

PIPER AIRCRAFT CORPORATION

LOCK HAVEN, PENNA.

REPORT.....

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MODEL..... PA-16

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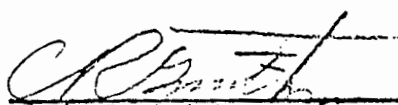
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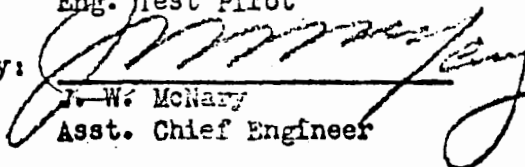
AIRPLANE FLIGHT MANUAL - PIPER MODEL PA-16

DATE: OCTOBER 18, 1948

Prepared by:


Clyde R. Smith
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Approved by:


J. W. McNary
Asst. Chief Engineer

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THIS DOCUMENT MUST BE KEPT IN THE AIRPLANE AT ALL TIMES

C.A.A. Approved

PIPER AIRCRAFT CORPORATION
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Piper PA-16
Normal and
Utility Categories

C.A.A. Identification No. N5211H

AIRPLANE FLIGHT MANUAL

1. Limitations

The following limitations must be observed in the operation of this airplane:

Engine	Lycoming O-235-C1
Engine Limits	For all operations 2600 R.P.M.
Fuel	80 Octane Minimum Aviation Gasoline
Propellers	Fixed Pitch Wood 73" Maximum Diameter 70.5" Minimum Diameter
Static Limits	Maximum 2350 R.P.M. Minimum 2100 R.P.M.
Power Instruments	Oil Temperature - Unsafe if indicator exceeds Red Line (240°F.) Yellow Arc: Caution (40°F to 120°F). Green Arc: Normal Operating Range (120°F to 240°F)
	Oil Pressure - Unsafe if indicator exceeds Red Line (100 lbs.) or is below the Red Line (25 lbs. minimum) Yellow Arc: Caution (85 lbs. to 100 lbs.) or (25 lbs. to 65 lbs.) Green Arc: Normal Operating Range (65 lbs. to 85 lbs.)
	Tachometer - Red Line: Rated Engine Speed Green Arc: 2200 RPM to 2450 RPM Normal Operating Range Yellow Arc: Caution 2450 RPM to 2600 RPM

Airpeed Limits (True Ind. Airspeed)	<u>Normal Category</u>	<u>Utility Category</u>
Maneuvering	105	108
Max. Cruising Speed	117	117
Never Exceed	140	140
Flight Load Factors		
Max. Positive	3.8	4.4
Max. Negative	(No inverted maneuvers approved.)	
Airplane Loading		
Max. Wt. (Take-off and Landing)	1650 lbs.	1400 lbs.

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C.G. Range (Normal Category)

Forward limit (+10") (15.5% MAC) at 1175 lbs. Straight line to (+11.5") (17.9%MAC) at 1650 lbs. Rear limit (+23") (36.7% MAC) at 1650 lbs.

(Utility Category)

Forward limit (10") (15.5% MAC) at 1175 lbs. Straight line to (+10.7") (16.6% MAC) at 1400 lbs. Rear limit (+15.5") (24.5% MAC) at 1400 lbs.

Datum

Leading edge of wing

MAC

61.2 inches; L.E. MAC (+0.5 in.)

Maximum Baggage Allowed 50 Lbs. (Normal Category Only)

When three people are carried both front seats must be occupied.

NOTE: It is the responsibility of the airplane owner and the pilot to insure that the airplane is properly loaded (See Weight and Balance)

PLACARDS:

a. General

1. Fuselage tank must be full until wing tank is empty.

b. Utility Category

1. When operating in Utility Category wing tank must not be filled more than 1/4 full.

MANEUVERS

- (a) No acrobatic maneuvers approved for Normal Category Operation.
- (b) The following maneuvers are approved for operation in the Utility Category only, with recommended entry speeds shown:

<u>Maneuver</u>	<u>Entry Speed T.I.A.S.</u>
Chandelles	117
Lazy Eights	117
Steep Turns	108
Spins	Stall
Stalls (Except Whip Stalls)	Stall

Airspeed

Instrument

Markings and

Their Significance

- (a) Radial RED line marks the never exceed speed which is the maximum safe airspeed 140 MPH
- (b) YELLOW ARC on indicator denotes range of speed in which operations should be conducted with caution and only in smooth air 117 MPH-140 MPH
- (c) GREEN ARC denotes normal operating speed range 52 MPH - 117 MPH

II. PROCEDURES

- (a) Except as noted above, all operating procedures for this airplane are conventional.

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III. PERFORMANCE

All performance given is for the following conditions:

1. A maximum gross weight 1650 lbs.;
2. On level paved runways;
3. In still air;
4. With slowest-turning fixed-pitch wood propeller which meets CAA minimum climb requirements.

In using the following data allowance for actual conditions must be made.

	Alt. Ft.	Outside Air Temperature					
		0°F	20°F	40°F	60°F	80°F	100°F
<u>Take-Off Distance (In Feet)</u>	Sea Level	1530	1655	1770	1910	2055	2200
Distance required to take-off and climb 50 feet full throttle at 68 MPH T.I.A.S.	3000	2220	2430	2645	2905	3140	3420
	5000	3010	3340	3715	4090	4535	5090
	7000	4430	5075	5720	6615	7675	8865
<u>Landing Distance (In Feet)</u>	Sea Level	1370	1395	1420	1440	1465	1490
Distance required to land over 50 foot obstacle and stop. Approach at 68 MPH T.I.A.S.	3000	1435	1460	1485	1510	1540	1565
	5000	1480	1510	1535	1565	1590	1620
	7000	1530	1565	1590	1625	1650	1680
<u>Normal Rate of Climb (In Ft. Per Minute)</u>	Sea Level	650	625	605	580	555	535
80 MPH T.I.A.S. Climbing Speed	3000	495	470	445	420	400	380
	5000	390	360	340	315	295	275
	7000	285	260	240	210	190	170
Power-Off Stalling Speeds vs. Angle of Bank MPH T.I.A.S.	Angle	10°	20°	30°	40°	50°	60°
	Speed	53	55	57	61	66	75

5. Performance with the Model M76AM-2 propeller has been demonstrated to equal or exceed that presented herein over the altitude and temperature range shown.

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