

Form ACA-837 (11-48)		DEPARTMENT OF COMMERCE CIVIL AERONAUTICS ADMINISTRATION		Form Approved Budget Bureau No. 41-R052.2	
REPAIR AND ALTERATION FORM (AIRCRAFT, PROPELLERS, ENGINES, INSTRUMENTS)					
(SEE REVERSE SIDE OF THIS FORM FOR INSTRUCTIONS)					
1. AIRCRAFT	MAKE <b>Republic</b>	MODEL <b>RD-3</b>	SERIAL NO. <b>384</b>	NATIONALITY AND REGISTRATION MARK <b>US N 6193W</b>	
2. OWNER	NAME (First, middle, last) <b>John E. Suchy</b>		ADDRESS (Street and number, city, zone, and State) <b>5215 So. Sangamon Chicago, Ill.</b>		
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>X</b>
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		EMPTY WEIGHT (Pounds)*		EMPTY CENTER OF GRAVITY (Inches from datum)*	
*AFTER the repairs and/or alterations described below were made.		<b>2209</b>		<b>121.27</b>	
				USEFUL LOAD (Pounds)*	
				<b>Normal 941</b>	
				<b>Utility 601</b>	
5. KIND OF AGENCY WHICH MADE REPAIRS AND/OR ALTERATIONS (Check)					
<input type="checkbox"/> MANUFACTURER <input checked="" type="checkbox"/> APPROVED REPAIR STATION <b>1346</b> (Specify) <input type="checkbox"/> CERTIFIED MECHANIC					
6. AGENCY	NAME <b>Will County Airport Repair Depot</b>		ADDRESS (Street and number, city, zone, and State) <b>Steger, Ill.</b>		DATE WORK ACCOMPLISHED <b>May 9, 1952</b>
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.)					
<b>Installed Grimes Landinglight model 3602-A-3 in left wing. See attachments for installation information and weight and balance.</b>					
APPROVED, SUBJECT TO INSPECTION AIRCRAFT ENGINEERING BRANCH C. A. A. - REGION 3 BY <i>John R. Hille</i> DATE <i>May 28, 1952</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>Waynard W. Mason</i> (Signature of supervising mechanic)		<b>A 104500</b> (Certificate number and rating)		<b>5/9/52</b> (Date)	
TO BE COMPLETED BY CAA REPRESENTATIVES					
<input checked="" type="checkbox"/> APPROVED	DESIGNEE'S SIGNATURE <i>August Maross</i>		NO. <b>3341</b>	DATE <b>6-14-52</b>	
<input type="checkbox"/> REJECTED	CAA AGENT SIGNATURE <i>Albert L. Mueller</i>		<input checked="" type="checkbox"/> ACCEPTED <input type="checkbox"/> REINSPECTED	DATE <b>6-23-52</b>	

## 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  
JAN 2 12 20 PM '86  
CERTIFICATE SECTION

Weight before light installation	2601	121.27	266,825
Landing light and installation	8	121.5	872
			267,697

267,697  
2609

121.27 New empty

Loading Schedule

Normal Category

Pilot	Passengers		Max. Fuel U.S.Gals.	Max. Baggage Pounds
	Front seat	Rear seat		
1	1	2	39	0
1	1	1	67	0
1	0	2	67	0
1	0	1	73	129
1	0	0	73	200

Utility Category

Pilot	Passengers		Max. Fuel U.S.Gals.	Max. Baggage Pounds
	Front seat	Rear seat		
1	1	0	33	0
1	0	1	33	0
1	0	0	65	0

## Normal Category

	Most Forward C.G.			Most Aft C.G.		
	weight	Arm	moment	weight	arm	moment
Weight empty	2209.0	121.27	267,897	2209.0	121.27	267,897
Pilot	170.0	62.0	10,540	170.0	62.0	10,540
Pass. Front	170.0	62.0	10,540			
Pass. Rear 2	340.0	96.0	32,640			
Oil	22.5	136.0	3,060	22.5	136.0	3,060
Fuel-Min.17.9 gal.	107.4	116.0	12,458	107.4	116.0	12,458
Wheel up Diff.						2,820
Total	3018.9	111.66	337,135	2508.9	118.28	296,775

Approved Forward C.G.Limit 111.5 inches aft of datum

Approved Aft C.G.Limit 118.3 inches aft of datum

## Utility Category

	Most Forward C.G.			Most Aft C.G.		
	weight	Arm	moment	Weight	Arm	moment
weight empty	2209.0	121.27	267,897	2209.0	121.27	267,897
Pilot & Chute	190.0	62.0	11,780	190.0	62.0	11,780
Pass.&Chute Front	190.0	62.0	11,780			
Oil	22.5	136.0	3,060	22.5	136.0	3,060
Fuel min.17.9 gal.	107.4	116.0	12,458	107.4	116.0	12,458
Wheel up Diff.						2,820
Total	2718.9	112.89	306,975	2528.9	117.83	298,015

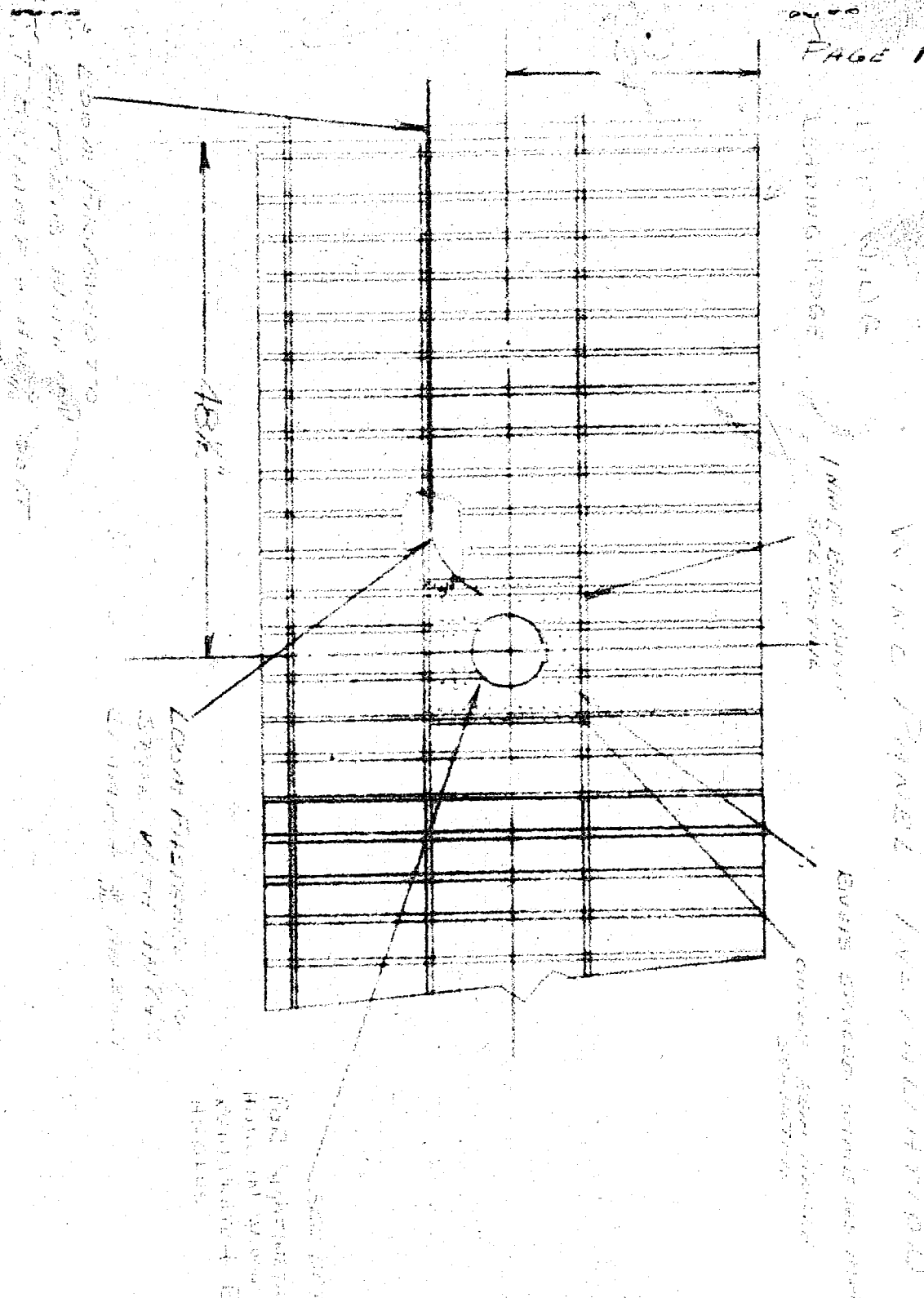
Approved Forward C.G. Limit 111.5 inches aft of datum

Approved aft C.G. Limit 118.3 inches aft of datum

Installation information for Grimes model 3602-A-3 landing light in Republic RC-3 N6193W. The landing light is installed in the left wing panel 24" from the leading edge and 48  $\frac{1}{2}$ " from the butt rib. (for detail see Drawing on page 1). The hole was cut in the panel and a doubler plate and Reinforcing angles were riveted to the skin. The reinforcing angles went from the front spar to the intermediate spar and are fastened by AN 3/16" bolts. For details of the reinforcing plate, reinforcing angles, and the hole in the skin see pages 2, 3 & 4. The retainer ring for the light was riveted to the skin and rein. plate and the light was fastened in place with 6/32 x 5/8 CSK. machine screws which were furnished by the manufacturer. The wires were made into a loom and were wrapped with plastic tape. The loom was fastened to the intermediate spar at the light with a AN 742 rubber lined clamp and fastened to the spar with a AN 3/16" bolt through an existing hole in the spar. The loom was fastened to the butt rib with a AN 788 rubber lined clamp and a AN 3/16" bolt. The ground wire for the light is fastened to a 3/16" bolt at the fuselage skin. The loom then goes through a rubber grommet at the fuselage skin and bulkhead. It is then clamped to the fuselage skin with AN 742 clamps (See detail drawing on page 5 for the loom installation in fuselage). The switches and fuses are located on the left door post just below the instrument panel. (for wiring diagram see page 6). The wire sizes were secured from Grimes and the sizes of wire and electrical load chart in page 7.

	Index to Drawings.
Page 1	Wing Panel Installation
Page 2	Detail of Wing Panel Installation
Page 3	Detail of Reinforcing plate and Angles
Page 4	Detail of hole in wing skin
Page 5	Hull installation of wiring loom
Page 6	Wiring Diagram
Page 7	Electrical load Chart and wire sizes

PAGE 1



LEADING EDGE  
TO  
TRAILING EDGE  
7-1/2 INCHES

LEADING EDGE  
TO  
TRAILING EDGE  
3-1/2 INCHES

FOR INFORMATION  
ONLY - NO  
REQUIREMENT FOR  
REVISION

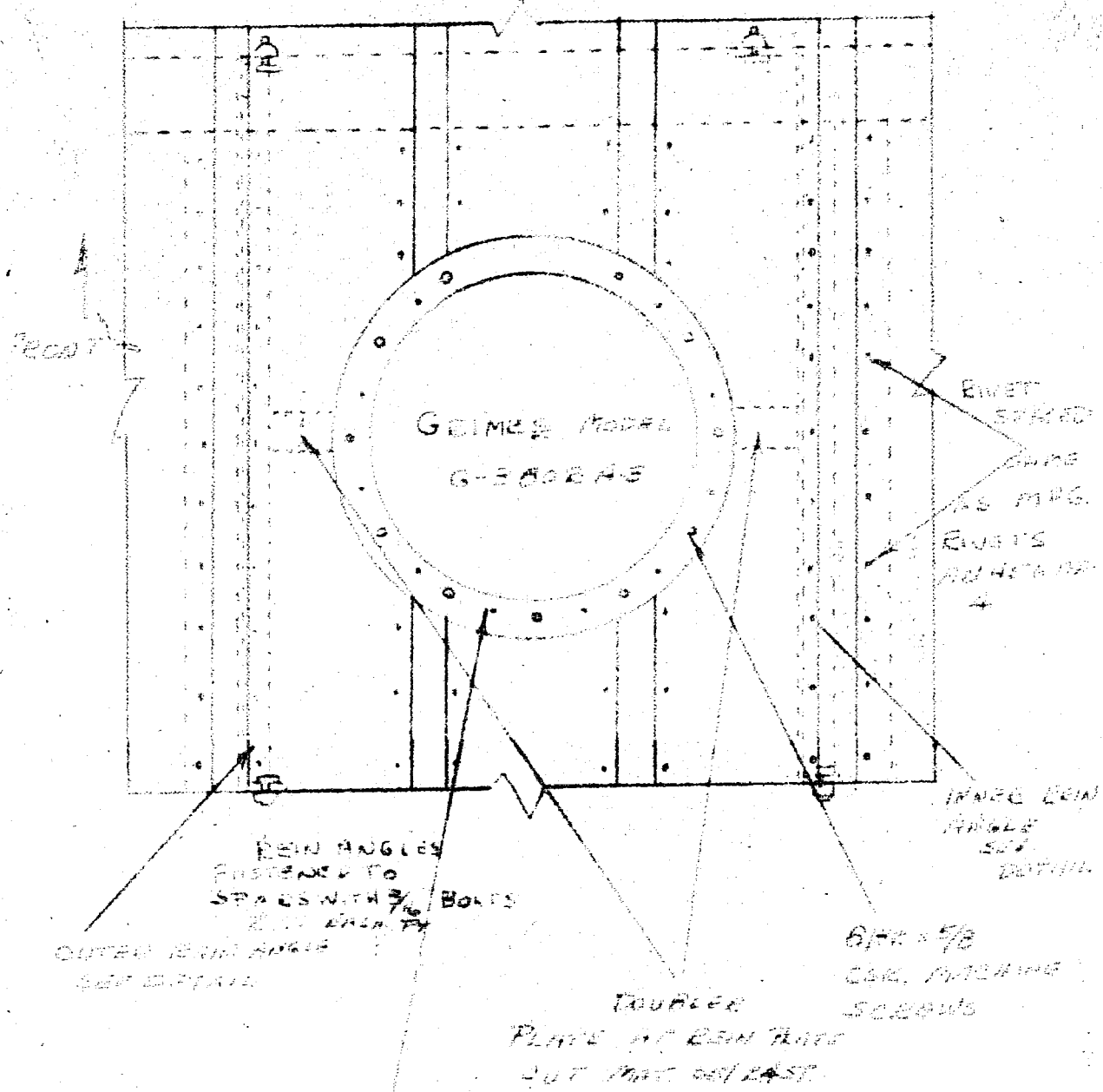
1-1/2 INCH  
LEADING EDGE

1-1/2 INCH  
TRAILING EDGE

LEADING EDGE TO TRAILING EDGE  
3-1/2 INCHES

DETAIL OF WING PANEL

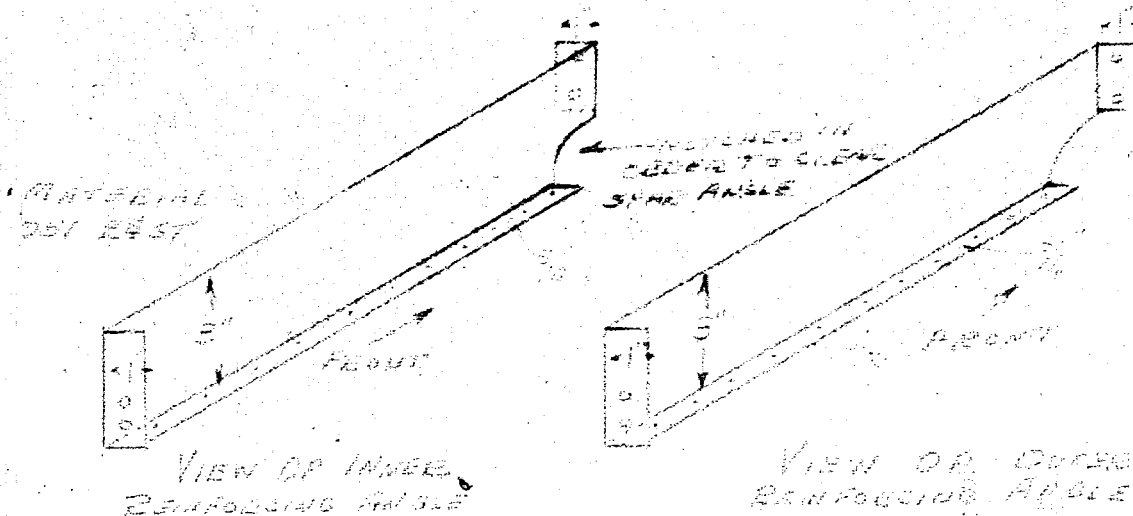
6-1-80  
PAGE 2



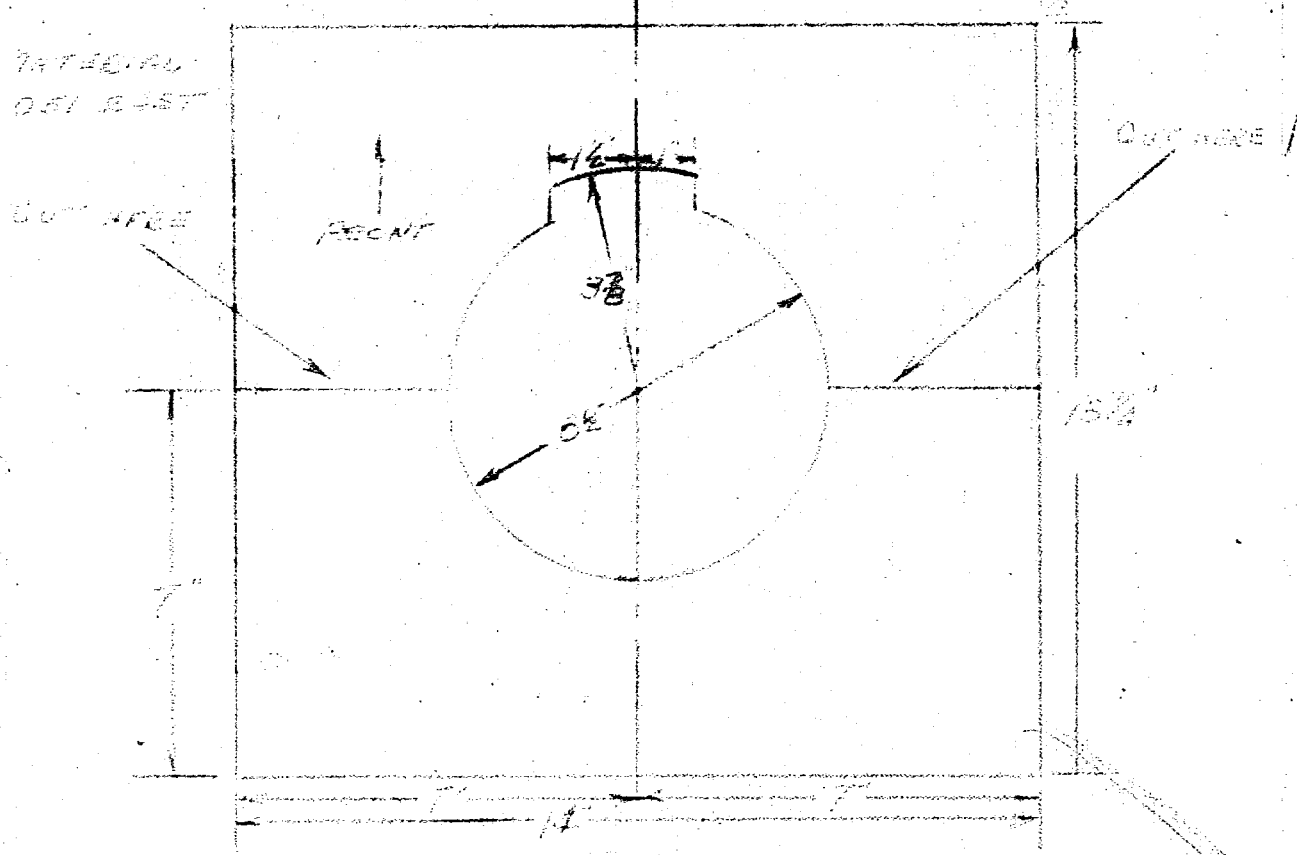
BETWEEN BAND  
RIVETED TO REIN PLATE  
1 SKIN WITH AN 226-4 NO RIVETS

PAGE 3

DETAIL OF LAM. PLATE + ANGLE

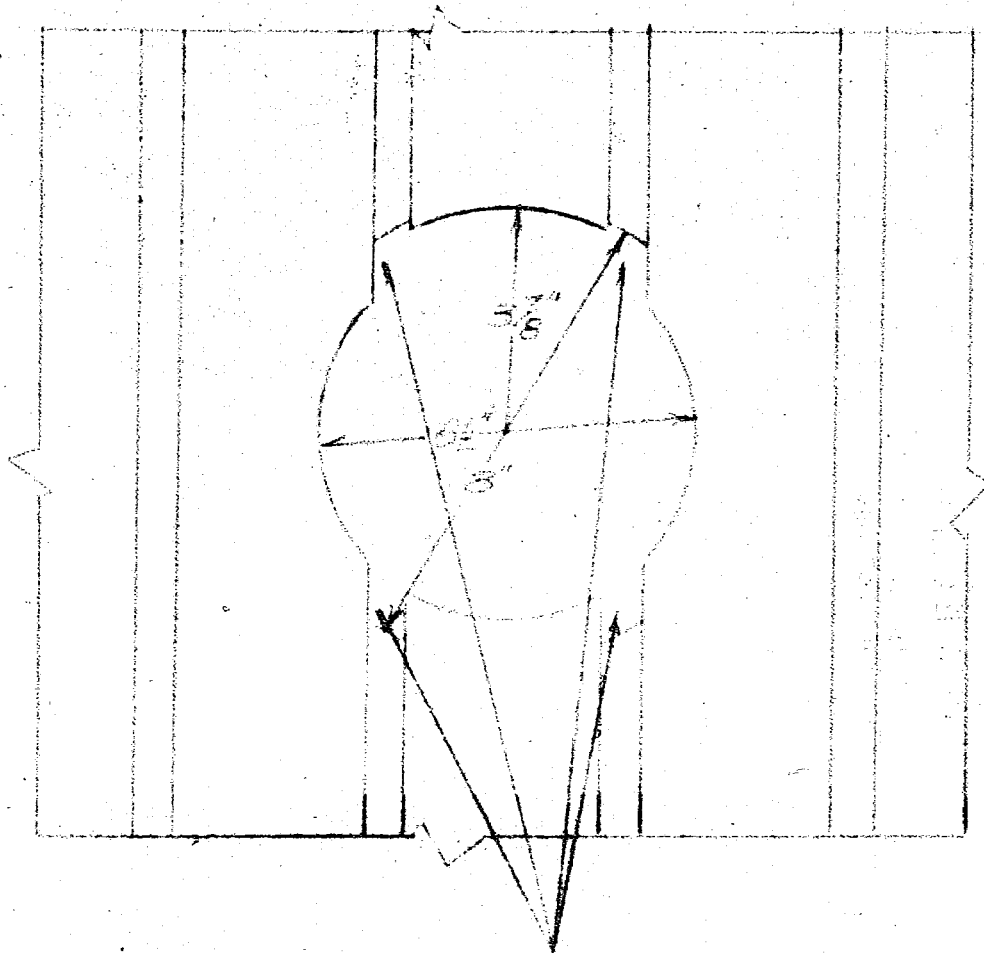


DETAIL OF REINFORCING PLATE

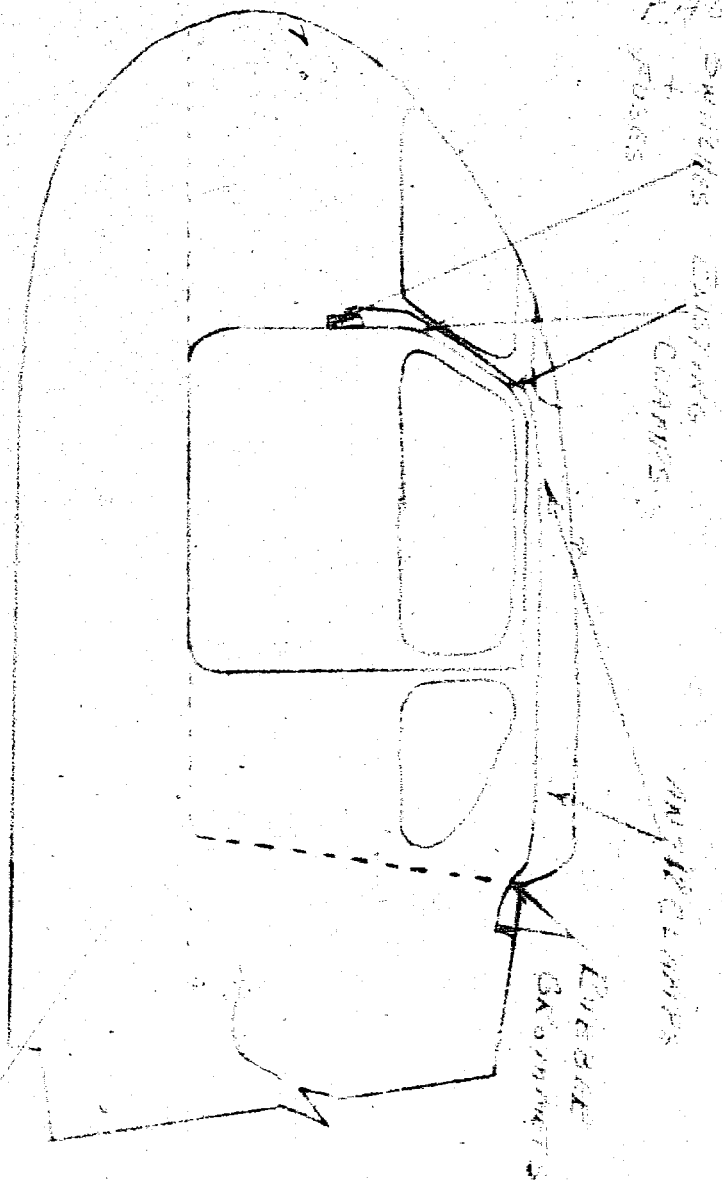




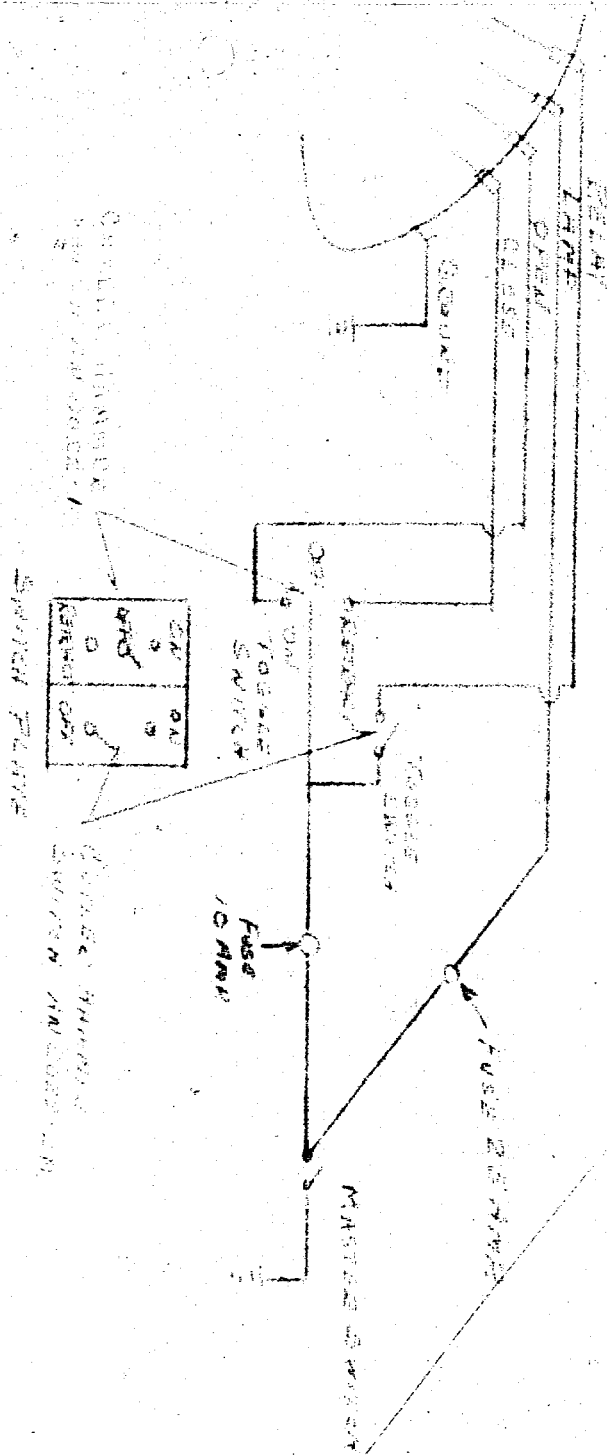
DETAIL OF HOLE IN WING SKIN



THIS PART REMOVED IN ORDER  
TO ALLOW LIGHT TO FIT  
FLUSH



PAGE 6



Wiring Diagram

## Electrical Load Chart And Wire Sizes

PAGE 2

		2100 amps. per hr.
35 Amp. 12Volt Generator		
Battery Auto-lite CF-129 Form 221		
Maximum Load ( 1 hr. flight)		
		Amp. hr. 20 hr. rate 60 amp.
		Amps. for 20 min. 76 amps.
	Rating	Total load
Landing light ( 5 min. operating per hr.	21.0 amp.	105.0 amp.
Radio # 3.5 receiver for 55 min.)	3.5	192.5
( 5.3 Transmitter for 5 min.)	5.3	26.5
Navigation lights (continuous)	4.3	258.0
Panel lights (continuous) (3 ea.)	3.0	180.0
Gauges ( fuel and oil pressure continuous) 3	1.1	66.0
***		
34.7		828.0

Total load night operation  
Available load

828 Amps.  
2100 Amps.

## Wire Size.

Ground wire	# 10
Lamp Wire	# 10
Relay Wire	# 16
Open Wire	# 16
Close Wire	# 16