				
	MANUFACTURER				

6. CONFORMITY STATEMENT

A. AGENCY'S NAME AND ADDRESS Paul A. Nyenmis Aviation Inspection & Repair, Inc. 18928-59th Drive NE Arlington, WA 98223	B. KIND OF AGENCY <input checked="" type="checkbox"/> U.S. CERTIFICATED MECHANIC <input type="checkbox"/> FOREIGN CERTIFICATED MECHANIC <input type="checkbox"/> CERTIFICATED REPAIR STATION <input type="checkbox"/> MANUFACTURER	C. CERTIFICATE NO. 1595544
---	--	--------------------------------------

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 6/4/90	SIGNATURE OF AUTHORIZED INDIVIDUAL <i>Paul A. Nyenmis</i>
-----------------------	--

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	<input checked="" type="checkbox"/> INSPECTION AUTHORIZATION	OTHER (Specify)
	FAA DESIGNEE	REPAIR STATION	CANADIAN DEPARTMENT OF TRANSPORT INSPECTOR OF AIRCRAFT	

DATE OF APPROVAL OR REJECTION 6-4-90	CERTIFICATE OR DESIGNATION NO. 1695544	SIGNATURE OF AUTHORIZED INDIVIDUAL <i>Paul A. Nyenmis</i>
--	--	--

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.)

Recovered elevators, rudder and ailerons using Ceconite Procedure #101, using Ceconite 101 cloth and Randolph products, per STC SA1351WE and Naval Aero Bulletin 01-85V-3 for Grumman G21A, Section 8, Fabric Repair and Attachment.

THE END

ADDITIONAL SHEETS ARE ATTACHED

DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION		Form Approved Budget Bureau No. 04-R0601	
MAJOR REPAIR AND ALTERATION (Airframe, Powerplant, Propeller, or Appliance)			
INSTRUCTIONS: Print or type all entries. See FAR 43.9, FAR 43 Appendix P, and AC 43.9-1 (or subsequent revision thereof) for instructions and disposition of this form.			
1. AIRCRAFT	MAKE Grumman	MODEL G-21A	NATIONALITY AND REGISTRATION MARK N95467
	SERIAL NO. 1161	ADDRESS (As shown on registration certificate) 4215 21st Ave. Seattle, WA 98199	
2. OWNER	NAME (As shown on registration certificate) Airpac		
3. FOR FAA USE ONLY The alteration identified herein complies with the applicable airworthiness requirements, and is approved for the above described aircraft, subject to conformity inspection by a person authorized in FAR 43, section 43.7			
DATE: 02-12-86 Signature of FAA Inspector: Betty M. Rogers Signature of FAA Inspector: AAL-FSDO-63			
4. UNIT IDENTIFICATION			
UNIT	MAKE	MODEL	SERIAL NO.
AIRFRAME	***** (As described in item 1 above) *****		
POWERPLANT			XX
PROPELLER			
APPLIANCE	TYPE		
	MANUFACTURER		
6. CONFORMITY STATEMENT			
A. AGENCY'S NAME AND ADDRESS		B. KIND OF AGENCY	
George Adams 12101 Edgewater Anchorage, AK 99515		<input checked="" type="checkbox"/> U.S. CERTIFICATED MECHANIC <input type="checkbox"/> FOREIGN CERTIFICATED MECHANIC <input type="checkbox"/> CERTIFICATED REPAIR STATION <input type="checkbox"/> MANUFACTURER	
		C. CERTIFICATE NO. 522-66-8058	
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 2-17-86		SIGNATURE OF AUTHORIZED INDIVIDUAL George Adams	
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 <input checked="" type="checkbox"/> APPROVED <input type="checkbox"/> REJECTED			
BY	FAA FLT. STANDARDS INSPECTOR	MANUFACTURER	INSPECTION AUTHORIZATION OTHER (Specify)
	FAA DESIGNEE	REPAIR STATION	
DATE OF APPROVAL OR REJECTION 2/12/86	CERTIFICATE OR DESIGNATION NO. 1379732IA	SIGNATURE OF AUTHORIZED INDIVIDUAL Rodney L. Whitfield, Director of Maintenance	

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.)

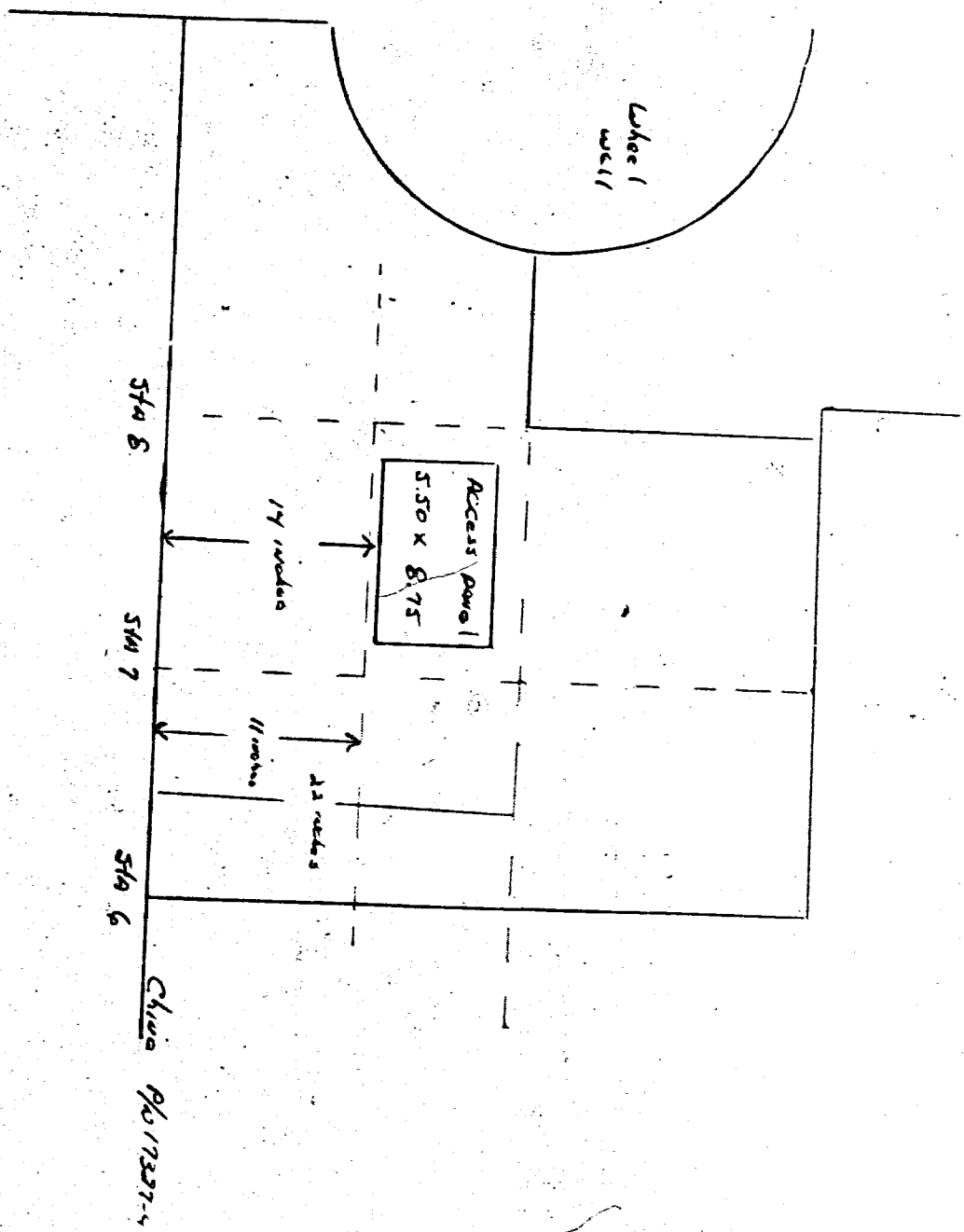
Installed an Access Panel on Right Side of Hull between Station # 7 and # 8, between Stringers located 11" and 22" above Chine P/N 17327-40. Opening is backed by a .060", 2024T3 Doubler which is Secured by AN 470-4 Rivets. Doubler opening is Secured by a Cover Panel held in place by 10-32 Machine Screws. All parts painted and finished. All work accomplished In Accordance With AC 43:13-1A Chapter 2, Section 3, and Standard Practice. Work previously done by person or persons unknown.

END


ADDITIONAL-SHEETS ARE ATTACHED

Make - Grumman Model - G-21A
Serial No. - 1161 Nationality and Registration Mark - N95467
Owner Name - AirPac, Inc. Address - 4215 21st. Ave.
Seattle, WA 98199

2-12-86



FAA AIRCRAFT REGISTRY
CAMERA NO. 27 DATE: 8-14-90

U. S. DEPARTMENT OF COMMERCE CIVIL AERONAUTICS ADMINISTRATION		Form Approved Budget Bureau No. 41-R881.A	
APPLICATION FOR AIRWORTHINESS CERTIFICATE AND/OR ANNUAL INSPECTION OF AN AIRCRAFT		INSTRUCTIONS Please print or type. Submit this form to the Civil Aeronautics Administration Aviation Safety Field Representative.	
1. TYPE OF APPLICATION (Check which)			
<input type="checkbox"/> ORIGINAL ISSUANCE OF CERTIFICATE		<input type="checkbox"/> RECERTIFICATION UNDER THE PROVISIONS OF CAR 1	
<input checked="" type="checkbox"/> ANNUAL INSPECTION FOR RENEWAL OF CERTIFICATE		<input type="checkbox"/> MULTIPLE CERTIFICATE UNDER THE PROVISIONS OF CAR 1	
<input type="checkbox"/> AMENDMENT OR MODIFICATION OF CURRENT CERTIFICATE		<input type="checkbox"/>	
2. AIRWORTHINESS CLASSIFICATION (Check appropriate item(s)) It is requested that the Certificate of Airworthiness be issued to permit operation of the aircraft in the following air- worthiness classification(s):			
<input checked="" type="checkbox"/> STANDARD (NORMAL, UTILITY, ACROBATIC, TRANSPORT CATEGORIES)			
<input type="checkbox"/> LIMITED (SEE CAR 9)			
<input type="checkbox"/> RESTRICTED (SEE CAR 9) (Check the restricted special purpose operation(s) to be conducted)			
<input type="checkbox"/> AGRICULTURAL AND PEST CONTROL		<input type="checkbox"/> PATROLLING	
<input type="checkbox"/> AERIAL ADVERTISING		<input type="checkbox"/> FOREST AND WILDLIFE CONSERVATION	
<input type="checkbox"/> AERIAL SURVEYING		<input type="checkbox"/> WEATHER CONTROL	
<input type="checkbox"/> GLIDER TOWING		<input type="checkbox"/> OTHER	
<input type="checkbox"/> EXPERIMENTAL (Check the type of experimental operation(s) to be conducted)			
<input type="checkbox"/> RESEARCH AND DEVELOPMENT		<input type="checkbox"/> RACING	
<input type="checkbox"/> AMATEUR-BUILT		<input type="checkbox"/> EXHIBITION	
<input type="checkbox"/> DEMONSTRATION		<input type="checkbox"/> OTHER	
3. AIRCRAFT IDENTIFICATION (Complete all items)			
a. AIRCRAFT MAKE GRUMMAN		b. AIRCRAFT MODEL G 21 A	c. AIRCRAFT SERIAL NO. 1167
d. ENGINE MAKE Pratt & Whitney		e. ENGINE MODEL R 985 - 14 B	
4. AIRCRAFT REGISTRATION INFORMATION (Complete all items)			
a. REGISTERED OWNER'S FULL NAME JOHN W. MECOM		b. PERMANENT MAILING ADDRESS 1100 Houston Club Bldg. Houston 2, Texas	c. AIRCRAFT NATIONALITY AND REGISTRATION MARK N- 95467
5. AIRCRAFT OWNER'S CERTIFICATION (Check and complete appropriate item) I hereby certify that I am the registered owner (or his agent) of the aircraft identified in Item 3 above which is registered* with the Civil Aeronautics Administration as required by the Regulations of the Administrator, Part 501 or 502 and when operated displays the following evidence of registration:			
<input checked="" type="checkbox"/> CERTIFICATE OF REGISTRATION, FORM ACA-500 (PART A), DATE OF ISSUE Jan. 11, 1952			
<input type="checkbox"/> APPLICATION FOR REGISTRATION, FORM ACA-500 (PART B), FORM ACA-500, PART A, FORWARDED TO CAA AIRCRAFT, RECORDS BRANCH, W-300 ON _____ (DATE)			
<input type="checkbox"/> DEALER'S REGISTRATION CERTIFICATE, FORM ACA-1707, DATED _____			
*In order to be eligible for registration an aircraft must be owned by a citizen of the United States, as defined by Section 1, (13) of the Civil Aeronautics Act of 1938, as amended.			
ATTACHMENTS (Check which)		 (SIGNATURE OF REGISTERED OWNER OR AUTHORIZED AGENT)	
<input checked="" type="checkbox"/> ACA-319		March 25, 1956 Agent (DATE) (TITLE)	
<input type="checkbox"/> WEIGHT AND BALANCE REPORT			
<input type="checkbox"/> ACA-337			
<input type="checkbox"/> DATA, DRAWINGS, ETC.			
<input type="checkbox"/> ACA-317			
<input type="checkbox"/> UNAPPROVED DEVIATION DATA			

U. S. DEPARTMENT OF COMMERCE
CIVIL AERONAUTICS ADMINISTRATION

AIRCRAFT INSPECTION REPORT

(To be completed by a CAA representative or approved repair station)

The aircraft described in Item 3 on the reverse of this form has been inspected and found to conform to the following:

1. AIRCRAFT AND ENGINE CERTIFICATION BASIS
 a. AIRCRAFT SPECIFICATION NO. _____ THROUGH SHEET REVISION NO. NONE
 b. AIRCRAFT LISTING PAGE NO. 98
 c. AIRWORTHINESS DIRECTIVE SUMMARY 1955 THROUGH CARD NO. 56-5
 d. CIVIL AIR REGULATION PART 6 (MODIFIED TYPE CERTIFICATE)

2. AIRCRAFT AND ENGINE OPERATING RECORDS
 a. AIRCRAFT NEW—NO PREVIOUS OPERATION OR MAINTENANCE HISTORY
 b. COMPLIANCE WITH APPLICABLE AIRWORTHINESS DIRECTIVES RECORDED
 c. AIRCRAFT RECORDS INDICATE THE AIRFRAME HAS BEEN OPERATED A TOTAL OF 2722:35 HOURS
 d. ENGINE RECORDS INDICATE THE FOLLOWING OPERATION:
 SERIAL NO. 12726 TOTAL HOURS 233:35
 SERIAL NO. P226933 TOTAL HOURS 319:35
 SERIAL NO. _____ TOTAL HOURS _____
 SERIAL NO. _____ TOTAL HOURS _____

3. PREVIOUS INSPECTION RECORD (INSPECTION RECORDED ON FORM ACA-319)
 a. LAST AIRWORTHINESS INSPECTION CONDUCTED March 25, 1956
 BY AIRCRAFT MANUFACTURER
 BY APPROVED REPAIR STATION, CERTIFICATE NO. _____
 BY MECHANIC, CERTIFICATE NO. O.G. Corban A&R 2219
 b. PERIODIC AIRCRAFT INSPECTION REPORT, FORM ACA-319, WAS RETURNED TO OWNER

RECEIVED
MAR 4 1 36 PM '56
ADMINISTRATIVE SECTION
A-500

4. AIRWORTHINESS DOCUMENTS ISSUED OR REVIEWED
 a. OPERATION LIMITATIONS, FORM ACA-308, WAS ISSUED (COPY ATTACHED)
 b. CURRENT OPERATION LIMITATIONS, FORM ACA-308, IS AVAILABLE IN AIRCRAFT
 c. CURRENT APPROVED AIRPLANE FLIGHT MANUAL IS AVAILABLE IN AIRCRAFT
 d. CURRENT WEIGHT AND BALANCE INFORMATION IS AVAILABLE IN AIRCRAFT
 e. THIS INSPECTION HAS BEEN RECORDED IN THE AIRCRAFT RECORDS
 f. CERTIFICATE OF AIRWORTHINESS, FORM ACA-132, ISSUED TO EXPIRE March 25, 1957
 g. PREVIOUS FORM ACA-132 WAS ISSUED TO EXPIRE March 30, 1956
 BY A.L. De Lange (NAME OF ISSUING REPRESENTATIVE) D.A.M.I. 4632 (DESIGNATION)

5. CAA APPROVED REPAIR STATION CERTIFICATION
 The aircraft described on the reverse has been inspected under the authority accorded certificated repair station No. _____ by CAB 52 and was found to be:
 AIRWORTHY
 UNAIRWORTHY
 (REPAIR STATION AUTHORIZED SIGNATURE) _____ (DATE) _____

6. CAA REPRESENTATIVE CERTIFICATION
 I HAVE INSPECTED THE AIRCRAFT DESCRIBED ON THE REVERSE AND FOUND IT AIRWORTHY UNAIRWORTHY
 (Check appropriate item)

DESIGNER'S SIGNATURE <u>Arnott Lake Drilling</u>	DESIGNATION NO. <u>4632</u>	DATE <u>3-25-56</u>
AVIATION SAFETY AGENT'S SIGNATURE <u>Charles DeLange</u>	CAA DESIGNATION NO. <u>2-9</u>	DATE <u>4-12-56</u>

ATTACHMENT

ACCEPTED
 REINSPECTED
 SPOT CHECKED

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 LGB FSDO	
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-21A		
	SERIAL NO. 1161		NATIONALITY AND REGISTRATION MARK N 95467		
2. OWNER	NAME (As shown on registration certificate) K. C. Aircraft Sheetmetal INC.		ADDRESS (As shown on registration certificate) 2750 Wardlow Rd. Longbeach Ca. 90806		
	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.	
Ralph Cullen 2925 Airport Drive Torrance, Ca.		<input checked="" type="checkbox"/> U.S. CERTIFICATED MECHANIC		AAP 1128140	
		<input type="checkbox"/> FOREIGN CERTIFICATED MECHANIC			
		<input type="checkbox"/> CERTIFICATED REPAIR STATION			
		<input type="checkbox"/> 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 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 11-6-78		SIGNATURE OF AUTHORIZED INDIVIDUAL Ralph Cullen			
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 <input checked="" type="checkbox"/> APPROVED <input type="checkbox"/> REJECTED					
BY	FAA FLT. STANDARDS INSPECTOR	MANUFACTURER	<input checked="" type="checkbox"/> INSPECTION AUTHORIZATION		OTHER (Specify)
	FAA DESIGNEE	REPAIR STATION	<input type="checkbox"/> CANADIAN DEPARTMENT OF TRANSPORT INSPECTOR OF AIRCRAFT		
DATE OF APPROVAL OR REJECTION 11-6-78		CERTIFICATE OR DESIGNATION NO. 1128140		SIGNATURE OF AUTHORIZED INDIVIDUAL Ralph Cullen	

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.)

1. THE FOLLOWING REPAIRS MADE TO THIS AIRCRAFT
AND THESE NEW PARTS INSTALLED

1. STA 29 - FUSELAGE - FLOOR ANGLE P/N 12072-4
AND 12072-25 STIFFNER ANGLE L.H.
 2. STA. 13 FUSELAGE - FLOOR MEMBER P/N 12053-2
AND 12053-3. BULKHEAD SKIN INNER P/N 12053-1
2 ANGLES P/N 12053-10 - 1 CHANNEL P/N 12053-32
 3. PILOTS CABIN AREA - 1 SKIN SHEET L.H. P/N 12073-8
1. FRAME STA. 10 P/N 12001-5 - 1. HORIZONTAL RIB
HULL NOSE FRAME P/N 12004-32. 1. CHANNEL FLOOR
FRAME P/N 12032-5. + 1 SKIN HORIZONTAL STAB.
P/N 12533-8.
 4. HULL BOTTOM 2 SKINS P/N 12003-29 L.H. 12003-30 R.H.
2. AIRCRAFT ASSEMBLED USING NEW AN HARDWARE
3. AIRCRAFT PAINTED + RE UPHOLSTERED - AND WEIGHED
FOR NEW WT + BAL FORM.

END

ADDITIONAL SHEETS ARE ATTACHED

DEPT. OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION				Form Approved Budget Bureau No. 04-R060.1	
MAJOR REPAIR AND ALTERATION (Airframe, Powerplant, Propeller, or Appliance)				FOR FAA USE ONLY	
				OFFICE IDENTIFICATION LGB FSDO 4-0-65	
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-21-A		NATIONALITY AND REGISTRATION MARK N 95467	
	SERIAL NO. 1161				
2. OWNER	NAME (As shown on registration certificate) KC Aircraft Sheetmetal Inc		ADDRESS (As shown on registration certificate) 2750 Wardlow Rd. Long Beach, Ca 92806		
	3. FOR FAA USE ONLY				
4. UNIT IDENTIFICATION					
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.	
Ralph Cullen 2925 Airport Dr. Torrance Ca 90505		<input checked="" type="checkbox"/> U.S. CERTIFICATED MECHANIC <input type="checkbox"/> FOREIGN CERTIFICATED MECHANIC <input type="checkbox"/> CERTIFICATED REPAIR STATION <input type="checkbox"/> MANUFACTURER		AP 1128149	
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 8-28-78		SIGNATURE OF AUTHORIZED INDIVIDUAL Ralph Cullen			
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 <input checked="" type="checkbox"/> APPROVED <input type="checkbox"/> REJECTED					
BY	FAA FLT. STANDARDS INSPECTOR	MANUFACTURER	<input checked="" type="checkbox"/> INSPECTION AUTHORIZATION	OTHER (Specify)	
	FAA DESIGNEE	REPAIR STATION	CANADIAN DEPARTMENT OF TRANSPORT INSPECTOR OF AIRCRAFT		
DATE OF APPROVAL OR REJECTION 8-28-78	CERTIFICATE OR DESIGNATION NO. 1128149IA	SIGNATURE OF AUTHORIZED INDIVIDUAL Ralph Cullen			

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.

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

1. Removed old wheels & brakes & installed Cleveland Wheel & Brake Conversion Kit F/N 199-65 per Cleveland drawing 50-25 Rev. A dated 12/12/75 consisting of wheel Assy F/N 40-127 & Brake Assy F/N 30-97
2. Installed McKinnon Enterprises Retractable Floats per STC SA4-1467 & drawing #4003. "B" change also two 50 amp generators per STC SA 4-652
3. Installed McKinnon Enterprises Inc Electric Gear Retract Motor per drawing MPD 9110 Rev. C, sheets one thru five & STC SA 4-1551
4. Installed Hartzell 3 Blade Propellers on L. & R. Eng. per STC-Sal-52
5. Installed the following radios in R. side of instrument panel:
2 ea. MX 170B 1 ea. KA-20-Sw. Panel
1 ea. XR 86 ADE 1 ea. KY 52-DNE
Dual VOR Heads in Pilot Side of Instrument Panel
Radios installed per AC43:13-2 Page 4 Fig. 2.1 & 2.2
All work done per AC43:13-1
END

ADDITIONAL SHEETS ARE ATTACHED

1284-0606 37 OCT 5 '67

FEDERAL AVIATION AGENCY				Form Approved Budget Bureau No. 04-R060.1	
MAJOR REPAIR AND ALTERATION (Airframe, Powerplant, Propeller, or Appliance)				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-21A
	SERIAL NO.	1161		NATIONALITY AND REGISTRATION MARK	N95467
2. OWNER	NAME (As shown on registration certificate)			ADDRESS (As shown on registration certificate)	
	ANTILLES AIR BOATS, INC.			39 Strand St., Christiansted, St. Croix, US Virgin Islands	
3. FOR FAA USE ONLY					
4. UNIT IDENTIFICATION					5. TYPE
UNIT	MAKE	MODEL	SERIAL NO.	REPAIR	ALTERATION
AIRFRAME	***** (As described in item 1 above) *****				
POWERPLANT	PRATT & WHITNEY	R985-AN14B	14642	X	
PROPELLER					
APPLIANCE	TYPE	Verified by Operator #7A			
	MANUFACTURER				
6. CONFORMITY STATEMENT					
A. AGENCY'S NAME AND ADDRESS			B. KIND OF AGENCY		C. CERTIFICATE NO.
EIGHTH AIR DEPOT, INC. SEBRING AIR TERMINAL P.O. Box 631 SEBRING, FLORIDA			U.S. CERTIFICATED MECHANIC		3610 POWER PLANT CLASS 1 & 2
			FOREIGN CERTIFICATED MECHANIC		
			<input checked="" type="checkbox"/> 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 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				
March 2, 1967	George W. Dumont, Chief Inspector				
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 Agency and is: <input checked="" type="checkbox"/> APPROVED <input type="checkbox"/> REJECTED					
BY	FAA FLT. STANDARDS INSPECTOR	MANUFACTURER	INSPECTION AUTHORIZATION		OTHER (Specify)
	FAA DESIGNEE	<input checked="" type="checkbox"/> REPAIR STATION	CANADIAN DEPARTMENT OF TRANSPORT INSPECTOR OF AIRCRAFT		
DATE OF APPROVAL OR REJECTION	CERTIFICATE OR DESIGNATION NO.	SIGNATURE OF AUTHORIZED INDIVIDUAL			
March 2, 1967	3610	George W. Dumont, Chief Inspector			

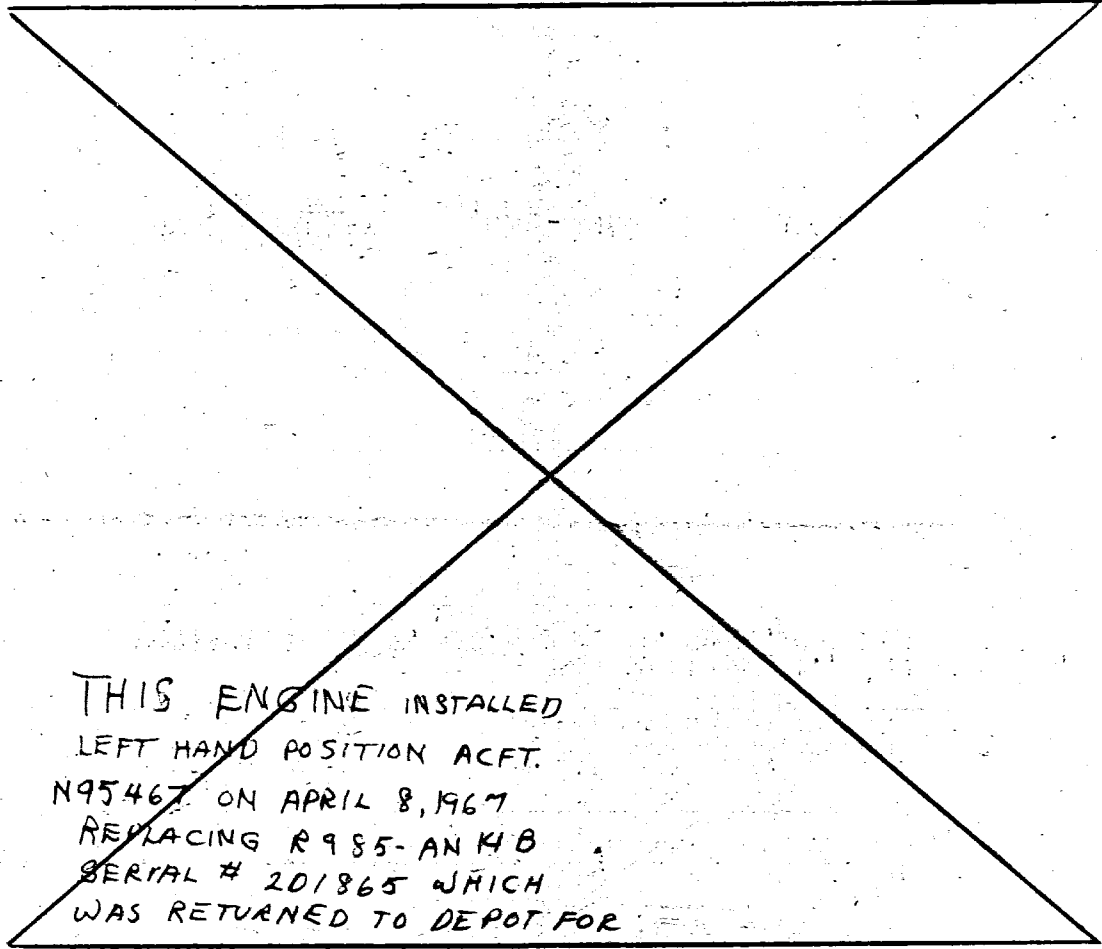
CONVEYANCE NOTICE
FAA AIRCRAFT REGISTRY

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.)

Engine received this station for overhaul. Engine given receiving inspection, completely disassembled and all parts cleaned. All steel parts magnafluxed. All parts inspected in accordance with manufacturer's specifications and replaced where necessary. Engine, magnetos and harness completely overhauled. Test house run of engine satisfactory. Time since overhaul 00:00 hours.

FAA A.D. Note 57-5-4 has been complied with (Crankshaft).
P&W Service Bulletin 1693 (Drain Pipes, Cyl. Inter-Bar) complied with.
FAA A.D. Note 65-7-2 complied with (Fly Weights and Fly Weight Liners).
FAA A.D. Note 66-14-4 (One Piece Cam Reduction Gear) complied with.



THIS ENGINE INSTALLED
LEFT HAND POSITION ACFT.
N95467 ON APRIL 8, 1967
REPLACING R985-AN4B
SERIAL # 201865 WHICH
WAS RETURNED TO DEPOT FOR
OVERHAUL

ADDITIONAL SHEETS ARE ATTACHED

1584-0000 2.25

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FEDERAL AVIATION AGENCY MAJOR REPAIR AND ALTERATION (Airframe, Powerplant, Propeller, or Appliance)				Form Approved Budget Bureau No. 04-R060.1 FOR FAA USE ONLY OFFICE IDENTIFICATION NO. 1261	
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 CIRRUS	MODEL C21A		NATIONALITY AND REGISTRATION MARK N9367	
	SERIAL NO. 1161				
2. OWNER	NAME WILLIAMS AIR BOATS, INC.		ADDRESS St. Croix, U.S. Virgin Islands.		
3. FOR FAA USE ONLY					
4. UNIT IDENTIFICATION					
UNIT	MAKE	MODEL	SERIAL NO.	5. TYPE	
AIRFRAME	ELEVATORS LEFT AND RIGHT			REPAIR	ALTERATION
	***** (As described in item 1 above) *****			<input checked="" type="checkbox"/>	
POWERPLANT					
PROPELLER					
APPLIANCE	TYPE				
	MANUFACTURER				
6. CONFORMITY STATEMENT					
A. AGENCY'S NAME AND ADDRESS		B. KIND OF AGENCY		C. CERTIFICATE NO.	
William J. Everett c/o Pan American H.S. Truman Airport St. Thomas, U.S. Virgin Islands.		<input checked="" type="checkbox"/> U.S. CERTIFICATED MECHANIC		IA/1496292	
		<input type="checkbox"/> FOREIGN CERTIFICATED MECHANIC			
		<input type="checkbox"/> CERTIFICATED REPAIR STATION			
		<input type="checkbox"/> 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 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 August 5th, 1967		SIGNATURE OF AUTHORIZED INDIVIDUAL <i>William J. Everett</i>			
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 Agency and is <input checked="" type="checkbox"/> APPROVED <input type="checkbox"/> REJECTED					
BY	FAA FLT. STANDARDS INSPECTOR	MANUFACTURER	<input checked="" type="checkbox"/> INSPECTION AUTHORIZATION	OTHER (Specify) Inspected by Operator 101	
	FAA DESIGNEE	REPAIR STATION	CANADIAN DEPARTMENT OF TRANSPORT INSPECTOR OF AIRCRAFT		
DATE OF APPROVAL OR REJECTION August 5, 1967		CERTIFICATE OR DESIGNATION NO. IA/1496292		SIGNATURE OF AUTHORIZED INDIVIDUAL <i>William J. Everett</i>	

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OKLA.

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.

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

1. Removed elevators S/N AAB # 7 and S/N AAB # 8.

2. Old covering removed from left and right elevators. Left S/N 6277 and right S/N 6287 structures inspected for condition.

O.K. to Cover *[Signature]*

3. Frames covered with Grade A Fabric. Four coats of clear nitrate dope brushed on, two coats of clear nitrate dope sprayed on, and eight coats of silver nitrate dope sprayed on. Balance not affected. All workmanship and materials used conforms to recommendations of C.A.M. 18.30-3 and FAR 43.

O.K. to Install *[Signature]*

4. Installed and rigged on aircraft in accordance with manufacturers specifications in maintenance handbook NAVAER 01-85VF-2 Sections (4-174) Page # 57.

NOTHING FOLLOWS

ADDITIONAL SHEETS ARE ATTACHED

INDEXED

1288-0027-1070 21 1967

FEDERAL AVIATION AGENCY MAJOR REPAIR AND ALTERATION (Airframe, Powerplant, Propeller, or Appliance)				SJU FSJU 7-6-61	Form Approved Budget Bureau No. 64-R060.1 FOR FAA USE ONLY OFFICE IDENTIFICATION SJU FSJU 7-6-61
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 CRENSHAW	MODEL G21A		NATIONALITY AND REGISTRATION MARK F93467	
	SERIAL NO. 1161	ADDRESS (As shown on registration certificate) 39 Strand Street, Christiansted St. Croix, U.S. Virgin Islands.			
2. OWNER	NAME (As shown on registration certificate) ANTILLES AIR BOATS, INC.				
3. FOR FAA USE ONLY					
4. UNIT IDENTIFICATION					
UNIT	MAKE	MODEL	SERIAL NO.	REPAIR	ALTERATION
AIRFRAME	Fuselage Skin Replacement ***** (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.
William Everett c/o Pan American H.S. Truman Airport, St. Thomas.			<input checked="" type="checkbox"/> U.S. CERTIFICATED MECHANIC		IAF1496292
			<input type="checkbox"/> FOREIGN CERTIFICATED MECHANIC		
			<input type="checkbox"/> CERTIFICATED REPAIR STATION		
			<input type="checkbox"/> 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 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 August 5th, 1967			SIGNATURE OF AUTHORIZED INDIVIDUAL <i>William Everett</i>		
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 Agency and is <input checked="" type="checkbox"/> APPROVED <input type="checkbox"/> REJECTED					
BY	FAA FLT. STANDARDS INSPECTOR	MANUFACTURER	<input checked="" type="checkbox"/> INSPECTION AUTHORIZATION OTHER (Specify) <i>verified by Operator #81</i>		
	FAA DESIGNEE	REPAIR STATION	<input type="checkbox"/> CANADIAN DEPARTMENT OF TRANSPORT INSPECTOR OF AIRCRAFT		
DATE OF APPROVAL OR REJECTION August 5th, 1967		CERTIFICATE OR DESIGNATION NO. IAF1496292		SIGNATURE OF AUTHORIZED INDIVIDUAL <i>William Everett</i>	

NOTICE

Weight and balance or operating limitations must 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.)

FUSELAGE SKIN REPLACEMENT

1. Replaced section of skin on fuselage from STA # 24 to STA # 26 directly below the escape hatch. See attached copies of pages of repair manual for location identification and type of metal.
2. All of the above work done in accordance with Grumman Structural Repair Manual and CAN 18.30-4 and FAR 43.

NOTHING FOLLOWS

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FEB 17 10 41 AM '82

FAA AIRCRAFT REGISTRY

ADDITIONAL SHEETS ARE ATTACHED

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1263-1621 11 Aug 27 1967

FEDERAL AVIATION AGENCY				Form Approved Budget Bureau No. 04-R060.1	
MAJOR REPAIR AND ALTERATION (Airframe, Powerplant, Propeller, or Appliance)				FOR FAA USE ONLY	
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.				OFFICE IDENTIFICATION 15-61	
1. AIRCRAFT	MAKE	GRUMMAN		MODEL	G-21A
	SERIAL NO.	1111		NATIONALITY AND REGISTRATION MARK	N95467
2. OWNER	NAME (As shown on registration certificate)			ADDRESS (As shown on registration certificate)	
	ANTILLES AIR BOATS, INC.			39 Strand Street, Christianstead St. Croix, U.S. V.I.	
3. FOR FAA USE ONLY					
4. UNIT IDENTIFICATION					5. TYPE
UNIT	MAKE	MODEL	SERIAL NO.	REPAIR	ALTERATION
AIRFRAME	Ailerons Left and Right ***** (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.
W.J. Everett c/o PAN AMERICAN H.S. Truman Airport St. THOMAS, U.S. V.I.			<input checked="" type="checkbox"/>	U.S. CERTIFICATED MECHANIC	FA#1496292
			<input type="checkbox"/>	FOREIGN CERTIFICATED MECHANIC	
			<input type="checkbox"/>	CERTIFICATED REPAIR STATION	
			<input type="checkbox"/>	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 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		
August 5th, 1967			<i>W. J. Everett</i>		
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 Agency and is <input checked="" type="checkbox"/> APPROVED <input type="checkbox"/> REJECTED					
BY	FAA FLT. STANDARDS INSPECTOR	MANUFACTURER	INSPECTION AUTHORIZATION		OTHER (Specify)
	FAA DESIGNEE	REPAIR STATION	CANADIAN DEPARTMENT OF TRANSPORT INSPECTOR OF AIRCRAFT		
DATE OF APPROVAL OR REJECTION	CERTIFICATE OR DESIGNATION NO.	SIGNATURE OF AUTHORIZED INDIVIDUAL			
August 5th, 1967	FA#1496292	<i>W. J. Everett</i>			

AVIATION
AIRCRAFT REGISTRY

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.)

1. Removed left and right ailerons S/N SEA # 11 and S/N SEA # 12

2. Old covering removed from left aileron S/N 7967 and right aileron S/N 7867

O.K. to Cover *[Signature]*

3. Frames covered with Grade A Fabric. Four coats of clear nitrate brushed on, two coats of clear nitrate dope sprayed on, eight coats of silver nitrate dope sprayed on. Balance not affected. All workmanship and materials used conforms to recommendations as per C.A.M. 18.30-3 FAR 43.

O.K. to Install *[Signature]*

4. Installed and rigged on aircraft in accordance with manufacturers recommendations in maintenance handbook NAVAER 01-85VF-2 Section (4-174) Page # 57.

NOTHING FOLLOWS

ADDITIONAL SHEETS ARE ATTACHED

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FEDERAL AVIATION AGENCY				Form Approved Budget Bureau No. 04-R060.1	
MAJOR REPAIR AND ALTERATION (Airframe, Powerplant, Propeller, or Appliance)				FOR FAA USE ONLY	
				OFFICE IDENTIFICATION 7-5-61	
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	G21A	
	SERIAL NO.	1161	NATIONALITY AND REGISTRATION MARK	N95467	
2. OWNER	NAME (As shown on registration certificate)		ADDRESS (As shown on registration certificate)		
	ANTILLES AIR BOATS		39 STRAND STREET, CHRISTIANSTAD ST. CROIX, U.S. VIRGIN ISLANDS		
3. FOR FAA USE ONLY					
4. UNIT IDENTIFICATION					
UNIT	MAKE	MODEL	SERIAL NO.	REPAIR	ALTERATION
AIRFRAME	***** (As described in item 1 above) *****				
POWERPLANT					
PROPELLER	HARTZELL PROPELLERS	HC-B3230-2R/ 10152-51			XX
APPLIANCE	TYPE				
	MANUFACTURER				
6. CONFORMITY STATEMENT					
A. AGENCY'S NAME AND ADDRESS		B. KIND OF AGENCY		C. CERTIFICATE NO.	
WILLIAM EVERETT PAN AMERICAN H.S. TRUMAN AIRPORT, ST. THOMAS		<input checked="" type="checkbox"/> U.S. CERTIFICATED MECHANIC <input type="checkbox"/> FOREIGN CERTIFICATED MECHANIC <input type="checkbox"/> CERTIFICATED REPAIR STATION <input type="checkbox"/> MANUFACTURER		IA#1496292	
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	August 5th, 1967	SIGNATURE OF AUTHORIZED INDIVIDUAL <i>William Everett</i>			
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 Agency and is <input checked="" type="checkbox"/> APPROVED <input type="checkbox"/> REJECTED					
BY	FAA FLT. STANDARDS INSPECTOR	MANUFACTURER	<input checked="" type="checkbox"/> INSPECTION AUTHORIZATION	OTHER (Specify) <i>Inspected by Operator</i>	
	FAA DESIGNEE	REPAIR STATION	CANADIAN DEPARTMENT OF TRANSPORT INSPECTOR OF AIRCRAFT		
DATE OF APPROVAL OR REJECTION	August 5th, 1967	CERTIFICATE OR DESIGNATION NO.	SIGNATURE OF AUTHORIZED INDIVIDUAL <i>William Everett</i>		
		IA#14962			

CONVEYANCE
ALL AIRCRAFT REVIS

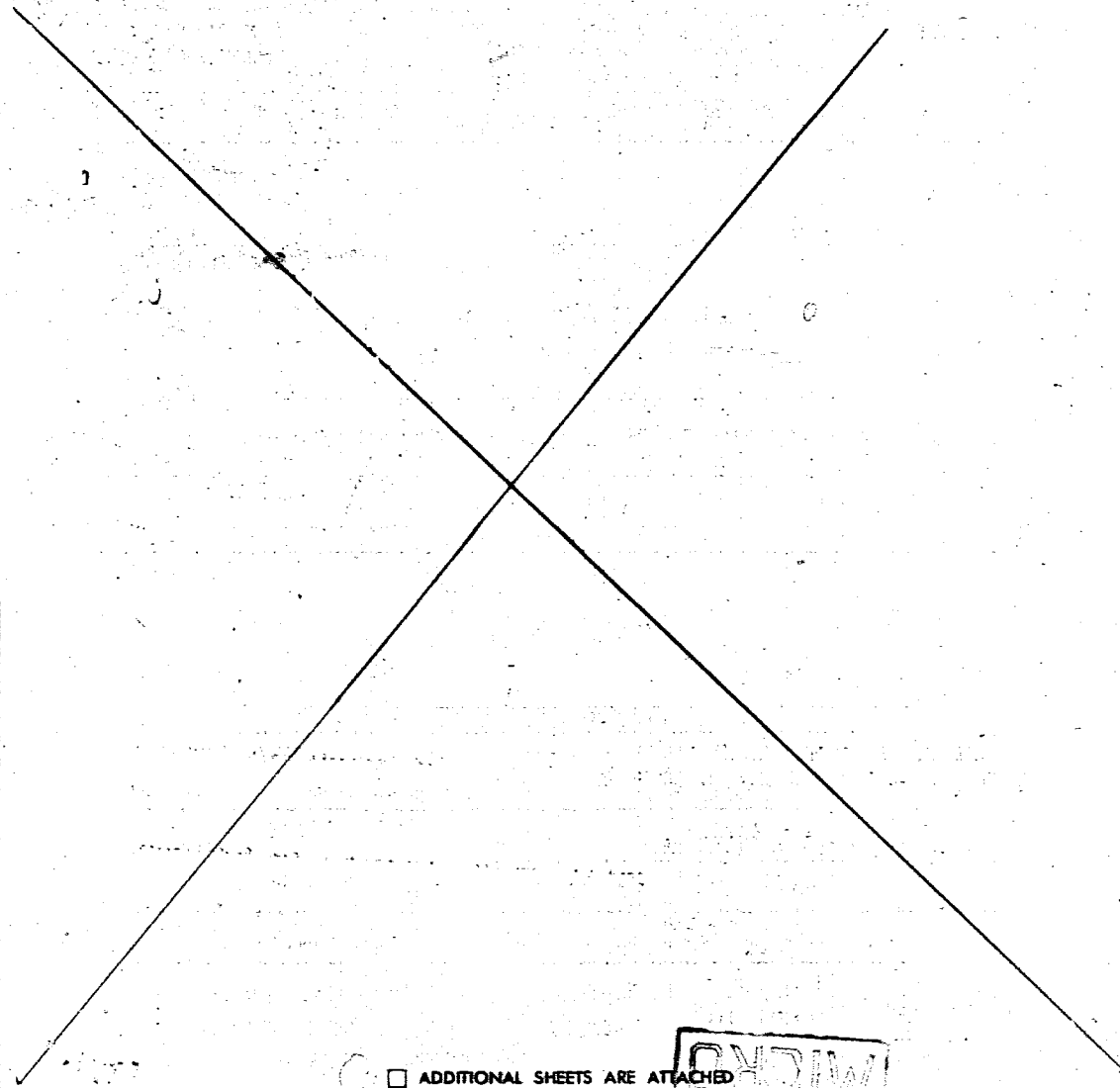
NOTICE

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.

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

2 ea. Hartzell Propellers Model HC-83230-2R/ 10152-51 installed on this aircraft in accordance with Hartzell Propeller Inc. STC SA1 -52 Drawing PD-1860. Flight Manual modified for this installation will be included in the new actual wt. bal. Complete functional check is satisfactory.

EBD



ADDITIONAL SHEETS ARE ATTACHED

BY [Signature]

1-73-0860 37 Dec 30 '66

FEDERAL AVIATION AGENCY				Form Approved Budget Bureau No. 04-R060.1	
MAJOR REPAIR AND ALTERATION (Airframe, Powerplant, Propeller, or Appliance)				FOR FAA USE ONLY	
				OFFICE IDENTIFICATION SJU-FSDO - 7-5-61	
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 21A		NATIONALITY AND REGISTRATION MARK N95467	
	SERIAL NO. 1161				
2. OWNER	NAME (As shown on registration certificate) Antilles Airboats		ADDRESS (As shown on registration certificate) 39 Strand Street Christiansted, St. Croix U.S.V.I.		
	3. FOR FAA USE ONLY				
4. UNIT IDENTIFICATION					
UNIT	MAKE	MODEL	SERIAL NO.	5. TYPE	
				REPAIR	ALTERATION
AIRFRAME	Full repair Sta# 19 to Sta# 25. ***** (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.			
William V. Everett Antilles Airboats Christiansted St. Croix USVI	<input checked="" type="checkbox"/> U.S. CERTIFICATED MECHANIC	1496292			
	<input type="checkbox"/> FOREIGN CERTIFICATED MECHANIC				
	<input type="checkbox"/> CERTIFICATED REPAIR STATION				
	<input type="checkbox"/> 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 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 Dec 10, 1966	SIGNATURE OF AUTHORIZED INDIVIDUAL <i>William Everett</i>				
7. APPROVAL FOR RETURN TO SERVICE					
BY	FAA FLT. STANDARDS INSPECTOR	MANUFACTURER	INSPECTION AUTHORIZATION	OTHER (Specify)	
	FAA DESIGNEE	REPAIR STATION		CANADIAN DEPARTMENT OF TRANSPORT INSPECTOR OF AIRCRAFT	Verified by Operator #15
DATE OF APPROVAL OR REJECTION Dec 10, 1966	CERTIFICATE OR DESIGNATION NO. IA-1496292	SIGNATURE OF AUTHORIZED INDIVIDUAL <i>William Everett</i>			

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.)

- 1) Repaired section of hull from hull station #19 to hull -25. Method of repair done in accordance with Grumman structure and repair manual Nav. Aer. 01-85V-3, page 125 figure 100, titled hull bottom repair outside plate.
- 2) Repaired cross floors members in area of station 22 thru station 24 in accordance with Grumman structure and repair manual Nav-aer 01-5V-3, page 129, titled cross floor typical repairs.
- 3) Spliced new section of keel, as per pg 189 of Grumman Structure & repair manual, titled extruded sections. Method of repair done in accordance with Grumman Structure and repair manual page 126 titled keel repair.

All above work conforms with AC 43-13-1 and Ac 43-13-2.

Nothing Follows.

FILE COPY
FSDO

12/23/66

COPY. _____
CIRC. _____ DESK.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

ADDITIONAL SHEETS ARE ATTACHED

FEDERAL AVIATION AGENCY		Form Approved Budget Bureau No. 04-R060.1	
MAJOR REPAIR AND ALTERATION (Airframe, Powerplant, Propeller, or Appliance)		FOR FAA USE ONLY	
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.		OFFICE IDENTIFICATION 50-FSDO-STJ	
1. AIRCRAFT	MAKE Grumman	MODEL G-21A	NATIONALITY AND REGISTRATION MARK N95467
	SERIAL NO. 1161	ADDRESS (As shown on registration certificate) 39 Strand Street Christiansted, St. Croix U.S. Virgin Islands	
2. OWNER	NAME (As shown on registration certificate) Antilles Air Boats		
3. FOR FAA USE ONLY			
<p>FILE COPY FSDO 7-19-66 SERV. DIST. 1</p>			
4. UNIT IDENTIFICATION			5. TYPE
UNIT	3. MAKE	MODEL	SERIAL NO.
AIRFRAME	(As described in item 1 above)		
POWERPLANT			
PROPELLER			
APPLIANCE	TYPE Brake Shoe and Lining Assy	G29	Aero Parts No. 19
	MANUFACTURER GRUMMAN		X
6. CONFORMITY STATEMENT			
A. AGENCY'S NAME AND ADDRESS		B. KIND OF AGENCY	
William Joseph Everett Jr. c/o Antilles Air Boats 39 Strand Street Christiansted, St. Croix U.S.V.I.		<input checked="" type="checkbox"/> U.S. CERTIFICATED MECHANIC	
		<input type="checkbox"/> FOREIGN CERTIFICATED MECHANIC	
		<input type="checkbox"/> CERTIFICATED REPAIR STATION	
		<input type="checkbox"/> MANUFACTURER	
		C. CERTIFICATE NO. IA-1496292	
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 July 17, 1966	SIGNATURE OF AUTHORIZED INDIVIDUAL <i>William Everett</i> IA#1496292		
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 Agency and is <input type="checkbox"/> APPROVED <input type="checkbox"/> REJECTED			
BY	FAA FLT. STANDARDS INSPECTOR	MANUFACTURER	INSPECTION AUTHORIZATION
	FAA DESIGNEE	REPAIR STATION	CANADIAN DEPARTMENT OF TRANSPORT INSPECTOR OF AIRCRAFT
DATE OF APPROVAL OR REJECTION July 17, 1966	CERTIFICATE OR DESIGNATION NO. IA-1496292	SIGNATURE OF AUTHORIZED INDIVIDUAL <i>William Everett</i>	

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.

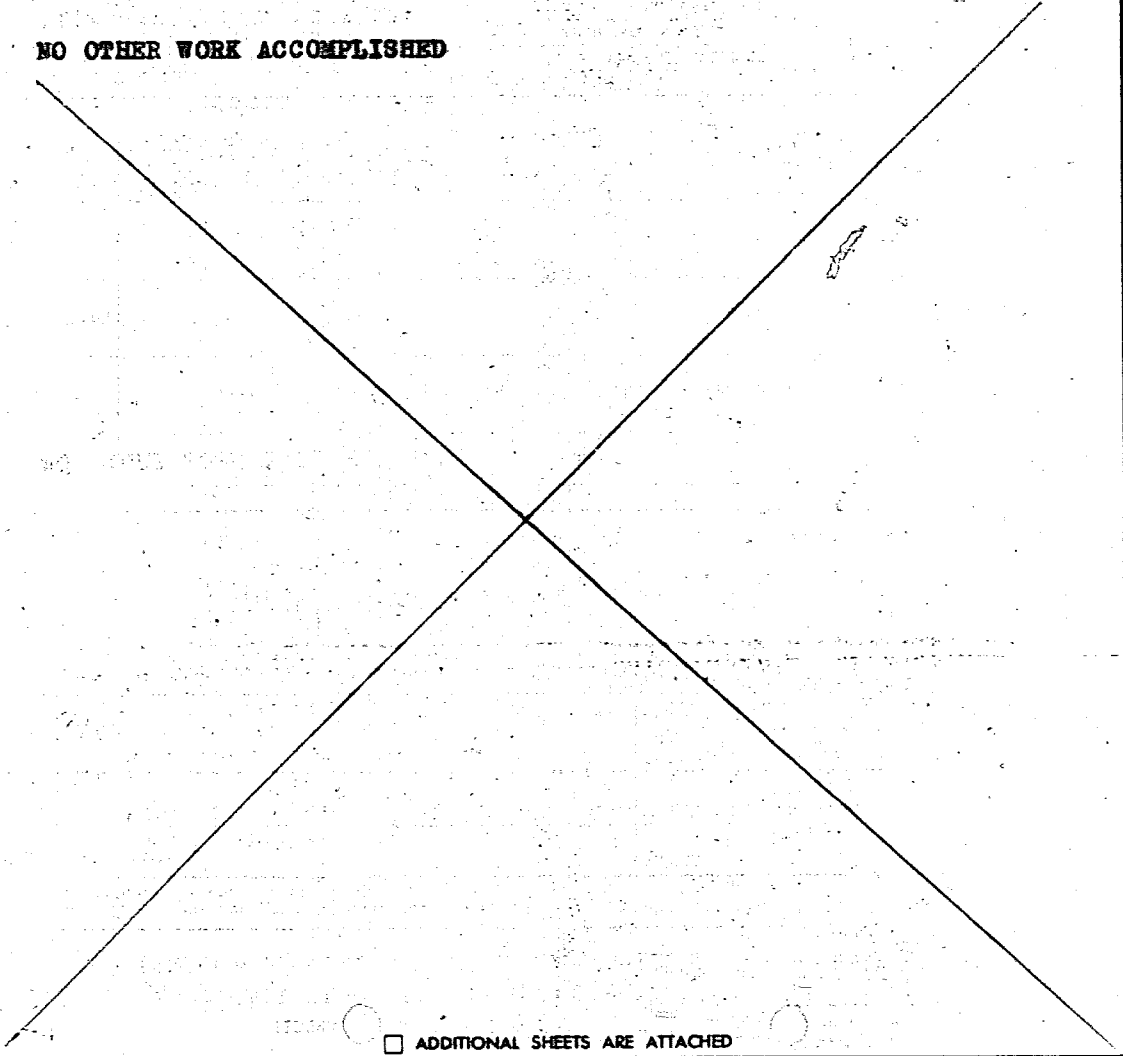
B. DESCRIPTION OF WORK ACCOMPLISHED (If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work completed.)

Brake shoe assembly Serial No. 19, modified in accordance with Supplemental Type Certificate No. S11380, installed on the left brake assembly in accordance with manufacturer's instructions.

Above installation involves no weight change.

Inspected *Williams* IA-1496292

NO OTHER WORK ACCOMPLISHED



ADDITIONAL SHEETS ARE ATTACHED

FEDERAL AVIATION AGENCY MAJOR REPAIR AND ALTERATION (Airframe, Powerplant, Propeller, or Appliance)				Form Approved Budget Bureau No. 04-R060.1 FOR FAA USE ONLY OFFICE IDENTIFICATION SO GADO 5	
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 <i>Gamboran</i>	MODEL <i>G-21A</i>		NATIONALITY AND REGISTRATION MARK <i>N 25467</i>	
	SERIAL NO. <i>1161</i>				
2. OWNER	NAME (As shown on registration certificate) <i>Antilles Air Boats</i>		ADDRESS (As shown on registration certificate) <i>39 Strand St. Christiansted St. Croix, U.S. Virgin Islands</i>		
3. FOR FAA USE ONLY					
4. UNIT IDENTIFICATION					
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.
<i>William Joseph Verett, Jr. c/o Antilles Air Boats 39 Strand St. Christiansted St. Croix, U.S. Virgin Islands</i>			<input checked="" type="checkbox"/> U.S. CERTIFICATED MECHANIC		<i>1496292 ADP</i>
			<input type="checkbox"/> FOREIGN CERTIFICATED MECHANIC		
			<input type="checkbox"/> CERTIFICATED REPAIR STATION		
			<input type="checkbox"/> 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 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 <i>28 June 1966</i>			SIGNATURE OF AUTHORIZED INDIVIDUAL <i>William J. Verett</i>		
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 Agency and is <input checked="" type="checkbox"/> APPROVED <input type="checkbox"/> REJECTED					
BY	FAA FLT. STANDARDS INSPECTOR	MANUFACTURER	<input checked="" type="checkbox"/>	OTHER (Specify) <i>Verified by Operator #45</i>	
	FAA DESIGNEE	REPAIR STATION			
DATE OF APPROVAL OR REJECTION <i>28 June 1966</i>		CERTIFICATE OR DESIGNATION NO. <i>11661</i>		SIGNATURE OF AUTHORIZED INDIVIDUAL <i>Roy R. ...</i>	

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.)

1. All covers removed from elevators #1107 & #1108 and starboard inspected for condition.

2. Elevator covers with grade A fabric. Four coats of clear nitrate dope brushed on, two coats of clear nitrate dope sprayed on, and eight coats of silver nitrate dope sprayed on. Remaining finish sprayed on with four coats of white nitrate dope. Balance not affected. All work meets FAA standards and conforms to recommendations of FAA, etc. 11-31-81 11-3-81

3. Installed and rigged in aircraft in accordance with manufacturer's specifications.

4. All covers removed from rudder #1109 and starboard inspected for condition.

5. Rudder cover with cowling in accordance with FAA Advisory Circular #107. This installation has been previously approved in STC #11-1137, which covers a similar -1 series aircraft. The finish consists of four coats of white nitrate dope, two coats sprayed, and eight coats of silver nitrate dope. Remaining finish sprayed on with four coats of white nitrate dope. Balance not affected. All work meets FAA standards and conforms to recommendations of FAA, etc. 11-3-81 11-3-81

6. Installed and rigged in aircraft in accordance with manufacturer's specifications.

RECEIVED
FEB 11 1982
60690-05
MILITARY DIVISION

MILRO

ADDITIONAL SHEETS ARE ATTACHED

FEDERAL AVIATION AGENCY MAJOR REPAIR AND ALTERATION (Airframe, Powerplant, Propeller, or Appliance)				Form Approved NOV 2 2 1965 Budget Bureau No. 04-R060.1 FOR FAA USE ONLY OFFICE IDENTIFICATION SO. GALO 7-5	
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	Cessna		MODEL	G 21 A
	SERIAL NO.	1161		NATIONALITY AND REGISTRATION MARK	N 99467
2. OWNER	NAME (As shown on registration certificate)			ADDRESS (As shown on registration certificate)	
	Antilles Air Boats, Inc.			39 Strand St. Christiansted St. Croix, U.S. Virgin Islands	
3. FOR FAA USE ONLY					
4. UNIT IDENTIFICATION					
UNIT	MAKE	MODEL	SERIAL NO.	5. TYPE	
AIRFRAME	***** (As described in item 1 above) *****			REPAIR	ALTERATION
POWERPLANT					
PROPELLER					
APPLIANCE	TYPE				
	MANUFACTURER				
6. CONFORMITY STATEMENT					
A. AGENCY'S NAME AND ADDRESS			B. KIND OF AGENCY		C. CERTIFICATE NO.
William N. Kilborn 3341 N.E. 16 Ave. Ft. Lauderdale, Florida			<input checked="" type="checkbox"/> U.S. CERTIFICATED MECHANIC		A & P 1402309
			<input type="checkbox"/> FOREIGN CERTIFICATED MECHANIC		
			<input type="checkbox"/> CERTIFICATED REPAIR STATION		
			<input type="checkbox"/> 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 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		
10/26/65			Wm. N. Kilborn		
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 Agency and is <input checked="" type="checkbox"/> APPROVED <input type="checkbox"/> REJECTED					
BY	FAA FT. STANDARDS INSPECTOR	MANUFACTURER	<input checked="" type="checkbox"/> INSPECTION AUTHORIZATION	OTHER (Specify)	
	FAA DESIGNEE	REPAIR STATION	CANADIAN DEPARTMENT OF TRANSPORT INSPECTOR OF AIRCRAFT		
DATE OF APPROVAL OR REJECTION		CERTIFICATE OR DESIGNATION NO.	SIGNATURE OF AUTHORIZED INDIVIDUAL		
10/26/65		1402309	Wm. N. Kilborn		

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.)

Nose skin (ref. A) was removed, straightened, and replaced as original.

The left side bulkhead at station 1 was manufactured and replaced the same as original.

Skin on left side between bulkheads 1 and 3 was replaced as shown, (ref. B). Skin was same thickness and type as original. Two vertical skin splices were made at bulkheads 2 and 3 (ref. C). The skin splices were made in accordance with CAM 18, fig 4-14(A).

Section of left forward chine from bulkhead 1 to just aft of bulkhead 3 was replaced as shown (ref. D). Standard Grumman chine strip was used in the repair. The chine strip splice just aft of bulkhead 3 was made in accordance with CAM 18, fig. 4-21.

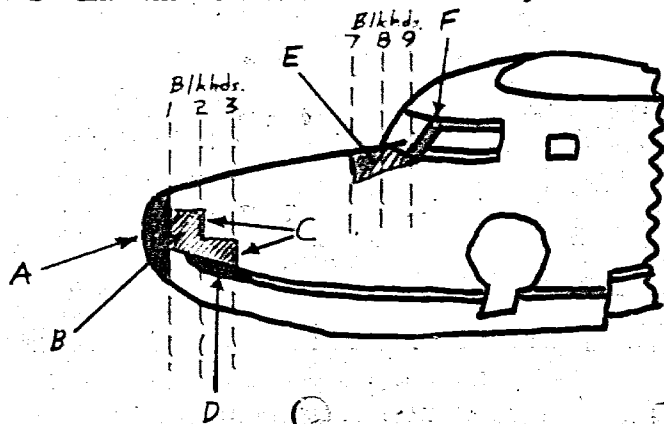
Complete skin just forward of the windshield between bulkheads 7 and 9 was replaced as shown (ref. E). Skin was same thickness and type as original and was replaced the same as original.

Both side windshield posts were replaced (ref. F). Standard Grumman keel stock was used, and the attachment was the same as original.

All aluminum replaced above was alodine treated and zinc chromate primed after fabrication and before installation as called for by Grumman specs.

All seams were made watertight as called for by Grumman specs.

All work was done in accordance with the applicable parts of CAM 18 and the Grumman Structural Repair Manual.



RECEIVED
 FAA
 NOV 2 1965
 SO-GEDO-5
 MIAMI, FLORIDA

ADDITIONAL SHEETS ARE ATTACHED

931 1367

FEDERAL AVIATION AGENCY

MAJOR REPAIR AND ALTERATION

Verified by *C. [Signature]* (Airframe, Powerplant, Propeller, or Appliance)

Form Approved
Budget Bureau No. 04-R060.1
FOR FAA USE ONLY
OFFICE IDENTIFICATION
SO GADO 5

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 G21A 7-5
	SERIAL NO. 1161	NATIONALITY AND REGISTRATION MARK N7967
2. OWNER	NAME (As shown on registration certificate) ANTILLES AIR BOATS, INC.	ADDRESS (As shown on registration certificate) 77 Strand St. Christiansted St. Croix, U.S. Virgin Islands

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 William Joseph Everett, Jr. 2535 S.W. 5th St. Miami, Florida	B. KIND OF AGENCY <input checked="" type="checkbox"/> U.S. CERTIFICATED MECHANIC <input type="checkbox"/> FOREIGN CERTIFICATED MECHANIC <input type="checkbox"/> CERTIFICATED REPAIR STATION <input type="checkbox"/> MANUFACTURER	C. CERTIFICATE NO. A & P 146292
---	--	---

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 19 June 1965	SIGNATURE OF AUTHORIZED INDIVIDUAL <i>William Everett</i> APT 146292
-----------------------------	---

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 Agency and is APPROVED REJECTED

BY	FAA FLT. STANDARDS INSPECTOR	MANUFACTURER	INSPECTION AUTHORIZATION <input checked="" type="checkbox"/>	OTHER (Specify)
	FAA DESIGNEE	REPAIR STATION		

DATE OF APPROVAL OR REJECTION 19 June 1965	CERTIFICATE OR DESIGNATION NO. 186675	SIGNATURE OF AUTHORIZED INDIVIDUAL <i>F. [Signature]</i>
--	---	---

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.

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

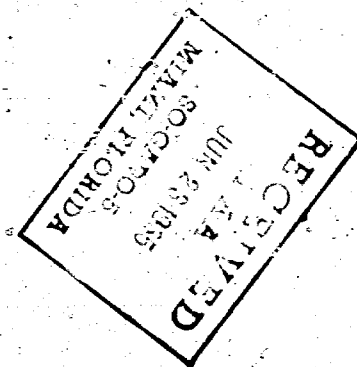
The following repairs were made to the hull of this aircraft:

- 1. A section of the chine from app. station 76 to app. station 24 using factory new parts. This work was done in accordance with specific instructions of the German repair manual pages 777 and 778 and figure 63. These instructions meet the standards of C.A.R. 18.*
- 2. The nose skin was replaced with a factory new part in accordance with the German structural repair manual.*
- 3. Panels of the upper front hull were replaced using .032 2024T3 aluminum. This work also was accomplished in accordance with the German repair manual pages 777, 778, and 779 and figure 63.*

This repair work all meets the standards set forth in C.A.R. 18, section 18.3(d) and was accomplished in accordance with F.A.R. 43.

Attached are two photocopies; 1 of station diagrams and 1 of hull skin plating diagram. Above areas are marked.

END



ADDITIONAL SHEETS ARE ATTACHED

931 1366

17 JUN 25 1965

Modified by _____ FEDERAL AVIATION AGENCY MAJOR REPAIR AND ALTERATION (Airframe, Powerplant, Propeller, or Appliance)	Form Approved Budget Bureau No. 04-R060.1 FOR FAA USE ONLY OFFICE IDENTIFICATION SO GADO 5
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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 G21A
	SERIAL NO. 1167	NATIONALITY AND REGISTRATION MARK N95407
2. OWNER	NAME (As shown on registration certificate) ANTILLES AIR BOATS, INC.	ADDRESS Spencer St. Fredericksted St. Cruz, U.S. Virgin Islands

3. FOR FAA USE ONLY

The repair/alteration identified herein complies with the applicable airworthiness requirements and is approved only for the above described aircraft, subject to conformity inspection by a person authorized in CAR Part 18, section 18.11(b).

6-5-65 Thomas J. Sharp
Date Signature of ERA Inspector
SO GADO-5

4. UNIT IDENTIFICATION				5. TYPE	
UNIT	MAKE	MODEL	SERIAL NO.	REPAIR	ALTERATION
AIRFRAME	***** (As described in item 1 above) *****				X
POWERPLANT					2
PROPELLER					
APPLIANCE	TYPE				
	MANUFACTURER				

6. CONFORMITY STATEMENT

A. AGENCY'S NAME AND ADDRESS William Joseph Everett, Jr. 2535 S.W. 5th St. Miami, Florida	B. KIND OF AGENCY <input checked="" type="checkbox"/> U.S. CERTIFICATED MECHANIC <input type="checkbox"/> FOREIGN CERTIFICATED MECHANIC <input type="checkbox"/> CERTIFICATED REPAIR STATION <input type="checkbox"/> MANUFACTURER	C. CERTIFICATE NO. 1496292
---	--	--------------------------------------

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 15 June 1965	SIGNATURE OF AUTHORIZED INDIVIDUAL William J. Everett AYP #1496292
-----------------------------	--

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 Agency and is APPROVED REJECTED

BY	FAA FLT. STANDARDS INSPECTOR	MANUFACTURER	<input checked="" type="checkbox"/> INSPECTION AUTHORIZATION	OTHER (Specify)
	FAA DESIGNEE	REPAIR STATION	CANADIAN DEPARTMENT OF TRANSPORT INSPECTOR OF AIRCRAFT	
DATE OF APPROVAL OR REJECTION 15 June 1965	CERTIFICATE OR DESIGNATION NO. M16615	SIGNATURE OF AUTHORIZED INDIVIDUAL John [Signature]		

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.)

Cessna G21A N95467 15 June 1965

Reference is made to previously approved 337 form on this aircraft dated Jan. 31, 1964.

Rack and following equipment removed at station 7:

*2 ea. ARC 13B receiver
2 ea. T11 transmitter*

1 ea. B13 Converter

Following equipment removed at station 9, the instrument panel:

*1 ea. cross pointer indicator (888)
1 ea. OBS type 1659-010130
1 ea. ADF control head*

*1 ea. ADF indicator (2330A)
2 ea. ARC control heads*

The following new equipment was installed on the instrument panel, sta. 9:

*1 ea. Narco Mark 12 transceiver
1 ea. Narco ADF 31
These installations accomplished using rfgs. attachments, cables, and containers.*

*1 ea. Narco VHT-3 transceiver
1 ea. Narco VOA-6 VOR indicator*

The Narco T12MP-12 power supply for the Mark 12 was mounted on a hull bulkhead at station 8, near sides using rfgs. rack and container.

The existing VHF antennas were used. The previously installed Collins 377 VOR antenna was replaced with a new Narco VOR-19A at station 12.7 and existing mounts were used for the ADF sense and loop antennas.

Where necessary connecting cables were fabricated using 20 ga. 19L W5086 wire, properly assembled and secured. Circuits properly fused and switches plainly identified.

All this equipment checked for proper operation. Magnetic compass swing with radios on and correction card installed. Electrical loading analysis reveals approx. 25% improvement over previous radio installation. Weight and balance effect noted in log and equipment list corrected.

RECEIVED
FAA
JUN 23 1965
SO-GADO-5
MIAMI, FLORIDA

ADDITIONAL SHEETS ARE ATTACHED

Verified by Operator <i>FA</i>		FEDERAL AVIATION AGENCY <i>800 1448</i>		Form Approved Product Form No. 24-Rev.
MAJOR REPAIR AND ALTERATION FORM (AIRFRAME, POWERPLANT, PROPELLER OR APPLIANCE)				
1. AIRCRAFT	MAKE Grumman	MODEL G-21A	SERIAL NO. 1161	NATIONALITY AND REGISTRATION MARK N-95467
2. OWNER	NAME (First, middle, last) Antilles Air Boats Inc.		ADDRESS (Street and number, city, zone and State) 39 Strand Street, Christiansted St. Croix, U. S. Virgin Islands	
3. COMPLETE ONLY FOR UNIT REPAIRED AND/OR ALTERED. DESCRIBE WORK ACCOMPLISHED ON REVERSE IN ACCORDANCE WITH CIVIL AERONAUTICS MANUAL 18.				
UNIT	MAKE	MODEL	SERIAL NO.	NATURE OF WORK (Check)
				MAJOR REPAIR MAJOR ALTERATION
a. AIRFRAME	***** (As described in Item 1 above) *****			
b. POWERPLANT				
c. PROPELLER				
d. APPLIANCE	TYPE AND MANUFACTURER Brake shoe and lining assy (Grumman) G-29		Aero Parts #5 & #7	X
4. AIRCRAFT WEIGHT AND BALANCE DATA *AFTER the repairs and/or alterations described below were made. This item must be completed by repair or alteration agency. However, in the case of a spare component, it will not be completed until such component is installed in an aircraft. At this time, it will be completed by the installing agency, if applicable.				
CATEGORY	EMPTY WEIGHT (Pounds)*	EMPTY CENTER OF GRAVITY (Inches from datum)*	USEFUL LOAD (Pounds)*	
5. CONFORMITY STATEMENT (Complete and check)				
a. AGENCY'S NAME AND ADDRESS		b. KIND OF AGENCY		c. CERTIFICATE NO.
Ray Allen Antilles Air Boats Inc. 39 Strand Street Christiansted, St. Croix U. S. Virgin Islands		<input checked="" type="checkbox"/> U. S. Certificated Mechanic. <input type="checkbox"/> Foreign Certificated Mechanic. <input type="checkbox"/> Certificated Repair Station. <input type="checkbox"/> Manufacturer. <input type="checkbox"/> (Check if repair or alteration was made under delegation option procedures.)		AAP 1512000
d. I certify that the repair and/or alteration made to the unit(s) identified under item 3 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 18 of the U. S. Civil Air Regulations and that the information furnished herein is true and correct to the best of my knowledge.				
<u>1-29-65</u> (Date repair and/or alteration completed)		<i>Ray Allen</i> AAP 1512000 (Signature of authorized individual)		
6. APPROVAL FOR RETURN TO SERVICE (Check and complete appropriate items) Pursuant to the authority specified below the unit identified in item 3 was inspected in the manner prescribed by the Administrator of the Federal Aviation Agency and is				
<input checked="" type="checkbox"/> APPROVED } BY { <input type="checkbox"/> REJECTED }		<input type="checkbox"/> FAA Designee <input type="checkbox"/> Manufacturer <input type="checkbox"/> Canadian Department of Transport Inspector of Aircraft <input type="checkbox"/> FAA Flight Standards Inspector <input type="checkbox"/> Repair Station <input checked="" type="checkbox"/> Other (Specify)		
<u>1-29-65</u> (Date of approval or rejection)		<i>Audrey K. ...</i> AT1315661 (Signature of authorized individual; title or identification number)		
7. TO BE COMPLETED ONLY BY FAA PERSONNEL				
<input type="checkbox"/> Forwarded for engineering comment <input type="checkbox"/> See attached memorandum <input checked="" type="checkbox"/> Accepted <u>2-1-65</u> (Date) <input type="checkbox"/> Reinspected _____ (Date) <input type="checkbox"/> Spot Checked _____ (Date)		28 FEB 5-1965		
<u>7-5</u> (FAA designation number)		<i>James M. ...</i> SO GADO 5 (Signature Flight Standards Inspector)		

A

INSTRUCTIONS

This form must be completed in duplicate each time a major repair and/or alteration is made of an aircraft, airframe, power-plant, propeller or appliance. After the repair and or alteration has been inspected and item 6 completed, the original copy of this form will be made available to the aircraft owner for retention as part of the aircraft records. The duplicate copy is retained by the FAA for administrative purposes.

See CAM 18 for detailed instructions concerning the information to be furnished with this form and instructions concerning its preparation.

6. DESCRIPTION OF WORK ACCOMPLISHED.*

1. Brake shoe assembly Serial No. 6, modified in accordance with Supplemental Type Certificate No. SAI1380, installed on the left brake assembly in accordance with manufacturer's instructions.
2. Brake shoe assembly Serial No. 7, modified in accordance with Supplemental Type Certificate No. SAI1380, installed on the right brake assembly in accordance with manufacturer's instructions.

Above installations involve no weight change.
NO OTHER WORK ACCOMPLISHED.

*If additional space is needed attach additional sheets bearing aircraft nationality and registration mark and date work completed.

Check block if additional sheets are attached.

U.S. GOVERNMENT PRINTING OFFICE: 1974-2-5730

Form FAA-337 (4-77)

Verified by Operator #33 FEDERAL AVIATION AGENCY
MAJOR REPAIR AND ALTERATION FORM (AIRFRAME, POWERPLANT, PROPELLER OR APPLIANCE)

1. AIRCRAFT	MAKE Cessna	MODEL 441A	SERIAL NO. 44101	ALTERNATE REGISTRATION MARK N5367 95407
2. OWNER	NAME (First, middle, last) Southeast Airlines		ADDRESS (Street and number, city, state and State) P.O. Box 48-304, Miami 48, Fla.	

3. COMPLETE ONLY FOR UNIT REPAIRED AND/OR ALTERED. DESCRIBE WORK ACCOMPLISHED ON REVERSE IN ACCORDANCE WITH CIVIL AERONAUTICS MANUAL 18.

UNIT	MAKE	MODEL	SERIAL NO.	NATURE OF WORK (CMA)	
				MAJOR REPAIR	MAJOR ALTERATION
a. AIRFRAME	(Fuselage skin replacements.) ***** (As described in item 1 above) *****			2	
b. POWERPLANT					
c. PROPELLER					
d. APPLIANCE	TYPE AND MANUFACTURER				

4. AIRCRAFT WEIGHT AND BALANCE DATA This item must be completed by repair or alteration agency. However, in the case of a spare component, it will not be completed until such component is installed in an aircraft. At this time, it will be completed by the installing agency, if applicable.
*AFTER the repairs and/or alterations described below were made.

CATEGORY	EMPTY WEIGHT (Pounds)*	EMPTY CENTER OF GRAVITY (Inches from datum)*	USEFUL LOAD (Pounds)*
NORMAL	6,427	31.69	1,573

5. CONFORMITY STATEMENT (Complete and check)

a. AGENCY'S NAME AND ADDRESS William Joseph Everett, Jr. 2535 S. W. 5th St. Miami 35, Fla.	b. KIND OF AGENCY <input checked="" type="checkbox"/> U. S. Certificated Mechanic. <input type="checkbox"/> Foreign Certificated Mechanic. <input type="checkbox"/> Certificated Repair Station. <input type="checkbox"/> Manufacturer. <input type="checkbox"/> (Check if repair or alteration was made under delegation option procedures.)	c. CERTIFICATE NO. T & P 1496293
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I certify that the repair and/or alteration made to the unit(s) identified under item 3 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 18 of the U. S. Civil Air Regulations and that the information furnished herein is true and correct to the best of my knowledge.

January 28, 1964
(Date repair and/or alteration completed)

William Joseph Everett NRP 1496293
(Signature of authorized individual)

6. APPROVAL FOR RETURN TO SERVICE (Check and complete appropriate items)
Pursuant to the authority specified below the unit identified in item 3 was inspected in the manner prescribed by the Administrator of the Federal Aviation Agency and is

3 APPROVED } BY { FAA Designee Manufacturer Canadian Department of Transport Inspector of Aircraft
 REJECTED } FAA Flight Standards Inspector Repair Station Other (Specify)
INSPECTION AUTHORIZED RECORDED
2-1-64 **Fred W. Rhea FA 1315661**
(Date of approval or rejection) (Signature of authorized individual title or identification number)

7. TO BE COMPLETED ONLY BY FAA PERSONNEL

a. Forwarded for engineering comment See attached memorandum
b. Accepted **2-3-64** (Date) Reinspected (Date) Spot Checked **38** **FEB 28 1964** (Date)
SO GADO 5 **7-5** **L. M. Young**
(FAA designation number) (Signature Flight Standards Inspector)

INSTRUCTIONS

This form must be completed in duplicate each time a major repair and/or alteration is made of an aircraft, airframe, powerplant, propeller or appliance. After the repair and/or alteration has been inspected and Item C completed, the original copy of this form will be made available to the aircraft owner for retention as part of the aircraft records. The duplicate copy is retained by the FAA for administrative purposes.

See CAM 18 for detailed instructions concerning the information to be furnished with this form and instructions concerning its preparation.

5. DESCRIPTION OF WORK ACCOMPLISHED.*
FUSELAGE SKIN REPAIRS

- A) Replaced the following sections of skin on the top of the fuselage:
 - 1. Section 18 color coded black from station #16 to #26. Replaced with .032-2024-T3 anodized.
 - 2. Section 15 color coded brown from station #26-27. Replaced with .032-2024-T3 anodized.
 - 3. Section 14 color coded blue from station #24 to station #26. Replaced with .040-2024-T3 anodized.
- B) Spliced in section of new .032-2024-T3 in skin #12 color coded green and extending from station #20 to station #24 same rivet pattern as Grumman skin splice made. Skin splice made water tight to conform with water tight area shown on hull skin plating diagram included with this form. Also included are hull station diagram and sheet #2 of hull plating diagram.
- C) All of the above work done in accordance with Grumman structural repair manual for 4-21 and C.M. 18.30-4.

..... NOTHING FOLLOWS

*If additional space is needed attach additional sheets bearing aircraft nationality and registration mark and date work completed.
Check block if additional sheets are attached.

Verified by Operator #33		FEDERAL AVIATION AGENCY		Form approved, Rocket Bureau No. 04-R00.	
MAJOR REPAIR AND ALTERATION FORM (AIRFRAME, POWERPLANT, PROPELLER OR APPLIANCE)					
1. AIRCRAFT	MAKE CITROCEL	MODEL G-21A	SERIAL NO. 1161	NATIONALITY AND REGISTRATION MARK N95467	
2. OWNER	NAME (First, middle, last) Southeast Airlines		ADDRESS (Street and number, city, zone and State) P.O. Box 48-304 Miami 48, Fla.		
3. COMPLETE ONLY FOR UNIT REPAIRED AND/OR ALTERED. DESCRIBE WORK ACCOMPLISHED ON REVERSE IN ACCORDANCE WITH CIVIL AERONAUTICS MANUAL 18.					
UNIT	MAKE	MODEL	SERIAL NO.	NATURE OF WORK (Check)	
				MAJOR REPAIR	MAJOR ALTERATION
a. AIRFRAME	***** (As described in item 1 above) *****				<input checked="" type="checkbox"/>
b. POWERPLANT				The alteration identified herein complied with applicable airworthiness requirements and is approved only for the above described aircraft subject to conformity inspection by a person authorized in CAR 13.11 (b).	
c. PROPELLER					
d. APPLIANCE	TYPE AND MANUFACTURER				
4. AIRCRAFT WEIGHT AND BALANCE DATA *AFTER the repairs and/or alterations described below were made.					
This item must be completed by repair or alteration agency. However, in the case of a spare component, it will not be completed until such component is installed in an aircraft. At this time, it will be completed by the installing agency, if applicable.					
CATEGORY	EMPTY WEIGHT (Pounds)*	EMPTY CENTER OF GRAVITY (Inches from datum)*	USEFUL LOAD (Pounds)*		
Normal	6427	± 21.69	1573		
5. CONFORMITY STATEMENT (Complete and check)					
a. AGENCY'S NAME AND ADDRESS		b. KIND OF AGENCY		c. CERTIFICATE NO.	
A. L. Matthews 9850 S.W. 197 Street Miami 57, Fla.		<input checked="" type="checkbox"/> U. S. Certified Mechanic. <input type="checkbox"/> Foreign Certified Mechanic. <input type="checkbox"/> Certified Repair Station. <input type="checkbox"/> Manufacturer. <input type="checkbox"/> (Check if repair or alteration was made under delegation option procedures.)		AAP N-5769	
d. I certify that the repair and/or alteration made to the unit(s) identified under item 3 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 18 of the U. S. Civil Air Regulations and that the information furnished herein is true and correct to the best of my knowledge.					
January 31, 1964 (Date repair and/or alteration completed)		<i>A. L. Matthews</i> (Signature of authorized individual)			
6. APPROVAL FOR RETURN TO SERVICE (Check and complete appropriate items)					
Pursuant to the authority specified below the unit identified in item 3 was inspected in the manner prescribed by the Administrator of the Federal Aviation Agency and is					
<input checked="" type="checkbox"/> APPROVED <input type="checkbox"/> REJECTED		BY { <input type="checkbox"/> FAA Designee <input type="checkbox"/> FAA Flight Standards Inspector } Feb. 1, 1964 (Date of approval or rejection)		<input type="checkbox"/> Manufacturer <input type="checkbox"/> Repair Station <input checked="" type="checkbox"/> Canadian Department of Transport Inspector of Aircraft <input checked="" type="checkbox"/> Other (Specify) <i>Inspection Authorization</i> <i>A. L. Matthews</i> N-5769 (Signature of authorized individual; title or identification number)	
7. TO BE COMPLETED ONLY BY FAA PERSONNEL					
a. <input type="checkbox"/> Forwarded for engineering comment <input type="checkbox"/> See attached memorandum					
b. <input checked="" type="checkbox"/> Accepted 2/3/64 (Date) <input type="checkbox"/> Reinspected (Date) <input type="checkbox"/> Spot Check (Date)					
SO GADC 5 (FAA designation number)		<i>Charles M. Campy</i> (Signature Flight Standards Inspector)			

INSTRUCTIONS

This form must be completed in duplicate each time a major repair and/or alteration is made of an aircraft, airframe, power-plant, propeller or appliance. After the repair and/or alteration has been inspected and item completed, the original copy of this form will be made available to the aircraft owner for retention as part of the aircraft records. The duplicate copy is retained by the FAA for administrative purposes.

See CAM 18 for detailed instructions concerning the information to be furnished with this form and instructions concerning its preparation.

B. DESCRIPTION OF WORK ACCOMPLISHED:

Installed one 3 place divan and 4 single seats as shown on attached sketch and substantiated as follows; the 3 place divan is similar to the divan previously installed in Douglas D03 N16065 which was load tested and the test witnessed by FAA Inspector C. W. Carrier, except that it was reduced in length from 72" to 60" and in width from 24" to 20". Since this shortens the effective length of the tubing in each bay and thus increases its strength, this is considered satisfactory. The attachment of the divan and seats to the floor and the floor to the fuselage structure is shown to be satisfactory by comparison with the approved Load Test Report #R-230, copy attached.

Weight and Balance Computation to check for compliance with Aeronautics Bulletin 7A section 75.

Airplane empty	6427	21.69	139401.63
Oil 15 gals.	112	8	896
Fuel 120 gals.(min.)	720	30	21600
Pilot & Copilot	340	58 -5	- 1700
2 pass. in Row 2 seats	340	68	23120
	<u>7939</u>		<u>183317.63</u>

CG = 183317.63/7939 = 23.09" aft of datum.
 CG range is 20.5 to 33.0
 Gross weight is 8000#

Aircraft released to service with only 2 single passenger seats installed. Structure and divan satisfactory for installation of the additional seats pending re-weighing of aircraft and meeting weight requirements of CAR 4a.723 and 4a.621

*If additional space is needed attach additional sheets bearing aircraft nationality and registration mark and date work completed.
 Check block if additional sheets are attached.

FEDERAL AVIATION AGENCY

MAJOR REPAIR AND ALTERATION FORM (AIRFRAME, POWERPLANT, PROPELLER OR APPLIANCE)

1. AIRCRAFT	MAKE Cessna	MODEL G-21A	SERIAL NO. 1161	NATIONALITY AND REGISTRATION MARK N95467
2. OWNER	NAME (First, middle, last) Southeast Airlines		ADDRESS (Street and number, city, zone and State) P.O. Box 48-304, Miami 48, Fla.	
3. COMPLETE ONLY FOR UNIT REPAIRED AND/OR ALTERED. DESCRIBE WORK ACCOMPLISHED ON REVERSE IN ACCORDANCE WITH CIVIL AERONAUTICS MANUAL 18.				
UNIT	MAKE	MODEL	SERIAL NO.	NATURE OF WORK (Check)
a. AIRFRAME	(wing metalizing) ***** (As described in item 1 above) *****			MAJOR REPAIR MAJOR ALTERATION X
b. POWERPLANT	The alteration identified in this report was completed with applicable regulations of the FAA and the above described aircraft was at the time of the alteration authorized in CAR 2015.			with applicable regulations of the FAA and the above described aircraft was at the time of the alteration authorized in CAR 2015.
c. PROPELLER				
d. APPLIANCE	TYPE AND MANUFACTURER		Date 2/1/64	Signature Charles M. Carney
4. AIRCRAFT WEIGHT AND BALANCE DATA This item must be completed by repair or alteration agency. However, in the case of a spare component, it will not be completed until such component is installed in an aircraft. At this time, it will be completed by the installing agency, if applicable.				
CATEGORY	EMPTY WEIGHT (Pounds)*	EMPTY CENTER OF GRAVITY (Inches from datum)*	USEFUL LOAD (Pounds)*	
Normal	4,487	145.30" (21.69)	1,570	
5. CONFORMITY STATEMENT (Complete and check)				
a. AGENCY'S NAME AND ADDRESS		b. KIND OF AGENCY		c. CERTIFICATE NO.
William Joseph Everett, Jr. 2535 S.W. 5th St. Miami 35, Fla.		<input checked="" type="checkbox"/> U. S. Certificated Mechanic. <input type="checkbox"/> Foreign Certificated Mechanic. <input type="checkbox"/> Certificated Repair Station. <input type="checkbox"/> Manufacturer. <input type="checkbox"/> (Check if repair or alteration was made under delegation option procedures.)		A & P 1496292
d. I certify that the repair and/or alteration made to the unit(s) identified under item 3 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 18 of the U. S. Civil Air Regulations and that the information furnished herein is true and correct to the best of my knowledge.				
January 23, 1964 (Date repair and/or alteration completed)		<i>William Joseph Everett, Jr.</i> (Signature of authorized individual)		
6. APPROVAL FOR RETURN TO SERVICE (Check and complete appropriate items) Pursuant to the authority specified below the unit identified in item 3 was inspected in the manner prescribed by the Administrator of the Federal Aviation Agency and is				
<input checked="" type="checkbox"/> APPROVED } BY { <input type="checkbox"/> FAA Designee <input type="checkbox"/> Manufacturer <input type="checkbox"/> Canadian Department of Transport Inspector of Aircraft <input type="checkbox"/> REJECTED } <input type="checkbox"/> FAA Flight Standards Inspector <input type="checkbox"/> Repair Station <input checked="" type="checkbox"/> Other (Specify) <i>Inspection Accounting</i>				
Feb. 1, 1964 (Date of approval or rejection)		<i>R. L. Newton</i> 1496292 (Signature of authorized individual: title or identification number)		
7. TO BE COMPLETED ONLY BY FAA PERSONNEL				
a. <input type="checkbox"/> Forwarded for engineering comment <input type="checkbox"/> See attached memorandum				
b. <input checked="" type="checkbox"/> Accepted 2/2/1964 (Date) <input type="checkbox"/> Reinspected (Date) <input type="checkbox"/> Spot Checked (Date)				
SO GADO 5 (FAA designation number)		<i>Charles M. Carney</i> (Signature Flight Standards Inspector)		

RECORDED

38 FEB 20 1964

RECORDED

INSTRUCTIONS

This form must be completed in duplicate each time a major repair and/or alteration is made of an aircraft, airframe, power-plant, propeller or appliance. After the repair and/or alteration has been inspected and item 6 completed, the original copy of this form will be made available to the aircraft owner for retention as part of the aircraft records. The duplicate copy is retained by the FAA for administrative purposes.

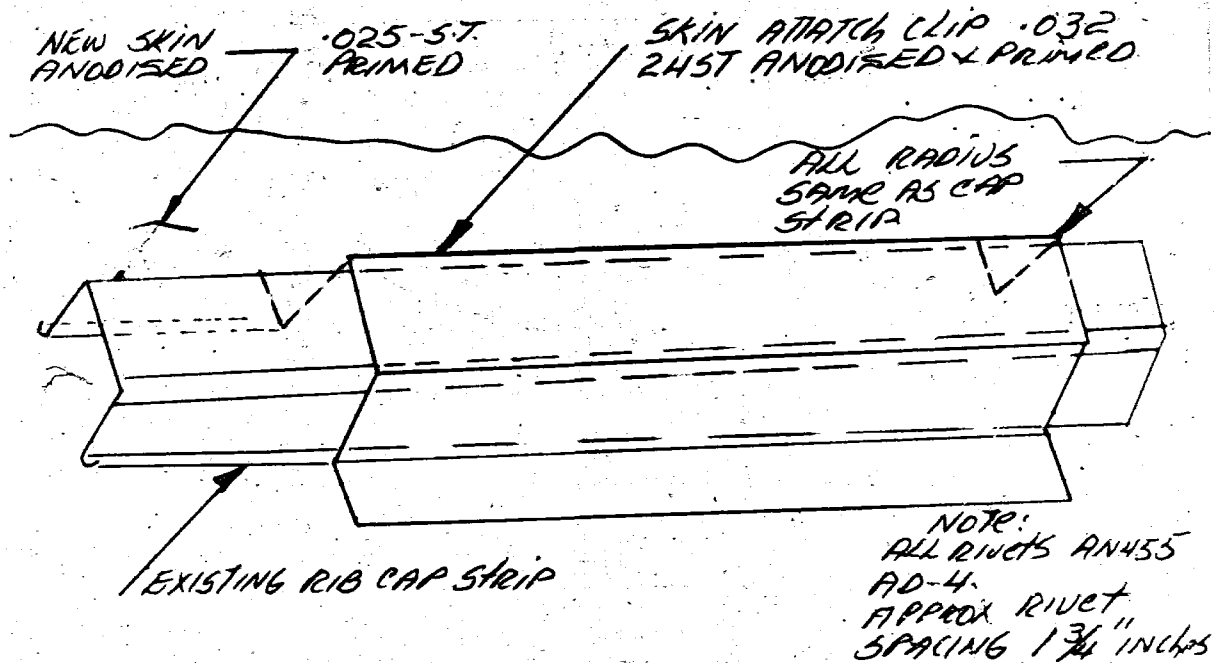
See CAM 18 for detailed instructions concerning the information to be furnished with this form and instructions concerning its preparation.

B. DESCRIPTION OF WORK ACCOMPLISHED.

Removed old fabric and installed .025, 24 ST, anodized, aluminum in place of fabric. Attachment to rear spar caps and flap and aileron beams with AN 455-4 rivets spaced approximately one inch apart. Zinc chromate tape applied as a seal between skin laps and spar laps. Attachment to ribs accomplished as per drawing below. Clips are fitted between diagonal rib compression members.

Clips primed and sprayed inside with Dumble Oil Company Rust Pan 326 for corrosion protection. Inspection covers are installed on lower wing skins, drain holes in each bay at trailing edge.

Tips covered same as wings. All work done in accordance with AD 13 and AD 14 weighed at Air International RSP, Sta. # 3692 (see weight and balance report included in aircraft records.) This modification previously approved on airplane N703A and was coordinated with EDMO-43 at that time.



*If additional space is needed attach additional sheets bearing aircraft nationality and registration mark and date work completed.

Check block if additional sheets are attached.

FEDERAL AVIATION AGENCY

Form approved
Budget Form No. 04-100A

Verified by Operator #33
MAJOR REPAIR AND ALTERATION FORM (AIRFRAME, POWERPLANT, PROPELLER OR APPLIANCE)

1. AIRCRAFT	MAKE Cessna	MODEL 441A	SERIAL NO. 1161	NATIONALITY AND REGISTRATION MARK N98467
2. OWNER	NAME (Print name last) Southwest Airlines		ADDRESS (Print and number, city, state and zip) P. O. B. 68304, Miami 28, Florida	

3. COMPLETE ONLY FOR UNIT REPAIRED AND/OR ALTERED. DESCRIBE WORK ACCOMPLISHED ON REVERSE IN ACCORDANCE WITH CIVIL AERONAUTICS MANUAL 18.

UNIT	MAKE	MODEL	SERIAL NO.	NATURE OF WORK (Check)	
				MAJOR REPAIR	MAJOR ALTERATION
a. AIRFRAME	Radio and seat installation				<input checked="" type="checkbox"/>
b. POWERPLANT	The work alteration identified herein complies with the applicable aircraft type certificate and is approved only for the above described aircraft type to conform to revision by a person authorized in CAR Part 18, section 18.11(b).				
c. PROPELLER					
d. APPLIANCE	TYPE AND MANUFACTURER	Date 2-1-64		Signature of FAA Inspector Thomas J. Sharp	

RECORDED

4. AIRCRAFT WEIGHT AND BALANCE DATA
*AFTER the repairs and/or alterations described below were made. This item must be completed by repair or alteration agency. However, in the case of a spare component, it will not be completed until such component is installed in an aircraft. At this time, it will be completed by the installing agency, if applicable.

CATEGORY	EMPTY WEIGHT (Pounds)*	EMPTY CENTER OF GRAVITY (Inches from datum)*	USEFUL LOAD (Pounds)*
Normal	6,427	142.89" (21.69)	1,573

5. CONFORMITY STATEMENT (Complete and check)

a. AGENCY'S NAME AND ADDRESS William Joseph Everett, Jr. 2535 S.W. 5th Street Miami, Florida	b. KIND OF AGENCY <input type="checkbox"/> U. S. Certificated Mechanic. <input type="checkbox"/> Foreign Certificated Mechanic. <input type="checkbox"/> Certificated Repair Station. <input type="checkbox"/> Manufacturer. <input type="checkbox"/> (Check if repair or alteration was made under delegation option procedure.)	c. CERTIFICATE NO. A 61P 1496203
--	--	--

I certify that the repair and/or alteration made to the unit(s) identified under item 3 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 18 of the U. S. Civil Air Regulations and that the information furnished herein is true and correct to the best of my knowledge.
January 31, 1964
(Date repair and/or alteration completed)
William Joseph Everett, Jr.
(Signature of authorized individual)

6. APPROVAL FOR RETURN TO SERVICE (Check and complete appropriate items)

Pursuant to the authority specified below the unit identified in item 3 was inspected in the manner prescribed by the Administrator of the Federal Aviation Agency and is

3 APPROVED } BY { FAA Designee Manufacturer Canadian Department of Transport Inspector of Aircraft
 REJECTED } FAA Flight Standards Inspector Repair Station Other (Specify)
INSPECTION AUTHORITY

2-1-64
(Date of approval or rejection)
Fred W. Shea AT 1315
(Signature of authorized individual, title or identification number)

38 FEB 20 1964

7. TO BE COMPLETED ONLY BY FAA PERSONNEL

a. Forwarded for engineering comment See attached memorandum

b. Accepted **2-1-64** (Date) Reinspected (Date) Spot Checked (Date)

SO GADO 5 7-5
(FAA designation number)
Thomas J. Sharp
(Signature Flight Standards Inspector)

INSTRUCTIONS

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See CAM 18 for detailed instructions concerning the information to be furnished with this form and instructions concerning its preparation.

B. DESCRIPTION OF WORK ACCOMPLISHED.

I. Manufactured and installed a three shelf radio rack immediately forward of Station #7 in the left hand side of box compartment. Used 3/4" 8084 T3 aluminum angle. The shelves are covered with 8084 T3-040 sheet aluminum. The rack is secured to bulkhead at Station #7 to adjacent stringers and to flooring with proper fasteners. Installed the following equipment on the above rack:

A. On the center shelf are located the following items:

1. A.R.C.-B-15B receiver
2. A.R.C.-B-11 transmitter
3. Lear ADF-12 amplifier

B. On the bottom shelf are located the following items:

1. A.R.C.-B-15B receiver
2. A.R.C.-B-15 converter
3. A.R.C.-VHF B-11 transmitter

II. The following antennas were installed on top of fuselage:

- A. Collins V.O.R. type 37-F at Station 12.9.
- B. Lear loop antenna centered at Station 12.
- C. 2 V.H.F. transmitting whip antennas mounted at Station 12.9. They are laterally located 19" on each side of Collins 37-F antenna.

III. Installed on instrument panel at Station #9 the following equipment:

- A. Cross point indicator model 63F
- B. ADF indicator model 2330A
- C. Azim bearing selector indicator type 1639-010130
- D. V.O.R. type 049 VHF #2 control head (ASD)
- E. VHF #1 control head type 049 (ASD)
- F. Lear ADF-12 control head

IV. Wiring is of Mil. Spec (MIL.-B-5086). All radio systems properly fused in accordance with manufacturers specifications. Radio operation switches properly placarded in cockpit. Electrical load computation performed and maximum continuous electrical load found to be 19.7 amps. This aircraft equipped with two each 25 amp. generators. 19.7 equals 78% of total generator capacity. Radio Functionally checked.

V. Magnetic compass swung with radios on. See weight and balance report accomplished by Air International Repair Station #3692. ~~use attached Hall Station #3692.~~ All workmanship above, as well as materials used conforms with the regulations set forth in FAR 23.30. Nothing follows.

*If additional space is needed attach additional sheets bearing aircraft nationality and registration mark and date work completed.

Check block if additional sheets are attached.

Verified by Operator #33 FEDERAL AVIATION AGENCY

MAJOR REPAIR AND ALTERATION FORM (AIRFRAME, POWERPLANT, PROPELLER OR APPLIANCE)

1. AIRCRAFT	MAKE Cessna	MODEL C171A	SERIAL NO. 1731	NATIONALITY AND REGISTRATION MARK N9467
2. OWNER	NAME (First, middle, last) Southwest Airlines			
		ADDRESS (Street and number, city, name and State) Box 42-306, Fairport, N.Y.		

3. COMPLETE ONLY FOR UNIT REPAIRED AND/OR ALTERED. DESCRIBE WORK ACCOMPLISHED ON REVERSE IN ACCORDANCE WITH CIVIL AERONAUTICS MANUAL 18.

UNIT	MAKE	MODEL	SERIAL NO.	NATURE OF WORK (Check)	
				MAJOR REPAIR	MAJOR ALTERATION
a. AIRFRAME	Left and right (outer) 118701-118702				
b. POWERPLANT					
c. PROPELLER					
d. APPLIANCE	TYPE AND MANUFACTURER				

4. AIRCRAFT WEIGHT AND BALANCE DATA This item must be completed by repair or alteration agency. However, in the case of a spare component, it will not be completed until such component is installed in an aircraft. At this time, it will be completed by the installing agency, if applicable.

CATEGORY	EMPTY WEIGHT (Pounds)*	EMPTY CENTER OF GRAVITY (Inches from datum)*	USEFUL LOAD (Pounds)*
NORMAL	6,427	21.69 (21.69)	6,573

5. CONFORMITY STATEMENT (Complete and check)

a. AGENCY'S NAME AND ADDRESS William Joseph Wood, Jr. 13156666 Fairport, N.Y.	b. KIND OF AGENCY <input type="checkbox"/> U. S. Certified Mechanic. <input type="checkbox"/> Foreign Certified Mechanic. <input type="checkbox"/> Certified Repair Station. <input type="checkbox"/> Manufacturer. <input type="checkbox"/> (Check if repair or alteration was made under delegation option procedures.)	c. CERTIFICATE NO. 13156666
---	--	---------------------------------------

d. I certify that the repair and/or alteration made to the unit(s) identified under item 3 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 18 of the U. S. Civil Air Regulations and that the information furnished herein is true and correct to the best of my knowledge.

January 20, 1964 *William Joseph Wood* (Signature of authorized individual)
(Date repair and/or alteration completed)

6. APPROVAL FOR RETURN TO SERVICE (Check and complete appropriate items)
Pursuant to the authority specified below the unit identified in item 3 was inspected in the manner prescribed by the Administrator of the Federal Aviation Agency and is

3 APPROVED REJECTED BY { FAA Designee Manufacturer Canadian Department of Transport Inspector of Aircraft
 FAA Flight Standards Inspector Repair Station Other (Specify) **INSPECTION AUTHORITY**

2-1-64 *Frederick R. FA 13156666* (Signature of authorized individual title or identification number)
(Date of approval or rejection)

7. TO BE COMPLETED ONLY BY FAA PERSONNEL

a. Forwarded for engineering comment See attached memorandum

b. Accepted **2-3-64** Reinspected Spot Checked **38 FEB 28 1964**
(Date) (Date) (Date)

SO GADO 5 *L.M. Young* (Signature Flight Standards Inspector)
(FAA designation number)

INSTRUCTIONS

This form must be completed in duplicate each time a major repair and/or alteration is made of an aircraft, airframe, power-plant, propeller or appliance. After the repair and/or alteration has been inspected and item 6 completed, the original copy of this form will be made available to the aircraft owner for retention as part of the aircraft records. The duplicate copy is retained by the FAA for administrative purposes.

See CAM 18 for detailed instructions concerning the information to be furnished with this form and instructions concerning its preparation.

1. DESCRIPTION OF WORK ACCOMPLISHED:

1. Old covering removed from rudder S/N SEA #8 and left elevator S/N SEA #9, also right elevator S/N SEA #10.

O.K. to cover: *Fred W. Shree*

2. Frames covered with Grade A fabric. Four coats of clear nitrate dope brushed on, two coats of clear nitrate dope sprayed on, eight coats of silver nitrate dope sprayed on, and remaining finish sprayed on with white enamel. Balance not affected. All workmanship and materials used conform as to recommendations as per CAM 18.30-3.

O.K. to install: *Fred W. Shree*

3. Installed and rigged on aircraft in accordance with manufacturers recommendations.

4. Old covering removed from left aileron S/N SEA #11 and right aileron S/N SEA #12 and structure inspected for condition.

O.K. to cover: *Fred W. Shree*

5. Frames covered with Grade A fabric. Four coats of clear nitrate dope brushed on, two coats of clear nitrate dope sprayed on, eight coats of silver nitrate dope sprayed on, and remaining finish sprayed on with white enamel. Balance not affected. All workmanship and materials used conform as to recommendations as per CAM 18.30-3.

O.K. to install: *Fred W. Shree*

6. Installed and rigged on aircraft in accordance with manufacturers recommendations.

~~REMARKS.~~

*If additional space is needed attach additional sheets bearing aircraft nationality and registration mark and date work completed.

Check block if additional sheets are attached.

Verified by Operator #33 FEDERAL AVIATION AGENCY				Form approved, Budget Bureau No. 04-2081	
MAJOR REPAIR AND ALTERATION FORM (AIRFRAME, POWERPLANT, PROPELLER OR APPLIANCE)					
1. AIRCRAFT	MAKE Grumman	MODEL G-21	SERIAL NO. 1101	NATIONALITY AND REGISTRATION MARK N95467	
2. OWNER	NAME (First, middle, last) Seaboard Airlines		ADDRESS (Street and number, city, zone and State) P.O. Box 48-304, Inlet 48, Fla.		
3. COMPLETE ONLY FOR UNIT REPAIRED AND/OR ALTERED. DESCRIBE WORK ACCOMPLISHED ON REVERSE IN ACCORDANCE WITH CIVIL AERONAUTICS MANUAL 18.					
UNIT	MAKE	MODEL	SERIAL NO.	NATURE OF WORK (Check)	
				MAJOR REPAIR	MAJOR ALTERATION
a. AIRFRAME	(wing box beam cracked on air right side lower)			X	
b. POWERPLANT					
c. PROPELLER					
d. APPLIANCE	TYPE AND MANUFACTURER				
4. AIRCRAFT WEIGHT AND BALANCE DATA <small>This item must be completed by repair or alteration agency. However, in the case of a spare component, it will not be completed until such component is installed in an aircraft. At this time, it will be completed by the installing agency, if applicable.</small>					
	*AFTER the repairs and/or alterations described below were made.				
CATEGORY	EMPTY WEIGHT (Pounds)*	EMPTY CENTER OF GRAVITY (Inches from datum)*		USEFUL LOAD (Pounds)*	
NORMAL	6,427	(21.69)		1,573	
5. CONFORMITY STATEMENT (Complete and check)					
a. AGENCY'S NAME AND ADDRESS			b. KIND OF AGENCY		c. CERTIFICATE NO.
William Joseph D. Barrett, Jr. 135 ... 9th St. Inlet, Fla.			<input checked="" type="checkbox"/> U. S. Certificated Mechanic. <input type="checkbox"/> Foreign Certificated Mechanic. <input type="checkbox"/> Certificated Repair Station. <input type="checkbox"/> Manufacturer. <input type="checkbox"/> (Check if repair or alteration was made under delegation option procedures.)		1496202
d. I certify that the repair and/or alteration made to the unit(s) identified under Item 3 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 18 of the U. S. Civil Air Regulations and that the information furnished herein is true and correct to the best of my knowledge. JANUARY 23, 1964 (Date repair and/or alteration completed)					
(Signature of authorized individual) <i>William Joseph D. Barrett, Jr.</i>					
6. APPROVAL FOR RETURN TO SERVICE (Check and complete appropriate items)					
Pursuant to the authority specified below the unit identified in Item 3 was inspected in the manner prescribed by the Administrator of the Federal Aviation Agency and is					
3 <input checked="" type="checkbox"/> APPROVED } BY { <input type="checkbox"/> FAA Designee <input type="checkbox"/> Manufacturer <input type="checkbox"/> Canadian Department of Transport Inspector of Aircraft <input type="checkbox"/> REJECTED } <input type="checkbox"/> FAA Flight Standards Inspector <input type="checkbox"/> Repair Station <input checked="" type="checkbox"/> Other (Specify)					
2-1-64 (Date of approval or rejection) INSPECTOR AUTHORIZATION (Signature of authorized individual; title or identification number) <i>Lead with IP 1315661</i>					
7. TO BE COMPLETED ONLY BY FAA PERSONNEL					
<input type="checkbox"/> Forwarded for engineering comment <input type="checkbox"/> See attached memorandum 38 FEB 28 1984 <input checked="" type="checkbox"/> Accepted 2-3-64 (Date) <input type="checkbox"/> Reinspected (Date) <input type="checkbox"/> Spot Checked (Date)					
SO GADO 5 7-5 (FAA designation number) <i>L.M. Young</i> (Signature of Flight Standards Inspector)					

INSTRUCTIONS

This form must be completed in duplicate each time a major repair and/or alteration is made of an aircraft, airframe, powerplant, propeller or appliance. After the repair and/or alteration has been inspected and Item 6 completed, the original copy of this form will be made available to the aircraft owner for retention as part of the aircraft records. The duplicate copy is retained by the FAA for administrative purposes.

See CAM 18 for detailed instructions concerning the information to be furnished with this form and instructions concerning its preparation.

8. DESCRIPTION OF WORK ACCOMPLISHED.*

1. Right wing box beam capstrip repaired. (Right lower inboard.)

Removed corroded section of spar cap between wing stations #97 and #109 and spliced in new piece of 245T aluminum alloy extrusion Alcoa #K-13864 in accordance with handbook of Grumman structural repairs, page 36, titled Wing Box Beam Capstrip Repairs. See included sheets. All work above done in accordance with CAM 18.30-4 and table 4-4 CAM 18.

NOTHING FOLLOWS.

*If additional space is needed attach additional sheets bearing aircraft nationality and registration mark and date work completed.
Check block if additional sheets are attached.

Verified by Operator #3.		FEDERAL AVIATION AGENCY		Form approved, Budget Bureau No. 04-8000.	
MAJOR REPAIR AND ALTERATION FORM (AIRFRAME, POWERPLANT, PROPELLER OR APPLIANCE)					
1. AIRCRAFT	MAKE Cessna	MODEL C-31A	SERIAL NO. 1161	NATIONALITY AND REGISTRATION MARK N05467	
2. OWNER	NAME (First, middle, last) Southwest Airlines		ADDRESS (Street and number, city, zone and State) P.O. Box 48-304, Miami 48, Fla.		
3. COMPLETE ONLY FOR UNIT REPAIRED AND/OR ALTERED. DESCRIBE WORK ACCOMPLISHED ON REVERSE IN ACCORDANCE WITH CIVIL AERONAUTICS MANUAL 18.					
	UNIT	MAKE	MODEL	SERIAL NO.	NATURE OF WORK (Check)
					MAJOR REPAIR MAJOR ALTERATION
a. AIRFRAME	(Left wing skin replacement) <i>(As described in Item 1 above)</i>				X
b. POWERPLANT					
c. PROPELLER					
d. APPLIANCE	TYPE AND MANUFACTURER				
4. AIRCRAFT WEIGHT AND BALANCE DATA This item must be completed by repair or alteration agency. However, in the case of a spare component, it will not be completed until such component is installed in an aircraft. At this time, it will be completed by the installing agency, if applicable.					
	CATEGORY	EMPTY WEIGHT (Pounds)*	EMPTY CENTER OF GRAVITY (Inches from datum)*	USEFUL LOAD (Pounds)*	
	NORMAL	6,427	21.69 (21.69)	1,573	
5. CONFORMITY STATEMENT (Complete and check)					
a. AGENCY'S NAME AND ADDRESS		b. KIND OF AGENCY		c. CERTIFICATE NO.	
1114a Joseph Verett, Jr. 2535 N.W. 5th St. Miami, Fla.		<input checked="" type="checkbox"/> U. S. Certificated Mechanic. <input type="checkbox"/> Foreign Certificated Mechanic. <input type="checkbox"/> Certificated Repair Station. <input type="checkbox"/> Manufacturer. <input type="checkbox"/> (Check if repair or alteration was made under delegation option procedures.)		P 1406292	
I certify that the repair and/or alteration made to the unit(s) identified under item 3 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 18 of the U. S. Civil Air Regulations and that the information furnished herein is true and correct to the best of my knowledge.					
January 30, 1964 (Date repair and/or alteration completed)		<i>William Joseph Verett</i> 1406292 (Signature of authorized individual)			
6. APPROVAL FOR RETURN TO SERVICE (Check and complete appropriate items)					
Pursuant to the authority specified below the unit identified in item 3 was inspected in the manner prescribed by the Administrator of the Federal Aviation Agency and is					
3 <input checked="" type="checkbox"/> APPROVED } BY { <input type="checkbox"/> REJECTED }		<input type="checkbox"/> FAA Designee <input type="checkbox"/> Manufacturer <input type="checkbox"/> Canadian Department of Transport Inspector of Aircraft <input type="checkbox"/> FAA Flight Standards Inspector <input type="checkbox"/> Repair Station <input checked="" type="checkbox"/> Other (Specify) INSPECTION AUTHORIZATION			
2-1-64 (Date of approval or rejection)		<i>Fred W. Lee</i> FA 1315661 (Signature of authorized individual; title or identification number)			
7. TO BE COMPLETED ONLY BY FAA PERSONNEL					
<input type="checkbox"/> Forwarded for engineering comment <input type="checkbox"/> See attached memorandum <input checked="" type="checkbox"/> Accepted 2-3-64 (Date) <input type="checkbox"/> Reinspected (Date) <input type="checkbox"/> Spot checked 38 FEB 23 1964 (Date)					
SO GADO 5 (FAA designation number)		<i>L.M. Young</i> (Signature Flight Standards Inspector)			

INSTRUCTIONS

This form must be completed in duplicate each time a major repair and/or alteration is made of an aircraft, airframe, power-plant, propeller or appliance. After the repair and/or alteration has been inspected and item 6 completed, the original copy of this form will be made available to the aircraft owner for retention as part of the aircraft records. The duplicate copy is retained by the FAA for administrative purposes.

See CAM 18 for detailed instructions concerning the information to be furnished with this form and instructions concerning its preparation.

6. DESCRIPTION OF WORK ACCOMPLISHED.

1. **Left wing skin replacement. (Stress skin)**
Re-laced the following skin sections on the top of the left wing as per Cessna skin plating diagram included with this form.
 1. Section 1 color coded yellow .051-34T-13.
 2. Section 2 color coded green .060-34T-13.
- B. **Replaced the following skin sections (non-stressed skin).**
 1. Section 11 leading edge color coded black .032-34T-13.
 2. Section 14 leading edge color coded brown .032-34T-13.
 3. Section 15 leading edge color coded violet .033-34T-13.
2. All skin acidized and installed in accordance with Cessna structural repair manual for Cessna 441 and 441B, 30-6. See attached copy of wing skin plating diagram.

EDITH POLLOCK.

*If additional space is needed attach additional sheets bearing aircraft nationality and registration mark and date work completed.

Check block if additional sheets are attached.

U.S. GOVERNMENT PRINTING OFFICE: 1961 O - 257360

Form FAA-337 (4-52)

FEDERAL AVIATION AGENCY

Verified by Operator #33
MAJOR REPAIR AND ALTERATION FORM (AIRFRAME, POWERPLANT, PROPELLER OR APPLIANCE)

1. AIRCRAFT	MAKE Cessna	MODEL C-281A	SERIAL NO. 1161	NATIONALITY AND REGISTRATION MARK N28467
2. OWNER	NAME (First, middle, last) Southwest Airlines			
		ADDRESS (Street and number, city, state and State) P.O. Box 48-306, Ind 40, Ind.		

3. COMPLETE ONLY FOR UNIT REPAIRED AND/OR ALTERED. DESCRIBE WORK ACCOMPLISHED ON REVERSE IN ACCORDANCE WITH CIVIL AERONAUTICS MANUAL 18.

UNIT	MAKE	MODEL	SERIAL NO.	NATURE OF WORK (Check)	
				MAJOR REPAIR	MAJOR ALTERATION
a. AIRFRAME	(Wing was also replaced)			<input checked="" type="checkbox"/>	
b. POWERPLANT					
c. PROPELLER					
4. APPLIANCE	TYPE AND MANUFACTURER				

4. AIRCRAFT WEIGHT AND BALANCE DATA This item must be completed by repair or alteration agency. However, in the case of a spare component, it will not be completed until such component is installed in an aircraft. At this time, it will be completed by the installing agency, if applicable.

CATEGORY	EMPTY WEIGHT (Pounds)*	EMPTY CENTER OF GRAVITY (Inches from datum)*	USEFUL LOAD (Pounds)*
NORMAL	6,427	PR" (21.69)	6573

5. CONFORMITY STATEMENT (Complete and check)

a. AGENCY'S NAME AND ADDRESS Illine Aircraft Works, Inc. 2515 ... St. Ind 35, Ind.	b. KIND OF AGENCY <input checked="" type="checkbox"/> U. S. Certificated Mechanic. <input type="checkbox"/> Foreign Certificated Mechanic. <input type="checkbox"/> Certificated Repair Station. <input type="checkbox"/> Manufacturer. <input type="checkbox"/> (Check if repair or alteration was made under delegation option procedures.)	c. CERTIFICATE NO. 1496592
--	--	--------------------------------------

6. I certify that the repair and/or alteration made to the unit(s) identified under item 3 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 18 of the U. S. Civil Air Regulations and that the information furnished herein is true and correct to the best of my knowledge.
January 8, 1964
William J. ... (Signature of authorized individual)

7. APPROVAL FOR RETURN TO SERVICE (Check and complete appropriate items)
Pursuant to the authority specified below the unit identified in item 3 was inspected in the manner prescribed by the Administrator of the Federal Aviation Agency and is

3 APPROVED } BY FAA Designee Manufacturer Canadian Department of Transport Inspector of Aircraft
 REJECTED } FAA Flight Standards Inspector Repair Station Other (Specify)
INSPECTION AUTHORIZATION

2-1-64 (Date of approval or rejection) **Fred W. Shea FA 1315661** (Signature of authorized individual; title or identification number)

8. TO BE COMPLETED ONLY BY FAA PERSONNEL

Forwarded for engineering comment See attached memorandum

Accepted **2-3-64** (Date) Reinspected (Date) Spot Checked (Date)

SO GADO 5 **7-5** **L. M. Young** (Signature of Flight Standards Inspector)

88 FEB 28 1964

Form FAA-337 (4-57)

INSTRUCTIONS

This form must be completed in duplicate each time a major repair and/or alteration is made of an aircraft, airframe, powerplant, propeller or appliance. After the repair and/or alteration has been inspected and Item 6 completed, the original copy of this form will be made available to the aircraft owner for retention as part of the aircraft records. The duplicate copy is retained by the FAA for administrative purposes.

See CAM 18 for detailed instructions concerning the information to be furnished with this form and instructions concerning its preparation.

8. DESCRIPTION OF WORK ACCOMPLISHED*

RIGHT WING SKIN REPLACEMENTS

- A. Replaced the following sections of skin on the leading edge of the right wing as per Grumman skin plating diagram included with this form.
1. Section 17 leading edge color coded black .032-34 ST-T3.
 2. Section 18 leading edge color coded blue .032-34ST-T3.
- B. All skin anodized and installed in accordance with Grumman structural repair manual for Grumman G21A and CAM 18.30-4. See attached copy of wing skin plating diagram.

..... NOTHING FOLLOWS

*If additional space is needed attach additional sheets bearing aircraft nationality and registration mark and date work completed.
Check block if additional sheets are attached.

EXHIBIT

Re: Data Filed in General Blue Print File

Aircraft Registration No. _____

Date of ACA BY	Description of Material	Initials
7-28-50	Drawings	A. E. H.

THIS FORM TO BE FILLED UNDER THE EARLIEST FORM ACA 505

FAA AIRCRAFT REGISTRY
CAMERA NO. 4 DATE: 2/16/82

CAA

Form approved
Budget Bureau No. 41-R082.6

U. S. DEPARTMENT OF COMMERCE
CIVIL AERONAUTICS ADMINISTRATION

MAJOR REPAIR AND ALTERATION FORM (AIRFRAME, POWERPLANT, PROPELLER OR APPLIANCE)

1. AIRCRAFT	MAKE Cessna	MODEL C-21-A	SERIAL NO. 1161	NATIONALITY AND REGISTRATION MARK N 95467
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2. OWNER NAME (First, middle, last) John W. Mecon	ADDRESS (Street and number, city, name and State) 8679 Lockheed Street Houston 17, Texas
--	--

3. COMPLETE ONLY FOR UNIT REPAIRED AND/OR ALTERED. DESCRIBE WORK ACCOMPLISHED ON REVERSE IN ACCORDANCE WITH CIVIL AERONAUTICS MANUAL 18.

UNIT	MAKE	MODEL	SERIAL NO.	NATURE OF WORK (Check)	
				MAJOR REPAIR	MAJOR ALTERATION
a. AIRFRAME	***** (As described in Item 1 above) *****				XXX
b. POWERPLANT	The unit identified herein complies with applicable airworthiness requirements and is approved only for the above described aircraft subject to periodic inspection by a person authorized in CAR 18.11 (b).				
c. PROPELLER	12-3-58 Data				
d. APPLIANCE	TYPE AND MANUFACTURER Data				

AIRCRAFT WEIGHT AND BALANCE DATA This item must be completed by repair or alteration agency. However, in the case of a spare component, it will not be completed until such component is installed in an aircraft. At this time, it will be completed by the installing agency, if applicable.

CATEGORY	EMPTY WEIGHT (Pounds)*	EMPTY CENTER OF GRAVITY (Inches from datum)*	USEFUL LOAD (Pounds)*
Normal	6315.0	± 25.15 aft of Datum	1685.0

5. CONFORMITY STATEMENT (Complete and check)

a. AGENCY'S NAME AND ADDRESS Roy H. Hinson 6453 Travalair International Airport Houston 17, Texas	b. KIND OF AGENCY <input checked="" type="checkbox"/> U. S. Certificated Mechanic. <input type="checkbox"/> Foreign Certificated Mechanic. <input type="checkbox"/> Certificated Repair Station. <input type="checkbox"/> Manufacturer. <input type="checkbox"/> (Check if repair or alteration was made under delegation option procedures.)	c. CERTIFICATE NO. A&R 64823
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I certify that the repair and/or alteration made to the unit(s) identified under item 3 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 18 of the U. S. Civil Air Regulations and that the information furnished herein is true and correct to the best of my knowledge.

November 17, 1958
(Date repair and/or alteration completed)

[Signature]
(Signature of authorized individual)

6. APPROVAL FOR RETURN TO SERVICE (Check and complete appropriate items)
Pursuant to the authority specified below the unit identified in item 3 was inspected in the manner prescribed by the Administrator and is

APPROVED } BY { CAA Designee Manufacturer Canadian Department of Transport Inspector of Aircraft
 REJECTED } CAA Aviation Safety Agent Repair Station Other (Specify) **Inspection Authorization**

December 4, 1958
(Date of approval or rejection)

[Signature] **A&R 64823**
(Signature of authorized individual; title or identification number)

7. TO BE COMPLETED ONLY BY CAA PERSONNEL

a. Forwarded for engineering comment See attached memorandum

b. Accepted (Date) Reinspected (Date) Spot Checked **12-4-58** (Date)

[Signature]
(Signature Aviation Safety Agent)

INSTRUCTIONS

This form must be completed in duplicate each time a major repair and/or alteration is made of an aircraft, airframe, power-plant, propeller or appliance. After the repair and/or alteration has been inspected and item 6 completed, the original copy of this form will be made available to the aircraft owner for retention as part of the aircraft records. The duplicate copy is retained by the CAA for administrative purposes.

See CAM 18 for detailed instructions concerning the information to be furnished with this form and instructions concerning its preparation.

8. DESCRIPTION OF WORK ACCOMPLISHED.

Installed Motorola T-31 FM radio in following manner:

NV 175 Control head mounted on overhead between Pilot and Co-Pilot's seats in a bracket fabricated from .064 ST aluminum and secured with 4 # 6 machine screws, washers and stop nuts. Control head secured to rack with 4 # 6 machine screws, washers and stop nuts.

T-31 transceiver unit mounted in bow compartment just forward of pilots compartment on left hand side of fuselage in a 'U' shaped rack secured to fuselage with 6 AN 3 bolts into plate nuts. Transceiver secured to 'U' shaped rack with 4 # 10 machine screws, washers into plate nuts.

Racks static tested according to CAR 3.386(d). By not exceeding Grumman's allowable weight limits for this compartment no further load check is necessary.

Units located where it will receive sufficient cooling so as not to be a smoke or fire hazard and secured so that normal swaying or vibrations will not cause the installed equipment to touch adjacent equipment or parts of the airplane. Equipment is readily accessible and does not interfere with any controls or exits. All racks and structure protected against deterioration and loss of strength according to CAR 3.235.

FM spike antenna mounted on top of nose section just forward of windshield and secured in such a manner that it will not dislodge while under air loads..

FM radio wired with factory provided wiring and routed in Grumman provided space for radio wiring. Primary wiring of FM unit is protected with 16 gage wire and a 15 amp PSM circuit breaker. Reused existing radio with Rhode Island wiring of MIL-W-5086 specifications and tied and AN 742 clamped in a commonly accepted manner to prevent chaffing.

Relocated circuit breakers into one (1) panel on right hand side of instrument panel. All circuit breakers same as previous size.

Current drain of FM unit is 1.5 amps receive and 10 amps transmit. Since this unit is used intermittently no electrical load analysis is necessary. Magnetic compass compensated according to CAR 3.758.

Functional tested according to CAR 3.652

	WEIGHT AND BALANCE COMPUTATION		
	WT	ARM	MOMENT
Aircraft	6287.5	25.46	160,331.25
Control head	+ 2.0	- 12.5	- 25.0
T-31 Transceiver	+ 22.0	- 60.5	- 1,331.0
Miscellaneous wiring and cables	+ 3.0	- 47.0	- 141.0
Spike antenna	+ .5	- 33.0	- 16.5
	<u>6315.0</u>	<u>+ 25.15</u>	<u>+ 158,817.75</u>

USEFUL LOAD 1685 lbs.

*If additional space is needed attach additional sheets bearing strength analysis and registration mark and date work completed.
Check block if additional sheets are attached.

U. S. DEPARTMENT OF COMMERCE
CIVIL AERONAUTICS ADMINISTRATION

Form approved
Budget Bureau No. 41-R032.4

MAJOR REPAIR AND ALTERATION FORM (AIRFRAME, POWERPLANT, PROPELLER OR APPLIANCE)

1. AIRCRAFT	MAKE Cessna	MODEL 441A	SERIAL NO. 1161	NATIONALITY AND REGISTRATION MARK N95467
2. OWNER	NAME (First, middle, last) John W. Mason			
ADDRESS (Street and number, city, zone and State) Golf Building Houston, Texas				

3. COMPLETE ONLY FOR UNIT REPAIRED AND/OR ALTERED. DESCRIBE WORK ACCOMPLISHED ON REVERSE IN ACCORDANCE WITH CIVIL AERONAUTICS MANUAL 18.

UNIT	MAKE	MODEL	SERIAL NO.	NATURE OF WORK (Check)	
				MAJOR REPAIR	MAJOR ALTERATION
a. AIRFRAME	***** (As described in item 1 above) *****				
b. POWERPLANT	Prest & Kintney	R-985 AB-1, -1AB	12721	X	
c. PROPELLER					
d. APPLIANCE	TYPE AND MANUFACTURER				

4. AIRCRAFT WEIGHT AND BALANCE DATA This item must be completed by repair or alteration agency. However, in the case of a spare component, it will not be completed until such component is installed in an aircraft. At this time, it will be completed by the installing agency, if applicable.

CATEGORY	EMPTY WEIGHT (Pounds)*	EMPTY CENTER OF GRAVITY (Inches from datum)*	USEFUL LOAD (Pounds)*
Standard	6287.5	+25.46	1712.5

5. CONFORMITY STATEMENT (Complete and check)

a. AGENCY'S NAME AND ADDRESS Precision Aeromotive Corporation Municipal Airport Houston 17, Texas	b. KIND OF AGENCY <input type="checkbox"/> U. S. Certificated Mechanic. <input type="checkbox"/> Foreign Certificated Mechanic. <input checked="" type="checkbox"/> Certificated Repair Station. <input type="checkbox"/> Manufacturer. <input type="checkbox"/> (Check if repair or alteration was made under delegation option procedures.)	c. CERTIFICATE NO. 386 Class 1 & 2: Powerplants, Propellers, & Accessories.
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d. I certify that the repair and/or alteration made to the unit(s) identified under item 3 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 18 of the U. S. Civil Air Regulations and that the information furnished herein is true and correct to the best of my knowledge.

April 5, 1955 (Date repair and/or alteration completed)
Phelps M. Lane (Signature of authorized individual) **Phelps M. Lane** EM 165997

6. APPROVAL FOR RETURN TO SERVICE (Check and complete appropriate items)
Pursuant to the authority specified below the unit identified in item 3 was inspected in the manner prescribed by the Administrator and is

APPROVED } BY { CAA Designee Manufacturer Canadian Department of Transport Inspector of Aircraft
 REJECTED } CAA Aviation Safety Agent Repair Station Other (Specify)

April 5, 1955 (Date of approval or rejection)
Phelps M. Lane (Signature of authorized individual; title or identification number) **386-Class 1 & 2**

7. TO BE COMPLETED ONLY BY CAA PERSONNEL

a. Forwarded for engineering comment See attached memorandum
b. Accepted **5-6-55** (Date) Reinspected (Date) Spot Checked (Date)

2-9 (CAA designation number)
Charles DeBane (Signature Aviation Safety Agent)

INSTRUCTIONS

This form must be completed in duplicate each time a major repair and/or alteration is made of an aircraft, airframe, power-plant, propeller or appliance. After the repair and/or alteration has been inspected and item 6 completed, the original copy of this form will be made available to the aircraft owner for retention as part of the aircraft records. The duplicate copy is retained by the CAA for administrative purposes.

See CAM 18 for detailed instructions concerning the information to be furnished with this form and instructions concerning its preparation.

8. DESCRIPTION OF WORK ACCOMPLISHED.

"The thrust nut retaining threads on the crankshaft assembled to the above engine have been reworked this date in compliance with AD 54-22-2 and Revision AD-55-6. This rework has been accomplished by means of our C. A. A. approved machine method and in accordance with limits as called out in P & W Service Bulletin 1488, Revision A, Supplement 1. The average thread root diameter of this shaft was 2.6385" after rework."

RECEIVED
MAY 19 3 39 PM '82
FAA RECORDS DIVISION
WASHINGTON, D.C. 20515

Am

If additional space is needed attach additional sheets bearing aircraft nationality and registration mark and date work completed.

Check block if additional sheets are attached.

U. S. DEPARTMENT OF COMMERCE
CIVIL AERONAUTICS ADMINISTRATION

Form approved
Budget Bureau No. 41-2062.4

MAJOR REPAIR AND ALTERATION FORM (AIRFRAME, POWERPLANT, PROPELLER OR APPLIANCE)

1. AIRCRAFT	MAKE Crummon	MODEL G21A	SERIAL NO. 1161	NATIONALITY AND REGISTRATION MARK N95467
2. OWNER	NAME (First, middle, last) John W. Meese		ADDRESS (Street and number, city, zone and State) Gulf Building Houston, Texas	
3. COMPLETE ONLY FOR UNIT REPAIRED AND/OR ALTERED. DESCRIBE WORK ACCOMPLISHED ON REVERSE IN ACCORDANCE WITH CIVIL AERONAUTICS MANUAL 18.				
UNIT	MAKE	MODEL	SERIAL NO.	NATURE OF WORK (Check) MAJOR REPAIR MAJOR ALTERATION
a. AIRFRAME	***** (As described in item 1 above) *****			
b. POWERPLANT	Pratt & Whitney	R-985 AH-1, -1AB	P-226933	X
c. PROPELLER				
d. APPLIANCE	TYPE AND MANUFACTURER			
4. AIRCRAFT WEIGHT AND BALANCE DATA This item must be completed by repair or alteration agency. However, in the case of a spare component, it will not be completed until such component is installed in an aircraft. At this time, it will be completed by the installing agency, if applicable.				
CATEGORY	EMPTY WEIGHT (Pounds)*	EMPTY CENTER OF GRAVITY (Inches from datum)*	USEFUL LOAD (Pounds)*	
Standard	6287.5	+ 25.46	1712.5	
5. CONFORMITY STATEMENT (Complete and check)				
a. AGENCY'S NAME AND ADDRESS Precision Automotive Corporation Municipal Airport Houston 17, Texas		b. KIND OF AGENCY <input type="checkbox"/> U. S. Certificated Mechanic. <input type="checkbox"/> Foreign Certificated Mechanic. <input checked="" type="checkbox"/> Certificated Repair Station. <input type="checkbox"/> Manufacturer. <input type="checkbox"/> (Check if repair or alteration was made under delegation option procedures.)		c. CERTIFICATE NO. 386 Class 1 & 2: Powerplants, Propellers, & Accessories.
d. I certify that the repair and/or alteration made to the unit(s) identified under item 3 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 18 of the U. S. Civil Air Regulations and that the information furnished herein is true and correct to the best of my knowledge.				
April 5, 1955 (Date repair and/or alteration completed)		Phelps M. Lane (Signature of authorized individual) DM 465977		
6. APPROVAL FOR RETURN TO SERVICE (Check and complete appropriate items) Pursuant to the authority specified below the unit identified in item 3 was inspected in the manner prescribed by the Administrator and is				
<input checked="" type="checkbox"/> APPROVED BY <input type="checkbox"/> CAA Designee <input type="checkbox"/> Manufacturer <input type="checkbox"/> Canadian Department of Transport Inspector of Aircraft <input type="checkbox"/> REJECTED BY <input type="checkbox"/> CAA Aviation Safety Agent <input checked="" type="checkbox"/> Repair Station <input type="checkbox"/> Other (Specify)				
April 5, 1955 (Date of approval or rejection)		Phelps M. Lane 386-Class 1 & 2 (Signature of authorized individual: title or identification number)		
7. TO BE COMPLETED ONLY BY CAA PERSONNEL				
a. <input type="checkbox"/> Forwarded for engineering comment <input type="checkbox"/> See attached memorandum				
b. <input checked="" type="checkbox"/> Accepted 5-6-55 <input type="checkbox"/> Reinspected <input type="checkbox"/> Spot Checked				
2-9 (CAA designation number)		Charles Pechance (Signature Aviation Safety Agent)		

INSTRUCTIONS

This form must be completed in duplicate each time a major repair and/or alteration is made of an aircraft, airframe, power-plant, propeller or appliance. After the repair and/or alteration has been inspected and item 6 completed, the original copy of this form will be made available to the aircraft owner for retention as part of the aircraft records. The duplicate copy is retained by the CAA for administrative purposes.

See CAM 18 for detailed instructions concerning the information to be furnished with this form and instructions concerning its preparation.

8. DESCRIPTION OF WORK ACCOMPLISHED:

"The thrust nut retaining threads on the crankshaft assembled to the above engine have been reworked this date in compliance with AD 54-22-2 and Revision AD-55-6. This rework has been accomplished by means of our C. A. A. approved machine method and in accordance with limits as called out in P & W Service Bulletin 1488, Revision A, Supplement 1. The average thread root diameter of this shaft was 2.6308" after rework."

RECEIVED
MAY 19 3 39 PM '55
AIRCRAFT RECORDS BRANCH
FAA-300

am

*If additional space is needed attach additional sheets bearing aircraft nationality and registration mark and date work completed.
Check block if additional sheets are attached.

U. S. DEPARTMENT OF COMMERCE
 CIVIL AERONAUTICS ADMINISTRATION

Form Approved. Budget Bureau No. 41-RM1.A

**APPLICATION FOR AIRWORTHINESS CERTIFICATE
 AND/OR ANNUAL INSPECTION OF AN AIRCRAFT**

INSTRUCTIONS

Please print or type. Submit this form to the
 Civil Aeronautics Administration Aviation Safety
 Field Representative.

1. TYPE OF APPLICATION (Check which)

- a. ORIGINAL ISSUANCE OF CERTIFICATE
- b. ANNUAL INSPECTION FOR RENEWAL OF CERTIFICATE
- c. AMENDMENT OR MODIFICATION OF CURRENT CERTIFICATE
- d. RECERTIFICATION UNDER THE PROVISIONS OF CAR 1
- e. MULTIPLE CERTIFICATE UNDER THE PROVISIONS OF CAR 1
- f.

2. AIRWORTHINESS CLASSIFICATION (Check appropriate item(s))

It is requested that the Certificate of Airworthiness be issued to permit operation of the aircraft in the following airworthiness classification(s):

- a. STANDARD (NORMAL UTILITY, ACROBATIC, TRANSPORT CATEGORIES)
- b. LIMITED (SEE CAR 9)
- c. RESTRICTED (SEE CAR 6)
(Check the restricted special purpose operation(s) to be conducted)
 - AGRICULTURAL AND PEST CONTROL
 - AERIAL ADVERTISING
 - AERIAL SURVEYING
 - GLIDER TOWING
 - PATROLLING
 - FOREST AND WILDLIFE CONSERVATION
 - WEATHER CONTROL
 - OTHER
- d. EXPERIMENTAL
(Check the type of experimental operation(s) to be conducted)
 - RESEARCH AND DEVELOPMENT
 - AMATEUR-BUILT
 - DEMONSTRATION
 - RACING
 - EXHIBITION
 - OTHER

3. AIRCRAFT IDENTIFICATION (Complete all items)

a. AIRCRAFT MAKE <i>Grumman</i>	b. AIRCRAFT MODEL <i>G21A</i>	c. AIRCRAFT SERIAL NO. <i>1161</i>
d. ENGINE MAKE <i>Pratt & Whitney</i>	e. ENGINE MODEL <i>R-985-AN</i>	

4. AIRCRAFT REGISTRATION INFORMATION (Complete all items)

a. REGISTERED OWNER'S FULL NAME <i>John W. Mecum</i>	b. PERMANENT MAILING ADDRESS <i>2906 Gulf Blk Houston 2, Texas</i>	c. AIRCRAFT NATIONALITY AND REGISTRATION MARK <i>N-95467</i>
---	---	---

5. AIRCRAFT OWNER'S CERTIFICATION (Check and complete appropriate item)

I hereby certify that I am the registered owner (or his agent) of the aircraft identified in Item 3 above which is registered* with the Civil Aeronautics Administration as required by the Regulations of the Administrator, Part 501 or 502 and when operated displays the following evidence of registration:

- a. CERTIFICATE OF REGISTRATION, FORM ACA-500 (PART A), DATE OF ISSUE *Jan 11, 1952*
- b. APPLICATION FOR REGISTRATION, FORM ACA-500 (PART B), FORM ACA-500, PART A, FORWARDED TO CAA AIRCRAFT RECORDS BRANCH, W-300 ON _____ (DATE)
- c. DEALER'S REGISTRATION CERTIFICATE, FORM ACA-4707, DATED _____

*In order to be eligible for registration an aircraft must be owned by a citizen of the United States, as defined by Section 1 (13) of the Civil Aeronautics Act of 1938, as amended.

ATTACHMENTS (Check which)

- ACA-319
- ACA-337
- ACA-317
- WEIGHT AND BALANCE REPORT
- DATA, DRAWINGS, ETC.
- UNAPPROVED DEVIATION DATA

William Fischer, Jr.
(SIGNATURE OF REGISTERED OWNER OR AUTHORIZED AGENT)
3/30/55 *Agent*
(DATE) (TITLE)

U. S. DEPARTMENT OF COMMERCE
CIVIL AERONAUTICS ADMINISTRATION

AIRCRAFT INSPECTION REPORT

(To be completed by a CAA representative or approved repair station)

The aircraft described in Item 3 on the reverse of this form has been inspected and found to conform to the following:

(Check and complete applicable items)

1. AIRCRAFT AND ENGINE CERTIFICATION BASIS

- a. AIRCRAFT SPECIFICATION NO. TL 639 THROUGH SHEET REVISION NO. _____
- b. AIRCRAFT LISTING PAGE NO. 98
- c. AIRWORTHINESS DIRECTIVE SUMMARY 1954 THROUGH CARD NO. 55-7
- d. CIVIL AIR REGULATION PART 8 (MODIFIED TYPE CERTIFICATE)

2. AIRCRAFT AND ENGINE OPERATING RECORDS

- a. AIRCRAFT NEW—NO PREVIOUS OPERATION OR MAINTENANCE HISTORY
- b. COMPLIANCE WITH APPLICABLE AIRWORTHINESS DIRECTIVES RECORDED
- c. AIRCRAFT RECORDS INDICATE THE AIRFRAME HAS BEEN OPERATED A TOTAL OF 2600:00 HOURS
- d. ENGINE RECORDS INDICATE THE FOLLOWING OPERATION:

SERIAL NO. <u>12726</u>	TOTAL HOURS <u>110:40</u>
SERIAL NO. <u>P226933</u>	TOTAL HOURS <u>202:50</u>
SERIAL NO. _____	TOTAL HOURS _____
SERIAL NO. _____	TOTAL HOURS _____

3. PREVIOUS INSPECTION RECORD (INSPECTION RECORDED ON FORM ACA-319)

- a. LAST AIRWORTHINESS INSPECTION CONDUCTED 2/20/55 (DATE)
 - BY AIRCRAFT MANUFACTURER
 - BY APPROVED REPAIR STATION, CERTIFICATE NO. _____
 - BY MECHANIC, CERTIFICATE NO. Wm Fischer dx A+E 584/11
- b. PERIODIC AIRCRAFT INSPECTION REPORT, FORM ACA-319, WAS RETURNED TO OWNER

RECEIVED
 March 9 2 00 PM '55
 AVIATION RECORDS BRANCH
 W-300

4. AIRWORTHINESS DOCUMENTS ISSUED OR REVIEWED

- a. OPERATION LIMITATIONS, FORM ACA-309, WAS ISSUED (COPY ATTACHED)
- b. CURRENT OPERATION LIMITATIONS _____ IS AVAILABLE IN AIRCRAFT
- c. CURRENT APPROVED AIRPLANE FLIGHT MANUAL IS AVAILABLE IN AIRCRAFT
- d. CURRENT WEIGHT AND BALANCE INFORMATION IS AVAILABLE IN AIRCRAFT
- e. THIS INSPECTION HAS BEEN RECORDED IN THE AIRCRAFT RECORDS
- f. CERTIFICATE OF AIRWORTHINESS, FORM ACA-1362, ISSUED TO EXPIRE March 30, 1956 (DATE)
- g. PREVIOUS FORM ACA-1362 WAS ISSUED TO EXPIRE March 15, 1955 (DATE)

BY Ray K. Beckelman (NAME OF ISSUING REPRESENTATIVE) 3-257-9 (DESIGNATION NO.)

5. CAA APPROVED REPAIR STATION CERTIFICATION

The aircraft described on the reverse has been inspected under the authority accorded certificated repair station No. _____ by CAR 52 and was found to be:

AIRWORTHY


UNAIRWORTHY

(REPAIR STATION AUTHORIZED SIGNATURE) (DATE)

6. CAA REPRESENTATIVE CERTIFICATION

I HAVE INSPECTED THE AIRCRAFT DESCRIBED ON THE REVERSE AND FOUND IT AIRWORTHY UNAIRWORTHY (Check appropriate item)

DESIGNEE'S SIGNATURE <u>Arnold J. DeLange</u>	DESIGNATION NO. <u>4632</u>	DATE <u>3/30/55</u>
AVIATION SAFETY AGENT'S SIGNATURE <u>Ray K. Beckelman</u>	CAA DESIGNATION NO. <u>2-9</u>	DATE <u>4-28-55</u>
<input type="checkbox"/> ATTACHMENT		
<input checked="" type="checkbox"/> ACCEPTED <input type="checkbox"/> REINSPECTED <input type="checkbox"/> SPOT CHECKED		

U. S. DEPARTMENT OF COMMERCE CIVIL AERONAUTICS ADMINISTRATION		Form Approved Budget Bureau No. 41-5041 A
APPLICATION FOR AIRWORTHINESS CERTIFICATE AND/OR ANNUAL INSPECTION OF AN AIRCRAFT		INSTRUCTIONS Please print or type. Submit this form to the Civil Aeronautics Administration Aviation Safety Field Representative.
1. TYPE OF APPLICATION (Check which)		
a. <input type="checkbox"/> ORIGINAL ISSUANCE OF CERTIFICATE b. <input checked="" type="checkbox"/> ANNUAL INSPECTION FOR RENEWAL OF CERTIFICATE c. <input type="checkbox"/> AMENDMENT OR MODIFICATION OF CURRENT CERTIFICATE		d. <input type="checkbox"/> RECERTIFICATION UNDER THE PROVISIONS OF CAR 8 e. <input type="checkbox"/> MULTIPLE CERTIFICATE UNDER THE PROVISIONS OF CAR 8 f. <input type="checkbox"/>
2. AIRWORTHINESS CLASSIFICATION (Check appropriate item(s)) It is requested that the Certificate of Airworthiness be issued to permit operation of the aircraft in the following air- worthiness classification(s):		
a. <input checked="" type="checkbox"/> STANDARD (NORMAL UTILITY, ACROBATIC, TRANSPORT CATEGORIES) b. <input type="checkbox"/> LIMITED (SEE CAR 9) c. <input type="checkbox"/> RESTRICTED (SEE CAR 8) (Check the restricted special purpose operation(s) to be conducted)		
<input type="checkbox"/> AGRICULTURAL AND PEST CONTROL <input type="checkbox"/> AERIAL ADVERTISING <input type="checkbox"/> AERIAL SURVEYING <input type="checkbox"/> GLIDER TOWING		<input type="checkbox"/> PATROLLING <input type="checkbox"/> FOREST AND WILDLIFE CONSERVATION <input type="checkbox"/> WEATHER CONTROL <input type="checkbox"/> OTHER
d. <input type="checkbox"/> EXPERIMENTAL (Check the type of experimental operation(s) to be conducted)		<input type="checkbox"/> RACING <input type="checkbox"/> EXHIBITION <input type="checkbox"/> OTHER
3. AIRCRAFT IDENTIFICATION (Complete all items)		
a. AIRCRAFT MAKE	b. AIRCRAFT MODEL	c. AIRCRAFT SERIAL NO.
Grumman	G-21-A	1161
d. ENGINE MAKE		e. ENGINE MODEL
P&W		R-985-ANI-1413
4. AIRCRAFT REGISTRATION INFORMATION (Complete all items)		
a. REGISTERED OWNER'S FULL NAME	b. PERMANENT MAILING ADDRESS	c. AIRCRAFT NATIONALITY AND REGISTRATION MARK
John W. Meconi	2906 Gulf 131dg, Houston 2, Texas	N-95467
5. AIRCRAFT OWNER'S CERTIFICATION (Check and complete appropriate item) I hereby certify that I am the registered owner (or his agent) of the aircraft identified in Item 3 above which is registered* with the Civil Aeronautics Administration as required by the Regulations of the Administrator, Part 501 or 502 and when operated displays the following evidence of registration:		
a. <input checked="" type="checkbox"/> CERTIFICATE OF REGISTRATION, FORM ACA-500 (PART A), DATE OF ISSUE <u>Jan 11, 1982</u>		
b. <input type="checkbox"/> APPLICATION FOR REGISTRATION, FORM ACA-500 (PART B), FORM ACA-500, PART A, FORWARDED TO CAA AIRCRAFT RECORDS BRANCH, W-300 ON _____ (DATE)		
c. <input type="checkbox"/> DEALER'S REGISTRATION CERTIFICATE, FORM ACA-1787, DATED _____		
<small>*In order to be eligible for registration an aircraft must be owned by a citizen of the United States, as defined by Section 1 (12) of the Civil Aeronautics Act of 1958, as amended.</small>		
ATTACHMENTS (Check which)		 (SIGNATURE OF REGISTERED OWNER OR AUTHORIZED AGENT)
<input checked="" type="checkbox"/> ACA-319 <input type="checkbox"/> WEIGHT AND BALANCE REPORT		
<input type="checkbox"/> ACA-337 <input type="checkbox"/> DATA, DRAWINGS, ETC.		
<input type="checkbox"/> ACA-317 <input type="checkbox"/> UNAPPROVED DEVIATION DATA		
		<u>3-15-84</u> (DATE)
		<u>Agent</u> (TITLE)

U. S. DEPARTMENT OF COMMERCE
CIVIL AERONAUTICS ADMINISTRATION

AIRCRAFT INSPECTION REPORT

(To be completed by a CAA representative or approved repair station)

The aircraft described in item 3 on the reverse of this form has been inspected and found to conform to the following:
(Check and complete applicable items)

1. AIRCRAFT AND ENGINE CERTIFICATION BASIS

- a. AIRCRAFT SPECIFICATION NO. _____ THROUGH SHEET REVISION NO. _____
- b. AIRCRAFT LISTING PAGE NO. 98
- c. AIRWORTHINESS DIRECTIVE SUMMARY 1953 THROUGH CARD NO. 54-5
- d. CIVIL AIR REGULATION PART 8 (MODIFIED TYPE CERTIFICATE)

2. AIRCRAFT AND ENGINE OPERATING RECORDS

- a. AIRCRAFT NEW—NO PREVIOUS OPERATION OR MAINTENANCE HISTORY
- b. COMPLIANCE WITH APPLICABLE AIRWORTHINESS DIRECTIVES RECORDED
- c. AIRCRAFT RECORDS INDICATE THE AIRFRAME HAS BEEN OPERATED A TOTAL OF 2507.25 HOURS
- d. ENGINE RECORDS INDICATE THE FOLLOWING OPERATION:

SERIAL NO. <u>12726</u>	TOTAL HOURS <u>11.05</u>
SERIAL NO. <u>P226933</u>	TOTAL HOURS <u>110.15</u>
SERIAL NO. _____	TOTAL HOURS _____
SERIAL NO. _____	TOTAL HOURS _____

3. PREVIOUS INSPECTION RECORD (INSPECTION RECORDED ON FORM ACA-319)

- a. LAST AIRWORTHINESS INSPECTION CONDUCTED 3-15-54 (DATE)
 - BY AIRCRAFT MANUFACTURER
 - BY APPROVED REPAIR STATION, CERTIFICATE NO. _____
 - BY MECHANIC, CERTIFICATE NO. A7E-502456
- b. PERIODIC AIRCRAFT INSPECTION REPORT, FORM ACA-319, WAS RETURNED TO OWNER

4. AIRWORTHINESS DOCUMENTS ISSUED OR REVIEWED

- a. OPERATION LIMITATIONS, FORM ACA-308, WAS ISSUED (COPY ATTACHED)
 - b. CURRENT OPERATION LIMITATIONS, FORM ACA-308, IS AVAILABLE IN AIRCRAFT
 - c. CURRENT APPROVED AIRPLANE FLIGHT MANUAL IS AVAILABLE IN AIRCRAFT
 - d. CURRENT WEIGHT AND BALANCE INFORMATION IS AVAILABLE IN AIRCRAFT
 - e. THIS INSPECTION HAS BEEN RECORDED IN THE AIRCRAFT RECORDS
 - f. CERTIFICATE OF AIRWORTHINESS, FORM ACA-1362, ISSUED TO EXPIRE 3-15-55 (DATE)
 - g. PREVIOUS FORM ACA-1362 WAS ISSUED TO EXPIRE 3-10-54 (DATE)
- BY Ray H. Beckerman (NAME OF ISSUING REPRESENTATIVE) 2-257-9 (DESIGNATION NO.)

5. CAA APPROVED REPAIR STATION CERTIFICATION

The aircraft described on the reverse has been inspected under the authority accorded certificated repair station No. _____ by CAB 52 and was found to be:

- AIRWORTHY
 - UNAIRWORTHY
- (REPAIR STATION AUTHORIZED SIGNATURE) _____ (DATE) _____

6. CAA REPRESENTATIVE CERTIFICATION

I HAVE INSPECTED THE AIRCRAFT DESCRIBED ON THE REVERSE AND FOUND IT AIRWORTHY UNAIRWORTHY (Check appropriate item)

DESIGNEE'S SIGNATURE	DESIGNATION NO.	DATE	
AVIATION SAFETY AGENT'S SIGNATURE	CAA DESIGNATION NO.	DATE	
<u>Ray H. Beckerman</u>	<u>2-257-9</u>	<u>3-7-54</u>	<input type="checkbox"/> ACCEPTED <input type="checkbox"/> REINSPECTED <input type="checkbox"/> SPOT CHECKED

ATTACHMENT

RECEIVED
 MAR 25 3 21 PM '54
 CIVIL AERONAUTICS ADMINISTRATION
 WASHINGTON, D.C.

U. S. DEPARTMENT OF COMMERCE
CIVIL AERONAUTICS ADMINISTRATION

Form approved
Budget Bureau No. 4-R053.4

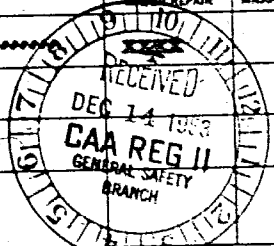
MAJOR REPAIR AND ALTERATION FORM (AIRFRAME, POWERPLANT, PROPELLER OR APPLIANCE)

1. AIRCRAFT	MAKE Cessna	MODEL G-21-A	SERIAL NO. 1161	NATIONALITY AND REGISTRATION MARK N95467
-------------	-----------------------	------------------------	---------------------------	--

2. OWNER	NAME (First, middle, last) John W. Mason	ADDRESS (Street and number, city, zone and State) 2906 Gulf Bldg. Houston 2, Texas
----------	--	--

3. COMPLETE ONLY FOR UNIT REPAIRED AND/OR ALTERED. DESCRIBE WORK ACCOMPLISHED ON REVERSE IN ACCORDANCE WITH CIVIL AERONAUTICS MANUAL 18.

UNIT	MAKE	MODEL	SERIAL NO.	NATURE OF WORK (Check)	
				MAJOR REPAIR	MAJOR ALTERATION
a. AIRFRAME	***** (As described in item 1 above) *****				
b. POWERPLANT					
c. PROPELLER					
d. APPLIANCE	TYPE AND MANUFACTURER				



AIRCRAFT WEIGHT AND BALANCE DATA This item must be completed by repair or alteration agency. However, in the case of a spare component, it will not be completed until such component is installed in an aircraft. At this time, it will be completed by the installing agency, if applicable.

CATEGORY	EMPTY WEIGHT (Pounds)*	EMPTY CENTER OF GRAVITY (Inches from datum)*	USEFUL LOAD (Pounds)*
Standard	6287.5	plus 25.46	1712.5

5. CONFORMITY STATEMENT (Complete and check)

a. AGENCY'S NAME AND ADDRESS Arnott L. De Lange P. O. 498 Hitchcock, Texas	b. KIND OF AGENCY <input checked="" type="checkbox"/> U. S. Certified Mechanic. <input type="checkbox"/> Foreign Certified Mechanic. <input type="checkbox"/> Certified Repair Station. <input type="checkbox"/> Manufacturer. <input type="checkbox"/> (Check if repair or alteration was made under delegation option procedures.)	c. CERTIFICATE NO. A & B 502456
--	---	---

I certify that the repair and/or alteration made to the unit(s) identified under item 3 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 18 of the U. S. Civil Air Regulations and that the information furnished herein is true and correct to the best of my knowledge.

Dec. 4, 1953 (Date repair and/or alteration completed) **Arnott L. De Lange** (Signature of authorized individual)

6. APPROVAL FOR RETURN TO SERVICE (Check and complete appropriate items)

Pursuant to the authority specified below the unit identified in item 3 was inspected in the manner prescribed by the Administrator and is

APPROVED } BY { CAA Designee Manufacturer Canadian Department of Transport Inspector of Aircraft
 REJECTED } CAA Aviation Safety Agent Repair Station Other (Specify)

12-9-53 (Date of approval or rejection) **Ray L. Becklerman - 2-257-9** (Signature of authorized individual; title or identification number)

7. TO BE COMPLETED ONLY BY CAA PERSONNEL

Forwarded for engineering comment See attached memorandum
 Accepted (Date) Reinspected (Date) Spot Checked (Date)

(CAA designation number) (Signature Aviation Safety Agent)

INSTRUCTIONS

This form must be completed in duplicate each time a major repair and/or alteration is made of an aircraft, airframe, power-plant, propeller or appliance. After the repair and/or alteration has been inspected and item 6 completed, the original copy of this form will be made available to the aircraft owner for retention as part of the aircraft records. The duplicate copy is retained by the CAA for administrative purposes.

See CAM 18 for detailed instructions concerning the information to be furnished with this form and instructions concerning its preparation.

6. DESCRIPTION OF WORK ACCOMPLISHED.

- I. Removed and recovered all fabric on Aircraft except Rudder.
Used Grade "A" fabric and nitrate dope
12 coats of clear.
8 coats of silver.
2 coats of enamel.
- II. Replaced bottom rear attach angle of Main Spar on right wing.
Replaced with factory part and done work according to manufacturer.

Put on new engine from Southwest Airmotive on right side. Checked Mount and all asseccory befor build up. Run in engine on ground.

RECEIVED
JAN 5 12 17 PM '54
ADHIN. & RECORDS BRANCH
W-300

Am

*If additional space is needed attach additional sheets bearing aircraft nationality and registration mark and date work completed.
Check block if additional sheets are attached.

U. S. DEPARTMENT OF COMMERCE
CIVIL AERONAUTICS ADMINISTRATION

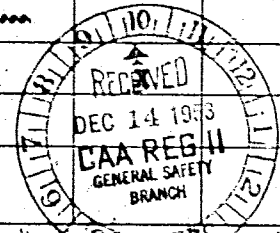
Form approved.
Budget Bureau No. 41-R022.4

MAJOR REPAIR AND ALTERATION FORM (AIRFRAME, POWERPLANT, PROPELLER OR APPLIANCE)

1. AIRCRAFT	MAKE SHUMMER	MODEL 621-A	SERIAL NO. 1161	NATIONALITY AND REGISTRATION MARK N95-467
2. OWNER	NAME (Firm, individual, less) John W. Mecom		ADDRESS (Street and number, city, zone and State) Hitchcock, Texas	

3. COMPLETE ONLY FOR UNIT REPAIRED AND/OR ALTERED. DESCRIBE WORK ACCOMPLISHED ON REVERSE IN ACCORDANCE WITH CIVIL AERONAUTICS MANUAL 18.

UNIT	MAKE	MODEL	SERIAL NO.	NATURE OF WORK (Class)	
				MAJOR REPAIR	MAJOR ALTERATION
a. AIRFRAME	***** (As described in item 3 above) *****				
b. POWERPLANT	Pratt & Whitney	R-985-AN1-14B	12726		
c. PROPELLER					
d. APPLIANCE	TYPE AND MANUFACTURER				



4. AIRCRAFT WEIGHT AND BALANCE DATA *After the repairs and/or alterations described below were made.* This item must be completed by repair or alteration agency. However, in the case of a spare component, it will not be completed until such component is installed in an aircraft. At this time, it will be completed by the installing agency, if applicable.

CATEGORY	EMPTY WEIGHT (Pounds)*	EMPTY CENTER OF GRAVITY (Inches from datum)*	USEFUL LOAD (Pounds)*
Standard	6287.5	+25.46	1712.5

5. CONFORMITY STATEMENT (Complete and check)

a. AGENCY'S NAME AND ADDRESS Southwest Airmotive Company 8401 Cedar Springs Dallas 9, Texas	b. KIND OF AGENCY <input type="checkbox"/> U. S. Certificated Mechanic. <input type="checkbox"/> Foreign Certificated Mechanic. <input checked="" type="checkbox"/> Certificated Repair Station. <input type="checkbox"/> Manufacturer. <input type="checkbox"/> (Check if repair or alteration was made under delegation option procedures.)	c. CERTIFICATE NO. #195
---	--	-----------------------------------

6. I certify that the repair and/or alteration made to the unit(s) identified under item 3 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 18 of the U. S. Civil Air Regulations and that the information furnished herein is true and correct to the best of my knowledge.

11-5-53 (Date repair and/or alteration completed)
Louis J. Binner (Signature of authorized individual) **E-3293**

6. APPROVAL FOR RETURN TO SERVICE (Check and complete appropriate items)
Pursuant to the authority specified below the unit identified in item 3 was inspected in the manner prescribed by the Administrator and is

APPROVED } BY { CAA Designee Manufacturer Canadian Department of Transport Inspector of Aircraft
 REJECTED } CAA Aviation Safety Agent Repair Station Other (Specify)

12-9-53 (Date of approval or rejection) *Ray B. ...* (Signature of authorized individual; title or identification number) **-7-257-4**

7. TO BE COMPLETED ONLY BY CAA PERSONNEL

a. Forwarded for engineering comment See attached memorandum
b. Accepted (Date) Reinspected (Date) Spot Checked (Date)

(CAA designation number) (Signature Aviation Safety Agent)

INSTRUCTIONS

This form must be completed in duplicate each time a major repair and/or alteration is made of an aircraft, airframe, powerplant, propeller or appliance. After the repair and/or alteration has been inspected and item 6 completed, the original copy of this form will be made available to the aircraft owner for retention as part of the aircraft records. The duplicate copy is retained by the CAA for administrative purposes.

See CAM 18 for detailed instructions concerning the information to be furnished with this form and instructions concerning its preparation.

8. DESCRIPTION OF WORK ACCOMPLISHED.

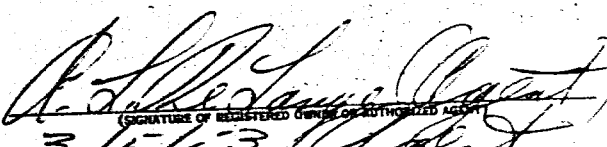
Engine majored. All steel parts magnafluxed. For parts replaced, see inspection forms. Magnetos, harness and carburetor overhauled per factory specifications. Engine test run 5.0 hours; prepared for storage.

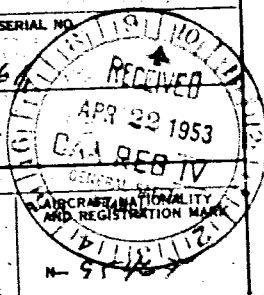
Engine mount magnafluxed and all accessories overhauled. Build up Engine and installed. Run in on ground.

*R. L. Lange
HFE 502456*

RECEIVED
JAN 5 12 17 PM '54
ADMIN. & RECORDS BRANCH
M-300

*If additional space is needed attach additional sheets bearing aircraft nationality and registration mark and date work completed.
Check block if additional sheets are attached.

U. S. DEPARTMENT OF COMMERCE CIVIL AERONAUTICS ADMINISTRATION APPLICATION FOR AIRWORTHINESS CERTIFICATE AND/OR ANNUAL INSPECTION OF AN AIRCRAFT		Form Approved Budget Bureau No. 47-R011A INSTRUCTIONS Please print or type. Submit this form to the Civil Aeronautics Administration Aviation Safety Field Representative.
1. TYPE OF APPLICATION (Check which)		
<input type="checkbox"/> ORIGINAL ISSUANCE OF CERTIFICATE <input checked="" type="checkbox"/> ANNUAL INSPECTION FOR RENEWAL OF CERTIFICATE <input type="checkbox"/> AMENDMENT OR MODIFICATION OF CURRENT CERTIFICATE		<input type="checkbox"/> RECERTIFICATION UNDER THE PROVISIONS OF CAR 9 <input type="checkbox"/> MULTIPLE CERTIFICATE UNDER THE PROVISIONS OF CAR 9 <input type="checkbox"/>
2. AIRWORTHINESS CLASSIFICATION (Check appropriate item(s)): It is requested that the Certificate of Airworthiness be issued to permit operation of the aircraft in the following air- worthiness classification(s):		
<input checked="" type="checkbox"/> STANDARD (NORMAL UTILITY, ACROBATIC, TRANSPORT CATEGORIES) <input type="checkbox"/> LIMITED (SEE CAR 9) <input type="checkbox"/> RESTRICTED (SEE CAR 9) (Check the restricted special purpose operation(s) to be conducted)		<input type="checkbox"/> PATROLLING <input type="checkbox"/> FOREST AND WILDLIFE CONSERVATION <input type="checkbox"/> WEATHER CONTROL <input type="checkbox"/> OTHER
<input type="checkbox"/> AGRICULTURAL AND PEST CONTROL <input type="checkbox"/> AERIAL ADVERTISING <input type="checkbox"/> AERIAL SURVEYING <input type="checkbox"/> GLIDER TOWING		<input type="checkbox"/> RACING <input type="checkbox"/> EXHIBITION <input type="checkbox"/> OTHER
<input type="checkbox"/> EXPERIMENTAL (Check the type of experimental operation(s) to be conducted)		
<input type="checkbox"/> RESEARCH AND DEVELOPMENT <input type="checkbox"/> AMATEUR-BUILT <input type="checkbox"/> DEMONSTRATION		
3. AIRCRAFT IDENTIFICATION (Complete all items)		
a. AIRCRAFT MAKE	b. AIRCRAFT MODEL	c. AIRCRAFT SERIAL NO.
Grumman	G-21-A	116
d. ENGINE MAKE	e. ENGINE MODEL	
P&W	A-985-14B	
4. AIRCRAFT REGISTRATION INFORMATION (Complete all items)		
a. REGISTERED OWNER'S FULL NAME	b. PERMANENT MAILING ADDRESS	
John W. Meenan	2906 Gulf Bldg. Houston 2, Texas	
5. AIRCRAFT OWNER'S CERTIFICATION (Check and complete appropriate item) I hereby certify that I am the registered owner (or his agent) of the aircraft identified in Item 3 above which is registered* with the Civil Aeronautics Administration as required by the Regulations of the Administrator, Part 501 or 502 and when operated displays the following evidence of registration:		
<input checked="" type="checkbox"/> CERTIFICATE OF REGISTRATION, FORM ACA-500 (PART A), DATE OF ISSUE <u>1-11-52</u>		
<input type="checkbox"/> APPLICATION FOR REGISTRATION, FORM ACA-500 (PART B), FORM ACA-500, PART A, FORWARDED TO CAA AIRCRAFT RECORDS BRANCH, W-300 ON _____ (DATE)		
<input type="checkbox"/> DEALER'S REGISTRATION CERTIFICATE, FORM ACA-1787, DATED _____		
*In order to be eligible for registration an aircraft must be owned by a citizen of the United States, as defined by Section 1 (19) of the Civil Aeronautics Act of 1930, as amended.		
ATTACHMENTS (Check which)		(SIGNATURE OF REGISTERED OWNER OR AUTHORIZED AGENT)  (DATE) <u>3/5/53</u> (TITLE)
<input checked="" type="checkbox"/> ACA-319 <input type="checkbox"/> WEIGHT AND BALANCE REPORT <input checked="" type="checkbox"/> ACA-337 <input type="checkbox"/> DATA, DRAWINGS, ETC. <input type="checkbox"/> ACA-317 <input type="checkbox"/> UNAPPROVED DEVIATION DATA		



U. S. DEPARTMENT OF COMMERCE
CIVIL AERONAUTICS ADMINISTRATION

AIRCRAFT INSPECTION REPORT

(To be completed by a CAA representative or approved repair station)

The aircraft described in Item 3 on the reverse of this form has been inspected and found to conform to the following:
(Check and complete applicable items)

1. AIRCRAFT AND ENGINE CERTIFICATION BASIS

- a. AIRCRAFT SPECIFICATION NO. 664 THROUGH SHEET REVISION NO. 3
- b. AIRCRAFT LISTING PAGE NO. _____
- c. AIRWORTHINESS DIRECTIVE SUMMARY 1952 THROUGH CARD NO. 63-5
(YEAR)
- d. CIVIL AIR REGULATION PART 8 (MODIFIED TYPE CERTIFICATE)

2. AIRCRAFT AND ENGINE OPERATING RECORDS

- a. AIRCRAFT NEW—NO PREVIOUS OPERATION OR MAINTENANCE HISTORY
- b. COMPLIANCE WITH APPLICABLE AIRWORTHINESS DIRECTIVES RECORDED
- c. AIRCRAFT RECORDS INDICATE THE AIRFRAME HAS BEEN OPERATED A TOTAL OF 2388.01 HOURS
- d. ENGINE RECORDS INDICATE THE FOLLOWING OPERATION:

SERIAL NO. <u>P226933</u>	TOTAL HOURS <u>9055 H.P.E</u>
SERIAL NO. <u>22562</u>	TOTAL HOURS <u>52565 H.P.E</u>
SERIAL NO. _____	TOTAL HOURS _____
SERIAL NO. _____	TOTAL HOURS _____

3. PREVIOUS INSPECTION RECORD (INSPECTION RECORDED ON FORM ACA-319)

- a. LAST AIRWORTHINESS INSPECTION CONDUCTED 3-5-53 (DATE)
 - BY AIRCRAFT MANUFACTURER
 - BY APPROVED REPAIR STATION, CERTIFICATE NO. _____
 - BY MECHANIC, CERTIFICATE NO. ATE 602466
- b. PERIODIC AIRCRAFT INSPECTION REPORT, FORM ACA-319, WAS RETURNED TO OWNER

4. AIRWORTHINESS DOCUMENTS ISSUED OR REVIEWED

- a. OPERATION LIMITATIONS, FORM ACA-309, WAS ISSUED (COPY ATTACHED)
 - b. CURRENT OPERATION LIMITATIONS, FORM ACA-309, IS AVAILABLE IN AIRCRAFT
 - c. CURRENT APPROVED AIRPLANE FLIGHT MANUAL IS AVAILABLE IN AIRCRAFT
 - d. CURRENT WEIGHT AND BALANCE INFORMATION IS AVAILABLE IN AIRCRAFT
 - e. THIS INSPECTION HAS BEEN RECORDED IN THE AIRCRAFT RECORDS
 - f. CERTIFICATE OF AIRWORTHINESS, FORM ACA-1362, ISSUED TO EXPIRE 3-10-54 (DATE)
 - g. PREVIOUS FORM ACA-1362 WAS ISSUED TO EXPIRE 3-11-52 (DATE)
- BY Ray N. Beckelman (NAME OF ISSUING REPRESENTATIVE) 4-579-M-5 (DESIGNATION NO.)

5. CAA APPROVED REPAIR STATION CERTIFICATION

The aircraft described on the reverse has been inspected under the authority accorded certificated repair station No. _____ by CAR 52 and was found to be:

AIRWORTHY
 UNAIRWORTHY

(REPAIR STATION AUTHORIZED SIGNATURE) _____ (DATE) _____

6. CAA REPRESENTATIVE CERTIFICATION

I HAVE INSPECTED THE AIRCRAFT DESCRIBED ON THE REVERSE AND FOUND IT AIRWORTHY UNAIRWORTHY
(Check appropriate item)

DESIGNEE'S SIGNATURE	DESIGNATION NO.	DATE	
AVIATION SAFETY AGENT'S SIGNATURE	CAA DESIGNATION NO.	DATE	
<u>Ray N. Beckelman</u>	<u>4-579-M-5</u>	<u>3-10-53</u>	

ATTACHMENT

RECEIVED
MAY 18 3 16 PM '53
ADMIN. & RECORDS BRANCH
W-300

V. O. Rd

Form ACA-327
(11-65)
DEPARTMENT OF COMMERCE
CIVIL AERONAUTICS ADMINISTRATION
Form approved
Budget Bureau No. 41-R0523
REPAIR AND ALTERATION FORM (AIRCRAFT, PROPELLERS, ENGINES, INSTRUMENTS)
(SEE REVERSE SIDE OF THIS FORM FOR INSTRUCTIONS)

1. AIRCRAFT	MAKE Crumman	MODEL 021-A	SERIAL NO. 1161	NATIONALITY AND REGISTRATION MARK N 95167 (SK)
2. OWNER	NAME (First, middle, last) John W. Mecca		ADDRESS (Street and number, city, zone, and State) 2906 Gulf Bldg. Houston 2, Texas	

3. FILL IN INFORMATION IN THIS ITEM ONLY FOR THE UNIT REPAIRED AND/OR ALTERED

UNIT	MAKE	MODEL	SERIAL NO.	NATURE OF WORK (Check)		
				MAJOR REPAIR	MAJOR ALTERATION	
a. AIRCRAFT	***** (As described in item 1 above) *****					
b. PROPELLER BLADE OR HUB						
c. ENGINE	Pratt & Whitney	R-985-AH-3-14B	P-226933	Major		
d. INSTRUMENT	TYPE AND MANUFACTURER					

4. AIRCRAFT

This item must be completed by repair or alteration agency. However, in the case of a spare component, it will not be completed until such component is installed in an aircraft. At this time, it will be completed by the installing agency, if applicable.

WEIGHT AND BALANCE DATA

EMPTY WEIGHT (Pounds)* *AFTER the repairs and/or alterations described below were made.	EMPTY CENTER OF GRAVITY (Inches from datum)*	USEFUL LOAD (Pounds)*
6287.5	25.46	1712.5

5. KIND OF AGENCY WHICH MADE REPAIRS AND/OR ALTERATIONS (Check)

MANUFACTURER APPROVED REPAIR STATION NO. 1808 CERTIFIED MECHANIC
(Specify)

6. AGENCY

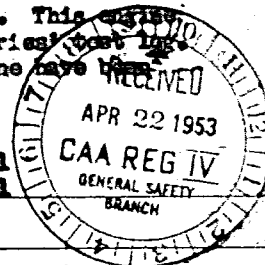
NAME Page Aircraft Industries	ADDRESS (Street and number, city, zone, and State) P. O. Box 883 Oklahoma City, Oklahoma	DATE WORK ACCOMPLISHED 8-26-52
---	--	--

DESCRIPTION OF WORK (ALL WORK MUST BE ACCOMPLISHED IN ACCORDANCE WITH PART 18 OF THE CIVIL AIR REGULATIONS AND ITS ASSOCIATED CIVIL AERONAUTICS MANUAL 18.)

This engine has received a major overhaul with replacements manufactured by Pratt & Whitney or licensees. The data plate has been stamped in accordance with CAA engine specifications. All steel parts magnafluxed. This engine given a 3130-hour test run at Page Aircraft Industrial Co. Inc. All Pratt & Whitney Service Bulletins pertaining to the engine have been previously complied with.

Carb: MB-9B-19
Serial: 5685167

Eng: SB9RH-3
LB-812111
PB-815261



If more space is needed, continue on reverse, or attach separate sheets bearing aircraft registration mark.

FORWARDED FOR ENGINEERING APPROVAL

I CERTIFY that the above statements are true and correct to the best of my knowledge.

*Rufus P. Huey
RUFUS P. HUEY*

1178825
(Certificate number and rating)

8-26-52
(Date)

TO BE COMPLETED BY CAA REPRESENTATIVES

<input checked="" type="checkbox"/> APPROVED <input type="checkbox"/> REJECTED	DESIGNEE'S SIGNATURE <i>Rufus P. Huey</i>	NO.	DATE
	CAA AGENT SIGNATURE <i>Rufus P. Huey</i>	<input type="checkbox"/> ACCEPTED <input type="checkbox"/> REINSPECTED	DATE 3-10-53

INSTRUCTIONS

1. This form must be filled out in duplicate each time a major repair and/or alteration is made of an aircraft, propeller, engine, or instrument.
2. When repairs and/or alterations are made which affect the operation limitations set forth in the Airplane Flight Manual or Form ACA-309, the aircraft shall not be returned to service until the operation limitations have been corrected by an authorized representative of the CAA.
3. Certificated mechanics must, in all cases, obtain approval of the repair and/or alteration from the CAA representative prior to returning the article to service.
4. The manufacturer of an aircraft, engine, propeller, or instrument, and a certificated repair station holding the appropriate rating may return the article to service without prior approval of an authorized CAA representative, provided the alteration and/or repair does not change any of the operation limitations.
5. Repair agencies will be guided as follows when completing this form:
 - a. For an Aircraft Repair and/or Alteration—Complete Items 1, 2, 3a, 4, 5, 6, and 7.
Mechanic—Submit to CAA representative for inspection and approval prior to returning the article to service. Upon approval, the CAA representative will return the original copy to the mechanic who should submit it to the aircraft owner.
Manufacturer or Approved Repair Station—Submit original to aircraft owner, forward copy to CAA district office or CAA agent prior to returning article to service.
 - b. For a Component Installed in an Aircraft—Complete Items 1, 2, 3 (b, c, or d, whichever is applicable), 4, 5, 6, and 7. Distribute copies as in a above.
 - c. For a Spare Component—Complete Items 3 (b, c, or d, whichever is applicable), 5, 6, and 7.
Mechanic—Submit to CAA representative for inspection and approval. When approved, retain both copies of the form with the component until installation on an aircraft. At this time Items 1, 2, and 4 must be completed by the installing agency who will distribute the forms as follows: (No further approval of CAA is required, only a log-book entry by the installing agency is necessary.) After installation, original form should be submitted to aircraft owner, and copy forwarded to the nearest CAA district office or CAA agent.
Manufacturer or Approved Repair Station—Handle same as for mechanics except that it is not necessary to submit to CAA representative for inspection or approval.

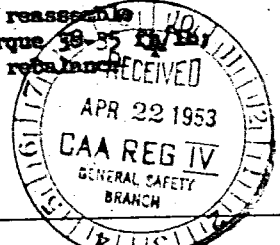
10-64210-2 U. S. GOVERNMENT PRINTING OFFICE

This engine was removed from packing case. Build up with Mount and Accessory. Installed on ~~Grumman~~ Grumman G21-A N95467 and run in. All pressure set and Carb. adjusted.

A. DeLange
A. L. DeLange

A & E 502456

RECEIVED
MAY 18 3 16 PM '53
ADMIN. & RECORDS BRANCH
W-500

Form ACA-357 (11-61)		DEPARTMENT OF COMMERCE CIVIL AERONAUTICS ADMINISTRATION		Form Approved Rodge Bureau No. 41-R0222	
REPAIR AND ALTERATION FORM (AIRCRAFT, PROPELLERS, ENGINES, INSTRUMENTS)					
(SEE REVERSE SIDE OF THIS FORM FOR INSTRUCTIONS)					
1. AIRCRAFT	MAKE <i>Grumman</i>	MODEL <i>G214</i>	SERIAL NO. <i>1161</i>	NATIONALITY AND REGISTRATION MARK <i>N95467 (SW)</i>	
2. OWNER	NAME (First, middle, last) JOHN W. BECOM		ADDRESS (Street and number, city, zone, and State) <i>2906 Gulf 13169,</i>		HOUSTON, TEXAS
3. FILL IN INFORMATION IN THIS ITEM ONLY FOR THE UNIT REPAIRED AND/OR ALTERED					
UNIT	MAKE	MODEL	SERIAL NO.	NATURE OF WORK (Check)	
				MAJOR REPAIR	MAJOR ALTERATION
a. AIRCRAFT	***** (As described in item 1 above) *****				
b. PROPELLER BLADE OR HUB	HAMILTON STANDARD	22D30-201/6533A-18	Hub Ser. 165584 Blade Ser. 715989 T18467	X	
c. ENGINE	TYPE AND MANUFACTURER				
d. INSTRUMENT	TYPE AND MANUFACTURER				
4. AIRCRAFT This item must be completed by repair or alteration agency. However, in the case of a spare component, it will not be completed until such component is installed in an aircraft. At this time, it will be completed by the installing agency, if applicable.					
WEIGHT AND BALANCE DATA					
AFTER the repairs and/or alterations described below were made.		EMPTY WEIGHT (Pounds) <i>6287.5</i>	EMPTY CENTER OF GRAVITY (Inches from datum)* <i>+25.46</i>	USEFUL LOAD (Pounds)* <i>1712.5</i>	
5. KIND OF AGENCY WHICH MADE REPAIRS AND/OR ALTERATIONS (Check)					
<input type="checkbox"/> MANUFACTURER		<input checked="" type="checkbox"/> APPROVED REPAIR STATION NO. <u>1350</u> <i>(Specify)</i>		<input type="checkbox"/> CERTIFIED MECHANIC	
6. AGENCY	NAME <u>L. WALKER COMPANY</u> <u>BOX 5188, HARRISBURG STATION</u>			ADDRESS (Street and number, city, zone, and State)	
				DATE WORK ACCOMPLISHED 7-1-52	
DESCRIPTION OF WORK (ALL WORK MUST BE ACCOMPLISHED IN ACCORDANCE WITH PART 18 OF THE CIVIL AIR REGULATIONS AND ITS ASSOCIATED CIVIL AERONAUTICS MANUAL 18.)					
<p>Disassemble, clean and visually inspect; remove 6533A-18 blades Serial 740174 and 740175 and install resorted and refinished blades of above serial numbers; cadmium plate hub assembly; reassemble with all necessary new parts; pitch 86.0 and 12.0; torque 38-35 ft/lb; done preload shin 1005; internal leakage 108 fl/ps; rebalance and machine test.</p>					
					
If more space is needed, continue on reverse, or attach separate sheets bearing aircraft registration mark.					
<input type="checkbox"/> FORWARDED FOR ENGINEERING APPROVAL					
I CERTIFY that the above statements are true and correct to the best of my knowledge.					
<i>Shuman E. Beason</i> (Signature of supervising mechanic)		1035568 PROPELLER MECHANIC (Certificate number and rating)		7-1-52 (Date)	
TO BE COMPLETED BY CAA REPRESENTATIVES					
<input checked="" type="checkbox"/> APPROVED	DESIGNEE'S SIGNATURE		NO.	DATE	
<input type="checkbox"/> REJECTED	<i>Ray J. Grubbs</i>		<input type="checkbox"/> ACCEPTED <input type="checkbox"/> REINSPECTED	7-10-53	

INSTRUCTIONS

1. This form must be filled out in duplicate each time a major repair and/or alteration is made of an aircraft, propeller, engine, or instrument.
2. When repairs and/or alterations are made which affect the operation limitations set forth in the Airplane Flight Manual or Form ACA-309, the aircraft shall not be returned to service until the operation limitations have been corrected by an authorized representative of the CAA.
3. Certificated mechanics must, in all cases, obtain approval of the repair and/or alteration from the CAA representative prior to returning the article to service.
4. The manufacturer of an aircraft, engine, propeller, or instrument, and a certificated repair station holding the appropriate rating may return the article to service without prior approval of an authorized CAA representative, provided the alteration and/or repair does not change any of the operation limitations.
5. Repair agencies will be guided as follows when completing this form.
 - a. For an Aircraft Repair and/or Alteration—Complete Items 1, 2, 3a, 4, 5, 6, and 7.
Mechanic—Submit to CAA representative for inspection and approval prior to returning the article to service. Upon approval, the CAA representative will return the original copy to the mechanic who should submit it to the aircraft owner.
Manufacturer or Approved Repair Station—Submit original to aircraft owner, forward copy to CAA district office or CAA agent prior to returning article to service.
 - b. For a Component Installed in an Aircraft—Complete Items 1, 2, 3 (b, c, or d, whichever is applicable), 4, 5, 6, and 7. Distribute copies as in a above.
 - c. For a Spare Component—Complete Items 3 (b, c, or d, whichever is applicable), 5, 6, and 7.
Mechanic—Submit to CAA representative for inspection and approval. When approved, retain both copies of the form with the component until installation on an aircraft. At this time Items 1, 2, and 4 must be completed by the installing agency who will distribute the forms as follows: (No further approval of CAA is required, only a log-book entry by the installing agency is necessary.) After installation, original form should be submitted to aircraft owner, and copy forwarded to the nearest CAA district office or CAA agent.
Manufacturer or Approved Repair Station—Handle same as for mechanics except that it is not necessary to submit to CAA representative for inspection or approval.

RECEIVED
MAY 18 3 26 PM '53
ADMIN. & RECORDS BRANCH
W-300

Form ACA-837 (11-68)		DEPARTMENT OF COMMERCE CIVIL AERONAUTICS ADMINISTRATION		Form Approved Budget Bureau No. 41-RN22	
REPAIR AND ALTERATION FORM (AIRCRAFT, PROPELLERS, ENGINES, INSTRUMENTS)					
(SEE REVERSE SIDE OF THIS FORM FOR INSTRUCTIONS)					
1. AIRCRAFT	MAKE <i>Cessna</i>	MODEL <i>441A</i>	SERIAL NO. <i>1167</i>	NATIONALITY AND REGISTRATION MARK <i>N 93467 (S)</i>	
2. OWNER	NAME (First, middle, last) <i>JOHN W. BECOM</i>		ADDRESS (Street and number, city, zone, and State) <i>2906 Gulf Blv, HOUSTON, TEXAS</i>		
3. FILL IN INFORMATION IN THIS ITEM ONLY FOR THE UNIT REPAIRED AND/OR ALTERED					
UNIT	MAKE	MODEL	SERIAL NO.	NATURE OF WORK (Check)	
a. AIRCRAFT	***** (As described in item 1 above) *****			MAJOR REPAIR	MAJOR ALTERATION
b. PROPELLER BLADE OR HUB	<i>HAMILTON STANDARD</i>	<i>22D30-201/6533A-18</i>	<i>Sub Ser. 165583 Blade Ser. 25928CP T39347</i>	<input checked="" type="checkbox"/>	
c. ENGINE	TYPE AND MANUFACTURER				
d. INSTRUMENT					
4. AIRCRAFT WEIGHT AND BALANCE DATA <i>After the repairs and/or alterations described below were made.</i>					
EMPTY WEIGHT (Pounds)* <i>6287.5</i>		EMPTY CENTER OF GRAVITY (Inches from datum)* <i>+25.46</i>		USEFUL LOAD (Pounds)* <i>1712.5</i>	
5. KIND OF AGENCY WHICH MADE REPAIRS AND/OR ALTERATIONS (Check)					
<input type="checkbox"/> MANUFACTURER		<input checked="" type="checkbox"/> APPROVED REPAIR STATION NO. <i>1359</i>		<input type="checkbox"/> CERTIFIED MECHANIC	
6. AGENCY	NAME <i>L. WALKER COMPANY</i> ADDRESS (Street and number, city, zone, and State) <i>BOX 5158, HARRISBURG STATION HOUSTON, TEXAS</i>			DATE WORK ACCOMPLISHED <i>7-1-52</i>	
DESCRIPTION OF WORK (ALL WORK MUST BE ACCOMPLISHED IN ACCORDANCE WITH PART 18 OF THE CIVIL AIR REGULATIONS AND ITS ASSOCIATED CIVIL AERONAUTICS MANUAL 18.)					
<i>Disassemble, clean and visually inspect; remove 6533A-18 blades, Serial T40152 and T40153 and install rework and refinish blades of above serial numbers; conus platehub assembly; reassemble with all necessary new parts; pitch 86.0 and 12.0; torque 42-44 ft/lb; down preload shim .005"; internal leakage 103 fl/oz; rebalance and machine test.</i>					
<i>Ass</i>					
If more space is needed, continue on reverse, or attach separate sheets bearing aircraft registration mark.					
<input type="checkbox"/> FORWARDED FOR ENGINEERING APPROVAL					
I CERTIFY that the above statements are true and correct to the best of my knowledge.					
<i>Thomas E. Beason</i> (Signature of supervising mechanic)		<i>1035568</i> PROPELLER MECHANIC (Certificate number and rating)		<i>7-1-52</i> (Date)	
TO BE COMPLETED BY CAA REPRESENTATIVES					
<input checked="" type="checkbox"/> APPROVED	DESIGNEE'S SIGNATURE	NO.	DATE		
<input type="checkbox"/> REJECTED	<i>Ralph D. Gabelman</i>	<input type="checkbox"/> ACCEPTED <input type="checkbox"/> REINSPECTED	<i>3-10-53</i>		

INSTRUCTIONS

1. This form must be filled out in duplicate each time a major repair and/or alteration is made of an aircraft, propeller, engine, or instrument.
2. When repairs and/or alterations are made which affect the operation limitations set forth in the Airplane Flight Manual or Form ACA-309, the aircraft shall not be returned to service until the operation limitations have been corrected by an authorized representative of the CAA.
3. Certificated mechanics must, in all cases, obtain approval of the repair and/or alteration from the CAA representative prior to returning the article to service.
4. The manufacturer of an aircraft, engine, propeller, or instrument, and a certificated repair station holding the appropriate rating may return the article to service without prior approval of an authorized CAA representative, provided the alteration and/or repair does not change any of the operation limitations.
5. Repair agencies will be guided as follows when completing this form.
 - a. For an Aircraft Repair and/or Alteration—Complete Items 1, 2, 3a, 4, 5, 6, and 7.

Mechanic—Submit to CAA representative for inspection and approval prior to returning the article to service. Upon approval, the CAA representative will return the original copy to the mechanic who should submit it to the aircraft owner.

Manufacturer or Approved Repair Station—Submit original to aircraft owner, forward copy to CAA district office or CAA agent prior to returning article to service.
 - b. For a Component Installed in an Aircraft—Complete Items 1, 2, 3 (b, c, or d, whichever is applicable), 4, 5, 6, and 7. Distribute copies as in a above.
 - c. For a Spare Component—Complete Items 3 (b, c, or d, whichever is applicable), 5, 6, and 7.

Mechanic—Submit to CAA representative for inspection and approval. When approved, retain both copies of the form with the component until installation on an aircraft. At this time Items 1, 2, and 4 must be completed by the installing agency who will distribute the forms as follows: (No further approval of CAA is required, only a log-book entry by the installing agency is necessary.) After installation, original form should be submitted to aircraft owner, and copy forwarded to the nearest CAA district office or CAA agent.

Manufacturer or Approved Repair Station—Handle same as for mechanics except that it is not necessary to submit to CAA representative for inspection or approval.

19-64010-2 U. S. GOVERNMENT PRINTING OFFICE

RECEIVED
MAY 18 3 16 PM '53
ADMIN. & RECORDS BRANCH
W-300

DEPARTMENT OF COMMERCE CIVIL AERONAUTICS ADMINISTRATION		Form Approved Bureau No. 41-RM14
Form ACA-305 (11-49)		INSTRUCTIONS Please submit this form to the Civil Aeronautics Administration Aviation Safety Field Representative
APPLICATION FOR AIRWORTHINESS CERTIFICATE AND/OR ANNUAL INSPECTION OF AN AIRCRAFT		
1. APPLICATION (CHECK WHETHER) <input type="checkbox"/> ORIGINAL AIRWORTHINESS CERTIFICATE <input checked="" type="checkbox"/> ANNUAL INSPECTION		2. AIRWORTHINESS CLASSIFICATION <input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> RESTRICTED <input type="checkbox"/> EXPERIMENTAL <input type="checkbox"/> LIMITED <input type="checkbox"/> OTHER
3. MAKE <u>Grumman</u>		5. NATIONALITY AND REGISTRATION MARK <u>N95467</u>
4. MODEL <u>G21A</u>		6. MANUFACTURER'S SERIAL NO. <u>1161</u>
7. MAKE <u>Pittsford & Whitney</u>		8. MODEL <u>R985 AN1</u>
9. OWNER'S NAME <u>John W. Mecum</u>		10. (GIVE ADDRESS ONLY IF IT HAS BEEN CHANGED FROM THAT GIVEN ON YOUR CERTIFICATE OF REGISTRATION, FORM ACA-300) <u>2906 Gulf Bldg Houston 2, Texas</u>
11. ATTACHMENTS (CHECK WHICH) <input checked="" type="checkbox"/> ACA-319 <input type="checkbox"/> WEIGHT AND BALANCE REPORT <input checked="" type="checkbox"/> ACA-337 <input type="checkbox"/> DATA, DRAWINGS, ETC. <input type="checkbox"/> ACA-317 <input type="checkbox"/> UNAPPROVED DEVIATION DATA		12. I CERTIFY that the above statements are true. <u>[Signature]</u> (OWNER OR AUTHORIZED AGENT) <u>3/11/82</u> <u>Agent</u> (DATE) (TITLE)
Form ACA-305a (11-49) AIRCRAFT INSPECTION REPORT (To be completed by CAA representatives)		
13. It has been determined that the aircraft described in 305 above is in conformity with the following: (CHECK AND COMPLETE APPLICABLE ITEMS)		
a. <input checked="" type="checkbox"/> AIRCRAFT SPECIFICATION NO. <u>654</u> THROUGH SHEET REVISION NO. <u>3</u> b. <input type="checkbox"/> AIRCRAFT LISTING PAGE NO. c. <input checked="" type="checkbox"/> AIRWORTHINESS DIRECTIVE SUMMARY <u>1951</u> THROUGH CARD NO. <u>52-4</u> (YEAR) d. <input type="checkbox"/> OPERATIONS LIMITATIONS FORM ACA-309 ISSUED. e. <input checked="" type="checkbox"/> OPERATIONS LIMITATIONS FORM ACA-309 IS AVAILABLE IN AIRCRAFT. f. <input type="checkbox"/> CURRENT, APPROVED, AIRPLANE FLIGHT MANUAL IS AVAILABLE IN AIRCRAFT. g. <input checked="" type="checkbox"/> ALL APPLICABLE NOTES, INSTRUMENT MARKINGS, AND PLACARDS HAVE BEEN COMPLIED WITH. h. <input checked="" type="checkbox"/> CERTIFICATE OF AIRWORTHINESS FORM ACA-1342 WAS ISSUED.		
FINDINGS		
14. <input checked="" type="checkbox"/> AIRWORTHY <input type="checkbox"/> UNAIRWORTHY	15. DESIGNEE'S SIGNATURE <u>[Signature]</u> 18. AVIATION SAFETY AGENT'S SIGNATURE	16. DESIGNATION NO. 19. <input type="checkbox"/> ACCEPTED <input type="checkbox"/> REINSPECTED
		17. DATE 20. DATE <u>3-11-82</u>
21. REASON FOR DISAPPROVAL, OR REMARKS (INDICATE IF YOU HAVE USED THE REVERSE TO CONTINUE THIS OR OTHER ITEM) <input type="checkbox"/> YES <input type="checkbox"/> NO		

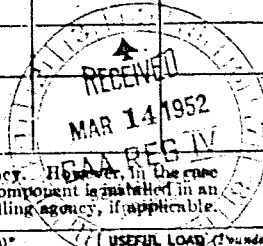
[Handwritten initials]

[Handwritten signature]

FAA AIRCRAFT REGISTRY
CAMERA NO. 4 DATE: 2/16/82

REGISTRY
RECORDS SECTION
MAR 25 1 46 PM '82

Form Approved Budget Bureau No. 41-R002.2		DEPARTMENT OF COMMERCE CIVIL AERONAUTICS ADMINISTRATION		
REPAIR AND ALTERATION FORM (AIRCRAFT, PROPELLERS, ENGINES, INSTRUMENTS) (SEE REVERSE SIDE OF THIS FORM FOR INSTRUCTIONS)				
1. AIRCRAFT	MAKE GRUMMAN	MODEL G-21-A	SERIAL NO. 1161	NATIONALITY AND REGISTRATION MARK N-95467
2. OWNER	NAME (First, middle, last) JOHN W. MECOM	ADDRESS (Street and number, city, zone, and State) 2906 GULF BUILDING HOUSTON 2, TEXAS		
3. FILL IN INFORMATION IN THIS ITEM ONLY FOR THE UNIT REPAIRED AND/OR ALTERED				
UNIT	MAKE	MODEL	SERIAL NO.	NATURE OF WORK (Check) MAJOR REPAIR MAJOR ALTERATION
a. AIRCRAFT	***** (As described in item 1 above) *****			XXX
b. PROPELLER BLADE OR HUB				
c. ENGINE				
d. INSTRUMENT	TYPE AND MANUFACTURER			
4. AIRCRAFT: This item must be completed by repair or alteration agency. However, in the case of a spare component, it will not be completed until such component is installed in an aircraft. At this time, it will be completed by the installing agency, if applicable.				
WEIGHT AND BALANCE DATA				
AFTER the repairs and/or alterations described below were made.		EMPTY WEIGHT (Pounds) 6287.5	EMPTY CENTER OF GRAVITY (Inches from datum)* + 25.46	USEFUL LOAD (Pounds)* 1712.5
5. KIND OF AGENCY WHICH MADE REPAIRS AND/OR ALTERATIONS (Check)				
<input type="checkbox"/> MANUFACTURER		<input type="checkbox"/> APPROVED REPAIR STATION NO. _____ (Specify)		<input checked="" type="checkbox"/> CERTIFIED MECHANIC
6. AGENCY	NAME ARNOTT L. DELANGE	ADDRESS (Street and number, city, zone, and State) 8052 MILBEDGE DR HOUSTON 17, TEXAS	DATE WORK ACCOMPLISHED March 10, 1952	
7. DESCRIPTION OF WORK (ALL WORK MUST BE ACCOMPLISHED IN ACCORDANCE WITH PART 18 OF THE CIVIL AIR REGULATIONS AND ITS ASSOCIATED CIVIL AERONAUTICS MANUAL 18.)				
I. RECOVERED ALL FABRIC ON AIRCRAFT USED GRADE "A" FABRIC AND NITRATE DOPS NUMBER OF COATS OF DOPS: (A) 10 COATS OF CLEAR (B) 6 COATS OF SILVER (C) 2 COATS OF ENAMEL II. REPLACED TOP REAR ANGLE OF MAIN SPAR ON RIGHT WING. REPLACED WITH FACTORY PARTS AND DONE ACCORDING TO MANUFACTURER III. SPLICED TOP REAR ANGLE OF MAIN SPAR ON LEFT WING (SEE ATTACHED DRAWING)				
If more space is needed, continue on reverse, or attach separate sheets bearing aircraft registration mark.				
<input type="checkbox"/> FORWARDED FOR ENGINEERING APPROVAL				
I CERTIFY that the above statements are true and correct to the best of my knowledge.				
Arnott L. Delange (Signature of supervising mechanic)		502436 AGE (Certificate number and rating)		3/10/52 (Date)
TO BE COMPLETED BY CAA REPRESENTATIVES				
<input checked="" type="checkbox"/> APPROVED <input type="checkbox"/> REJECTED	DESIGNEE'S SIGNATURE	NO.	DATE	
	CAA REVIEW SIGNATURE Rayl. Guichman	<input type="checkbox"/> ACCEPTED <input type="checkbox"/> REINSPECTED	3-1-52	



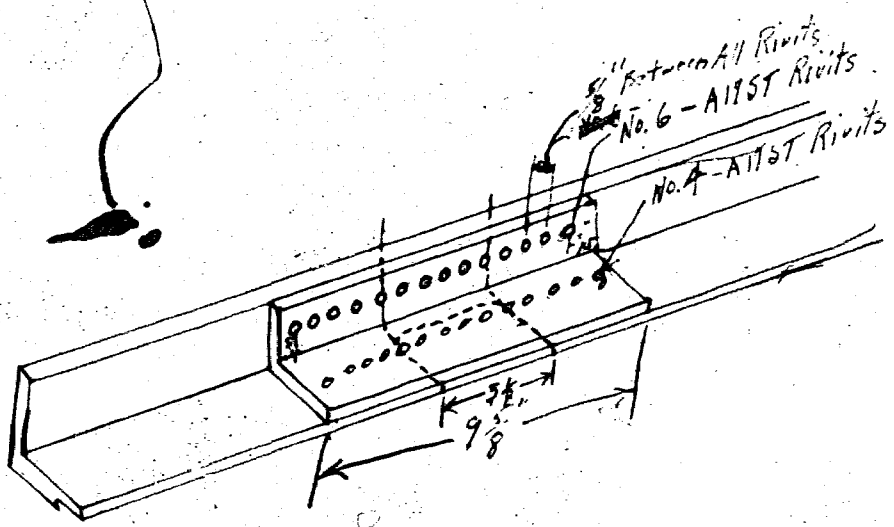
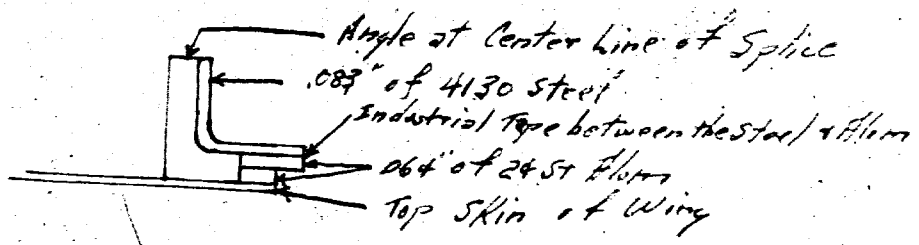
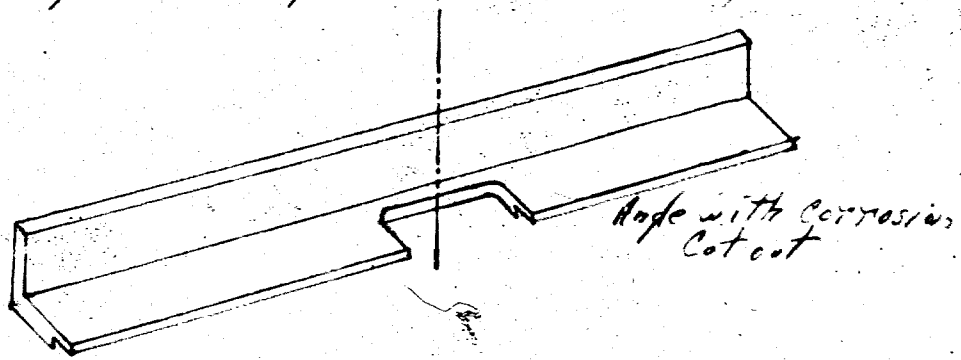
INSTRUCTIONS

1. This form must be filled out in duplicate each time a major repair and/or alteration is made of an aircraft, propeller, engine, or instrument.
2. When repairs and/or alterations are made which affect the operation limitations set forth in the Airplane Flight Manual or Form ACA-309, the aircraft shall not be returned to service until the operation limitations have been corrected by an authorized representative of the CAA.
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4. The manufacturer of an aircraft, engine, propeller, or instrument, and a certificated repair station holding the appropriate rating may return the article to service without prior approval of an authorized CAA representative, provided the alteration and/or repair does not change any of the operation limitations.
5. Repair agencies will be guided as follows when completing this form.
 - a. For an Aircraft Repair and/or Alteration—Complete Items 1, 2, 3a, 4, 5, 6, and 7.
Mechanic—Submit to CAA representative for inspection and approval prior to returning the article to service. Upon approval, the CAA representative will return the original copy to the mechanic who should submit it to the aircraft owner.
Manufacturer or Approved Repair Station—Submit original to aircraft owner, forward copy to CAA district office or CAA agent prior to returning article to service.
 - b. For a Component Installed in an Aircraft—Complete Items 1, 2, 3 (b, c, or d, whichever is applicable), 4, 5, 6, and 7. Distribute copies as in a above.
 - c. For a Spare Component—Complete Items 3 (b, c, or d, whichever is applicable), 5, 6, and 7.
Mechanic—Submit to CAA representative for inspection and approval. When approved, retain both copies of the form with the component until installation on an aircraft. At this time Items 1, 2, and 4 must be completed by the installing agency who will distribute the forms as follows: (No further approval of CAA is required, only a log-book entry by the installing agency is necessary.) After installation, original form should be submitted to aircraft owner, and copy forwarded to the nearest CAA district office or CAA agent.
Manufacturer or Approved Repair Station—Handle same as for mechanics except that it is not necessary to submit to CAA representative for inspection or approval.

APR 20 1 46 PM '82
FAA DISTRICT OFFICE
MEMPHIS

N95467 Splice of Top Rear Angl of Main Spar
on Left Wing

Angle turned upside down to show splice

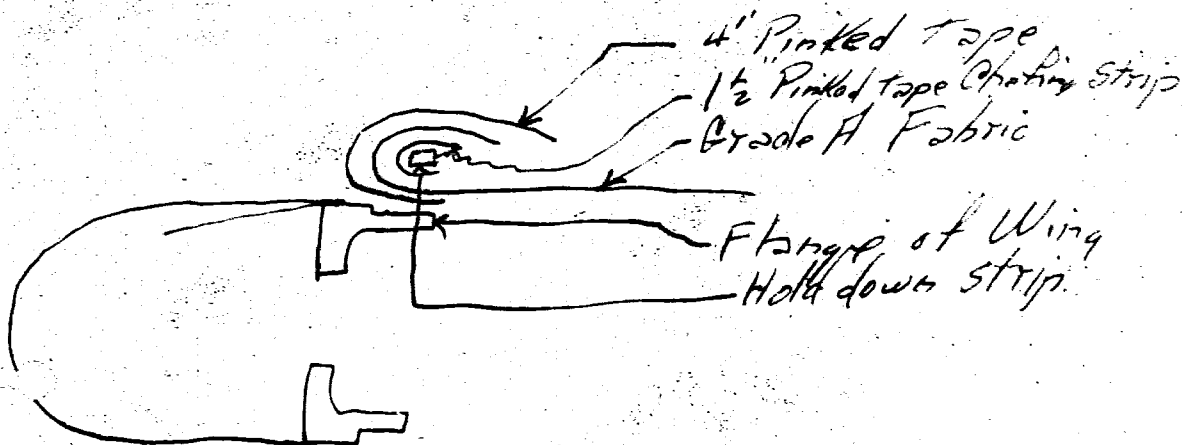


Attached to 337 of March 10, 1952

FAA AIRCRAFT REGISTRY
CAMERA NO. 4 DATE: 2/16/82

RECEIVED
REGISTRATION SECTION
FEB 25 1 46 PM '82

N 95467 Method of Attaching Fabric to Crummin Goose E-21A.



1. 4" pinked tape is doped to the Flange and three coats of dope applied.
2. Fabric is doped to 4" tape
3. 1/2" Chafing strip is doped to Fabric.
4. Hold down strip is fasten down.
5. 1/2" Chafing strip is doped over hold down strip
6. Fabric is doped down to 1/2" chafing strip and to itself.
7. 4" Pinked tape is doped to fabric that is laped over and Fabric on top of wing.

Attached to 3370 of March 10, 1952

FAA AIRCRAFT REGISTRY
CAMERA NO. 4 DATE: 2/16/82

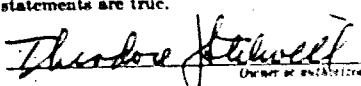

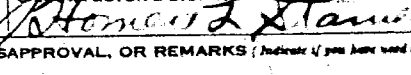
REC'D
RECEIVED
FEDERAL BUREAU OF INVESTIGATION
WASHINGTON, D.C.

Form ACA-305 (11-49)		DEPARTMENT OF COMMERCE FEDERAL AVIATION ADMINISTRATION		Form Approved Budget Bureau No. 41-RM1.4	
APPLICATION FOR AIRWORTHINESS CERTIFICATE AND/OR ANNUAL INSPECTION OF AN AIRCRAFT				INSTRUCTIONS Please submit this form to the Civil Aeronautics Administration Aviation Safety Field Representative	
1. APPLICATION (CHECK WHETHER) <input type="checkbox"/> ORIGINAL AIRWORTHINESS CERTIFICATE <input type="checkbox"/> ANNUAL INSPECTION SPECIAL		2. AIRWORTHINESS CLASSIFICATION <input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> RESTRICTED <input type="checkbox"/> EXPERIMENTAL <input type="checkbox"/> LIMITED <input type="checkbox"/> OTHER			
3. MAKE Cessna				5. NATIONALITY AND REGISTRATION MARK N75487	
4. MODEL G-21A				6. MANUFACTURER'S SERIAL NO. 1161	
ENGINE					
7. MAKE P&H			8. MODEL S-901-AR3B		
9. OWNER'S NAME Southern California Aircraft Corp.			10. (GIVE ADDRESS ONLY IF IT HAS BEEN CHANGED FROM THAT GIVEN ON YOUR CERTIFICATE OF REGISTRATION, FORM ACA-300) Box 302 Ontario, California		
11. ATTACHMENTS (CHECK WHICH) <input type="checkbox"/> ACA-319 <input type="checkbox"/> WEIGHT AND BALANCE REPORT <input type="checkbox"/> ACA-337 <input type="checkbox"/> DATA, DRAWINGS, ETC. <input type="checkbox"/> ACA-317 <input type="checkbox"/> UNAPPROVED DEVIATION DATA			12. I CERTIFY that the above statements are true. (OWNER OR AUTHORIZED AGENT) (DATE) (TITLE)		

Form ACA-305a (11-49)				AIRCRAFT INSPECTION REPORT (To be completed by CAA representatives)			
13. It has been determined that the aircraft described in 305 above is in conformity with the following: (CHECK AND COMPLETE APPLICABLE ITEMS)							
a. <input type="checkbox"/> AIRCRAFT SPECIFICATION NO. _____ THROUGH SHEET REVISION NO. _____							
b. <input type="checkbox"/> AIRCRAFT LISTING PAGE NO. _____							
c. <input type="checkbox"/> AIRWORTHINESS DIRECTIVE SUMMARY _____ (YEAR) THROUGH CARO NO. _____							
d. <input type="checkbox"/> OPERATIONS LIMITATIONS FORM ACA-309 ISSUED.							
e. <input type="checkbox"/> OPERATIONS LIMITATIONS FORM ACA-309 IS AVAILABLE IN AIRCRAFT.							
f. <input type="checkbox"/> CURRENT, APPROVED, AIRPLANE FLIGHT MANUAL IS AVAILABLE IN AIRCRAFT.							
g. <input type="checkbox"/> ALL APPLICABLE NOTES, INSTRUMENT MARKINGS, AND PLACARDS HAVE BEEN COMPLIED WITH.							
h. <input type="checkbox"/> CERTIFICATE OF AIRWORTHINESS FORM ACA-1362 WAS ISSUED.							
FINDINGS							
14. <input type="checkbox"/> AIRWORTHY <input checked="" type="checkbox"/> UNAIRWORTHY		15. DESIGNEE'S SIGNATURE <i>[Signature]</i>		16. DESIGNATION NO.		17. DATE 7/7/82	
18. AVIATION SAFETY AGENCY'S SIGNATURE <i>[Signature]</i>		19. <input type="checkbox"/> ACCEPTED <input type="checkbox"/> REINSPECTED		20. DATE 12/29/82			
21. REASON FOR DISAPPROVAL, OR REMARKS (INDICATE IF YOU HAVE USED THE REVERSE TO CONTINUE THIS OR OTHER ITEM) <input type="checkbox"/> YES <input type="checkbox"/> NO							
Form ACA 310A, Notice of Unairworthy Condition, has been attached for the following reasons:							
The fabric on both wings appears to be in an unairworthy condition and should be tested to determine if it meets the minimum strength requirements.							
<i>Good 1-18-82 [Signature]</i>							

FAA AIRCRAFT REGISTRY
CAMERA NO. 4 DATE: 2/16/82

RECEIVED
CERTIFICATE SECTION
JAN 9 3 05 PM '82

Form ACA-805 (12-57)		DEPARTMENT OF COMMERCE CIVIL AERONAUTICS ADMINISTRATION		FORM APPROVED BUDGET REPEAT NO. 41-BM-1	
APPLICATION FOR AIRWORTHINESS CERTIFICATE AND/OR ANNUAL INSPECTION OF AN AIRCRAFT				INSTRUCTIONS Please submit this form to the Civil Aeronautics Administration Field Representative	
APPLICATION (Check whether)		AIRWORTHINESS CLASSIFICATION			
<input type="checkbox"/> ORIGINAL AIRWORTHINESS CERTIFICATE		<input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> RESTRICTED			
<input checked="" type="checkbox"/> ANNUAL INSPECTION		<input type="checkbox"/> EXPERIMENTAL <input type="checkbox"/> LIMITED <input type="checkbox"/> OTHER			
AIRCRAFT					
MAKE Grueman		MODEL G-21A		TYPE CERTIFICATE NO. T8 654	
REGISTRATION NO. N95467(Standard)		MANUFACTURER'S SERIAL NO. 1161			
ENGINE					
MAKE Pratt & Whitney		MODEL R-985-AN-1			
OWNER'S NAME W.A. Crocket		PERMANENT ADDRESS (Street and number, city, zone, and State) 4208 Wilson Ave. Fresno, California			
ATTACHMENTS (Check whether)		I CERTIFY that the above statements are true.			
<input checked="" type="checkbox"/> ACA-318 <input type="checkbox"/> WEIGHT AND BALANCE REPORT		 Theodore Stewart (Owner or authorized agent)			
<input type="checkbox"/> ACA-317 <input type="checkbox"/> DATA, DRAWINGS, ETC.					
<input type="checkbox"/> ACA-317 <input type="checkbox"/> UNAPPROVED DEVIATION DATA					
		3-22-51 (DATE)		A&E #M12256 (TITLE)	
Form ACA-305a		AIRCRAFT INSPECTION REPORT (To be completed by a CAA inspector or a designated inspector or representative)			
It has been determined that the aircraft described in 305 above is in conformity with the following:					
ALL APPLICABLE MANDATORY NOTES, INSTRUMENT MARKINGS AND PLACARDING REQUIREMENTS HAVE BEEN COMPLIED WITH <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO					
AIRCRAFT SPECIFICATION-AIRWORTHINESS DIRECTIVE NO(S). AD-654 Through 51-8 (Specify)					
FORM ACA-1362, CERTIFICATE OF AIRWORTHINESS, ISSUED <input type="checkbox"/> ORIGINAL <input checked="" type="checkbox"/> ANNUAL INSPECTION					
Check whether: <input type="checkbox"/> OPERATION LIMITATIONS FORM ACA-309 WAS ISSUED, OR Previously issued.					
<input type="checkbox"/> APPROVED AIRPLANE FLIGHT MANUAL IS IN THE AIRCRAFT					
FINDINGS					
<input checked="" type="checkbox"/> AIRWORTHY		DESIGNEE'S SIGNATURE AND NO.  #6356		DATE 3-22-51	
<input type="checkbox"/> UNAIRWORTHY		INSPECTOR'S SIGNATURE 		<input checked="" type="checkbox"/> ACCEPTED <input type="checkbox"/> REINSPECTED DATE 3-27-51	
REASON FOR DISAPPROVAL, OR REMARKS (Indicate if you have used the receipt to continue this or other items.) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					

RECEIVED
MAR 29 1951
AVIATION SAFETY DISTRICT
OFFICE
3333-103 AIRSIDE COLUMBIA

DEPARTMENT OF COMMERCE
CIVIL AERONAUTICS ADMIN.
APR 2 10 18 AM '51
MAIL ROOM - 1
WASHINGTON

Form Approved Budget Bureau No. 41-R082.2		DEPARTMENT OF COMMERCE CIVIL AERONAUTICS ADMINISTRATION	
Form ACA-637 (11-48) REPAIR AND ALTERATION FORM (AIRCRAFT, PROPELLERS, ENGINES, INSTRUMENTS) (SEE REVERSE SIDE OF THIS FORM FOR INSTRUCTIONS)			
1. AIRCRAFT	MAKE Grumman	MODEL G-21A	SERIAL NO. 1161
NATIONALITY AND REGISTRATION MARK N-95467 (Standard)			
2. OWNER	NAME (First, middle, last) W. A. Crocket	ADDRESS (Street and number, city, zone, and State) 4208 Wilson Ave., Fresno, Calif.	
Fill in information in this item only for the unit repaired and/or altered			
UNIT	MAKE	MODEL	SERIAL NO.
AIRCRAFT (As described in item 1 above)			
a. PROPELLER BLADE OR HUB	Hamilton Std.	22D30-201 6533A-18	16558h 44017h/5
c. ENGINE			
d. INSTRUMENT	TYPE AND MANUFACTURER		
4. AIRCRAFT This item must be completed by repair or alteration agency. However, in the case of a spare component, it will not be completed until such component is installed in an aircraft. At this time, it will be completed by the installing agency, if applicable.			
WEIGHT AND BALANCE DATA			
AFTER the repairs and/or alterations described below were made.		EMPTY WEIGHT (Pounds) 6287.5	EMPTY CENTER OF GRAVITY (Inches from datum)* 485.46
			USEFUL LOAD (Pounds)* 1712.5
5. KIND OF AGENCY WHICH MADE REPAIRS AND/OR ALTERATIONS (Check)			
<input type="checkbox"/> MANUFACTURER		<input checked="" type="checkbox"/> APPROVED REPAIR STATION NO. 4006	<input type="checkbox"/> CERTIFIED MECHANIC
		(Specify)	
6. AGENCY	NAME West Coast Propeller	ADDRESS (Street and number, city, zone, and State) 6842 Beck Avenue North Hollywood, California	DATE WORK ACCOMPLISHED Sept 12, 1950
7. DESCRIPTION OF WORK (ALL WORK MUST BE ACCOMPLISHED IN ACCORDANCE WITH PART 18 OF THE CIVIL AIR REGULATIONS AND ITS ASSOCIATED CIVIL AERONAUTICS MANUAL 18.)			
<p>Propeller disassembled, cleaned, inspected. Blades refinished, anodized. Propellers reassembled, checked and balanced. Setting High 86 Low 11</p>			
If more space is needed, continue on reverse, or attach separate sheets bearing aircraft registration mark.			
<input type="checkbox"/> FORWARDED FOR ENGINEERING APPROVAL			
I CERTIFY that the above statements are true and correct to the best of my knowledge.			
<i>Ralph J. Hurty</i> (Signature of supervising mechanic)		1150017 Limited Propeller (Certificate number and rating)	Sept 12, 1950 (Date)
TO BE COMPLETED BY CAA REPRESENTATIVES			
<input type="checkbox"/> APPROVED	DESIGNEE'S SIGNATURE <i>[Signature]</i>	NO. 6344	DATE Sept. 14, 1950
<input type="checkbox"/> REJECTED	CAA AGENT SIGNATURE <i>Harvey W. Kattelmans</i>	<input checked="" type="checkbox"/> ACCEPTED <input type="checkbox"/> REINSPECTED	DATE Sept 15, 1950

INSTRUCTIONS

1. This form must be filled out in duplicate each time a major repair and/or alteration is made of an aircraft, propeller, engine, or instrument.
2. When repairs and/or alterations are made which affect the operation limitations set forth in the Airplane Flight Manual or Form ACA-309, the aircraft shall not be returned to service until the operation limitations have been corrected by an authorized representative of the CAA.
3. Certificated mechanics must, in all cases, obtain approval of the repair and/or alteration from the CAA representative prior to returning the article to service.
4. The manufacturer of an aircraft, engine, propeller, or instrument, and a certificated repair station holding the appropriate rating may return the article to service without prior approval of an authorized CAA representative, provided the alteration and/or repair does not change any of the operation limitations.
5. Repair agencies will be guided as follows when completing this form.
 - a. For an Aircraft Repair and/or Alteration—Complete Items 1, 2, 3c, 4, 5, 6, and 7.

Mechanic—Submit to CAA representative for inspection and approval prior to returning the article to service. Upon approval, the CAA representative will return the original copy to the mechanic who should submit it to the aircraft owner.

Manufacturer or Approved Repair Station—Submit original to aircraft owner, forward copy to CAA district office or CAA agent prior to returning article to service.
 - b. For a Component Installed in an Aircraft—Complete Items 1, 2, 3 (b, c, or d, whichever is applicable), 4, 5, 6, and 7. Distribute copies as in a above.
 - c. For a Spare Component—Complete Items 3 (b, c, or d, whichever is applicable), 5, 6, and 7.

Mechanic—Submit to CAA representative for inspection and approval. When approved, retain both copies of the form with the component until installation on an aircraft. At this time Items 1, 2, and 4 must be completed by the installing agency who will distribute the forms as follows: (No further approval of CAA is required, only a log-book entry by the installing agency is necessary.) After installation, original form should be submitted to aircraft owner, and copy forwarded to the nearest CAA district office or CAA agent.

Manufacturer or Approved Repair Station—Handle same as for mechanics except that it is not necessary to submit to CAA representative for inspection or approval.

16-54010-2 U. S. GOVERNMENT PRINTING OFFICE

RECEIVED

SEP 15 1950

LOS ANGELES DISTRICT
INSPECTION OFFICE 6-326

Form ACA-4 (11-48) DEPARTMENT OF COMMERCE CIVIL AERONAUTICS ADMINISTRATION Form Approved Budget Bureau No. 41-8022 2
REPAIR AND ALTERATION FORM (AIRCRAFT, PROPELLERS, ENGINES, INSTRUMENTS)
(SEE REVERSE SIDE OF THIS FORM FOR INSTRUCTIONS)

1. AIRCRAFT	MAKE Grumman	MODEL G-21A	SERIAL NO. 1161	NATIONALITY AND REGISTRATION MARK N-95467 (Standard)
2. OWNER	NAME (First, middle, last) W. A. Crocket		ADDRESS (Street and number, city, zone, and State) 4208 Wilson Ave, Fresno, Calif.	

3. FILL IN INFORMATION IN THIS ITEM ONLY FOR THE UNIT REPAIRED AND/OR ALTERED

UNIT	MAKE	MODEL	SERIAL NO.	NATURE OF WORK (Check)	
				MAJOR REPAIR	MAJOR ALTERATION
a. AIRCRAFT	As described in item 1 above				
b. PROPELLER BLADE OR HUB	Hamilton Std.	22D30-201 6533A-18	165583 740152/3	<input checked="" type="checkbox"/>	
c. ENGINE					
d. INSTRUMENT	TYPE AND MANUFACTURER				

4. AIRCRAFT WEIGHT AND BALANCE DATA

This item must be completed by repair or alteration agency. However, in the case of a spare component, it will not be completed until such component is installed in an aircraft. At this time, it will be completed by the installing agency, if applicable.

AFTER the repairs and/or alterations described below were made.	EMPTY WEIGHT (Pounds) 6287.5	EMPTY CENTER OF GRAVITY (Inches from datum)* 425.46	USEFUL LOAD (Pounds)* 1712.5
--	---	---	--

5. KIND OF AGENCY WHICH MADE REPAIRS AND/OR ALTERATIONS (Check)

MANUFACTURER APPROVED REPAIR STATION NO. **4006** (Specify) CERTIFIED MECHANIC

6. AGENCY	NAME West Coast Propeller	ADDRESS (Street and number, city, zone, and State) 6842 Beck Avenue North Hollywood, California	DATE WORK ACCOMPLISHED Sept. 12, 1950
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7. DESCRIPTION OF WORK (ALL WORK MUST BE ACCOMPLISHED IN ACCORDANCE WITH PART 18 OF THE CIVIL AIR REGULATIONS AND ITS ASSOCIATED CIVIL AERONAUTICS MANUAL 18.)

**Propeller disassembled, cleaned, inspected. Blades refinished and anodized. Propeller reassembled, checked, balanced and functionally tested for actuation and leakage. Setting High 86
Low 11**

agc

If more space is needed, continue on reverse, or attach separate sheets bearing aircraft registration mark.

FORWARDED FOR ENGINEERING APPROVAL

I CERTIFY that the above statements are true and correct to the best of my knowledge.

Ralph Z. Huntz **115017 Limited Propeller** Sept 12, 1950
(Signature of supervising mechanic) (Certificate number and rating) (Date)

TO BE COMPLETED BY CAA REPRESENTATIVES

<input checked="" type="checkbox"/> APPROVED	DESIGNER'S SIGNATURE <i>[Signature]</i>	NO. 6344	DATE Sept. 14, 1950
<input type="checkbox"/> REJECTED	CAA AGENT SIGNATURE <i>[Signature]</i>	<input checked="" type="checkbox"/> ACCEPTED <input type="checkbox"/> REINSPECTED	DATE Sept 15, 1950

INSTRUCTIONS

1. This form must be filled out in duplicate each time a major repair and/or alteration is made to an aircraft, propeller, engine, or instrument.
2. When repairs and/or alterations are made which affect the operation limitations set forth in the Airplane Flight Manual or Form ACA-309, the aircraft shall not be returned to service until the operation limitations have been corrected by an authorized representative of the CAA.
3. Certificated mechanics must, in all cases, obtain approval of the repair and/or alteration from the CAA representative prior to returning the article to service.
4. The manufacturer of an aircraft, engine, propeller, or instrument, and a certificated repair station holding the appropriate rating may return the article to service without prior approval of an authorized CAA representative, provided the alteration and/or repair does not change any of the operation limitations.
5. Repair agencies will be guided as follows when completing this form.
 - a. For an Aircraft Repair and/or Alteration—Complete Items 1, 2, 3a, 4, 5, 6, and 7.

Mechanic—Submit to CAA representative for inspection and approval prior to returning the article to service. Upon approval, the CAA representative will return the original copy to the mechanic who should submit it to the aircraft owner.

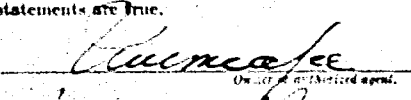

Manufacturer or Approved Repair Station—Submit original to aircraft owner, forward copy to CAA district office or CAA agent prior to returning article to service.
 - b. For a Component Installed in an Aircraft—Complete Items 1, 2, 3 (b, c, or d, whichever is applicable), 4, 5, 6, and 7. Distribute copies as in a above.
 - c. For a Spare Component—Complete Items 3 (b, c, or d, whichever is applicable), 5, 6, and 7.

Mechanic—Submit to CAA representative for inspection and approval. When approved, retain both copies of the form with the component until installation on an aircraft. At this time Items 1, 2, and 4 must be completed by the installing agency who will distribute the forms as follows: (No further approval of CAA is required, only a log-book entry by the installing agency is necessary.) After installation, original form should be submitted to aircraft owner, and copy forwarded to the nearest CAA district office or CAA agent.

Manufacturer or Approved Repair Station—Handle same as for mechanics except that it is not necessary to submit to CAA representative for inspection or approval.

16-64010-2 U. S. GOVERNMENT PRINTING OFFICE

RECEIVED
SEP 15 1950
LOS ANGELES DISTRICT
INSPECTION OFFICE 6-328

Form ACA-305 (12-47)		DEPARTMENT OF COMMERCE CIVIL AERONAUTICS ADMINISTRATION		FORM APPROVED POST BUREAU No. 41-5941	
APPLICATION FOR AIRWORTHINESS CERTIFICATE AND/OR ANNUAL INSPECTION OF AN AIRCRAFT				INSTRUCTIONS Please submit this form to the Civil Aeronautics Administration Field Representative	
APPLICATION (Check whether)		AIRWORTHINESS CLASSIFICATION			
<input type="checkbox"/> ORIGINAL AIRWORTHINESS CERTIFICATE		<input type="checkbox"/> STANDARD <input type="checkbox"/> RESTRICTED			
<input checked="" type="checkbox"/> ANNUAL INSPECTION		<input type="checkbox"/> EXPERIMENTAL <input type="checkbox"/> LIMITED <input type="checkbox"/> OTHER			
AIRCRAFT					
MAKE <u>Crusman</u>		MODEL <u>G-21A</u>		TYPE CERTIFICATE NO. <u>654</u>	
REGISTRATION NO. <u>195167</u>		MANUFACTURER'S SERIAL NO. <u>1161</u>			
ENGINE					
MAKE <u>Pratt & Whitney</u>		MODEL <u>R959A1</u>			
OWNER'S NAME <u>W. A. Crocket</u>			PERMANENT ADDRESS (Street and number, city, state, and zone) <u>1208 Wilson Avenue Fresno, California</u>		
ATTACHMENTS (Check which)			I CERTIFY that the above statements are true.		
<input checked="" type="checkbox"/> ACA-319 <input checked="" type="checkbox"/> WEIGHT AND BALANCE REPORT			 <small>Owner or authorized agent.</small>  <small>(TITLE)</small>		
<input checked="" type="checkbox"/> ACA-337 <input checked="" type="checkbox"/> DATA, DRAWINGS, ETC.					
<input type="checkbox"/> ACA-317 <input type="checkbox"/> UNAPPROVED DEVIATION DATA					
(DATE)					
Form ACA-308a					
AIRCRAFT INSPECTION REPORT (To be completed by a CAA inspector or a designated inspector or representative)					
It has been determined that the aircraft described in 305 above is in conformity with the following:					
ALL APPLICABLE MANDATORY NOTES, INSTRUMENT MARKINGS AND PLACARDING REQUIREMENTS HAVE BEEN COMPLIED WITH <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO					
AIRCRAFT SPECIFICATION—AIRWORTHINESS DIRECTIVE NO(S). A- <u>654—ADS through Card 50-30</u> <small>(Specify)</small>					
FORM ACA-1362, CERTIFICATE OF AIRWORTHINESS, ISSUED <input type="checkbox"/> ORIGINAL <input checked="" type="checkbox"/> ANNUAL INSPECTION					
(Check whether)					
<input checked="" type="checkbox"/> OPERATION LIMITATIONS FORM ACA-309 WAS ISSUED, OR					
<input type="checkbox"/> APPROVED AIRPLANE FLIGHT MANUAL IS IN THE AIRCRAFT					
FINDINGS					
<input checked="" type="checkbox"/> AIRWORTHY		DESIGNEE'S SIGNATURE AND NO. <u>William D. Williams</u> <u>DAIT 167</u>		DATE <u>8/5/50</u>	
<input type="checkbox"/> UNAIRWORTHY		CAA INSPECTOR'S SIGNATURE <u>Robert C. Bard</u>		<input checked="" type="checkbox"/> ACCEPTED <input type="checkbox"/> REINSPECTED	
				DATE <u>10-7-50</u>	
REASON FOR DISAPPROVAL, OR REMARKS (Indicate if you have used the reverse to continue this or other items.) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					
Date of last flight <u>7/25/50</u>					
Form 309 is available in the aircraft.					
<u>10-31-50</u> <u>inspected</u>					

FAA AIRCRAFT REGISTRY
CAMERA NO. 4 DATE: 2/16/82

DEPARTMENT OF COMMERCE
CIVIL AERONAUTICS ADMIN.
OCT 18 9 27 AM '50
MAIL ROOM -)
WASHINGTON

FORM ACA-837 (11-7-61)		DEPARTMENT OF COMMERCE CIVIL AERONAUTICS ADMINISTRATION		BUDGET BUREAU NO. 415-8033-1 A. ANNUAL EXPIRES DECEMBER 31, 1948	
REPAIR AND ALTERATION FORM (AIRCRAFT, PROPELLERS, ENGINES, INSTRUMENTS)					
<p>INSTRUCTIONS - This form must be filled out in duplicate each time a major repair and/or alteration is made of an aircraft, propeller, engine, or instrument, as follows:</p> <p>(A) For an Aircraft - Complete items 1, 2, 3a, 4, 5, 6, and 7 and submit to CAA representative for approval.</p> <p>(B) For a Component Installed in an Aircraft - Complete items 1, 2, 3(b, c, or d, whichever is applicable), 4, 5, and 6, and submit as described in (A) above.</p> <p>(C) For a Spare Component - Complete items 3(b, c, or d), 5, and 6, and submit to CAA representative for approval. When approved, retain both copies of this form with the component until installation on an aircraft. At that time, items 1, 2, and 4 must be completed by the installing agency, which will then forward forms as described in (A) above.</p>					
1. AIRCRAFT	MAKE Cessna	MODEL C-21A	SERIAL NO. 1161	CAA IDENTIFICATION MARK 192567	
2. OWNER	NAME (First, middle, last) W.A. Crockett		ADDRESS (Street and number, city, zone, and state) P.O. Box, Marysville, Wash. 9208 Wilson Ave. Fresno, Calif.		
3. FILL IN INFORMATION IN THIS ITEM ONLY FOR THE UNIT REPAIRED AND/OR ALTERED					
	UNIT	MAKE	MODEL	SERIAL NO.	NATURE OF WORK (Check)
					MAJOR REPAIR MAJOR ALTERATION
	AIRCRAFT	(As described in item 1 above)			✓ ✓
	PROPELLER b. BLADE OR HUB				
	c. ENGINE				
	d. INSTRUMENT	TYPE AND MANUFACTURER			
The following items are to be completed by repair or alteration agency. However, in the case of a spare component, item 4 will not be completed until such component is installed in an aircraft. At this time, item 4 will be completed by the installing agency, if applicable.					
4. AIRCRAFT	EMPTY WEIGHT (Pounds) 6237.5	EMPTY CENTER OF GRAVITY (Inches from datum) 25.16	USEFUL LOAD (Pounds) 172.5		
*AFTER the repairs and/or alterations described below were made.					
5. KIND OF AGENCY WHICH MADE REPAIRS AND/OR ALTERATIONS (Check)					
<input type="checkbox"/> MANUFACTURER		<input type="checkbox"/> APPROVED REPAIR STATION NO. _____		<input checked="" type="checkbox"/> CERTIFIED MECHANIC	
(SPECIFY)					
6. AGENCY	NAME Jeffries A. Williams	ADDRESS (Street and number, city, zone, and state) 601 1/2 Street,agerstown, Md.		DATE WORK ACCOMPLISHED 8/3/50	
7. DESCRIPTION OF WORK ACCOMPLISHED IN ACCORDANCE WITH PART 18 OF THE CIVIL AIR REGULATIONS AND ITS ASSOCIATED CIVIL AERONAUTICS MANUAL 18. (If more space is needed, continue on reverse, or attach separate sheets bearing aircraft identification mark)					
Data and drawings pertaining to repairs and alterations made to this aircraft, are attached.					
Aux. Fuel System has been checked inoperative, & Valve has been safetied in off position. Until final Engineering approval.					
Agent Bird & Co. Rep. S. Hayden covered on approval of installation.					
I CERTIFY THAT THE ABOVE STATEMENTS ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.					
SIGNATURE OF SUPERVISING MECHANIC <i>Jeffries A. Williams</i>		CERTIFICATE NUMBER AND RATING A & P 17254		DATE 8/3/50	
TO BE COMPLETED BY CAA REPRESENTATIVES					
<input checked="" type="checkbox"/> APPROVED	SIGNATURE OF DESIGNEE <i>Jeffries A. Williams</i>		NUMBER 167	DATE 8/3/50	
<input type="checkbox"/> REJECTED	SIGNATURE OF INSPECTOR <i>Robert C. Bond</i>		<input checked="" type="checkbox"/> ACCEPTED	DATE 10-2-50	
<input type="checkbox"/> FORWARDED FOR ENGINEERING APPROVAL			<input type="checkbox"/> REINSPECTED		

FAA AIRCRAFT REGISTRY
CAMERA NO. 4 DATE: 2/16/82

DEPARTMENT OF COMMERCE
CIVIL AERONAUTICS ADMIN.
OCT 10 9 17 AM '50
MAIL ROOM - 1
WASHINGTON

WITH ACA SET
(3-46)

Budget Bureau No. 41-R002
Form Approved

CLASSIFICATION	NATURE OF WORK PERFORMED	
	Minor repair	Major alteration
AIRCRAFT		
ENGINE	X	
PROPELLER		
INSTRUMENT		

UNITED STATES OF AMERICA
DEPARTMENT OF COMMERCE
CIVIL AERONAUTICS ADMINISTRATION
WASHINGTON

(To be filled in by inspector)

APPROVED
 DISAPPROVED

Forwarded for engineering approval
(Submit complete details)

Date 8/3/50
Design R. E. Beard
Number 167

Date 10-2-50
Inspector R. E. Beard
 Accepted. Reinspected.

REPAIR AND ALTERATION FORM
AIRCRAFT—ENGINES—PROPELLERS—INSTRUMENTS

Aircraft Identification Mark No. 119547

Owner's name The Texas Company
Owner's address 135 East 42nd Street, Mineola, N.Y.
Aircraft manufacturer and model PRUMPIAN G-21A Serial No. 1167
Engine manufacturer and model* WASP R985AN1 Serial No. 22562
Propeller manufacturer and model* _____ Serial No. _____
Propeller blade model* _____ Serial No. _____
Instrument name, manufacturer, and model* _____ Serial No. _____

* To be filled in only for unit repaired or altered.

REPAIR OR ALTERATION AGENCY

Manufacturer. _____ Approved repair station No. 292 _____ Certificated mechanic
Agency's name The Engine Air Service, Inc.
Address 199 East Second St., Mineola, N.Y. Date of repair or alteration 11/20/46

The following work has been accomplished in accordance with Part 18, Civil Air Regulations. (For recommended practice refer to CAM 18.)

[If blank space is insufficient for clear presentation, attach separate pages (8" x 10 1/2" or multiples thereof) bearing aircraft identification mark]

The above engine was completely major overhauled and run in on test stand.
The following parts were replaced:

1	8711/10	Blower Slinger
1	35081	Pin Impeller Nut
1	9035	Lock
1	59189	Oil Screen
1	2628	Governor drive gear
2	981	Mag. Packing Spring
1	32983	Master Rod Bearing
4	5206	Studs
1	8334	Nut Vacuum Drive
18	59477	Contacts
18	15893	Cup Ferrules
14	78643	Elbows

* CHECK AGENCY INVOLVED.

TO BE FILLED OUT IN DUPLICATE AND COMPLETED ON OPPOSITE SIDE

DISTRIBUTION OF COMPLETED FORMS.

(1) When repair and alteration is identified by aircraft identification and serial number the original is to be forwarded through the appropriate Field Branch Office, and copy delivered to the owner of the aircraft. (2) When the repair and/or alteration of spare components is not identified this form must stay with the component until it is installed and the aircraft identification and serial number is entered on this form which is to be forwarded in the same manner as set forth in condition (1).

NOTE: Submitted herewith are technical data, drawings, Weight and Balance Report, etc., as listed below.

- | | | |
|-----|-------|------------------------|
| 1 | 8335 | Tab Lock |
| 9 | 39523 | Exhaust Guides |
| 1 | 9423 | Clutch Band |
| 4 | 299 | Screws, Gear |
| 2 | 33455 | Oil Transfer Rings |
| 1 | 56210 | Gasket Set |
| 18 | 2604 | Valve Spring Outer |
| 27 | 27057 | Piston Rings |
| 18 | 17097 | Piston Rings |
| 9 | 13681 | Piston Rings |
| 38 | 10449 | Cylinder Nuts |
| 2 | 15372 | Rocker Box Studs |
| 88 | 5/16 | Stop Nuts |
| 76 | 1/4 | Stop Nuts |
| 24 | 3/8 | Stop Nuts |
| 108 | 3/8 | Palnuts |
| 1 | 30604 | Nut, Impeller |
| 1 | 8734 | Gear Oil Pump |
| 1 | 104 | Bearing, Starter Shaft |
| 1 | 12769 | Bearing, Inter. |
| 1 | 13755 | Baffle |
| 18 | 9016 | Bearing, Rocker Arm |
| 8 | 39785 | Knuckle Pin |
| 1 | 38365 | Pump Housing |
| 8 | 326 | Knuckle Pin Bushing |
| 4 | 27056 | Pistons |
| 18 | 2603 | Valve Spring |
| 2 | 11468 | Mag. Seal |
| 1 | 53203 | Governor Line Adapter |
| 2 | 11052 | Mag. Disc |
| 1 | | Wire Harness |

- 2 Magneto Overhauled
- 1 Carburetor Overhauled
- 1 Cadmium Plated Parts
- 9 Magnaflux all steel parts
- 9 Cylinders Sand Blast & Metallized
- 9 Cylinders Honed & Polished
- Engine completely major overhauled and run in on test stand.
- Converted for Hydromatic Propeller.

WASHINGTON
 MAIL ROOM
 1 - 17 AM '50

SUPERVISING MECHANIC'S CERTIFICATE

DEPARTMENT OF COMMERCE
 CIVIL AERONAUTICS ADMINISTRATION

I hereby certify the foregoing statements are true of his own knowledge.

(Date) 11/20/50
 (Mechanic's signature) [Signature]

Mechanic's Certificate No. _____ (Rating)

Form ACA-387
(11-7-46)

DEPARTMENT OF COMMERCE
CIVIL AERONAUTICS ADMINISTRATION

ADDSY BUREAU NO. 41-8952.1
APPROVAL EXPIRES DECEMBER 31, 1948

REPAIR AND ALTERATION FORM (AIRCRAFT, PROPELLERS, ENGINES, INSTRUMENTS)

INSTRUCTIONS - This form must be filled out in duplicate each time a major repair and/or alteration is made of an aircraft, propeller, engine, or instrument, as follows:
 (A) For an Aircraft - Complete items 1, 2, 3a, 4, 5, 6, and 7 and submit to CAA representative for approval.
 (B) For a Component Installed in an Aircraft - Complete items 1, 2, 3(b, c, or d, whichever is applicable), 4, 5, and 6, and submit as described in (A) above.
 (C) For a Spare Component - Complete items 3(b, c, or d), 5, and 6, and submit to CAA representative for approval. When approved, retain both copies of this form with the component until installation on an aircraft. At that time, items 1, 2, and 4 must be completed by the installing agency, which will then forward forms as described in (A) above.

1. AIRCRAFT	MAKE Grumman	MODEL G-21A	SERIAL NO. 1161	CAA IDENTIFICATION MARK N95467
2. OWNER	NAME (First, middle, last) The Radio Company W.A. Crocket			
	ADDRESS (Street and number, city, zone, and state) 4208 Wilson Ave., Fresno, Calif.			

3. FILL IN INFORMATION IN THIS ITEM ONLY FOR THE UNIT REPAIRED AND/OR ALTERED

UNIT	MAKE	MODEL	SERIAL NO.	NATURE OF WORK (Check)	
				MAJOR REPAIR	MAJOR ALTERATION
a. AIRCRAFT	(As described in item 1 above)				
b. PROPELLER BLADE OR HUB					
c. ENGINE	Pratt & Whitney Wasp R985AN1		JP202767	XX	
d. INSTRUMENT	TYPE AND MANUFACTURER				

The following items are to be completed by repair or alteration agency. However, in the case of a spare component, item 4 will not be completed until such component is installed in an aircraft. At this time, item 4 will be completed by the installing agency, if applicable.

4. AIRCRAFT	EMPTY WEIGHT (Pounds)	EMPTY CENTER OF GRAVITY (Inches from datum)	USEFUL LOAD (Pounds)
-------------	-----------------------	---	----------------------

5. KIND OF AGENCY WHICH MADE REPAIRS AND/OR ALTERATIONS (Check)

MANUFACTURER APPROVED REPAIR STATION NO. **292** CERTIFIED MECHANIC.

(SPECIFY)

6. AGENCY	NAME Engine Air Service, Inc.	ADDRESS (Street and number, city, zone, and state) 199 E. 2nd St., Mineola, N.Y.	DATE WORK ACCOMPLISHED 3/10/47
	<i>Raffaello</i>	<i>M-10629</i>	<i>3/10/47</i>

7. DESCRIPTION OF WORK ACCOMPLISHED IN ACCORDANCE WITH PART 19 OF THE CIVIL AIR REGULATIONS AND ITS ASSOCIATED CIVIL AERONAUTICS MANUAL 19. (If more space is needed, continue on reverse, or attach separate sheets bearing aircraft identification mark)

**Engine disassembled, cleaned, inspected
 All necessary parts replaced
 Crankshaft reconditioned, modified for Hydro Type
 All steel parts magnafluxed
 Engine reassembled, overhauled, and run in on test stand.**

I CERTIFY THAT THE ABOVE STATEMENTS ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.

W. L. Buford *M. B. 242* *3/10/47*
 SIGNATURE OF SUPERVISING MECHANIC CERTIFICATE NUMBER AND RATING DATE

TO BE COMPLETED BY CAA REPRESENTATIVES

<input checked="" type="checkbox"/> APPROVED	SIGNATURE OF DESIGNER <i>J. Williams</i>	NUMBER 167	DATE 8/3/50
<input type="checkbox"/> REJECTED	SIGNATURE OF INSPECTOR <i>Robert C. Bard</i>	<input checked="" type="checkbox"/> ACCEPTED	DATE 10-2-50
<input type="checkbox"/> FORWARDED FOR ENGINEERING APPROVAL		<input type="checkbox"/> REINSPECTED	

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DEPARTMENT OF COMMERCE
CIVIL AERONAUTICS ADMINISTRATION
OCT 10 9 17 AM '80
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WASHINGTON

10/3/80

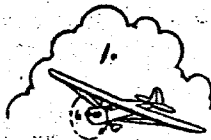
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DEPARTMENT OF COMMERCE CIVIL AERONAUTICS ADMINISTRATION				Form Approved Budget Bureau No. 41-R022.2	
REPAIR AND ALTERATION FORM (AIRCRAFT, PROPELLERS, ENGINES, INSTRUMENTS)					
SEE REVERSE SIDE OF THIS FORM FOR INSTRUCTIONS					
1. AIRCRAFT MAKE Grumman		MODEL G-21A	SERIAL NO. 1161	NATIONALITY AND REGISTRATION MARK N95467	
2. OWNER NAME (First, middle, last) W.A. Crocket		ADDRESS (Street and number, city, zone, and State) 4208 Wilson Ave. Fresno, Calif.			
3. FILL IN INFORMATION IN THIS ITEM ONLY FOR THE UNIT REPAIRED AND/OR ALTERED					
UNIT	MAKE	MODEL	SERIAL NO.	NATURE OF WORK (Check)	
				MAJOR REPAIR	MAJOR ALTERATION
a. AIRCRAFT	***** (As described in item 1 above) *****				
PROPELLER BLADE OR HUB	H.S.P.	22D30-201 PL10602 2-6533A-18	165584 T 40174 & 75	X	X
c. ENGINE	TYPE AND MANUFACTURER				
d. INSTRUMENT	TYPE AND MANUFACTURER				
4. AIRCRAFT - This item must be completed by repair or alteration agency. However, in the case of a spare component, it will not be completed until such component is installed in an aircraft. At this time, it will be completed by the installing agency, if applicable.					
WEIGHT AND BALANCE DATA					
AFTER the repairs and/or alterations described below were made.		EMPTY WEIGHT (Pounds)	EMPTY CENTER OF GRAVITY (Inches from datum)*	USEFUL LOAD (Pounds)*	
5. KIND OF AGENCY WHICH MADE REPAIRS AND/OR ALTERATIONS (Check)					
<input checked="" type="checkbox"/> MANUFACTURER <input type="checkbox"/> APPROVED REPAIR STATION NO. _____ (Specify) <input type="checkbox"/> CERTIFIED MECHANIC					
6. AGENCY	NAME Airport Dept. Pratt & Whitney Div. United Aircraft Corp.	ADDRESS (Street and number, city, zone, and State) 400 South Main St. East Hartford, Conn.		DATE WORK ACCOMPLISHED 7-3-50	
7. DESCRIPTION OF WORK (ALL WORK MUST BE ACCOMPLISHED IN ACCORDANCE WITH PART 18 OF THE CIVIL AIR REGULATIONS AND ITS ASSOCIATED CIVIL AERONAUTICS MANUAL 18.)					
<p>The Hub Assy. is new. Blades were converted from 6101A-15 to 6533A-18 and overhauled. Propeller inspected, built & tested to Hamilton Standard Propellers Specifications.</p>					
If more space is needed, continue on reverse, or attach separate sheets bearing aircraft registration mark.					
<input type="checkbox"/> FORWARDED FOR ENGINEERING APPROVAL					
I CERTIFY that the above statements are true and correct to the best of my knowledge.					
Arthur L. Giffel (Signature of supervising mechanic)			Inspector in Charge (Certificate number and rating)		7-3-50 (Date)
TO BE COMPLETED BY CAA REPRESENTATIVES					
<input checked="" type="checkbox"/> APPROVED <input type="checkbox"/> REJECTED		DESIGNER SIGNATURE J. Williams CAA AGENT SIGNATURE		NO. 167 <input type="checkbox"/> ACCEPTED <input type="checkbox"/> REINSPECTED	DATE 8/3/50

INSTRUCTIONS

1. This form must be filled out in duplicate each time a major repair and/or alteration is made of an aircraft, propeller, engine, or instrument.
2. When repairs and/or alterations are made which affect the operation limitations set forth in the Airplane Flight Manual or Form ACA-309, the aircraft shall not be returned to service until the operation limitations have been corrected by an authorized representative of the CAA.
3. Certified mechanics must, in all cases, obtain approval of the repair and/or alteration from the CAA representative prior to returning the article to service.
4. The manufacturer of an aircraft, engine, propeller, or instrument, or a certified repair station holding the appropriate rating may return the article to service without prior approval of an authorized CAA representative, provided the alteration and/or repair does not change any of the operation limitations.
5. Repair agencies will be guided as follows when completing this form.
 - a. For an Aircraft Repair and/or Alteration—Complete Items 1, 2, 3a, 4, 5, 6, and 7.
Mechanic—Submit to CAA representative for inspection and approval prior to returning the article to service. Upon approval, the CAA representative will return the original copy to the mechanic who should submit it to the aircraft owner.
Manufacturer or Approved Repair Station—Submit original to aircraft owner, forward copy to CAA district office or CAA agent prior to returning article to service.
 - b. For a Component Installed in an Aircraft—Complete Items 1, 2, 3 (b, c, or d, whichever is applicable), 4, 5, 6, and 7. Distribute copies as in a above.
 - c. For a Spare Component—Complete Items 3 (b, c, or d, whichever is applicable), 5, 6, and 7.
Mechanic—Submit to CAA representative for inspection and approval. When approved, retain both copies of the form with the component until installation on an aircraft. At this time Items 1, 2, and 4 must be completed by the installing agency who will distribute the forms as follows: (No further approval of CAA is required, only a log-book entry by the installing agency is necessary.) After installation, original form should be submitted to aircraft owner, and copy forwarded to the nearest CAA district office or CAA agent.
Manufacturer or Approved Repair Station—Handle same as for mechanics except that it is not necessary to submit to CAA representative for inspection or approval.

Instruction, Sales and Service
Hangar Storage



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M. L. Hardy, Mgr.

Hardy Aviation, Inc.

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C. A. A. Approved Flight and Ground School

Cessna C-21A
N 95467
Serial #1161

1. Removed all paint and all furring from ship, for inspection.
 2. Replaced five longitudinal stringers in step, as shown on attached sketch. Station 13 to 16. Factory replacement parts used. Installation the same as original.
 3. Replaced four vertical stringers on lower left side of cabin, at Stations 23, 23, 25, and 26. This installation the same as original.
 4. Replaced skin panels below left cabin door. Material used .040 x 24 ST. Alodine anti-corrosion solution used. Installation same as original. Station 24 to 26.
 5. Replaced lower skin panel, left side. Station 13 to 24. Material used .032 x 24 ST. Alodine anti-corrosion solution used. Material and installation same as original.
 6. Replaced left chine strip. Station 16 to 29. Factory parts and sealing materials were used for this installation. Installation the same as original.
 7. Replaced left chine strip at step section. Station 13 to 16. Factory parts and sealing material were used for this installation. Installation the same as original.
 8. Spliced two vertical stringers in left side of rear baggage compartment. Station 27 to 28. Splices are made in accordance with Figure 3-21; riveting done in accordance with Fig. 3-14 and Table 3-4 of CAM-13. Lower sections of these two stringers were replaced with factory parts.
Replaced lower longitudinal stringer in this same section. Materials and installation same as previous. Station 26 to 29.
 9. Replaced left spray chine strip. Station 29 to 36. Factory replacement parts were used. Installation same as original.
 10. Repaired, by splicing, lower section of instrument panel right vertical support. Station 9. Materials used .051 x 75 ST. In accordance with Fig. 3-14, Table 3-4, CAM-13.
 11. Replaced left vertical support and angle of instrument panel. Materials used .051 x 75 ST. sheet and 3/4 x 3/4 x 1/16 x 24 ST angle. Riveting installation same as original. Station 9.
 12. Replaced longitudinal floor board attachment stringer on left side of pilot's compartment. Replacement materials and installation same as original. Station 7 to 11.
- Replaced inboard flap hinge on left wing flap.

FAA AIRCRAFT REGISTRY

CAMERA NO. 4 DATE: 2/16/82

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13. Installed 11.5" x 47" x .040 x 24 ST. reinforcement on left lower fuselage skin. Station 7 to 11. This installation was in accordance with Fig. 3-20, of 800-13. Materials in this installation were treated with Alodine anti-corrosion solution.
14. Reinforced belly skin to bulkhead attach angle, at station 12, using 1/16" x 24 ST. angle. This repair was in accordance with Fig. 3-21, 800-13.
15. Reinforced vertical stringer in left side, front baggage compartment. Station 5. Using 1/16" x 24 ST. angle. This repair was in accordance with Fig. 3-21, 800-13.
16. Replaced Z type vertical stringer on bow bulkhead left side. Station 3. .040 x 24 ST. materials used. Installation same as original.
17. Replaced skin on right rear passenger compartment door. Replaced hinges same. Station 23 to 26. Materials and installation same as original. Replaced skin and hinges on left rear passenger compartment door. Replaced all cabin and cockpit windows. Plexiglass material used, same as original. Station 24 to 26.
18. Replaced patch on hull at tip of keel. Station 28 to 29. Installation same as previous.
19. Replaced keel tip using factory parts. Installation same as original. Station 27 to 30.
20. Installed one reinforcement plate on belly skin, aft of left wheel well. Station 19. 3" x 3.75" x .040 x 24 ST. This installation was in accordance with Fig. 3-24 and Table 3-4, 800-13.
21. Installed one reinforcement plate on belly skin, aft of left wheel well. Station 24. 3" x 4" x .040 x 24 ST. This installation in accordance with Fig. 3-24 and Table 3-4, 800-13.
22. Replaced left and right outside members of windshield frame. Factory parts used in the installation. Installation made the same as previous.
23. Replaced all windshield rubber channels and sealing materials.
24. Replaced cabin floor boards.
25. Replaced all upholstery in cabin.
26. Installed complete new stainless steel set of rudder and elevator control cables. These cables were assembled by John A. Roebblings & Sons.
27. Installed complete set of new stainless steel rudder and elevator trim tab cables. These cables were assembled by John A. Roebblings & Sons.

FAA AIRCRAFT REGISTRY

CAMERA NO. 4 DATE: 2/16/82

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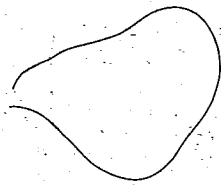
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- 28. Replaced all worn control pulleys.
 - 29. Replaced left front elevator trim tab ~~spool-assembly~~. Installation same as previous.
 - 30. Removed all fabric from rudder for replacement of rudder control horn, and of wiring and conduit of tail and anchor lights. Factory replacement parts were used for this installation.
 - 31. Rudder completely recovered in accordance with material specification of Table 2-1 and Table 2-2. Sewing and lacing same as original. Doping and finishing in accordance with 18.20-2C, CAM-13.
 - 32. Removed military electrical fitting from upper surface of right wing. Station 196. Installed reinforcement plate 5.5" x 6.5" x .064 x 24ST, at this location. This installation in accordance with Fig. 3-14, Table 3-4, CAM-13.
 - 33. Removed entire landing gear and tail-wheel assembly and retracting mechanism. Removed all paint and grease from same, for inspection. Replaced seals in all oleo struts. Replaced fluid in all shock struts. Replaced brake shoes, linings, and bearings in both wheels. Replaced brake piston seals. Replaced flexible hydraulic brake lines on landing gear. Installed new tail wheel bearings, tire and tube. Refilled all landing gear retraction gear boxes with grease as recommended. All landing gear metal parts and wheel well surfaces are painted with zinc chromate primer and bitumastic (acid-proof) paint.
 - 34. Installed one Aero Trades electric landing gear retracting mechanism AN-14. This installation made in accordance with the manufacturer's prints.
 - 35. Installed one Grimes Landing Light, AN-223, in right wing. Station 137 to 151. This installation made with the manufacturer's mounting bracket and wired in accordance with the manufacturer's wiring diagram.
 - 36. Installed one Pratt & Whitney engine, left side: Model P985AN1
Serial #22562
- Installed one Pratt & Whitney engine, right side: Model P985AN1
Serial # JP202767
- These engines were overhauled by Engine Air Service, Approved Repair Station #292. See attached Forms 337.
Engine mounts were exchanged with this installation.



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CAMERA NO. 4 DATE: 2/16/82

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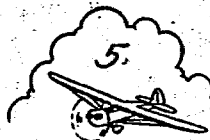
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37. Installed one Leeco Neville generator on left engine, Model E-5A.
Installed two new Leeco Neville battery relays, in relay box. Attachment made by relay mount attachment provided with eight 10-32 screws. This unit mounted on landing gear bulkhead aft of co-pilot's seat at Station 12.
Installed two new Carton Pile Voltage Regulators. This unit is mounted under the forward walk-way in the pilots' compartment, at Station 12, by the mounting screws provided on the unit.
Installed two new Western Electric capacitors in instrument panel.
The wiring for this complete generator circuit was accomplished in accordance with the manufacturer's wiring diagram.
38. Installed two new Eclipse engine starters, Model E 30.
39. Installed two new Hamilton Standard full-feathering hydraulic propellers as per aircraft specification, Pg. 96, Item 228.
40. Installed two new Pasco feathering pumps Model 12H3M. Installation made on lower front part of fire-wall with standard pump mounting bracket and studs for attachment.
41. Installed two new, Arrow H & H, hydraulic feathering valves.
These valves are mounted on the right lower tube of each engine mount by 4130 steel plate welded to two Curtiss Clamps.
42. Two hydraulic feathering buttons are installed on pilot's engine gauge panel.
43. Two feathering pump solenoids mounted one to each engine mount by the brackets furnished by the manufacturer. This propeller installation is made in accordance with the Grumman Aircraft wiring diagram. The plumbing is done with aeroquip hose and fittings. The propellers and governors are adjusted to standard performance specifications.
44. Installed one new Kollsman direction indicator compass. This compass is mounted in the original compass bracket, above the instrument panel.
45. Installed taxi light BE 4509 in left wing leading edge as per picture attached.
46. Installed one Blinker relay, Airlectron Model 8 0. This unit mounted to aft right side of bulkhead at Station 6.

FAA AIRCRAFT REGISTRY
CAMERA NO. 4 DATE: 2/16/82

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47. Installed one 2.75 gal. propeller anti-icer fluid tank. This tank is manufacturer's part and is mounted on the front, left side of bulkhead at Station 6, by mounting lugs provided.
48. Installed one Eclipse anti-icing pump Model 6. This unit is mounted to the floor on the left side of the front baggage compartment, by the lugs provided on the pump.
49. Two propeller anti-icer slinger rings, furnished by the propeller manufacturer are mounted on the propellers.
50. Installed one Continental Electric Dynamo EMFI 310-1. This unit mounted on left forward side of bulkhead, Station 6. Mounting bracket provided by manufacturer.
51. Installed one radio wiring junction box. This unit mounted on left front side of bulkhead at Station 6. Standard mountings provided in box.
52. Installed two thermos bottle racks, on rear right side of bulkhead at Station 14. These units are mounted by four 1032 screws, each, as provided in unit.
53. Installed six cabin lights and brackets, Grimes B 3550. These lights are mounted to stringers in top of cabin above the respective seats.
54. Installed three Hardman chairs and cushions Model 100-3. Installed one Beechcraft couch, catalogue part # 404-130226-600, and cushions. See attached 337 drawings and pictures.
55. Installed one portable card table at Station 20.
56. Installed one ARC Pilot's Audio Unit. This unit mounted on left side of pilot's seat and attached by mounting screws provided for same.
57. Installed one ARC control panel. This unit is mounted in the lower left side of instrument panel and is secured by four mounting screws as provided by the manufacturer.
58. Installed three ARC instruments. These instruments installed pilot's side of the instrument panel and are mounted with screws as provided by the instrument manufacturer.
59. Installed one ADF Dial. This instrument installed left side pilot's instrument panel and secured by screws provided by instrument manufacturer.

FAA AIRCRAFT REGISTRY
CAMERA NO. 4 DATE: 2/16/82

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C. A. A. Approved Flight and Ground School

60. Installed one ADF Control panel and bracket. Attachment made to left side of engine gauge panel and upper cabin stringers, by eight 6-32 machine screws. Station 10-11.
61. Installed one VHF antenna mast and bracket, top of fuselage above rear baggage compartment. Station 26.
62. Installed one ARC manual loop and bracket in top of fuselage. Station 22.
63. Installed one Ram's Horn antenna A-13 and bracket, top of fuselage at pilot's compartment. Station 13.
64. Installed one ADF loop antenna and brackets, top of fuselage and baggage compartment. Station 29.
65. Installed one radio rack as shown on 337 drawing attached. Station 27.
66. The following radio equipment is installed on the radio rack, at Station 27, and is secured to the rack by the manufacturer's mounting brackets.

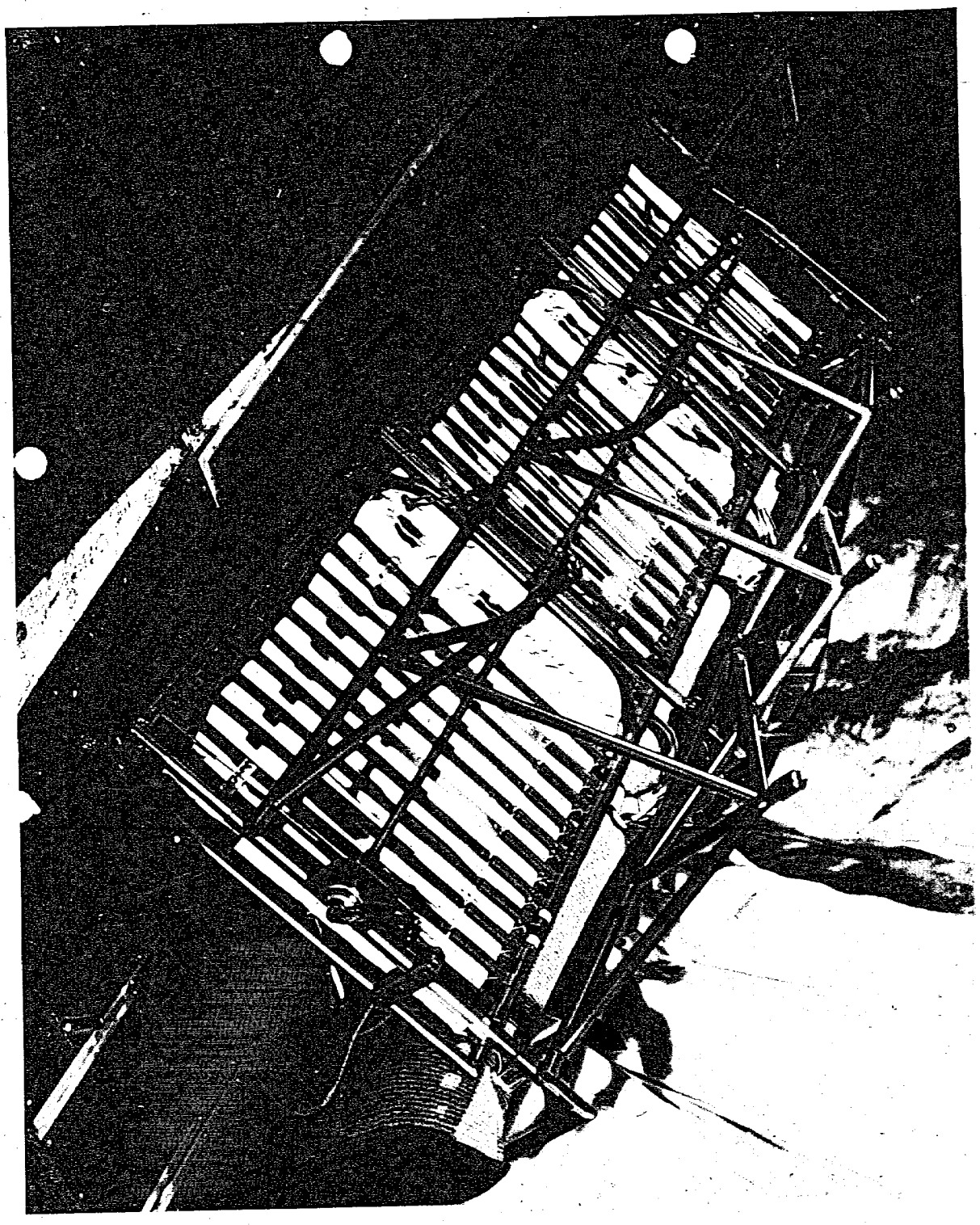
1 ADF unit HC-133P
1 ARC-VHF transmitter, T-11A
1 Airadio transmitter 1105
1 ARC receiver R 15
1 ARC Receiver 13A
1 ARC filter amplifier
2 Radio junction boxes

1 Leeland inverter
1 Western Electric Dynamotor, type 337
1 ARC receiver R 11A
2 ARC transmitters T 11A
1 ARC converter
1 Marker Beacon receiver HC 1023A

Standard Seaplane procedure was used in making all these repairs, using zinc chromate primer, zinc chromate paste, paralaton, and bitumastic paint, as a precaution against corrosion.

FAA AIRCRAFT REGISTRY
CAMERA NO. 4 DATE: 2/16/82

FAA AIRCRAFT REGISTRY
CAMERA NO. 4 DATE: 2/16/82



FAA AIRCRAFT REGISTRY
CAMERA NO. 4 DATE: 2/16/82

12581F

WEIGHT & BALANCE STATEMENT

FOR

GRUMMAN MODEL G21A

SERIAL #1161 (11C-95467) *

Prepared by G. F. Comstock

Date: 28 July 1950

FAA AIRCRAFT REGISTRY

CAMERA NO. 4 DATE: 2/16/82

www

WEIGHT & BALANCE COMPUTATIONS
(Covering Modifications)

GRUMMAN MODEL G21A, Serial 1161

<u>WEIGHT EMPTY</u>	<u>Wgt.</u> <u>Lbs.</u>	<u>Horizontal</u>	
		<u>Arm</u>	<u>Moment</u>
Weight Empty (D of C Form ACA-337 dated 8-17-49)	5964.5	+22.54	+134440
<u>Items Added</u>			
1-Hardman Chair & Cushions, Model 1005	+27.0	+136	+3672
1-Hardman Chair & Cushions, Model 1005	+27.0	+56	+1512
1-Hardman Chair & Cushions, Model 1005	+27.0	+109	+2943
6-Cabin Lights & Brkts.	+1.5	+82.5	+124
2-Thermos Bottle Racks, Model 1005	+2.5	+16	+40
2-Eclipse Starters, Model E-80	+38.0	-12	-456
1-Leece-Neville Generator, Model E-5A	+21.0	-23	-483
2-Constant Speed Full Feathering Propellers (Net Weight Change)	+67.0	-38	-2546
1-Propeller De-Icer Park, 2 3/4 Gal. Capacity	+3.0	-53.5	-161
1-Blinker Relay Airlectron, Model G	+1.0	-50	-50
1-Grimes Landing Light, AN-E223	+8.0	+60	+480
2-Voltage Regulators, #739-R16	+4.0	-34.5	-138
1-Taxi Light and Brkt., GE-4509	+3.0	+16	+48
1-Kollsman Indicator, Model 398F	+2.3	-30	-7
2-Battery Relays & Box, Leece-Neville 23509	+9.0	+5.5	+50
1-Electric Landing Gear Unit, ATC-14	+30.0	-30	-900
1-Complete Set Plumbing - Aux. Fuel System	+19.0	+21	+399
1-Beechcraft Couch & Cushions, D-185404-180226-600	+80.5	+66	+5313
1-Portable Card Table	+6.0	+84.5	+507
1-Propeller Anti-Icing Pump - Eclipse Model G	+4.0	-53.5	-214
<u>Radio Equipment</u>			
1-Dynamotor - Continental Elec., Type DMFX310-U1	+4.0	-53.5	-214
1-Radio Junction Box	+4.5	-53.5	-241
1-Radio Filter, AN-F727	+1.5	-53	-80
1-ARC Pilot's Audio	+4.3	-16	-69
1-ARC Control Panel	+1.5	-29.5	-44
3-ARC Instruments	+4.1	-29.5	-121
1-LLS Ramshorn Antenna & Brkt., A-13	+9.0	+13.5	+122
1-ADF Control Panel	+3.0	-12	-36
1-ADF Dial	+1.5	-29.5	-44
1-ARC Manual Loop	+2.5	+108	+270
1-VHF Antenna Mast & Brkt.	+2.5	+119.5	+374
1-ADF Loop Antenna	+4.0	+178	+712
1-Radio Rack	+7.3	+157	+1146
1-ADF Unit, BC-433F	+43	+158	+6794
1-Lecland Inverter	+16	+158	+2528
1-ARC-VHF Transmitter, T11A	+3.4	+158	+537
1-ARC-VHF Transmitter, Type 377	+14	+150.5	+2107
1-Airradio Transmitter, 3105	+4.7	+156.5	+736
1-ARC Receiver, R11A	+9.0	+151	+1359
1-ARC Receiver, R15	+3.3	+156.5	+1299
2-Transmitters, T11A	+6.8	+164.5	+1119
1-ARC Receiver, 13A	+10.7	+151.5	+1621
1-ARC Converter	+5.8	+156.5	+908
1-ARC Filter Amplifier	+3.4	+164.5	+888
1-Marker Beacon Receiver, BC1023A	+3.2	+164.5	+526
1-Radio Junction Box	+3.7	+169	+625
1-Radio Junction Box	+6.7	+157	+1052

FAA AIRCRAFT REGISTRY
CAMERA NO. 4 DATE: 2/16/82

WEIGHT & BALANCE COMPUTATIONS
 (Covering Modifications)
GRUMMAN MODEL 321A, Serial 1161

<u>Items Removed</u>	<u>Wgt.</u> <u>Lbs.</u>	<u>Horizontal</u>	
		<u>Arm</u>	<u>Moment</u>
1-Passenger Bench	-73.5	+64	-4704
1-Passenger Bench	-79.5	+54	-5388
2-Aviation Starters, Mod. #3 and Handcrank	-72.0	-12	+864
1-Relay Battery Cut-Out Switch	-2.0	+10	-20
1-Western Elec. Dynamotor	-14.0	-39	+546
1-Airadio Transmitter	-4.7	+10	-47
1-Airadio, SU-52B	-2.5	-31	+78
TOTAL REVISED WEIGHT EMPTY	+6287.5	+25.46	+160076

FAA AIRCRAFT REGISTRY
CAMERA NO. 4 DATE: 2/16/82

MOST FORWARD & REARWARD LOADING CONDITIONS
GRUMMAN MODEL 321A, Serial 1161

MOST FORWARD LOADING

	<u>Wgt.</u> <u>Lbs.</u>	<u>Arm</u>	<u>Horizontal</u> <u>Moment</u>
Weight Empty (See Page #2)	6288.0	+25.46	+160076
Plus			
Pilot & Co-Pilot	340.0	-5	-1700
Fuel	0	-	0
Oil, 15 gals.	113.0	+8	+904
Baggage - Forward	<u>246.0</u>	<u>-65</u>	<u>-15990</u>
TOTAL	6987.0	+20.5	+143290

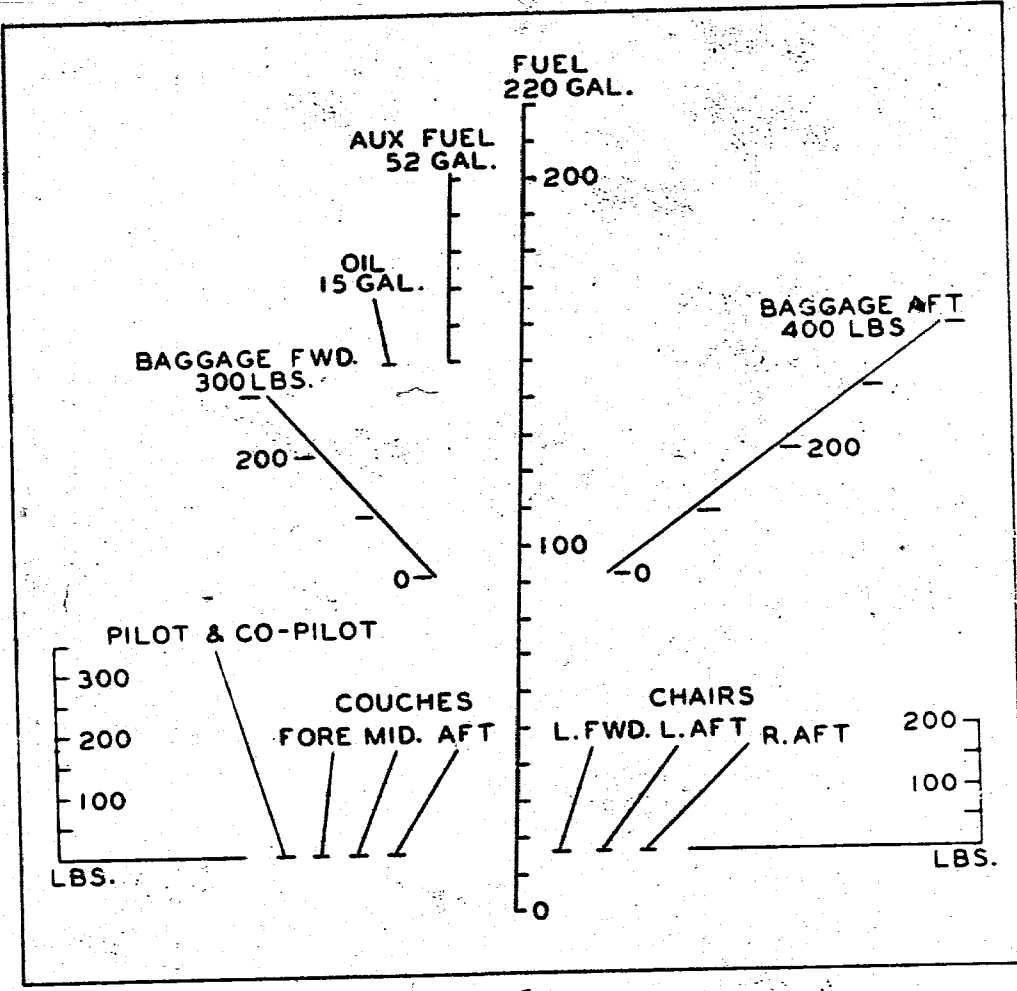
NOTE: Although only 246 lbs. of baggage can be substantiated for forward c.g. condition, additional baggage up to maximum capacity (300 lbs.) permissible. Weight & Balance Computer can determine, for a given flight, allowable amount of baggage for this compartment.

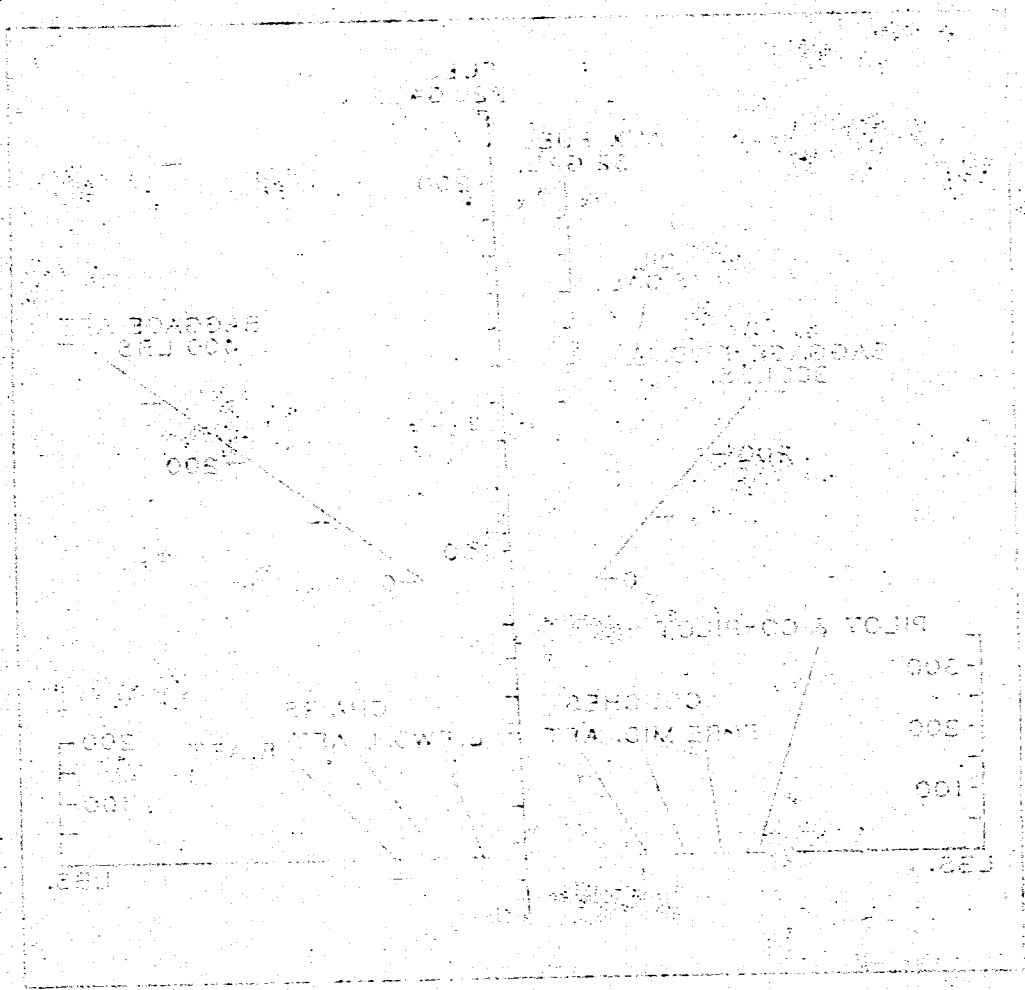
MOST REARWARD LOADING

	<u>Wgt.</u> <u>Lbs.</u>	<u>Arm</u>	<u>Horizontal</u> <u>Moment</u>
Weight Empty (See Page #2)	6288.0	+25.46	+160076
Plus			
Pilot	170	-5	-850
Fuel	0	-	0
Oil	0	+8	0
Passengers			
1-Passenger - Couch (Forward)	170	+40	+6800
1-Passenger - Couch (Center)	170	+66	+11220
1-Passenger - Couch (Aft)	170	+91	+15470
1-Passenger - Left Chair (Forward)	170	+61	+10370
1-Passenger - Left Chair (Rear)	170	+104	+17680
1-Passenger - Right Chair (Rear)	170	+130.5	+22185
Baggage	<u>28</u>	<u>+169</u>	<u>+4732</u>
TOTAL	7506	+33.0	+247683

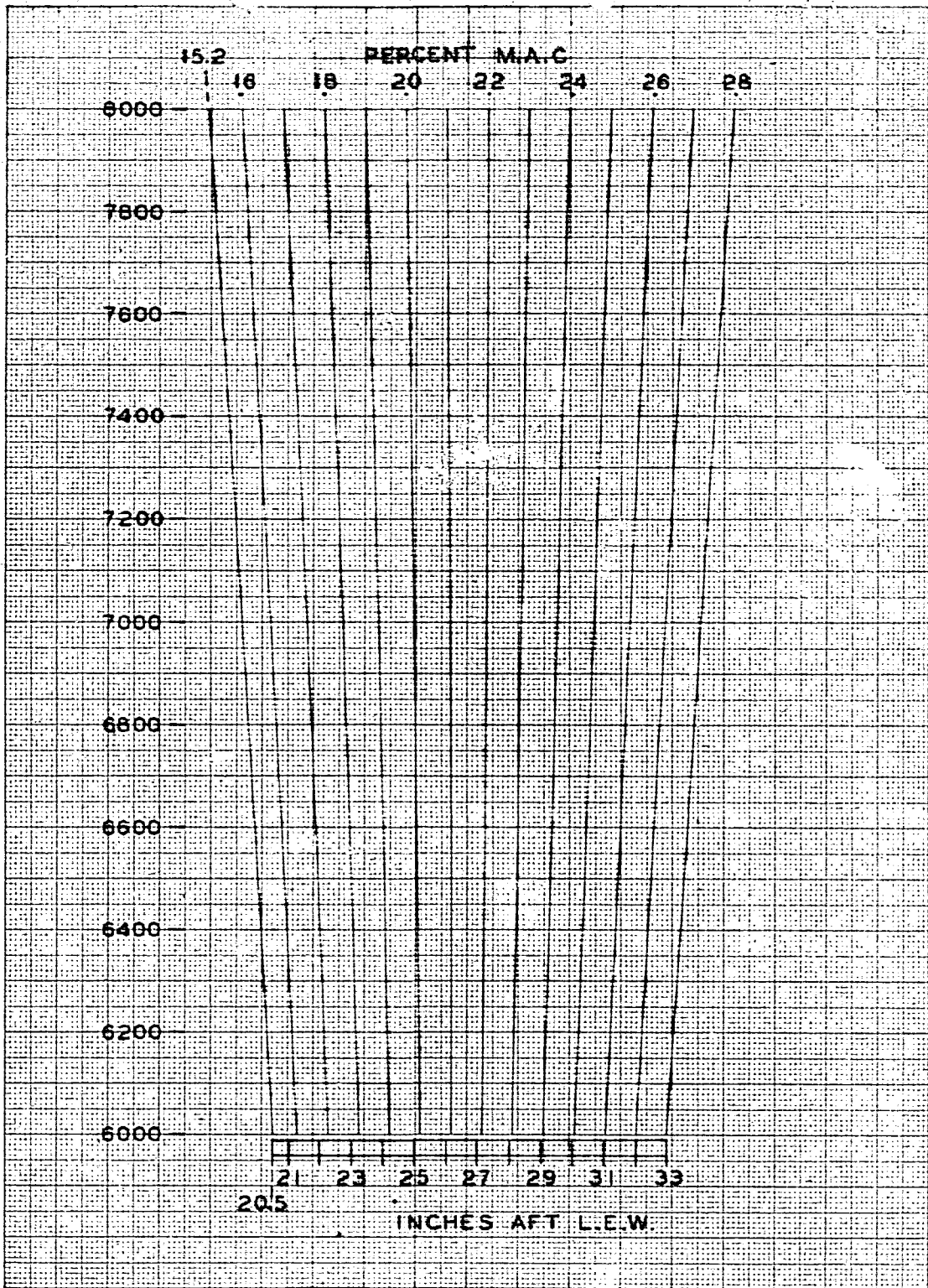
NOTE: Although only 28 lbs. of baggage can be substantiated for rearward condition, the Weight & Balance Computer can determine, for a given flight, allowable amount of baggage up to maximum capacity of this compartment.

FAA AIRCRAFT REGISTRY
CAMERA NO. 4 DATE: 2/16/82





KRUPPEL & EVES CO., N. Y. NO. 1
3111 Avenue 5 mm. line-spread, ca. 1/100 in.
WASHINGTON, D. C.



FAA AIRCRAFT REGISTRY

CAMERA NO. 4 DATE: 2/16/82

Beech Aircraft Corporation

Wichita, Kansas - U.S.A.

AIR  MAIL

July 21, 1950

IN REPLY PLEASE REFER
TO 917-418

Mr. Hardy
Hardy Aviation, Inc.
Waynesboro, Pennsylvania

Dear Mr. Hardy:

This is in reply to your telephone conversation of July 20, 1950 with our Mr. R. B. Bosworth regarding CAA approval of the couch assembly as used in the DL8S airplane.

The couch is manufactured from Krehbiel Plastic Products Company, Drawing KM-1025 and has been CAA approved by the Krehbiel Company as Part KM-1025. 54

We do not know that all of these couches manufactured had a placard installed on them; however, present couches have an identification placard installed as follows:

From a position facing the front of the couch a placard is installed on the back side of the diagonal tube running from the left end (hand crank end) of the rear of the frame to the left vertical support tube.

We are enclosing 1 copy of our photographs No. 12581F, No. 12581D and No. 6134A for your identification purposes of this couch assembly.

Very truly yours,

BEECH AIRCRAFT CORPORATION

R. H. Schowalter

R. H. Schowalter
Service Engineering

RHS:jp



THE WORLD IS SMALL WHEN YOU FLY A BEECHCRAFT

Dear Mr. [Name],
This is in reply to your letter of [Date] regarding the [Subject].
The FAA is currently reviewing the information provided and will contact you again once a decision has been reached.
Thank you for your patience and cooperation.

Very truly yours,
[Signature]
[Name]
[Title]

Form ACA-305 (12-47)		DEPARTMENT OF COMMERCE CIVIL AERONAUTICS ADMINISTRATION		FORM APPROVED BUDGET BUREAU No. 41-R01.3	
APPLICATION FOR AIRWORTHINESS CERTIFICATE AND/OR ANNUAL INSPECTION OF AN AIRCRAFT				INSTRUCTIONS Please submit this form to the Civil Aeronautics Administration Field Representative	
APPLICATION (Check whether) <input type="checkbox"/> ORIGINAL AIRWORTHINESS CERTIFICATE <input checked="" type="checkbox"/> ANNUAL INSPECTION		AIRWORTHINESS CLASSIFICATION <input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> RESTRICTED <input type="checkbox"/> EXPERIMENTAL <input type="checkbox"/> LIMITED <input type="checkbox"/> OTHER			
AIRCRAFT					
MAKE GRUMMAN		MODEL G-21A		TYPE CERTIFICATE NO. 654	
REGISTRATION NO. NC95467		MANUFACTURER'S SERIAL NO. 1161			
ENGINE					
MAKE P&W WASP JR.			MODEL R985-AN6B		
OWNER'S NAME HARDY AVIATION INC.			PERMANENT ADDRESS (Street and number, city, zone, and State) R.D.#4 WAYNESBORO, PENNA.		
ATTACHMENTS (Check which) <input checked="" type="checkbox"/> ACA-319 <input type="checkbox"/> WEIGHT AND BALANCE REPORT <input checked="" type="checkbox"/> ACA-337 <input type="checkbox"/> DATA, DRAWINGS, ETC. <input type="checkbox"/> ACA-317 <input type="checkbox"/> UNAPPROVED DEVIATION DATA		I CERTIFY that the above statements are true. <div style="text-align: right;"> <i>Malcolm L. Hardy</i> (Signature) Pres (Title) </div>			
		8/17/49 (DATE)			
AIRCRAFT INSPECTION REPORT					
(To be completed by a CAA inspector or a designated inspector or representative)					
It has been determined that the aircraft described in 305 above is in conformity with the following:					
ALL APPLICABLE MANDATORY NOTES, INSTRUMENT MARKINGS AND PLACARDING REQUIREMENTS HAVE BEEN COMPLIED WITH <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO					
AIRCRAFT SPECIFICATION-AIRWORTHINESS DIRECTIVE NO(S). A-654 ADS THROUGH CARD 49-32 (Specify)					
FORM ACA-1362, CERTIFICATE OF AIRWORTHINESS, ISSUED <input type="checkbox"/> ORIGINAL <input checked="" type="checkbox"/> ANNUAL INSPECTION					
(Check whether) <input type="checkbox"/> OPERATION LIMITATIONS FORM ACA-309 WAS ISSUED, OR <input type="checkbox"/> APPROVED AIRPLANE FLIGHT MANUAL IS IN THE AIRCRAFT					
FINDINGS					
<input checked="" type="checkbox"/> AIRWORTHY <input type="checkbox"/> UNAIRWORTHY		DESIGNEE'S SIGNATURE AND TITLE <i>J. Williams</i> DAMT 167		DATE 8/17/49	
		CAA INSPECTOR'S SIGNATURE <i>John Meyer</i>		<input checked="" type="checkbox"/> ACCEPTED DATE <input type="checkbox"/> REINSPECTED 8-22-49	
REASON FOR DISAPPROVAL, OR REMARKS (Indicate if you have used the reserve to continue this or other item.) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					
FORM 309 IS AVAILABLE IN THE AIRCRAFT. DATE OF LAST FLIGHT 8/8/49 , PERRY PERMIT APPROVED ISSUED .					
<i>9-15-49</i> <i>700</i>					

FAA AIRCRAFT REGISTRY
CAMERA NO. 4 DATE: 2/16/82

MAIL ROOM 3
WASHINGTON
SEP 6 9 35 AM '49
DEPT OF COMMERCE
CIVIL AERONAUTICS ADM.

FORM ACA-387 (11-7-61)		DEPARTMENT OF COMMERCE CIVIL AERONAUTICS ADMINISTRATION		BUREAU NO. 41-8052.1 APPROVAL EXPIRES DECEMBER 31, 1948	
REPAIR AND ALTERATION FORM (AIRCRAFT, PROPELLERS, ENGINES, INSTRUMENTS)					
<p>INSTRUCTIONS - This form must be filled out in duplicate each time a major repair and/or alteration is made of an aircraft, propeller, engine, or instrument, as follows:</p> <p>(A) For an Aircraft - Complete items 1, 2, 2a, 4, 5, 6, and 7 and submit to CAA representative for approval.</p> <p>(B) For a Component Installed in an Aircraft - Complete items 1, 2, 3(b, c, or d, whichever is applicable), 4, 5, and 6, and submit as described in (A) above.</p> <p>(C) For a Spare Component - Complete items 3(b, c, or d), 5, and 6, and submit to CAA representative for approval. When approved, retain both copies of this form with the component until installation on an aircraft. At that time, items 1, 2, and 4 must be completed by the installing agency, which will then forward forms as described in (A) above.</p>					
1. AIRCRAFT	MAKE GRUMMAN	MODEL G-21A	SERIAL NO. 1161	CAA IDENTIFICATION MARK 1095467	
2. OWNER	NAME (First, middle, last) Hardy Aviation Inc.		ADDRESS (Street and number, city, zone, and state) R.B. #4 Waynesboro, Penna,		
3. FILL IN INFORMATION IN THIS ITEM ONLY FOR THE UNIT REPAIRED AND/OR ALTERED					
UNIT	MAKE	MODEL	SERIAL NO.	NATURE OF WORK (Check) MAJOR REPAIR MAJOR ALTERATION	
a. AIRCRAFT	(As described in item 1 above)				
b. PROPELLER BLADE OR HUB					
c. ENGINE					
d. INSTRUMENT	TYPE AND MANUFACTURER				
The following items are to be completed by repair or alteration agency. However, in the case of a spare component, item 4 will not be completed until such component is installed in an aircraft. At this time, item 4 will be completed by the installing agency, if applicable.					
4. AIRCRAFT	EMPTY WEIGHT (Pounds) 5965.5	EMPTY CENTER OF GRAVITY (Inches from datum) 22.54	USEFUL LOAD (Pounds) 2035.5 - 2035		
*AFTER the repairs and/or alterations described below were made.					
5. KIND OF AGENCY WHICH MADE REPAIRS AND/OR ALTERATIONS (Check)					
<input type="checkbox"/> MANUFACTURER		<input type="checkbox"/> APPROVED REPAIR STATION NO. _____		<input checked="" type="checkbox"/> CERTIFIED MECHANIC	
(SPECIFY)					
AGENCY	NAME J A WILLIAMS	ADDRESS (Street and number, city, zone, and state) 601 WISE ST HAGERSTOWN, MD.		DATE WORK ACCOMPLISHED 8/17/49	
7. DESCRIPTION OF WORK ACCOMPLISHED IN ACCORDANCE WITH PART 19 OF THE CIVIL AIR REGULATIONS AND ITS ASSOCIATED CIVIL AERONAUTICS MANUAL 18. (If more space is needed, continue on reverse, or attach separate sheets bearing aircraft identification mark)					
<p>REPLACED TRAILING EDGE STRIP ON LEFT SIDE OF CENTER SECTION. REPLACEMENT PARTS AND MATERIALS ARE SAME AS ORIGINAL.</p> <p>INSTALLED THREE REINFORCEMENT PLATES ON LOWER SKIN IN FLAP WELL OF RIGHT CENTER SECTION, METHOD OF REPAIR USED IS AS SHOWN IN FIGURE 32 OF CAM-108</p> <p>INSTALLED REINFORCEMENT DOUBLER ON LEFT LOWER SIDE OF REAR CABIN BULKHEAD 20" X 8" . MATERIAL USED .051 X 17ST Rivets 5/32" X A17ST</p>					
I CERTIFY THAT THE ABOVE STATEMENTS ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.					
SIGNATURE OF SUPERVISING MECHANIC <i>J A Williams</i>		CERTIFICATE NUMBER AND RATING A&E 171544		DATE 8/17/49	
TO BE COMPLETED BY CAA REPRESENTATIVES					
<input checked="" type="checkbox"/> APPROVED	SIGNATURE OF DESIGNEE <i>J A Williams</i>	NUMBER 167	DATE 8/17/49		
<input type="checkbox"/> REJECTED	SIGNATURE OF INSPECTOR <i>J H Myers</i>	<input checked="" type="checkbox"/> ACCEPTED	DATE 8-22-49		
<input type="checkbox"/> FORWARDED FOR ENGINEERING APPROVAL		<input type="checkbox"/> REINSPECTED			

FAA AIRCRAFT REGISTRY
CAMERA NO. 4 DATE: 2/16/82

WASHINGTON
MAIL ROOM 3
SEP 6 9 35 AM '82
DEPT. OF COMMERCE
COMMUNICATIONS DIV.

FORM ACA-305 (13-5-47)		DEPARTMENT OF COMMERCE CIVIL AERONAUTICS ADMINISTRATION		FORM APPROVED BUDGET BUREAU NO. 41-R041.3	
APPLICATION FOR AIRWORTHINESS CERTIFICATE AND/OR ANNUAL INSPECTION OF AN AIRCRAFT				INSTRUCTIONS Please submit this form to the Civil Aeronautics Administration Field Representative.	
APPLICATION (Check whether)		CAA IDENTIFICATION			
<input type="checkbox"/> ORIGINAL AIRWORTHINESS CERTIF. <input checked="" type="checkbox"/> ANNUAL INSPECTION		<input checked="" type="checkbox"/> NC <input type="checkbox"/> SP <input type="checkbox"/> OTHER (Specify) _____ <input type="checkbox"/> NX <input type="checkbox"/> NL			
AIRCRAFT					
MAKE <u>Grumman</u>		MODEL <u>G21A</u>			
REGISTRATION NO. <u>95467</u>	MANUFACTURER'S SERIAL NO. <u>1161</u>	DATE MANUFACTURED <u>12/42</u>	TYPE CERTIFICATE NO. <u>654</u>		
ENGINE					
MAKE <u>P&W</u>		MODEL <u>R985-AN1</u>			
OWNER'S NAME <u>K.F. Brown</u>		PERMANENT ADDRESS (Street and number, City, Zone and State) <u>4605 Arbor Road Long Beach, Calif.</u>			
ATTACHMENTS (Check which)		I CERTIFY THAT THE ABOVE STATEMENTS ARE TRUE.			
<input type="checkbox"/> ACA-319 <input type="checkbox"/> WEIGHT AND BALANCE REPORT <input checked="" type="checkbox"/> ACA-337 <input type="checkbox"/> SPECIAL APPROVALS <input type="checkbox"/> ACA-805 <input type="checkbox"/> DATA, DRAWINGS, ETC. <input type="checkbox"/> ACA-317 <input type="checkbox"/> UNAPPROVED DEVIATION DATA		DATE <u>May 6, 1948</u> SIGNATURE <u>[Signature]</u> TITLE <u>Agent</u>			
FORM ACA-305a (FORMERLY ACA-307) AIRCRAFT INSPECTION REPORT (To be completed by a CAA inspector or a designated inspector or representative)					
IT HAS BEEN DETERMINED THAT THE AIRCRAFT DESCRIBED IN 305 ABOVE IS IN CONFORMITY WITH THE FOLLOWING ALL APPLICABLE MANDATORY NOTES, INSTRUMENT MARKINGS AND PLACARDING REQUIREMENTS HAVE BEEN COMPLIED WITH <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO					
AIRCRAFT SPECIFICATION - AIRWORTHINESS DIRECTIVE, NO(S). <u>A-654-3</u> <u>ADS thru 48-17-</u> (SPECIFY)					
AUTHORITY FOR EXCEPTIONS (If any)					
FORM ACA-1362, CERTIFICATE OF AIRWORTHINESS, ISSUED <input type="checkbox"/> ORIGINAL <input checked="" type="checkbox"/> ANNUAL INSPECTION					
(Check whether) <input type="checkbox"/> OPERATION LIMITATIONS FORM ACA-309 WAS ISSUED, OR <input type="checkbox"/> APPROVED AIRPLANE FLIGHT MANUAL IS IN THE AIRCRAFT					
FINDINGS					
<input checked="" type="checkbox"/> AIRWORTHY <input type="checkbox"/> UN-AIRWORTHY		DESIGNEE'S SIGNATURE AND NO. <u>[Signature] 664</u>		DATE <u>5/6/48</u>	
		CAA INSPECTOR'S SIGNATURE <u>[Signature]</u>		<input checked="" type="checkbox"/> ACCEPTED DATE <u>5-21-48</u> <input type="checkbox"/> REINSPECTED	
REASON FOR DISAPPROVAL, OR REMARKS (Indicate if you have used the reverse to continue this or other item <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No)					
Form ACA 309 Available in Aircraft.					

SLH

EXP 9-2-49

7-26-48

FAA AIRCRAFT REGISTRY
CAMERA NO. 4 DATE: 2/16/82

FORM ACA-337 (11-7-36)		DEPARTMENT OF COMMERCE CIVIL AERONAUTICS ADMINISTRATION		BUDGET BUREAU NO. 41-8052.1 APPROVAL EXPIRES DECEMBER 31, 1948	
REPAIR AND ALTERATION FORM (AIRCRAFT, PROPELLERS, ENGINES, INSTRUMENTS)					
<p>INSTRUCTIONS - This form must be filled out in duplicate each time a major repair and/or alteration is made of an aircraft, propeller, engine, or instrument, as follows:</p> <p>(A) For an Aircraft - Complete items 1, 2, 2a, 4, 5, 6, and 7 and submit to CAA representative for approval.</p> <p>(B) For a Component installed in an Aircraft - Complete items 1, 2, 2(b, c, or d, whichever is applicable), 4, 5, and 6, and submit as described in (A) above.</p> <p>(C) For a Spare Component - Complete items 2(b, c, or d), 5, and 6, and submit to CAA representative for approval. When approved, retain both copies of this form with the component until installation on an aircraft. At that time, items 1, 2, and 4 must be completed by the installing agency, which will then forward forms as described in (A) above.</p>					
1. AIRCRAFT	MAKE Grumman	MODEL OPA	SERIAL NO. 1161	CAA IDENTIFICATION MARK NC95467	
2. OWNER	NAME (First, middle, last) R.F. Brown		ADDRESS (Street and number, city, zone, and state) 1605 Arbor Road Long Beach, Calif.		
3. FILL IN INFORMATION IN THIS ITEM ONLY FOR THE UNIT REPAIRED AND/OR ALTERED					
	UNIT	MAKE	MODEL	SERIAL NO.	NATURE OF WORK (Check) MAJOR REPAIR MAJOR ALTERATION
a. AIRCRAFT	(As described in item 1 above)				X
b. PROPELLER					
c. ENGINE					
d. INSTRUMENT	TYPE AND MANUFACTURER				
The following items are to be completed by repair or alteration agency. However, in the case of a spare component, item 4 will not be completed until such component is installed in an aircraft. At this time, item 4 will be completed by the installing agency, if applicable.					
4. AIRCRAFT	EMPTY WEIGHT (Pounds) 6954.5	EMPTY CENTER OF GRAVITY (Inches from datum) 22.88	USEFUL LOAD (Pounds) 2100 1045.5		
5. KIND OF AGENCY WHICH MADE REPAIRS AND/OR ALTERATIONS (Check)					
<input type="checkbox"/> MANUFACTURER <input checked="" type="checkbox"/> APPROVED REPAIR STATION NO. 4011 <input type="checkbox"/> CERTIFIED MECHANIC (SPECIFY)					
AGENCY	NAME Long Beach Aeromotive	ADDRESS (Street and number, city, zone, and state) 2735 E. Spring St. Long Beach, Calif.		DATE WORK ACCOMPLISHED 5/6/48	
7. DESCRIPTION OF WORK ACCOMPLISHED IN ACCORDANCE WITH PART 19 OF THE CIVIL AIR REGULATIONS AND ITS ASSOCIATED CIVIL AERONAUTICS MANUAL 18. (If more space is needed, continue on reverse, or attach separate sheets bearing aircraft identification mark)					
<p>1. Removed old engines and installed overhauled engines R-985-AN-1 Ser. No. 3369 and 42-121746</p> <p>2. ADs 48-14-2 and Grumman Service bulletin #21 complied with.</p> <p>3. Gear removed magnifluxed, overhauled and installed; new flight control cables installed; right wing recovered with grade "A" fabric; All control surfaces recovered; hull repaired as necessary and aircraft completely refinished.</p>					
I CERTIFY THAT THE ABOVE STATEMENTS ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.					
Signature of Supervising Mechanic <i>John B. Bannard</i> JOHN B. BANNARD		CERTIFICATE NUMBER AND RATING A&R 106284		DATE 5/6/48	
TO BE COMPLETED BY CAA REPRESENTATIVES					
<input type="checkbox"/> APPROVED <input type="checkbox"/> REJECTED <input type="checkbox"/> FORWARDED FOR ENGINEERING APPROVAL	SIGNATURE OF DESIGNER <i>J. Conway</i>		NUMBER 664	DATE 5/6/48	
	SIGNATURE OF INSPECTOR <i>J. B. Bannard</i>		<input checked="" type="checkbox"/> ACCEPTED <input type="checkbox"/> REINSPECTED	DATE 5-21-48	

FAA AIRCRAFT REGISTRY
CAMERA NO. 4 DATE: 2/16/82

Form 1CA-309 Page 1

OPERATION LIMITATIONS

UNITED STATES OF AMERICA
 DEPARTMENT OF COMMERCE
 CIVIL AERONAUTICS ADMINISTRATION

A IDENT. MARK
NC 9547

ENGINE: **100-AN-1** AIRCRAFT MAKE: **Grumman** MODEL: **G21A** SERIAL NO.: **1101** DATE: **12/42** DESIGNATION: **Land Sea** TYPE CERT.: **654**

ENGINE AND AIR SPEED LIMITS NOT TO BE EXCEEDED
(All Values Are Maximums and Are NOT Recommended Operating Limits)

ENGINE LIMITS						TRUE INDICATED AIR SPEED	
MINUTES	ALTITUDE	M. H.C.	R.P.M.	M.P.	FUEL OCT.	M.P.H. LAND	KNOTS SEA
TAKE-OFF	Und	Any	80.5	2300	450	87	CLIMB OR LEVEL FLIGHT 194 169
(SEA LEVEL)	X	TO	84.5	2200	400	87	GLIDE OR DIVE (Smooth Air Only) 225 195
ALTIMETER TO 5000	TO 5000	83.5	2200	400	87	min	FLAPS EXTENDED Land & Sea 110 96
ALTIMETER TO 5000	TO 5000	83.5	2200	400	87	min	FLAPS EXTENDED Land & Sea 110 96

ALTIMETER TO 5000
 straight line variation with Alt.

METO—MAXIMUM EXCEPT TAKE-OFF

TAKE-OFF WEIGHT		LANDING WEIGHT	
LAND	SEA	LAND	SEA
8000	8000	8000	8000

OPERATIONS AUTHORIZED

C.G. range is (1/ 20.5) to (1/ 33)
 about is wing leading edge at fuselage
 wt. & bal. data section for
 loading information

INSPECTOR'S SIGNATURE: *[Signature]*
 DATE: 4/17/47

ADDITIONAL OPERATIONS AUTHORIZED: YES NO (IF YES—SEE OVER)

THIS PLACARD MUST BE DISPLAYED IN VIEW OF THE PILOT
 (FOLD HERE)

ADDITIONAL OPERATIONS AUTHORIZED

IF THIS FORM IS LOST OR DESTROYED, A DUPLICATE MAY BE OBTAINED FROM THE
CERTIFICATION AND RECORDATION SECTION, AIRCRAFT AND COMPONENTS SERVICE,
CIVIL AERONAUTICS ADMINISTRATION, WASHINGTON, D. C., FOR \$2.00. (MONEY ORDER
OR CHECK SHOULD BE MADE PAYABLE TO THE TREASURER OF THE UNITED STATES.)

Form ACA-305 (3-7-46)		DEPARTMENT OF COMMERCE CIVIL AERONAUTICS ADMINISTRATION		BUDGET BUREAU NO. 41-2041.2 APPROVAL EXPIRES FEBRUARY 15, 1947	
APPLICATION FOR AIRWORTHINESS CERTIFICATE AND/OR ANNUAL INSPECTION OF AN AIRCRAFT				INSTRUCTIONS Please submit this form to the Civil Aero- nautics Administration Field Representative.	
APPLICATION (Check)		CAA IDENTIFICATION			
<input checked="" type="checkbox"/> AIRWORTHINESS CERTIFICATE <input type="checkbox"/> ANNUAL INSPECTION		<input checked="" type="checkbox"/> NC <input type="checkbox"/> NX <input type="checkbox"/> NR <input type="checkbox"/> OTHER (Specify) _____			
AIRCRAFT					
MAKE <u>Crumman</u>			MODEL <u>G 21A</u>		
REGISTRATION NO. <u>NC 95467</u>		MANUFACTURER'S SERIAL NO. <u>1161</u>		DATE MANUFACTURED <u>12/42</u>	
ENGINE					
MAKE <u>P.Y.W.</u>			MODEL <u>R 985-AN6B</u>		RATED H.P. <u>450</u>
(Check whether) <input type="checkbox"/> NEW <input checked="" type="checkbox"/> USED <input type="checkbox"/> OVERHAULED		IF OVERHAULED, STATE BY WHOM _____		DATE OF OVERHAUL _____	
(Check which) <input checked="" type="checkbox"/> AIRCRAFT NOW REGISTERED WITH THE ADMINISTRATION		<input type="checkbox"/> APPLICATION FOR REGISTRATION AND BILL OF SALE (FORMS ACA-501 AND 502) ATTACHED			
OWNER'S NAME <u>Kenneth F. Brown</u>			PERMANENT ADDRESS (Street and No., City, Zone, State) <u>1320 Gaviota Ave Long Beach 4, Calif.</u>		
ATTACHMENTS (Check which)		I CERTIFY THAT THE ABOVE STATEMENTS ARE TRUE			
<input checked="" type="checkbox"/> ACA-319 <input checked="" type="checkbox"/> WEIGHT AND BALANCE REPORT <input checked="" type="checkbox"/> ACA-337 <input checked="" type="checkbox"/> SPECIAL APPROVALS <input type="checkbox"/> ACA-805 <input checked="" type="checkbox"/> DATA, DRAWINGS, ETC. <input type="checkbox"/> ACA-317 <input type="checkbox"/> UNAPPROVED DEVIATION DATA		<u>Kenneth F. Brown</u> OWNER OR AUTHORIZED AGENT <u>4-17-47</u> DATE <u>Brown</u> TITLE			
FORM ACA-305B (FORMERLY ACA-307)		AIRCRAFT INSPECTION REPORT (To be completed by a CAA inspector or a designated inspector or representative)			
IT HAS BEEN DETERMINED THAT THE AIRCRAFT DESCRIBED IN 305 ABOVE IS IN CONFORMITY WITH THE FOLLOWING					
LISTING IN INSPECTOR'S HANDBOOK, CHAP. XVIII		AIRCRAFT SPECIFICATION		AIRWORTHINESS DIRECTIVE	
PAGE NO.	T.C. NO.	SERIAL NO.	EFFECTIVE NOTES	NO.	EFFECTIVE NOTES
	<u>654</u>	<u>A-6543</u>	<u>1 & 8 Complied with</u>	<u>654-1</u>	<u>4 Complied with</u>
OTHER (Describe)			EXCEPTIONS, IF ANY (If additional space is required, use reverse)		
<input checked="" type="checkbox"/> FORM ACA-319 (Return to owner)		APPROVED BY <u>J. Barnard</u>	MECH. CERTIF. AND RATING NO. <u>AEE, M 106284</u>	DATED <u>4-17-47</u>	
<input checked="" type="checkbox"/> FORM ACA-317 ISSUED		CERTIFICATE VALID TO (Specify date)			
<input checked="" type="checkbox"/> AIRCRAFT AIRWORTHINESS CERTIFICATE WITH OPERATION LIMITATIONS FORM (ATTACHED) WAS ISSUED					
FINDINGS					
<input checked="" type="checkbox"/> AIRWORTHY		DESIGNEE'S SIGNATURE AND NO. <u>J. Conroy 664</u>		DATE <u>4-17-47</u>	
<input type="checkbox"/> UNAIRWORTHY		CAA INSPECTOR'S SIGNATURE <u>Jed A. Bolleniger</u>		<input type="checkbox"/> ACCEPTED DATE _____ <input checked="" type="checkbox"/> REINSPECTED <u>June 30, 1947</u>	
REASON FOR DISAPPROVAL, OR REMARKS (Indicate if you have used the reverse to continue this or other item <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No)					
Form 309 Available in Aircraft					

FAA AIRCRAFT REGISTRY
CAMERA NO. 4 DATE: 2/16/82

MAIL ROOM-2
WASHINGTON
FEB 9 3 04 PM '82

FORM ACA-337
(11-7-46)

DEPARTMENT OF COMMERCE
CIVIL AERONAUTICS ADMINISTRATION

POST BUREAU NO. 61-2052.1
APPLICABLE EXPIRES DECEMBER 31, 1948

REPAIR AND ALTERATION FORM (AIRCRAFT, PROPELLERS, ENGINES, INSTRUMENTS)

INSTRUCTIONS - This form must be filled out in duplicate each time a major repair and/or alteration is made of an aircraft, propeller, engine, or instrument, as follows:

- (A) For an Aircraft - Complete items 1, 2, 3a, 4, 5, 6, and 7 and submit to CAA representative for approval.
- (B) For a Component Installed in an Aircraft - Complete items 1, 2, 3(b), c, or d, whichever is applicable, 4, 5, and 6, and submit as described in (A) above.
- (C) For a Spare Component - Complete items 3(b), c, or d), 5, and 6, and submit to CAA representative for approval. When approved, retain both copies of this form with the component until installation on an aircraft. At that time, items 1, 2, and 4 must be completed by the installing agency, which will then forward forms as described in (A) above.

1. AIRCRAFT	MAKE Grueman	MODEL G21A	SERIAL NO. 1161	CAA IDENTIFICATION MARK NC 95467
2. OWNER	NAME (First, middle, last) Kenneth F. Brown			
	ADDRESS (Street and number, city, zone, and state) 4605 Arbor Rd. Lakewood Village Road. Long Beach, Calif.			

3. FILL IN INFORMATION IN THIS ITEM ONLY FOR THE UNIT REPAIRED AND/OR ALTERED

UNIT	MAKE	MODEL	SERIAL NO.	NATURE OF WORK (Check)	
				MAJOR REPAIR	MAJOR ALTERATION
a. AIRCRAFT	(As described in item 1 above)			X	
b. PROPELLER MADE OR HUB					
c. ENGINE					
d. INSTRUMENT	TYPE AND MANUFACTURER				

The following items are to be completed by repair or alteration agency. However, in the case of a spare component, item 4 will not be completed until such component is installed in an aircraft. At this time, item 4 will be completed by the installing agency, if applicable.

4. AIRCRAFT	EMPTY WEIGHT (Pounds) 5964.5	EMPTY CENTER OF GRAVITY (Inches from datum) 22.54	USEFUL LOAD (Pounds) 2035.5
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*AFTER the repairs and/or alterations described below were made.

5. KIND OF AGENCY WHICH MADE REPAIRS AND/OR ALTERATIONS (Check)		
<input type="checkbox"/> MANUFACTURER	<input checked="" type="checkbox"/> APPROVED REPAIR STATION NO. 4011	<input type="checkbox"/> CERTIFIED MECHANIC
	(SPECIFY)	

6. AGENCY	NAME Long Beach Aeromotive	ADDRESS (Street and number, city, zone, and state) 2735 E. Spring St. Long Beach, Calif.	DATE WORK ACCOMPLISHED 9/11/47
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7. DESCRIPTION OF WORK ACCOMPLISHED IN ACCORDANCE WITH PART 19 OF THE CIVIL AIR REGULATIONS AND ITS ASSOCIATED CIVIL AERONAUTICS MANUAL 18. (If more space is needed, continue on reverse, or attach separate sheets bearing aircraft identification mark)

Replaced left wing complete.
Factory type parts used.
All workmanship and material used in accordance with C.A.M.-18.

I CERTIFY THAT THE ABOVE STATEMENTS ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.

<i>John B. Baird</i>	A&E m-106284	9/11/47
SIGNATURE OF SUPERVISING MECHANIC	CERTIFICATE NUMBER AND RATING	DATE

TO BE COMPLETED BY CAA REPRESENTATIVES

<input checked="" type="checkbox"/> APPROVED	SIGNATURE OF DESIGNEE <i>J. J. Conway</i>	NUMBER 664	DATE 9-11-47
<input type="checkbox"/> REJECTED	SIGNATURE OF INSPECTOR <i>John B. Baird</i>	<input checked="" type="checkbox"/> ACCEPTED	DATE 10-6-47
<input type="checkbox"/> FORWARDED FOR ENGINEERING APPROVAL		<input type="checkbox"/> REINSPECTED	

[Faint, mostly illegible text and lines on a form, possibly containing aircraft registration information.]

[Handwritten signature]

[Handwritten text]

FORM ACA-387 (11-7-46)		DEPARTMENT OF COMMERCE CIVIL AERONAUTICS ADMINISTRATION		BUDGET BUREAU NO. 41-4032.1 APPROVAL EXPIRES DECEMBER 31, 1948	
REPAIR AND ALTERATION FORM (AIRCRAFT, PROPELLERS, ENGINES, INSTRUMENTS)					
<p>INSTRUCTIONS - This form must be filled out in duplicate each time a major repair and/or alteration is made of an aircraft, propeller, engine, or instrument, as follows:</p> <p>(A) For an Aircraft - Complete items 1, 2, 3a, 4, 5, 6, and 7 and submit to CAA representative for approval.</p> <p>(B) For a Component Installed in an Aircraft - Complete items 1, 2, 3(b, c, or d, whichever is applicable), 4, 5, and 6, and submit as described in (A) above.</p> <p>(C) For a Spare Component - Complete items 3(b, c, or d), 5, and 6, and submit to CAA representative for approval. When approved, retain both copies of this form with the component until installation on an aircraft. At that time, items 1, 2, and 4 must be completed by the installing agency, which will then forward forms as described in (A) above.</p>					
1. AIRCRAFT	MAKE Grumman	MODEL JRF-6B	SERIAL NO. 1161	CAA IDENTIFICATION MARK NC 95467	
2. OWNER	NAME (First, middle, last) Kenneth F. Brown		ADDRESS (Street and number, city, zone, and state) 4605 Arbor Road. Lakewood Village Road.		
3. FILL IN INFORMATION IN THIS ITEM ONLY FOR THE UNIT REPAIRED AND/OR ALTERED					
	UNIT	MAKE	MODEL	SERIAL NO.	NATURE OF WORK (Check)
					MAJOR REPAIR MAJOR ALTERATION
4. AIRCRAFT	(As described in item 1 above)				
5. PROPELLER					
6. BLADE OF HUB					
7. ENGINE					
8. INSTRUMENT	TYPE AND MANUFACTURER				
The following items are to be completed by repair or alteration agency. However, in the case of a spare component, item 4 will not be completed until such component is installed in an aircraft. At this time, item 4 will be completed by the installing agency, if applicable.					
9. AIRCRAFT	EMPTY WEIGHT (Pounds) 5964.5	EMPTY CENTER OF GRAVITY (Inches from datum) 22.54	USEFUL LOAD (Pounds) 2035.5		
*AFTER the repairs and/or alterations described below were made.					
5. KIND OF AGENCY WHICH MADE REPAIRS AND/OR ALTERATIONS (Check)					
<input type="checkbox"/> MANUFACTURER <input checked="" type="checkbox"/> APPROVED REPAIR STATION NO. 4011 <input type="checkbox"/> CERTIFIED MECHANIC (SPECIFY)					
AGENCY	NAME Long Beach Aeromotive	ADDRESS (Street and number, city, zone, and state) 2735 E. Spring St. Long Beach 6 California		DATE WORK ACCOMPLISHED 5/10/47	
7. DESCRIPTION OF WORK ACCOMPLISHED IN ACCORDANCE WITH PART 19 OF THE CIVIL AIR REGULATIONS AND ITS ASSOCIATED CIVIL AERONAUTICS MANUAL 18. (If more space is needed, continue on reverse, or attach separate sheets bearing aircraft identification mark)					
1. Replaced left wing & float with factory type parts. 2. All workmanship and material used in accordance with C.A.M.-18..					
I CERTIFY THAT THE ABOVE STATEMENTS ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.					
SIGNATURE OF SUPERVISING MECHANIC <i>John B. Barnard</i>		CERTIFICATE NUMBER AND RATING HFE M 106274		DATE 5/10/47	
TO BE COMPLETED BY CAA REPRESENTATIVES					
<input checked="" type="checkbox"/> APPROVED	SIGNATURE OF DESIGNER <i>J. J. Conway</i>	NUMBER 664	DATE 5/10/47		
<input type="checkbox"/> REJECTED	SIGNATURE OF INSPECTOR <i>Jack A. Bollinger</i>	<input checked="" type="checkbox"/> ACCEPTED	DATE 10-6-47		
<input type="checkbox"/> FORWARDED FOR ENGINEERING APPROVAL		<input type="checkbox"/> REINSPECTED			

FAA AIRCRAFT REGISTRY
CAMERA NO. 4 DATE: 2/16/82

DEPARTMENT OF COMMERCE
CIVIL AERONAUTICS ADMIN.
OCT 15 4 00 PM '82
MAIL ROOM-2
WASHINGTON

FORM ACA-337 (11-7-46)		DEPARTMENT OF COMMERCE CIVIL AERONAUTICS ADMINISTRATION		3ST BUREAU NO. 41-4032-1 APPROVAL EXPIRES DECEMBER 31, 1948	
REPAIR AND ALTERATION FORM (AIRCRAFT, PROPELLERS, ENGINES, INSTRUMENTS)					
<p>INSTRUCTIONS - This form must be filled out in duplicate each time a major repair and/or alteration is made of an aircraft, propeller, engine, or instrument, as follows:</p> <p>(A) For an Aircraft - Complete items 1, 2, 3a, 4, 5, 6, and 7 and submit to CAA representative for approval.</p> <p>(B) For a Component Installed in an Aircraft - Complete items 1, 2, 3(b, c, or d, whichever is applicable), 4, 5, and 6, and submit as described in (A) above.</p> <p>(C) For a Spare Component - Complete items 3(b, c, or d), 5, and 6, and submit to CAA representative for approval. When approved, retain both copies of this form with the component until installation on an aircraft. At that time, items 1, 2, and 4 must be completed by the installing agency, which will then forward forms as described in (A) above.</p>					
1. AIRCRAFT	MAKE Grumman	MODEL JRF-6B	SERIAL NO. 1161	CAA IDENTIFICATION MARK HC 95467	
2. OWNER	NAME (First, middle, last) Kenneth F. Brown		ADDRESS (Street and number, city, zone, and state) 1320 Gaviota Ave. Long Beach 4, California		
3. FILL IN INFORMATION IN THIS ITEM ONLY FOR THE UNIT REPAIRED AND/OR ALTERED					
UNIT	MAKE	MODEL	SERIAL NO.	NATURE OF WORK (Check)	
				MAJOR REPAIR	MAJOR ALTERATION
a. AIRCRAFT	(As described in item 1 above)				<input checked="" type="checkbox"/>
b. PROPELLER					
c. ENGINE					
d. INSTRUMENT	TYPE AND MANUFACTURER				
The following items are to be completed by repair or alteration agency. However, in the case of a spare component, item 4 will not be completed until such component is installed in an aircraft. At this time, item 4 will be completed by the installing agency, if applicable.					
4. AIRCRAFT	EMPTY WEIGHT (Pounds) 5964.5	EMPTY CENTER OF GRAVITY (Inches from datum) 22.54	USEFUL LOAD (Pounds) 2035.5		
*AFTER the repairs and/or alterations described below were made.					
5. KIND OF AGENCY WHICH MADE REPAIRS AND/OR ALTERATIONS (Check)					
<input type="checkbox"/> MANUFACTURER		<input checked="" type="checkbox"/> APPROVED REPAIR STATION NO. 4011		<input type="checkbox"/> CERTIFIED MECHANIC	
(SPECIFY)					
AGENCY	NAME Long Beach Aeromotive	ADDRESS (Street and number, city, zone, and state) 2735 East Spring St. Long Beach 8 California		DATE WORK ACCOMPLISHED 4/17/47	
7. DESCRIPTION OF WORK ACCOMPLISHED IN ACCORDANCE WITH PART 19 OF THE CIVIL AIR REGULATIONS AND ITS ASSOCIATED CIVIL AERONAUTICS MANUAL 18. (If more space is needed, continue on reverse, or attach separate sheets bearing Aircraft Identification mark)					
<p>Installed seats as per enclosed drawings #21 and stress analysis. Complied with Mandatory Note 4 of AD-654-1 Complied with Note 1 & 8 of Aircraft Spec. A-654-3</p>					
<p>APPROVED, SUBJECT TO INSPECTION AIRCRAFT ENG. BRANCH, REGION 8 Engineer <i>[Signature]</i> Date MAY 2 1947</p>					
I CERTIFY THAT THE ABOVE STATEMENTS ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.					
<i>[Signature]</i> SIGNATURE OF SUPERVISING MECHANIC		HFE M106284 CERTIFICATE NUMBER AND RATING		3/30/47 DATE	
TO BE COMPLETED BY CAA REPRESENTATIVES					
<input checked="" type="checkbox"/> APPROVED	SIGNATURE OF DESIGNEE <i>[Signature]</i>		NUMBER 4-17-47	DATE	
<input type="checkbox"/> REJECTED	SIGNATURE OF INSPECTOR <i>[Signature]</i>		<input type="checkbox"/> ACCEPTED	DATE	
<input type="checkbox"/> FORWARDED FOR ENGINEERING APPROVAL			<input type="checkbox"/> REINSPECTED	June 30, 1947	

PAGE 1

WEIGHT DATA

FORM NO. 6-270-3

1. AIRCRAFT Grobman MODEL G216 SERIAL 1161 C 95467

2. LEVELING MEANS Leveling lugs on right side of pilots compartment.

3. DATUM Wing Leading edge at fuselage

4. DATUM IS LOCATED: 10.0 INCHES (FORWARD) (1/1) OF MAIN WHEEL CENTER LINE.

5. DISTANCE BETWEEN CENTERLINE OF MAIN WHEELS AND CENTER LINE OF TAIL WHEEL: 120 INCHES.

6. WEIGHING AS WITH (A) RESIDUAL OIL: _____ (B) 15 GALS. AT 18 °F

	SCALE READING	TARE	NET WEIGHT
7. RIGHT WHEEL	<u>2795</u>	<u>5</u>	<u>2790</u>
8. LEFT WHEEL	<u>2670</u>	<u>5.5</u>	<u>2664.5</u>
9. TAIL WHEEL	<u>707</u>	<u>85</u>	<u>622</u>
10. TOTAL NET WEIGHT			<u>6076.5</u>

11. EQUIPMENT INSTALLED AT TIME OF WEIGHING:

ITEM	ITEM NO.	AREA	WEIGHT	MOMENT
<u>109</u>	<u>225</u>			<u>0</u>
<u>201</u>	<u>210</u>	<u>Hays Industries wheels #13</u>		
<u>101</u>	<u>217</u>	<u>2 Special bench type seats</u>		
<u>102</u>	<u>223</u>	<u>Air radio transmitter &</u>		
<u>103</u>	<u>202</u>	<u>Receiver</u>		
<u>108</u>	<u>226</u>			
<u>107</u>				
<u>301</u>				
<u>104</u>				
<u>105</u>				
<u>215</u>				
<u>220</u>				

WEIGHTS WITNESSED BY: J.F. Conway 664 DATE 4-17-47
 (OVER)

FORM NO. 6-270-3

BALANCE COMPUTATION

12. EMPTY CENTER OF GRAVITY OF THE AIRCRAFT, AS WEIGHED:
 (ITEM 5) 120 x (ITEM 9) 622 = 12.25 RELATIVE TO MAIN WHEELS
 (ITEM 10) 6077

13. EMPTY CENTER OF GRAVITY, RELATIVE TO DATUM:
 (ITEM 12) 12.25 + (ITEM 4) 10.0 = 22.25

14. IF OTHER THAN RESIDUAL OIL WAS WEIGHED, MAKE FOLLOWING COMPUTATION:

	ARM	WEIGHT	MOMENT
AIRCRAFT	(ITEM 13) <u>22.25</u>	(ITEM 10) <u>6077</u>	<u>135395</u>
OIL	(ITEM 6B) <u>48</u>	<u>-112.5</u>	<u>-900</u>
		(A) <u>5964.5</u>	(B) <u>134495</u>
(B) <u>134495</u>	= (C) <u>22.54</u>	EMPTY CENTER OF GRAVITY OF AIRCRAFT.	
(A) <u>5964.5</u>			

15. MOST FORWARD LOADING: _____ APPROVED FORWARD LIMIT: _____

ITEM	ARM	WEIGHT	MOMENT
AIRCRAFT	(13 OR 13C)	(10 OR 13A)	
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
	(A)	(B)	

(B) _____ = _____ MOST FORWARD "C. G." LOCATION.
 (A) _____

16. MOST REARWARD LOADING: _____ APPROVED REARWARD LIMIT: _____

ITEM	ARM	WEIGHT	MOMENT
AIRCRAFT	(13 OR 13C)	(10 OR 13A)	
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
	(A)	(B)	

(B) _____ = _____ MOST REARWARD "C. G." LOCATION.
 (A) _____

APPROVED BY J.F. Conway 664 DATE 4-17-47

WASHINGTON
 MAIL ROOM-2
 APR 9 3 04 PM '47

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LONG BEACH AEROMOTIVE

C.A.A. APPROVED REPAIR STATION
PHONE 499-44 2735 EAST SPRING STREET
LONG BEACH 6, CALIFORNIA

AIRCRAFT AND ENGINE OVERHAUL • MAINTENANCE • MODIFICATION

NC 95467

GRUMMAN G-21A SERIAL NO. 1161

LOADING SCHEDULE

REPORT DATE: 4-17-47

PREPARED BY: J. Barnard

APPROVED BY: J. J. Conroy, 664
Civil Aeronautics Administration

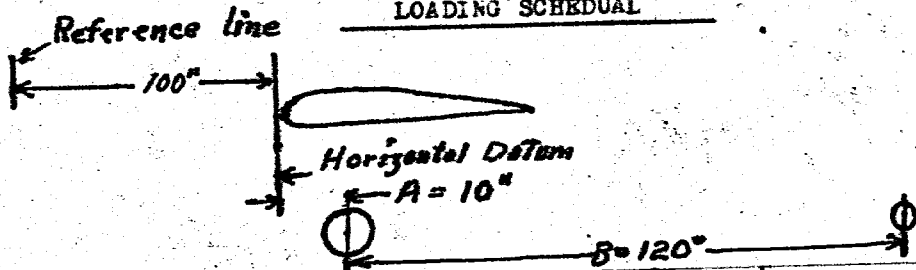
APR 17 1947
10-5
23

10

FAA AIRCRAFT REGISTRY
CAMERA NO. 4 DATE: 2/16/82

MAIL ROOM - 2
WASHINGTON
FEB 9 3 04 PM '82

LOADING SCHEDULE



	Scale Reading	Tare	Symbol	Net Weight
Right Wheel	2795	5	R	2790
Left Wheel	2670	5	L	2665
Tail Wheel	707	85	T	622
Total Weight			W	6077

$$\frac{T \times B}{W} \div 100 - A = \frac{(622) \times (120)}{(6077)} \div (100 \div 10) = 122.25$$

Corrected Weight & Balance

Items	Weight	Arm	Moment
Aircraft as weighed	6077.0	122.25	742913
Oil 15 Gal.	112.5	108	12150
Empty Weight	5964.5		730763

Sub-Total Weight & Bal. Index Units

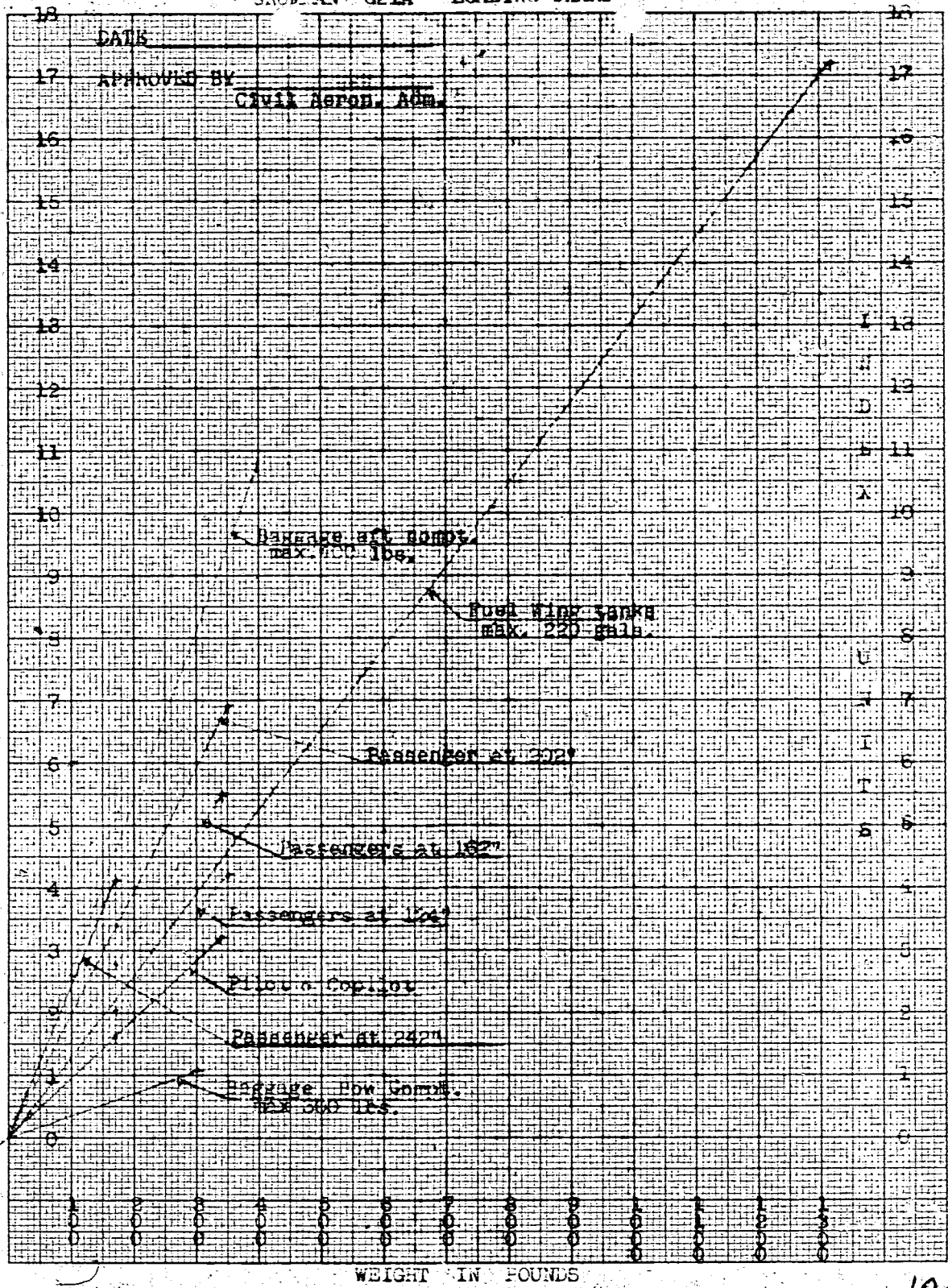
Items	Weight	Arm	Index Units
Empty Weight	5964.5		73.06
Full Oil	112.5	108	1.21
Sub Total	6077.0		74.29

EXAMPLE

	Weight	Index Unit
Sub Total	6077	74.29
Pilot	170	2.61
Fuel (120 Gal)	720	9.40
3 Passengers	340	4.10
2 Passengers	340	5.50
1 Passenger	170	3.4
Baggage	183	4.6
	8000	103.10

101 - A

GRUMMAN G21A LOADING CHART



KEUFFEL & ESSER CO., N. Y. NO. 258-170
 10 x 10 to 16 x 16 inch, 5th line reprinted
 MADE IN U.S.A.

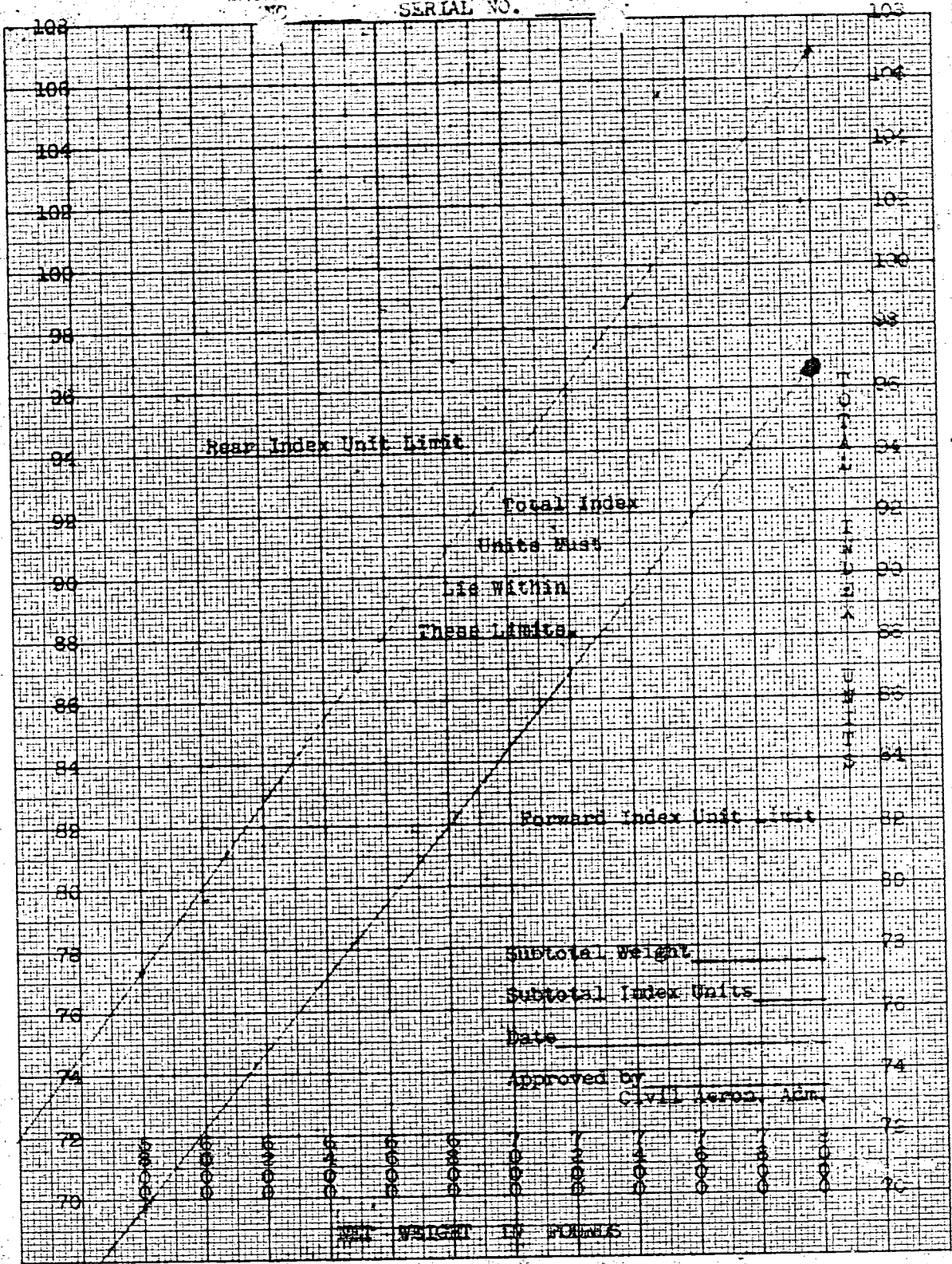
WEIGHT IN POUNDS

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FAA AIRCRAFT REGISTRY

CAMERA NO. 4 DATE: 2/16/82

GRUMMAN G-21A LOADING SCHEDULE
 NO. SERIAL NO.



KEUFFEL & ESSER CO., N. Y. 90, 95-17C
 57 7/16 to the 1 inch, 5th line
 MADE IN U.S.A.

WASHINGTON
MAIL ROOM - 2
FEB 9 3 04 PM '82
U.S. AIR FORCE