

**DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION**

1A4
Revision 24
Piper Aircraft, Inc

PA-20
PA-20S
PA-20 "115"
PA-20S "115"
PA-20 "135"
PA-20S "135"

August 7, 2006

AIRCRAFT SPECIFICATION NO. 1A4

Type Certificate Holder Piper Aircraft, Inc.
2926 Piper Drive
Vero Beach, Florida 32960

Type Certificate Holder Record The New Piper Aircraft, Inc transferred TC 1A4 to Piper Aircraft, Inc on August 7, 2006.

I - Model PA-20, 4 PCLM Normal Category Only), Approved December 21, 1949.

Engine Lycoming O-290-D

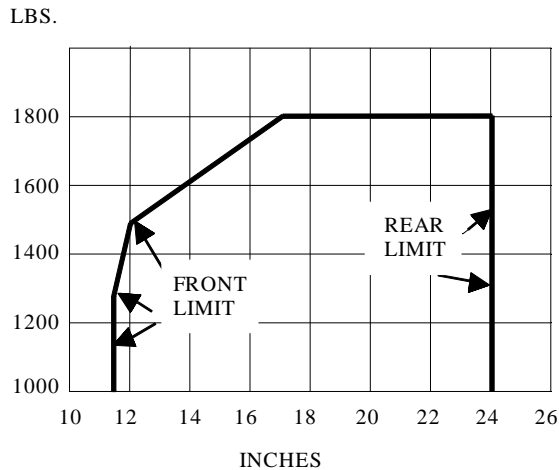
Fuel 80 minimum octane aviation gasoline

Engine Limits For all operations, 2600 rpm (125 hp)

Airspeed Limits

Maneuvering	106 mph	(92 knots)	True Ind.
Maximum Structural Cruising	126 mph	(110 knots)	True Ind.
Never Exceed	158 mph	(137 knots)	True Ind.
Flaps Extended	80 mph	(70 knots)	True Ind.

C. G. Range (+17.5) to (+24.0) at 1800 lbs.
(+12.0) to (+24.0) at 1490 lbs.
(+11.5) to (+24.0) at 1240 lbs. or less
Straight line variation between points given.



Empty weight C. G. Range None

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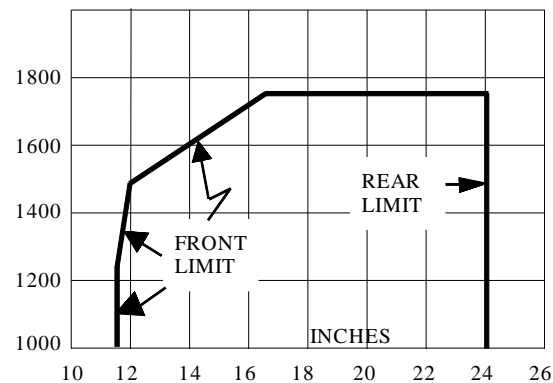
I - Model PA-20, 4 PCLM (cont'd)

<u>Maximum Weight</u>	1800 lbs.
<u>Number of Seats</u>	4 (2 at +18 to +21 and 2 at +49)
<u>Maximum Baggage</u>	50 lbs. (+67)
<u>Fuel Capacity</u>	36 gallons (2 wing tanks at +24)
<u>Oil Capacity</u>	2 gallons (-29)
<u>Serial Numbers Eligible</u>	20-1 and up.
<u>Required Equipment</u>	In addition to the pertinent required basic equipment specified in CAR 3, the following items of equipment must be installed: Items 1(a), 101, 201(a), 202, 204(a), and 401(a).

II - Model PA-20 "115", 4 PCLM (Normal Category Only), Approved March 22, 1950.

<u>Engine</u>	Lycoming O-235-C1												
<u>Fuel</u>	80 minimum octane aviation gasoline												
<u>Engine Limits</u>	Take-off (one minute), 2800 rpm (115 hp) All other operations, 2600 rpm (108 hp)												
<u>Airspeed Limits</u>	<table> <tr> <td>Maneuvering</td> <td>105 mph (91 knots)</td> <td>True Ind.</td> </tr> <tr> <td>Maximum Structural Cruising</td> <td>117 mph (102 knots)</td> <td>True Ind.</td> </tr> <tr> <td>Never Exceed</td> <td>140 mph (122 knots)</td> <td>True Ind.</td> </tr> <tr> <td>Flaps Extended (when Item 601 is installed)</td> <td>80 mph (70 knots)</td> <td>True Ind.</td> </tr> </table>	Maneuvering	105 mph (91 knots)	True Ind.	Maximum Structural Cruising	117 mph (102 knots)	True Ind.	Never Exceed	140 mph (122 knots)	True Ind.	Flaps Extended (when Item 601 is installed)	80 mph (70 knots)	True Ind.
Maneuvering	105 mph (91 knots)	True Ind.											
Maximum Structural Cruising	117 mph (102 knots)	True Ind.											
Never Exceed	140 mph (122 knots)	True Ind.											
Flaps Extended (when Item 601 is installed)	80 mph (70 knots)	True Ind.											
<u>C. G. Range</u>	(+16.6) to (+24.0) at 1750 lbs. (+12.0) to (+24.0) at 1490 lbs. (+11.5) to (+24.0) at 1240 lbs. or less Straight line variation between points given.												

LBS.

Empty Weight C. G. Range NoneMaximum Weight 1750 lbs.Number of Seats 4 (2 at +18 to +21 and 2 at +49)Maximum Baggage 50 lbs. (+67)

II - Model PA-20 "115", 4 PCLM (cont'd)

Fuel Capacity 36 gallons (2 wing tanks at +24)

Oil Capacity 1.5 gallons (-29)

Serial Numbers Eligible 20-1 and up.

Required Equipment In addition to the pertinent required basic equipment specified in CAR 3, the following items of equipment must be installed:
Items 2(a), 201(a), 202, 204(a), and 401(b).

III - Model PA-20S and PA-20S "115", 3 PCSM (Normal Category Only), Approved May 18, 1950;**Model PA-20S "135", 3 PCSM (Normal Category Only), Approved May 15, 1952.**

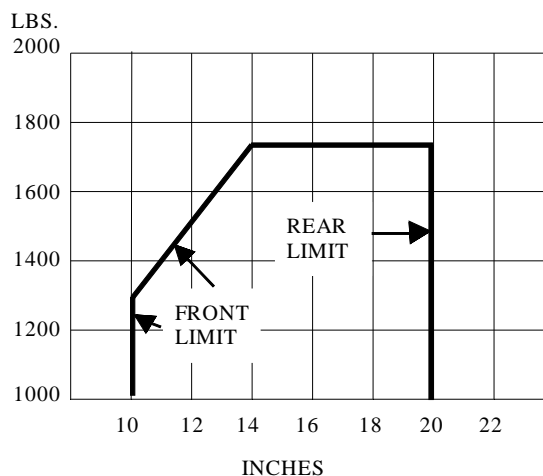
Engine Model PA-20S: Lycoming O-290-D
Model PA-20S "115": Lycoming O-235-C1
Model PA-20S "135": Lycoming O-290-D2

Fuel Lycoming O-290D & O-235-C1: 80 minimum octane aviation gasoline
Lycoming O-290-D2: 80/87 minimum octane aviation gasoline

Engine Limits Model PA-20S: All operations, 2600 rpm (125 hp)
Model PA-20S "115": All operations, 2600 rpm (108 hp)
Model PA-20S "135": All operations, 2600 rpm (135 hp)

Airspeed Limits Maneuvering 105 mph (91 knots) True Ind.
Maximum Structural Cruising 117 mph (102 knots) True Ind.
Never Exceed 140 mph (122 knots) True Ind.
Flaps Extended 80 mph (70 knots) True Ind.

C. G. Range (+14.0) to (+20.0) at 1738 lbs.
(+10.0) to (+20.0) at 1300 lbs. or less
Straight line variation between points given.



Empty Weight C. G. Range None

Maximum Weight 1738 lbs.

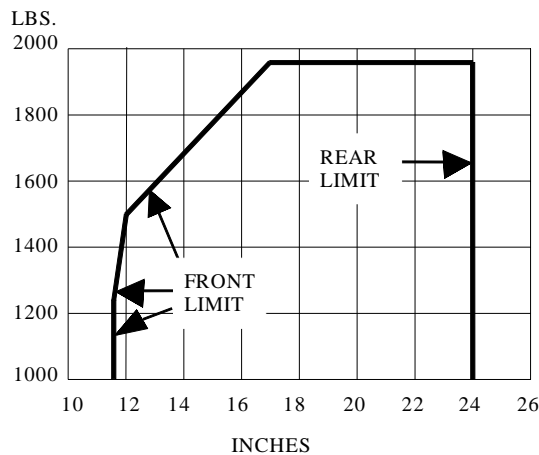
Number of Seats 4 (2 at +18 to +21 and 2 at +49)

III - Model PA-20S and PA-20S "115", 3 PCSM, Model PA-20S "135", 3 PCSM (cont'd)

<u>Maximum Baggage</u>	50 lbs. (+67)
<u>Fuel Capacity</u>	36 gallons (2 wing tanks at +24)
<u>Oil Capacity</u>	Model PA-20S and PA-20S "135": 2 gallons (-29) Model PA-20S "115": 1.5 gallons (-29)
<u>Serial Numbers Eligible</u>	20-1 and up.
<u>Required Equipment</u>	In addition to the pertinent required basic equipment specified in CAR 3, the following items of equipment must be installed: Model PA-20S: Items 1(b), 105, 106, 209(a), and 401(c). Model PA-20S "115": Items 2(d), 106, 209(a), and 401(c). Model PA-20S "135": Items 3(b), 107, 108, 209(a), and 401(e).

IV - Model PA-20 "135", 4 PCLM (Normal Category Only), Approved May 5, 1952.

<u>Engine</u>	Lycoming O-290-D2
<u>Fuel</u>	80/87 minimum grade aviation gasoline
<u>Engine Limits</u>	For all operations, 2600 rpm (135 hp)
<u>Airspeed Limits</u>	Maneuvering 106 mph (92 knots) True Ind. Maximum Structural Cruising 126 mph (110 knots) True Ind. Never Exceed 158 mph (137 knots) True Ind. Flaps Extended 80 mph (70 knots) True Ind.
<u>C. G. Range</u>	(+17.5) to (+24.0) at 1950 lbs. (+12.0) to (+24.0) at 1490 lbs. (+11.5) to (+24.0) at 1240 lbs. or less Straight line variation between points given.



<u>Empty Weight C. G. Range</u>	None
<u>Maximum Weight</u>	1950 lbs.
<u>Number of Seats</u>	4 (2 at +21 and 2 at +49)

<u>IV - Model PA-20 "135", 4 PCLM</u> (cont'd)	
<u>Maximum Baggage</u>	50 lbs. (+67) May be increased to 100 lbs. provided: (a) Baggage compartment placard is changed to "Maximum Baggage 100 Pounds," and (b) Airplane Flight Manual, Item 401(f), is available in the airplane.
<u>Fuel Capacity</u>	36 gallons (2 wing tanks at +24)
<u>Oil Capacity</u>	2 gallons (-29)
<u>Serial Numbers Eligible</u>	20-877 and up.
<u>Required Equipment</u>	In addition to the pertinent required basic equipment specified in CAR 3, the following items of equipment must be installed: Items 3(a), 107, 201(a), 202, 204(a), and 401(d).

Specifications Pertinent to All Models

<u>Datum</u>	Wing leading edge			
<u>Leveling Means</u>	Plumb from hole in upper channel of front door to center punch mark on front seat cross tube.			
<u>Control Surface</u>	Stabilizer	1° Up	6½°	Down
<u>Movements</u>	Elevator	24° Up	12°	Down
	Aileron	15° Up	15°	Down
	Rudder	16° Right	16°	Left
	Flap	40° Down		
<u>Certification Basis</u>	Type Certificate No. 1A4 (CAR 3)			
<u>Production Basis</u>	Approved for manufacture of spare parts only under Production Certificate No. 206.			
<u>Export Eligibility</u>	Deleted as of - August 28, 1995.			

Equipment A plus (+) or minus (-) sign preceding the weight of an item indicates net weight change when that item is installed.

Approval for the installation of all items of equipment listed herein has been obtained by the aircraft manufacturer except those items preceded by an asterisk (*). The asterisk denotes that approval has been obtained by someone other than the aircraft manufacturer. An item marked with an asterisk may not have been manufactured under a FAA monitored or approved quality control system, and therefore conformity must be determined if the item is not identified by a Form ACA-186, PMA, or other evidence of FAA production approval.

Propellers and Propeller Accessories

The following propellers are eligible with the specified engines at the limits shown for diameter and static rpm at maximum permissible throttle setting, no additional tolerance permitted:

1. With Lycoming O-290-D engine only
 - (a) Propeller - Sensenich 74FM59 or any other fixed pitch wood propeller which is +11 lbs. (-50)
rated for the engine power and speed:
Landplane and skiplane only:
Static rpm: Not over 2400, not under 2200.
Diameter: Not over 74 inches, not under 70.5 inches.

Propellers and Propeller Accessories (cont'd)

- (b) Propeller fixed pitch metal
- (1) Sensenich M76AM-2 +25 lbs. (-50)
- or (2) Sensenich M74DM +30 lbs. (-50)
- Applicable Airplane Flight Manual shall be revised by the modifier and approved by the applicable FAA Aircraft Certification Office to reflect this installation change.
- Static rpm: Landplane and skiplane: Not over 2450, not under 2150.
Seaplane: Not over 2500, not under 2300.
- Diameter: Not over 74 inches, not under 72.5 inches.
- (c) Propeller - Koppers Aeromatic, F200-H/00-74E +34 lbs. (-50)
Parts List Assembly No. 4394H-1.
Installation and operation must be accomplished in accordance with Koppers "Adjustment Instructions and Operating Limitation No. 58."
Landplane, skiplane and seaplane:
Low pitch setting 14° at 24 in. sta.:
Static rpm: Not over 2600, no under 2550.
Diameter: Not over 74 inches, not under 72.5 inches.
- (d) Propeller - Sensenich Hub CS3FM4, blades C 374A7 or PC 374A7, two position controllable. +30 lbs. (-50)
Propeller control installation required as per Sensenich Dwg. D-3028, Revision E.
Landplane and skiplane only:
Blade pitch setting at 3/4 in. radius (27.75 in. sta.):
Low 13°, High 16.6°.
Diameter: Not over 74 inches, not under 72.5 inches.
2. With Lycoming O-235-C1 engine only
- (a) Propeller - Sensenich 74FM-56 or any other fixed pitch wood propeller which is rated for engine power and speed: +11 lbs. (-50)
Landplane and skiplane only:
Static rpm: Not over 2400, not under 2200.
Diameter: Not over 74 inches, not under 70.5 inches.
- (b) Propeller - McCauley Model 1C90-LM-7254 fixed pitch metal or any other Model 1C90LM propeller meeting proper limits: +23 lbs. (-50)
Landplane and skiplane only:
Static rpm: Not over 2290, not under 2200.
Diameter: Not over 72 inches, not under 70.5 inches.
- (c) Propeller - Koppers Aeromatic (Item 102 required)
- (1) F200/00-73E; Parts List Assembly No. 4368, 4368-1 +19 lbs. (-50)
Koppers Installation Procedure and Operating Limitations No. 34.
- (2) F200/00-74E; Parts List Assembly No. 4292A, 4292A-1 +32 lbs. (-50)
Koppers Installation Procedure and Operating Limitations No. 16B.
- (3) F200-H/00-73E; Parts List Assembly No. 4368H, 4368H-1 +33 lbs. (-50)
Adjustment Instructions and Operating Limitations No. 52A.
Altitude Control Assembly No. 4382
- (c) Propeller - Koppers Aeromatic (Item 102 required)
- (4) F200-H/00-74E; Parts List Assembly No. 4292AH-1. +34 lbs. (-50)
Instructions and Operating Limitation No. 52A.
Altitude Control Assembly No. 4382. +6 lbs. (-35)
Landplane and skiplane only:
Low pitch settings at 24 in. sta.: (1), (3) - 10.4°
(2), (4) - 11.0°
Static rpm: (1), (2) - Not over 2750, not under 2700.
(3), (4) - Not over 2800, not under 2750.
Diameter: (1), (3) - Not over 73 inches, not under 71.5 inches.
(2), (4) - Not over 74 inches, not under 72.5 inches.

Propellers and Propeller Accessories (cont'd)

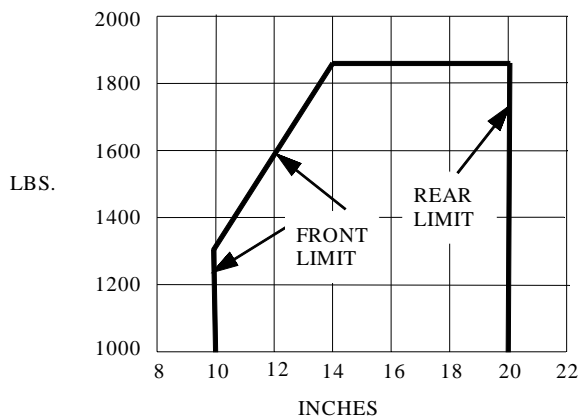
- (d) Propeller - Sensenich M76AM-2 or -3, fixed pitch metal +25 lbs. (-50)
 Landplane and skiplane:
 Static rpm: Not over 2500, not under 2300.
 Diameter: Not over 74 inches, not under 71.5 inches.
 Seaplane:
 Static rpm: Not over 2500, not under 2400.
 Diameter: Not over 74 inches, not under 72.5 inches.
- (e) Propeller - Sensenich Hub CS-2FM6-1, blades PC276A7-2, two-position controllable. +27 lbs. (-50)
 Propeller control installation required as per Sensenich Dwg. D-3028 (Item 103 required)
 Landplane and skiplane only:
 Blade pitch setting at 3/4 radius (28.5 in. station):
 Low 11.8°, High 15.3°
 Diameter: Not over 74 inches, not under 72.5 inches.
3. With Lycoming O-290-D2 engine only
- (a) Propeller - Sensenich 72FM59 or any other fixed pitch wood propeller which is +11 lbs. (-50)
 rated for the engine power and speed:
 Landplane and skiplane only:
 Static rpm: Not over 2400, not under 2200.
 Diameter: Not over 74 inches, not under 70.5 inches.
- (b) Propeller - fixed pitch metal
 (1) Sensenich M76AM-2 +25 lbs. (-50)
 or (2) Sensenich M74DM +30 lbs. (-50)
 Applicable Airplane Flight Manual shall be revised by the modifier and approved by the applicable FAA Aircraft Certification Office to reflect this installation change.
 Landplane and skiplane:
 Static rpm: Not over 2450, not under 2150.
 Diameter: Not over 74 inches, not under 72.5 inches.
 Seaplane:
 Static rpm: Not over 2500, not under 2350.
 Diameter: Not over 74 inches, not under 72.5 inches.
- (c) Propeller - Koppers Aeromatic F200-H/00-74E +34 lbs. (-50)
 Parts List Assembly No. 4394H-1.
 Installation and operation must be accomplished in accordance with Koppers "Adjustment Instructions and Operating Limitation No. 58."
 Landplane, skiplane and seaplane:
 Low pitch setting 14° at 24 in. sta.:
 Static rpm: Not over 2600, not under 2550.
 Diameter: Not over 74 inches, not under 72.5 inches.
- (d) Propeller - Sensenich Hub CS3FM-4, blades PC374A7 or C374E, 2 position controllable +34 lbs. (-50)
 Propeller control installation required as per Sensenich Dwg. D-3028, Rev. E.
 Landplane and skiplane only:
 Blade pitch setting at 3/4 inch radius (27.75 in. sta.):
 Low 13°, High 16.6°
 Diameter: Not over 74 inches, not under 72.5 inches.

Engines and Engine Accessories - Fuel and Oil Systems

101. Oil cooler - Harrison No. AP06CJ04-02 or AP06CU04-02 and Piper air duct (required on +3 lbs. (-18)
 landplane with O-290-D engine)
102. Oil sump baffle and blast tube, Koppers Company, Inc., Dwg. No. 3351 (required with
 Propeller Item 2(c)).
103. Oil sump baffle, Sensenich Dwg. No. D-3028, Rev. C (Required with Propeller Item 2(e)).
104. Oil filter, Fram PB-5, Kit No. K-520, Fram Dwg. No. 62832 and Instruction Sheet No. 62831 +5 lbs. (-18.5)
 (weight includes 1 quart oil)
105. Oil Cooler Harrison No. AP09CJ04 or No. AP09AU04 and Piper Oil Cooler Air +3 lbs. (-18)
 Scoop P/N 12900 (Required on seaplane with Lycoming O-290-D engine).
106. Seaplane top engine cowl assembly, Piper P/N 12720-9 Neglect Wt. Change
107. Oil Cooler - Harrison No. AP13SJ03-01 or AP12CU03-01 installed in accordance with +6 lbs. (-46)
 Piper Dwg. 13724 (Required with landplane and skiplane with Lycoming O-290-D2 engine)
108. Seaplane bottom engine cowl assembly, Piper P/N 13159-8 Neglect Wt. Change

Landing Gear

201. Two main wheel-brake assemblies, 8.00-4, Type III +10 lbs. (0)
 (a) Goodrich Model 841A,
 Wheel Assembly No. D-3-13A-1
 Brake Assembly No. D-2-113
202. Two Main wheel 4-ply rating tires, 8.00-4, Type III, with regular tubes +22 lbs. (0)
204. Tail wheel assembly
 (a) Scott Model #3-24B, Steerable +6 lbs. (+177)
 (b) Maule Model #SFS-1-4-P8 No Weight Change
 (c) Scott Model 3200 per Scott Dwg. No. 3243 +2 lbs. (+178)
208. Skis
 (a) Federal A-1850, A-2000, A-2000A , or A-2500A per Federal Dwg. 11R262 Use Actual Wt Change
 *(b) Federal AWB-2100 main skis and AWT-2500A tail ski per Federal Aircraft Works Dwg. No. 11R944A. Use Actual Wt Change
- The following placard is required with this installation:
 "Do not extend or retract skis while in motion on the ground."
- *(c) Wesco per Western Aircraft Equipment Company Dwg. Nos. 12 and 148: Use Actual Wt Change
 (1) A-20, (2) A-25, (3) AS-2, (4) AS-2A, (5) AS-2B.
209. Floats:
 (a) Edo Model 86-1650 Floats with water rudder installed in accordance with Edo +147 lbs. (+14.5)
 Dwg. No. 05525 and Piper drawings as follows:
 Model PA-20S "115" and PA-20S "125":
 Serial Nos. 20-1 through 20-811 per Piper Dwg. 12479;
 Serial Nos. 20-812 and up per Piper Dwg. 13693;
 Model PA-20S "135":
 Up to Serial No. 20-934 per Piper Dwg. 13805;
 Serial No. 20-934 and up per Piper Dwg. 14077.
 (b) Edo Model 89-2000 floats with water rudder installed in accordance with Edo +178 lbs. (+12)
 Dwg. No. 16270.
 Seaplane fin, seaplane side engine cowl, and other modifications must be installed in accordance with Piper Dwg. 14237.
 Eligible only on Model PA-20S "135".
 Serial Nos. below 20-934 require a fuselage reinforcement brace, Piper Part No. 12480.
 C. G. Range: (+14) to (+20) at 1850 lbs.
 (+10) to (+20) at 1300 lbs. or less
 Straight line variation between points given.



Maximum Weight: 1850 lbs.

Required equipment: Items 3(b), 107, 108, 209(b), and 401(g).

- *210. Tandem Gear Model GW-100 installed in accordance with A. W. Whitaker, +46 lbs. (0)
 5001 N.E. Union Avenue, Portland, Oregon, Dwg. T-10 and installation instructions dated June 8, 1949.

Electrical Equipment

- | | | | |
|------|--|----------|-------|
| 301. | Battery - Reading S24-12V | +25 lbs. | (+21) |
| 302. | Landing lights in wing leading edge per Piper Dwg. 12534 | +4 lbs. | (+5) |
| 303. | Battery - Reading R33-12V
Serial No. 20-776, 20-778, 20-783, 20-786, 20-791 through 20-794, 20-796, 20-799,
20-801, 20-802, 20-805, 20-807, 20-808, 20-811 and up. | +28 lbs. | (+21) |

Interior Equipment

- | | | | |
|-------|---|----------|-------|
| 401. | (a) CAA (FAA) Approved Airplane Flight Manual dated December 21, 1949, for airplanes equipped with Lycoming O-290-D engines. | | |
| | (b) CAA (FAA) Approved Airplane Flight Manual dated March 22, 1950, for airplanes equipped with Lycoming O-235-C1 engines. | | |
| | (c) CAA (FAA) Approved Airplane Flight Manual - Seaplane dated May 18, 1950. | | |
| | (d) FAA-DOA Approved Airplane Flight Manual dated May 5, 1952, for landplanes equipped with Lycoming O-290-D2 engines.
(Required with 50 lb. baggage allowance.) | | |
| | (e) FAA-DOA Approved Airplane Flight Manual dated May 15, 1952, for seaplanes equipped with Lycoming O-290-D2 engines. | | |
| | (f) FAA-DOA Approved Airplane Flight Manual dated October 23, 1952, for landplanes equipped with Lycoming O-290-D2 engines.
(Required with 100 lb. baggage allowance.) | | |
| | (g) FAA-DOA Approved Airplane Flight Manual dated August 19, 1953, for Model PA-20S "135" seaplanes equipped with Edo Model 89-2000 floats. | | |
| *402. | Javelin A-2 single axis automatic pilot installed in accordance with Javelin Dwg. 721 and instructions dated June 15, 1954. (Landplane only). | +18 lbs. | (+94) |

Miscellaneous Equipment

601. Flaps - Installed in accordance with Piper Dwg. No. 12538 (Optional on PA-20 "115" Model).
When installed, the Airspeed Instrument must include: white arc 48 to 80 mph.

NOTE 1. Current weight and balance report including list of equipment included in certificated weight empty, and loading instructions when necessary, must be in each aircraft at the time of original certification and at all times thereafter (except in the case of air carrier operators having an approved weight control system).

NOTE 2. The following placards must be displayed:

- (a) On the instrument panel in full view of the pilot:
 - (1) "Operate in Normal Category in compliance with approved Flight Manual. Acrobatic (including spins) prohibited."
 - (2) "No Smoking." (Not required on Serial Nos. 20-553 and up.)
- (b) Adjacent to the fuel valve,
 - (1) "Use right tank level flight only."
Placard not required if aircraft revised per Piper Service Letter No. 145.
- (c) On the baggage compartment,
 - (1) "Maximum Baggage 50 pounds."
 - (2) "Maximum Baggage 100 pounds." (For model PA-20 "135" when Airplane Flight Manual, Item 401(f), is available in the airplane.)

...END...