



# Attachment 4

## Weight and Balance

FLYING BOAT, INC.  
ROUTINE/NON-ROUTINE WORK CARD

FORM:  
CF. 001

0014					KRIL			N 2969	
CARD NO.	EST. M/H	ACTUAL M/H	TYPE CK.	ATA	STA	GEN REF. NO.	GEN. CARD. NO.	DATE 7-22-03	
ORIGINATOR JPC	DISCREPANCY Weights and Balance Need to BE PERFORM DUE TO TIME CONSTRAINT								
RII									
<input checked="" type="radio"/> YES	NO								
PARTS REQUIRED: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		PARTS ORDERED: YES <input type="checkbox"/> NO <input type="checkbox"/>		PARTS RECEIVED: YES <input type="checkbox"/> NO <input type="checkbox"/>		REQUISITION NO.			
CORRECTIVE ACTION Performed weights and balance on Aircraft N 2969 as per Form JW-1									
P/N ON			S/N ON						
P/N OFF			S/N OFF						
ACCOMP. SIGN. 					INSP SIGN. 			DATE 7-22-03	

188

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**MEMORANDUM**

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**DATE:** 07-25-03

**TO:** DIRECTOR OF OPERATIONS

**FROM:** DIRECTOR OF QUALITY CONTROL

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AIRCRAFT N2969 WAS WEIGHED ON 23<sup>TH</sup> OF JULY 2003. THE NEW WEIGHTS AND INDEX FOR WEIGHT AND BALANCE PURPOSE IS ATTACHED. IF YOU HAVE ANY FURTHER QUESTIONS PLEASE DO NOT HESITATE TO CALL ME.

THANK YOU



LUIS R. CARRILLO

DIRECTOR OF QUALITY CONTROL

ITEM	WEIGHT	H. ARM	INDEX
AIRCRAFT EMPTY (Includes Unusable Fuel and Oil)	9013	226.8	2044148.4
PILOT	400	126.0	50000
BASIC WEIGHT	9413	222.47	2094148.4
BASIC INDEX	9413	222.5	209.4

BASIC WEIGHT AND BASIC INDEX

TABLE 5-1

LOADING CHART DATUM - HULL STATION "0" →

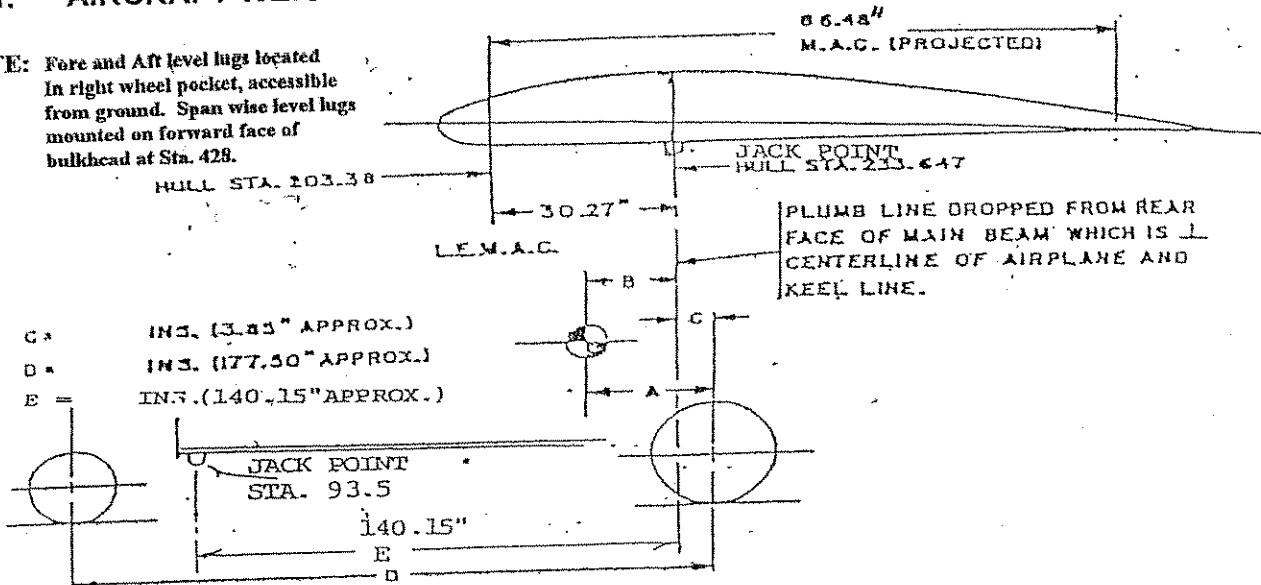
PASSENGERS AT 170* EACH			Comp't	Arm
INDEX	UNITS	ROW		
1	PASS:2	PASS.	A	70
2.1		C - 1	B	125
2.8	5.6	FC - 1	C	155
3.2	6.4	FC - 2	D	188
3.6	7.2	FC - 3	E	211
			F	250
4.7	9.4	RC - 1	G	278
5.4	10.8	RC - 2	H	317
6.1		T - 1	I	360
			J	400

↓ 20"

PASSENGER AND CARGO LOADING DIAGRAM  
TO SEAT CONFIGURATION  
TABLE 5-2

31. AIRCRAFT WEIGHING DATA FORM (C.F. 040)

NOTE: Fore and Aft level lugs located in right wheel pocket, accessible from ground. Span wise level lugs mounted on forward face of bulkhead at Sta. 428.



LOCATION	ARM	SCALE READING/TARE	MOMENT
Right - W/R	233.647	4312 /	1007485.8
Left - W/L	233.647	4262 /	995803.5
Nose - W/N	93.5	439 /	41046.5
Total:		9013	

A = C.G. inches forward of centerline Main Wheel -  $\frac{W/N \times D/(E)}{W/R + W/L + W/N \text{ (corrected)}}$  (+ 3.85) = 10.68

B = C.G. inches forward of Rear Face of Main Beam - A - C = 6.83

C.G. inches aft of Reference Datum - 233.65 - B = 226.82

	WEIGHT	ARM	MOMENT
Airplane as Weighed	9013	226.82	2044335.8
Additional Trapped Fuel in Flight		220	
Aircraft Empty Weight	9013	226.82	2044335.8

NOTE: Empty Weight C. G. = "Aft of Reference Datum or Forward of Hull"

Sta. 233.65 (Rear Face of Main Wing Beam) =  $\frac{-203.38 \times 100}{86.48}$  = % M.A.C.

AIRCRAFT N 2969 S/N 27 WEIGHED BY: CURTIS YGAGER DATE: 7/23/03

WITNESSED BY: \_\_\_\_\_ CALIBRATION DATE & S/N OF SCALES:  
 4/20/03 317617

WEIGHED IN HANGAR LEVEL ATTITUDE

FUEL-DRAINED TO PICK-UPS

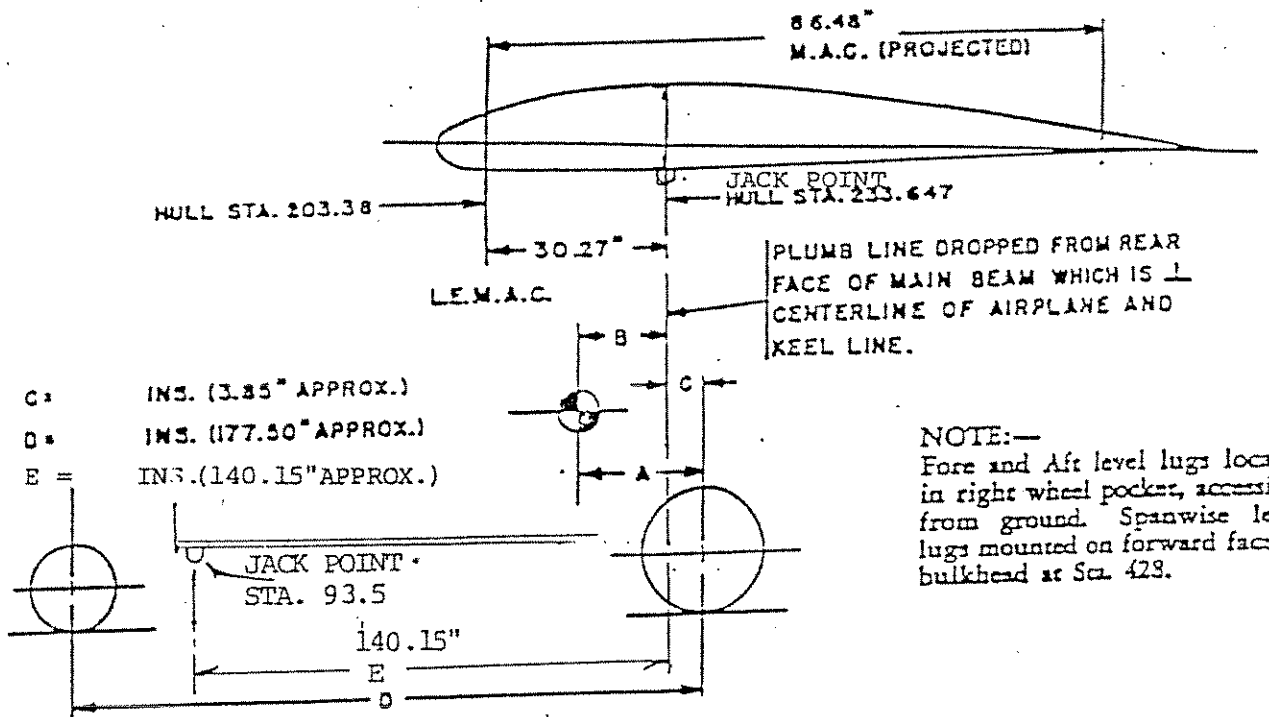
REVERE ELECTRONIC SCALES s/n. 317617

calibrated; 4/20/03

AIRPLANE WEIGHING DATA:

DATE WEIGHED - 7/23/03

N 2969



NOTE:—  
Fore and Aft level lugs located in right wheel pocket, accessible from ground. Spanwise level lugs mounted on forward face of bulkhead at Sta. 423.

REACTIONS	SCALE READING	TARE	CORRECTED READING
Right — W <sub>R</sub>	4312	@233.647	1007485.8
Left — W <sub>L</sub>	4262	@233.647	995803.5
Nose — W <sub>N</sub>	439	@93.5	41046.5
	<u>9013</u>		

A = C.G. inches forward of centerline Main Wheels =  $\frac{W_N \times E}{W_R + W_L + W_N \text{ (corrected)}} + 3.85 = 10.68$

B = C.G. inches forward of Rear Face Main Beam = A - C = 6.83

C.G. inches aft of Reference Datum = 233.65 - B = 226.82

CORRECTION FOR MISSING ITEMS

	WEIGHT	ARM	MOMENT
Airplane as Weighed	9013	226.82	204435.8
Additional Trapped Fuel in Flight		220	

Empty Weight  
 Empty Weight C.G. = " Aft of Reference Datum or " Forward of Hull  
 Sta. 233.65 (Rear Face of Main Wing Beam) =  $\frac{-203.38 \times 100}{86.48}$  % M.A.C.

WEIGHED BY:  
 Witnessed:

A/c weighed in closed HANGAR using Revere Electronic Scales, s/n 317617 next CALIBRATION due 4/20/04  
 CURT Yable A/P

# Scalemen of Florida, Inc.

"the weigh of the future!"

3650 Hacienda Blvd., Suite A Ft. Lauderdale, FL 33314  
 Phone (954) 370-5700 (800) 633-2377 Fax (954) 370-8800  
 www.scalemen.com

## Scale Inspection and Calibration Report

Customer: <u>Hop of Jet</u>		Contact: _____	
Address: <u>5340 NW 21 Ave Hanger #6</u> <u>Ft Lauderdale, FL 33307</u>			
Service Report #:	Location/Room#:	Temp: <u>70°F</u>	RH: <u>65%</u>
Manufacturer: <u>GSE</u>	System ID #: <u>Yellow #128987</u>		
Model Number: <u>350</u>	Date Cal: <u>2-11-03</u>	Date Due: <u>2-11-04</u>	
Serial Number: <u>317617</u>	Report#	Page <u>2</u> of <u>3</u>	
Capacity/Resolution: <u>50000/1/6</u>	Calibrated By: <u>[Signature]</u>		

### Calibration Status and Services Performed

Initial Observation:  In Tolerance  Out of Tolerance  Inoperative

Notes/Comments: \_\_\_\_\_

NIST Handbook 44 Procedure Used: N.1.1 N.1.2 N.1.3 N.1.4 N.1.7 N.1.9

*Test Press*

Test	Applied Weight	Error Before	Error After	Pass/Fail
1	10000 16	0	0	PASS
	20000 16	+10	+10	PASS
	30000 16	+20	+20	PASS
	40000 16	+30	+30	PASS
	50000 16	+30	+30	PASS

### Weight or Mass Standard Traceability Information

ID Number	Description	Date Cal	Date Due	NIST Traceability Number
<u>W01947.com X</u>	<u>WF-110 # 25516</u>	<u>1/2003</u>	<u>1/2004</u>	<u>FL-01338</u>

The above instrument or device has been calibrated in accordance with the directives and procedures of NIST Handbook 44. Calibration was performed using standards directly traceable to NIST through the Florida Department of Agriculture and Consumer Services. Evidence of traceability will be provided upon request.

[Signature]  
Technician Signature



South Florida Manufacturer's Association

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 Certificate # 199

SFI Form# 010-00

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## Scale Inspection and Calibration Report

Customer: <u>HOP a Test</u>	Contact: _____
Address: <u>5340 NW 21 Ave Hanger #60</u> <u>FT Lauderdale, FL - 33307</u>	
Service Report #:	Location/Room#: _____ Temp: <u>75°F RH: 65%</u>
Manufacturer: <u>GSE</u>	System ID #: <u>Red - #129282</u>
Model Number: <u>350</u>	Date Cal: <u>2-11-03</u> Date Due: <u>2-11-04</u>
Serial Number: <u>317617</u>	Report# _____ Page <u>1</u> of <u>3</u>
Capacity/Resolution: <u>50000 / 1 lb</u>	Calibrated By: <u>[Signature]</u>

### Calibration Status and Services Performed

Initial Observation:  In Tolerance  Out of Tolerance  Inoperative

Notes/Comments: \_\_\_\_\_

NIST Handbook 44 Procedure Used: N.1.1 N.1.2 N.1.3 N.1.4 N.1.7 N.1.9  
TEST PASS

Test	Applied Weight	Error Before	Error After	Pass/Fail
1	10000 lb	-10	-10	PASS
	20000 lb	-20	-20	PASS
	30000 lb	-20	-20	PASS
	40000 lb	-20	-20	PASS
	50000 lb	-10	-10	PASS

### Weight or Mass Standard Traceability Information

ID Number	Description	Date Cal	Date Due	NIST Traceability Number
<u>Weight Tray</u>	<u>WI 110 #2516</u>	<u>1/2003</u>	<u>1/2004</u>	<u>FL-01338</u>

The above instrument or device has been calibrated in accordance with the directives and procedures of NIST Handbook 44. Calibration was performed using standards directly traceable to NIST through the Florida Department of Agriculture and Consumer Services. Evidence of traceability will be provided upon request.

[Signature]  
 Technician Signature



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## Scale Inspection and Calibration Report

Customer: <u>Hop A Jet</u>	Contact: _____
Address: <u>5340 NW 21 Ave Hanger #60</u> <u>Ft Lauderdale - FL - 33307</u>	
Service Report #:	Location/Room#: _____ Temp: <u>Nof</u> RH: <u>65%</u>
Manufacturer: <u>GSE</u>	System ID #: <u>Blue # 129261</u>
Model Number: <u>350</u>	Date Cal: <u>2-11-03</u> Date Due: <u>2-11-04</u>
Serial Number: <u>317611</u>	Report# _____ Page <u>3</u> of <u>3</u>
Capacity/Resolution: <u>50000/1/16</u>	Calibrated By: <u>[Signature]</u>

### Calibration Status and Services Performed

Initial Observation:  In-Tolerance  Out of Tolerance  Inoperative

Notes/Comments: \_\_\_\_\_

NIST Handbook 44 Procedure Used: N.1.1 N.1.2 N.1.3 N.1.4 N.1.7 N.1.9

*Test Press*

Test	Applied Weight	Error Before	Error After	Pass/Fail
1	10000 16	-20	-20	PASS
	20000 16	-20	-20	PASS
	30000 16	-30	-30	PASS
	40000 16	-30	-30	PASS
	50000 16	-35	-35	PASS

### Weight or Mass Standard Traceability Information

ID Number	Description	Date Cal	Date Due	NIST Traceability Number
<u>Weights only</u>	<u>WF-110 # 25/16</u>	<u>1/2003</u>	<u>1/2004</u>	<u>FL-01338</u>

The above instrument or device has been calibrated in accordance with the directives and procedures of NIST Handbook 44. Calibration was performed using standards directly traceable to NIST through the Florida Department of Agriculture and Consumer Services. Evidence of traceability will be provided upon request.

[Signature]  
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SFI Form# 010-00