

PILOT'S OPERATING HANDBOOK AND FAA APPROVED AIRPLANE FLIGHT MANUAL

PIPER PA-24-180 COMANCHE

2550 POUNDS GROSS WEIGHT

1957 THROUGH 1964

APPLICABLE TO AIRPLANES WITH SERIAL NUMBERS:
24-1 THROUGH 24-3687

SECOND ISSUE



FUEL AND OIL CONSUMPTION

Fuel Flow @ 75% Power	10.0 gph/60.0 pph
Fuel Flow @ 65% Power	8.8 gph/52.8 pph
Fuel Flow @ 55% Power	7.4 gph/44.4 pph
Oil Consumption (Typical)	0.20 to 0.25 US qts/hr

PERFORMANCE

1.) Operating Speeds:

Maximum Speed	167 mph 145 kt
Cruise @ 75% Power @ 8,000 ft	160 mph 139 kt
Cruise @ 65% Power @ 11,000 ft	153 mph 133 kt
Cruise @ 55% Power @ 14,500 ft	140 mph 122 kt

2.) Endurance/Range 46 Gallons:

At 75% Power	4.3 hr -----	598 nm	688 sm	1,107 km
At 65% Power	4.9 hr -----	652 nm	750 sm	1,207 km
At 55% Power	5.8 hr -----	706 nm	812 sm	1,307 km

3.) Endurance/Range 56 Gallons:

At 75% Power	5.2 hr -----	723 nm	832 sm	1,339 km
At 65% Power	6.0 hr -----	798 nm	918 sm	1,477 km
At 55% Power	7.1 hr -----	864 nm	994 sm	1,599 km

** NOTE **

Range and endurance figures include an allowance for fuel used during start, taxi, takeoff, climb, and descent plus 45 minutes reserve fuel at a reduced power setting to obtain maximum range (V_{IMR}) or maximum endurance (V_{IMD}) as applicable. Mixture setting is best economy cruise.

4.) Rate of Climb:

At 2,550 lbs Gross Weight	910 ft/min
At 2,000 lbs Gross Weight	1,225 ft/min

5.) Climb Gradient:

At 2,550 lbs Gross Weight	658 ft/nm
At 2,000 lbs Gross Weight	886 ft/nm

SECTION 3 - EMERGENCY PROCEDURES

PA-24-180 * 2550 LBS GROSS WEIGHT

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EMERGENCY PROCEDURES

PA-24-180 * 2550 LBS GROSS WEIGHT

ENGINE POWER LOSS DURING TAKEOFF

If sufficient runway remains for a normal landing: Land straight ahead.

**** NOTE ****

A check should be made early in the takeoff roll for proper engine operation. Any indication of a sluggish or rough running engine is reason to discontinue the takeoff.

**** WARNING ****

Runway length necessary under normal conditions to safely operate within the accelerate-stop distance required for the aircraft is recommended to be no less than 3,000 ft.

If insufficient runway remains:

Airspeed Maintain Safe Airspeed
Landing Gear As Situation Requires
Flaps As Situation Requires

Make only shallow turns to avoid obstacles.

If sufficient altitude has been gained to attempt an engine restart: Initiate **Engine Power Loss During Flight** procedure. (Below)

ENGINE POWER LOSS DURING FLIGHT

Airspeed Establish Best Glide (95 mph or 83 kt @ Full Gross Weight)

**** NOTE **** Best engine-out glide speed decreases as the airplane's gross weight decreases.

Fuel Selector Switch to Tank Containing Fuel
Electric Fuel Pump On
Ignition Switch Check On
Mixture Full Rich
Carburetor Heat On
Primer Check In and Locked
Engine Gauges Check for Indication of Cause of Power Loss

If power is restored:

Electric Fuel Pump Off
Carburetor Heat Off

If power is not restored: Initiate **Power-Off Landing** procedure. (Page 3-5)

FLIGHT PLANNING EXAMPLE (Cont.)

3.) Climb:

Planned Cruise Altitude 8000 ft MSL
Average Rate of Climb (Figure 5-09) 750 ft/min
Time to Climb 8.0 min
Fuel Consumption Rate (Figures 5-05 and 5-06) 16.0 gph/96.0 pph
Fuel Consumption 2.1 US gal/12.6 lbs

4.) Cruise:

Cruise Conditions:

Pressure Altitude 8000 ft MSL
Temperature 40 Degrees F. (05 Degrees C.)
Expected Headwind Component En Route None

** NOTE **

Fuel consumption rates as shown by Lycoming (Figure 5-05) are based on a full rich mixture and standard sea level conditions.

Power Setting 75 Percent
TAS (And Ground Speed) (Figure 5-11) 160 mph 139 kt
Time to Cruise 135 min
Fuel Consumption Rate (Figures 5-05 and 5-06) 10.0 gph/60.0 pph
Fuel Consumption 22.5 US gal/135.0 lbs

5.) Descent:

Average Rate of Descent (Each Inch Decrease in MAP = 100 fpm Descent Rate) .. 700 ft/min
Time to Descend 5.7 min
Fuel Consumption Rate (Figures 5-05 and 5-06) 6.5 gph/39.0 pph
Fuel Consumption 0.6 US gal/3.6 lbs

6.) Landing:

Landing Conditions:

Temperature 60 Degrees F. (15 Degrees C.)
Pressure Altitude 4000 ft MSL
Runway Length 5200 ft
Runway Headwind Component 10 kt

When consulting the Landing Performance chart it is necessary to keep in mind that the distances shown are based on use of the short field technique with maximum braking effort. Ground roll distance can be expected to be approximately twice the distance shown on the chart when making a standard landing.

Landing Weight 2200 lbs
Ground Roll (Figure 5-02) 325 ft
Total Distance to Clear a 50 ft Obstacle (Figure 5-14) 1200 ft

PART THROTTLE FUEL CONSUMPTION

LYCOMING O-360-A SERIES ENGINE
CARBURETOR: MARVEL-SCHUBLER MA-4-5
STANDARD SEA LEVEL CONDITIONS

COMPRESSION RATIO: 8.5 TO 1
MINIMUM FUEL GRADE: 91/96
MIXTURE: BEST ECONOMY

**** NOTE ****

TO OBTAIN FUEL CONSUMPTION AT ALTITUDE, REFER TO ACCOMPANYING
ALTITUDE PERFORMANCE CURVE.

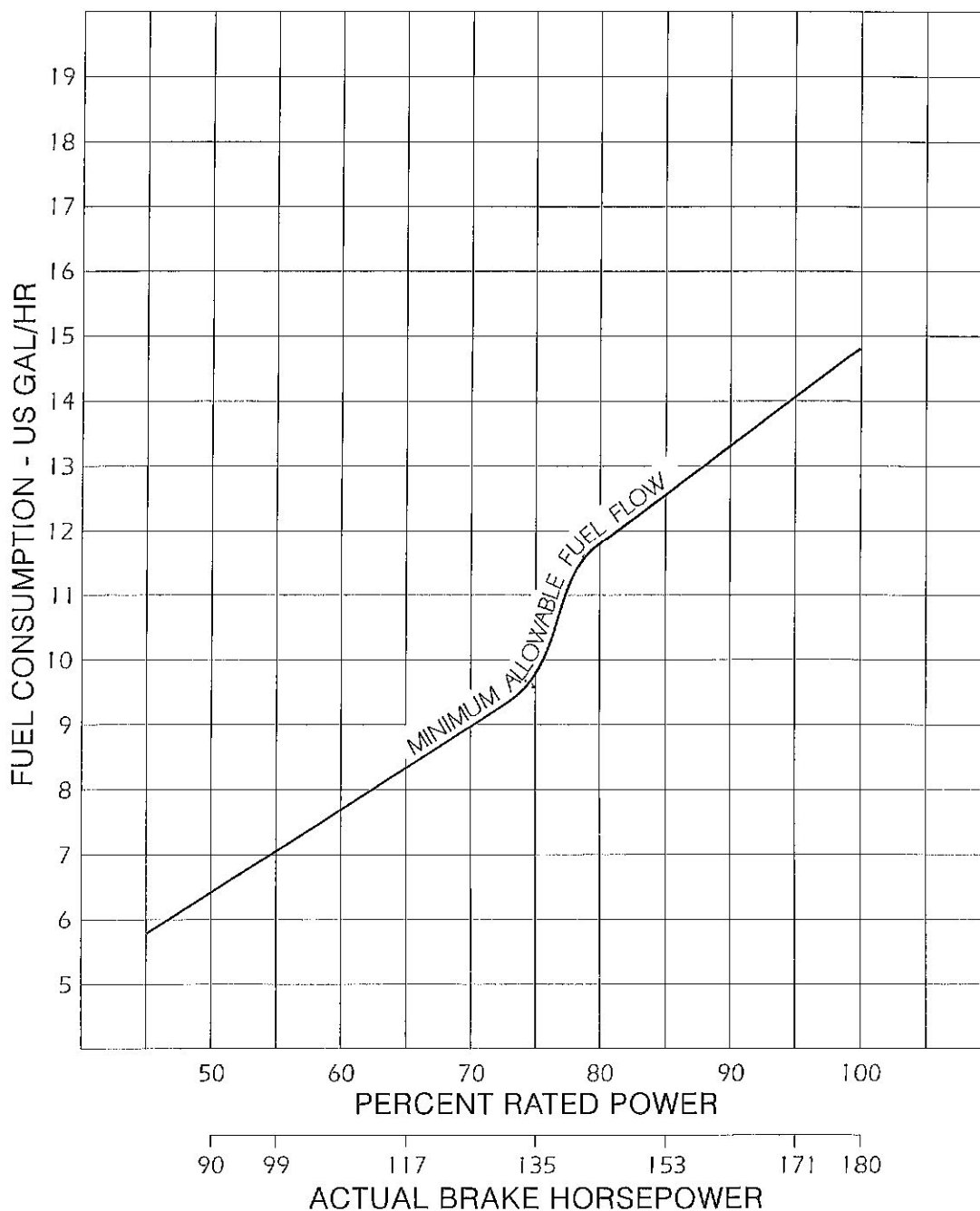


FIGURE 5-05