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# AIRPLANE FLIGHT MANUAL

MODEL PA-28-140

FAA IDENTIFICATION NO. \_\_\_\_\_

SERIAL NO. \_\_\_\_\_

(SERIAL NOS. 28-20001 thru 28-7125641)

THIS DOCUMENT MUST BE KEPT IN AIRPLANE AT ALL TIMES.

FAA APPROVED: *H. E. Waterman*  
H. E. Waterman  
Supervisor, EMDO 42  
FAA Southern Region  
Atlanta, Georgia

DATE: February 14, 1964

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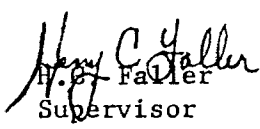
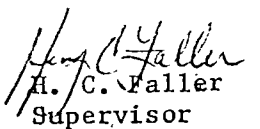
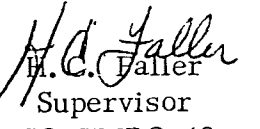
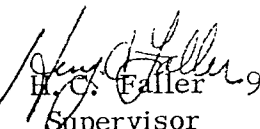
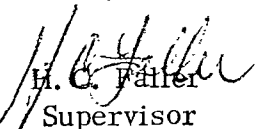
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| REVISION NO. | PAGE | DESCRIPTION                                                                | APPROVED                                                                | DATE     |
|--------------|------|----------------------------------------------------------------------------|-------------------------------------------------------------------------|----------|
| 1            | 1    | Deleted Propeller -<br>And Static RPM -<br>Information                     | <i>H.E. Waterman</i><br>H. E. Waterman<br>Supervisor<br>SO-EMDO-42      | 3/24/64  |
| 2            | 1    | Added Static<br>R.P.M. Information                                         | <i>H.E. Waterman</i><br>H. E. Waterman<br>Supervisor<br>SO-EMDO-42      | 5/25/64  |
| 3            | 3    | Placards Section:<br>Added Placard No. 4                                   | <i>H.E. Waterman</i><br>H. E. Waterman<br>Supervisor<br>SO-EMDO-42      | 7/8/64   |
| 4            | 2    | Maneuvers Section:<br>Deleted Stalls in Utility<br>Category                | <i>H.C. Faller</i><br>H. C. Faller<br>Supervisor<br>SO-EMDO-43          | 8/31/64  |
| 5c           | 2,3  | Increased Gross Weight<br>to 2150 and Baggage Capacity<br>to 200 Lbs.      | <i>H.C. Faller</i><br>H. C. Faller<br>Supervisor<br>SO-EMDO-43          | 5/21/65  |
| 6            | 1    | Limitations Section:<br>Revised Oil Temperature<br>and Fuel Pressure Range | <i>Robert H. Lauer</i><br>for H. C. Faller<br>Supervisor,<br>SO-EMDO-43 | 6/23/65  |
| 7            | 1    | Static RPM Corrected                                                       | <i>Robert H. Lauer</i><br>for H. C. Faller<br>Supervisor<br>SO-EMDO-43  | 8/12/65  |
| 8            | 1    | Revised Static RPM, Oil<br>Temperature and Fuel<br>Pressure Limitations    | <i>H.T. Herold</i><br>for H. C. Faller<br>Supervisor<br>SO-EMDO-43      | 12/13/65 |
|              | 2    | Added Note to Maximum Weight<br>Callout                                    |                                                                         |          |
|              | 3    | Revised Placard No. 4                                                      |                                                                         |          |

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|---------------------|---------------|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-------------|
| 9                   | 3             | Procedure Section.<br>Added Item No. 4<br>"Electric Pitch Trim<br>Procedures"                              |                                                                                                                                   |             |
|                     | 4             | Added Page 4                                                                                               | <br>H. C. Faller<br>Supervisor<br>SO-EMDO-43   | 3/16/66     |
| 10                  | 4             | Add Procedures Section<br>And Item 5                                                                       |                                                                                                                                   |             |
|                     | 3             | Added Placard No. 5                                                                                        | <br>H. C. Faller<br>Supervisor<br>SO-EMDO-43   | 5/20/66     |
| 11                  | 3             | Added Placard No. 6                                                                                        | <br>H. C. Faller<br>Supervisor<br>SO-EMDO-43 | 12/6/66     |
| 12                  | 2             | Revised C. G. Range                                                                                        |                                                                                                                                   |             |
|                     |               |                                                                                                            | <br>H. C. Faller<br>Supervisor<br>SO-EMDO-43 | 9/25/67     |
| 13                  | Title<br>Page | Added FAA Identification<br>No., Serial No. and this<br>document must be kept in<br>airplane at all times. | <br>H. C. Faller<br>Supervisor<br>SO-EMDO-43 | 11/27/67    |
| 14                  | 1             | Added Propeller<br>Designation                                                                             |                                                                                                                                   |             |
|                     | 2, 3          | Revised Placard Nos. 1<br>and 6 to read: "In full<br>view of the Pilot".                                   | <br>H. C. Faller<br>Supervisor<br>SO-EMDO-43 | 6/24/68     |

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| REVISION<br>NO. | PAGE     | DESCRIPTION                                               | APPROVED                                                 | DATE     |
|-----------------|----------|-----------------------------------------------------------|----------------------------------------------------------|----------|
| 15              | 2        | Revised Baggage Capacity Limitations                      | <i>H. M. Toomey</i><br>H. M. Toomey<br>FAA DOA SO-1      | 10/29/68 |
| 16              | Title    | Allocated Piper Report No. VB-160 to this Manual.         | <i>H. M. Toomey</i><br>H. M. Toomey<br>FAA DOA SO-1      | 11/7/68  |
| 17              | 4        | Procedures Section: Revised Item 4 and Added Item 6.      | <i>H. M. Toomey</i><br>H. M. Toomey<br>FAA DOA SO-1      | 5/5/69   |
|                 | 5        | Added Page 5.                                             |                                                          |          |
| 18              | 3        | Placards Section: Added Placard No. 7.                    | <i>H. M. Toomey</i><br>H. M. Toomey<br>FAA DOA SO-1      | 12/17/69 |
| 19              | 1        | Limitations Section: Rephrased Propeller Limits.          |                                                          |          |
|                 | 2        | Maximum Weight: Added information.                        |                                                          |          |
|                 | 2 thru 5 | Pages re-arranged to provide space for added information. | <i>H. M. Toomey</i><br>Herbert M. Toomey<br>FAA DOA SO-1 | 1/6/70   |
| 20              | 4        | Added Items 8 and 9 to Placards Section.                  |                                                          |          |
|                 | 6        | Added Page 6.<br>Added Item 7 to Procedures Section.      |                                                          |          |
|                 | 7        | Added Page 7.<br>Added Item 8 to Procedures Section.      | <i>G. C. Stephen</i><br>G. C. Stephen<br>FAA DOA SO-1    | 8/10/70  |
| 21              | 1        | Added Lycoming O-320-E3D Engine                           | <i>G. C. Stephen</i><br>G. C. Stephen<br>FAA-DOA SO-1    | 3/30/71  |

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|-----------------|-------|-------------------------------------------------------------------------------|-----------------------|----------|
| 22              | TITLE | Corrected effectivity from "20,001 thru 25,641" to "28-20001 thru 28-7125641" | <i>W. H. Thompson</i> | 11-29-73 |
|                 | V     | Added page                                                                    |                       |          |
| 23              | 1     | Changed Oil Pressure Gauge Markings                                           | <i>Ward Evans</i>     | 7-25-75  |

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Piper Model PA-28-140  
Normal and Utility Categories

FAA Identification No. \_\_\_\_\_

Serial No. \_\_\_\_\_

### AIRPLANE FLIGHT MANUAL

#### 1. Limitations Section

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

|               |                                                                                                                                                                                                                                                                                                                                  |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Engine        | Lycoming O-320-E2A or O-320-E3D                                                                                                                                                                                                                                                                                                  |
| Engine Limits | For all operations 2700 rpm, 150 hp                                                                                                                                                                                                                                                                                              |
| Fuel          | 80/87 Octane Aviation Fuel                                                                                                                                                                                                                                                                                                       |
| Propeller     | Sensenich M74DM or 74DM6, Maximum diameter 74 inches.<br>Minimum diameter 72-1/2 inches. Static RPM at maximum permissible throttle setting:<br>Not under 2150, not over 2425 for max allowable weight of 1950 lbs.<br>Not under 2275, not over 2425 for max allowable weight of 2150 lbs.<br>No additional tolerance permitted. |

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power Instruments | <u>Oil temperature:</u> 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 20,000 to 20,550)<br><u>Oil temperature:</u> GREEN arc (normal operating range) 75°F to 245°F; RED line (maximum) 245°F (S/N 20,551 and up)<br><u>Oil pressure:</u> GREEN arc (normal operating range) 60 psi to 85 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) 85 psi.<br><u>Fuel Pressure:</u> GREEN arc (normal operating range) .5 psi to 5 psi; RED line (minimum) .5 psi; RED line (maximum) 5 psi (S/N 20,000 to 20,550).<br><u>Fuel Pressure:</u> GREEN arc (normal operating range) .5 psi to 8 psi; RED line (minimum) .5 psi; RED line (maximum) 8 psi (S/N 20,551 and up).<br><u>Tachometer:</u> GREEN arc (normal operating range) 500 to 2700 rpm; RED line (maximum continuous power) 2700 rpm. |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                       |                                                                        |
|-----------------------|------------------------------------------------------------------------|
| Airspeed Limits       | Never exceed . . . . . 171                                             |
| (Calibrated Airspeed) | Maximum structural cruise . . . . . 140                                |
| (Miles per Hour)      | 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. |

|          |                                                              |                                           |
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|                  |                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Maximum Weight   | 1950 lbs.                             | Utility Category - S/N 28-20001 and up<br>Normal Category - S/N 28-20001 through 28-20939<br>(Normal category maximum weight for aircraft with S/N 28-20001 through 28-20939 may be increased to 2150 lbs. by the installation of Piper Kit 756 962 and Sensenich propeller M74DM58)                                                                                                                                                         |
|                  | 2150 lbs.                             | Normal Category Only (S/N 28-20940 and up)                                                                                                                                                                                                                                                                                                                                                                                                   |
| Baggage Capacity | 100 lbs.<br>(+117)                    | 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. Maximum baggage may be increased to 300 lbs. by the installation of Piper Kit 756 962, Sensenich propeller M74DM58 or 74DM6-0-58 and when modified in accordance with Piper drawing 66671. See Page 2A of the weight and balance section for proper loading of baggage). |
|                  | 200 lbs.<br>(+117)                    | S/N 28-20940 and up. (See Page 2A of the weight and balance section for proper loading of baggage).                                                                                                                                                                                                                                                                                                                                          |
|                  | 300 lbs.<br>(+117)<br>( & )<br>(+133) | S/N 28-20940 and up. (Aircraft are eligible for 300-lb maximum baggage when modified in accordance with Piper drawing 66671. See Page 2A of the weight and balance section for proper loading of baggage).                                                                                                                                                                                                                                   |

#### C.G. Range

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

##### 1. Normal Category

| Weight<br>(Pounds) | Forward Limit<br>(In. Aft of Datum) | Rearward Limit<br>(In. Aft of Datum) |
|--------------------|-------------------------------------|--------------------------------------|
| 2150               | 88.4                                | 95.9                                 |
| 1975               | 85.9                                | 95.9                                 |
| 1650               | 84.0                                | 95.9                                 |

##### 2. Utility Category

| Weight<br>(Pounds) | Forward Limit<br>(In. Aft of Datum) | Rearward Limit<br>(In. Aft of Datum) |
|--------------------|-------------------------------------|--------------------------------------|
| 1950               | 85.8                                | 86.5                                 |
| 1650               | 84.0                                | 86.5                                 |

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.

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# Maneuvers

1. Normal Category - All acrobatic maneuvers including spins prohibited.
2. Utility Category - Approved maneuvers for Utility Category only.

|                        | Entry Speed |
|------------------------|-------------|
| Spins (Flaps Up) ..... | Stall       |
| Steep Turns .....      | 129 mph     |
| Lazy Eights .....      | 129         |
| Chandelles .....       | 129         |

# 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 aft side of baggage compartment: "UTILITY CATEGORY OPERATION - NO BAGGAGE OR AFT PASSENGERS ALLOWED. NORMAL CATEGORY OPERATION - SEE AIRPLANE FLIGHT MANUAL WEIGHT BALANCE SECTION FOR BAGGAGE AND AFT PASSENGER LIMITATIONS. "
4. 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. "
5. 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)

6. 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         |

7. In full view of the pilot: "ROUGH AIR OR MANEUVERING SPEED - 129 MPH."

8. On the instrument panel in full view of the pilot when the AutoFlite II is installed:

"TURN AUTOFLITE ON. ADJUST TRIM KNOB FOR MINIMUM HEADING CHANGE. FOR HEADING CHANGE, PRESS DISENGAGE SWITCH ON CONTROL WHEEL, CHANGE HEADING, RELEASE SWITCH. ROTATE TURN KNOB FOR TURN COMMANDS. PUSH TURN KNOB IN TO ENGAGE TRACKER. PUSH TRIM KNOB IN FOR HI SENSITIVITY. LIMITATIONS AUTOFLITE OFF FOR TAKEOFF AND LANDING."

9. On the instrument panel in full view of the pilot when the supplementary white strobe lights are installed:

"WARNING - TURN OFF STROBE LIGHTS WHEN TAXIING IN VICINITY OF OTHER AIRCRAFT, OR DURING FLIGHT THROUGH CLOUD, FOG OR HAZE."

|                                    |                 |                                    |                                      |
|------------------------------------|-----------------|------------------------------------|--------------------------------------|
| Airspeed<br>Instrument<br>Markings | RED radial line | Never Exceed                       | 171 mph (148 knots)                  |
|                                    | YELLOW arc      | Caution Range<br>(Smooth Air Only) | 140 to 171 mph<br>(121 to 148 knots) |
|                                    | GREEN arc       | Normal Operating Range             | 64 to 140 mph<br>(56 to 121 knots)   |
|                                    | WHITE arc       | Flaps Down Range                   | 55 to 115 mph<br>(48 to 100 knots)   |

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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 takeoff and landing.
3. Except as noted above, all operating procedures for this airplane are normal.
4. (Electric Pitch Trim Installation Without Pitch Trim Switch)

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.

5. (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' altitude loss.
- e. In approach configuration malfunction, 1 second delay results in 10° bank and 0' altitude loss.

|          |                                                              |                                           |
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2. Procedures  
Section  
(Cont'd)

6. (Electric Pitch Trim Installation With Pitch Trim Switch)

The following emergency information applies in case of electric pitch trim malfunction:

- a. In case of malfunction, disengage electric pitch trim by pushing pitch trim switch on instrument panel to OFF position.
- b. In an emergency, electric pitch trim may be overpowered using manual pitch trim.
- c. In cruise configuration, malfunction results in 10° pitch change and 30' altitude variation.

7. (AutoFlite II Installation Only)

I Limitations: AutoFlite off for takeoff and landing.

II Procedures:

- a. Normal Operation - Refer to Manufacturer's Operation Manual.
- b. Emergency
  1. In case of malfunction PRESS disconnect switch on pilot's control wheel.
  2. Rocker switch on instrument panel - OFF.
  3. Unit may be overpowered manually.
  4. In cruise configuration malfunction, 3 seconds delay results in 60° bank, and 100' altitude loss.
  5. In approach configuration malfunction, 1 second delay results in 10° bank and 0' altitude loss.

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## 2. Procedures

### Section

(Cont'd)

## 8. (AutoControl III Installation Only)

I Limitations: AutoPilot off during takeoff and landing.

### II Procedures:

a. Normal Operation - Refer 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.

## 3. Performance

### Section

All performance is given for a weight of 2150 pounds.

Loss of altitude during stalls can be as great as 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 | -- | -- | -- | -- |