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DUPLICATE

AIRPLANE FLIGHT MANUAL

MODEL PA-28R-200

RETRACTABLE

FAA IDENTIFICATION N98JG

SERIAL NO. 28R-35117

THIS DOCUMENT MUST BE KEPT IN AIRPLANE AT ALL TIMES.

FAA APPROVED

Herb M. Toomey
for Herb M. Toomey, DOA SO-1
Piper Aircraft Corporation

DATE January 9, 1969

(Serial Nos. 28R-35001 thru 28R-7135229)

FAA DOA SO-1 APPROVED

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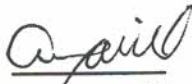
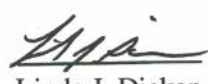
Log of Revisions

REVISION NO.	PAGE	DESCRIPTION	APPROVED	DATE
1	3	Add Placard No. 10	<i>H. M. Toomey</i> H. M. Toomey FAA DOA SO-1	3/3/69
2	4	Placards Section: Added Items 11 and 12		
	7	Procedures Section: Revised Item 9		
	7, 8	Procedures Section: Added Items 10 and 11		
	8, 9	Added Pages 8 and 9	<i>G. C. Stephen</i> G. C. Stephen FAA DOA SO-1	8-28-70
3	Title	Add: (Serial Nos. 28R-35001 thru 28R-7135229)	<i>J. McCreanor</i> J. McCreanor FAA DOA SO-1	11-11-70
4	1	Changed oil pressure gauge markings	<i>Ward Evans</i>	7-25-75
5	6	Moved Procedure item 6 to page 7. Moved Procedure item 7 to page 8.		
	7	Moved contents of page to page 9. Added Procedure item 6 from page 6. Completely revised Procedure item 6.		
	8	Moved contents of page to page 10. Added Procedure item 7.		
	9	Moved contents of page to page 11. Added contents from page 7.		
	10	Added page and contents from page 8.		
	11	Added page and contents from page 9.	<i>Ward Evans</i>	8-13-76
6	3	Added placard note		
	5, 6, 7, 8	Revised landing gear system description and operating instructions.	<i>W. H. H. H.</i> 4116187	

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Log of Revisions (continued)

Revision	Revised Pages	Description and Revision	FAA Approved Date
7.	iii 4 11	Added page and Rev. 7 to L of R. Revised Airspeed Instrument Markings. Revised Performance Section.	 Albert J. Mill May 9, 2002
8.	iii 1	Added Rev. 8 to L of R. Revised tachometer red arc range.	 Linda J. Dicken October 10, 2005

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		MPH	Knots
Airspeed Limits	Never exceed	214	186
(Calibrated Airspeed)	Maximum structural cruise	170	148
(Miles per Hour)	Maneuvering	134	116
	Flaps extended	125	109
	Maximum gear extension	150	130
	Maximum gear retraction	125	109
	Maximum positive load factor	3.8	
	Maximum negative load factor	No inverted maneuvers approved	

Maximum Weight 2600 lbs

Baggage Capacity 200 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)
2600	90.0	95.9
1925	81.0	95.9

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 All acrobatic maneuvers including spins prohibited.

Placards

1. In full view of the pilot:

"THIS AIRCRAFT APPROVED FOR NIGHT IFR NON-ICING FLIGHT WHEN EQUIPPED IN ACCORDANCE WITH FAR 91 OR FAR 135."

"THIS AIRCRAFT MUST BE OPERATED AS A NORMAL CATEGORY AIRPLANE IN COMPLIANCE WITH THE OPERATING LIMITATIONS STATED IN THE FORM OF PLACARDS, MARKINGS AND MANUALS."

2. In full view of the pilot:

"NO ACROBATIC MANEUVERS INCLUDING SPINS APPROVED."

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Placards
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3. On the instrument panel in full view of the pilot:
"MANEUVERING SPEED - 134 MPH"
4. On the instrument panel in full view of the pilot:
"DEMONSTRATED CROSSWIND COMPONENT - 20 MPH"
5. Adjacent to upper door latch:
"ENGAGE LATCH BEFORE FLIGHT"
6. On the inside of the baggage compartment door:
"BAGGAGE MAXIMUM 200 LBS. SEE WEIGHT AND BALANCE DATA FOR
BAGGAGE LOADINGS BETWEEN 150 LBS. AND 200 LBS."
7. Near Emergency Gear Lever: "EMERGENCY DOWN"
On airplanes equipped with the Back Up Gear Extender:
"OVERRIDE UP".
8. Near landing gear selector switch;
"GEAR UP 125 MPH MAX"
"DOWN 150 MPH MAX"
9. 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"
10. 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."

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**Placards
(Cont'd)**

11. 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."
12. 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	214 mph (186 knots)
YELLOW arc	Caution range Smooth air only	170 to 214 mph (148 to 186 knots)
GREEN arc	Normal Operating Range	71 to 170 mph (62 to 148 knots)
WHITE arc	Flap Down Range	64 to 125 mph (56 to 109 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. Some airplanes are equipped with an airspeed-power sensing system (back-up gear extender) which extends the landing gear under low airspeed-power conditions*even though the pilot may not have selected the gear down. The system will also prevent retraction of the landing gear by normal means when the airspeed power values are below a predetermined minimum. (See Item 5 Procedures Section).

For normal operations, the pilot should extend the landing gear with the gear selector switch located on the instrument panel, just as if the back-up gear extender system were not installed.

*Approximately 105 MPH IAS at any altitude, power off.

4. Landing gear position indicator and warning lights:
 - (a) The red "Gear Warning" light on the warning panel and the warning horn operate simultaneously when:
 - (1) In flight, when the throttle is reduced to approximately 14 in Hg manifold pressure or below, and the gear selector switch is not in the down position.
 - (2) In flight, on airplanes equipped with the back-up gear extender when the system has lowered the landing gear and the gear selector switch is not in the "DOWN" position and the throttle is not Full Open.
 - (3) On the ground, when the master switch is "ON" and the gear selector switch is in the "UP" position.

On airplanes NOT equipped with the back-up gear extender and additional switch is installed which activates a warning horn and light whenever the flaps are extended beyond the approach position (10°) and the landing gear is not down and locked.

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2. Procedures
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4. Landing gear position indication and warning lights:
(Continued)

- (b) The three green lights on the instrument panel operate individually as each associated gear is locked in the extended position.
- (c) The yellow "In Transit" light on the instrument panel operates whenever any of the three gears is not in either the fully retracted position or the fully extended and locked position.

5. Takeoff considerations:

During takeoff, on airplanes equipped with the back-up gear extender, if the gear selector switch is placed in the gear up position before reaching the airspeed at which the system no longer commands gear down,* the gear will not retract. For obstacle clearance on takeoff and for takeoffs from high altitude airports, the landing gear can be retracted at the pilot's discretion by placing the gear selector switch in the UP position and then holding the emergency gear lever in the OVERRIDE UP POSITION until the speed required for retraction by the system has been attained.

* Approximately 85 MPH IAS at sea level to approximately 100 MPH IAS at 10,000 ft., with a straight line variation between.

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6. Emergency landing gear extension instructions:

Accomplish the following checks prior to initiation of the emergency extension procedure.

- (a) Master Switch - Check "ON"
- (b) Circuit Breakers - Check
- (c) Panel Lights - "OFF" (in daytime)
- (d) Gear Indicator Bulbs - Check

If landing gear does not check down and locked:

- (e) Reduce airspeed below 100 MPH.
- (f) Move landing gear selector switch to "GEAR DOWN" position.
- (g) On airplanes equipped with the back-up gear extender, if gear has failed to lock down, raise emergency gear lever to "OVERRIDE ENGAGED" position.
- (h) If gear has still failed to lock down, move emergency gear lever to "EMERGENCY DOWN" position.
- (i) If gear has still failed to lock down, yaw the airplane abruptly from side to side with the rudder.

If the nose gear will not lock down using the above procedure, slow the aircraft to the lowest safe speed attainable using the lowest power setting required for safe operation and accomplish the following:

- (j) On airplanes equipped with the back-up gear extender, raise the emergency gear lever to "OVERRIDE ENGAGED" position.
- (k) Move landing gear selector switch to "GEAR DOWN" position.

If landing gear does not check down, recycle gear through "UP" position, and repeat (k).

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7. Gear up emergency landing:

In the event a gear up landing is required, make an initial approach at not less than 110 MPH IAS to prevent the gear from free falling on airplanes equipped with the back-up gear extender.

- (a) Leave flaps "UP" to reduce wing and flap damage.
- (b) CLOSE throttle and shut OFF the master and ignition switches.
- (c) Turn the fuel selector valve to OFF.
- (d) On airplanes equipped with the back-up gear extender hold the emergency gear lever in the "OVERRIDE UP" position while reducing airspeed and until the airplane comes to rest. Contact the surface at minimum airspeed.

NOTE

With the master switch "OFF" the landing gear cannot be retracted.

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2. Procedures
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8. (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 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.

9. (AutoFlite Installation Only)

I Limitations

- a. None

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

10. (AutoControl III Installation Only)

I Limitations

- a. Automatic pilot off for takeoff and landing.

II Procedures

- a. Normal Operation - Refer to Manufacturer's Operation Manual

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2. Procedures

Section (Cont'd)

b. Emergency

1. In case of malfunction, disengage automatic pilot controls.
2. In emergency, automatic pilot may be overpowered manually.
3. In cruise configuration malfunction, 3 seconds delay results in 60° bank and 200 ft. altitude loss.
4. In approach configuration malfunction, 1 second delay results in 10° bank and 0 ft. altitude loss.

11. (AutoFlite II Installation Only)

I Limitations

- a. AutoFlite off for takeoff and landing.
- b. AutoFlite use prohibited above 200 mph CAS.

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 45° bank and 150 ft. altitude loss.
 5. In approach configuration malfunction, 1 second delay results in 15° bank and 50 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 2600 pounds.

Loss of altitude during stalls varied from 100 to 310 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 (gear down)	71 <i>Knots - 62</i>	73 63	81 70	88 76	100 87
Flaps down (gear down)	64 <i>Knots - 55</i>	66 57	73 63	80 69	90 78

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EQUIPMENT LIST

MODEL PA-28R-200

(SERIAL NOS. 28R-35000 THRU 28R-35820)

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REVISION NO.	PAGE	DESCRIPTION	APPROVED	DATE
1	12	Added: R. C. Allen Turn Coordinator #80-9	<i>G. McClean</i>	1-27-69
2	15	Added: Narco Mark 16 Installations	<i>G. McClean</i>	7-16-69
	18	Added: Adjustable Front Seat Installations and Overhead Vent System		
3	11	Added: Strobe Light, Whelen Engineering Company	<i>G. McClean</i>	10-3-69
4	18	Under Exterior Finish Changed 1st Trim Color to Trim Color and 2nd Trim Color to Accent Color	<i>G. McClean</i>	12-4-69
5	18	Added: Alternate Static Source	<i>G. McClean</i>	3-18-70
6	8	Spinner and Attachment Plate Installation Added	<i>G. McClean</i>	5-27-70
7	1	Change Unusable Fuel: 13-1/3 Pints was 3 Pints 10.0 lbs. was 2.2 lbs.	<i>G. McClean</i>	6-23-70
8	7	Change Unusable Fuel: 13-1/3 Pints was 3 Pints 10.0 lbs. was 2.2 lbs.	<i>G. McClean</i>	8-26-70
9	Title	Added Serial Nos. 28R-35000 thru 28R-35820	<i>G. McClean</i>	9-25-70