

INDEX - WEIGHT AND BALANCE

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WEIGHT AND BALANCE

FOR

CHEROKEE WARRIOR

APPLICABLE TO AIRPLANE SERIAL NUMBERS 28-7415001 THROUGH 28-7615435

WARNING

EXTREME CARE MUST BE EXERCISED TO LIMIT THE USE OF THIS REPORT TO APPLICABLE AIRCRAFT. THIS REPORT REVISED AS INDICATED BELOW OR SUBSEQUENTLY REVISED IS VALID FOR USE WITH THE AIRPLANE IDENTIFIED BELOW WHEN APPROVED BY PIPER AIRCRAFT CORPORATION. SUBSEQUENT REVISIONS SUPPLIED BY PIPER AIRCRAFT CORPORATION MUST BE PROPERLY INSERTED.

MODEL PA-28-151

AIRCRAFT SERIAL NO. _____ REGISTRATION NO. _____

WEIGHT AND BALANCE, REPORT NUMBER VB-535 REVISION _____

PIPER AIRCRAFT CORPORATION
APPROVAL SIGNATURE AND STAMP _____

ISSUED: MAY 14, 1973
REVISED: OCTOBER 21, 1977

REPORT: VB-535
MODEL: PA-28-151







WEIGHT AND BALANCE LOG OF REVISIONS

Revision	Revised Pages	Description and Revision	Approved Date
1	5-8	Revised Arm and Moment values and Fuel capacity for Sample Loading Problem.	<i>V. Tennant</i> Aug. 30, 1973
2	5-10 5-17 5-27	Revised C.G. Range and Weight Chart. Added Vacuum Pump (79399-0). Revised Ground Ventilating Blower.	<i>om</i> Jan. 25, 1974
3	Title	Added PAC Approval Form. (NOTE: AIRCRAFT DELIVERED WITH MANUALS PRIOR TO THIS REVISION DO NOT REQUIRE THIS REVISION.)	May 31, 1974
4	5-5, 5-7 5-12 5-13 5-14 5-16 5-17 5-18 5-19 5-20 5-21 5-22 5-23 5-24 5-25 5-25a 5-25b	Revised Unusable Fuel Moment (graph). Revised Engine Driven Fuel Pump and Prestolite Starter Cert. Basis; added Chrysler Alternator; added Oil Filters and footnote. Revised Landing Gear Cert. Basis. Revised Battery Weight, Arm and Moment; added Annunciator Lights and footnote. Revised Inertia Safety Belts Weights, Moment and part no. Added Lycoming LW13743, Champion (H-48110) Oil Filter; revised Vacuum Regulator Weight and Moment; revised Prestolite Starter Cert. Basis; added Low Vacuum Annunciator Lights, Airborne Vacuum Regulator and footnotes. Revised Battery Weight, Arm and Moment. Revised Red Strobe Light Cert. Basis. Added Encoding Altimeter and footnote. Revised AutoControl III; added AutoControl IIIB and footnotes. Revised King VHF Transceivers; added footnote. Added footnote. Revised UGR-2A Glide Slope; added footnote Revised Narco Marker Beacon and King Audio Panel; added footnote Added Page. Added Page.	<i>om</i>



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WEIGHT AND BALANCE LOG OF REVISIONS (cont)

Revision	Revised Pages	Description and Revision	Approved Date
4 (cont)	5-26	Revised Inertia Safety Belts part no.; revised Main Wheel Fairings and Adjustable Front Seats Weight, Arm and Moment; added Assist Strap.	 June 14, 1974
	5-27	Added Corrosive Resistant Kit	
5	5-15	Revised Engine Cluster Dwg. No Revised Fire Extinguisher Weight and Moment; deleted Baggage Tie Down Straps Added Overhead Vent Systems (76304-9 and 76304-10)	 Jan. 17, 1975
	5-26		
	5-27		
6	5-15	Revised Airspeed Indicator info; added footnotes.	 July 14, 1975
	5-18	Revised Rotating Beacon; revised Piper Pitch Trim Dwg. No.; added 67496-3 and footnote.	
	5-20	Revised Tru-Speed Indicator info.; added Engine Hour Meter; added footnotes.	
	5-21	Revised AutoFlite II, AutoControl IIIB and Omni Coupler Cert. Basis; added footnotes.	
	5-26	Added 79591-0 (Left) Vert. Adj. Front Seats; added 79591-1 (Right) Vert. Adj. Front Seat.	
	5-27	Added Stainless Steel Control Cables; relocated Exterior Finish to page 5-28.	
	5-28	Added Exterior Finish from page 5-27.	
7	5-20	Revised Clock.	 Dec. 1, 1975
	5-25	Revised Automatic Locator Transmitter	
	5-25a	Added King KN61 and KN65A DME's.	
8	5-25	Added Automatic Locator Transmitter; moved info to page 5-25a.	 July 20, 1976
	5-25a	Added info from page 5-25.	
9	Title	Added Applicable Serial Numbers (NOTE: AIRCRAFT DELIVERED WITH MANUALS PRIOR TO THIS REVISION DO NOT REQUIRE THIS REVISION.)	 Oct. 21, 1977

WEIGHT AND BALANCE LOG OF REVISIONS (cont)

Revision	Revised Pages	Description and Revision	Approved Date
10	5-1 5-3 5-4	Revised Weight and Balance info. Added Caution; relocated para. 2. b. to pg. 5-4. Added para. 2. b. from pg. 5-3.	 April 6, 1979
11	5-12	Added Oil Cooler alternate vendor info.	 Nov. 10, 1988

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WEIGHT AND BALANCE

In order to achieve the performance and flying characteristics which are designed into the airplane, it must be flown with the weight and center of gravity (C.G.) position within the approved envelope. The aircraft offers a tremendous flexibility of loading. However, you cannot fill the airplane, with the maximum number of adult passengers, full fuel tanks and maximum baggage. With the flexibility comes responsibility. The pilot must insure that the airplane is loaded within the loading envelope before he makes a takeoff.

Misloading carries consequences for any aircraft. An overloaded airplane will not take off, climb or cruise as well as a properly loaded one. The heavier the airplane is loaded, the less climb performance it will have.

Center of gravity is a determining factor in flight characteristics. If the C.G. is too far forward in any airplane, it may be difficult to rotate for takeoff or landing. If the C.G. is too far aft, the airplane may rotate prematurely on takeoff or try to pitch up during climb. Longitudinal stability will be reduced. This can lead to inadvertent stalls and even spins; and spin recovery becomes more difficult as the center of gravity moves aft of the approved limit.

A properly loaded aircraft, however, will perform as intended. Before the airplane is delivered, it is weighed, and a basic weight and C.G. location is computed. (Basic weight consists of the empty weight of the aircraft plus the unusable fuel and full oil capacity.) Using the basic weight and C.G. location, the pilot can easily determine the weight and C.G. position for the loaded airplane by computing the total weight and moment and then determining whether they are within the approved envelope.

The basic weight and C.G. location for a particular airplane are recorded in the weight and balance section of the Airplane Flight Manual. The current values should always be used. Whenever new equipment is added or any modification work is done, the mechanic responsible for the work is required to compute a new basic weight and basic C.G. position and to write these in the aircraft log book. The owner should make sure that it is done.

A weight and balance calculation is necessary in determining how much fuel or baggage can be boarded so as to keep within allowable limits. Check calculations prior to adding fuel to insure against improper loading.

The following pages are forms used in weighing an airplane in production and in computing basic weight, basic C.G. position, and useful load. Note that the useful load includes fuel, oil, baggage, cargo and passengers. Following this is the method for computing takeoff weight and C.G.

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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 5-7.

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.

CAUTION

Whenever the fuel system is completely drained and fuel is replenished it will be necessary to run the engine for a minimum of 3 minutes at 1000 RPM on each tank to insure no air exists in the fuel supply lines.

- 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 copilot 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.

CHEROKEE WARRIOR

- b. Level airplane (see diagram) deflating nose wheel tire, to center bubble on level.

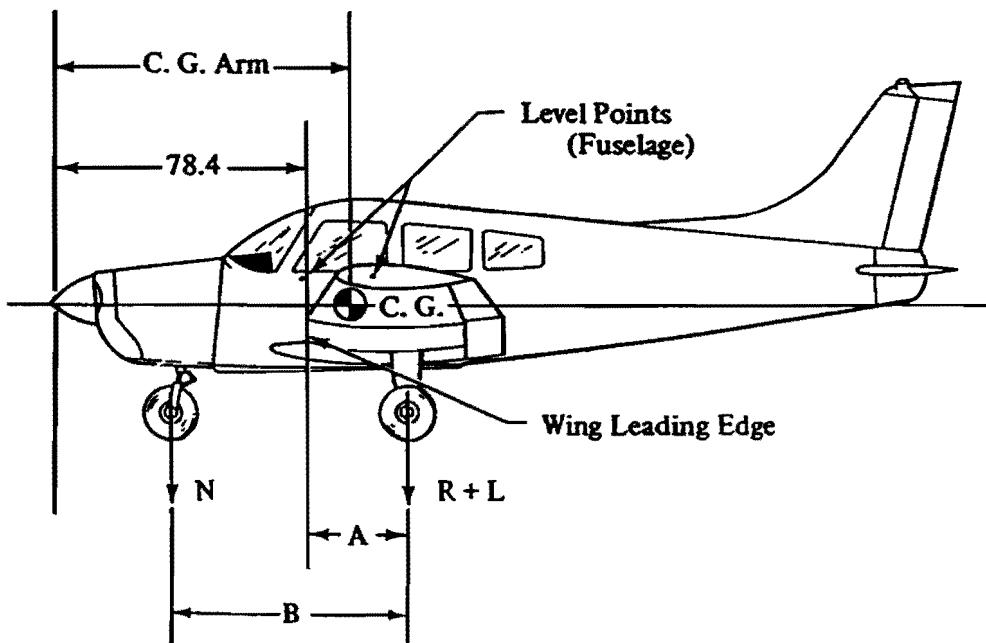
3. WEIGHING - AIRPLANE EMPTY WEIGHT

- 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-28-151 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 =

- b. Obtain measurement "A" by measuring from a plumb bob dropped from one wing leading edge, at the intersection of the straight and inboard 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:

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

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

5. LICENSED EMPTY WEIGHT AND EMPTY WEIGHT CENTER OF GRAVITY

	Weight	Arm	Moment
Empty Weight (as weighed)			
Unusable Fuel (2.0 gal.)	12 lb	103.0	1236
Licensed Empty Weight			

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WEIGHT AND BALANCE DATA

MODEL PA-28-151 CHEROKEE

Airplane Serial Number _____

Registration Number _____

Date _____

AIRPLANE EMPTY WEIGHT

Item		Weight (Lbs)	x	C. G. Arm (Inches Aft of Datum)	=	Moment (In-Lbs)
*Empty Weight	Actual Computed					
Unusable Fuel (2 gal.)		12		103		1236
Standard Empty Weight						
Optional Equipment						
Licensed Empty Weight						

*Empty weight is defined as dry empty weight (including paint and hydraulic fluid) plus 1.8 lbs undrainable engine oil.

AIRPLANE USEFUL LOAD

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

Normal category: (2325 lbs) - (lbs) = lbs

Utility category: (1950 lbs) - (lbs) = lbs

THIS LICENSED EMPTY WEIGHT, C.G. AND USEFUL LOAD ARE FOR THE AIRPLANE AS DELIVERED FROM THE FACTORY. REFER TO APPROPRIATE AIRCRAFT RECORD WHEN ALTERATIONS HAVE BEEN MADE.

CHEROKEE WARRIOR

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)

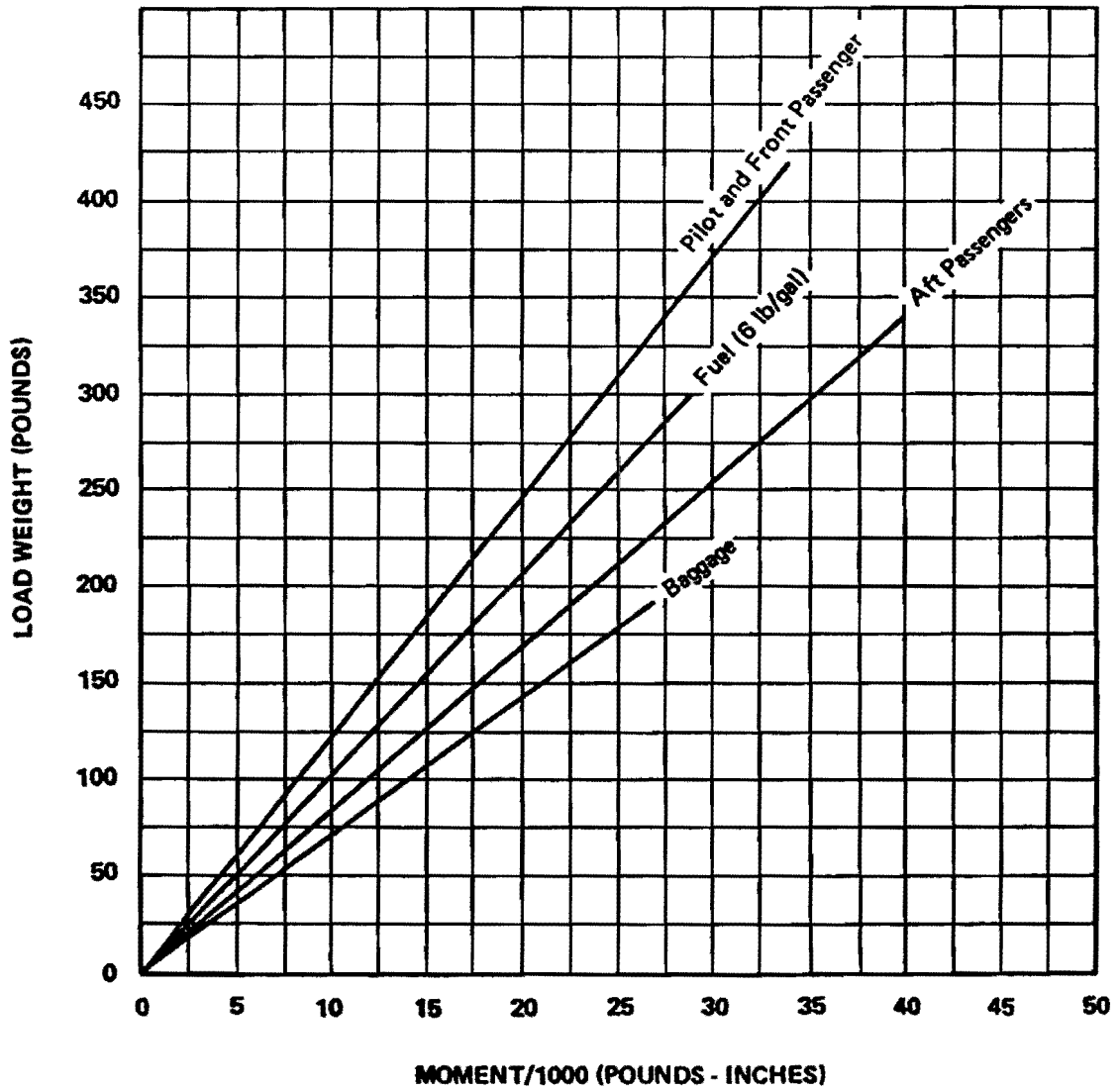
	Weight (Lbs)	Arm Aft Datum (Inches)	Moment (In-Lbs)
Licensed Empty Weight			
Oil (8 quarts)	15	27.5	413
Pilot and Front Passenger	340	80.5	27370
Passengers, Aft* (Rear Seat)	340	118.1	40154
Fuel (48 Gal. Maximum)		95.0	
Baggage*		142.8	
Total Loaded Airplane			

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

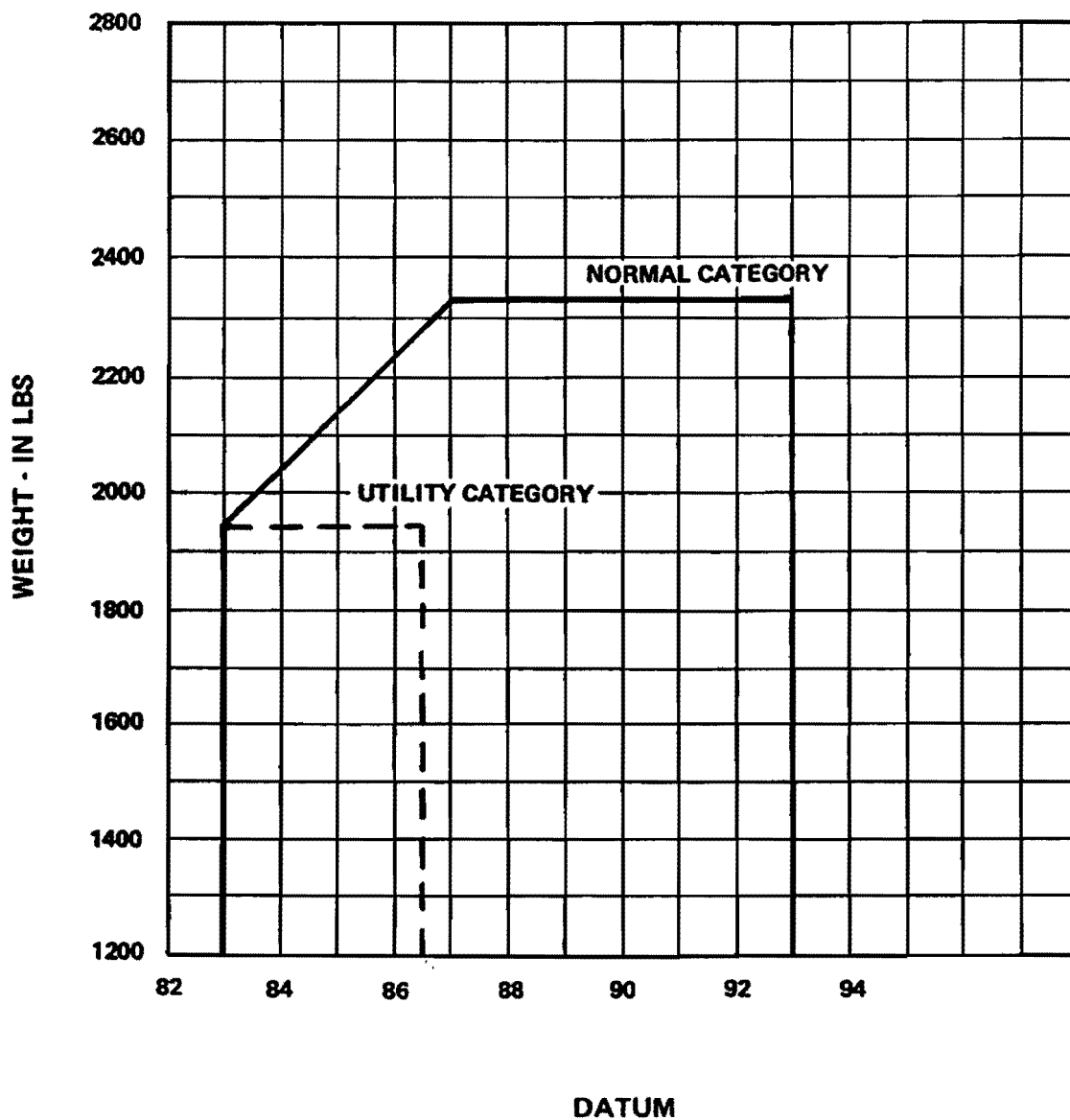
IT IS THE RESPONSIBILITY OF THE PILOT AND AIRCRAFT OWNER TO INSURE THAT THE AIRPLANE IS LOADED PROPERLY.

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

LOADING GRAPH



C. G. RANGE AND WEIGHT



EQUIPMENT LIST

The following is a list of equipment which may be installed in the PA-28-151. Items marked with an "X" are items installed when the airplane was delivered by the manufacturer.

Item	Item	Weight Lbs.	Arm Aft Datum	Moment	Cert. Basis
A. Propellers and Propeller Accessories					
_____	Propeller, Sensenich 74DM6-0-58	31.6	3.8	120	TC P886
	or				
_____	McCauley 1C1 60EGM7653	30.6	3.8	116	TC P910
_____	Spinner and Attachment Plates	2.5	3.0	7	TC 2A13

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Item	Item	Weight Lbs.	Arm Aft Datum	Moment	Cert. Basis
B. Engine and Engine Accessories					
_____	Engine - Lycoming Model 0-320-E3D	268.0	21.2	5682	TC 274
_____	Fuel Pump, Electric Auxiliary, Bendix Model 478360	1.6	44.7	72	TC 2A13
_____	Fuel Pump, Engine Driven, Lycoming Dwg. No. 73297, 74082, 75148 or 75246	1.7	36.3	62	TC 2A13
_____	Oil Cooler, Piper Dwg. 18622 Harrison #C-8526250 or Niagara N.D.M. 20002A	1.9	31.3	58	TC 2A13
_____	Air Filter, Piper Dwg. 35477	.4	30.0	12	TC 2A13
_____	Alternator, 60 Amp, Prestolite No. ALY6408	10.5	14.0	147	TC 2A13
_____	Starter - Lycoming 76210 (Prestolite MZ4204)	* 17.0	14.5	246	TC 2A13
_____	Alternator 60 Amp (Chrysler 3656623)	12.4	14.0	174	TC 2A13
_____	Oil Filter - Lycoming No. ** 75528 (AC #OF5578770)	3.3	35.5	117	TC 2A13
_____	Oil Filter - Lycoming** # LW-13743 (Champion # CH-48110)	2.8	35.5	99	TC 2A13

* Included in Engine Weight.
** Serial nos. 7515001 and up

Item	Item	Weight Lbs.	Arm Aft Datum	Moment	Cert. Basis
C. Landing Gear and Brakes					
	Two Main Wheel Assemblies	32.3	109.6	3540	TSO C26a
	(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				
	One Nose Wheel 5.00 - 5	8.3	29.8	247	TSO C26a
	(a) Cleveland Aircraft Products Wheel Assembly No. 40-77A (Less Brake Drum)				
	(b) One Nose Wheel 4-ply Rating Tire 5.00- 5 with Regular Tube				

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Item	Item	Weight Lbs.	Arm Aft Datum	Moment	Cert. Basis
	D. Electrical Equipment				
_____	Stall Warning Device, Safe Flight Instrument Corporation No. 53514-101	.4	80.2	32	TSO C30b
_____	Voltage Regulator, Wico Electric #X-16300B	.5	51.9	26	TC 2A13
_____	Battery 12V, 25 A.H., Rebat Model S-25	21.9	114.9	2516	TC 2A13
_____	Overvoltage Relay, Wico Electric No. X16799	.5	55.4	28	TC 2A13
_____	Annunciator Lights *	.9	55.5	50	TC 2A13

*Serial nos. 7515001 and up

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Item	Item	Weight Lbs.	Arm Aft Datum	Moment	Cert. Basis
E. Instruments					
_____	Compass - Piper Dwg. 67462	.9	59.9	54	TSO C7c
_____	Airspeed Indicator, Piper PS50049-16*	.6	61.8	37	TSO C2b
_____	Piper PS50049-25 **	.6	61.8	37	TSO C2b
_____	Tachometer, Piper Dwg. 62177-3	.7	61.2	43	TC 2A13
_____	Altimeter, Piper PS50008-2 or -3	1.0	60.9	61	TSO C10b
_____	Engine Cluster, Piper Dwg 95241-17	.8	62.4	50	TC 2A13
_____	Ammeter - Piper Dwg. 66696	.3	62.4	19	TC 2A13

* Serial nos. 7415001 through 7515449

** Serial nos. 7615001 and up

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Item	Item	Weight Lbs.	Arm Aft Datum	Moment	Cert. Basis
	F. Miscellaneous				
_____	Forward Seat Belts (2) .75 lbs each Piper Spec. PS50039-4-2A	1.5	81.9	123	TSO C22
_____	Inertia Safety Belts (2) 0.75 lbs. each Piper Spec. PS50039-4-17	1.5	119.6	179	TC 2A13
_____	Rear Seat Belts (2) .70 lbs. each Piper Spec PS50039-4-3	1.4	123.0	172	TSO C22
_____	Rear Seat	20.0	124.2	2484	TC 2A13
_____	Flight Manual	2.6	—	—	TC 2A13
_____	Toe Brakes (Dual) Piper Dwg. 63473	10.5	49.6	521	TC 2A13

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Item	Item	Weight Lbs.	Arm Aft Datum	Moment	Cert. Basis
G. Engine and Engine Accessories (Optional Equipment)					
_____	Vacuum Pump, Airborne Mfg. Co., Model No. 200cc and Drive	5.0	32.0	160	TC 2A13
_____	Oil Filter - Lycoming No. * 75528 (AC* OF5578770)	3.3	35.5	117	TC 2A13
_____	Oil Filter - Lycoming * *LW-13743 (Champion *CH-48110)	2.8	35.5	99	TC 2A13
_____	Vacuum Regulator *	.6	52.0	31	TC 2A13
_____	Vacuum Filter	.3	52.0	16	TC 2A13
_____	Primer System, Piper Dwg. 35327-0	1.2	50.0	60	TC 2A13
_____	Starter - Lycoming 76211 (Prestolite MZ4206) (Weight 18 lbs)	** 1.0	14.5	15	TC 2A13
_____	Vacuum Pump, Airborne Mfg. Co., Model 211cc and Drive, PAC 79399-0	3.2	32.0	103	TC 2A13
_____	Low Vacuum Annunciator Light ***	Neglect			TC 2A13
_____	Vacuum Regulator, Airborne Mfg. Co. * 2H3-19***	.5	52.0	26	TC 2A13

* Serial nos. 7415001 through 7415731
 ** Weight and moment difference between standard and optional equipment.
 *** Serial nos. 7515001 and up

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Item	Item	Weight Lbs.	Arm Aft Datum	Moment	Cert. Basis
H.	Electrical Equipment (Optional Equipment)				
_____	Rotating Beacon	1.5	263.4	395	TC 2A13
_____	Landing Light, G.E. Model 4509	.5	13.1	7	TC 2A13
_____	Navigation Lights (2) Grimes Model A1285 (Red and Green)	.4	106.6	43	TSO C30b
_____	Navigation Light (Rear) (1) Grimes Mode 2064 (White)	.2	281.0	56	TSO C30b
_____	Battery 12V, 35 A.H. Rebat R-35 (Weight 27.2 lbs.)	* 5.3	114.9	609	TC 2A13
_____	Cabin Light, Piper Dwgs. 66632-0 & 95229-0	.3	99.0	30	TC 2A13
_____	Cabin Speaker SB-15052 or 6EU 1937	.8	99.0	79	TC 2A13
_____	Auxiliary Power Receptacle, Piper Dwg. 35289	2.7	178.5	482	TC 2A13
_____	External Power Cable 62355-11	4.6	142.8	657	TC 2A13
_____	Piper Pitch Trim, Piper Dwg. 67496-2 or -3 **	4.3	155.3	668	TC 2A13
_____	Heated Pitot Head Piper Dwg. 35493-2	.4	100.0	40	TC 2A13

* Weight and moment difference between standard and optional equipment.

** Serial nos. 28-7515213 and up.

Item	Item	Weight Lbs.	Arm Aft Datum	Moment	Cert. Basis
H.	Electrical Equipment (Optional Equipment) (cont)				
_____	Red Strobe Light, Whelen Engineering Co. Piper Dwg. 99033-7				TSO C30b
_____	Power Supply, Whelen Model HS A412A-14	2.3	198.0	455	TC 2A13
_____	Light (Fin Tip)	.4	263.4	105	TC 2A13
_____	Cable	.4	230.7	92	TC 2A13
_____	Red/White Strobe Light, Whelen Engineering Co. Piper Dwg. 99033-10				
_____	Power Supply, Whelen Model HD, T3 No. A413 (with Fin and Wing Lights)	3.0	198.0	594	TC 2A13
_____	Light (Fin Tip)	.4	263.4	105	TC 2A13
_____	Cable	.4	230.7	92	TC 2A13
_____	Lights (Wing Tip) (2)	.3	106.6	32	TC 2A13
_____	Cables	2.0	115.6	231	TC 2A13

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Item	Item	Weight Lbs.	Arm Aft Datum	Moment	Cert. Basis
I.	Instruments (Optional Equipment)				
_____	Suction Gauge, Piper Dwg. 99480-0 or -2	.5	62.2	31	TC 2A13
_____	Vertical Speed, Piper Dwg 99010-2, 4 or -5	1.0	60.9	61	TSO C8b
_____	Attitude Gyro, Piper Dwg. 99002-2, -3, 4 or -5	2.2	59.4	131	TSO C4c
_____	Directional Gyro, Piper Dwg. 99003-2, -3, -4 or -5	2.6	59.7	155	TSO C5c
_____	Air Temperature Gauge, Piper Dwg. 99479-0 or -2	.2	72.6	15	TC 2A13
_____	Clock	.4	62.4	25	TC 2A13
_____	Tru-Speed Indicator, Piper PS50049-15**	(Same as Standard Equipment)			TC 2A13
_____	Piper PS50049-26***	(Same as Standard Equipment)			TC 2A13
_____	Turn and Slip Indicator, Piper PS50030-2 or -3	2.6	59.7	155	TSO C3b
_____	Encoding Altimeter Piper PS50008-6 or -7	* .9	60.3	54	TSO C10b C88
_____	Engine Hour Meter*** Piper Dwg. 79548-2	.3	61.2	18	TC 2A13

* Weight and moment difference between standard and optional equipment.

** Serial nos. 7415001 through 7515449.

*** Serial nos. 7615001 and up.

Item	Item	Weight Lbs.	Arm Aft Datum	Moment	Cert. Basis
J. Autopilots (Optional Equipment)					
AutoControl III, Piper *					
Dwg. 79221-7,-8, -9					
_____	Roll Servo, * 1C363-1-430R	2.5	122.2	306	STC SA1406SW
_____	Console, * 1C338 (thru S/N 9999)	1.2	60.1	72	STC SA1406SW
_____	Cables	.7	95.5	67	STC SA1406SW
_____	Attitude Gyro, * 52D66	2.3	59.4	137	STC SA1406SW
_____	Directional Gyro, * 52D54	3.2	59.0	189	STC SA1406SW
_____	Omni Coupler, * 1C388	.9	59.3	53	STC SA1406SW
AutoFlite II, Piper Dwg. 99447-3					
_____	Roll Servo, * 1C363-1-430R	2.5	122.2	306	***
_____	Cable	.7	93.4	65	***
_____	Panel Unit, * 52D75-3 or -4	2.4	59.4	143	***
AutoControl III B **					
_____	Roll Servo * 1C363-1-430R	2.5	122.2	306	****
_____	Console, * 1C338 (S/N 10000 & up)	1.0	60.1	60	****
_____	Cables	.5	95.5	48	****
_____	Attitude Gyro, * 52D66	2.7	59.4	160	****
_____	Directional Gyro, * 52D54	2.9	59.0	171	****
_____	Omni Coupler, * 1C388	1.0	59.3	59	****

* Serial nos. 7415001 through 7415731

** Serial nos. 7515001 and up

*** STC SA1406SW for serial nos. 7415001 through 7515449. STC SA3066SW-D for serial nos. 7615001 and up.

**** STC SA1406SW for serial nos. 7515001 through 7515449. STC SA3065SW-D for serial nos. 7615001 and up.

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Item	Item	Weight Lbs.	Arm Aft Datum	Moment	Cert. Basis
K. Radio Equipment (Optional Equipment)					
_____	Narco Mark 16 (VHF Comm/Nav) * Transceiver, Single	7.5	56.9	427	TC 2A13
_____	Transceiver, Dual	15.0	56.9	854	TC 2A13
_____	Narco VOA-50M Omni Converter*	2.1	59.9	126	TC 2A13
_____	Narco VOA-40 (M) Omni Converter *	1.9	59.9	114	TC 2A13
_____	Narco VOA-40 Omni Converter *	1.9	59.9	114	TC 2A13
_____	Narco Comm 10A VHF Transceiver	3.9	57.4	224	TC 2A13
_____	Narco Comm 11A VHF Transceiver	3.6	57.4	207	TC 2A13
_____	Narco Dual Comm 11A VHF Transceiver	7.1	57.4	408	TC 2A13
_____	Narco Nav 10 VHF Receiver	1.9	58.6	111	TC 2A13
_____	Narco Nav 11 VHF Receiver	2.8	58.6	164	TC 2A13
_____	Narco Nav 12 VHF Receiver	3.4	58.6	199	TC 2A13
_____	Narco Dual Nav 11 VHF Receiver	5.6	58.6	328	TC 2A13
_____	King KX-175B() VHF Transceiver	9.4	56.6	532	TC 2A13
_____	King KN-73 Glide Slope Receiver	3.2	184.3	590	TC 2A13
_____	King KN-77 VOR/LOC Converter	3.6	183.6	661	TC 2A13
_____	King KNI-520 VOR/ILS Indicator	1.7	60.5	103	TC 2A13
_____	King KX-175B() VHF Transceiver (2nd)	8.6	56.6	487	TC 2A13
_____	King KN-77 VOR/LOC Converter	4.2	183.6	771	TC 2A13
_____	King KNI-520 VOR/ILS Indicator	1.7	60.5	103	TC 2A13

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Item	Item	Weight Lbs.	Arm Aft Datum	Moment	Cert. Basis
	K. Radio Equipment (Optional Equipment) (cont)				
_____	Narco Comm 110 VHF Transceiver *	3.0	57.4	172	TC 2A13
_____	Narco Comm 111 Transceiver	3.0	57.4	172	TC 2A13
_____	Narco Dual Comm 111 Transceiver	6.0	57.4	344	TC 2A13
_____	Narco Nav 110 VHF Receiver *	1.7	58.6	100	TC 2A13
_____	Narco Nav 111 VHF Receiver	2.5	58.6	147	TC 2A13
_____	Narco Nav 112 VHF Receiver	3.3	58.6	193	TC 2A13
_____	King KX170B () (VHF Comm/Nav) Transceiver, Single	7.5	56.6	425	TC 2A13
_____	Transceiver, Dual	15.0	56.6	849	TC 2A13
_____	King KI201 () VOR/LOC Ind.	2.5	59.6	149	TC 2A13
_____	King Dual KI201 () VOR/LOC Ind.	5.0	59.9	300	TC 2A13
_____	King KI214 () VOR/LOC/GS Ind.	3.3	59.9	198	TC 2A13
_____	Nav Receiving Antenna	.5	265.0	133	TC 2A13
_____	Cable, Nav Antenna	.9	157.0	141	TC 2A13
_____	* 1 VHF Comm Antenna	.3	157.8	47	TC 2A13
_____	Cable, Antenna * 1 VHF	.4	103.4	41	TC 2A13
_____	* 2 VHF Comm Antenna	.3	192.8	58	TC 2A13
_____	Cable, Antenna * 2 VHF	.5	120.9	60	TC 2A13

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CHEROKEE WARRIOR

Item	Item	Weight Lbs.	Arm Aft Datum	Moment	Cert. Basis
K. Radio Equipment (Optional Equipment) (cont)					
Anti Static Kit					
_____	* 1 VHF Comm Antenna	1.0	160.8	161	TC 2A13
_____	Cable * 1 VHF Antenna	0.4	103.4	41	TC 2A13
_____	* 2 VHF Comm Antenna	1.0	195.8	196	TC 2A13
_____	Cable * 2 VHF Comm Antenna	0.5	120.9	60	TC 2A13
_____	Low Frequency Antenna	0.5	147.5	74	TC 2A13
_____	Static Wicks	—	—	—	TC 2A13
Narco ADF-31 A/B *					
_____	Panel Unit	5.0	58.5	293	TC 2A13
_____	Sensor Unit	2.5	162.7	407	TC 2A13
_____	Sensor Cable	2.3	100.6	231	TC 2A13
_____	Sense Antenna and Cable	.4	150.0	60	TC 2A13
Bendix ADF-T-12C* or Bendix ADF-T-12D*					
_____	Receiver	3.5	59.4	208	TC 2A13
_____	Audio Amplifier	.8	52.4	42	TC 2A13
_____	Servo Indicator	1.7	60.9	104	TC 2A13
_____	Loop Antenna	1.3	160.8	209	TC 2A13
_____	Cable, Interconnecting	2.3	108.0	248	TC 2A13
_____	Sense Antenna and Cable	.4	150.0	60	TC 2A13
King KR-85					
_____	Receiver	4.3	59.4	255	TC 2A13
_____	Servo Indicator	1.2	61.3	74	TC 2A13
_____	Loop Antenna	1.3	161.5	210	TC 2A13
_____	Loop Cable	1.8	108.0	194	TC 2A13
_____	Audio Amplifier	.8	51.0	41	TC 2A13
_____	Sense Antenna and Cable	.4	150.0	60	TC 2A13
PM-1 Marker Beacon *					
_____	Receiver	1.1	121.3	133	TC 2A13
_____	Remote Unit	.3	128.4	39	TC 2A13
_____	Cable	.3	80.0	24	TC 2A13
UGR-2A Glide Slope					
_____	Receiver	2.4	173.8	417	TC 2A13
_____	Cable	1.8	128.0	230	TC 2A13
_____	Antenna	.4	87.4	35	TC 2A13
_____	Cable, Antenna	.5	145.0	73	TC 2A13

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CHEROKEE WARRIOR

Item	Item	Weight Lbs.	Arm Aft Datum	Moment	Cert. Basis
K.	Radio Equipment (Optional Equipment) (cont)				
_____	Narco CP-25B/125 Audio Selector Panel *	1.5	60.2	90	TC 2A13
_____	Narco MBT-12-R Marker Beacon	3.1	69.1	214	TC 2A13
_____	Narco AT50A Transponder Panel Unit	** 3.0	57.3	172	TC 2A13
_____	King KT76/78 Transponder Panel Unit	3.1	58.1	180	TC 2A13
_____	Antenna and Cable	—	—	—	TC 2A13
_____	King KMA-20 () Audio Panel	2.8	60.2	169	TC 2A13
_____	Antenna	.5	116.3	58	TC 2A13
_____	Cable	.4	87.5	35	TC 2A13
_____	King KN60C DME Receiver	6.8	56.7	386	TC 2A13
_____	Antenna	.2	107.1	21	TC 2A13
_____	Cable, Antenna	0.3	80.6	24	TC 2A13
_____	Piper Automatic Locator, Piper Dwg. 99890 Transmitter, Piper Dwg. 79265-0	1.7	236.2	402	TC 2A13
_____	Transmitter, Piper Dwg. 79265-6	1.3	236.2	307	TC 2A13
_____	Transmitter, Piper Dwg. 79265-4	1.7	236.2	454	TC 2A13
_____	Antenna and Cable	.2	224.4	45	TC 2A13
_____	Shelf and Access Plate	.3	235.4	71	TC 2A13
_____	Audio Selector Panel,* Piper Dwg. 99395-0, -2 or -3	.7	61.3	43	TC 2A13
_____	Microphone (Dynamic) Piper Dwg. 68856-12	.5	70.0	35	TC 2A13
_____	Microphone (Carbon), Piper Dwg. 68856-10	.5	70.0	35	TC 2A13

* Serial nos. 7415001 through 7415731
 ** Weight includes Antenna and Cable.

CHEROKEE WARRIOR

Item	Item	Weight Lbs.	Arm Aft Datum	Moment	Cert. Basis
	K. Radio Equipment (Optional Equipment) (cont)				
_____	Headset, Piper Dwg. 68856-10	.5	60.0	30	TC 2A13
_____	King KI-213 VOR/LOC/GS Indicator*	2.5	60.4	151	TC 2A13
	King KR-86 ADF *				
_____	Receiver	3.9	59.4	232	TC 2A13
_____	Loop Antenna	1.5	161.5	242	TC 2A13
_____	Loop Cable	1.3	108.0	140	TC 2A13
_____	Audio Amplifier	0.8	51.0	41	TC 2A13
_____	Sense Antenna & Cable	0.4	150.0	60	TC 2A13
	King KR-86 ADF (2nd) *				
_____	Receiver	3.9	59.4	232	TC 2A13
_____	Loop Antenna	1.5	150.7	226	TC 2A13
_____	Loop Cable	1.3	105.0	137	TC 2A13
_____	Sense Antenna & Cable	3.0	147.5	443	TC 2A13
	King KN-65 DME*				
_____	Receiver	7.6	201.6	1532	TC 2A13
_____	Antenna	0.2	107.1	21	TC 2A13
_____	Cable, Antenna	0.3	157.1	47	TC 2A13
_____	Indicator	1.0	62.4	62	TC 2A13
	King KN-74 R-Nav *				
_____	Computer	3.7	57.6	213	TC 2A13
_____	Cable Assy.	1.0	53.0	53	TC 2A13
_____	Narco Comm 11B VHF Transceiver *	3.9	57.4	224	TC 2A13
_____	Narco Dual Comm 11B VHF Transceiver *	7.8	57.4	448	TC 2A13
_____	Narco Comm 111B VHF Transceiver *	3.9	57.4	224	TC 2A13
_____	Narco Dual Comm 111B VHF Transceiver *	7.8	57.4	448	TC 2A13
_____	King KN61 DME	12.5	179.0	2237	TC 2A13
_____	King KN65A DME	13.0	174.9	2274	TSO C66a

*Serial nos. 7515001 and up

CHEROKEE WARRIOR

Item	Item	Weight Lbs.	Arm Aft Datum	Moment	Cert. Basis
K. Radio Equipment (Optional Equipment) (cont)					
_____	Narco Nav 14 VHF Receiver *	2.5	57.4	144	TC 2A13
_____	Narco Nav 114 VHF Receiver *	2.5	57.4	144	TC 2A13
	Narco UGR-3 Glide Slope *				
_____	Receiver	2.4	173.8	417	TC 2A13
_____	Cable	1.8	128.0	230	TC 2A13
_____	Antenna	0.4	87.4	35	TC 2A13
_____	Cable, Antenna	0.5	145.0	73	TC 2A13
_____	Narco CP-125 Audio Selector Panel*	2.2	60.2	132	TC 2A13
	Narco ADF-140*				
_____	Receiver	2.5	58.3	146	TC 2A13
_____	Servo Indicator	1.3	61.0	79	TC 2A13
_____	Loop Antenna	1.6	162.0	259	TC 2A13
_____	Cable, Loop	0.6	105.5	63	TC 2A13
_____	Sense Antenna and Cable	0.4	147.5	59	TC 2A13
	Narco Dual ADF-140 *				
_____	Receivers	5.0	58.3	292	TC 2A13
_____	Dual Needle Indicator	3.5	61.0	214	TC 2A13
_____	Loop Antenna * 1	1.6	162.0	259	TC 2A13
_____	Cable, Loop * 1	0.6	105.5	63	TC 2A13
_____	Sense Antenna and Cable * 1	0.4	143.8	58	TC 2A13
_____	Loop Antenna * 2	1.6	150.0	240	TC 2A13
_____	Cable, Loop * 2	0.6	93.5	56	TC 2A13
_____	Sense Antenna and Cable * 2	3.0	143.8	431	TC 2A13
_____	Remote for Dual Ind.	2.0	185.5	371	TC 2A13
	Narco DME-190 *				
_____	Receiver	5.2	56.8	295	TC 2A13
_____	Antenna	0.3	108.9	33	TC 2A13
_____	Cable, Antenna	0.4	80.6	32	TC 2A13
_____	Microphone (Dynamic) * Piper Dwg. 68856-11	0.6	69.9	42	TC 2A13

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Item	Item	Weight Lbs.	Arm Aft Datum	Moment	Cert. Basis
L. Miscellaneous (Optional Equipment)					
_____	Fire Extinguisher, Scott Aviation 42211-00, Piper Dwg. 76167-2	4.6	71.0	327	TC 2A13
_____	Assist Step Piper Dwg. 65384-0	1.8	156.0	281	TC 2A13
_____	Inertia Safety Belts (Rear) (2) 0.8 lbs. each Piper Spec. PS50039-4-14	1.6	140.3	224	TC 2A13
_____	Tow Bar, Piper Dwg. 99458	1.3	140.0	182	TC 2A13
_____	Nose Wheel Fairing Piper Dwg. 35513	3.8	29.8	113	TC 2A13
_____	Main Wheel Fairings Piper Dwg. 65237	7.6	113.6	863	TC 2A13
_____	Vert. Adj. Front Seats (Left) Piper Dwg. 76340-0	* 6.6	80.7	533	TC 2A13
_____	(Left) Piper Dwg. 79591-0	* 6.6	80.3	530	TC 2A13
_____	Vert. Adj. Front Seat (Right) Piper Dwg. 76340-1	* 6.8	80.0	544	TC 2A13
_____	(Right) Piper Dwg. 79591-1	* 6.6	79.6	525	TC 2A13
_____	Super Cabin Sound Proofing Piper Dwg. 79030-2	18.1	86.8	1571	TC 2A13
_____	Rear Seat Vents	2.5	98	245	TC 2A13
_____	Lighter, 12V Universal 200462	.2	62.9	13	TC 2A13
_____	Assist Strap and Coat Hook, Piper Dwg. 62353-5	.2	109.5	22	TC 2A13
_____	Assist Strap Piper Dwg. 79455	.2	109.5	22	TC 2A13

*Weight and moment difference between standard and optional equipment.

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Item	Item	Weight Lbs.	Arm Aft Datum	Moment	Cert. Basis
L. Miscellaneous (Optional Equipment) (cont)					
_____	Overhead Vent System with Ground Ventilating Blower, Piper Dwg. 76304-2	12.9	170.1	2194	TC 2A13
_____	Overhead Vent System, Piper Dwg. 76304-0	5.3	155.8	822	TC 2A13
_____	Overhead Vent System, Piper Dwg. 76304-9	6.4	159.6	1022	TC 2A13
_____	Overhead Vent System with Ground Ventilating Blower, Piper Dwg. 76304-10	14.0	170.7	2390	TC 2A13
_____	Alternate Static Source, Piper Dwg. 67479-2	.4	61.0	24	TC 2A13
Calibrated Alternate Static Source					
Placard Required: Yes _____ No _____					
_____	Headrest (2) (Front)	2.2	94.5	208	TC 2A13
_____	Sun Visors, Piper Dwg. 66991-0	1.5	85.0	128	TC 2A13
_____	Zinc Chromate Finish, Piper Dwg. 65665	5.0	158.0	790	TC 2A13
_____	Corrosive Resistant Kit	3.0	106.0	318	TC 2A13
_____	Stainless Steel Control Cables	—	—	—	TC 2A13
TOTAL OPTIONAL EQUIPMENT		_____	_____	_____	

CHEROKEE WARRIOR

EXTERIOR FINISH

Base Color _____

Registration No. Color _____

Trim Color _____

Type Finish _____

Accent Color _____