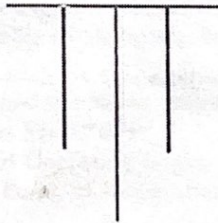


THIS DOCUMENT MUST BE KEPT IN THE AIRPLANE AT ALL TIMES

APPROVED
AIRPLANE FLIGHT MANUAL
FOR THE
MODEL PA-23



SEPTEMBER 1, 1955

PIPER AIRCRAFT CORPORATION
LOCK HAVEN, PENNA.

MODEL PA-23
Airplane Flight Manual

PROCEDURES

FUEL SYSTEM (Main)
72 GAL. CAPACITY

NORMAL OPERATION

1. TAKE-OFF AND LANDING
 - a. Main Valves **"ON"**
 - b. Pressure Cross Feed **"OFF"**
 - c. Electric Fuel Pumps **"ON"**
2. CRUISE
 - a. Main Valves **"ON"**
 - b. Pressure Cross Feed **"OFF"**
 - c. Electric Fuel Pumps **"OFF"**

EMERGENCY OPERATION

A pressure cross feed valve is provided to increase the range during single engine emergency operating conditions. Fuel system operation is as follows:

- a. Pressure Cross Feed **"ON"**
- b. Main Fuel Valve of Inoperative Engine **"ON"**
- c. Electric Fuel Pump of Inoperative Engine **"ON"**
- d. Main Fuel Valve of Operating Engine **"OFF"**

When fuel from tank of **inoperative engine** is exhausted, return to **operating engine** fuel system as follows:

- a. Pressure Cross Feed **"OFF"**
- b. Main Valve of Operating Engine **"ON"**
- c. Electric Fuel Pump of Inoperative Engine **"OFF"**

MODEL PA-23
Airplane Flight Manual

SUPPLEMENT No. 1

DUAL GENERATOR INSTALLATION

When dual generators are installed, field circuit switches are provided at the lower right side of the control pedestal.

Both switches shall be "ON" at all times except to check generator operation, or in the event of malfunctioning (indicated by extreme charge or discharge on the ammeter) when the appropriate switch should be turned OFF.

In all cases the master switch, when in the "OFF" position will disconnect all electrical equipment from the power source.

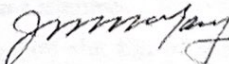
TO CHECK GENERATORS PRIOR TO TAKE-OFF

1. LEFT GENERATOR CHECK
 - a. Right Throttle **CLOSED**
 - b. Right Generator Field Switch **OFF**
 - c. Left Generator Field Switch **ON**
 - d. Advance Throttle of Left Engine to 1800 RPM.
Generator, if Operating, Will Show Charge.

2. RIGHT GENERATOR CHECK
 - a. Left Throttle **CLOSED**
 - b. Left Generator Field Switch **OFF**
 - c. Right Generator Field Switch **ON**
 - d. Advance Throttle of Right Engine to 1800 RPM.
Generator, if Operating, Will Show Charge.

CIRCUIT BREAKERS

Circuit breakers for protection of the electrical system are located behind a door at bottom roll on instrument panel to the left side of the control pedestal.


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P I P E R A I R C R A F T C O R P O R A T I O N

MODEL PA-23
Airplane Flight Manual
SUPPLEMENT No. 3
AUTOMATIC PILOT
LEAR MODEL L-2

PLACARDS REQUIRED

1. ON THE INSTRUMENT PANEL:
"Do not operate autopilot during single engine operation."

NORMAL OPERATION

1. "ENGAGE" Switch shall be placed in "OFF" position.
2. "TURN" knob shall be in "DETENT" or neutral position. The Autopilot will not operate if the turn knob is out of detent. This is a safety feature to avoid a turn maneuver to the right or left if the Autopilot was made operative when the knob was in a turn position.
3. "PITCH" Knob shall be positioned to place the reference line on the knob in line with the reference line of the controller box.
(This operation is not necessary when approach coupler is installed).
4. Turn Master Autopilot Switch to "ON" position. Allow approximately one minute for equipment to reach operating temperature.
5. Turn the "ENGAGE" Switch to "ON" position. The Autopilot is now operating. With the pitch knob positioned as described in (3) above, remove the cap covering the pitch trim control. Adjust the pitch trim knob for level flight in the pitch axis when the aircraft is at minimum cruising speed; this adjustment shall be made only at the beginning of a flight. At this time adjust the roll trim knob until the ball in your turn and bank instrument is centered. This last step is important to allow coordinated turns to be executed. Replace the pitch trim control cap.
6. **TO TURN:** To turn left, turn the knob slowly to the left. To turn to the right turn the knob slowly to the right. To return to level flight return the turn knob to the detent position.
7. **TO CLIMB OR DIVE:** To dive turn the top of the pitch knob away from you. The angle of the dive is determined by the amount that you rotate the pitch knob. Conversely, to climb turn the top of the pitch knob toward you.

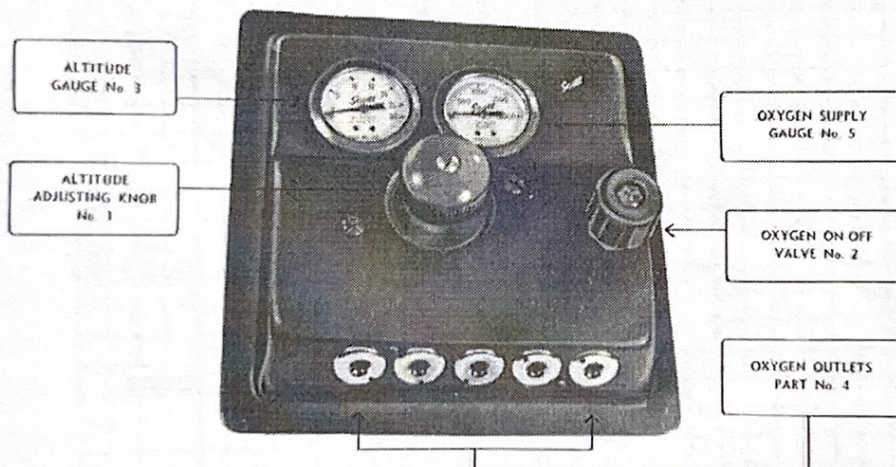
MODEL PA-23
Airplane Flight Manual
SUPPLEMENT No. 4

OXYGEN SYSTEM
SCOTT AVIATION CORPORATION
CONSOLE MODEL 8800

PLACARDS REQUIRED

1. ON THE OXYGEN CONSOLE ON CABIN WALL BEHIND PILOT'S SEAT:

CAUTION
DO NOT SMOKE WHILE USING OXYGEN

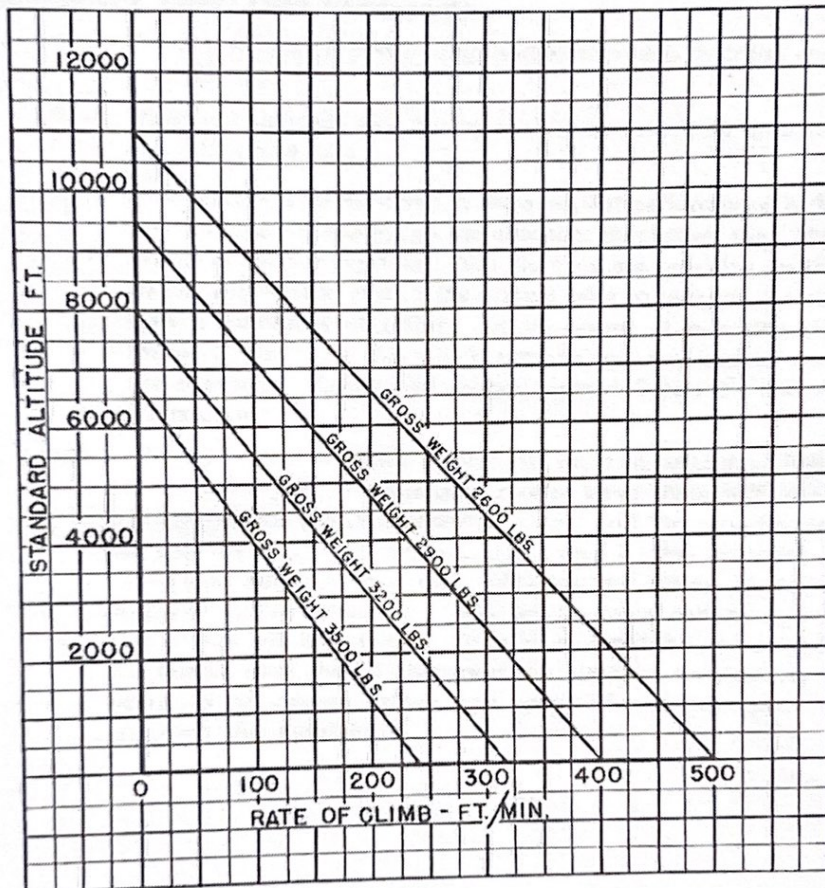
NORMAL OPERATION

1. BEFORE TAKE-OFF:
Turn on Cylinder Valve Under Rear Seat
2. WHEN READY TO USE:
 - a. Check to Be Sure That Altitude Knob (No. 1) Is "OFF" by Turning "LEFT" to Limit.
Use caution—Do not force valves or seat seals will be damaged.
 - b. Turn Oxygen Valve (No. 2) "ON" slowly. Approximately One-Half Turn to "LEFT" Is All That Is Necessary.
 - c. Plug "IN" Required Number of Masks to Outlets (No. 4). To Plug In, Insert Fitting, Push, and Turn to "RIGHT" to Limit.
 - d. Observe Altitude Gauge (No. 3) While Turning Altitude Adjusting Knob (No. 1) to "RIGHT". Set Gauge (No. 3) to Correspond to Flight Altitude.

P I P E R A I R C R A F T C O R P O R A T I O N

MODEL PA-23
Airplane Flight Manual
SUPPLEMENT No. 6
PERFORMANCE

Critical engine (left) inoperative climb performance which may be realized in standard air at a speed of 95 MPH with gear and flaps retracted is as follows, (Ref. CAR 42.82) :



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Sept. 1, 1955

PIPER AIRCRAFT CORPORATION

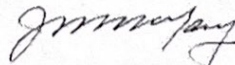
MODEL PA-23
Airplane Flight Manual

SUPPLEMENT No. 7

AUTOMATIC PILOT
LEAR MODEL L-2

EMERGENCY OPERATING PROCEDURE

- (1) Maximum altitude lost during malfunction tests in cruise configuration **50** feet.
- (2) Maximum altitude lost during malfunction tests in approach configuration **100** feet.
- (3) In the event a malfunction in the autopilot performance is detected, you may readily disengage the autopilot by placing the "ENGAGE" switch in the off position. Slip clutches are provided on the servo output capstans to permit the human pilot to override the autopilot with a minimum of effort. In the event of a malfunction the following forces at the pilot's controls are required to overpower the autopilot: Rudder 30 pounds, aileron 9 pounds, and elevator 10 pounds.
- (4) "If one engine becomes inoperative while in unbanked flight with the autopilot ON, the autopilot rudder servo force will attempt to compensate for the unsymmetrical power and the resulting yaw will be less than 3° per second. However, if the autopilot TURN CONTROL knob is displaced following the above condition, the autopilot rudder servo force will become zero and an appreciable rate of yaw will be induced. In order to avoid the above conditions, the human pilot should disconnect the autopilot immediately subsequent to an engine failure and retrim the aircraft prior to re-engaging the autopilot."



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Sept. 1, 1955

P I P E R A I R C R A F T C O R P O R A T I O N

MODEL PA-23
Airplane Flight Manual

SUPPLEMENT No. 9
OPTIONAL SEAT ARRANGEMENT

PLACARDS REQUIRED:

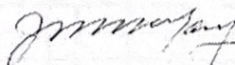
1. UNDER BOTH REAR WINDOWS
"Latch seats for take-off and landing."
2. ON BAGGAGE DOOR FRAME
"When five seats are installed see weight and balance for baggage capacity and loading schedule."

PROCEDURES:

Since it is possible, with the addition of optional equipment, to exceed the gross weight of the airplane a loading schedule is submitted for the convenience of the pilot and will be found in the weight and balance section of this manual.

Any one of the loadings, which are based on the actual empty weight of the airplane, assures loading within the gross weight limits and must not be exceeded.

If any item is added to the airplane which will cause a change in its empty weight, the loading schedule must be altered accordingly.



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PIPER AIRCRAFT CORPORATION

MODEL PA-23
Airplane Flight Manual
WEIGHT AND BALANCE (Cont.)

MOST REARWARD C. G.

| ITEM | Weight | Arm | Moment |
|----------------------------------|--------|-------|----------|
| Empty Weight | 2283.9 | 90.1 | 207940.1 |
| Oil (4 Gal.) | 30 | 59.0 | 1770 |
| Fuel (72 Gal. Main) | 432 | 113.0 | 48816 |
| Fuel (Gal. Aux.) | 216 | 113.0 | 24408 |
| Pilot and Passenger (Front Seat) | 340 | 89.0 | 30260 |
| Passenger (1 Rear Seat) | 170 | 126.5 | 21505 |
| Baggage | 18.8 | 150.0 | 2820 |

TOTAL 3490.7 96.6 337376.1

Most Rearward C. G. Is Inches Aft Datum

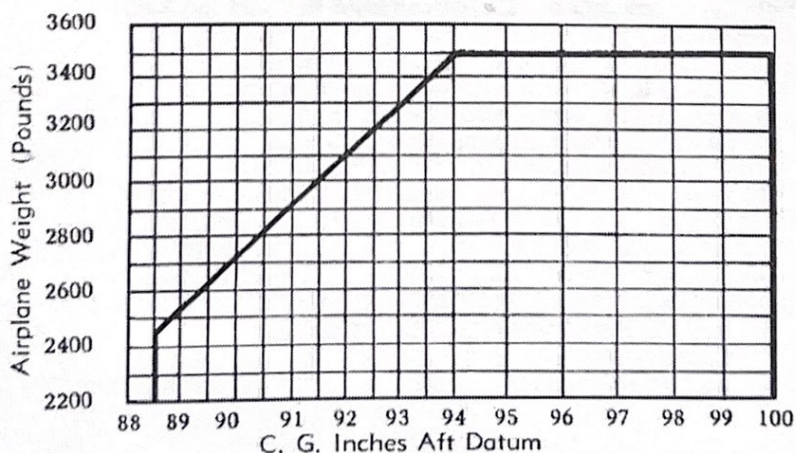
MOST REARWARD C. G. (ALTERNATE)

| ITEM | Weight | Arm | Moment |
|----------------------------------|--------|-------|----------|
| Empty Weight | 2283.9 | 90.1 | 207940.1 |
| Oil (4 Gal.) | 30 | 59.0 | 1770 |
| Fuel (72 Gal. Main) | 432 | 113.0 | 48816 |
| Fuel (Gal. Aux.) | | 113.0 | |
| Pilot and Passenger (Front Seat) | 340 | 89.0 | 30260 |
| Passenger (2 Rear Seat) | 340 | 126.5 | 43010 |
| Baggage | | 150.0 | |

TOTAL 3425.9 96.8 331672.7

Most Rearward C. G. (Alternate) Is Inches Aft Datum

APPROVED C. G. RANGE VS. WEIGHT



MODEL PA-23
Airplane Flight Manual
EQUIPMENT LIST

| Item No. | Item | Weight | Arm Aff. Datum |
|---|--|-------------|----------------|
| PROPELLERS AND PROPELLER ACCESSORIES | | | |
| X — 1. | Two, full feathering, constant speed, propeller installations | | |
| | (a) Hartzell HC-82xG-2 Hubs with 7636D Blades Pitch settings at 30 in. sta.: Low 10°, High 80.5° (Feathered) Diameter: Not over 76 in. Not under 74.5 in. | 63 Lbs. ea. | (35) |
| | or Hartzell HC-82xG-2B Hubs with 7636D-4 blades Item 401 (j) required Pitch settings at 30 in. sta.: Low 12°, High 80° (Feathered) Diameter: Not over 72 in. Not under 70.5 in. | 63 Lbs. ea. | (35) |
| X | (b) Two Woodward hydraulic governor assemblies, 210080 | 3 Lbs. ea. | (68.5) |
| X | (c) Hartzell prop. spinner dome C-888 and bulkhead adapter C-885 | 6 Lbs. ea. | (35) |
| | (d) Two Hamilton Standard hydraulic governor assemblies Model No. 1Q12 per Hartzell Modification B2 | 3 Lbs. ea. | (68.5) |

PIPER AIRCRAFT CORPORATION

MODEL PA-23
Airplane Flight Manual
EQUIPMENT LIST (Cont.)

| Item No. | Item | Weight | Arm Aft. Datum |
|----------|------|--------|----------------|
|----------|------|--------|----------------|

INTERIOR EQUIPMENT

X-401. DMCR Approved Airplane Flight Manual dated Sept. 1, 1955.

| | | | |
|--------|--|----------|-------|
| X-402. | Heater, Modified Stewart Warner Model 979-B-1 or 940-B12 | 18 Lbs. | (33) |
| — 403. | Lear L-2B Automatic Pilot | | |
| — (a) | Lear L-2B Autopilot Altitude Control and 1350B Approach Coupler Installed According to Lear Dwg. 701950 or Piper Dwg. 18759. Item 301B Required. | 104 Lbs. | (114) |
| — (b) | Lear L-2B Autopilot With Automatic Altitude Control Installed According to Lear Dwg. 701950 or Piper Dwg. 18759. Item 301B Required. | 54 Lbs. | (156) |
| — (c) | Lear L-2B Autopilot Installed According to Lear Dwg. 701950 or Piper Dwg. 18759. Item 301B Required. | 51 Lbs. | (154) |

P I P E R A I R C R A F T C O R P O R A T I O N

MODEL PA-23
Airplane Flight Manual
EQUIPMENT LIST (Cont.)

| Item No. | Item | Weight | Arm Aft. Datum |
|-----------------------------|--|---------|-------------------|
| ELECTRICAL EQUIPMENT | | | |
| <u>X</u> 301. | Generators | | |
| <u>X</u> | — (a) One 35 Amp. Generator—Delco-Remy 12 Volt, With Bracket | 18 Lbs. | (45) |
| <u>X</u> | — (b) Auxiliary 35 Amp. Generator Delco-Remy 12 Volt, With Brackets and Relays | 23 Lbs. | (52) |
| <u>X</u> 302. | Battery | | |
| | (a) One 12 Volt 33 Amp. Hour | 27 Lbs. | (40.5) |
| <u>X</u> 303. | One Landing Light G. E. Model 4509 | 2 Lbs. | (11.5) |
| <u>X^v</u> 304. | One Anti-Collision Light. Grimes No. D7080 Rotating Beacon Installed in Accordance With Piper Dwg. 18714 | 2 Lbs. | (260) |

MODEL PA-23
Airplane Flight Manual

WEIGHT AND BALANCE (Cont.)

A. Empty Weight C. G. Forward Main Wheel Centerline Is

$$\frac{(N)}{(T)} \times 90 = \text{Inches}$$

B. Empty Weight C. G. Aft Wing Leading Edge Is

$$34.5 - (A) = \text{Inches}$$

C. Empty Weight C. G. Aft Datum Is

$$80.0 + (B) = \text{Inches}$$

Empty weight & C. G. corrected to include all items
 on equipment list as of 2,283.9 90.1 207,940.1
 MOST FORWARD C. G. (REDUCED WEIGHT)

| ITEM | Weight | Arm | Moment |
|---------------------|--------|-------|-----------|
| Empty Weight | 2283.9 | 90.1 | 207,816.7 |
| Oil (4 Gal.) | 30 | 59.0 | 1770 |
| Fuel (25 Gal. Main) | 150 | 113.0 | 16950 |
| Pilot | 170 | 89.0 | 15130 |

TOTAL 26,339 91.75 331,672.7

Most Forward C. G. (Reduced Weight) Is Inches
 Aft Datum

MOST FORWARD C. G. (ALTERNATE)

| ITEM | Weight | Arm | Moment |
|---------------------|--------|-------|-----------|
| Empty Weight | 2283.9 | 90.1 | 207,940.1 |
| Oil (4 Gal.) | 30 | 59.0 | 1770 |
| Fuel (72 Gal. Main) | 432 | 113.0 | 48816 |
| Pilot | 170 | 89.0 | 15130 |
| Passenger | 170 | 89.0 | 15130 |

TOTAL 3085.9 93.24 288,612.2

Most Forward C. G. (Alternate) Is Inches
 Aft Datum

MODEL PA-23
Airplane Flight Manual
SUPPLEMENT No. 7
AUTOMATIC PILOT
LEAR MODEL L-2

8. **AUTOMATIC PITCH TRIM** operates whenever the autopilot is engaged. To manually operate the elevator trim tab, "ENGAGE" switch should be placed in the "OFF" position.
9. **AUTOMATIC ALTITUDE CONTROLLER: (IF INSTALLED).**
The aircraft shall be placed in a level flight attitude before the "Automatic Altitude Control" switch is placed in the "ON" position. Do not operate the "NOSE" control when the automatic altitude controller is engaged. Place the automatic altitude control in the "OFF" position before beginning a descent with the automatic pilot.
10. **AUTOMATIC APPROACH CONTROLLER: (IF INSTALLED).**

The automatic approach control should not be engaged until the airplane is positioned near the localizer path and at an intersection angle up to 90° (smaller angles are preferable) to the inbound ILS course. When the localizer needle begins to swing toward center the localizer button may be depressed. The airplane will then bracket the localizer beam. The maximum bank angle during the bracketing of the localizer should not exceed 30°.

When the glide path needle becomes centered the "FINAL" glide path button may be depressed. This will automatically disconnect the "ALTITUDE CONTROL" and the airplane will bracket the glide path slope and begin a rate of descent commensurate with the glide path angle and airspeed. Complete "BEFORE LANDING CHECK" at this point.

The controller may be disengaged from the autopilot at any time necessary for "GO-AROUND" by merely lifting the autopilot turn knob from the detent position and dropping it again. This leaves the autopilot still in normal control of the airplane and a "GO-AROUND" may be made on autopilot. If a manual "GO-AROUND" is desired, however, the autopilot "ENGAGE" switch may be turned "OFF" which will remove both controller and autopilot from control of the airplane.

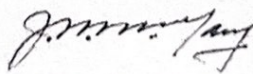
If the approach is carried to completion, the automatic pilot "ENGAGE" switch must be turned "OFF" prior to landing thus disconnecting both the automatic pilot and approach controller and returning the aircraft to manual control for completion of the landing.

P I P E R A I R C R A F T C O R P O R A T I O N

MODEL PA-23
Airplane Flight Manual
PERFORMANCE

STALLS

Loss of altitude during a single engine power-on stall is 225 feet. Other stall configurations result in less loss of altitude.



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Sept. 1, 1955

PIPER AIRCRAFT CORPORATION

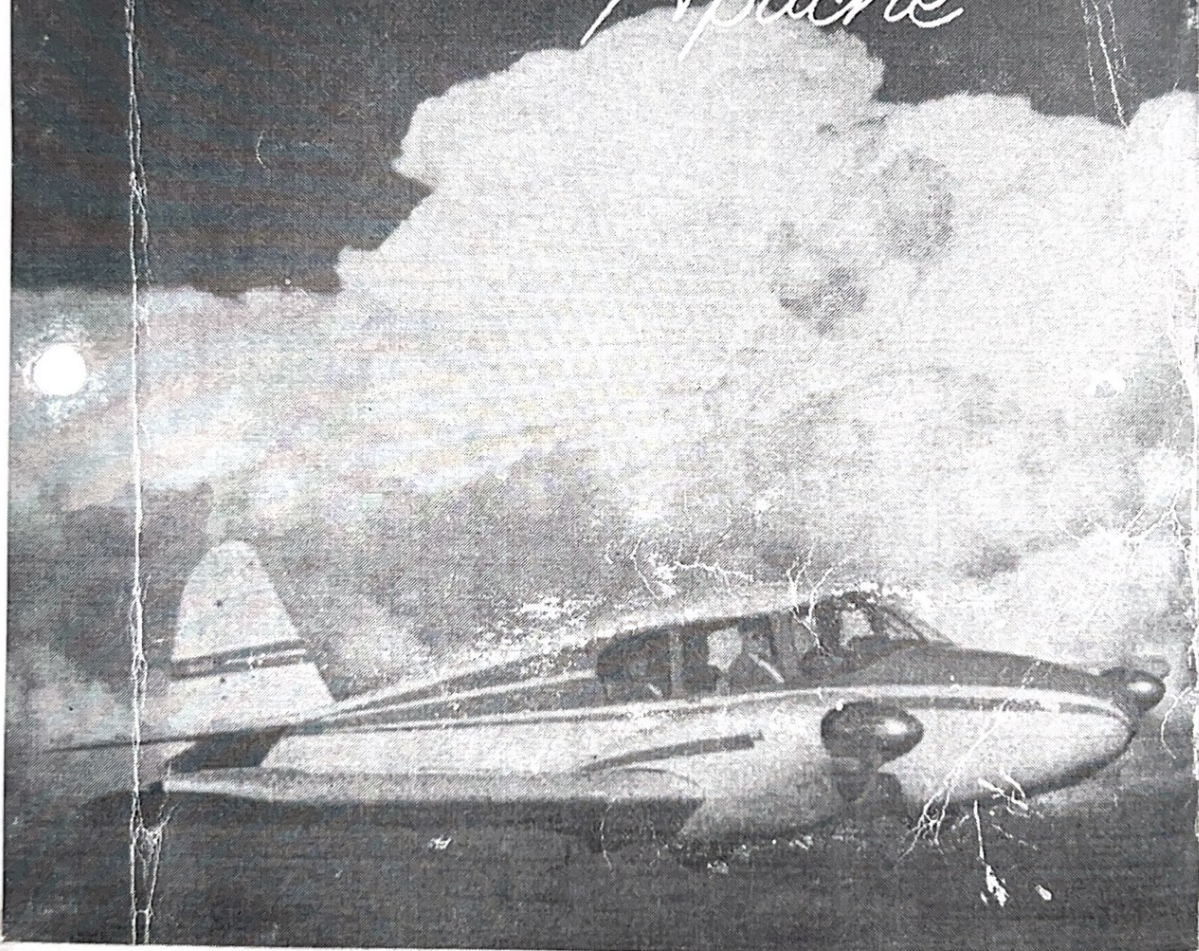
MODEL PA-23
Airplane Flight Manual
LIMITATIONS (Cont.)

| | | | |
|------------------------------|--|-----------------------------|----------------------------|
| AIRSPEED (True Indicated) | Red Line (never exceed) | 208 MPH. | |
| | Yellow Arc (smooth air only) | 165 MPH to 208 MPH. | |
| | Green Arc | 66 MPH to 165 MPH. | |
| | White Arc (flaps extended) | 61 MPH to 100 MPH. | |
| | Maneuvering Speed | 124 MPH. | |
| | Max. Structural Cruise | 165 MPH. | |
| | Max. Gear Extended | 125 MPH. | |
| | Min. Control Speed (single engine) | 85 MPH. | |
| | Stalling Speed | | |
| | Gear and Flaps Up | 66 MPH. | |
| | Gear and Flaps Extended | 61 MPH. | |
| FLIGHT LOAD FACTORS | Maximum Positive | 3.8g. | |
| | Maximum Negative | No Inverted Flight Approved | |
| MANEUVERS | All intentional acrobatic maneuvers, including spins, are prohibited. | | |
| WING FLAP SETTINGS | Take-off | 0° | |
| | Landing | 50° | |
| MAXIMUM WEIGHT | 3500 Lbs. | | |
| C. G. RANGE | Weight (Lbs.) | Fwd. Limit (In. Aft Datum) | Rwd. Limit (In. Aft Datum) |
| | 2450 or less | 88.5 | 100 |
| | 3500 | 94.0 | 100 |
| | Straight line variation between the points given. (Datum is 80 inches ahead of the wing leading edge outboard of tapered sections.) | | |
| | It is the responsibility of the airplane owner and the pilot to assure that the airplane is properly loaded. | | |
| | See weight and balance section for proper loading instructions. | | |
| PLACARDS | On the Instrument Panel in Full View of the Pilot: This airplane must be operated as a normal category airplane in compliance with the Airplane Flight Manual. | | |
| | On the Baggage Compartment: Maximum baggage 200 lbs. Rear seats may be removed and 340 pounds maximum additional baggage distributed on floor between front spar and baggage compartment. | | |

P I P E R A I R C R A F T C O R P O R A T I O N

PIPER

Apache



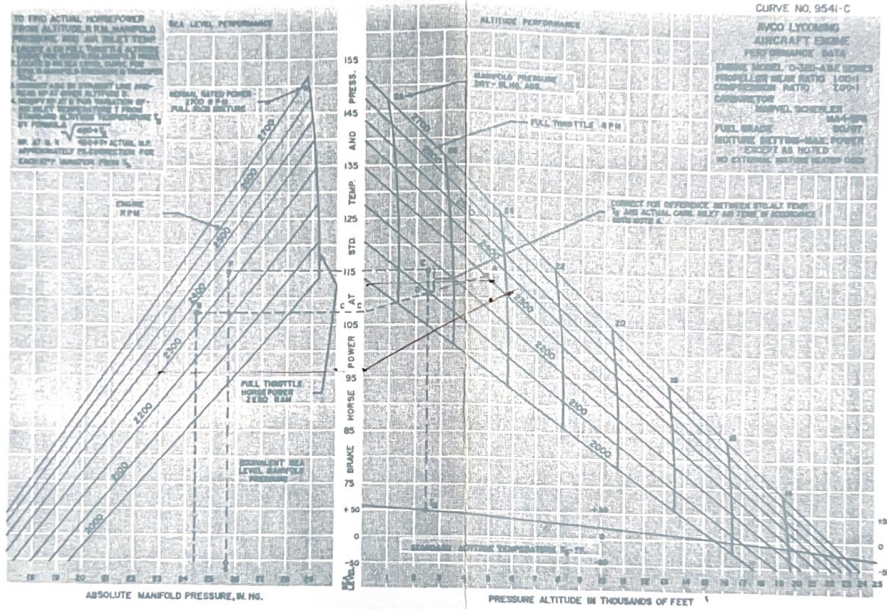
AIRPLANE FLIGHT MANUAL

POWER SETTING TABLE - LYCOMING MODEL O-520 SERIES, 150 HP ENGINE @ 2700 RPM

| PRESS. ALT. FEET | STD. ALT. TEMP. °F | 68 HP - 45% RATED RPM AND MAN. PRESS. | | | | 82 HP - 55% RATED RPM AND MAN. PRESS. | | | | 98 HP - 65% RATED RPM AND MAN. PRESS. | | | | 112 HP - 75% RATED RPM AND MAN. PRESS. | | | | PRESS. ALT. FEET |
|------------------------|--------------------------|--|------|------|------|--|------|------|------|--|------|------|------|---|------|------|------|------------------------|
| | | 2100 | 2200 | 2300 | 2400 | 2100 | 2200 | 2300 | 2400 | 2100 | 2200 | 2300 | 2400 | 2100 | 2200 | 2300 | 2400 | |
| SL | 59 | 20.0 | 19.2 | 18.5 | 17.7 | 22.5 | 21.5 | 20.7 | 20.0 | ---- | ---- | 23.2 | 22.6 | ---- | ---- | ---- | 24.7 | SL |
| 1000 | 55 | 19.7 | 18.9 | 18.3 | 17.5 | 22.2 | 21.2 | 20.4 | 19.8 | ---- | ---- | 22.9 | 22.4 | ---- | ---- | ---- | 24.4 | 1000 |
| 2000 | 52 | 19.5 | 18.7 | 18.0 | 17.3 | 22.0 | 21.0 | 20.2 | 19.6 | ---- | ---- | 22.7 | 22.1 | ---- | ---- | 25.0 | 24.2 | 2000 |
| 3000 | 48 | 19.3 | 18.5 | 17.8 | 17.1 | 21.7 | 20.8 | 19.9 | 19.4 | ---- | 23.5 | 22.5 | 21.9 | ---- | ---- | 24.8 | 24.0 | 3000 |
| 4000 | 45 | 19.0 | 18.3 | 17.5 | 16.9 | 21.5 | 20.5 | 19.7 | 19.2 | ---- | 23.3 | 22.3 | 21.7 | ---- | ---- | 24.6 | 23.8 | 4000 |
| 5000 | 41 | 18.8 | 18.0 | 17.3 | 16.7 | 21.2 | 20.3 | 19.5 | 19.0 | ---- | 23.0 | 22.1 | 21.5 | ---- | ---- | 24.4 | 23.6 | 5000 |
| 6000 | 38 | 18.5 | 17.8 | 17.1 | 16.5 | 20.9 | 20.1 | 19.3 | 18.8 | ---- | 22.8 | 21.9 | 21.3 | ---- | ---- | ---- | 23.4 | 6000 |
| 7000 | 34 | 18.3 | 17.6 | 16.9 | 16.3 | 20.7 | 19.9 | 19.1 | 18.6 | ---- | 22.6 | 21.7 | 21.1 | ---- | ---- | ---- | ---- | 7000 |
| 8000 | 31 | 18.0 | 17.4 | 16.7 | 16.1 | 20.5 | 19.6 | 18.9 | 18.4 | ---- | ---- | 21.5 | 20.8 | ---- | ---- | ---- | ---- | 8000 |
| 9000 | 27 | 17.8 | 17.1 | 16.5 | 15.9 | 20.2 | 19.4 | 18.7 | 18.1 | ---- | ---- | 21.2 | 20.6 | ---- | ---- | ---- | ---- | 9000 |
| 10000 | 23 | 17.6 | 16.9 | 16.3 | 15.7 | 20.0 | 19.2 | 18.5 | 17.9 | ---- | ---- | ---- | 20.4 | ---- | ---- | ---- | ---- | 10000 |
| 11000 | 19 | 17.4 | 16.7 | 16.1 | 15.5 | 19.8 | 19.0 | 18.3 | 17.7 | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | 11000 |
| 12000 | 16 | 17.2 | 16.5 | 15.9 | 15.3 | ---- | 18.8 | 18.1 | 17.5 | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | 12000 |
| 13000 | 12 | 17.0 | 16.3 | 15.7 | 15.1 | ---- | ---- | 17.9 | 17.3 | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | 13000 |
| 14000 | 9 | 16.8 | 16.2 | 15.5 | 14.9 | ---- | ---- | ---- | 17.2 | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | 14000 |
| 15000 | 5 | 16.6 | 16.0 | 15.3 | 14.8 | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | 15000 |

To maintain constant power, correct manifold pressure approximately 0.17" Hg for each 10°F variation in carburetor air temperature from standard altitude temperature. Add manifold pressure for air temperatures above standard; subtract for temperatures below standard.

Revised January, 1977



AVCO LYCOMING OPERATOR'S MANUAL
O-320 & IO-320 SERIES
SECTION 3

Figure 3-3. Sea Level and Altitude Performance - O-320-A and -E Series

3-15

$$HP_{20} \times \sqrt{\frac{460 + T_s}{460 + T}}$$

$$107 \times \sqrt{\frac{460 + 42}{460 + T}}$$

AVCO LYCOMING OPERATOR'S MANUAL

SECTION 3

O-320 & IO-320 SERIES

CURVE NO. 10156

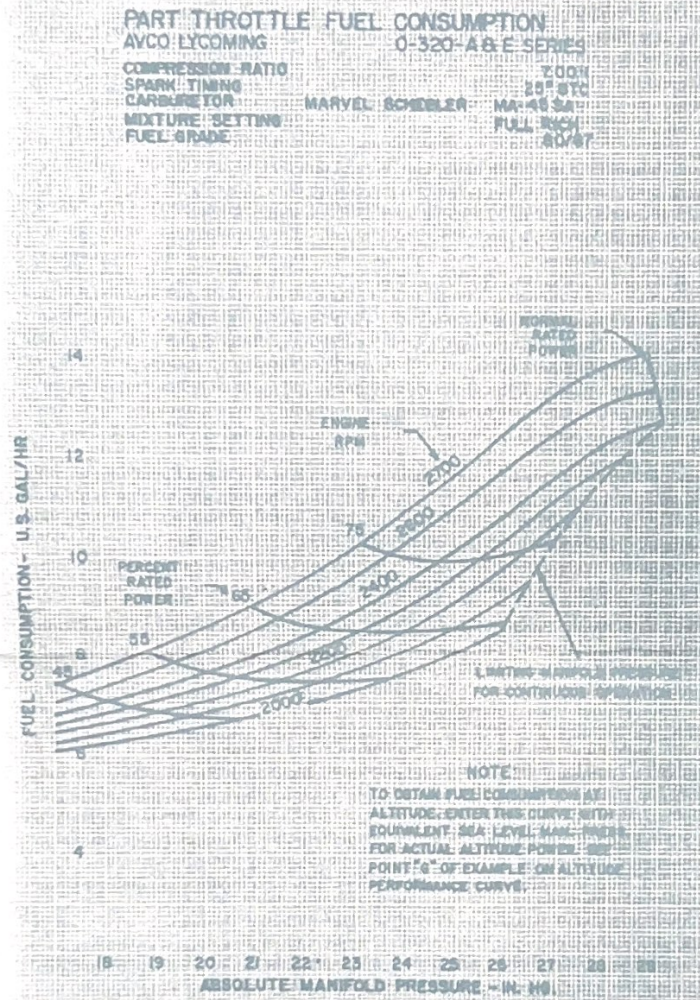


Figure 3-4. Part Throttle Fuel Consumption -
 O-320-A and -E Series

AVCO LYCOMING OPERATOR'S MANUAL

SECTION 3

O-320 & IO-320 SERIES

OPERATING CONDITIONS (CONT.)

| Operation | RPM | HP | Fuel Cons. Gal./Hr. | Max. Oil Cons. Qts./Hr. | *Max. Cyl. Head Temp. |
|---|------|-----|---------------------------|-------------------------------|-----------------------------|
| IO-320-A, -E Series | | | | | |
| Normal Rated | 2700 | 150 | ----- | .67 | 500°F. |
| Performance Cruise (75% Rated) | 2450 | 110 | 10.0 | .37 | 500°F. |
| Economy Cruise (65% Rated) | 2350 | 97 | 8.8 | .33 | 500°F. |
| IO-320-B, -C, -D; AIO-320; LIO-320 Series | | | | | |
| Normal Rated | 2700 | 160 | ----- | .72 | 500°F. |
| Performance Cruise (75% Rated) | 2450 | 120 | 10.0 | .40 | 500°F. |
| Economy Cruise (65% Rated) | 2350 | 104 | 8.8 | .35 | 500°F. |

* - At Bayonet Location - For maximum service life of the engine, maintain cylinder head temperatures between 150°F. and 435°F. during continuous operation.

11. ENGINE SHUT-DOWN.

- a. Set propeller at minimum blade angle (where applicable).
- b. Idle until there is a decided decrease in cylinder head temperature.
- c. Move mixture control to "Idle Cut-Off".
- d. When engine stops, turn ignition switch off.

AVCO LYCOMING OPERATOR'S MANUAL
O-320 & IO-320 SERIES **SECTION 3**

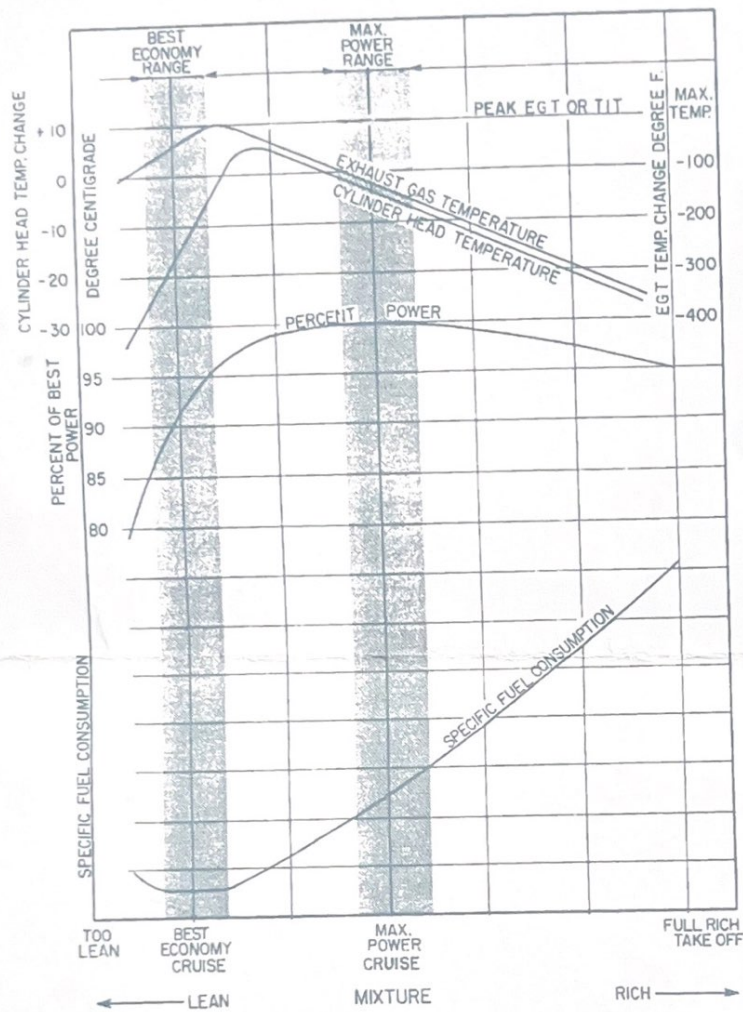


Figure 3-1. Representative Effect of Leaning on Cylinder Head Temperature, EGT (Exhaust Gas Temperature), Engine Power and Specific Fuel Consumption at Constant Engine RPM and Manifold Pressure

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