

PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	
CHECKED		
APPROVED		PAGE _____

AIRPLANE FLIGHT MANUAL

MODEL PA-28-180

FAA IDENTIFICATION NO. N7776N

SERIAL NO. 28-5224

THIS DOCUMENT MUST BE KEPT IN AIRPLANE AT ALL TIMES.

FAA APPROVED: Original signed by Walter R. Haldeman \*  
 Walter R. Haldeman  
 Chief, Engineering & Manufacturing Branch  
 Southern Region - - - Atlanta, Georgia

DATE: August 3, 1962

\* FAA APPROVED: Gene Dearing For R  
 Gene Dearing  
 Aerospace Engineer

DATE: August 12, 1964

PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Airplane Flight Manual
CHECKED		Model PA-28-180
APPROVED		PAGE <u>1 of 6</u>

Piper Model PA-28-180

Normal and Utility Categories

AIRPLANE FLIGHT MANUAL

1. Limitations Section The following limitations must be observed in the operation of this airplane:
  - Engine Lycoming O-360-A3A or O-360-A4A
  - Engine Limits Maximum permissible RPM for takeoff, 2475. For all other operations, 2700 rpm, 180 hp, (A/C S/N 28-671 to 1760A).  
For all operations, 2700 rpm, 180 hp, (A/C S/N 28-1571, 1573, 1761 and up).
  - Fuel 91/96 minimum octane aviation fuel.
  - Propeller Sensenich M76 EMM or 76EM8 (S/N 671 to 1760A)  
Sensenich M76 EMMS or 76EM8S5 (S/N 1571, 1573, 1761 & up)  
Maximum diameter 76 inches, minimum diameter 76 inches.  
Static RPM at maximum permissible throttle setting. Not over 2450, not under 2275. No additional tolerance permitted.
  - Power Instruments Oil temperature: GREEN arc (normal operating range) 120° F to 245° F; YELLOW arc (caution range) 60° F to 120° F; RED line (maximum) 245° F (S/N 671 to S/N 1760A)  
  
Oil Temperature: GREEN arc (Normal operating range) 75° F to 245° F; RED line (maximum) 245° F (S/N 1571, 1573, 1761 & up)  
  
Oil Pressure: GREEN arc (normal operating range) 60 psi to 90 psi; YELLOW arc (caution range) 25 psi to 60 psi; RED line (minimum) 60 psi; RED line (maximum) 90 psi.  
  
Fuel Pressure: GREEN arc (normal operating range) .5 psi to 5 psi; RED line (minimum) .5 psi; RED line (maximum) 5 psi (S/N 671 to S/N 1760A)  
  
Fuel Pressure: GREEN arc (normal operating range) .5 psi to 8 psi; RED line (minimum) .5 psi; RED line (maximum) 8 psi (S/N 1571, 1573, 1761 and up)  
  
Tachometer: GREEN arc (normal operating range) 500 to 2700 rpm; RED line (maximum continuous power) 2700 rpm.

FAA APPROVED 8/3/62

REVISED 6/24/68

Rev. No. 15

**Airspeed Limits**

Never exceed .....	171 mph
Maximum structural cruise.....	140
Maneuvering.....	129
Flaps extended.....	115
Maximum positive load factor.....	3.8 Normal Category
Maximum positive load factor.....	4.4 Utility Category
Maximum negative load factor.....	No inverted maneuvers approved

**Maximum Weight** 2400 lbs. - Normal Category; 1950 lbs. - Utility Category.

**Baggage Capacity** 200 lbs.

**C. G. Range** The datum used is 78.4 inches ahead of the wing leading edge at the intersection of the straight and tapered section.

1. Normal Category

Weight (Pounds)	Forward Limit (In. aft of datum)	Rearward Limit (In. aft of datum)
2400	92.1	94.5
2200	89.2	95.9
1975	85.9	95.9
1650	84.0	95.9

2. Utility Category

Weight (Pounds)	Forward Limit (In. aft of datum)	Rearward Limit (In. aft of datum)
1950	85.8	86.5
1650	84.0	86.5

Straight line variation between points given.

NOTE: It is the responsibility of the airplane owner and the pilot to insure that the airplane is properly loaded. See weight and balance section for proper loading instructions.

**Maneuvers**

1. Normal Category - All acrobatic maneuvers including spins prohibited.
2. Utility Category - Approved maneuvers for Utility Category only.

	<u>Entry Speed</u>
Spins (Flaps Up).....	Stall
Steep Turns.....	129 mph
Lazy Eights.....	129
Chandelles.....	129

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REVISED 9/25/67 Rev. No. 12

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Placards

1. In full view of the pilot:

"THIS AIRPLANE MUST BE OPERATED AS A NORMAL OR UTILITY CATEGORY AIRPLANE IN COMPLIANCE WITH THE OPERATING LIMITATIONS STATED IN THE FORM OF PLACARDS, MARKINGS AND MANUALS.

ALL MARKINGS AND PLACARDS ON THIS AIRPLANE APPLY TO ITS OPERATION AS A UTILITY CATEGORY AIRPLANE. FOR NORMAL AND UTILITY CATEGORY OPERATIONS, REFER TO THE AIRPLANE FLIGHT MANUAL.

FOR SPIN RECOVERY, USE FULL RUDDER AGAINST SPIN, FOLLOWED IMMEDIATELY BY FORWARD WHEEL.

NO ACROBATIC MANEUVERS (INCLUDING SPINS) ARE APPROVED FOR NORMAL CATEGORY OPERATIONS."

2. Adjacent to upper door latch:

"ENGAGE LATCH BEFORE FLIGHT." ✓

3. On the inside of the baggage compartment door:

"MAXIMUM BAGGAGE 125 LBS." (S/N 671 to 1760A)  
(MAXIMUM BAGGAGE MAY BE INCREASED TO 200 LBS. IN ACCORDANCE WITH PIPER SERVICE SPARES LETTER NO. 242)

UTILITY CATEGORY OPERATION - NO BAGGAGE OR AFT PASSENGERS ALLOWED. NORMAL CATEGORY OPERATION - SEE AIRPLANE FLIGHT MANUAL WEIGHT AND BALANCE SECTION FOR BAGGAGE AND AFT PASSENGER LIMITATIONS.

4. In full view of the pilot:

"ROUGH AIR OR MANEUVERING SPEED 129 MPH." ✓

"UTILITY CATEGORY OPERATION - NO AFT PASSENGERS ALLOWED." ✓

5. On the instrument panel in full view of the pilot when the oil cooler winterization kit is installed:

"OIL COOLER WINTERIZATION PLATE TO BE REMOVED WHEN AMBIENT TEMPERATURE EXCEEDS 50° F." ✓

6. On the instrument panel in full view of the pilot when the autoflite is installed:

"FOR HEADING CHANGES: PRESS DISENGAGE SWITCH ON CONTROL WHEEL. CHANGE HEADING, RELEASE DISENGAGE SWITCH." ✓

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REVISED 4/2/68 Rev. No. 13

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Placards (Cont'd) 7. In full view of the pilot: "UTILITY CATEGORY ONLY."  
Acrobatic maneuvers are limited to the following:

		<u>Entry Speed</u>	
		Spins (Flaps Up).....	Stall
		Steep Turns.....	129 mph.
		Lazy Eights.....	129
		Chandelles.....	129
Airspeed	RED radial line	Never exceed	171 mph (148 knots)
Instrument	YELLOW arc	Caution Range	140 to 171 mph (121
Markings		(Smooth Air Only)	to 148 knots)
	GREEN arc	Normal Operating	67 to 140 mph (58
		Range	to 121 knots)
	WHITE arc	Flap Down Range	57 to 115 mph (50
			to 100 knots)

2. Procedures  
Section

1. The stall-warning system is inoperative with the master switch off.
2. Electric fuel pump must be on for both landing and takeoff.
3. The PA-28-180 airplane is approved under FAA Regulation CAR 3 which prohibits intentional spins for normal category operation. The following information is noteworthy:
  - a. The stall characteristics of the PA-28-180 are normal with the nose pitching down moderately following the stall, occasionally with a moderate roll which can be corrected by normal use of ailerons and rudder against the roll.
  - b. Prolonged use of full rudder during stall practice may result in a rapid roll followed by a spin and should be avoided. Recovery from an incipient spin may be effected in less than one additional turn by use of opposite rudder followed by full forward control wheel.
  - c. In the event that a fully developed spin is inadvertently experienced, recovery is best made by using full opposite rudder followed by full forward wheel and full opposite aileron. The control positions against the spin should be maintained during the entire recovery, which may require several turns and a substantial loss of altitude if the airplane is loaded heavily with a rearward center of gravity.
4. Except as noted above, all operating procedures for this airplane are normal.

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Procedures Section  
(Cont'd.)

5. (Electric Pitch Trim Installation Only)

The following emergency information applies in case of electric pitch trim malfunction:

- a. In case of malfunction, disengage electric pitch trim by pulling out circuit breaker on instrument panel.
- b. In emergency, electric pitch trim may be overpowered using manual pitch trim.
- c. In cruise configuration, malfunction results in 10° pitch change and 30 Ft. altitude variation.

6. (Autoflite Installation Only)

The following emergency information applies in case of autoflite malfunction:

- a. In case of malfunction PRESS disconnect switch on pilot's control wheel.
- b. Rocker switch on instrument panel - OFF.
- c. Unit may be overpowered manually.
- d. In cruise configuration malfunction, 3 seconds delay results in 60° bank, and 100 Ft. altitude loss.
- e. In approach configuration malfunction, 1 second delay results in 10° bank and 0 Ft. altitude loss.

7. (AutoControl III Installation Only)

I. Limitations:

Pilot off during take off and landing.

II. Procedures:

a. Normal Operation

Refers to Manufacturer's Operation Manual.

b. Emergency

1. In case of malfunction, disengage manual controls.
2. In emergency, pilot may be overpowered manually.
3. In cruise configuration malfunction, 3 seconds delay results in 60° bank and 100 Ft. altitude loss.
4. In approach configuration malfunction, 1 second delay results in 10° bank and 0 Ft. altitude loss.

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REVISED 7/15/66 Rev. No. 8

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3. Performance Section

The following performance figures were obtained during FAA Type tests and may be realized under conditions indicated with the airplane and engine in good condition and with average piloting technique. All performance is given for 2400 pounds.

Loss of altitude during stalls varied from 125 to 200 feet, depending on configuration and power.

Stalling speeds, in mph, power off, versus angle of bank (Calibrated Airspeed):

Angle of bank	0	20	40	50	60
Flaps Up	67	69	76	83	94
Flaps Down	57	--	--	--	--

PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Airplane Flight Manual Model PA=28-180
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APPROVED		PAGE <u>II</u>

Log of Revisions

<u>REVISION NO.</u>	<u>PAGE</u>	<u>DESCRIPTION</u>	<u>APPROVED</u>	<u>DATE</u>
1	1	Deleted Propeller Pitch Information. Added Static R.P.M. Information	<i>J. A. Ragan</i> for H. E. Waterman Supervisor SO-EMDO-42	5/25/64
2	2	Placards Section: Added Placard No. 5	<i>H. E. Waterman</i> H. E. Waterman Supervisor SO-EMDO-42	7/8/64
3	2	Added to Placard No. 3: "BAGGAGE, MAX. 200 LBS., SEE WEIGHT AND BALANCE DATA FOR BAGGAGE LOADINGS BETWEEN 150 LBS. AND 200 LBS."	<i>Robert H. Faller</i> for H. C. Faller Supervisor SO-EMDO-43	8/5/64
	1	Added Sensenich M76EMMS		
4	3	Item 5 added to Procedures Section.	<i>H. C. Faller</i> H. C. Faller Supervisor SO-EMDO-43	10/20/64
5	1	Limitations Section: Revised Oil Temperature and Fuel Pressure Range	<i>Robert H. Faller</i> for H. C. Faller Supervisor, SO-EMDO-43	6/23/65
6	1	Limitation Section: Add note to Engine Limits	<i>H. C. Faller</i> H. C. Faller Supervisor, SO-EMDO-43	1/5/66
7	2	C. G. Range: 1975 lbs. 85.9 In. 95.9 In. 1650 lbs. 84.0 In. 95.9 In. Was 18.50 lbs. 85.1 In. 95.9 In.		
	4	Added Procedures Section And Item 6		
	2	Added Placard No. 6	<i>Robert H. Faller</i> for H. C. Faller Supervisor SO-EMDO-43	5/20/66

FAA APPROVED 8/3/62



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APPROVED		PAGE <u>III</u>

Log of Revisions

<u>Revision No.</u>	<u>Page</u>	<u>Description</u>	<u>Approved</u>	<u>Date</u>
8	1	Revised Oil Temperature, Oil Pressure and Fuel Pressure Limitations		
	2,3	Revised Placards No. 3 and No. 5		
	5	Added Page 5		
		Procedures Section - Added Item 7		
	6	Added Page 6	<i>Herbert T. Herold</i> for Henry C. Faller Supervisor SO-EMDO-43	7/15/66
9	1	Limitations Section Add "or O-360-A4A	<i>Henry C. Faller</i> Henry C. Faller Supervisor SO-EMDO-43	8/2/66
10	2,3	C. G. Range - Placard No. 1 and Placard No. 3 revised to include utility category operations. Added utility category max. wt. and approved maneuvers		
	4	Procedures Section - Added to Item 3 "For Normal Category Operation". Added Placard No. 7.		
	3	Placards Section - Added utility category operation to Item 4.		
	1	Added Utility Category		
	2	Added maximum positive load factor for Utility Category. Added Baggage Capacity.	<i>Henry C. Faller</i> Henry C. Faller Supervisor SO-EMDO-43	12/6/66

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APPROVED		PAGE <u>IV</u>

Log of Revisions

REVISION NO.	PAGE	DESCRIPTION	APPROVED	DATE
11	3	Placards Section: Revised Placard No. 1 to read, "In Full View of the Pilot"	<i>H.C. Faller</i> H. C. Faller Supervisor SO-EMDO-43	5/12/67
12	2	Revised C. G. Range	<i>H.C. Faller</i> H. C. Faller Supervisor SO-EMDO-43	9/25/67
13	3, 4	Revised Placard No. 4 and No. 7 to read: "In full view of the pilot"	<i>H.C. Faller</i> H. C. Faller Supervisor SO-EMDO-43	4/2/68
14	1	Added Aircraft Serial Numbers 1571 and 1573 to Engine and Propeller Limitations	<i>H.C. Faller</i> H. C. Faller Supervisor SO-EMDO-43	6/3/68
15	1	Added Propeller Designations	<i>H.C. Faller</i> H. C. Faller Supervisor SO-EMDO-43	6/24/68

PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Weight and Balance Data Model PA-28-180 D
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APPROVED		
		PAGE 1 Section 1

WEIGHT AND BALANCE DATA  
MODEL PA-28-180 D CHEROKEE

Airplane Serial Number 28 - 5224

Registration Number N7776N

Date 15 NOV 1968

AIRPLANE EMPTY WEIGHT

Item	Weight (Lbs)	X (Inches Aft of Datum)	= Moment (In - lbs)
Standard Empty Weight * <del>Actual</del> Computed	1298.0	85.4	110918
Optional Equipment	62.9	91.1	5729
Unusable Fuel (3 Pints)	2.2	103.0	227
Licensed Empty Weight = Total of Above Items	1363.1	85.7	116874

*As of 23, 1974*      *1416.1*      *87.18*      *125700*  
 \* Standard Empty Weight includes paint, hydraulic fluid and undrainable engine oil.

AIRPLANE USEFUL LOAD

(Gross Weight) - (Licensed Empty Weight) = Useful Load

Normal Category:    (2400 lbs)    -    ( 1363.1    lbs)    =    1036.9    lbs.

Utility Category:    (1950 lbs)    -    ( 1363.1    lbs)    =    586.9    lbs.

THIS LICENSED EMPTY WEIGHT, C. G. AND USEFUL LOAD ARE FOR THE AIRPLANE AS DELIVERED FROM THE FACTORY. REFER TO FORM FAA-337 WHEN ALTERATIONS HAVE BEEN MADE.

*A.M. Della*

Inspection Representative

PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Weight and Balance Data Model PA-28-180 D
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C. G. RANGE AND WEIGHT INSTRUCTIONS

1. Add the weight of all items to be loaded to the licensed empty weight.
2. Use the loading graph to determine the moment of all items to be carried in the airplane.
3. Add the moment of all items to be loaded to the licensed empty weight moment.
4. Divide the total moment by the total weight to determine the C. G. location.
5. By using the figures of Item 1 and Item 4, locate a point on the C. G. range and weight graph. If the point falls within the C. G. envelope, the loading meets the weight and balance requirements.

SAMPLE LOADING PROBLEM (Normal Category)

	Weight (lbs)	Arm Aft Datum (Inches)	Moment (In - Lbs)
Licensed Empty Weight	1363.1	85.7	116874 ✓
Oil (8 quarts)	15	32.5	488 ✓
Pilot and Front Passenger	340	85.5	29070
Passengers, Aft * (Rear Seat)	340	118.1	40154
Fuel (50 Gal. Maximum)	300 <i>226</i>	95.0	28500
Baggage *	41.9	142.8	5983
Total Loaded Airplane	2400	92.1	221069

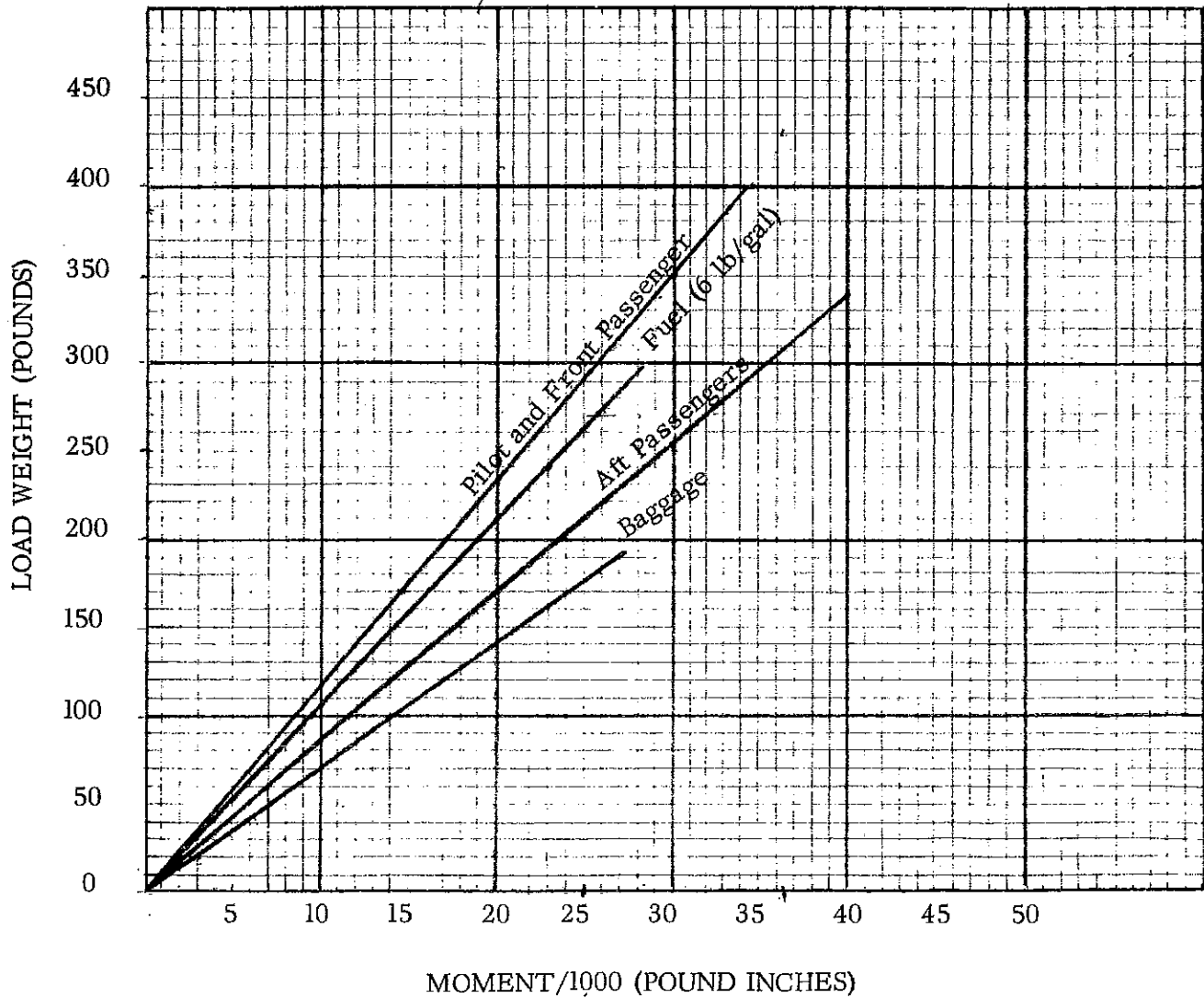
The center of gravity (C. G.) of this sample loading problem is at 92.1 inches aft of the datum line. Locate this point ( 92.1 ) on the C. G. range and weight graph. Since this point falls within the weight - C. G. envelope, this loading meets the weight and balance requirements.

IT IS THE RESPONSIBILITY OF THE PILOT AND AIRCRAFT OWNER TO INSURE THAT THE AIRPLANE IS LOADED PROPERLY.

\* Utility Category Operation - No baggage or aft passengers allowed.

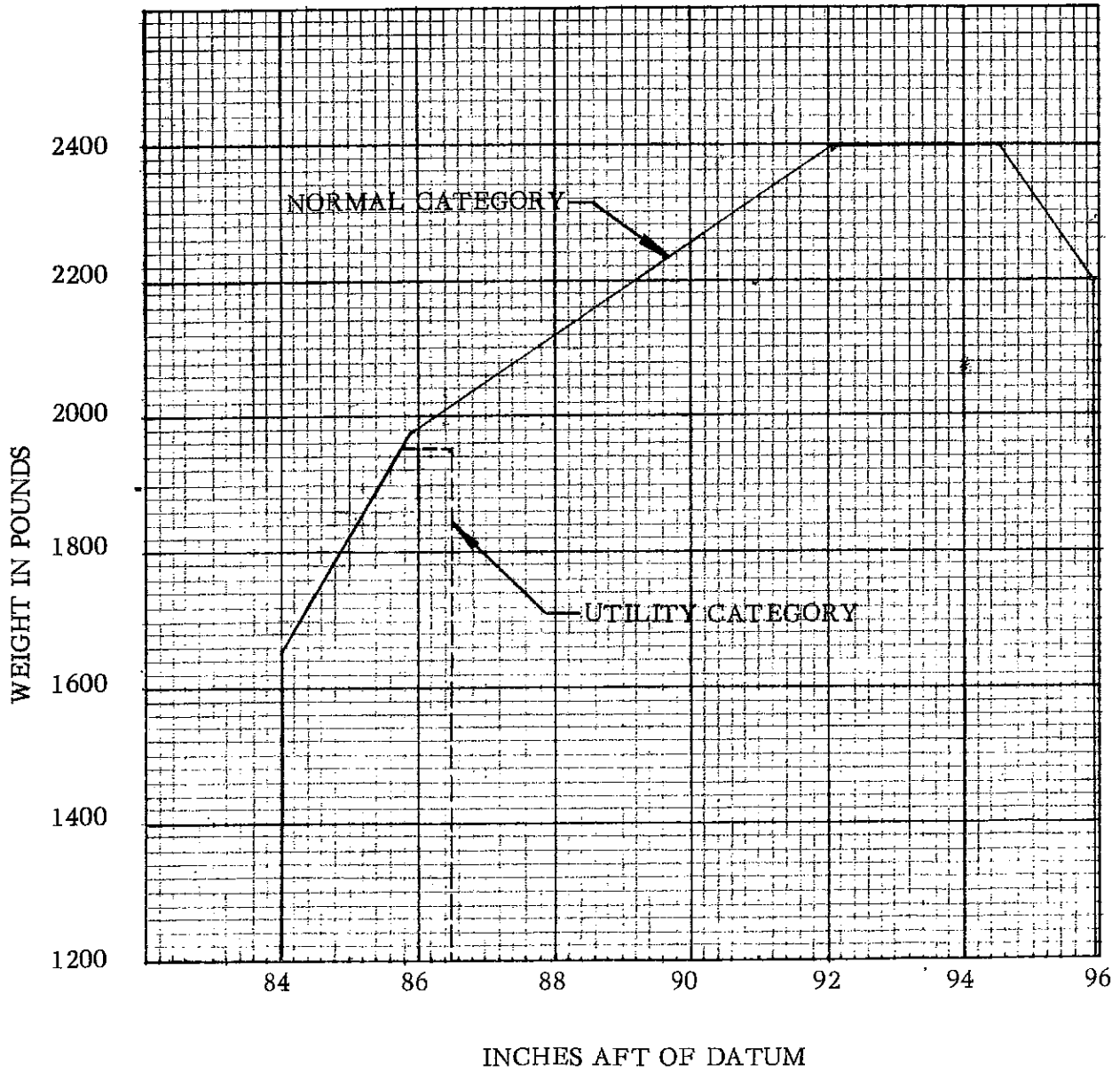
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LOADING GRAPH



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APPROVED		PAGE 4 Section 1

C. G. RANGE AND WEIGHT



**WEIGHT/BALANCE & EQUIPMENT LIST REVISION 26-JUL-04**  
**EXXEL AVIONICS, LLC - FAA CRS# XL6R743J**  
**Brainard Airport - Hartford, CT 06114-2123**

Mallory Selfridge  
 125 Pifershire Street  
 Eastford, CT 06242-9472

N7776N  
 PIPER PA28-180  
 S# 28-5224

OLD )	USEFUL LOAD	EMPTY WEIGHT	ARM	MOMENT
	998.65	1401.35	86.66	121434.18

**\* REMOVED \***

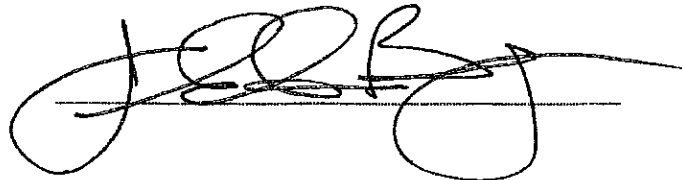
1D363-183R	ROLL SERVO	-2.60	122.20	-317.72
1C359	AMPLIFIER	-1.80	111.80	-201.24
AUTOPILOT	CABLES	-1.00	95.50	-95.50
AUTOPILOT	CONTROLLER	-0.50	67.90	-33.95
1394T100	RATE GYRO	-1.20	65.50	-78.60

**\* INSTALLED \***

01260-1-0-14	ROLL COMPUTER	2.50	64.50	161.25
0105-R9	ROLL SERVO	3.20	120.00	384.00
39188-2	CABLE ASSEMBLY	1.30	88.00	114.40

NEW )	USEFUL LOAD	EMPTY WEIGHT	ARM	MOMENT
	998.75	1401.25	86.61	121366.82

It is the pilot's responsibility to load the A/C properly at all times.  
 The "OLD" figures were taken from a document dated 12-NOV-02.



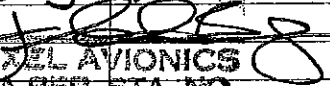
## Equipment Change Weight and Balance Report

New England Aero Services, Inc.  
P.O. Box 914  
Dayville, CT. 06241  
1-860-774-0602

Make <u>PIPER</u>	Model <u>PA 28-180</u>	Date <u>11-12-02</u>
S/N <u>28-5224</u>	N <u>7776N</u>	
Customer <u>MALLORY W. SILFRANGE</u>		
Address <u>125 PIPER SHIRE ST.</u> <u>EASTFORD, CT. 06242</u>		

Maximum Certificated Weight <u>2400 LBS</u>
Location of Datum <u>78.4" FWD WING L.I.E.</u>
Leveling Means

Item	In	Out	Weight	Arm	Moment	Remarks
Aircraft Old Weight and CG.			<u>1403.35</u>	<u>86.78</u>	<u>121783.18</u>	
<u>A.D.F. ANTENNA</u>		<u>X</u>	<u>- 2.0</u>	<u>174.5</u>	<u>- 349</u>	

**SUPERSEDED**  
July 26, 2004  
  
**EXCEL AVIONICS**  
 FAA REP. STA. NO.  
 XL6743J

### New Data

Empty Weight 1401.35 Total Moment 121434.18

Empty Weight CG. 86.66 Useful Load 998.65

Signature William M. Simms Number ASP1475560

Note; \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



WEIGHT/BALANCE & EQUIPMENT LIST REVISION 10-OCT-02  
 EXXEL AVIONICS, LLC - FAA CRS# XL6R743J  
 Brainard Airport - Hartford, CT 06114-2123

Mallory Selfridge  
 125 Piffershire Street  
 Eastford, CT 06248-9472

N7770H  
 PIPER PA28-180  
 SN 28-5224

OLD >	USEFUL LOAD	EMPTY WEIGHT	ARM	MOMENT
	999.35	1400.65	86.77	121535.80

\* REMOVED \*

\* NO ITEMS REMOVED

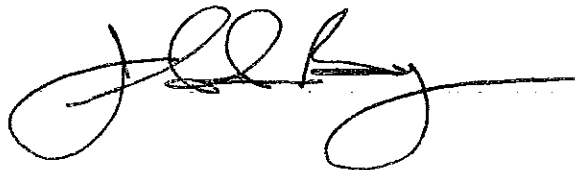
\* INSTALLED \*

ATD-200	TRAFFIC ALERTER	1.20	65.90	80.28
CI125	L-BAND ANTENNA	0.30	69.00	20.70
CI132	VHF ANTENNA	1.50	122.00	186.40

THIS INFORMATION  
 IS UNCLASSIFIED

NEW >	USEFUL LOAD	EMPTY WEIGHT	ARM	MOMENT
	996.65	1403.35	86.78	121783.18

It is the pilot's responsibility to load the A/C properly at all times.  
 The Pilot is responsible for the accuracy of this information.





U.S. Department of Transportation  
Federal Aviation Administration

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

Form Approved  
OMB No. 2120-0020

**For FAA Use Only**

Office Identification

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

<b>1. Aircraft</b>	Make <b>PIPER</b>	Model <b>PA28-180</b>
	Serial No. <b>28-5224</b>	Nationality and Registration Mark <b>N7776N</b>
<b>2. Owner</b>	Name (As shown on registration certificate) <b>MALORY G. SELFRIDGE</b>	Address (As shown on registration certificate) <b>125 PILFERSHIRE STREET EASTFORD, CT 06242-9472</b>

**3. For FAA Use Only**

4. Unit Identification				5. Type	
Unit	Make	Model	Serial No.	Repair	Alteration
AIRFRAME	.....(As described in Item 1 above).....				<b>AX</b>
POWERPLANT					
PROPELLER					
APPLIANCE	Type				
	Manufacturer				

**6. Conformity Statement**

<b>A. Agency's Name and Address</b> <b>EXXEL AVIONICS</b> <b>20 LINDBERGH DRIVE</b> <b>HARTFORD, CT 06114</b>	<b>B. Kind of Agency</b> <input type="checkbox"/> U.S. Certificated Mechanic <input type="checkbox"/> Foreign Certificated Mechanic <input checked="" type="checkbox"/> Certificated Repair Station <input type="checkbox"/> Manufacturer	<b>C. Certificate No.</b>  <b>XL6R743J</b>
--	---	--

**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.

<b>Date</b> <b>OCTOBER 10, 2002</b>	<b>Signature of Authorized Individual</b> 
--	---

**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

<b>BY</b>	FAA Fit. Standards Inspector		Manufacturer	Inspection Authorization	Other (Specify)
	FAA Designee	<b>AX</b>	Repair Station	Person Approved by Transport Canada Airworthiness Group	
Date of Approval or Rejection <b>OCTOBER 10, 2002</b>		Certificate or Designation No. <b>XL6R743J</b>		Signature of Authorized Individual 	

**WEIGHT/BALANCE & EQUIPMENT LIST REVISION 30-AUG-02**  
**EXXEL AVIONICS, LLC - FAA CRS# XL6R743J**  
**Brainard Airport - Hartford, CT 06114-2123**

Mallory Selfridge  
 125 Piffershire Street  
 Eastford, CT 06242-9472

N7770N  
 PIPER PA28-100  
 SN 28-5224

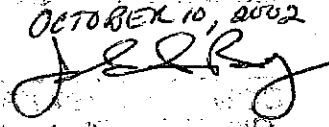
OLD )	USEFUL LOAD	EMPTY WEIGHT	ARM	MOMENT
	1001.75	1398.25	86.72	121257.30

**\* REMOVED \***

KX170A	NAV/COMM	-7.10	62.90	-446.59
KI201C	VOR INDICATOR	-2.80	64.90	-181.72
AT50A	TRANSPONDER	-3.50	63.40	-221.90
AUDIO CONTROL	JUNCTION BOX	-0.80	66.30	-53.04
GLIDESLOPE	VHF ANTENNA	-1.10	92.40	-101.64
COMMUNICATION	VHF ANTENNA	-1.30	192.80	-250.64

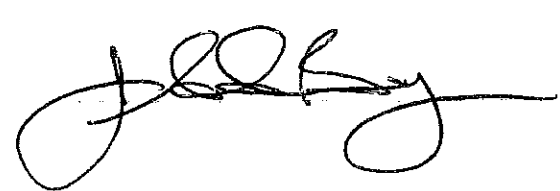
**\* INSTALLED \***

KN024	AUDIO PANEL/MAR	1.00	65.60	118.00
ONS430	GPS/NAV/COMM	6.80	63.90	434.02
BI106A	GPS INDICATOR	1.50	65.80	98.70
ATY327	TRANSPONDER	3.10	64.90	201.19
CI102	MARKER ANTENNA	1.00	115.00	115.00
DM 070-1/A	VHF ANTENNA	1.10	158.00	173.80
DM 070-1/A	VHF ANTENNA	1.10	193.00	212.30
0050	GPS ANTENNA	0.50	92.50	46.25
FN200	COOLING FAN	2.10	63.90	134.19

OCTOBER 10, 2002  
  
 JERRY

NEW )	USEFUL LOAD	EMPTY WEIGHT	ARM	MOMENT
	999.35	1400.65	86.77	121535.80

It is the pilot's responsibility to load the A/C properly at all times.  
 The "OLD" figures were taken from a document dated 07 2002 01





US Department of Transportation  
Federal Aviation Administration

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

Form Approved  
OMB No. 2120-0020

**For FAA Use Only**

Office Identification

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

<b>1. Aircraft</b>	Make <b>PIPER</b>	Model <b>PA28-180</b>
	Serial No. <b>28-5224</b>	Nationality and Registration Mark <b>N7776N</b>
<b>2. Owner</b>	Name (As shown on registration certificate) <b>MALORY G. SEFRIDGE</b>	
	Address (As shown on registration certificate) <b>125 PILFERSHIRE STREET EASTFORD, CT 06242-9472</b>	

**3. For FAA Use Only**

4. Unit Identification				5. Type	
Unit	Make	Model	Serial No.	Repair	Alteration
AIRFRAME	~~~~~ (As described in Item 1 above) ~~~~~				<b>OK</b>
POWERPLANT					
PROPELLER					
APPLIANCE	Type				
	Manufacturer				

**6. Conformity Statement**

<b>A. Agency's Name and Address</b> <b>EXCEL AVIATIONES</b> <b>20 LINDBERGH DRIVE</b> <b>HARTFORD, CT 06114</b>	<b>B. Kind of Agency</b> <input type="checkbox"/> U.S. Certificated Mechanic <input type="checkbox"/> Foreign Certificated Mechanic <input checked="" type="checkbox"/> Certificated Repair Station <input type="checkbox"/> Manufacturer	<b>C. Certificate No.</b> <b>XLGR743J</b>
--	---	--

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 <b>SEPTEMBER 3, 2002</b>	Signature of Authorized Individual 
----------------------------------	--

**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

3Y	FAA Fit. Standards Inspector	Manufacturer	Inspection Authorization	Other (Specify)
	FAA Designee <b>OK</b>	Repair Station	Person Approved by Transport Canada Airworthiness Group	
Date of Approval or Rejection <b>SEPTEMBER 3, 2002</b>		Certificate or Designation No. <b>XLGR743J</b>	Signature of Authorized Individual 	



U.S. Department of Transportation  
Federal Aviation Administration

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

Form Approved  
OMB No. 2120-0020

**For FAA Use Only**  
Office Identification

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

<b>1. Aircraft</b>	Make <b>PIPER</b>	Model <b>PA28-180</b>
	Serial No. <b>28-5224</b>	Nationality and Registration Mark <b>N7776N</b>
<b>2. Owner</b>	Name (As shown on registration certificate) <b>MALLOY G, SELFRIDGE</b>	Address (As shown on registration certificate) <b>125 PILFERSHIRE STREET EASTFORD, CT 06242-9472</b>

**3. For FAA Use Only**

<b>3. For FAA Use Only</b>					
----------------------------	--	--	--	--	--

4. Unit Identification				5. Type	
Unit	Make	Model	Serial No.	Repair	Alteration
AIRFRAME	~~~~~ (As described in Item 1 above) ~~~~~				<b>XXX</b>
POWERPLANT					
PROPELLER					
APPLIANCE	Type				
	Manufacturer				

**6. Conformity Statement**

<b>A. Agency's Name and Address</b> <b>EXCEL AVIONICS</b> <b>20 LINDBERGH DRIVE</b> <b>HARTFORD, CT 06114</b>	<b>B. Kind of Agency</b> <input type="checkbox"/> U.S. Certificated Mechanic <input type="checkbox"/> Foreign Certificated Mechanic <input checked="" type="checkbox"/> Certificated Repair Station <input type="checkbox"/> Manufacturer	<b>C. Certificate No.</b> <b>XL6R743J</b>
--	---	--

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 <b>SEPTEMBER 3, 2002</b>	Signature of Authorized Individual 
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**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

<b>BY</b>	FAA Flt. Standards Inspector	Manufacturer	Inspection Authorization	Other (Specify)
	FAA Designee <b>NR</b>	Repair Station	Person Approved by Transport Canada Airworthiness Group	
Date of Approval or Rejection <b>SEPTEMBER 3, 2002</b>		Certificate or Designation No. <b>XL6R743J</b>	Signature of Authorized Individual 	



Department  
Transportation  
**Federal Aviation  
Administration**

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

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

<b>1. Aircraft</b>	Make <b>PIPER</b>	Model <b>PA 28-180</b>
	Serial No. <b>28-5224</b>	Nationality and Registration Mark <b>N 7776N</b>
<b>2. Owner</b>	Name (As shown on registration certificate) <b>MALLOY G. SELFRIODGE</b>	
	Address (As shown on registration certificate) <b>125 PILFERSHIRE STREET EASTFORD, CT 06242-9472</b>	

**3. For FAA Use Only**

4. Unit Identification				5. Type	
Unit	Make	Model	Serial No.	Repair	Alteration
AIRFRAME	..... (As described in Item 1 above) .....				<b>AA</b>
POWERPLANT					
PROPELLER					
APPLIANCE	Type				
	Manufacturer				

**6. Conformity Statement**

<b>A. Agency's Name and Address</b> <b>EXXEL AVIONICS</b> <b>20 LINDBERGH DRIVE</b> <b>HARTFORD, CT 06114</b>	<b>B. Kind of Agency</b> <input type="checkbox"/> U.S. Certified Mechanic <input type="checkbox"/> Foreign Certified Mechanic <input checked="" type="checkbox"/> Certified Repair Station <input type="checkbox"/> Manufacturer	<b>C. Certificate No.</b> <b>XLR743J</b>
--	--	---

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 <b>SEPTEMBER 3, 2002</b>	Signature of Authorized Individual 
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Y	FAA Fit. Standards Inspector	Manufacturer	Inspection Authorization	Other (Specify)
	FAA Designee <input checked="" type="checkbox"/>	Repair Station	Person Approved by Transport Canada Airworthiness Group	
Date of Approval or Rejection <b>SEPTEMBER 3, 2002</b>		Certificate or Designation No. <b>XLR743J</b>		Signature of Authorized Individual 

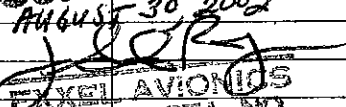
# Equipment Change Weight and Balance Report

New England Aero Services, Inc.  
P.O. Box 914  
Dayville, CT. 06241  
1-860-774-0602

Make <u>PIPER</u>	Model <u>PA28-180</u>	Date <u>4/3/01</u>
S/N <u>28-5224</u>	N <u>7776N</u>	
Customer <u>MALLORY G. SELFRIDGE</u>		
Address <u>125 PILVERSHIRE ST.</u> <u>EASTFORD, CT. 06242</u>		

Maximum Certificated Weight	<u>2400 LBS.</u>
Location of Datum	<u>78.4" FWD. WING LEADING EDGE.</u>
Leveling Means	<u>2 SCREWS LEFT SIDE OF FUSELAGE</u>

Item	In	Out	Weight	Arm	Moment	Remarks
Aircraft Old Weight and CG.			1386.75	86.4	119815.2	
FT. <sup>SHOULDER</sup> "HARNESSES" (2)	X		5.75	110.4	634.8	
REAR <sup>SHOULDER</sup> HARNESSES (2)	X		5.75	140.4	807.3	
			1398.25	86.72	121257.3	

**SUPERSEDED**  
AUGUST 30, 2002  
  
**EXCEL AVIONICS**  
FAA REP. STA. NO.  
X15R743J

## New Data

Empty Weight 1398.25 Total Moment 121257.3  
Empty Weight CG. 86.72 Useful Load 1001.75  
Signature Edvard G. Baranski Number A&P 1475874

Note: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# Equipment Change Weight and Balance Report

New England Aero Services, Inc.  
P.O. Box 914  
Dayville, CT. 06241  
1-860-774-0602

Make <u>PIPER</u>	Model <u>PA 28-180</u>	Date <u>9/22/00</u>
S/N <u>28-5224</u>	N <u>7776N</u>	
Customer <u>MALLORY B. SELFRIDGE</u>		
Address <u>125 PILFERSHIRE ST.</u> <u>EAST FORD, CT 06242</u>		

Maximum Certificated Weight	<u>2400 LBS</u>
Location of Datum	
Leveling Means	

Item	In	Out	Weight	Arm	Moment	Remarks
Aircraft Old Weight and CG.			<u>1399.5</u>		<u>121519.5</u>	
<u>OLD WIRE</u>		<u>X</u>	<u>-12.75</u>	<u>132.4</u>	<u>-1688.1</u>	

## New Data

Empty Weight 1386.75 Total Moment 119830.5

Empty Weight CG 86.4 Useful Load 1013.3 LBS.

Signature Edward L. Beranek Number A&P 1475874

Note: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

*SUPERCHECK 4-3-01*



# Equipment Change Weight and Balance Report

New England Aero Services, Inc.  
P.O. Box 914  
Dayville, CT. 06241  
1-860-774-0602

Make <u>PIPER</u>	Model <u>PA 28-180</u>	Date <u>7-14-00</u>
S/N <u>28-5224</u>	N	
Customer <u>MALORY SELFRIE</u>		
Address <u>125 PILGRIMSHIRE ST EASTFORD CT. 06242</u>		

Maximum Certificated Weight	<u>2400</u>
Location of Datum	
Leveling Means	

Item	In	Out	Weight	Arm	Moment	Remarks
Aircraft Old Weight and CG.			<u>1396.8</u>	<u>87.0</u>	<u>121519.5</u>	
<del>REMOVE ALUMINUM CANON INSIDE COPPER</del>	<del>*</del>		<del>+ 2.7</del>	<del>-</del>	<del>---</del>	
<div style="font-size: 2em; font-weight: bold; opacity: 0.5;">           SUPPLEMENTED 9/22/00         </div>						

## New Data

Empty Weight 1399.5 Total Moment 121519.5

Empty Weight CG 86.83 Useful Load 1000.5

Signature William M. Simon Number AEP1475560

Note; \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Weight and Balance Data Model PA-28-180 D
CHECKED		
APPROVED		PAGE 5 Section 1

WEIGHT AND BALANCE DATA

WEIGHING PROCEDURE

At the time of delivery, Piper Aircraft Corporation provides each airplane with the licensed empty weight and center of gravity location. This data is on Page 1, Section 1 of this Flight Manual.

The removal or addition of an excessive amount of equipment or excessive airplane modifications can affect the licensed empty weight and empty weight center of gravity. The following is a weighing procedure to determine this licensed empty weight and center of gravity location:

1. PREPARATION

- a. Be certain that all items checked in the airplane equipment list are installed in the proper location in the airplane.
- b. Remove excessive dirt, grease, moisture, foreign items such as rags and tools from the airplane before weighing.
- c. Defuel airplane. Then open all fuel drains until all remaining fuel is drained. Operate engine on each tank until all undrainable fuel is used and engine stops.
- d. Drain all oil from the engine, by means of the oil drain, with the airplane in ground attitude. This will leave the undrainable oil still in the system. Engine oil temperature should be in the normal operating range before draining.
- e. Place pilot and co-pilot seats in fourth (4th) notch, aft of forward position. Put flaps in the fully retracted position and all control surfaces in the neutral position. Tow bar should be in the proper location and all entrance and baggage doors closed.
- f. Weigh the airplane inside a closed building to prevent errors in scale readings due to wind.

2. LEVELING

- a. With airplane on scales, block main gear oleo pistons in the fully extended position.
- b. Level airplane (see diagram) by deflating nose wheel tire, to center bubble on level.

PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Weight and Balance Data Model PA-28-180 D
CHECKED		
APPROVED		PAGE 6 Section 1

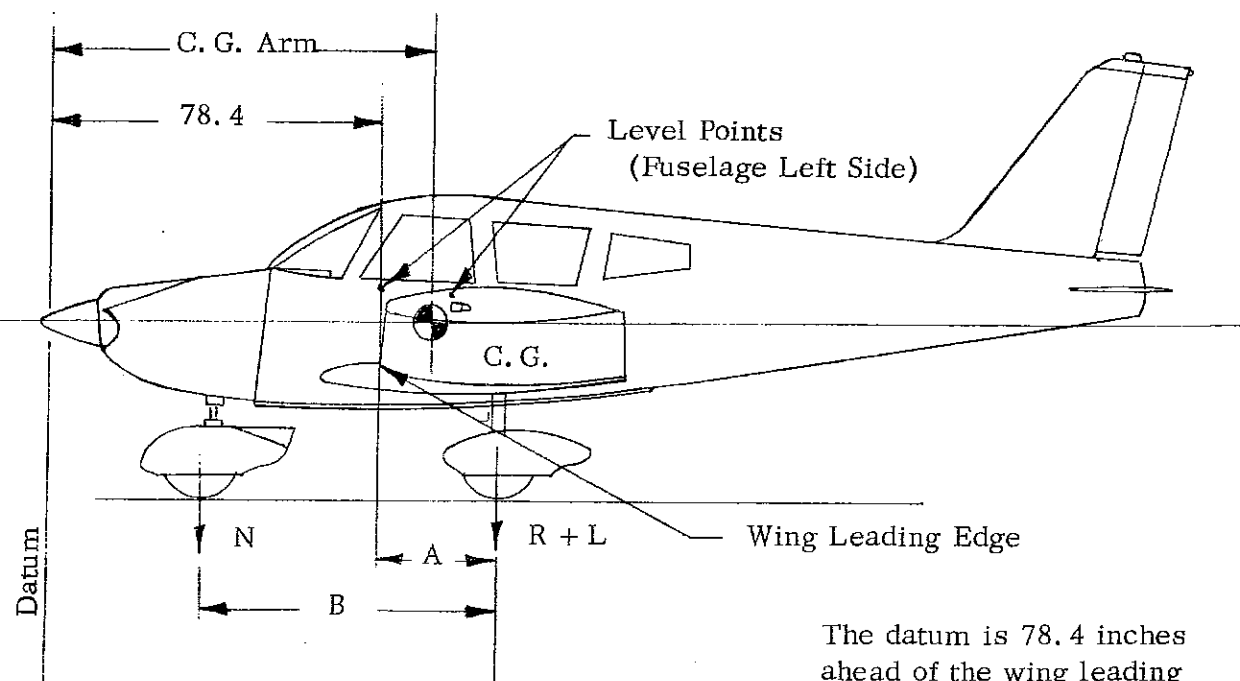
3. WEIGHING - AIRPLANE EMPTY WEIGHT

- a. With the airplane level and brakes released, record the weight shown on each scale. Deduct the tare, if any, from each reading.

Scale Position and Symbol	Scale Reading	Tare	Net Weight
Nose Wheel (N)			
Right Main Wheel (R)			
Left Main Wheel (L)			
Airplane Empty Weight, as Weighed (T)			

4. EMPTY WEIGHT CENTER OF GRAVITY

- a. The following geometry applies to the PA-28-180 D airplane when airplane is level (See Item 2) .



The datum is 78.4 inches ahead of the wing leading edge at the intersection of the straight and tapered section.

A =

B =

PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Weight and Balance Data Model PA-28-180 D
CHECKED		
APPROVED		PAGE 7 Section I

- b. Obtain measurement "A" by measuring from a plumb bob dropped from the wing leading edge, at the intersection of the straight and tapered section, horizontally and parallel to the airplane centerline, to the main wheel centerline.
- c. Obtain measurement "B" by measuring the distance from the main wheel centerline, horizontally and parallel to the airplane centerline, to each side of the nose wheel axle. Then average the measurements.
- d. The empty weight center of gravity (as weighed including optional equipment and undrainable oil) can be determined by the following formula:

$$C. G. \text{ Arm} = 78.4 + A - \frac{B(N)}{T}$$

$$C.G. \text{ Arm} = 78.4 + ( \quad ) - \frac{( \quad )( \quad )}{( \quad )} = \quad \text{inches}$$

5. LICENSED EMPTY WEIGHT AND EMPTY WEIGHT CENTER OF GRAVITY

	Weight	Arm	Moment
Empty Weight (as weighed)			
Unusable Fuel (3 pints)	+ 2.2	103.0	+ 227
Licensed Empty Weight			

PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.		Weight and Balance Data Model PA-28-180 D	
CHECKED			PAGE 8 Section 1	
APPROVED	STANDARD EQUIPMENT LIST			
WEIGHT AND BALANCE STANDARD EQUIPMENT LIST MODEL PA-28-180 D				
	ITEM	WEIGHT (LBS)	ARM AFT DATUM (INCHES)	MOMENT (POUND- INCHES)
Check if Installed	<u>Engine Accessories</u>			
	Engine - Lycoming Model 0-360-A3A	274.4	26.1	7162
X	Engine - Lycoming Model 0-360-A4A	282.4	26.1	7371
X	Fuel Pump, Electric Auxiliary, Bendix Model 478360	1.8	41.8	75
X	Fuel Pump, Engine Drive, Lycoming Dwg. No. 73297, 74082, 75148 or 75246	1.6	41.3	66
X	Oil Cooler, Piper Dwg, Harrison C-8526250	2.6	18.1	47
X	Filter, Fram Model CA-161 PL or AC No. A48C or Purolator AFP-2 - <del>BA-104/BA-3</del>	.9	20.1	18
	Alternator, 35 Amp, Chrysler #2098615	12.5	19.0	238
X	Alternator, 60 Amp, Chrysler #2642210 or #2642997	12.5	19.0	238
	Starter-Lycoming 74092 (Delco-Remy 1109511)	* 18.0	19.5	351
X	Starter-Lycoming 76211 (Prestolite MZ4206)	* 18.0	19.5	351
	<u>Propeller and Propeller Accessories</u>			
	Propeller, Sensenich M76EMM or 76EM8	34.5	10.1	348
X	Propeller, Sensenich M76EMMS60 or 76EM8S5-0-60	38.5	8.8	339
X	Spinner and Attachment Plates	4.3	8.0	34
* Included in Engine Weight.				

<b>PREPARED</b>	<b>PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.</b>	Weight and Balance Data Model PA-28-180 D
<b>CHECKED</b>		
<b>APPROVED</b>	STANDARD EQUIPMENT LIST	PAGE 9 Section 1

	ITEM	WEIGHT (LBS)	ARM AFT DATUM (INCHES)	MOMENT (POUND- INCHES)
Check if Installed	<u>Landing Gear and Brakes</u>			
	Two Main Wheel Assemblies 6.00-6	32.0	109.6	3507
	(a) Cleveland Aircraft Products Wheel Assembly No. 40-28 Brake Assembly No. 30-18			
	(b) Two Main 4-Ply Rating Tires 6.00-6 with Regular Tubes			
<u>X</u>	Two Main Wheel Assemblies	32.3	109.6	3540
	(a) Cleveland Aircraft Products Wheel Assembly No. 40-86 Brake Assembly No. 30-55			
	(b) Two Main 4-Ply Rating Tires 6.00-6 with Regular Tubes			
<u>X</u>	One Nose Wheel 6.00-6	12.5	34.8	435
	(a) Cleveland Aircraft Products Wheel Assembly No. 38501 (Less Brake Drum)			
	(b) One Nose Wheel 4-Ply Rating Tire 6.00-6 with Regular Tubes			
	<u>Electrical Equipment</u>			
<u>X</u>	Stall Warning Device, Safe Flight Inst. Corporation No. C52207-4	.2	80.2	16
	Voltage Regulator, Delco-Remy #118704	1.5	168.5	253
	Voltage Regulator, Chrysler #2098613	.5	57.8	29
<u>X</u>	Voltage Regulator, Wico Electric #X-16300	.5	57.8	29
<u>X</u>	Battery 12V, 25 A. H., Rebat Model S-25	21.5	168.0	3612

PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Weight and Balance Data Model PA-28-180 D
CHECKED		
APPROVED	STANDARD EQUIPMENT LIST	PAGE 10 Section 1

Check if Installed	ITEM	WEIGHT (LBS)	ARM AFT DATUM (INCHES)	MOMENT (POUND- INCHES)
	<u>Instrument</u>			
<u>X</u>	Compass - Piper Drawing 67462	.9	65.7	59
	Airspeed Indicator, Piper Dwg. 63205-2	.6	66.8	40
<u>X</u>	Tachometer, Piper Drawing 62177-3	.7	66.2	46
<u>X</u>	Altimeter, Piper Drawing 67467	1.0	65.9	66
	Engine Cluster, Piper Drawing 65852-2	.8	67.4	54
	Engine Cluster, Piper Drawing 67441-2	.8	67.4	54
<u>X</u>	Engine Cluster, Piper Drawing 95241-4	.8	67.4	54
<u>X</u>	Engine Cluster, Piper Drawing 95241-2	.8	67.4	54
	<u>Miscellaneous</u>			
<u>X</u>	Forward Seat Belts (2)	1.5	86.9	130
<u>X</u>	Aft Seat Belts (2)	1.4	123.0	172
<u>X</u>	Flight Manual	-----	-----	-----
<u>X</u>	Tow Bar	1.3	133.0	173

THE ABOVE ITEMS ARE INCLUDED IN THE AIRPLANE STANDARD EMPTY WEIGHT.



PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Weight and Balance Data
CHECKED		Model PA-28-180 D
APPROVED	OPTIONAL EQUIPMENT LIST	PAGE 11 Section 1

OPTIONAL EQUIPMENT LIST  
MODEL PA-28-180 D

Check if Installed	ITEM	WEIGHT (LBS)	ARM AFT DATUM (INCHES)	MOMENT (POUND- INCHES)
	<u>Engine Accessories</u>			
X	Vacuum Pump, Airborne Mechanisms Model No. 10-113A1, 113A5 or 200 cc and Drive	5.0	37.0	185
X	Oil Filter - Lycoming No. 74911 (AC of 81A No. 6437032)	3.3	40.5	134
X	Vacuum Regulator and Filter	2.2	57.0	125
	<u>Electrical Equipment</u>			
X	Rotating Beacon, Grimes #40-0101-7-12 or Grimes #40-0101-15-12	1.5	263.4	395
X	Landing Light, G. E. Model 4509	.5	18.1	9
X	Navigation Light (Rear)(1) Grimes Model 2064 (White)	.2	281.0	56
X	Navigation Lights (2) Grimes Model A1285 (Red and Green)	.4	106.6	43
	Battery 12V, 35 A. H., Rebat R-33 or R-35 (Weight 27.0 lbs)	5.5 *	168.0	924
X	Cabin Light	.3	104.0	31
X	Cabin Speaker	.8	104.0	83
	Rotating Beacon, Whelen Model WRM L-12	1.6	263.4	421
X	<b>Strobe System, Whelen Model HDT-3</b>			
	<b>Power Unit</b>	3.125	156.0	487.5
X (2)	<b>A429 Heads</b>	.125	106.6	13.3
* (1)	<b>A408 Head</b>	.375	125.4	47.0

\* Weight and moment difference between standard and optional equipment.

PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Weight and Balance Data Model PA-28-180 D
CHECKED		
APPROVED	OPTIONAL EQUIPMENT LIST	PAGE 12 Section 1

Check if Installed	ITEM	WEIGHT (LBS)	ARM AFT DATUM (INCHES)	MOMENT (POUND- INCHES)
	<u>Electrical Equipment</u> (Cont'd)			
	Auxiliary Power Receptacle, PAC 62355-3	2.7	168.0	454
	External Power Cable, PAC 62355-2	4.6	142.8	657
X	Piper Pitch Trim	4.0	158.0	632
X	Heated Pitot Head	.4	100.0	40
	 <u>Instruments</u>			
	Suction Gauge - Piper Drawing 67481	.5	67.2	34
	Suction Gauge - U.S. Gauge AW1821AFO3	.5	67.2	34
	Suction Gauge - Airborne Mechanisms IG3-4	.5	67.2	34

PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Weight and Balance Data
CHECKED		Model PA-28-180 D
APPROVED	OPTIONAL EQUIPMENT LIST	PAGE 13 Section 1

Check if Installed	ITEM	WEIGHT (LBS)	ARM AFT DATUM (INCHES)	MOMENT (POUND- INCHES)
	<u>Instruments</u> (Cont'd)			
	Turn and Bank, Piper Drawing 41711-2	2.2	64.9	143
	Rate of Climb, Garwin #22-201-01-1A	1.0	65.9	66
	Directional Gyro, Garwin (3")	2.4	64.7	155
	Directional Gyro, AIM (3")	3.1	64.0	198
X	Artificial Horizon, Garwin (3")	1.8	64.9	117
	Artificial Horizon, AIM (3")	2.2	64.4	142
X	Air Temperature Gauge, Rochester Manufacturing Co., No. 1592-C2 or NHM-70 (Manning, Maxwell & Moore)	.2	82.6	17
X	Clock, 8-Day, MIL-C-7939	.4	67.4	27
X	Tru-Speed Indicator, PAC 62143-2	Same as Standard Equipment Weight		
X	Pictorial Rate of Turn, Mitchell 52D69	1.3	65.3	85
	Brittain Turn Coordinator TC-100(12)	2.6	64.7	168
	Exhaust Gas Temperature	.7	60.4	42
	Attitude Gyro, R. C. Allen (3")	2.2	65.6	144
X	Directional Gyro, R. C. Allen (3")	3.3	64.8	214
	Manifold Pressure Gauge, PAC 21962	1.1	65.8	72
	Rate of Climb, Standard Precision SP-1403-(1)-PIP	.5	65.9	33
X	Rate of Climb, Karnish #AC-135-3	1.0	65.9	66

<b>PREPARED</b>	<b>PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.</b>	Weight and Balance Data
<b>CHECKED</b>		Model PA-28-180 D
<b>APPROVED</b>	OPTIONAL EQUIPMENT LIST	PAGE 14 Section 1

Check if Installed	ITEM	WEIGHT (LBS)	ARM AFT DATUM (INCHES)	MOMENT (POUND- INCHES)
	<u>AutoPilots</u>			
	AutoControl III			
	Roll Servo, Mitchell #1D363-183R	2.5	122.2	306
	Console, Mitchell #1C338	1.2	65.1	78
	Cables	.7	95.5	67
	Attitude Gyro, Mitchell #52D66 (Garwin)	1.9	64.9	123
	Attitude Gyro, Mitchell #52D66 (AIM)	2.3	64.4	148
	Directional Gyro, Mitchell #52D54P (Garwin)	2.5	64.7	162
	Directional Gyro, Mitchell #52D54P (AIM)	3.2	64.0	205
	Omni Coupler	.9	64.3	58
	<del>X</del> AutoFlite			
X	Roll Servo, Mitchell #1D363-183R	2.6	122.2	318
X	Gyro Amplifier, Mitchell #1C359	1.8	111.8	201
X	Cables	1.0	95.5	96
X	Panel Unit	.3	67.9	20

PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Weight and Balance Data Model PA-28-180 D
CHECKED		
APPROVED	OPTIONAL EQUIPMENT LIST	PAGE 15 Section 1

Check if Installed	ITEM	WEIGHT (LBS)	ARM AFT DATUM (INCHES)	MOMENT (POUND- INCHES)
	<u>Radio</u>			
	PM-1 Marker Beacon			
	Receiver	1.1	121.3	133
	Panel Unit	.3	68.1	20
	Cable	.3	85.0	26
	Piper Radio Compass PRC-3	4.5	64.4	290
	Piper VHF Transceiver PTR-1	5.0	64.8	324
	Piper Omni Convertor 0-1	2.5	65.3	163
	King KX150B	9.1	61.9	563
X	Omni Receiving Antenna, Narco VRP-37	1.4	203.0	284
X	VHF Antenna, Transmitting VHF-1	.3	157.8	47
	VHF Antenna, Transmitting VHF-2	.3	192.8	58
X	Cable, VHF-1	.4	118.0	47
	Cable, VHF-2	.5	135.0	68
	Low Frequency Antenna	.5	167.0	84
	Loop Antenna (PRC-3)	.3	54.5	16
	Omni Tracker (#1D482)	.5	54.9	27
X	<del>Narco Mark 12A</del>			
X	<del>Transceiver, Single</del>	6.0	61.9	371
	Transceiver, Dual	12.0	61.9	743
X	<del>Modulator-Power Unit, Single</del>	4.0	186.0	744

*Removed  
9/8/99*

*Removed  
9/8/99*

PREPARED		PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.		Weight and Balance Data	
CHECKED				Model PA-28-180 D	
APPROVED		OPTIONAL EQUIPMENT LIST		PAGE 16 Section 1	
Check if Installed	ITEM	WEIGHT (LBS)	ARM AFT DATUM (INCHES)	MOMENT (POUND- INCHES)	
	<u>Radio</u> (Cont'd)				
	Modulator-Power Unit, Dual	8.0	186.0	1488	
X	Cable, Single	1.7	120.0	204	
	Cable, Dual	3.4	120.0	408	
	Narco VOA-6 Omni Convertor	1.8	64.4	116	
	Narco VOA-5 Omni Convertor	3.1	64.4	200	
	Narco VOA-4 Omni Convertor	3.0	64.4	193	
	Narco VOA-4 Omni Convertor	3.0	64.4	193	
X	Narco ADF-31A, Piper Drawing 67456				
<del>X</del>	<del>Panel Unit</del>	<del>4.8</del>	<del>63.5</del>	<del>305</del>	<i>Remo 9/18/77</i>
X	Sensor Unit and Doublers	2.2	162.7	358	
<del>X</del>	<del>Sensor Cable</del>	<del>2.3</del>	<del>105.6</del>	<del>243</del>	<i>Remo 9/18/77</i>
X	Sense Antenna and Cable	.4	150.0	60	
	Bendix ADF-T-12				
	Receiver	3.8	65.8	250	
	Audio Amplifier	.8	56.0	45	
	Radio Compass	1.7	66.4	113	
	Loop Antenna	1.2	160.8	193	
	Cable, Antenna	1.5	108.0	162	
X	Narco VOA-8 Omni Convertor	3.3	64.4	213	
	Narco VOA-9 Omni Convertor	3.4	64.4	219	

PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.		Weight and Balance Data Model PA-28-180 D	
CHECKED			PAGE 17 Section 1	
APPROVED	OPTIONAL EQUIPMENT LIST			
Check if Installed	ITEM	WEIGHT (LBS)	ARM AFT DATUM (INCHES)	MOMENT (POUND- INCHES)
	<u>Radio</u> (Cont'd)			
	Narco - UDI-111 DME	8.6	62.6	538
	Narco Mark III	7.5	62.7	470
	Narco UDI-4 DME			
	Receiver	8.5	61.7	524
	Antenna	.3	113.9	34
	Cable, Antenna	.4	100.0	40
<input checked="" type="checkbox"/>	UGR-2 Glide Slope			
<input checked="" type="checkbox"/>	Receiver	2.4	173.8	417
<input checked="" type="checkbox"/>	Cable	2.1	128.0	269
<input checked="" type="checkbox"/>	Antenna	.4	92.4	37
<input checked="" type="checkbox"/>	Cable, Antenna	.5	145.0	73
	Transmitter Selector (Dual VHF Only)	.7	66.3	46
<input checked="" type="checkbox"/>	Microphone	.5	75.0	38
<input checked="" type="checkbox"/>	Headset	.5	65.0	33
<input checked="" type="checkbox"/>	Junction Box	.6	66.3	40
<input checked="" type="checkbox"/>	In-Flight Devices' Century -- 31 Transponder	3.5	63.7	222.95
	Cable and Antenna	1.1	83.5	918.5
<input checked="" type="checkbox"/>	Narco MBT	1.2	66.8	80.2
<input checked="" type="checkbox"/>	Trans Cal Blind encoder	1.0	53.4	53.4

*Remove  
9/8/81*

PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Weight and Balance Data Model PA-28-180 D
CHECKED		
APPROVED	OPTIONAL EQUIPMENT LIST	PAGE 18 Section 1

Check if Installed	ITEM	WEIGHT (LBS)	ARM AFT DATUM (INCHES)	MOMENT (POUND- INCHES)
	<u>Miscellaneous</u>			
X	Nose Wheel Fairing, Piper Drawing 65348	3.8	34.8	132
X	Main Wheel Fairing, Piper Drawing 65237	7.0	109.6	767
X	Assist Step	1.8	156.0	281
	Toe Brakes (Dual)	10.5	54.6	573
X	Toe Brakes (Single)	5.0	54.6	273
	Fire Extinguisher-Stop Fire #A-20	7.5	93.0	698
	Inertia Safety Belt, PAC 65766 (Set of 2)	2.5	111.6	279
X	Assist Strap and Coat Hooks	.2	109.5	22
X	Lighter	.2	67.9	14
	Fire Extinguisher, Kidde Kompact VI (With Brackets)	5.3	85.0	451
	TOTAL OPTIONAL EQUIPMENT	62.9	91.1	5729
X	<i>Narco ELT-10 Ant.</i>	<i>3.7</i>	<i>176.0</i>	<i>651</i>

EXTERIOR FINISH

Base Color Juneau White

1st Trim Color Mocha Tan

2nd Trim Color Denver Brown

Registration No. Color Denver Brown

Type Finish Lacquer