

PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	
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APPROVED	REPORT VB-163	PAGE _____

AIRPLANE FLIGHT MANUAL

MODEL PA-28-180

SERIAL NOS. 671 THRU 5600

FAA IDENTIFICATION NO. _____

SERIAL NO. _____

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

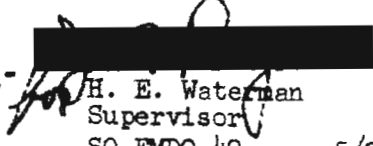
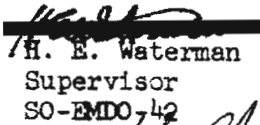
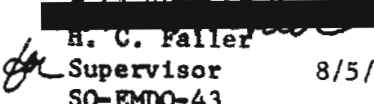
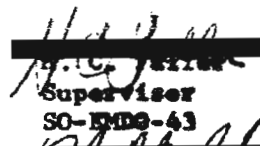
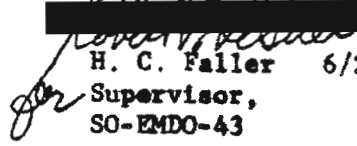
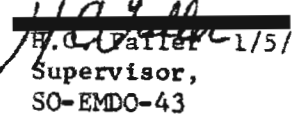
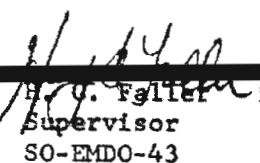
FAA APPROVED: [Redacted Signature] For Retype Only.

Gene Dearing
Aerospace Engineer

DATE: August 12, 1964

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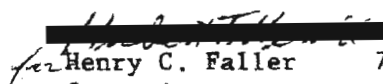
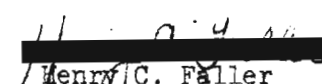

Log of Revisions

<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	 H. E. Waterman Supervisor SO-EMDO-42	5/25/64
2	2	Placards Section: Added Placard No. 5	 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."	 H. C. Faller Supervisor SO-EMDO-43	8/5/64
	1	Added Sensenich M76EMMS		
4	3	Item 5 added to Procedures Section.	 H. C. Faller Supervisor SO-EMDO-43	10/20/64
5	1	Limitations Section: Revised Oil Temperature and Fuel Pressure Range	 H. C. Faller Supervisor, SO-EMDO-43	6/23/65
6	1	Limitation Section: Add note to Engine Limits	 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	 H. C. Faller Supervisor SO-EMDO-43	5/20/66

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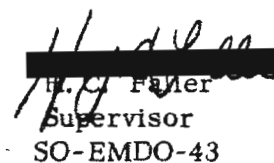
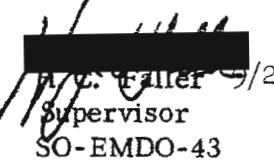
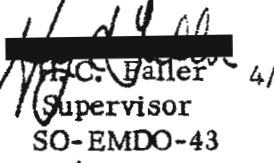
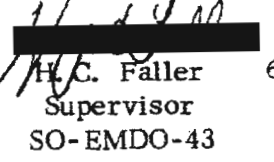
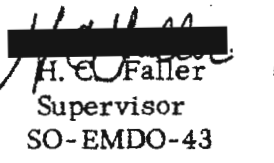
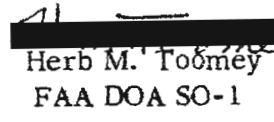
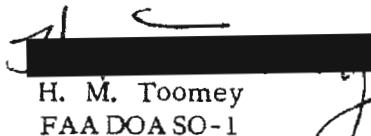
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<u>Revision No.</u>	<u>Page</u>	<u>Description</u>	<u>Approved</u>	<u>Date</u>
8	1	Revised Oil Temperature, Oil Pressure and Fuel Pressure Limitations		
	2,3	Revised Placards No. 3 and No. 5		
	5	Added Page 5		
		Procedures Section - Added Item 7		
	6	Added Page 6	 Henry C. Faller Supervisor SO-EMDO-43	7/15/66
9	1	Limitations Section Add "or O-360-A4A	 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.	 Henry C. Faller Supervisor SO-EMDO-43	12/6/66

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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"	 H. C. Faller Supervisor SO-EMDO-43	5/12/67
12	2	Revised C. G. Range	 H. C. Faller Supervisor SO-EMDO-43	5/25/67
13	3, 4	Revised Placard No. 4 and No. 7 to read: "In full view of the pilot"	 H. C. Faller Supervisor SO-EMDO-43	4/2/68
14	1	Added Aircraft Serial Numbers 1571 and 1573 to Engine and Propeller Limitations	 H. C. Faller Supervisor SO-EMDO-43	6/3/68
15	1	Added Propeller Designations	 H. C. Faller Supervisor SO-EMDO-43	6/24/68
16	Title	Allocated Piper Report No. VB-163 to this Manual.	 Herb M. Toomey FAA DOA SO-1	7/11/68
17	Title	Added Applicable Serial Nos. 1 Thru 4377		
	1	Added Supplement No. 1	 H. M. Toomey FAA DOA SO-1	4/22/69

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REVISION NO.	PAGE	DESCRIPTION	APPROVED	DATE
18	Title	Changed applicable Serial Nos. from 1 thru 4377 to 1 thru 5600.	 H. M. Toomey FAA DOA SO-1	7/15/69
19	Title	Changed applicable Serial Nos. from 1 thru 5600 to 571 thru 5600.	 H. M. Toomey FAA DOA SO-1	9/23/69
20	2	Added Forward Intermediate and Forward Gross Weight Points	 H. M. Toomey FAA DOA SO-1	5/8/70
21	2	Deleted Forward Intermediate and Forward Gross Weight Points.	 G. C. Stephen FAA DOA SO-1	9/14/70
22	1	Changed oil pressure gauge markings		7-25-75

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REPORT VB-163

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) 25 psi when installed or 60 psi when installed; 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.

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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; 150 lbs - Utility Category.

Baggage Capacity 200 lbs

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

1. Normal Category

<u>Weight</u> <u>(Pounds)</u>	<u>Forward Limit</u> <u>(In. Aft of Datum)</u>	<u>Rearward Limit</u> <u>(In. Aft of Datum)</u>
2400	92.1	94.5
2200	89.2	95.9
1975	85.9	95.9
1650	84.0	95.9

2. Utility Category

<u>Weight</u> <u>(Pounds)</u>	<u>Forward Limit</u> <u>(In. Aft of Datum)</u>	<u>Rearward Limit</u> <u>(In. Aft of Datum)</u>
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 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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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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Placards (Cont'd) 7. In full view of the pilot: "UTILITY CATEGORY ONLY."
Acrobatic maneuvers are limited to the following:

			Entry Speed
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
- The stall-warning system is inoperative with the master switch off.
 - Electric fuel pump must be on for both landing and takeoff.
 - 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:
 - 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.
 - 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.
 - 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.
 - 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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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	--	--	--	--

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SUPPLEMENT NO. 1 TO PIPER MODEL PA-28 FLIGHT MANUAL

MODELS AFFECTED: Piper PA-28 models equipped with
 Lycoming O-360-A3A engine and
 Sensenich M76EMM-0, M76EMMS-0,
 76EM8S5-0 or 76EM8-0 propeller.


PROPELLER LIMITS

Avoid continuous operation between 2150 and 2350 RPM.

The aircraft tachometer must be placarded to show a red
 arc between 2150 and 2350 RPM in accordance with Piper
 Service Letter No. 526.

NOTE: This document must be attached to the Airplane
 Flight Manual.

FAA DOA SO-1
 APPROVED


 H. M. Toomey

DATE

4/22/69