

PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Airplane Flight Manual Model PA-28-235
CHECKED		
APPROVED	REPORT VB-170	PAGE <u>I</u>

REFERENCE ONLY

THIS ELECTRONIC VERSION
OF THE AFM IS
NOT APPROVED TO
REPLACE ANY OPERATING
INFORMATION REQUIRED
BY THE REGULATIONS.

AIRPLANE FLIGHT MANUAL

MODEL PA-28-235

SERIAL NUMBER EFFECTIVITY: 28-10001 thru 28-7210023

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 : July 15, 1963

* FAA APPROVED: [REDACTED] For Retype Only.

Gene Dearing
Aerospace Engineer
August 12, 1964

DATE:

PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Airplane Flight Manual
CHECKED		Model PA-28-235
APPROVED	REPORT VB-170	PAGE II

Log of Revisions

REVISION NO.	PAGE	DESCRIPTION	APPROVED	DATE
1	2	Added Placard No. 6 to Page 2	s/H. E. Waterman Supervisor	8/16/63
	3	Item 4 added to Procedures Section	SO-EMDO-42	
2	1	0-540-B1B5 or 0-540-B4B5 added to Limitations Section	s/J. A. Ragan for H. E. Waterman Supervisor	12/4/63
			SO-EMDO-42	
3	1	Hartzell Propeller added to Limitations Section		
	1	Minimum Dia. on McCauley Propeller changed to read: 78.5 inches	s/H. E. Waterman Supervisor	1/29/64
			SO-EMDO-42	
4	2	Deleted Placard Adjacent to Fuel Selector Handle	s/H. E. Waterman Supervisor	3/24/64
			SO-EMDO-42	
5	3	Item 5 added to Procedures Section	s/H. C. Faller Supervisor	10/20/64
			SO-EMDO-43	
6	1	Limitations Section: Revised Oil Temperature and Fuel Pressure Range	s/Robert H. LeSuer for H. C. Faller Supervisor	6/23/65
			SO-EMDO-43	
7	4	Added Procedure Section and Item 6		
	2	Added Placard No. 6	s/Henry C. Faller Supervisor	5/20/66
			SO-EMDO-43	
8	4	Procedure Section: Added Item 7	s/Hubert T. Herold for H. C. Faller Supervisor	7/15/66
	5	Added Page 5	SO-EMDO-43	

FAA APPROVED 7/15/63

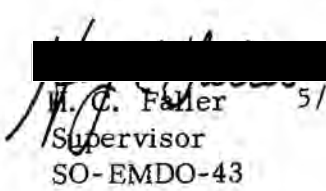
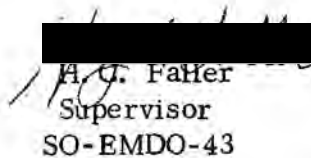
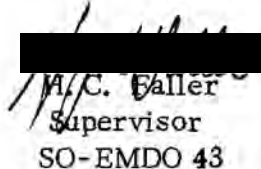
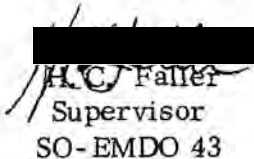
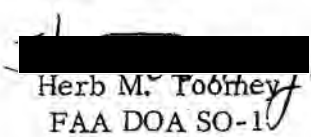
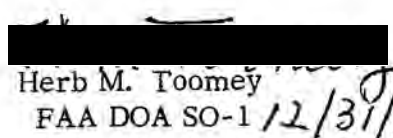
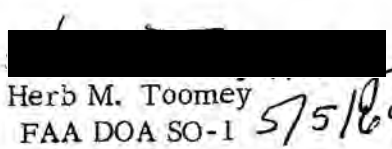
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H. E. Mannick, Supervisor
ATL EMDO

REVISED 12/31/68 Rev. 14

PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Airplane Flight Manual Model PA-28-235
CHECKED		
APPROVED	REPORT VB-170	PAGE <u>III</u>

Log of Revisions

REVISION NO.	PAGE	DESCRIPTION	APPROVED	DATE
9	2	Revised Placard No. 1: 'In full view of the pilot' was 'on the instrument panel in full view of the pilot.'	 H.C. Faller Supervisor SO-EMDO-43	5/12/67
10	1	Optional Propeller added, Sensenich M80BMM.	 H.C. Faller Supervisor SO-EMDO-43	1/5/68
11	1	Added engine limitation note for Sensenich M80BMM prop	 H.C. Faller Supervisor SO-EMDO 43	4/3/68
12	1	Added Propeller Designation	 H.C. Faller Supervisor SO-EMDO 43	6/24/68
13	Title	Allocated Piper Report No. VB-170 to this Manual.	 Herb M. Toomey FAA DOA SO-1	11/14/68
	1	Propeller Section: Added high pitch stop callout and tolerance.		
14	II	Retyped without change for clarity.	 Herb M. Toomey FAA DOA SO-1	12/31/68
15	3, 4	Procedures Section: Revised Item 5 and Added Item 8.		
	2	Placards Section: Item 5 - Changed the word "AutoPilot" to read "AutoControl II".	 Herb M. Toomey FAA DOA SO-1	5/5/69

FAA APPROVED 7/15/63

PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Airplane Flight Manual
CHECKED		Model PA-28-235
APPROVED	REPORT VB-170	PAGE <u>IV</u>

Log of Revisions

REVISION NO.	PAGE	DESCRIPTION	APPROVED	DATE
16	2	Added Forward Intermediate Point	[REDACTED] H. M. Toomey FAA DOA SO-1	5/8/70
17	3	Placards Section: Added Items 7 and 8.		
	6	Procedures Section: Added Item 9. Added Page 6.	[REDACTED] G. C. Stephen FAA DOA SO-1	9/11/70
18	2	Added Serials Nos. to C. G. Range		
	2, 3	Retyped Pages	[REDACTED] G. C. Stephen FAA DOA SO-1	9/24/70
19	6, 7	Procedures Section: Added Item 10 Retyped Page 6. Added Page 7.	[REDACTED] G. C. Stephen FAA DOA SO-1	9/11/71
20	Title, 2	Added Serial No. Limitation	[REDACTED] H. W. Barnhouse FAA DOA SO-1	6/1/72
21	1	Changed oil pressure gauge markings	[REDACTED]	7-25-75

PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Airplane Flight Manual Model PA-28-235
CHECKED		
APPROVED	REPORT VB-170	PAGE <u>2 of 7</u>

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.

<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>
2900	91.5	93.5
2100	81.5	93.5

(Serial Nos. 28-10001 thru 28-11378)

<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>
2900	91.5	93.5
2600	86.0	93.5
2100	81.5	93.5

(Serial Nos. 28-7110001 to 28-7210023)

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 Balance Section for proper loading instructions.

Maneuvers

No acrobatic maneuvers, including spins, approved.

Placards

- In full view of the pilot:
"THIS AIRPLANE MUST BE OPERATED AS A NORMAL CATEGORY AIRPLANE IN COMPLIANCE WITH THE OPERATING LIMITATIONS STATED IN THE FORM OF PLACARDS, MARKINGS AND MANUALS. NO ACROBATIC MANEUVERS, INCLUDING SPINS, APPROVED."
- Adjacent to upper door latch:
"ENGAGE LATCH BEFORE FLIGHT."
- On the inside of the baggage compartment door:
"MAXIMUM BAGGAGE 200 LBS."
- On the instrument panel in full view of the pilot:
"ROUGH AIR OR MANEUVERING SPEED 138 M. P. H."

FAA APPROVED 7/15/63

REVISED 6/ 1/72 Rev. No. 20

PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Airplane Flight Manual Model PA-28-235
CHECKED		
APPROVED	REPORT VB-170	PAGE <u>3 of 7</u>

Placards (Cont'd)

5. Adjacent to the throttle for AutoControl II installation:
 "AUTOCONTROL LIMITATIONS."
 1. Automatic Pilot to be off during takeoff and landing.
 2. Automatic Pilot use prohibited above **175 mph C. A. S.**
6. On the instrument panel in full view of the pilot when the Auto-Flite is installed:
 "FOR HEADING CHANGES: PRESS DISENGAGE SWITCH ON CONTROL WHEEL. CHANGE HEADING. RELEASE DISENGAGE SWITCH."
7. On the instrument panel in full view of the pilot when the Auto-Flite 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 AUTO-FLITE OFF FOR TAKEOFF AND LANDING."
8. 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 Instrument Markings	RED radial line	Never Exceed	197 mph (171 knots)
	YELLOW arc	Caution Range Smooth Air Only	156 to 197 mph (136 to 171 knots)
	GREEN arc	Normal Operating Range	70 to 156 mph (61 to 136 knots)
	WHITE arc	Flap Down Range	61 to 115 mph (53 to 100 knots)

FAA APPROVED 7/15/63

REVISED 9/24/70 Rev. No. 18

PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Airplane Flight Manual Model PA-28-235
CHECKED		
APPROVED	REPORT VB-170	PAGE 4 of 7

2. Procedures
Section

1. The stall warning system is inoperative with the master switch off.
2. Electric fuel pump must be on for both landing and takeoff.
3. Except as noted above, all operating procedures for this airplane are normal.
4. (Automatic Pilot Installation Only)

The following emergency information applies in case of automatic pilot malfunction:

- a. In case of malfunction, disengage automatic pilot controls.
 - b. In emergency, automatic pilot may be overpowered manually.
 - c. In cruise configuration, malfunction results in 55-degree bank and 100-ft. altitude loss. In approach configuration and malfunction results in 18-degree bank and 40-ft. altitude loss.
5. (Electric Pitch Trim Installation Without Pitch Trim Switch)

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

- a. In case of malfunction, disengage electric pitch trim by pulling out circuitbreaker 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.

FAA APPROVED 7/15/63

REVISED 5/5/69 Rev. No. 15

PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Airplane Flight Manual
CHECKED		Model PA-28-235
APPROVED		
REPORT VB-170		PAGE 5 of 7

2. Procedures
Section
(Cont'd)

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 takeoff 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.

8. (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 ft altitude variation.

FAA APPROVED 7/15/63

REVISED 5/ 5/69 Rev. No. 15

PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Airplane Flight Manual Model PA-28-235
CHECKED		
APPROVED	REPORT VB-170	PAGE <u>6 of 7</u>

2. Procedures
Section
(Cont'd)

9. (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.

10. Fuel System Pre-Flight Procedure

The fuel system should be drained daily prior to first flight and after refueling to avoid the accumulation of water or sediment. Each fuel tank is equipped with an individual quick drain located at the lower inboard rear corner of the tank. The fuel strainer and a system quick drain valve are located in the fuselage at the lowest point of the fuel system. It is important that the fuel system be drained in the following manner:

a. Drain each tank through its individual quick drain located at the lower inboard rear corner of the tank, making sure that enough fuel has been drained to insure that all water and sediment is removed.

b. Place a container under the fuel sump drain outlet, which is located under the fuselage.

PREPARED	PIPER AIRCRAFT CORP. DEVELOPMENT CENTER, VERO BEACH, FLA.	Airplane Flight Manual Model PA-28-235
CHECKED		
APPROVED	REPORT VB-170	PAGE 7 of 7

2. Procedures

Section (Cont'd)

- c. Drain the fuel strainer by pressing down on the lever located on the right-hand side of the cabin below the forward edge of the rear seat. The fuel selector must be positioned in the following sequence: off position, left tip, left main, right main, and right tip while draining the strainer to insure that the fuel lines between each tank outlet and fuel strainer are drained as well as the strainer. When the fuel tanks are full, it will take approximately 11 seconds to drain all the fuel in one of the lines between a tip tank and the fuel strainer and approximately six seconds to drain all the fuel in one of the lines from a main tank to the fuel strainer. When the fuel tanks are less than full, it will take a few seconds longer.
- d. Examine the contents of the container placed under the fuel sump drain outlet for water and sediment and dispose of the contents.

CAUTION: When draining any amount of fuel, care should be taken to insure that no fire hazard exists before starting engine.

After using the under-seat quick drain, it should be checked from outside to make sure it has closed completely and is not leaking.

3. Performance Section

All performance is given for a weight of 2900 pounds.

Loss of altitude during stalls can be as great as 350 feet, depending on configuration and power.

Stalling speed, in mph. (Calibrated Airspeed):

Flaps up	70
Flaps down	60