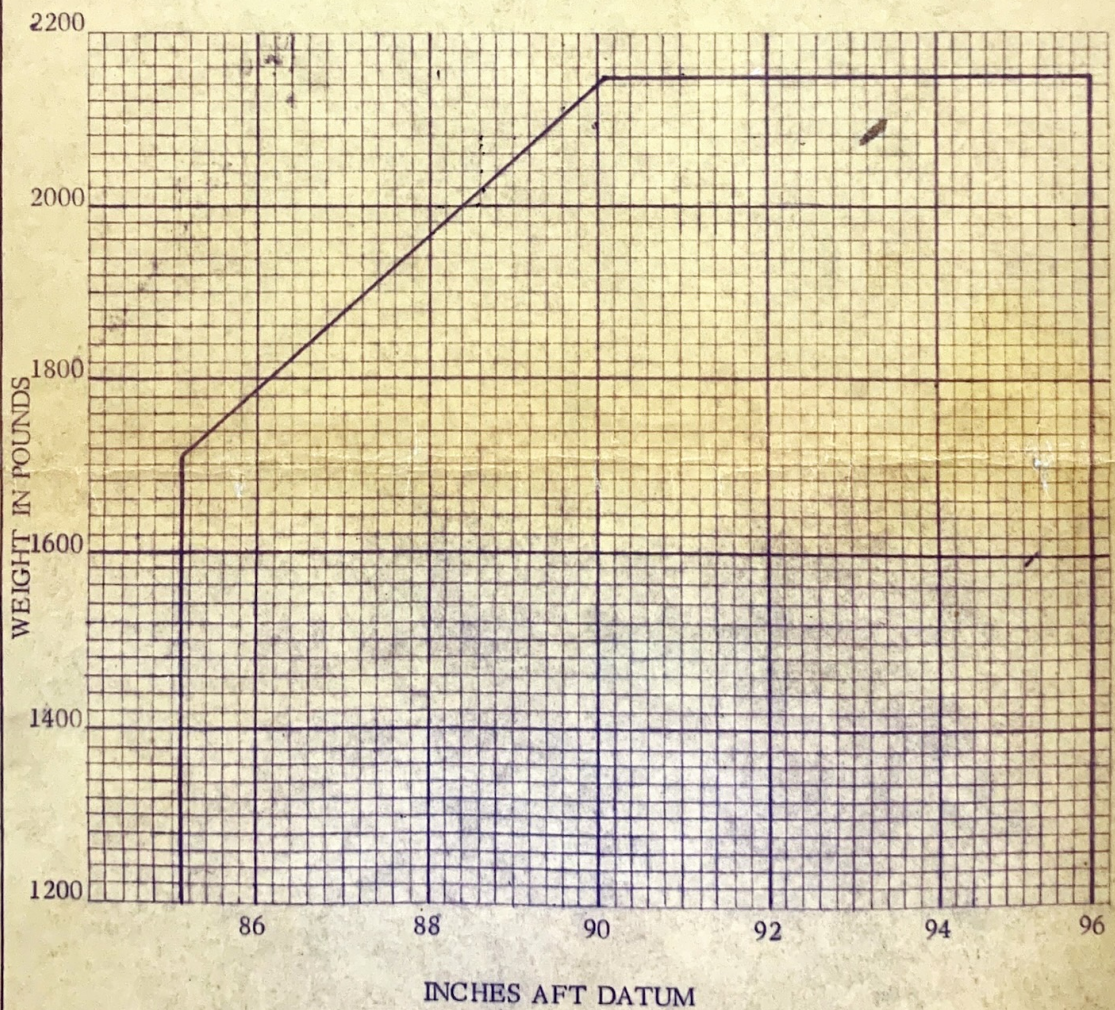


PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Weight and Balance Data
CHECKED		Model PA-28-150
APPROVED		PAGE <u>5</u> Section <u>2</u>

C.G. RANGE AND WEIGHT



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DEVELOPMENT CENTER, VERO BEACH, FLA.

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AIRPLANE FLIGHT MANUAL

MODEL PA-28-150

FAA APPROVED:

H. H. Slaughter

H. H. Slaughter
Chief, Engineering & Manufacturing Branch
Region 2 -- Fort Worth, Texas

DATE:

June 2, 1961

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Log of Revisions

REVISION NO.	PAGE	DESCRIPTION	APPROVED	DATE
1	2	Change Placard No. 3 to read: "MAXIMUM BAGGAGE 125 LBS."	<i>H. Waterman</i> Supervisor SO-EMDO-42	8/29/62

PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Airplane Flight Manual Model PA-28-150
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Piper Model PA-28-150
Normal Category Only

FAA Identification No. N5680W

Serial No. 28-931

AIRPLANE FLIGHT MANUAL

1. Limitations Section. The following limitations must be observed in the operation of this airplane:

Engine	Lycoming O-320-E2A or O-320-A2B
Engine Limits	For all operations 2700 rpm, 150 hp.
Fuel	80/87 Octane Aviation Fuel.
Propeller	Sensenich M74DM58, Maximum diameter 74 inches, minimum diameter 72-1/2 inches.

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.

Oil pressure: GREEN arc (normal operating range) 60 psi to 85 psi; YELLOW arc (caution range) 25 psi to 60 psi; RED line (minimum) 60 psi; RED line (maximum) 85 psi.

Fuel pressure: GREEN arc (normal operating range) .5 psi to 5 psi; RED line (minimum) .5 psi; RED line (maximum) 5 psi.

Tachometer: GREEN arc (normal operating range) 500 to 2700 rpm; RED line (maximum continuous power) 2700 rpm.

Airspeed Limits	Never exceed.....	171	VNE
(Calibrated Airspeed)	Maximum structural cruise.....	140	VNO
(Miles per Hour)	Maneuvering.....	129	VA
	Flaps extended.....	115	VFE
	Maximum positive load factor.....	3.8	
	Maximum negative load factor.....		No inverted maneuvers approved.

FAA APPROVED

DATE June 2, 1961

PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Airplane Flight Manual Model PA-28-150
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Maximum Weight 2150 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.

Weight' (Pounds)	Forward Limit (In. aft of datum)	Rearward Limit (In. aft of datum)
2150	90.1	95.9
1710	85.1	95.9

Straight line variation between given points.

Note: It is the responsibility of the airplane owner and/or the pilot to insure that the airplane is properly loaded. See weight and balance section for loading information.

Maneuvers All acrobatic maneuvers including spins prohibited.

Placards 1. On the instrument panel in full view of the pilot: "THIS AIRPLANE MUST BE OPERATED IN THE NORMAL CATEGORY IN COMPLIANCE WITH THE OPERATING LIMITATIONS STATED IN THE FORM OF MARKINGS, PLACARDS AND MANUALS."

2. At the inside top rear corner of the door: "ENGAGE LATCH BEFORE FLIGHT."

3. On the inside of the baggage compartment door: "MAXIMUM BAGGAGE 125 LBS."

Airspeed Instrument Markings	RED radial line	Never Exceed	^{VNE} 171 mph (148 knots)
	YELLOW arc	Caution Range	^{VNO} 140 to 171 mph (121 to 148 knots)
	GREEN arc	Normal Operating Range	^{VSI} 64 to 140 mph (56 to 121 knots)
	WHITE arc	Flaps down range	^{VSO} 55 to 115 mph (48 to 100 knots)

2. Procedures Section
1. The stall warning system is inoperative with the master switch off.
 2. The electric fuel pump must be on for both take-off and landing.
 3. Except as noted above, all operating procedures for this airplane are normal.

FAA APPROVED
DATE August 29, 1962

PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Airplane Flight Manual Model PA-28-150
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3. Performance Section. The following performance figures were determined during F.A.A. type tests with the airplane at maximum weight, which is 2150 pounds. These figures may be duplicated under the conditions stated, with the airplane and engine in good condition, and with average piloting technique.

Loss of altitude during stalls varies 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	64	66	73	80	91
Flaps down	55	--	--	--	--

FAA APPROVED
DATE June 2, 1961

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WEIGHT AND BALANCE
DATA
MODEL PA-28-150

PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Weight and Balance Data Model PA-28-150
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ACTUAL WEIGHT AND BALANCE
EQUIPMENT LIST
MODEL PA-28-150

N5680W

	ITEM	WEIGHT (LBS.)	ARM AFT DATUM
Check if installed	<u>Engine Accessories</u>		
X	Engine - Lycoming Model 0-320-E2A or Engine - Lycoming Model 0-320-A2B	284.0	26.1
X	Fuel Pump, Electric Auxiliary, Bendix Model 478360	1.8	41.8
	Fuel Pump, Engine Driven A.C., Type A.H. No. 5594068	3.0	41.3
X	Fuel Pump, Engine Driven, Lycoming Dwg. No. 73297 or 74060, or 74082	1.6	41.3
X	Oil Cooler, Piper Dwg. 18622	2.6	18.1
X	Filter, Fram Model CA-161PL or AC No. A48-C	.9	20.1
	Generator, Delco-Remy Model No. 1101900 (12V. 35 amp.)	16.6	19.0
X	Starter, Delco-Remy Model No. 1109657	17.0	19.0
X	Vacuum Pump, Airborne Mechanisms Model No. 10-113A1 or 113A5	3.6	36.3
X	Magneto (2) Scintilla S4LN-20 and S4LN-21	10.2	38.1
X	Alternator, 35 amp., Chrysler No. 2098615	12.5	19.0
	<u>Propeller and Propeller Accessories</u>		
X	Propeller, Sensenich M74DM58	30.0	10.1
X	Spinner and Attachment Plates	2.0	8.0

PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Weight and Balance Data Model PA-28-150	
CHECKED			
APPROVED		PAGE 2 Section 1	
	ITEM	WEIGHT (LBS.)	ARM AFT DATUM
Check if installed	<u>Landing Gear and Brakes</u>		
X	Two Main Wheel Assemblies 6.00-16 (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	32.0	109.6
X	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 6.00x 6 With Regular Tube	14.0	34.3
	<u>Electrical Equipment</u>		
	Battery 12 V., 33 A.H., Exide Model AC-66 or Reading R-33	27.0	160.9
	Forward Rotating Beacon, Grimes Model D7080 or Whelen Model WRM-12	2.0	26.7
X	Aft Rotating Beacon, Grimes Model D7080 or Whelen Model WRM-12	2.0	263.4
X	Stall Warning Device, Safe Flight Inst. Corp. No. C52207-4	.2	80.2
X	Landing Light, G. E. Model 4509	.5	18.1
	Voltage Regulator, Delco-Remy No. 118704	1.5	168.5
	Piper Autocontrol	4.5	60.0
X	Navigation Lights (2) Grimes Model A1285 Red and Green	.4	106.6
X	Navigation Light (Rear) (1) Grimes Model 2064 (White)	.1	280.9
X	Voltage Regulator, Chrysler No. 2098613	.5	57.8
X	Battery 12 V., 25 A.H., Rebat Model S-25	21.5	160.9
X	Installed Narco ELT-10.	3.3	160.9

PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Weight and Balance Data Model PA-28-150
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Check if installed	ITEM	WEIGHT (LBS.)	ARM AFT DATUM
	<u>Instruments</u>		
X	Compass - Airpath No. C2350-L41	.9	66.6
X	Airspeed Indicator, TSO-C 2a Type I	.6	67.7
X	Turn and Bank, Pioneer A-5	1.5	66.4
X	Tachometer, AC 1548302	.8	67.7
X	Suction Gauge, AN5771-11	.4	68.1
	Altimeter, Aero Marine No. 552	1.4	66.8
X	Altimeter, AN 5760-2 (C-12 or C-13)	1.4	66.8
X	Rate of Climb, Pioneer C-7	1.4	66.8
X	Directional Gyro, Vacuum	2.5	66.6
X	Artificial Horizon, Vacuum	2.7	66.1
X	Air Temperature Gauge, Rochester Manufacturing Co., No. 1592-C2	.2	82.6
X	Clock, 8-Day	.4	68.3
	Directional Gyro, Vacuum (Autopilot)	4.3	65.1
	Artificial Horizon, Vacuum (Autopilot)	4.5	65.3
X	Engine Cluster -- Piper Dwg. #63922	.8	68.8
	Tru-Speed Indicator, TSO-C-2A Type 1	.6	67.7
	<u>Radio</u>		
	Narco VHT-3 (Less Antenna)	8.0	62.6
	Piper PRC-3 RDF	4.5	64.4
X	Omni, Antenna	.4	266.2

PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Weight and Balance Data Model PA-28-180	
CHECKED			
APPROVED		PAGE 4 Section 1	
	ITEM	WEIGHT (LBS.)	ARM AFT DATUM
Check if installed	<u>Radio</u> (Continued from Page 3 Section 1)		
<input checked="" type="checkbox"/>	Transmitting Antenna	.6	89.4
	L. F. Receiving Antenna	.5	167.0
	RDF Loop	.3	54.5
<input checked="" type="checkbox"/>	Piper VHF Transceiver Model PTR-1	5.0	64.8
<input checked="" type="checkbox"/>	Piper Omni Converter Model 0-1	2.5	65.3
	Marker Antenna	1.2	64.7
	Narco Omnigator -- VTR-2A (less Antenna)	14.0	58.0
	King KX 150 Director (less Antenna)	9.1	62.8
	<u>Miscellaneous</u>		
<input checked="" type="checkbox"/>	Tow Bar Assembly	1.5	132.0
<input checked="" type="checkbox"/>	Coat Hooks and Assist Straps	.2	107.5
<input checked="" type="checkbox"/>	Sun Visors	1.0	80.7
<input checked="" type="checkbox"/>	Arm Rests	1.2	85.8
<input checked="" type="checkbox"/>	Cabin Dome Light	1.0	99.0
<input checked="" type="checkbox"/>	Fwd. Seat Belts	1.0	86.9
<input checked="" type="checkbox"/>	Aft Seat Belts	.8	123.0
<input checked="" type="checkbox"/>	Nose Wheel Fairing	4.0	34.3
<input checked="" type="checkbox"/>	Main Wheel Fairing	8.0	109.6
	Fire Extinguisher	7.5	93.0
<input checked="" type="checkbox"/>	Flight Manual		

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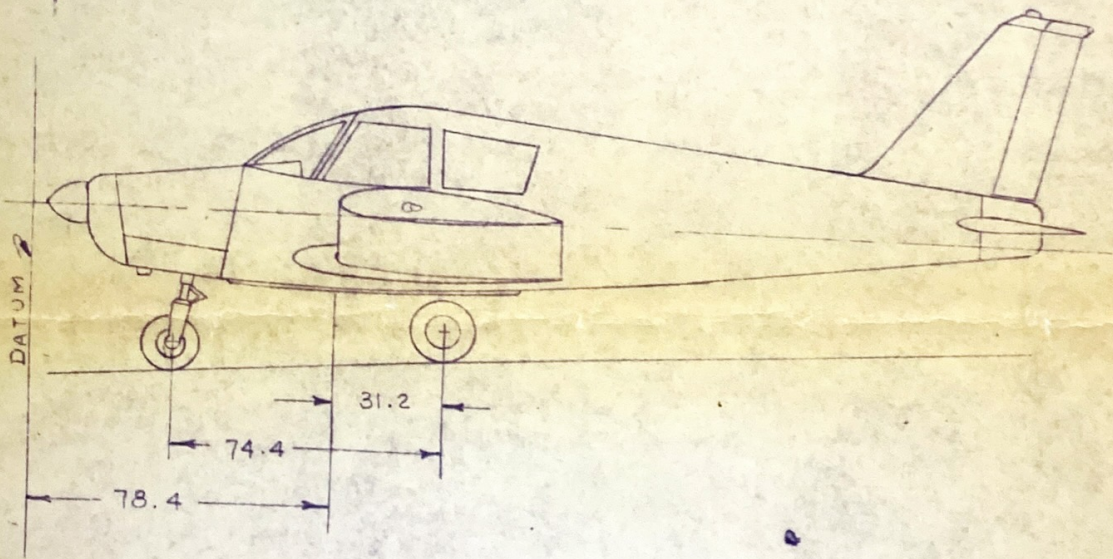
ACTUAL WEIGHT AND BALANCE

Model PA-28-150

SERIAL NUMBER 28- 931

CERTIFICATE NUMBER N5680W

DATE December 12, 1962



Actual
Empty weight as ~~weights~~ (includes items checked on Equipment List):

- Left Wheel 432
- Right Wheel 437
- Nose Wheel 381
- Total 1250

Ronald Pitcher
Ronald Pitcher
DMIR-2049

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APPROVED		PAGE 2 Section 2

Empty weight C.G. forward main wheel centerline is:

$$A. \frac{(N)}{(T)} \times 74.4 = \underline{22.6} \text{ inches}$$

Empty weight C.G. aft wing leading edge (at intersection of straight and tapered sections):

$$B. 31.2 - (A) = \underline{8.6} \text{ inches}$$

Empty weight C.G. aft datum is:

$$C. 78.4 + (B) = \underline{87.0} \text{ inches}$$

MOST FORWARD C.G. (REDUCED WEIGHT)

<u>Item</u>	<u>Weight</u>	<u>Arm</u>	<u>Moment</u>
Empty Weight	1250	87.0	108750
Oil (2 Gal.)	15	31.7	476
Fuel (8 Gal.)	48	95.0	4560
Pilot	<u>170</u>	<u>85.5</u>	<u>14535</u>
Total	1483	86.5	128321

MOST FORWARD C.G. IS 86.5 INCHES AFT DATUM

MOST FORWARD C.G. (ALTERNATE)

<u>Item</u>	<u>Weight</u>	<u>Arm</u>	<u>Moment</u>
Empty Weight	1250	87.0	108750
Oil (2 Gal.)	15	31.7	476
Fuel (50 Gal.)	300	95.0	28500
Pilot	170	85.5	14535
Passenger (Front Seat)	<u>170</u>	<u>85.5</u>	<u>14535</u>
Total	1905	87.5	166796

MOST FORWARD C.G. (ALTERNATE) IS 87.5 INCHES AFT DATUM

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MOST FORWARD C.G. (GROSS WEIGHT)

<u>Item</u>	<u>Weight</u>	<u>Arm</u>	<u>Moment</u>
Empty Weight	1250	87.0	108750
Oil (2 Gal.)	15	31.7	476
Fuel (required to reach 2150 lbs.) 34.1 gal.	205	95.0	19475
Pilot and Passenger (Front Seat)	340	88.5	29070
Passengers (Rear Seat)	340	118.1	40154
Total	2150		197925

MOST FORWARD C.G. (GROSS WEIGHT) IS 92.0 INCHES AFT DATUM

MOST REARWARD C.G. (GROSS WEIGHT)

<u>Item</u>	<u>Weight</u>	<u>Arm</u>	<u>Moment</u>
Empty Weight	1250	87.0	108750
Oil (2 Gal.)	15	31.7	476
Fuel (33 34 Gal.)	198 205	95.0	18810 19475
Pilot and Passenger (Front Seat)	340	85.5	29070
Passengers (Rear Seat)	340	118.1	40154
Baggage	7	142.8	999
Total	2150		198259

MOST REARWARD C.G. (GROSS WEIGHT) IS 92.2 INCHES AFT DATUM

MOST REARWARD C.G. (GROSS WEIGHT ALTERNATE)

<u>Item</u>	<u>Weight</u>	<u>Arm</u>	<u>Moment</u>
Empty Weight	1250	87.0	108750
Oil (2 Gal.)	15	31.7	476

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MOST REARWARD C.G. (GROSS WEIGHT ALTERNATE) -- continued

<u>Item</u>	<u>Weight</u>	<u>Arm</u>	<u>Moment</u>
Fuel (required to reach 2150 lbs.) 13.3 gal.	80	95.0	7600
Pilot and Passenger (Front Seat)	340	85.5	29070
Passengers (Rear Seat)	340	118.2	40154
Baggage	<u>125</u>	<u>142.8</u>	<u>17850</u>
Total	2150		203900

MOST REARWARD C.G. (GROSS WEIGHT ALTERNATE) IS 94.8 INCHES
AFT DATUM