

FAA APPROVED 2/14/66

REVISED 5/ 5/69 Rev. No. 17

PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Weight and Balance Data Model PA-28-140
DESIGNED		
APPROVED		PAGE Title

REPORT VB-162

EQUIPMENT LIST

MODEL PA-28-140

*And WEIGHT +
BALANCE*

DESIGNED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Weight and Balance Data Model PA-28-140
CHECKED		
APPROVED		REPORT VB-162 PAGE <u>11</u>

Log of Revisions

REVISION NO.	PAGE	DESCRIPTION	APPROVED	DATE
1	12	Added: R. C. Allen Turn Coordinator #80-9	<i>g.m. Allen</i>	1-26-69
2	14	Changed Narco Mark 12 to read: Narco Mark 12A or Narco Mark 12B Added: Narco Mark VIII Narco VOA-50M Omni Convertor Narco VOA-40 Omni Convertor (2)	<i>g.m. Allen</i>	1-31-69

PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Weight and Balance Data
DESIGNED		Model PA-28-140
APPROVED		REPORT VB-162
		PAGE 1 Section 1

WEIGHT AND BALANCE DATA

MODEL PA-28-140 CHEROKEE

Airplane Serial Number 28-26085

Registration Number N98171

Date JUN 26 1969

AIRPLANE EMPTY WEIGHT

Item	Weight (lbs)	C. G. Arm X (Inches aft of Datum)	Moment (in-lbs)
Standard Empty Weight * Normal Computed	1224.4	84.4	103294
Optional Equipment	86.2	100.3	8643
Unusable Fuel (3 Pints)	2.2	103.0	227
Licensed Empty Weight = Total of Above Items	1312.4	85.5	112166

* Standard Empty Weight includes paint, hydraulic fluid and undrainable engine oil.

AIRPLANE USEFUL LOAD

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

Normal Category: (2150 lbs.) - (1312.4 lbs) = 837.6 lbs.

Utility Category: (1950 lbs) - (1312.4 lbs) = 637.6 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. G. Grier
 Inspection Representative

AS DELIVERED FROM THE FACTORY. REFER TO FORM FAA-337 WHEN ALTERATIONS HAVE BEEN MADE.

A. G. Grier
Inspection Representative

PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Weight and Balance Data Model PA-28-140
CHIEF		
APPROVED	REPORT VB-162	PAGE 2 Section 1

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.

NOTE: With optional jump seats installed, aft passenger weight is restricted only by airplane weight and balance limitations (See Page 4 of this section). For baggage allowance, see Page 2A of this section.

SAMPLE LOADING PROBLEM (Normal Category)

	Weight (lbs.)	Arm Aft Datum (Inches)	Moment (In-lbs.)
Licensed Empty Weight	1312.4	85.5	112166
Oil (8quarts)	15	32.5	488
Pilot and Front Passenger	340	85.5	29070
Passengers, Aft *	340	117.0	39780
Fuel (50 Gal. Maximum) 23.8 gallons	142.6	95.0	13547
Baggage * Area ①		117.0	
Baggage * Area ②		133.3	
Total Loaded Airplane	2150	90.7	195051

The center of gravity (C.G.) of this sample loading problem is at 90.7 inches aft of the datum line. Locate this point (90.7) 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.

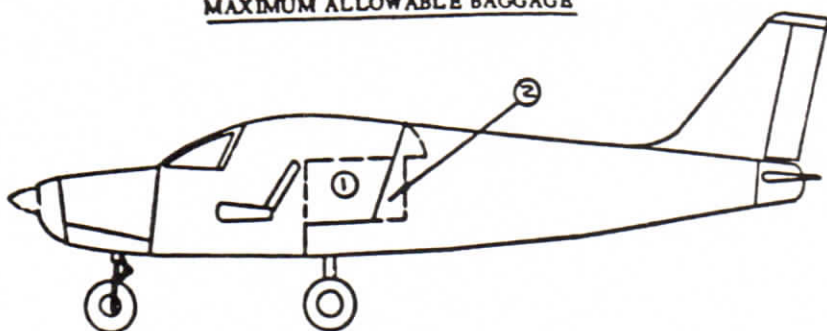
IT IS THE RESPONSIBILITY OF THE PILOT AND AIRCRAFT OWNER TO INSURE THAT THE AIRPLANE IS LOADED PROPERLY.

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

Normal Category Operation - See Page 2A of this section.

PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Weight and Balance Data Model PA-28-140
CHIEF		
APPROVED	REPORT VB-162	PIRE 2A Section 1

MAXIMUM ALLOWABLE BAGGAGE



A. Maximum Allowable Baggage Capacity Area ① = 200 lbs.

1. S/N 28-20940 and up.
2. S/N 28-20001 through 28-20939 (maximum baggage may be increased to 200 lbs by the installation of Piper Kit 756 962 and Sensenich propeller M74DM58 or 74DM6-0-58).

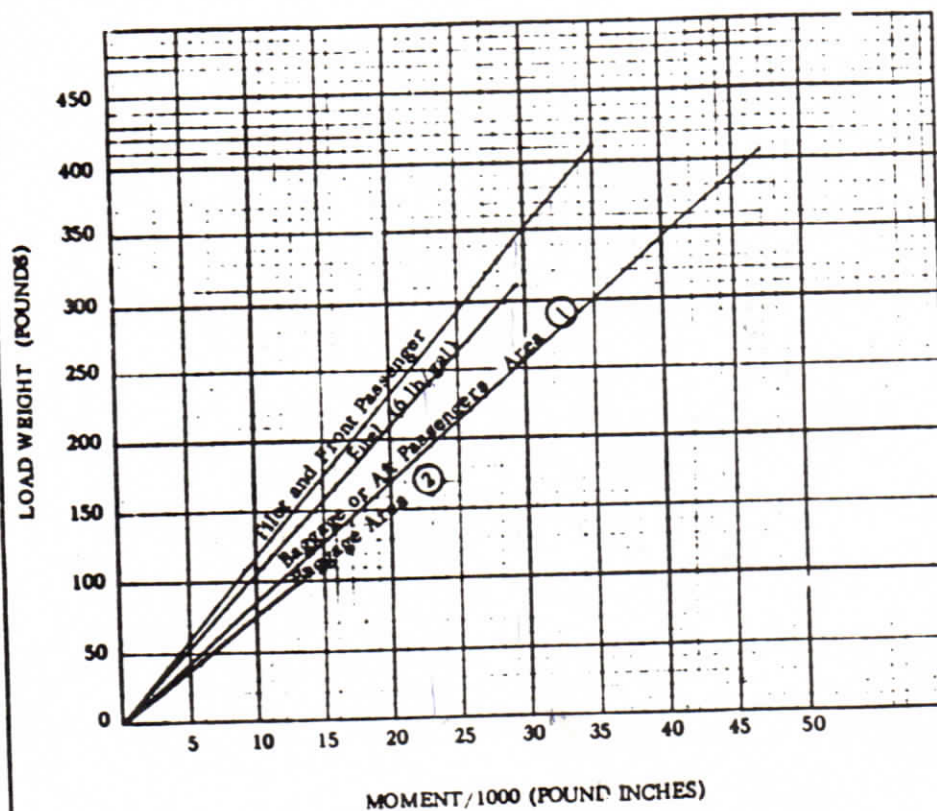
B. Maximum Allowable Baggage Capacity Area ② = 100 lbs.

1. S/N 28-20940 and up. (Aircraft are eligible for 100-lb maximum baggage in this area when modified in accordance with Piper drawing 66671).
2. S/N 28-20001 through 28-20939. (Aircraft are eligible for 100-lb maximum baggage in this area by the installation of Piper Kit 756 962, Sensenich propeller M74DM58 or 74DM6-0-58 and when modified in accordance with Piper drawing 66671).

PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Weight and Balance Data Model PA-28-140
CHIEF		

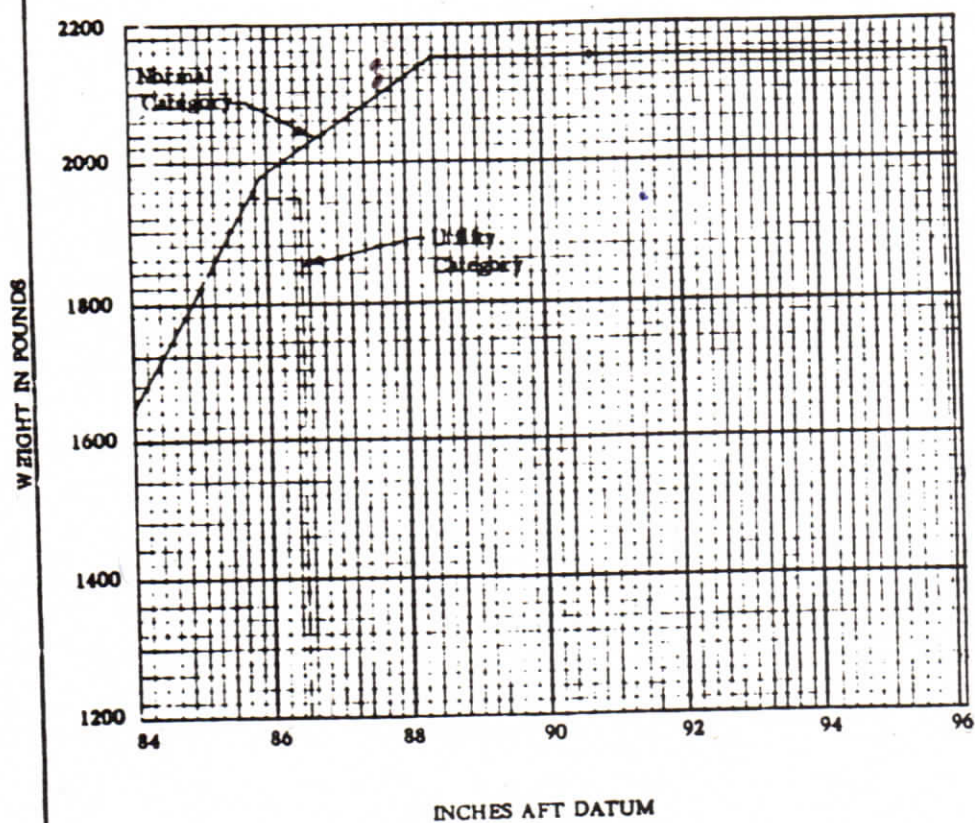
PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Weight and Balance Data Model PA-28-140
CHECKED		
APPROVED		REPORT VB-162 PAGE 3 Section 1

LOADING GRAPH



PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Weight and Balance Data
DRAWN		Model PA-28-140
APPROVED		REPORT VB-162
		Page 1 Section 1

C. G. RANGE AND WEIGHTS



PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Weight and Balance Data Model PA-28-140
CHECKED		
APPROVED	REPORT VB-162	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 BY <i>J. L. Dean</i> REVIEWED BY <i>R. J. Hemen</i> APPROVED <i>[Signature]</i>	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Weight and Balance Data Model PA-28-140
REPORT VB-162		PAGE 6 Section 1

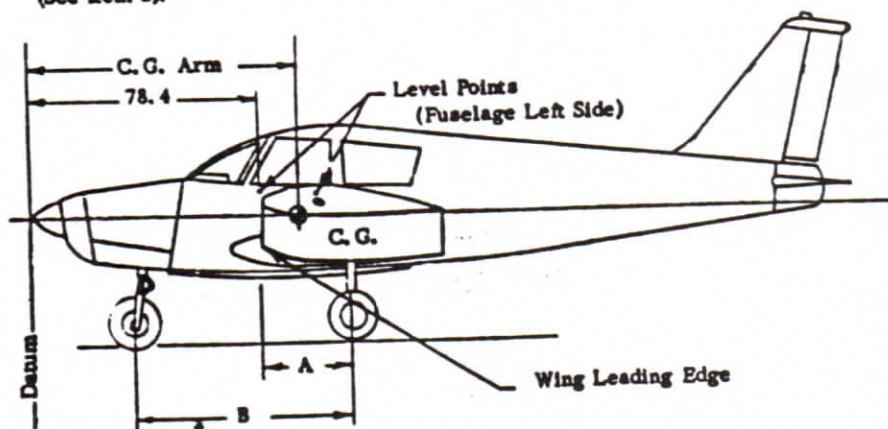
3. WEIGHING - AIRPLANE EMPTY WEIGHT

2. 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-28-140 B airplane when airplane is level (See Item 2).



A =

B =

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

A =

B =

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

DESIGNED BY	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Weight and Balance Data Model PA-28-140
APPROVED BY		REPORT VB-162
		PAGE 7 Section 1

- 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:

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

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

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.		Weight and Balance Data	
DESIGNED	DEVELOPMENT CENTER, VERO BEACH, FLA.		Model PA-28-140	
APPROVED	REPORT VB-162		PAGE 8 Section 1	
		STANDARD EQUIPMENT LIST		

WEIGHT AND BALANCE STANDARD EQUIPMENT LIST MODEL PA-28-140				
Check if Installed	ITEM	WEIGHT (LBS)	ARM AFT DATUM (INCHES)	MOMENT (POUND- INCHES)
	<u>Engine Accessories</u>			
<input checked="" type="checkbox"/>	Engine - Lycoming Model O-320-E2A	261.4	26.1	6822
<input checked="" type="checkbox"/>	Fuel Pump, Electric Auxiliary, Bendix Model 478360	1.8	41.8	75
<input checked="" type="checkbox"/>	Fuel Pump, Engine Driven, Lycoming Dwg. No. 73297, 74082, 75148 or 75246	1.6	41.3	66
<input checked="" type="checkbox"/>	Oil Cooler, Piper Dwg., Harrison C-8526250	2.6	18.1	47
<input checked="" type="checkbox"/>	Filter, Fram Model CA-161PL or AC No. A48C or Purolator AFP-2	.9	20.1	18
<input checked="" type="checkbox"/>	Starter - Lycoming #76210 (Prestolite MZ 4204) 17.0 *		19.5	332
<input checked="" type="checkbox"/>	Alternator, 60 Amp. Chrysler No. 2642997	12.5	19.0	238
	<u>Propeller and Propeller Accessories</u>			
<input checked="" type="checkbox"/>	Propeller, Sensenich M74DM58 or 74DM6-0-58	30.0	10.1	303
<input checked="" type="checkbox"/>	Spinner and Attachment Plates	2.0	8.0	16
	<u>Landing Gear and Brakes</u>			
<input checked="" type="checkbox"/>	Two Main Wheel Assemblies 6.00-6 (a) Cleveland Aircraft Products (2) Wheel Assembly No. 40-86 (2) Brake Assembly No. 30-55 (b) Two Main 4-Ply Rating Tires 6.00-6 with Regular Tubes	32.0	109.6	3507
<input checked="" type="checkbox"/>	One Nose Wheel 6.00-6 (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	12.5	34.8	435

* Included in Engine Weight

<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			
	* Included in Engine Weight			

PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.		Weight and Balance Data Model PA-28-140	
DESIGNED	REPORT VB-161 STANDARD EQUIPMENT LIST		PAGE 9 Section 1	
APPROVED				

Check if Installed	ITEM	WEIGHT (LBS)	ARM AFT DATUM (INCHES)	MOMENT (POUND- INCHES)
	<u>Electrical Equipment</u>			
<u>X</u>	Stall Warning Device, Safe Flight Instrument Corporation, No. C52207-4	.2	80.2	16
<u>X</u>	Voltage Regulator, Wico Electric No. X.163008	.5	57.8	29
	Battery 12V, 25 A. H., Rebat Model S-25	21.5	114.9	2470
<u>X</u>	Overvoltage Relay, Wico Electric No. X16799	.5	53.8	27
	<u>Instruments</u>			
<u>X</u>	Compass - Piper Drawing 67462	.9	64.9	58
	Airspeed Indicator - Piper Drawing 63205	.6	66.8	40
<u>X</u>	Tachometer - Piper Drawing 62177-2 or -3	.7	66.2	46
<u>X</u>	Engine Cluster - Piper Drawing 95241-7	.8	67.4	54
<u>X</u>	Altimeter - Piper Drawing 67467	1.0	65.9	66
<u>X</u>	Ammeter - Piper Drawing 66696	.3	67.4	20
	<u>Miscellaneous</u>			
<u>X</u>	Forward Seat Belts (2)	1.5	86.9	130
	Baggage Tie Down Straps	.8	118.0	94
<u>X</u>	Flight Manual	----	----	----
<u>X</u>	Tow Bar	1.3	104.7	136

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

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

DESIGNED	PIPER AIRCRAFT CORP.		Weight and Balance Data	
CONSTRUCTED	DEVELOPMENT CENTER, VERO BEACH, FLA.		Model PA-28-140	
APPROVED	REPORT VB-162		PART 10 Section 1	
OPTIONAL EQUIPMENT LIST				
OPTIONAL EQUIPMENT LIST MODEL PA-28-140				
Check if Installed	ITEM	WEIGHT (LBS)	ARM AFT DATUM (INCHES)	MOMENT (POUND- INCHES)
	<u>Engine Accessories</u>			
<input checked="" type="checkbox"/>	Vacuum Pump, Airborne Mechanisms Model No. 10-113A1 or 113A5 or 200 cc and Drive	5.0	37.0	185
<input type="checkbox"/>	Starter - Lycoming 76211 (Prestolite MZ 4206) (Weight 18.0 lbs.)	1.0 *	19.5	20
<input checked="" type="checkbox"/>	Oil Filter - Lycoming #74911 (AC 81-A #6437032)	3.3	40.5	134
<input checked="" type="checkbox"/>	Vacuum Regulator and Filter	2.2	57.0	125
<input type="checkbox"/>	Vacuum Regulator	1.5	56.0	84
	<u>Electrical Equipment</u>			
<input checked="" type="checkbox"/>	Rotating Beacon, Grimes #40-0101-7-12 or Grimes #40-0101-15-12	1.5	263.4	395
<input checked="" type="checkbox"/>	Landing Light, G. E. Model 4509	.5	18.1	9
<input checked="" type="checkbox"/>	Navigation Lights (2) Grimes Model A1285 (Red and Green)	.4	106.6	43
<input checked="" type="checkbox"/>	Navigation Light (Rear) (1) Grimes Model 2064 (White)	.2	281.0	56
<input checked="" type="checkbox"/>	Battery 12V., 35 A.H. Reading R-35 (Weight 27.0 lbs.)	5.5 *	114.9	632
* Weight and Moment difference between standard and optional equipment.				

• Weight and Moment difference between standard and optional equipment.

PREPARED	PIPER AIRCRAFT CORP.		Weight and Balance Data	
DESIGNED	DEVELOPMENT CENTER, VERO BEACH, FLA.		Model PA-28-140	
APPROVED	REPORT VB-162		PAGE 11 Section 1	
		OPTIONAL EQUIPMENT LIST		

Check if Installed	ITEM	WEIGHT (LBS)	ARM AFT DATUM (INCHES)	MOMENT (POUND- INCHES)
	<u>Electrical Equipment (Cont'd)</u>			
<input checked="" type="checkbox"/>	Cabin Light	.3	104.0	31
<input checked="" type="checkbox"/>	Cabin Speaker	.8	104.0	83
<input type="checkbox"/>	Auxiliary Power Receptacle 65529	3.0	133.0	399
<input type="checkbox"/>	External Power Cable 62355-7	4.6	117.0	538
<input type="checkbox"/>	Piper Pitch Trim	4.3	155.3	668
<input type="checkbox"/>	Heated Pitot Head	.4	100.0	40
	<u>Instruments</u>			
<input type="checkbox"/>	Suction Gauge - Piper Drawing 67481	.5	67.2	34
<input type="checkbox"/>	Suction Gauge - U.S. Gauge AW1821APO3	.5	67.2	34
<input checked="" type="checkbox"/>	Suction Gauge, Airborne Mechanisms 1G3-4	.5	67.2	34
<input type="checkbox"/>	Altimeter, AN5760-2 (C-12 or C-13)	Same as Standard Equipment Weight		
<input checked="" type="checkbox"/>	Rate of Climb - Piper Drawing 67468	1.0	65.9	66
<input type="checkbox"/>	Artificial Horizon, Garwin (3")	1.8	64.9	117
<input type="checkbox"/>	Artificial Horizon, AIM (3")	2.2	64.4	142
<input type="checkbox"/>	Directional Gyro, Garwin (3")	2.4	64.7	155
<input type="checkbox"/>	Directional Gyro, AIM (3")	3.1	64.0	198
<input checked="" type="checkbox"/>	Attitude Gyro, R.C. Allen (3")	2.2	65.6	144
<input checked="" type="checkbox"/>	Directional Gyro, R.C. Allen (3")	3.3	64.8	214

DESIGNED	PIPER AIRCRAFT CORP.		Weight and Balance Data
CONSTRUCTED	DEVELOPMENT CENTER, VERO BEACH, FLA.		Model PA-28-140
APPROVED	REPORT VB-162		PAGE 12 Section 1
	OPTIONAL EQUIPMENT LIST		

Check if Installed	ITEM	WEIGHT (LBS)	ARM AFT DATUM (INCHES)	MOMENT (POUND- INCHES)
	<u>Instruments (Cont'd)</u>			
<u>X</u>	Air Temperature Gauge, Rochester Manufacturing Co., No. 1592-C2 or NHM-70 (Manning, Maxwell & Moore)	.2	82.6	17
<u>X</u>	Clock, 8-Day - MIL-C-7939	.4	67.4	27
<u>X</u>	Tru-Speed Indicator, Piper Drawing 62143	Same as Standard Equipment Weight		
<u>X</u>	Pictorial Rate of Turn, Mitchell 52D69	1.3	65.3	85
	Turn and Bank, Piper Drawing 41711-2	2.2	64.9	143
	Brittain Turn Coordinator #TC-100(12)	2.6	64.7	168
	R. C. Allen Turn Coordinator #80-9	2.3	64.7	149
	<u>Autopilots</u>			
	<u>Autoflite</u>			
	Roll Servo, Mitchell #1C363-1-183R	2.2	122.3	269
	Gyro Amplifier, Mitchell #1C359-1	1.8	111.8	201
	Cables	1.0	95.5	96
	Panel Unit	.3	67.9	20
	Omai Tracker (#1D482)	.5	54.9	27

PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.		Weight and Balance Data Model PA-28-140	
REPORT VB-162 OPTIONAL EQUIPMENT LIST		Page 13 Section 1	

Check if Installed	ITEM	WEIGHT (LBS)	ARM AFT DATUM (INCHES)	MOMENT (POUND- INCHES)
	<u>AutoPilots (Cont'd)</u>			
	<u>AutoControl III</u>			
	Roll Servo, Mitchell #1C363-1-183R	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 #52D54 (Garwin)	2.5	64.7	162
	Directional Gyro, Mitchell #52D54 (AIM)	3.2	64.0	205
	Omni Coupler, Mitchell #1C388	.9	64.3	58
	<u>Radio</u>			
	<u>FM-1 Marker Beacon</u>			
	Receiver	1.1	121.3	133
	Panel Unit	.3	68.1	20
	Cable	.3	85.0	26
<input checked="" type="checkbox"/>	Omni Receiving Antenna, Narco VRP -37	1.4	203.0	284

PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.		Weight and Balance Data Model PA-28-140	
REPORT VB-162 OPTIONAL EQUIPMENT LIST		PAGE 14 Section 1	

Check if Installed	ITEM	WEIGHT (LBS)	ARM AFT DATUM (INCHES)	MOMENT (POUND- INCHES)
	<u>Radio</u> (Cont'd)			
<input checked="" type="checkbox"/>	VHF Antenna, Transmitting VHF-1	.3	157.8	47
	VHF Antenna, Transmitting VHF-2	.3	192.8	58
<input checked="" type="checkbox"/>	Cable, VHF-1	.4	118.0	47
	Cable, VHF-2	.5	135.0	68
	Low Frequency Antenna	.5	167.0	84
<input checked="" type="checkbox"/>	<u>Narco Mark 12A or Narco Mark 12B</u>			
<input checked="" type="checkbox"/>	Transceiver, Single	6.0	61.9	371
	Transceiver, Dual	12.0	61.9	743
<input checked="" type="checkbox"/>	Modulator-Power Unit, Single	4.0	146.8	587
	Modulator-Power Unit, Dual	8.0	149.7	1198
<input checked="" type="checkbox"/>	Cable, Single	1.8	120.0	216
	Cable, Dual	3.8	120.0	456
	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 Mark III	7.5	62.7	470
	Narco Mark VIII	7.5	62.7	470
	Narco VOA-50M Omni Convertor	2.1	64.9	136
<input checked="" type="checkbox"/>	Narco VOA-40 Omni Convertor	1.9	64.9	123
	Narco VOA-40 Omni Convertor	1.9	64.9	123

PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA. REPORT VB-162 OPTIONAL EQUIPMENT LIST	Weight and Balance Data
DRAWN		Model PA-28-140
APPROVED		PAGE 15 Section 1

Check if Installed	ITEM	WEIGHT (LBS)	ARM AFT DATUM (INCHES)	MOMENT (POUND- INCHES)
	<u>Radio (Cont'd)</u>			
	Bendix ADF-T-12			
	Receiver	3.8	64.0	243
	Audio Amplifier	.3	64.0	51
	Radio Compass	1.7	66.8	113
	Loop Antenna	1.2	160.8	193
	Cable, Antenna	1.5	108.0	162
	Sense Antenna And Cable	.4	150.0	60
<input checked="" type="checkbox"/>	Microphone	.5	75.0	38
<input checked="" type="checkbox"/>	Headset	.5	65.0	33
	Narco ADF-31			
	Panel Unit	4.8	63.5	305
	Sensor Unit and Doublers	2.2	162.7	358
	Sense Antenna and Cable	.4	150.0	60
	Sensor Cable	2.3	105.6	243
	Narco VOA-8 Omni Convertor	3.3	64.4	213
	Narco VOA-9 Omni Convertor	3.4	64.4	219
	Narco UDI-4 DME			
	Receiver	8.5	61.7	524
	Antenna	.3	113.9	34
	Cable, Antenna	.4	100.0	40

marco UDE-4 DME

Receiver	8.5	61.7	524
Antenna	.3	113.9	34
Cable, Antenna	.4	100.0	40

PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.		Weight and Balance Data Model PA-28-140	
REPORT VB-162 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)			
	UGR-2 Glide Slope			
	Receiver	2.4	141.8	340
	Cable	1.8	106.0	191
	Antenna	.4	92.4	37
	Cable, Antenna	.3	143.0	73
	Transmitter Selector (Dual VHF Only)	.7	66.3	46
<input checked="" type="checkbox"/>	Junction Box	.6	66.3	40
	<u>Miscellaneous</u>			
	Fire Extinguisher - Stop Fire # A-20	7.5	93.0	698
	Fire Extinguisher - Kidde Kompact VI (With Brackets)	5.3	85.0	451
<input checked="" type="checkbox"/>	Nose Wheel Fairing - Piper Dwg. 65348	3.8	34.8	132
<input checked="" type="checkbox"/>	Main Wheel Fairings - Piper Dwg. 65237	7.0	109.6	767
	Toe Brakes (Dual)	10.5	54.6	573
	Toe Brakes (Single)	5.0	54.6	273
<input checked="" type="checkbox"/>	Assist Step	1.8	156.0	281
	Inertia Safety Belt - Piper Dwg. 65766 (Set of 2)	2.5	111.6	279
<input checked="" type="checkbox"/>	Lighter	.2	67.9	14

DESIGNED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Weight and Balance Data Model PA-28-140
APPROVED		
	REPORT VB-167 OPTIONAL EQUIPMENT LIST	PAGE 17 Section 1

Check if Installed	ITEM	WEIGHT (LBS)	ARM AFT DATUM (INCHES)	MOMENT (POUND- INCHES)
	<u>Miscellaneous</u> (Cont'd)			
<input checked="" type="checkbox"/>	Jump Seat Installation, Piper Drawing 66664			
<input checked="" type="checkbox"/>	Jump Seats (2)	16.2	118.0	1912
<input checked="" type="checkbox"/>	Jump Seat Belts and Cables	1.1 *	123.0	135
<input checked="" type="checkbox"/>	Close Out Panel	7.3 *	140.6	1026
<input checked="" type="checkbox"/>	Ventilators (2)	1.0	100.9	101
<input checked="" type="checkbox"/>	Ash Trays (2)	.8	110.2	88
<input checked="" type="checkbox"/>	Assist Strap and Coat Hook	.2	109.5	22
<input checked="" type="checkbox"/>	Baggage Tie Down Straps	.8	126.7	101
	TOTAL OPTIONAL EQUIPMENT	86.2	100.3	8643

EXTERIOR FINISH

Base Color Juneau White

1st Trim Color Pontiac Red

2nd Trim Color Dakota Black

Registration No. Color Pontiac Red

Type Finish Lacquer

* Weight and Moment difference between standard and optional equipment.