

TIME TO CLIMB - HOT DAY

METO POWER SINGLE - ENGINE

PROPELLER-FEATHERED ON INOPERATIVE ENGINE

□ R/C = 100 FT/MIN.

MODEL(S): C-47,
C-117 AND R4D

BASED ON: FLIGHT TEST DATA
DATA AS OF: 11 JULY 1957

ENGINE(S): (2) R-1830-90C
(HIGH BLOWER INOPERATIVE)
-90D AND -92

FUEL GRADE: 100/130
FUEL DENSITY: 6.0 LB/GAL

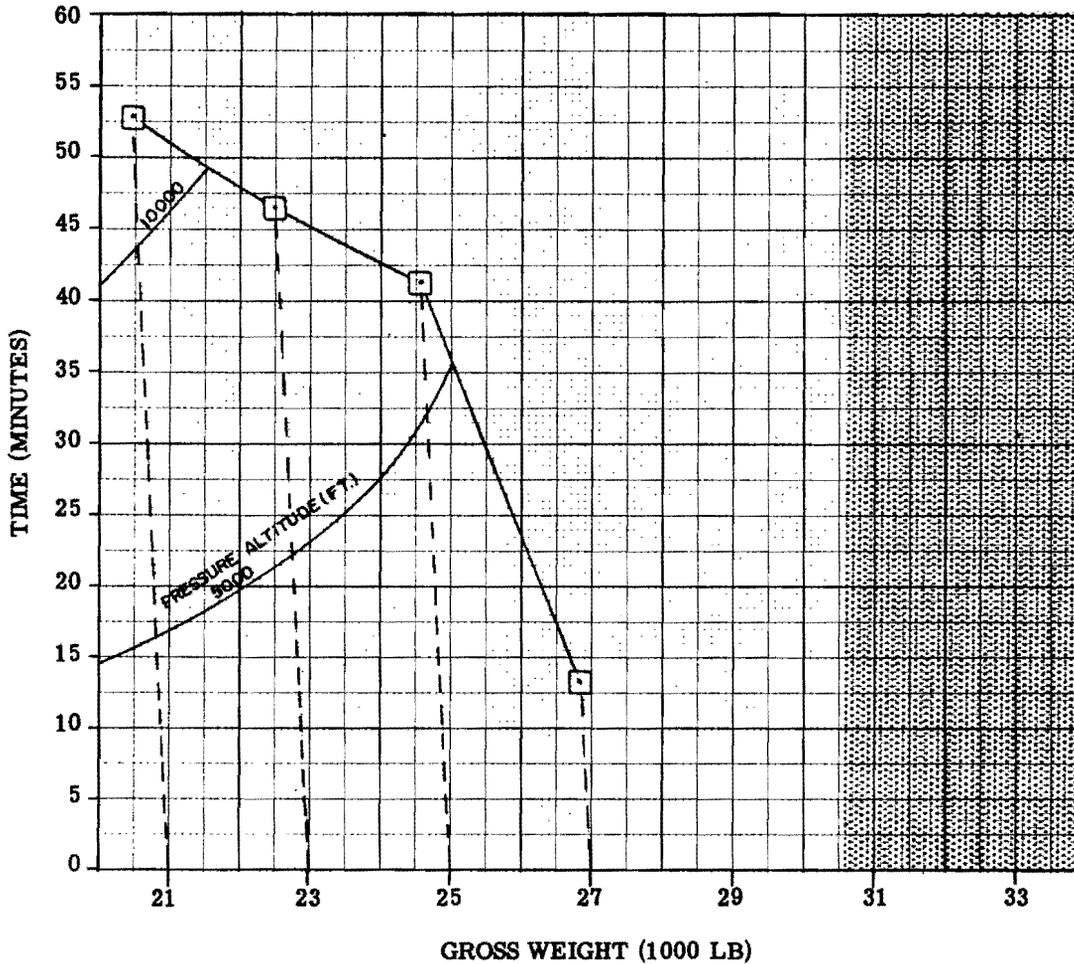
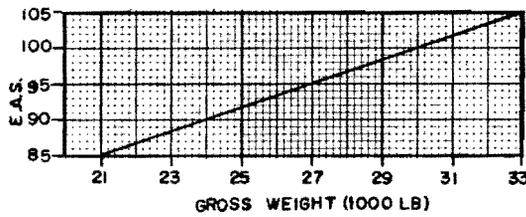


Figure A4-8. Time To Climb - Hot Day - METO Power - Single Engine. (Sheet 1 of 2)

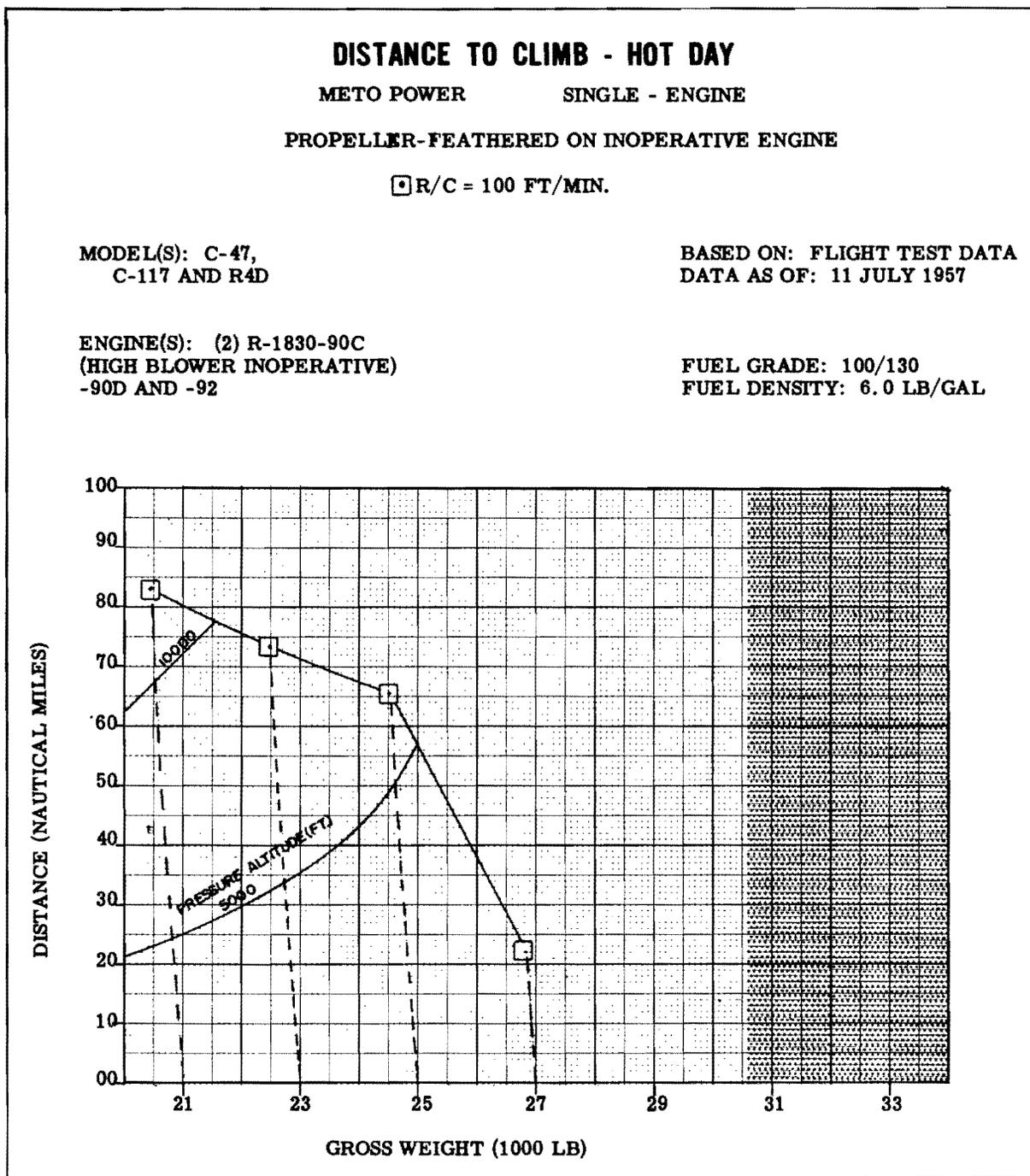


Figure A4-8. Distance To Climb - Hot Day - METO Power - Single Engine. (Sheet 2 of 2)

TIME TO CLIMB - STANDARD DAY

METO POWER TWO ENGINE
WITH SKIS

□ R/C = 100 FT/MIN.

MODEL(S): C-47
C-117 AND R4D

BASED ON: FLIGHT TEST DATA
DATA AS OF: 11 JULY 1957

ENGINE(S): (2) R-1830-90C
(HIGH BLOWER INOPERATIVE)
-90D AND -92

FUEL GRADE: 100/130
FUEL DENSITY: 6.0 LB/GAL

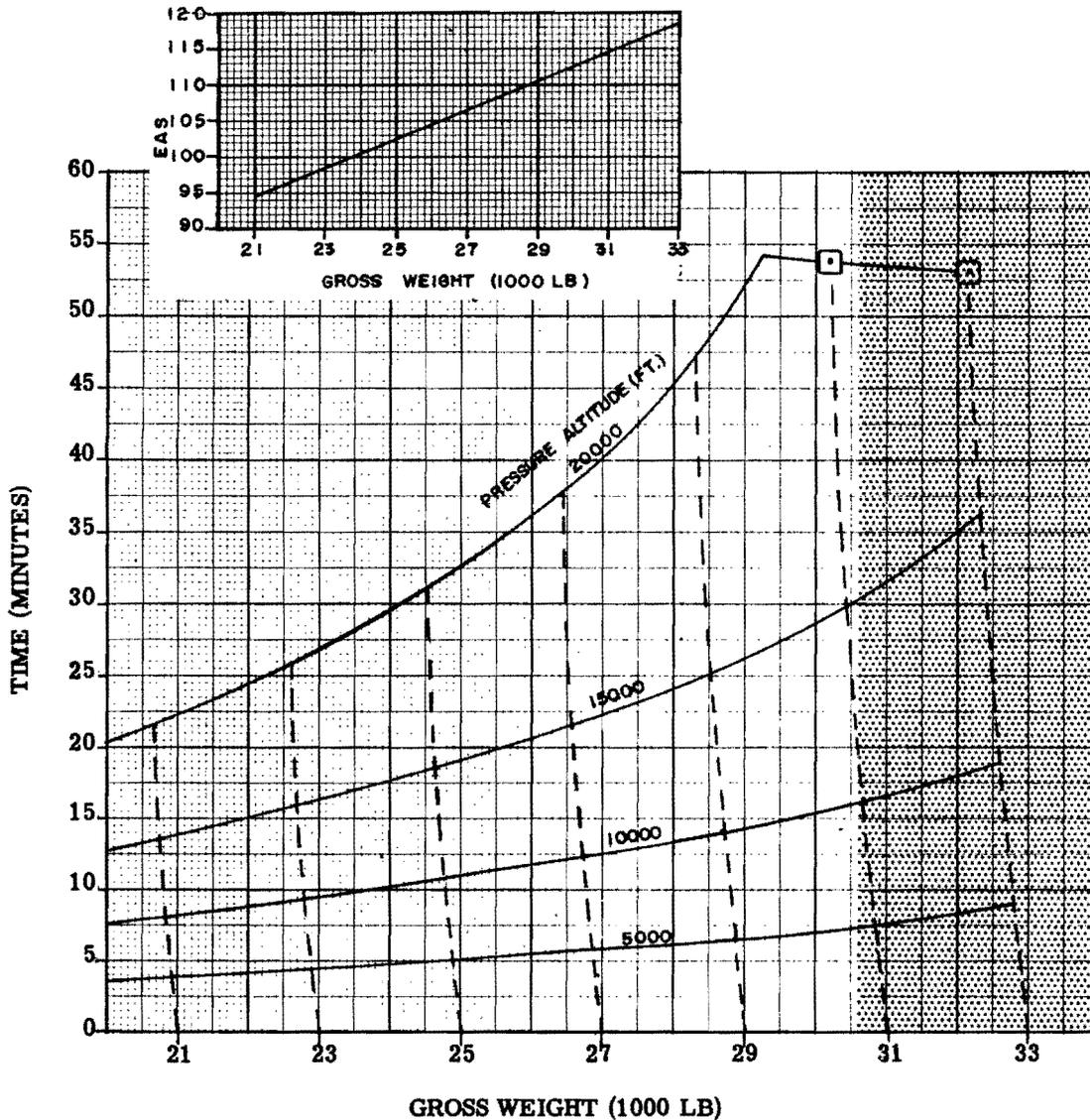


Figure A4-9. Time To Climb - Standard Day - METO Power - Two Engines With Skis. (Sheet 1 of 2)

DISTANCE TO CLIMB - STANDARD DAY

METO POWER TWO ENGINE

WITH SKIS

□ R/C = 100 FT/MIN.

MODEL(S): C-47
C-117 AND R4D

BASED ON: FLIGHT TEST DATA
DATA AS OF: 11 JULY 1957

ENGINE(S): (2) R-1830-90C
(HIGH BLOWER INOPERATIVE)
-90D AND -92

FUEL GRADE: 100/130
FUEL DENSITY: 6.0 LB/GAL

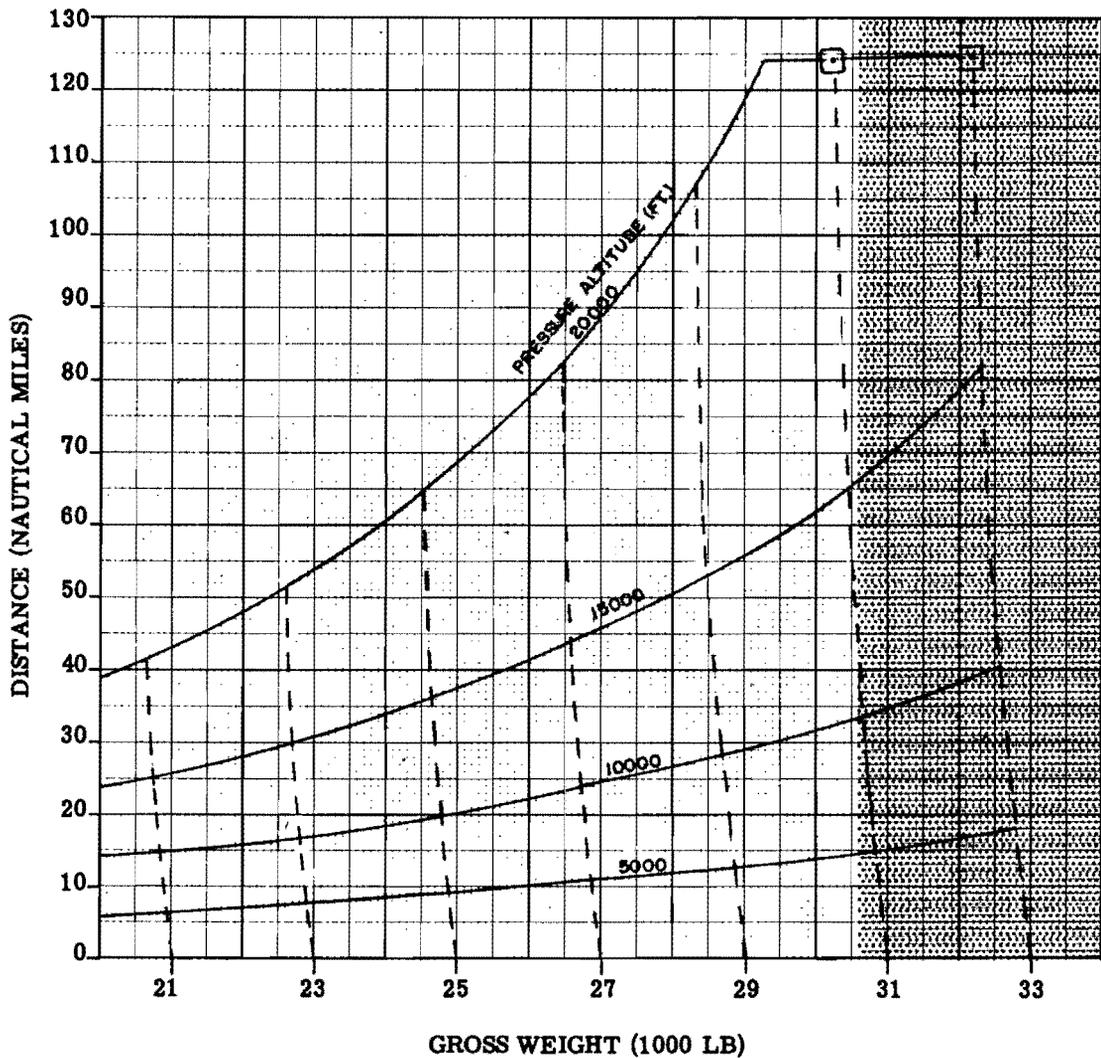


Figure A4-9. Distance To Climb - Standard Day - METO Power - Two Engine - With Skis. (Sheet 2 of 2)

TIME TO CLIMB - HOT DAY
METO POWER TWO ENGINE
WITH SKIS

□ R/C = 100 FT/MIN.

MODEL(S): C-47
 C-117 AND R4D

BASED ON: FLIGHT TEST DATA
 DATA AS OF: 11 JULY 1957

ENGINE(S): (2) R-1830-90C
 (HIGH BLOWER INOPERATIVE)
 -90D AND -92

FUEL GRADE: 100/130
 FUEL DENSITY: 6.0 LB/GAL

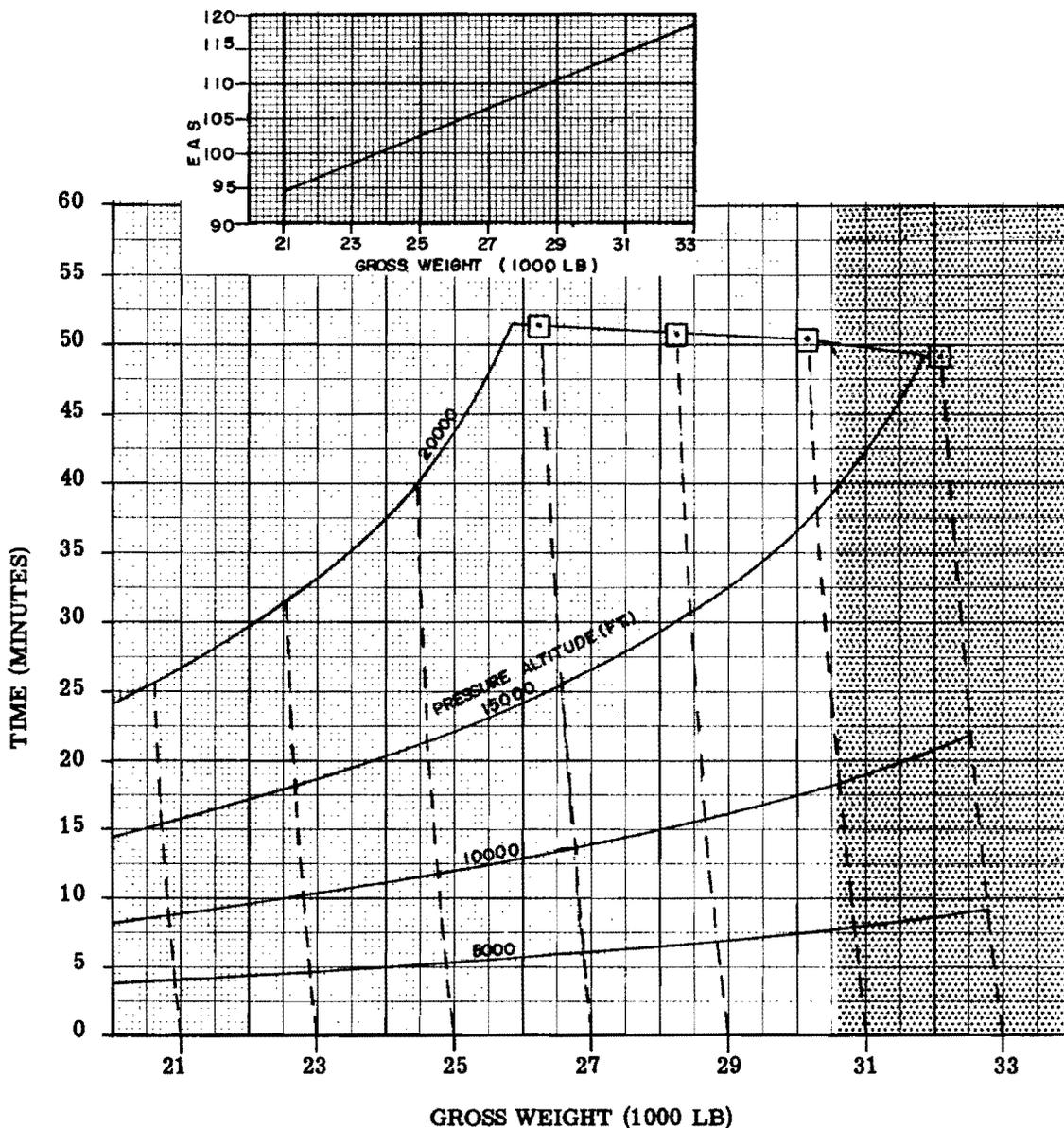


Figure A4-10. Time To Climb - Hot Day - METO Power - Two Engine - With Skis. (Sheet 1 of 2)

DISTANCE TO CLIMB - HOT DAY

METO POWER TWO ENGINE

WITH SKIS

□ R/C = 100 FT/MIN.

MODEL(S): C-47
C-117 AND R4D

BASED ON: FLIGHT TEST DATA
DATA AS OF: 11 JULY 1957

ENGINE(S): (2) R-1830-90C
(HIGH BLOWER INOPERATIVE)
-90D AND -92

FUEL GRADE: 100/130
FUEL DENSITY: 6.0 LB/GAL

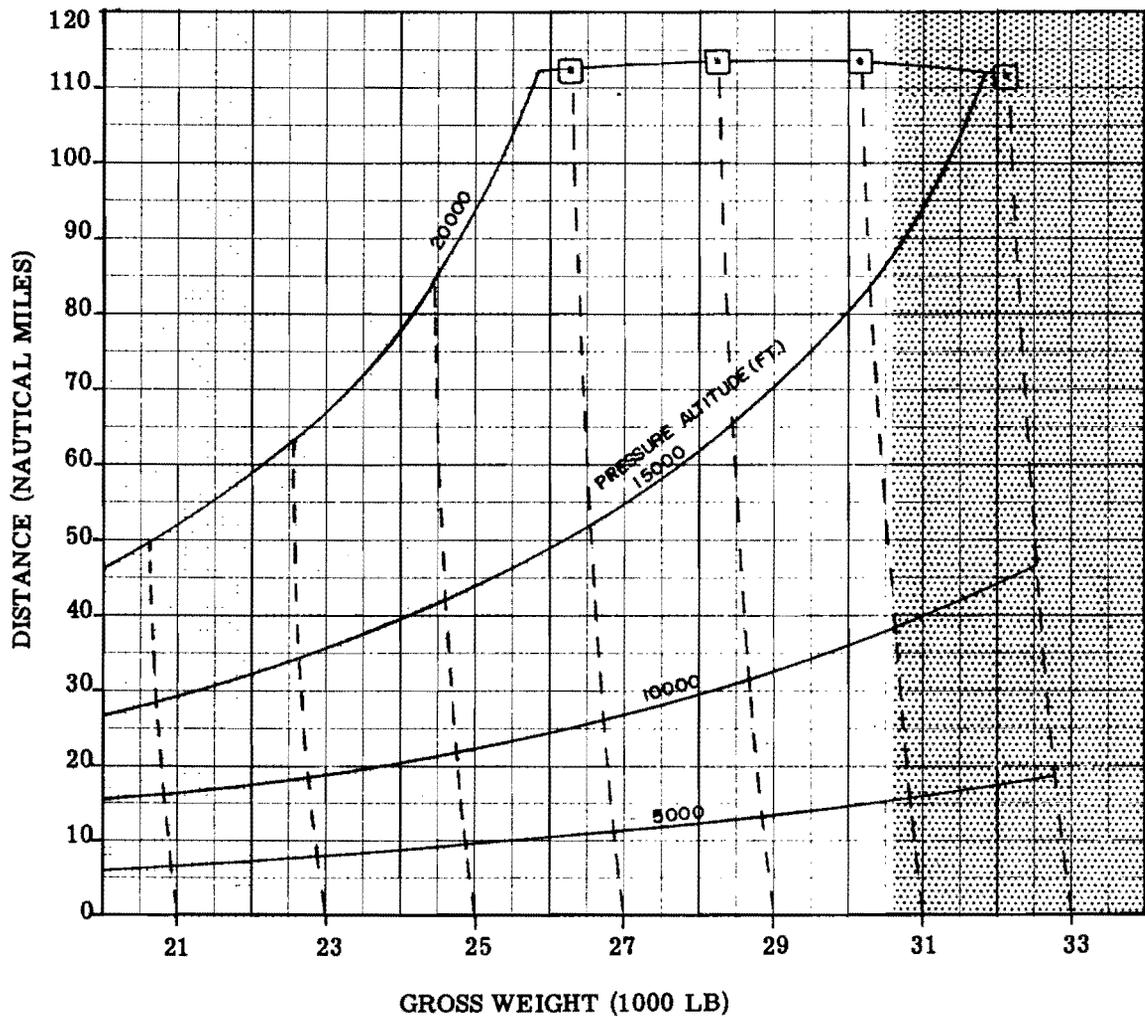


Figure A4-10. Distance To Climb - Hot Day - METO Power - Two Engine - With Skis. (Sheet 2 of 2)

TIME TO CLIMB-STANDARD DAY

CLIMB POWER TWO-ENGINE
WITH SKIS

□ R/C = 100 FT/MIN

MODEL(S): C-47,
C-117 AND R4D

BASED ON: FLIGHT TEST DATA
DATA AS OF: 11 JULY 1957

ENGINE(S): (2) R-1830-90C
(HIGH BLOWER INOPERATIVE)
-90D AND -92

FUEL GRADE: 100/130
FUEL DENSITY: 6.0 LB/GAL

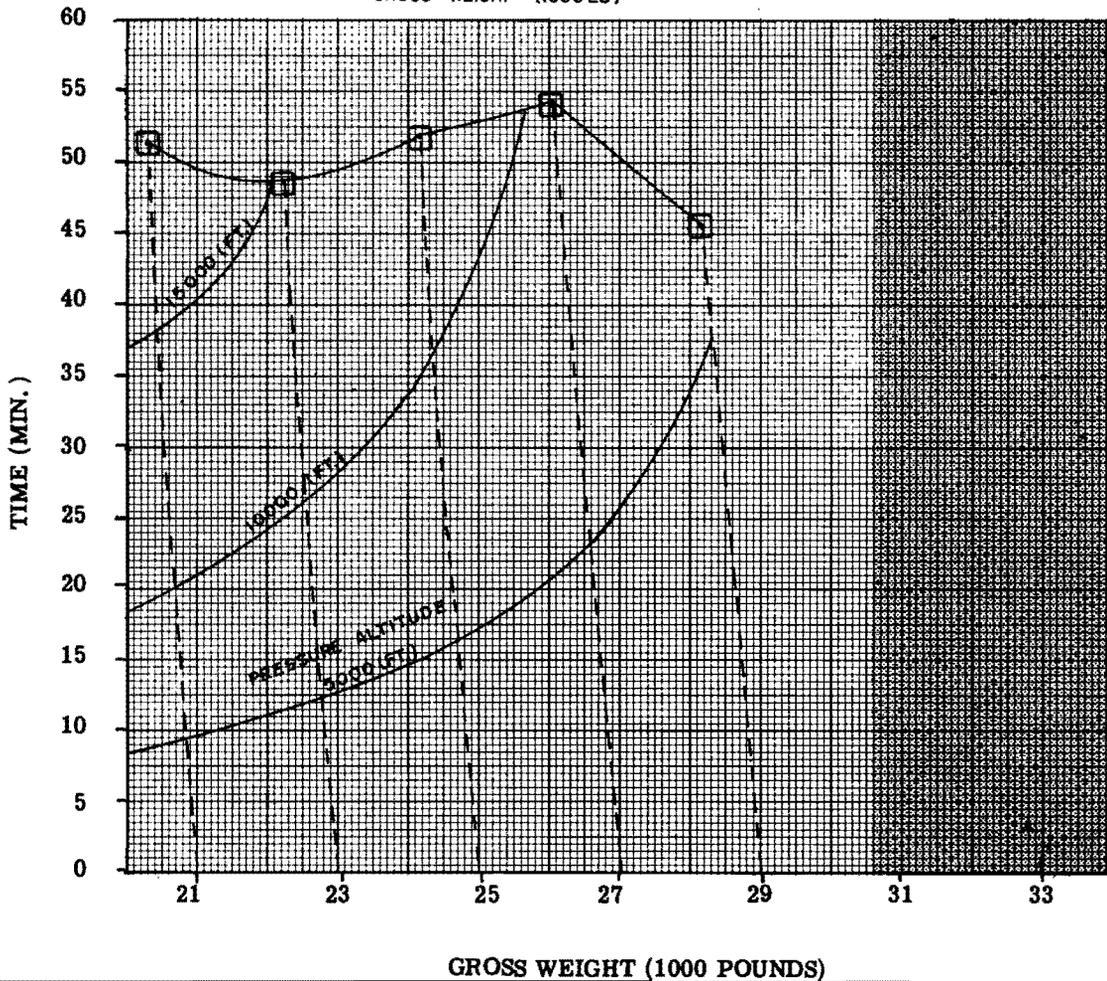
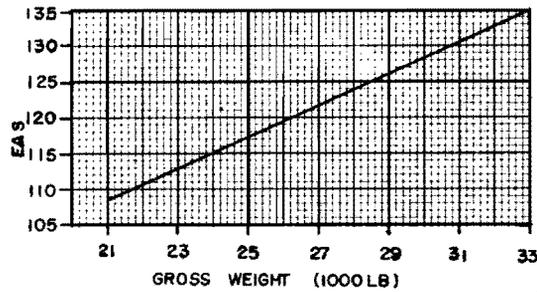


Figure A4-11. Time To Climb - Standard Day - Climb Power - Two Engine - With Skis. (Sheet 1 of 2)

DISTANCE TO CLIMB - STANDARD DAY

CLIMB POWER TWO-ENGINE

WITH SKIS

□ R/C = 100 FT/MIN

MODEL(S): C-47,
C-117 AND R4D

BASED ON: FLIGHT TEST DATA
DATA AS OF: 11 JULY 1957

ENGINE(S): (2) R-1830-90C
(HIGH BLOWER INOPERATIVE)
-90D AND -92

FUEL GRADE: 100/130
FUEL DENSITY: 6.0 LB/GAL

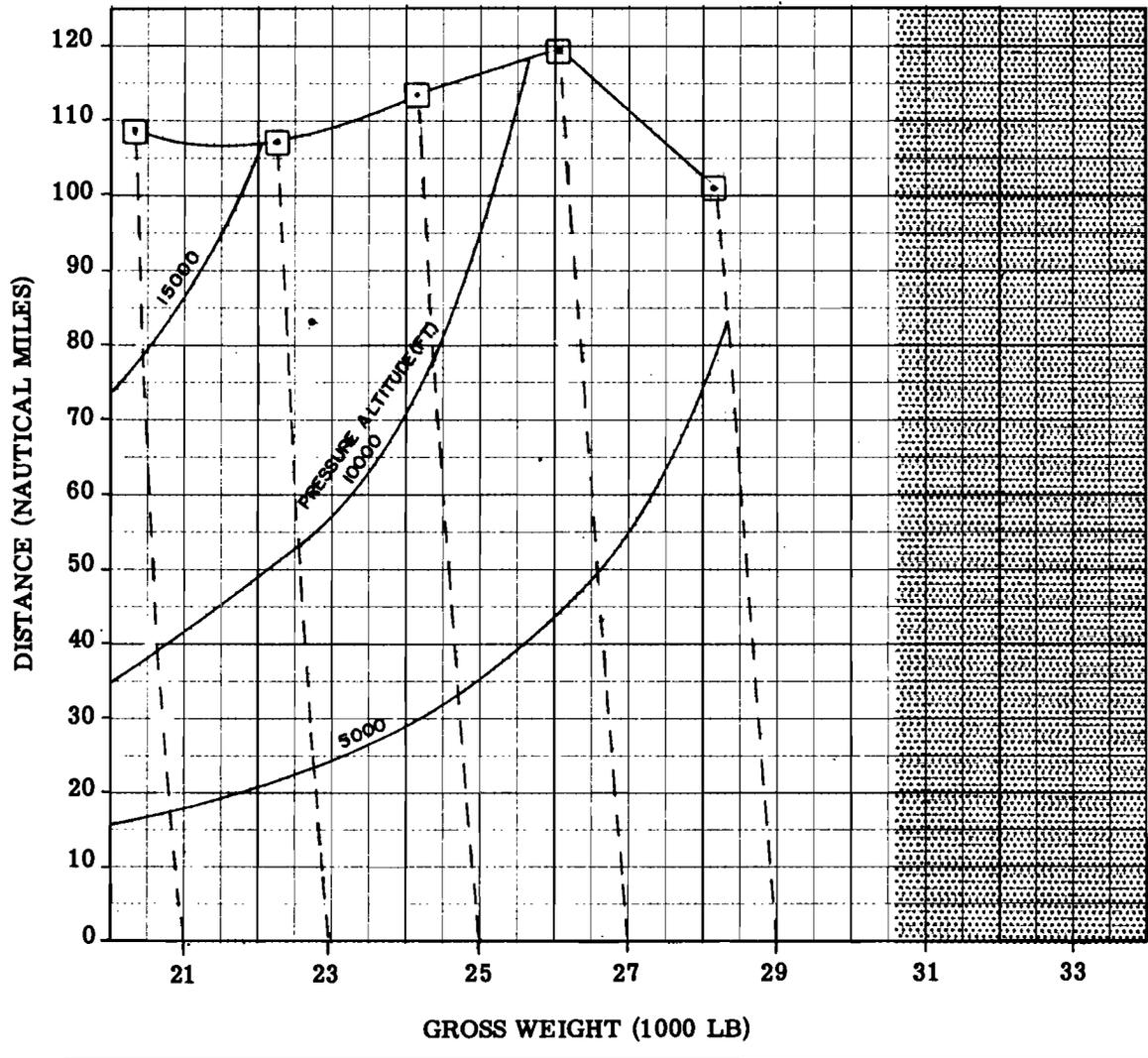


Figure A4-11. Distance To Climb - Standard Day - Climb Power - Two Engine - With Skis. (Sheet 2 of 2)

TIME TO CLIMB HOT DAY

CLIMB POWER TWO ENGINE

WITH SKIS

□ R/C = 100 FT/MIN

MODEL(S): C-47,
C-117 AND R4D

BASED ON: FLIGHT TEST DATA
DATA AS OF: 11 JULY 1957

ENGINE(S): (2) R-1830-90C
(HIGH BLOWER INOPERATIVE)
-90D AND -92

FUEL GRADE: 100/130
FUEL DENSITY: 6.0 LB/GAL

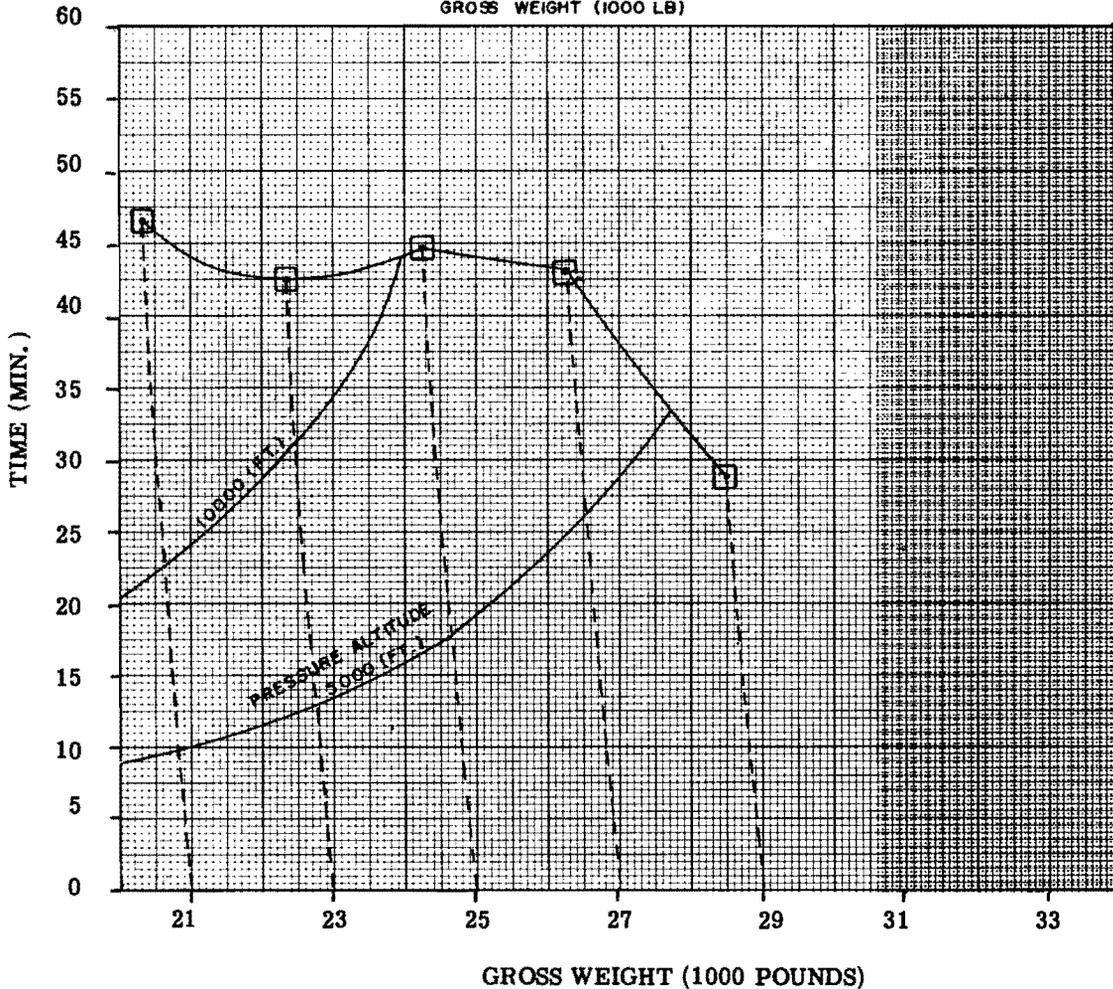
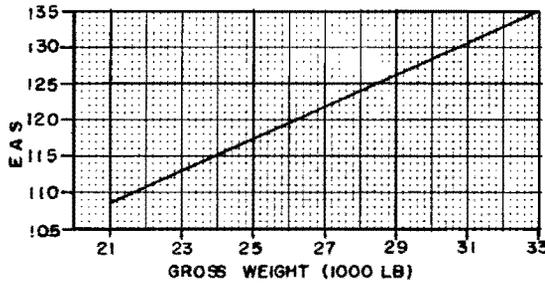


Figure A4-12. Time To Climb - Hot Day - Climb Power - Two Engine - With Skis. (Sheet 1 of 2)

DISTANCE TO CLIMB - HOT DAY

CLIMB POWER TWO ENGINE

WITH SKIS

□ R/C = 100 FT/MIN

MODEL(S): C-47,
C-117 AND R4D

BASED ON: FLIGHT TEST DATA
DATA AS OF: 11 JULY 1957

ENGINE(S): (2) R-1830-90C
(HIGH BLOWER INOPERATIVE)
-90D AND -92

FUEL GRADE: 100/130
FUEL DENSITY: 6.0 LB/GAL

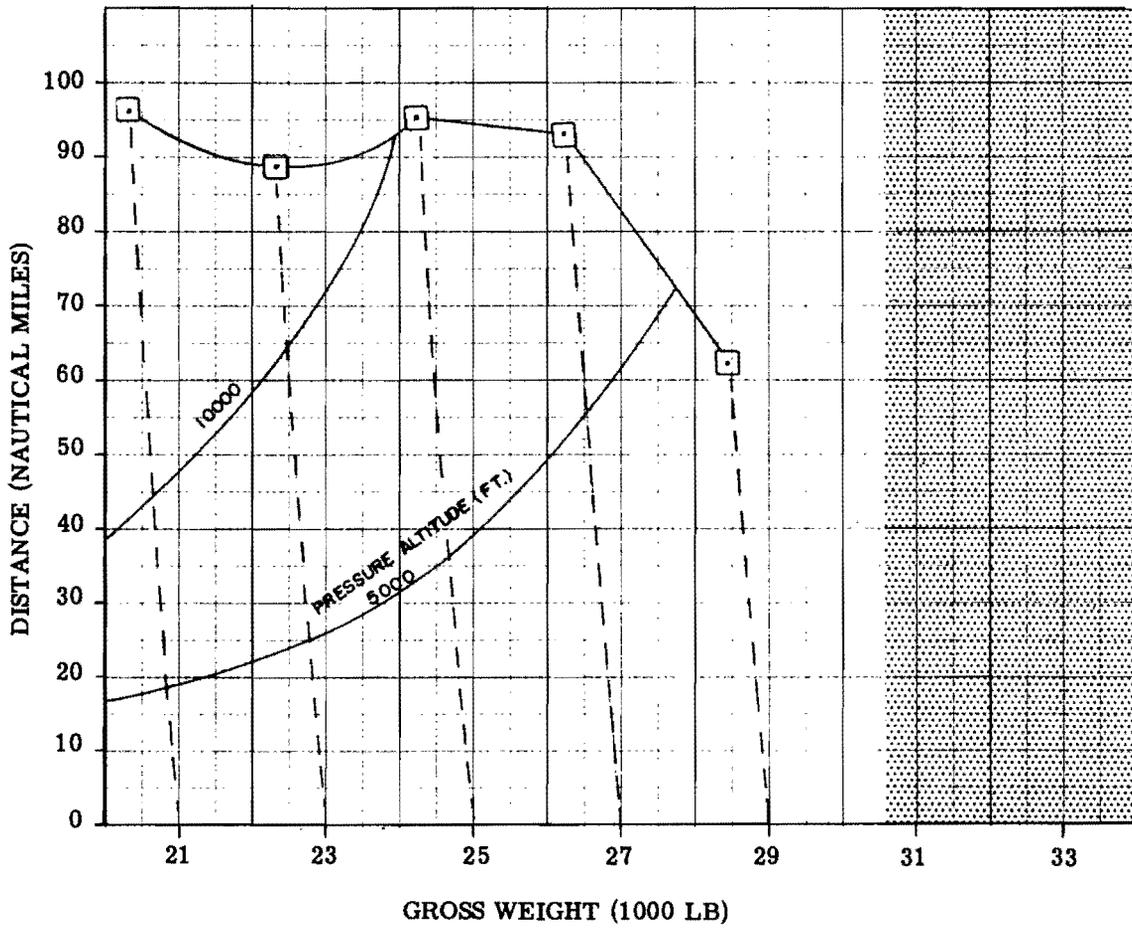


Figure A4-12. Distance To Climb - Hot Day - Climb Power - Two Engine - With Skis. (Sheet 2 of 2)

TIME TO CLIMB - STANDARD DAY

MAXIMUM POWER SINGLE-ENGINE

WITH SKIS

□ R/C = 100 FT/MIN

MODEL(S): C-47,
C-117 AND R4D

BASED ON: FLIGHT TEST DATA
DATA AS OF: 11 JULY 1957

ENGINE(S): (2) R-1830-90C
(HIGH BLOWER INOPERATIVE)
-90D AND -92

FUEL GRADE: 100/130
FUEL DENSITY: 6.0 LB/GAL

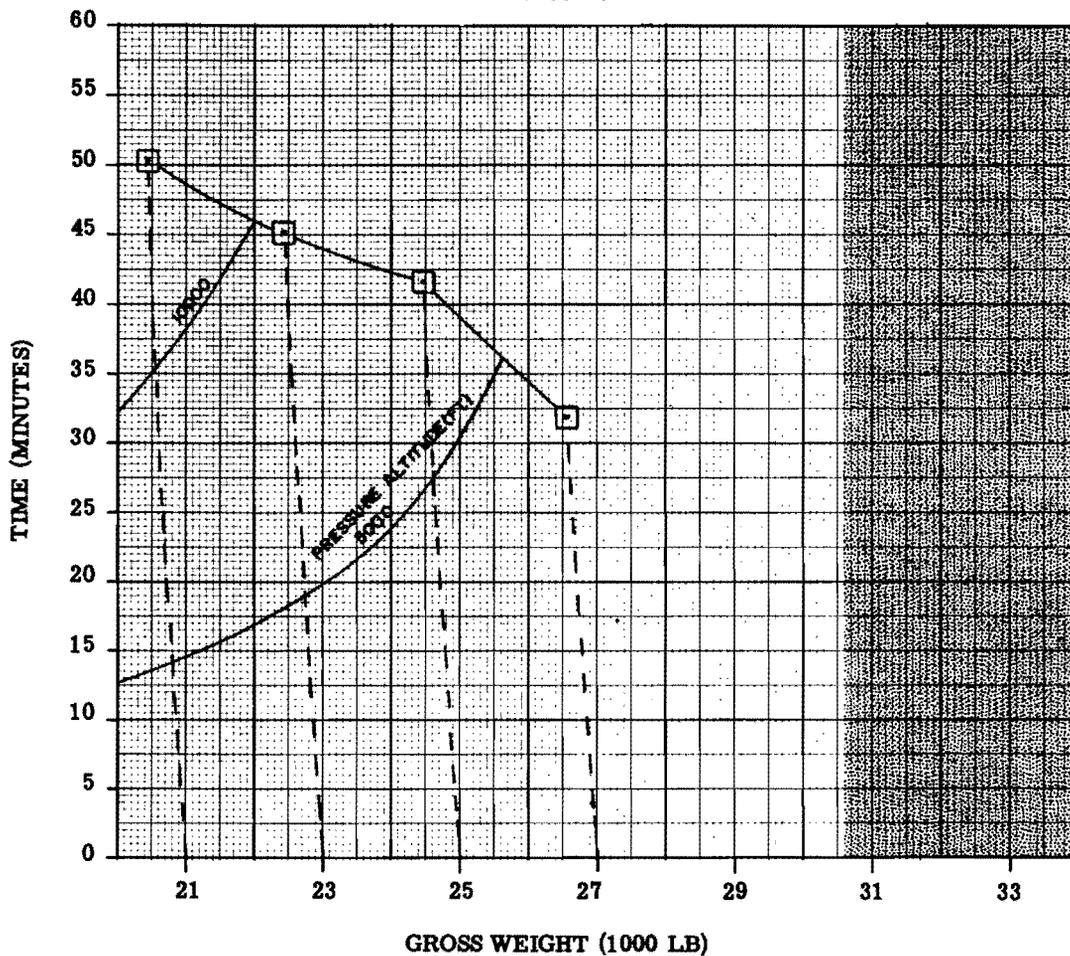
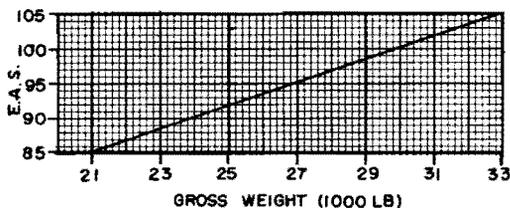


Figure A4-13. Time To Climb - Standard Day - Maximum Power Single Engine - With Skis. (Sheet 1 of 2)

DISTANCE TO CLIMB - STANDARD DAY

MAXIMUM POWER SINGLE-ENGINE

WITH SKIS

□ R/C = 100 FT/MIN

MODEL(S): C-47,
C-117 AND R4D

BASED ON: FLIGHT TEST DATA
DATA AS OF: 11 JULY 1957

ENGINE(S): (2) R-1830-90C
(HIGH BLOWER INOPERATIVE)
-90D AND -92

FUEL GRADE: 100/130
FUEL DENSITY: 6.0 LB/GAL

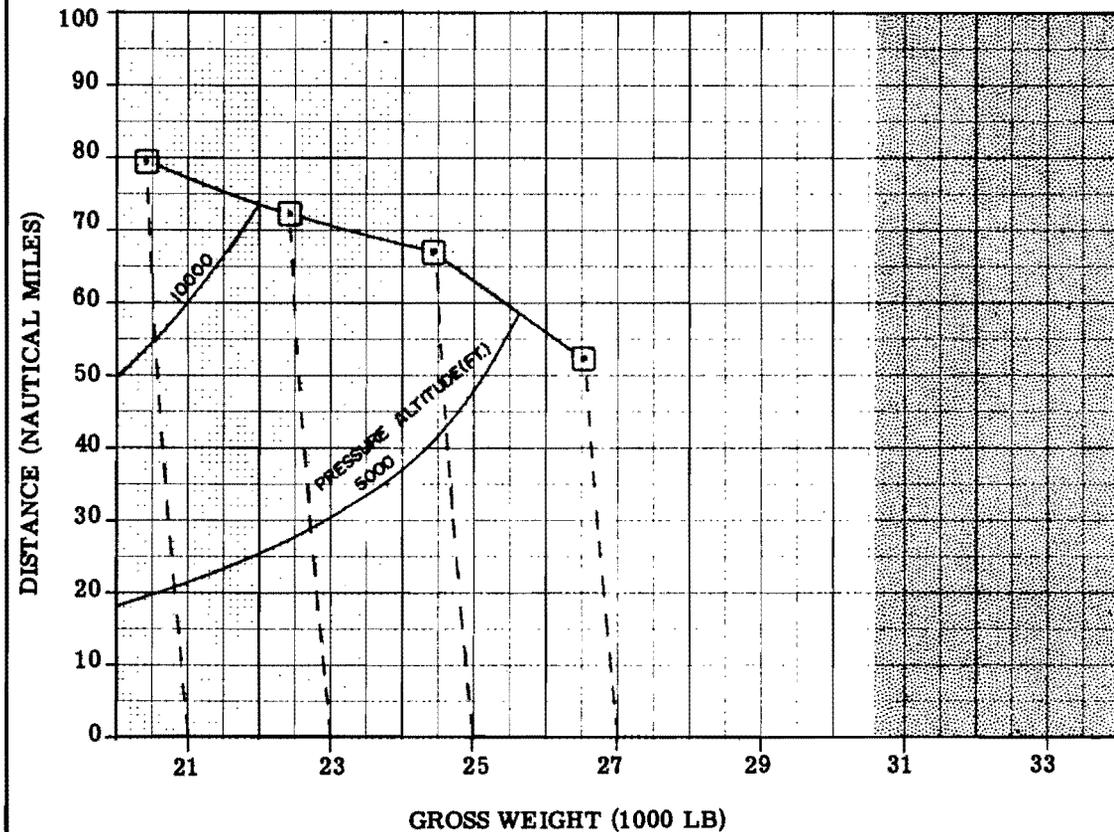


Figure A4-13. Distance To Climb - Standard Day - Maximum Power Single Engine - With Skies. (Sheet 2 of 2)

TIME TO CLIMB - HOT DAY

MAXIMUM POWER SINGLE-ENGINE
WITH SKIS

□ R/C = 100 FT/MIN

MODEL(S): C-47,
C-117 AND R4D

BASED ON: FLIGHT TEST DATA
DATA AS OF: 11 JULY 1957

ENGINE(S): (2) R-1830-90C
(HIGH BLOWER INOPERATIVE)
-90D AND -92

FUEL GRADE: 100/130
FUEL DENSITY: 6.0 LB/GAL

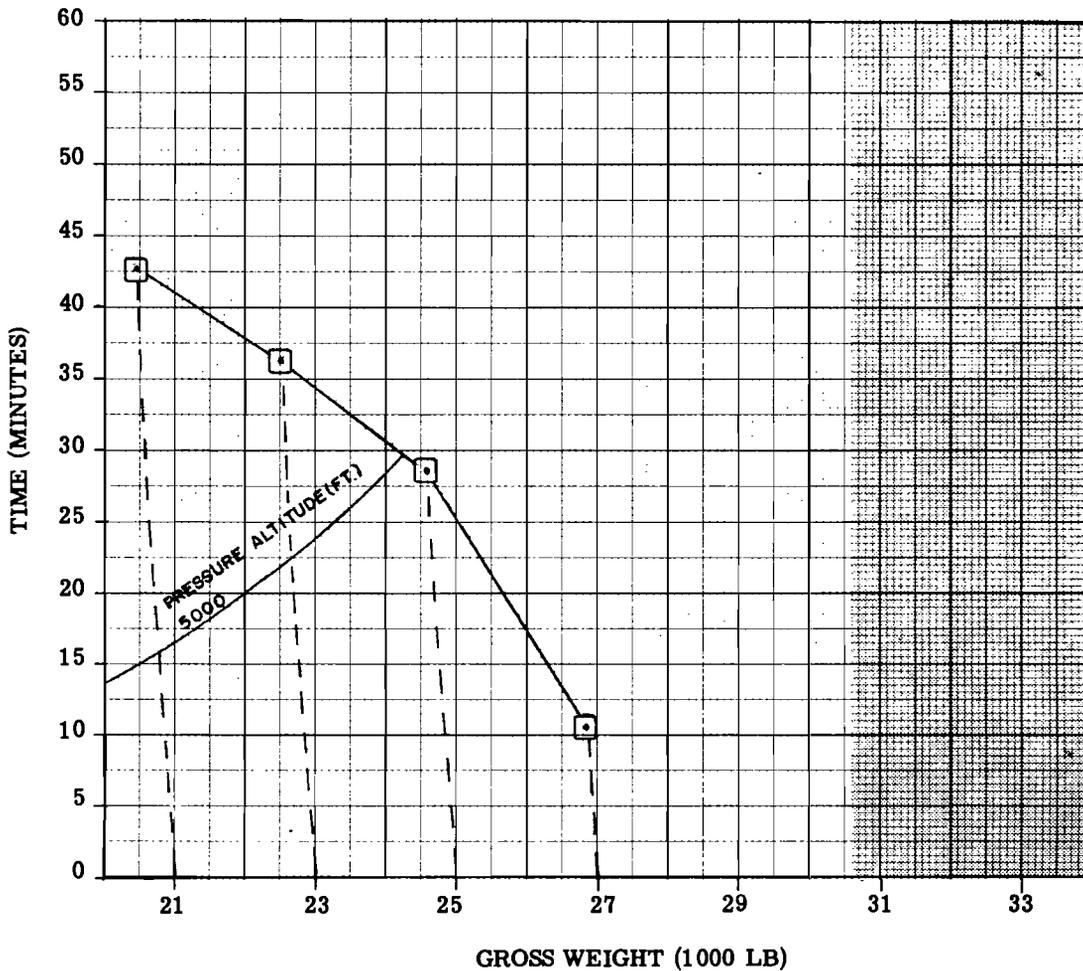
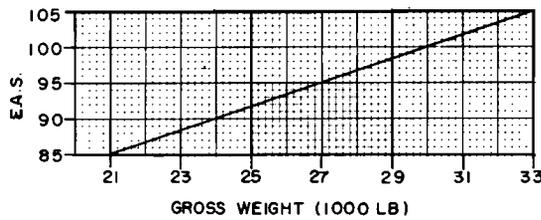


Figure A4-14. Time To Climb - Hot Day - Maximum Power - Single Engine - With Skis. (Sheet 1 of 2)

DISTANCE TO CLIMB - HOT DAY

MAXIMUM POWER SINGLE-ENGINE

WITH SKIS

□ R/C = 100 FT/MIN

MODEL(S): C-47,
C-117 AND R4D

BASED ON: FLIGHT TEST DATA
DATA AS OF: 11 JULY 1957

ENGINE(S): (2) R-1830-90C
(HIGH BLOWER INOPERATIVE)
-90D AND -92

FUEL GRADE: 100/130
FUEL DENSITY: 6.0 LB/GAL

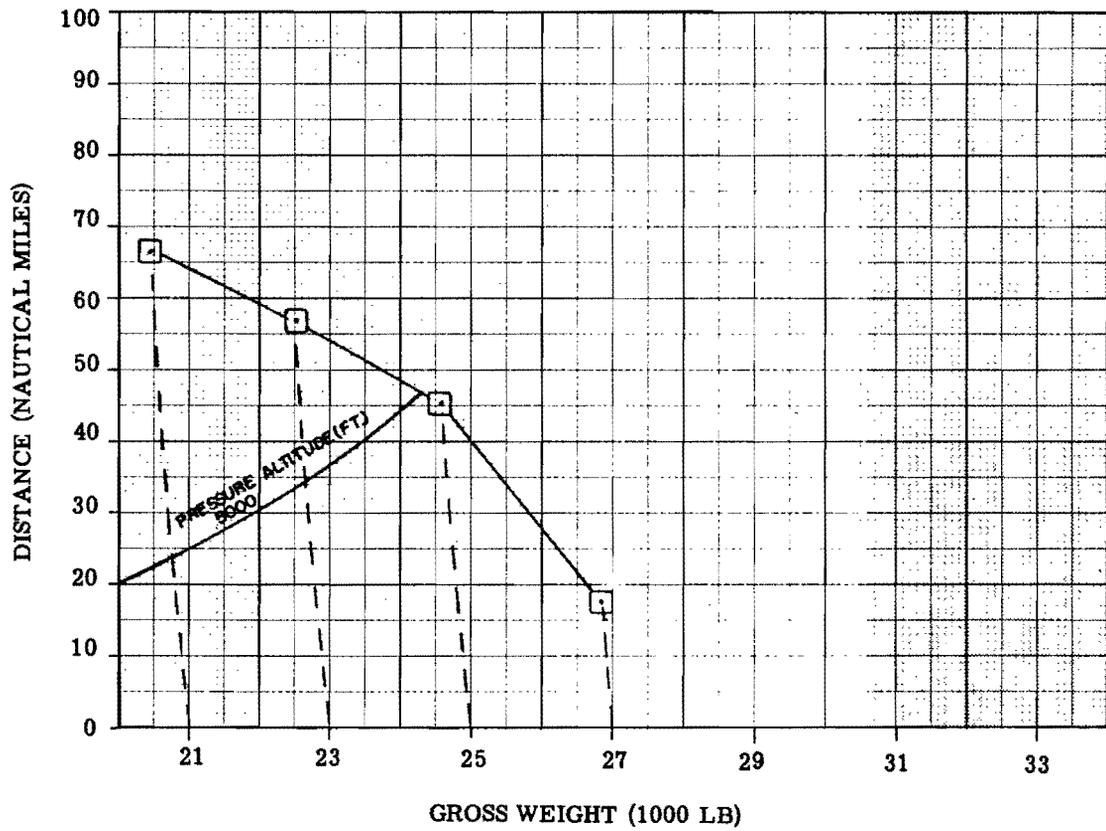


Figure A4-14. Distance To Climb - Hot Day - Maximum Power - Single Engine - With Skis. (Sheet 2 of 2)

MODEL(S): C-47,
C-117 AND R4D

RATE OF CLIMB METO POWER

ENGINE(S): (2) R-1830-90C
(HIGH BLOWER INOPERATIVE)
-90D AND -92

TWO-ENGINE WING FLAPS - UP COWL FLAPS - TRAIL POSITION

2550 RPM

FUEL GRADE: 100/130
FUEL DENSITY: 6.0 LB/GAL

BASED ON: FLIGHT TEST DATA
DATA AS OF: 11 JULY 1957

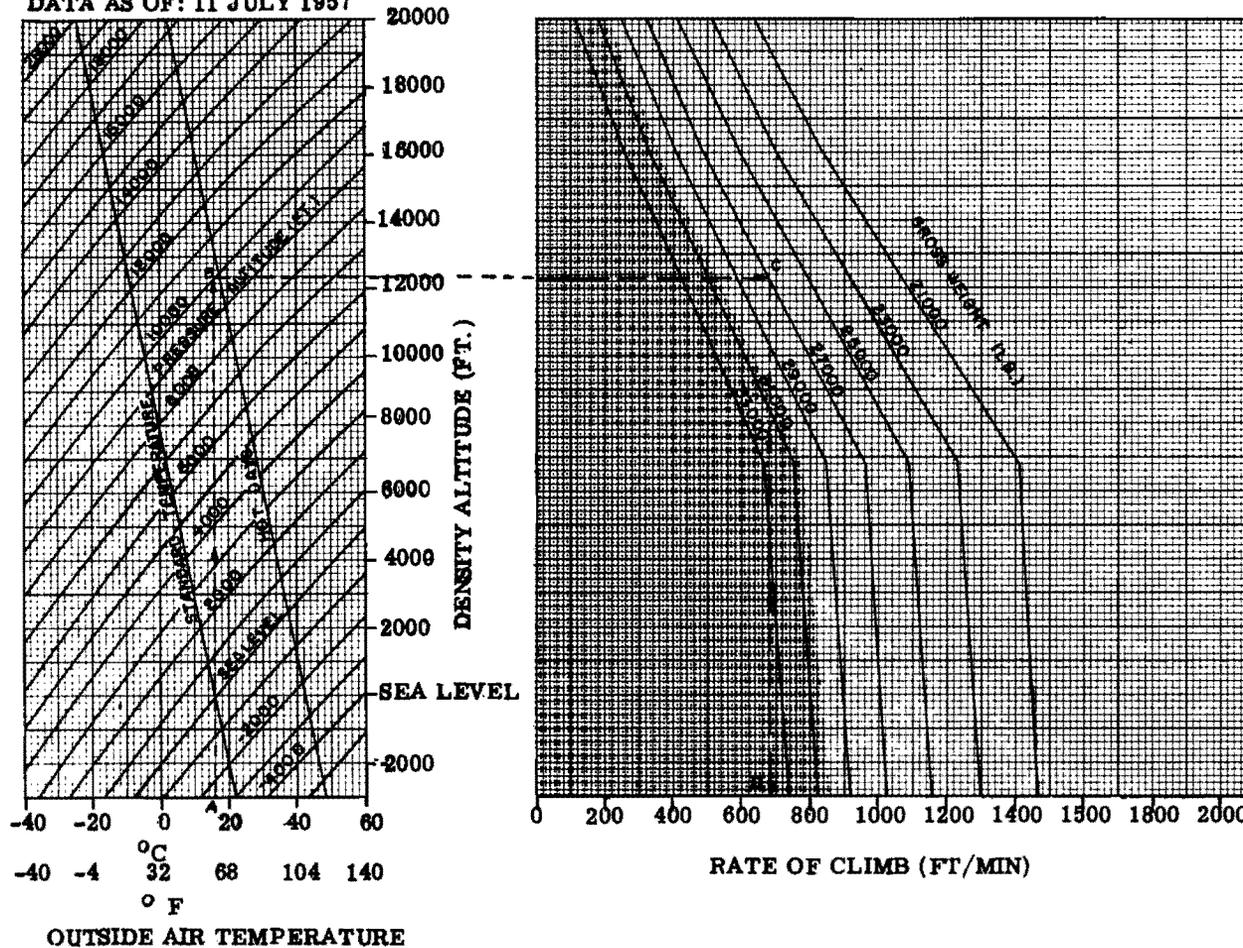


Figure A4-15. Rate of Climb - METO Power - 2550 RPM - Two Engine.

MODEL(S): C-47,
C-117 AND R4D

RATE OF CLIMB CLIMB POWER

ENGINE(S): (2) R-1830-90C
(HIGH BLOWER INOPERATIVE;
-90D AND -92

TWO ENGINE - 2350 RPM

FUEL GRADE: 100/130
FUEL DENSITY: 6.0 LB/GAL

BASED ON: FLIGHT TEST DATA
DATA AS OF: 11 JULY 1957

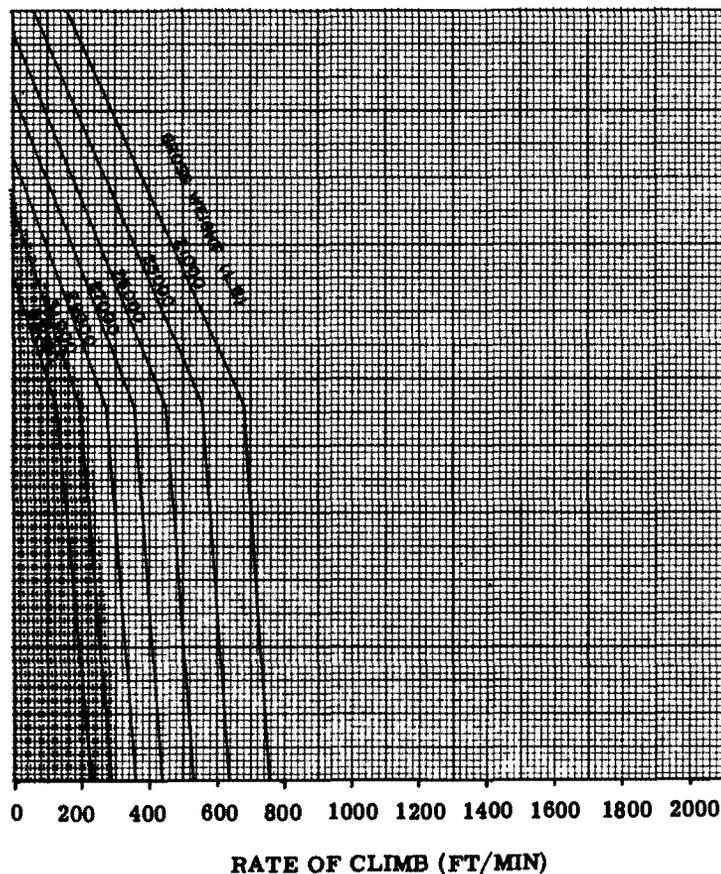
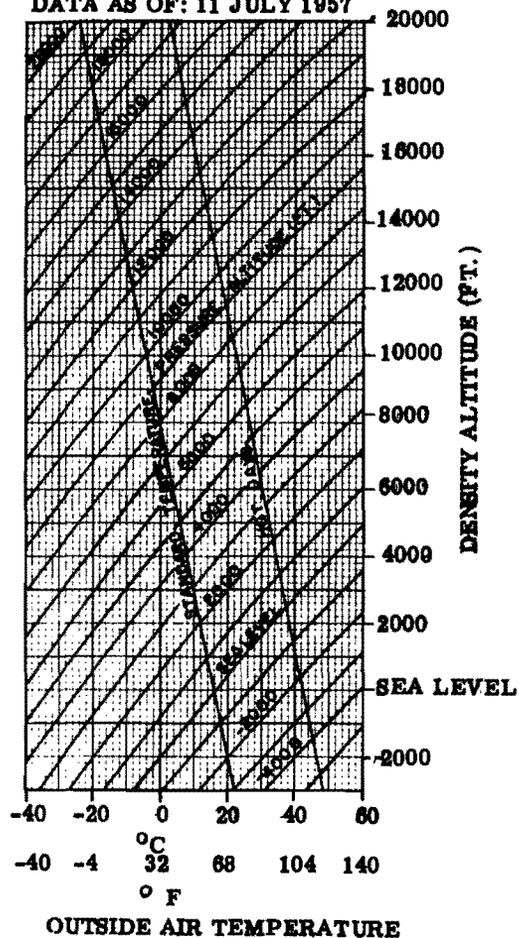


Figure A4-16. Rate of Climb - Climb Power - 2350 RPM - Two Engine.

MODEL(S): C-47,
C-117 AND R4D

RATE OF CLIMB METO POWER

TWO - ENGINES - 2550 RPM

WITH SKIS

ENGINE(S): (2) R-1830-90C
(HIGH BLOWER INOPERATIVE)
-90D AND -92

FUEL GRADE: 100/130
FUEL DENSITY: 6.0 LB/GAL

BASED ON: FLIGHT TEST DATA
DATA AS OF: 11 JULY 1957

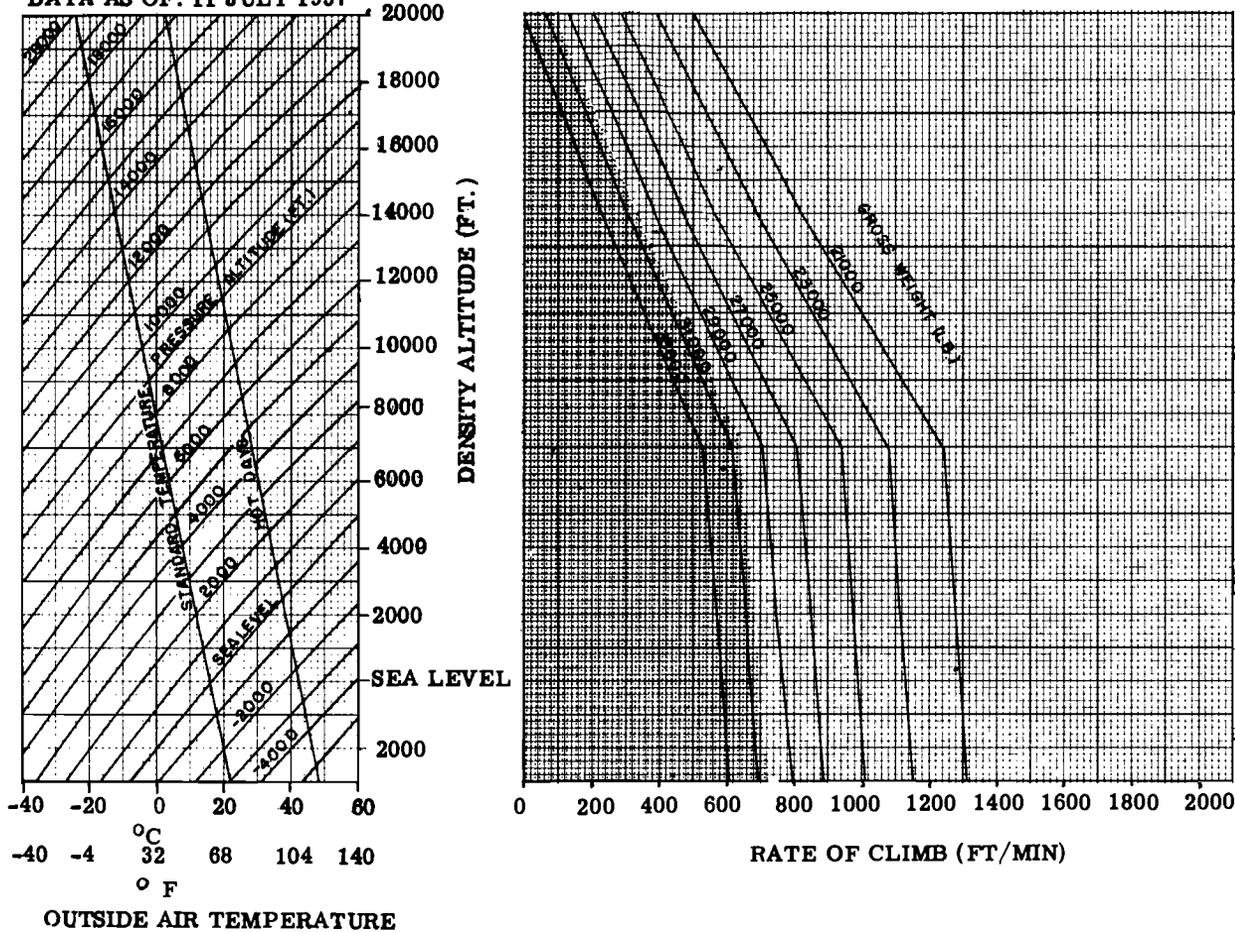


Figure A4-17. Rate of Climb - METO Power - 2550 RPM - Two Engine - With Skis.

MODEL(S): C-47,
C-117 AND R4D

RATE OF CLIMB - CLIMB POWER

TWO ENGINE WITH SKIS

2350 RPM

ENGINE(S): (2) R-1830-90C
(HIGH BLOWER INOPERATIVE)
-90D AND -92

FUEL GRADE: 100/130
FUEL DENSITY: 6.0 LB/GAL

BASED ON: FLIGHT TEST DATA
DATA AS OF: 11 JULY 1957

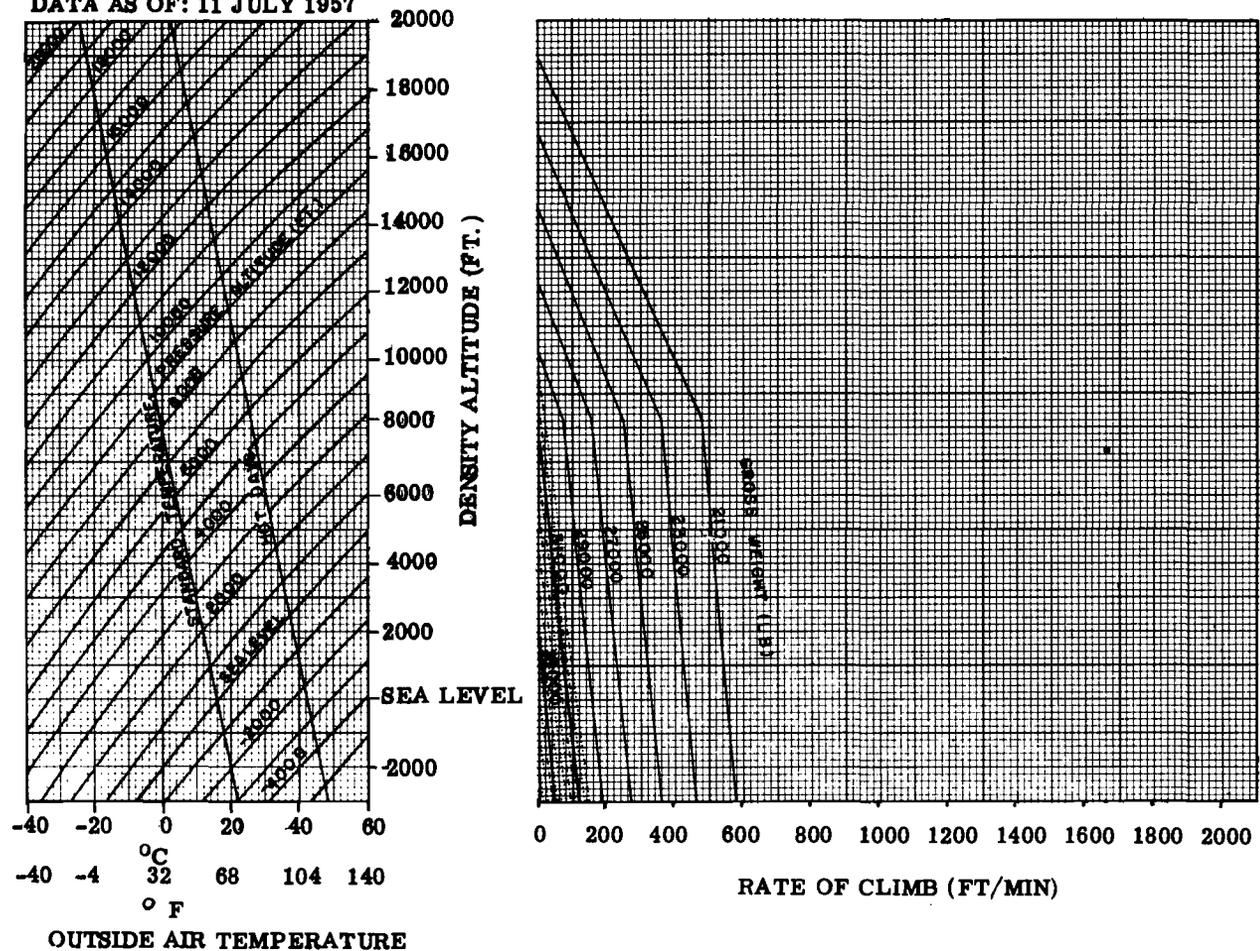


Figure A4-18. Rate of Climb - Climb Power - 2350 RPM - Two Engine - With Skis.

MODEL(S): C-47,
C-117 AND R4D

RATE OF CLIMB - MAX POWER

SINGLE ENGINE
PROPELLER - FEATHERED ON INOPERATIVE ENGINE

2700 RPM

ENGINE(S): (2) R-1830-90C
(HIGH BLOWER INOPERATIVE)
-90D AND -92

FUEL GRADE: 100/130
FUEL DENSITY: 6.0 LB/GAL

BASED ON: FLIGHT TEST DATA
DATA AS OF: 11 JULY 1957

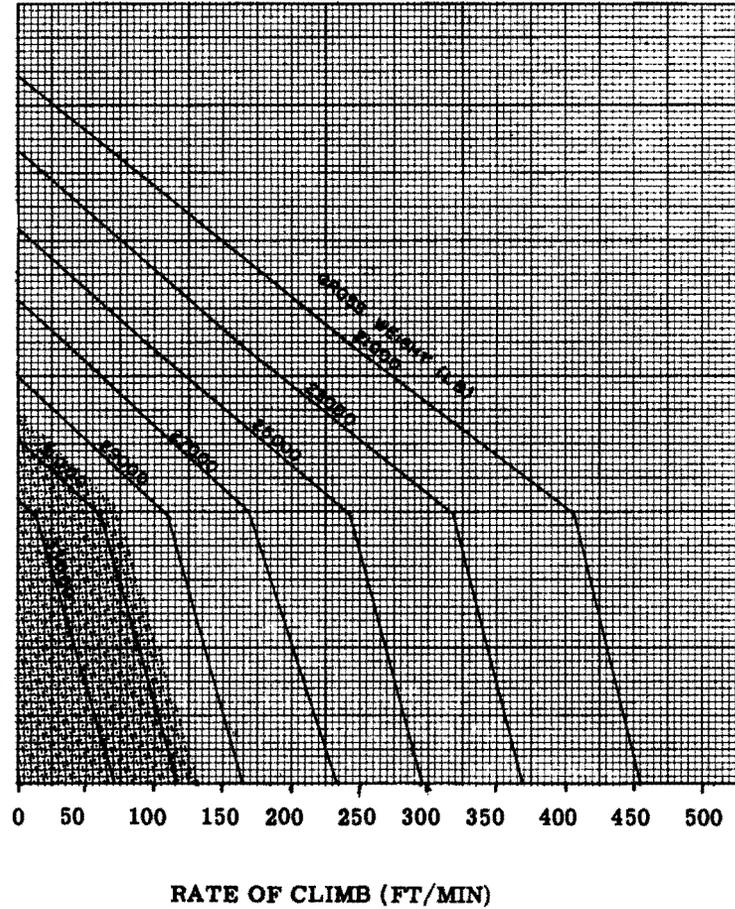
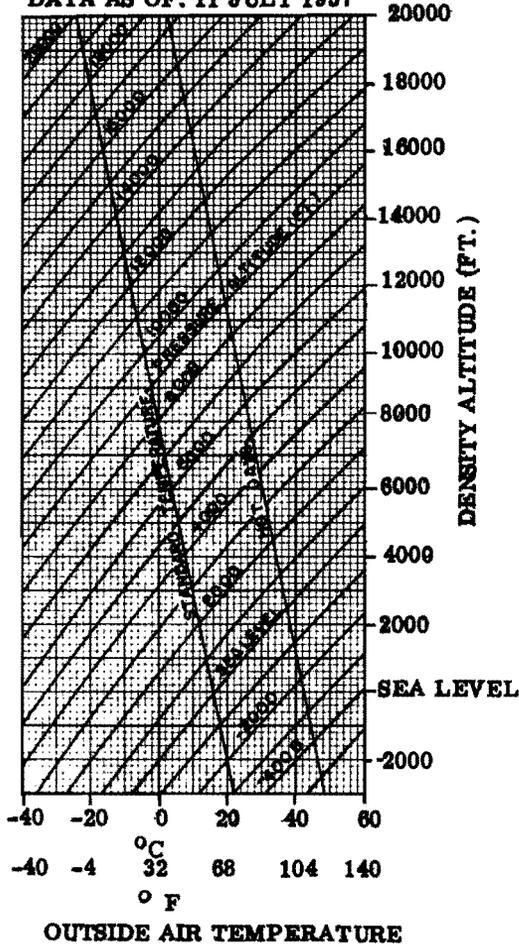


Figure A4-19. Rate of Climb - Maximum Power - 2700 RPM - Single Engine.

MODEL(S): C-47,
C-117 AND R4D

RATE OF CLIMB - METO POWER

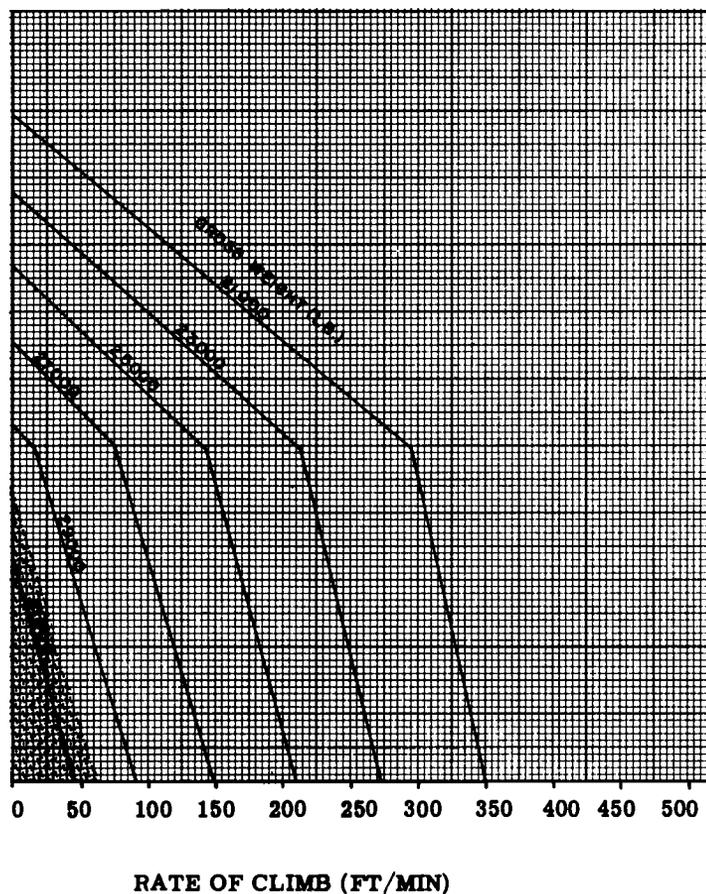
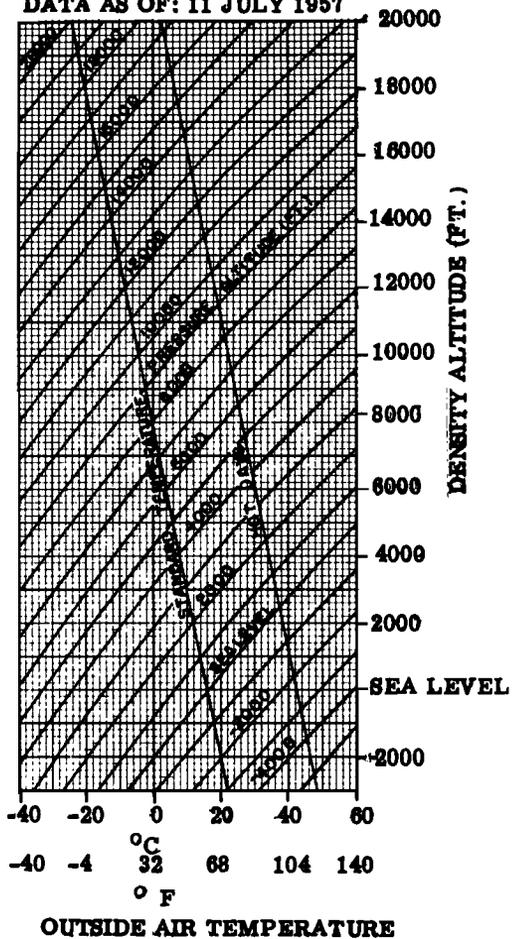
ENGINE(S): (2) R-1830-90C
(HIGH BLOWER INOPERATIVE)
-90D AND -92

SINGLE ENGINE PROPELLER -
FEATHERED ON INOPERATIVE ENGINE
2550 RPM

FUEL GRADE: 100/130
FUEL DENSITY: 6.0 LB/GAL

WING FLAPS - UP COWL FLAPS - TRAIL POSITION

BASED ON: FLIGHT TEST DATA
DATA AS OF: 11 JULY 1957



A4-37

Figure A4-20. Rate of Climb - METO Power - 2550 RPM - Single Engine.

T.O. 1C-47-1

Appendix
Part 4

MODEL(S): C-47,
C-117 AND R4D

RATE OF CLIMB - CLIMB POWER

ENGINE(S): (2) R-1830-90C
(HIGH BLOWER INOPERATIVE)
-90D AND -92

SINGLE ENGINE - PROPELLER FEATHERED ON INOPERATIVE ENGINE

2350 RPM

FUEL GRADE: 100/130
FUEL DENSITY: 6.0 LB/GAL

WING FLAPS - UP COWL FLAPS - TRAIL POSITION

BASED ON: FLIGHT TEST DATA
DATA AS OF: 11 JULY 1957

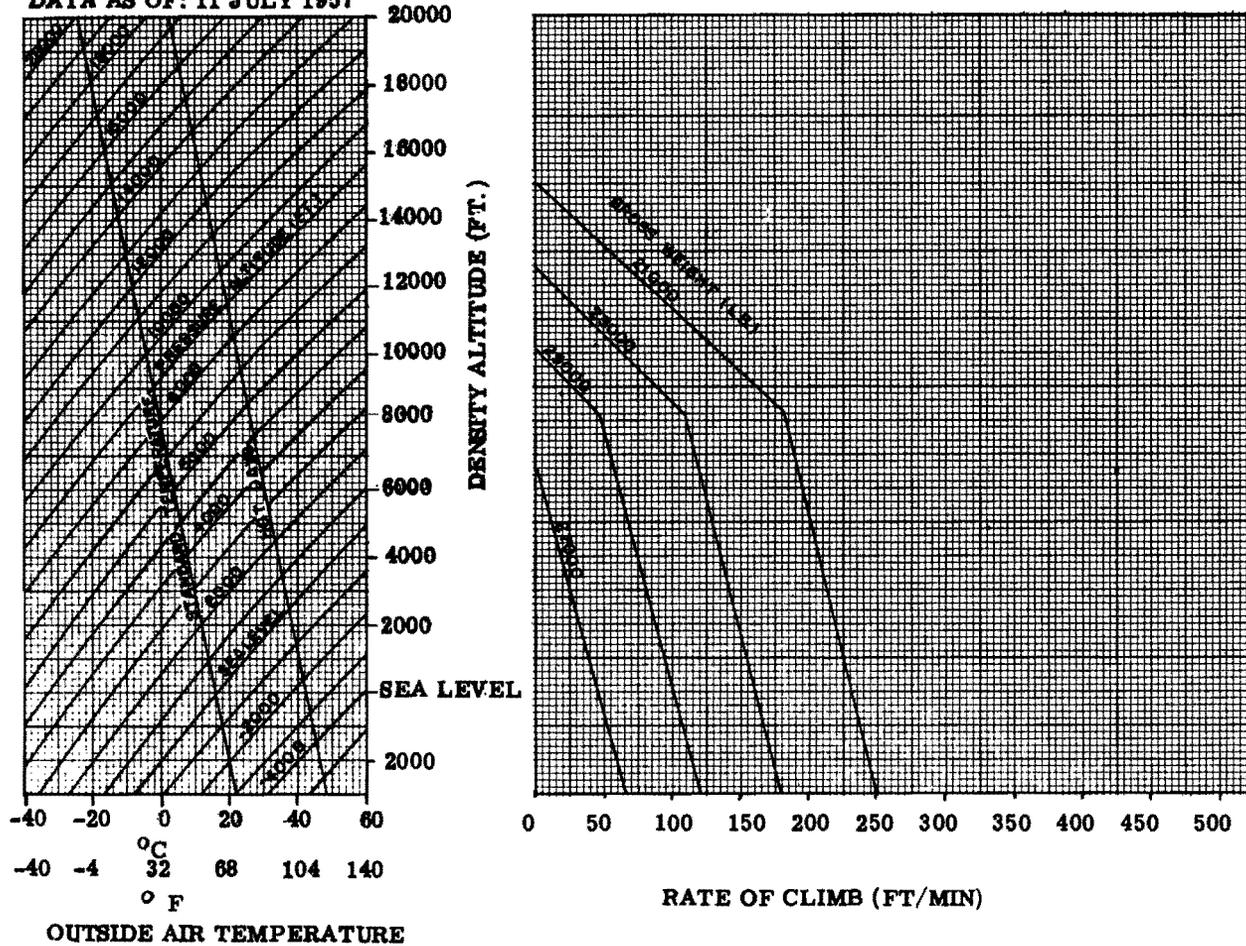


Figure A4-21. Rate of Climb - Climb Power - 2350 RPM - Single Engine.

MODEL(S): C-47,
C-117 AND R4D

RATE OF CLIMB - MAX POWER

ENGINE(S): (2) R-1830-90C
(HIGH BLOWER INOPERATIVE)

SINGLE ENGINE PROPELLER - FEATHERED ON INOPERATIVE ENGINE -90D AND -92

2700 RPM

WITH SKIS

WINGS FLAPS - UP COWL FLAPS - TRAIL POSITION

FUEL GRADE: 100/130

FUEL DENSITY: 6.0 LB/GAL

BASED ON: FLIGHT TEST DATA
DATA AS OF: 11 JULY 1957

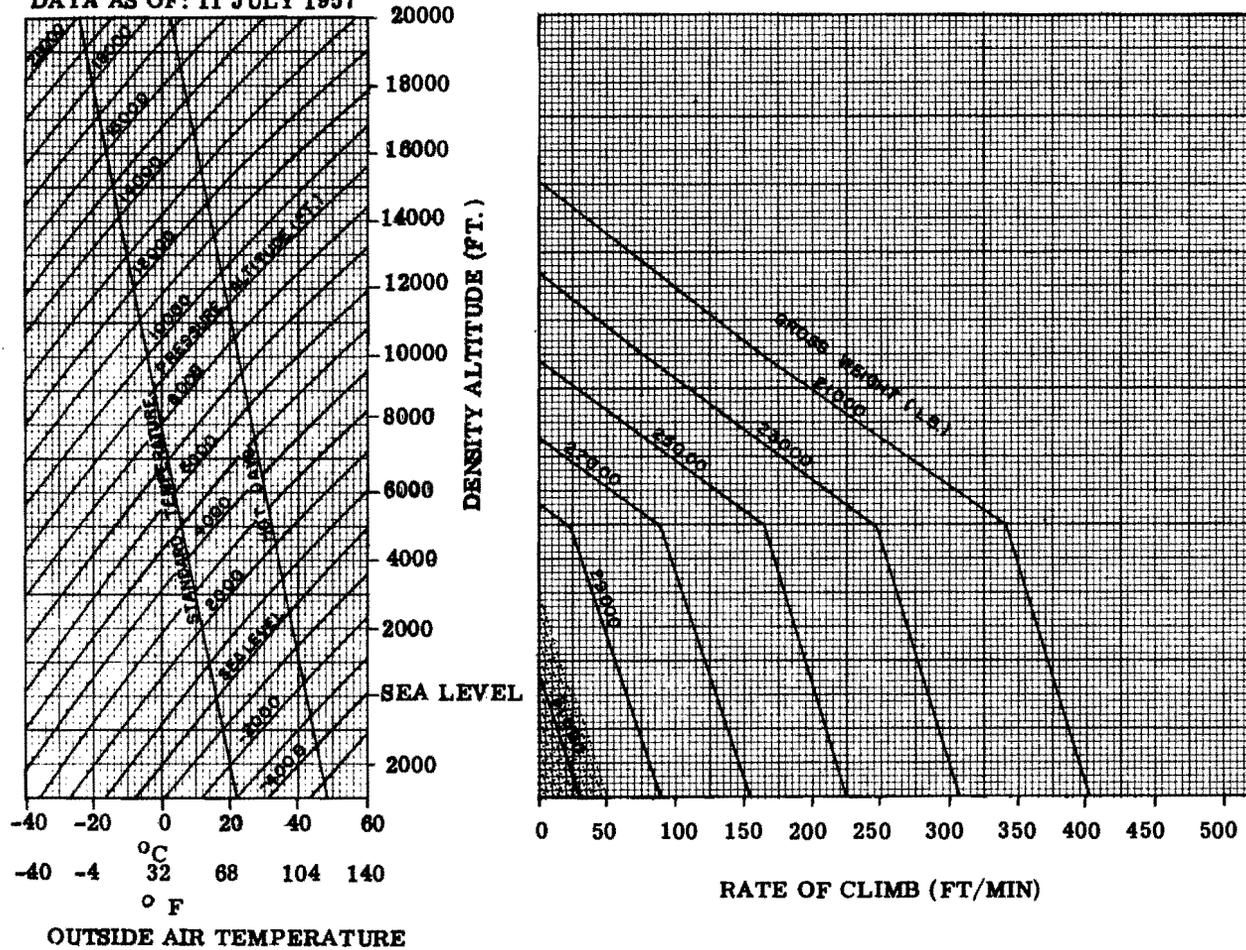


Figure A4-22. Rate of Climb - Maximum Power - 2700 RPM - Single Engine - With Skis.

MODEL(S): C-47,
C-117 AND R4D

RATE OF CLIMB - METO POWER

ENGINE(S): (2) R-1830-90C
(HIGH BLOWER INOPERATIVE)
-90D AND -92

SINGLE ENGINE PROPELLER - FEATHERED ON INOPERATIVE ENGINE
2550 RPM WITH SKIS
WING FLAPS - UP COWL FLAPS - TRAIL POSITION

FUEL GRADE: 100/130
FUEL DENSITY: 6.0 LB/GAL

BASED ON: FLIGHT TEST DATA
DATA AS OF: 11 JULY 1957

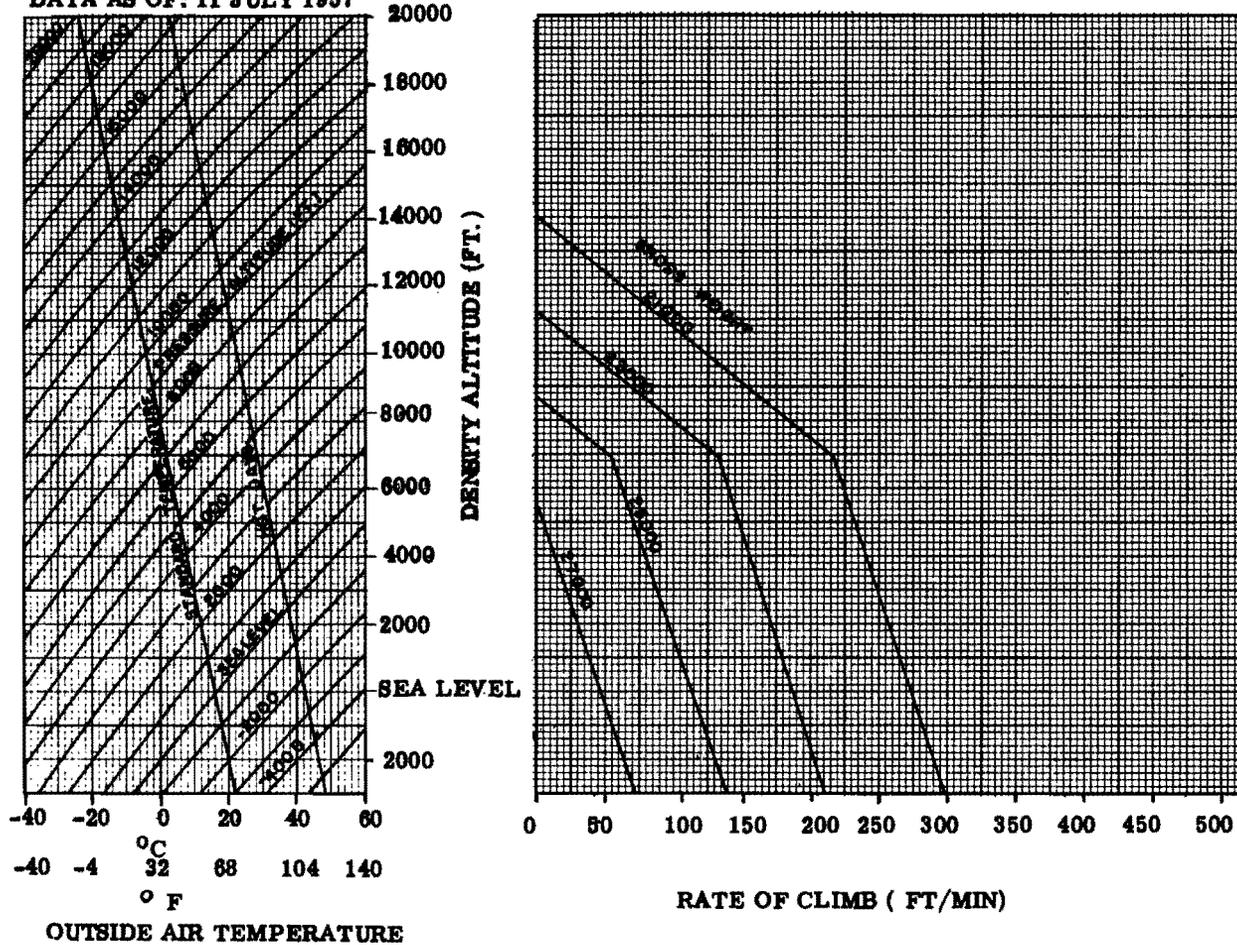


Figure A4-23. Rate of Climb - METO Power - 2550 RPM - Single Engine - With Skis.

MODEL(S): C-47,
C-117 AND R4D

SINGLE ENGINE PROPELLER - FEATHERED ON INOPERATIVE ENGINE

ENGINE(S): (2) R-1830-90C
(HIGH BLOWER INOPERATIVE)
-90D AND -92

2350 RPM

WITH SKIS

WING FLAPS - UP COWL FLAPS - TRAIL POSITION

FUEL GRADE: 100/130
FUEL DENSITY: 6.0 LB/GAL

BASED ON: FLIGHT TEST DATA
DATA AS OF: 11 JULY 1957

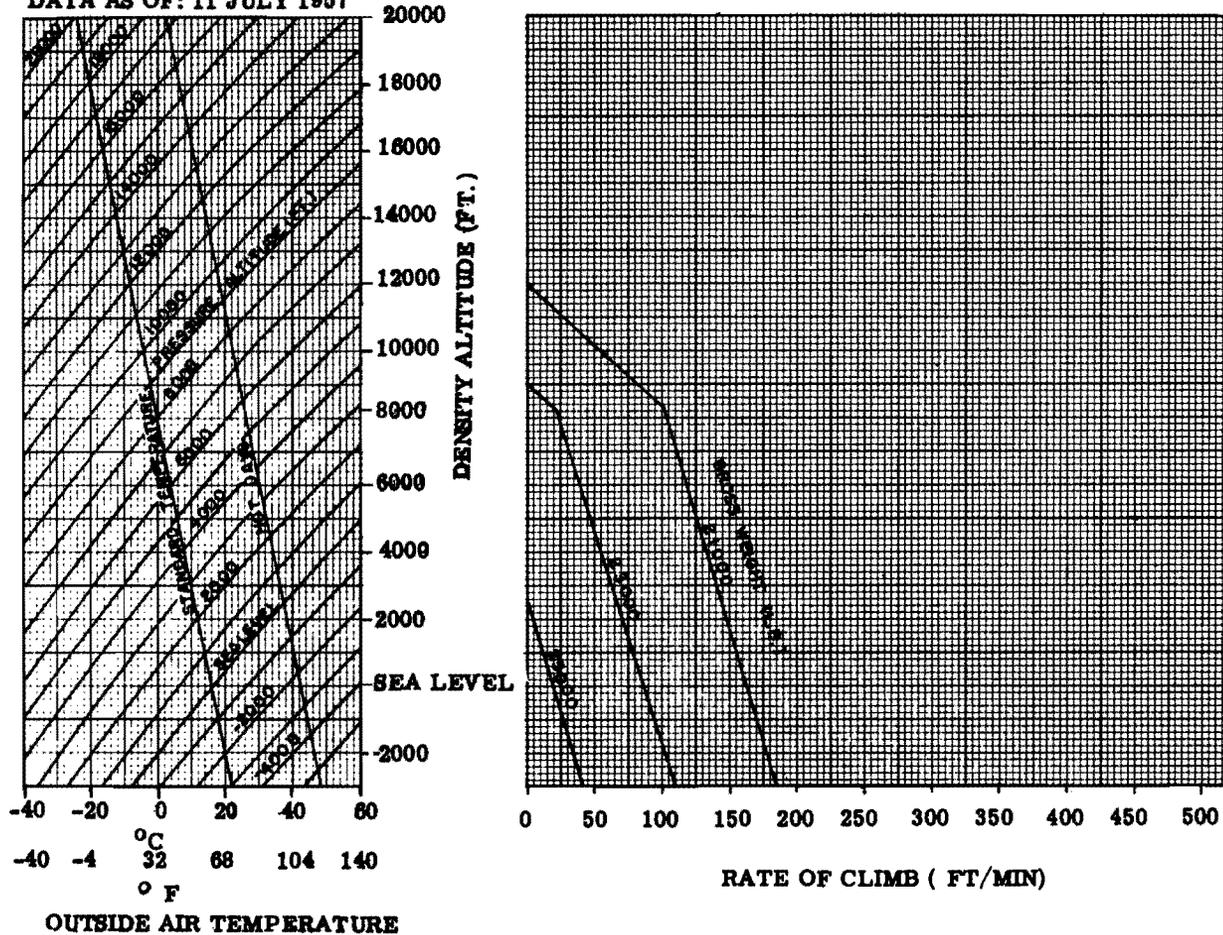


Figure A4-24. Rate of Climb - Climb Power - 2350 RPM - Single Engine.

SINGLE-ENGINE SAWTOOTH CLIMB

CONFIGURATION I (CLEAN)

FLAPS UP

COWL FLAPS CLOSED ON INOPERATIVE ENGINE

TAKEOFF POWER AND COWL FLAPS TRAIL

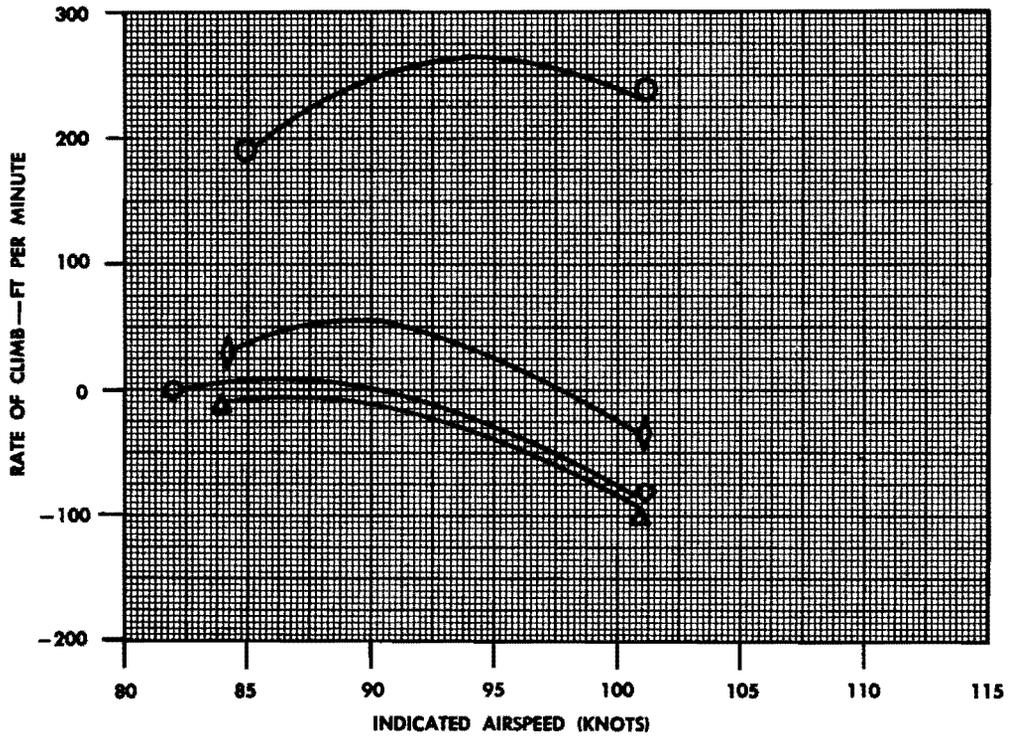
ON OPERATING ENGINE

GROSS WEIGHT—26,000 LBS

MODEL(S): C-47,
C-117 AND R4D

CONDITIONS
3000 FEET
NACA STANDARD DAY

BASED ON: FLIGHT TEST DATA
DATA AS OF: 11 JULY 1957



- PROP FEATHERED, GEAR UP
- ◇- PROP FEATHERED, GEAR DOWN
- ◊- PROP WINDMILLING, GEAR UP
- △- PROP WINDMILLING, GEAR UP, 4 ATO UNITS INSTALLED

ENGINE(S): (2) R-1830-90C
(HIGH BLOWER INOPERATIVE,
-90D AND -92

FUEL GRADE: 100/130
FUEL DENSITY: 6.0 LB/GAL

Figure A4-25. Single Engine Sawtooth Climb.

EMERGENCY CEILING STANDARD DAY

100 FT/MIN RATE OF CLIMB AT METO POWER
CLEAN CONFIGURATION

SAMPLE PROBLEM:

- A. GROSS WEIGHT = 27000 POUNDS.
- B. TWO ENGINE - WITH SKIS CURVE.
- C. PRESSURE ALTITUDE = 22000 FEET.

MODEL(S): C-47,
C-117 AND R4D

ENGINE(S): (2) R-1830-90C
(HIGH BLOWER INOPERATIVE
-90D AND -92

BASED ON: FLIGHT TEST DATA
DATA AS OF: 11 JULY 1957

FUEL GRADE: 100/130
FUEL DENSITY: 6.0 LB/GAL

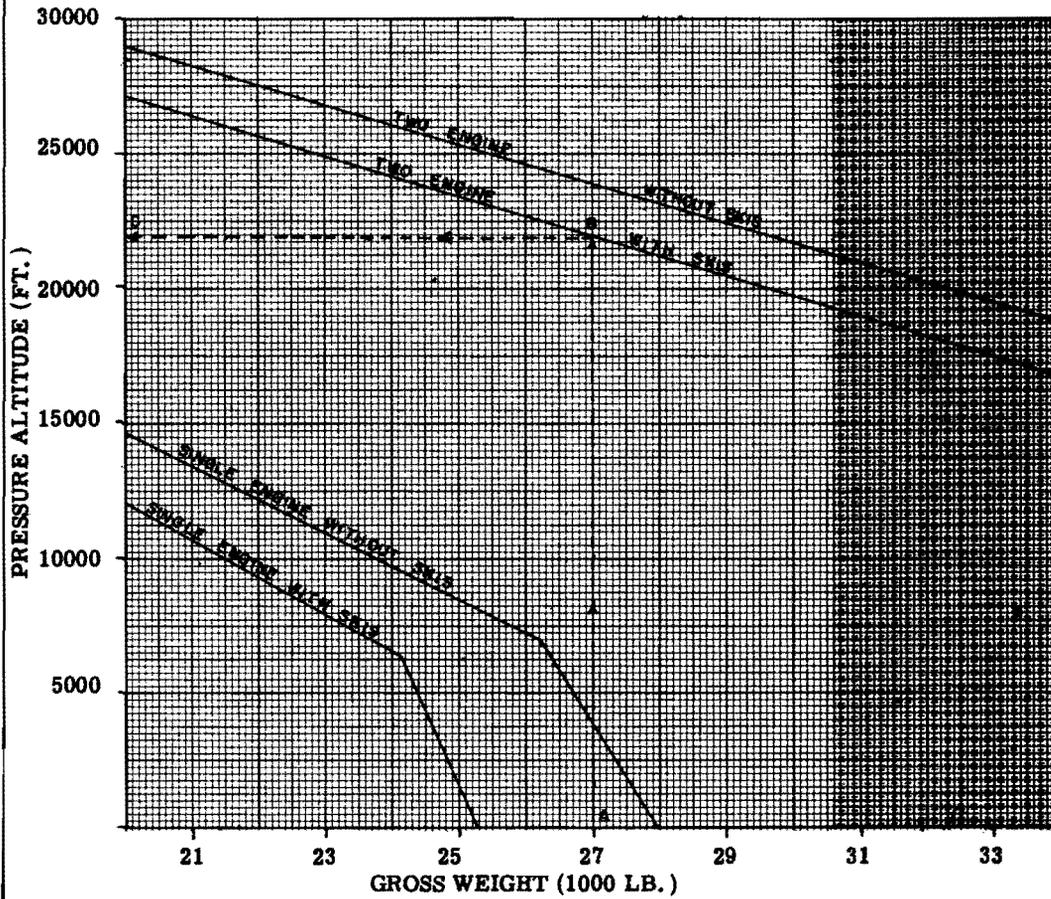


Figure A4-26. Emergency Ceiling - Standard Day.

PART FIVE

RANGE

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DISCUSSION OF CHARTS.

The range performance is presented in three types of charts: long range power condition, flight planning for long range cruise condition, and level flight performance. Maximum endurance power conditions charts are also provided.

LEVEL FLIGHT PERFORMANCE

The level flight performance charts (figure A5-1 and A5-2) are used to determine the equivalent and true airspeeds, and the brake horsepower required per engine for level flight performance with and without skis during two engine operation at various combinations of gross weight and density altitude.

Enter the chart at the recommended long range airspeed curve, Point A, and proceed to the known gross weight curve, Point B. From this intersection, proceed horizontally to the known density altitude and read the required brake horsepower per engine for two engine operation, Point C. To determine the correct equivalent airspeed at this setting, proceed from Point B, vertically to the equivalent airspeed scale, Point D. The true airspeed may be determined by projecting a line vertically from Point D to the known density altitude, Point E, and interpolating the true airspeed at this point.

LONG RANGE POWER CONDITIONS

The long range power conditions charts (figure A5-3 through A5-6) are presented with sheet 1 of 2 and 2 of 2 on facing pages. Sheet 1 of 2 shows recommended true airspeed (TAS), brake horsepower, RPM, and manifold pressure. Sheet 2 of 2 shows fuel flow (pounds per hour) and specific range (nautical miles per pound of fuel). Charts are included for two engine and single engine long range operation at various weights in low blower, auto rich and auto lean carburetor settings. Enter each chart at the aircraft's initial cruise gross weight (or any desired intermediate gross weight) and proceed vertically from bottom to top. To gain maximum range efficiency from use of the chart, recompute power settings at least once each hour for the new gross weight (decreased as fuel is consumed). These charts are based on the recommended long range airspeed curve (99 percent maximum range) on the level flight performance charts (figure A5-1 and A5-2). A sample problem is presented on the first chart of this series.

FLIGHT PLANNING CHART FOR LONG RANGE CRUISE CONDITION

The flight planning charts for long range cruise condition (figures A5-7 through A5-13) are used to determine the fuel consumed and the time elapsed for a cruise operation when the required distance to

cruise and either the initial or final aircraft cruise gross weight are known. In the event initial and final cruise gross weights are known, both the range and time to cruise may be obtained from the charts.

The charts are constructed for use with two and single-engine power conditions. The vertical scales labeled range and time, are presented only to find the difference in nautical miles (aircraft range) or time in (100 minutes) due to fuel consumption between initial and final cruise gross weights. A sample problem is included on the first chart of this series (figure A5-7).

Enter the chart with the given gross weight (Point A). Draw a line vertically to the time curve (Point B). Extend the line vertically from Point B to the range curve (Point C). Draw a line horizontally from Point C to the range scale (Point D). Subtract mission range from the value shown at Point D and reenter the range scale with this value (Point E). Draw a line horizontally from Point E to intersect the range curve (Point F). From Point F, draw a line vertically to the time curve (Point G) and extend to the gross weight scale (Point H). Subtract the value at Point H from the value at Point A to obtain the fuel required for the mission range. Similarly, time may be found by drawing a horizontal line from the time curve Point B and Point G, to the time scale, Point I and Point J. The difference between the values shown at Point I and Point J is the time corresponding to the mission range.

MAXIMUM ENDURANCE POWER CONDITIONS

The maximum endurance power conditions charts (figures A5-14 and A5-15) present the calibrated airspeed (CAS), brake horsepower, rpm, manifold pressure and fuel flow for maximum endurance conditions at various gross weights for operation with two engines. Where applicable, the charts contain altitude curves which show operation in auto rich or auto lean mixture in low blower.

To determine CAS, power, rpm, manifold pressure, and fuel flow values, enter the chart at the aircraft gross weight and proceed vertically. The desired values may then be read as the vertical line intersects the particular curve. The endurance in hours is obtained by dividing the amount of fuel remaining to be used by the average total fuel flow in pounds per hour occurring between the initial and final gross weights. Where sudden changes occur in the fuel flow curve, the endurance calculation should be separated into parts at the gross weight where the break occurs, and the separate endurance times added together.

LEVEL FLIGHT PERFORMANCE TWO ENGINE

MODEL(S): C-47,
C-117 AND R4D

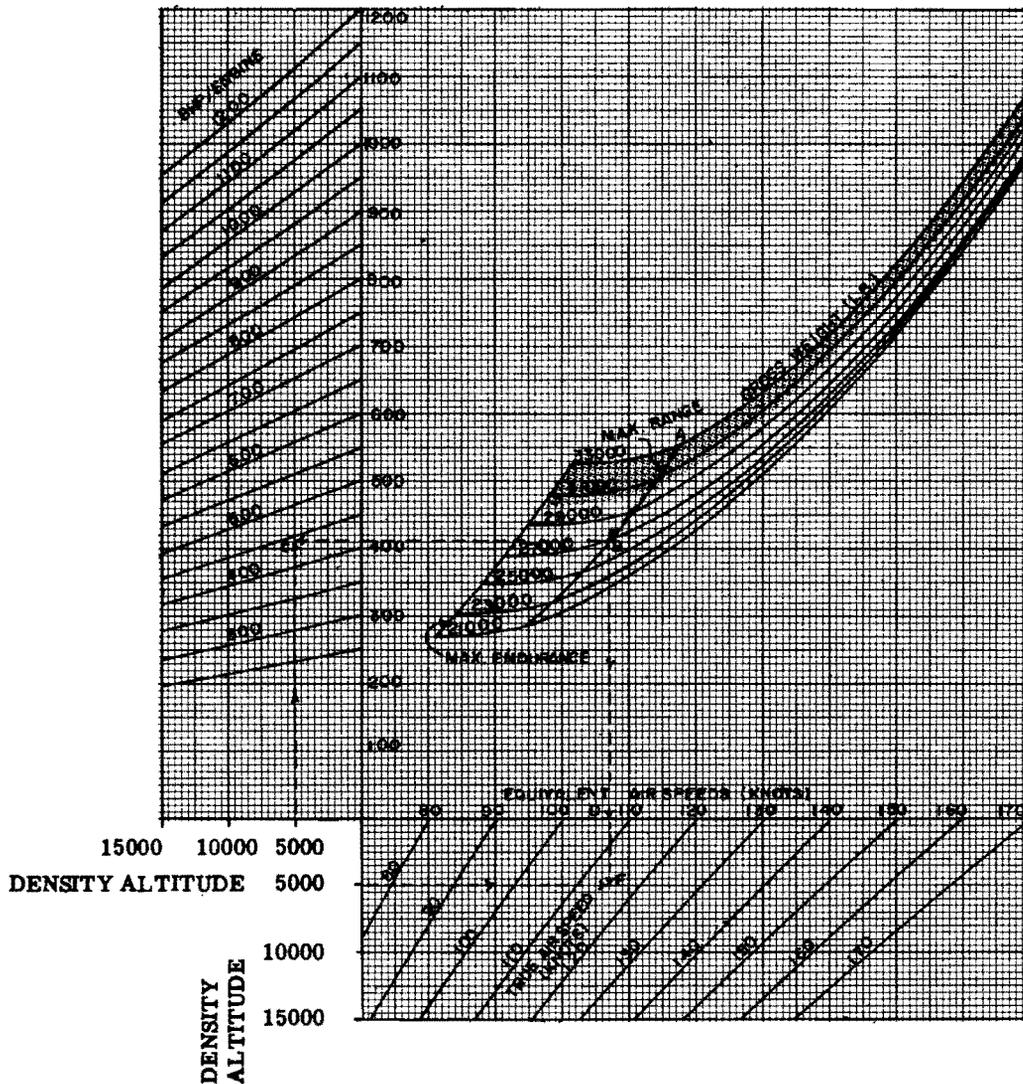
ENGINE(S): (2) R-1830-90C
(HIGH BLOWER INOPERATIVE)
-90D AND -92

BASED ON: FLIGHT TEST DATA
DATA AS OF: 11 JULY 1957

FUEL GRADE: 100/130
FUEL DENSITY: 6.0 LB/GAL

SAMPLE PROBLEM:

- A. MAXIMUM RANGE.
- B. GROSS WEIGHT = 27000 POUNDS.
- C. BRAKE HORSEPOWER PER ENGINE = 440 AT 5000 FEET DENSITY ALTITUDE.
- D. EQUIVALENT AIRSPEED = 107 KNOTS.
- E. TRUE AIRSPEED = 115 KNOTS AT 5000 FEET DENSITY ALTITUDE.



A5-1. Level Flight Performance - Two Engines.

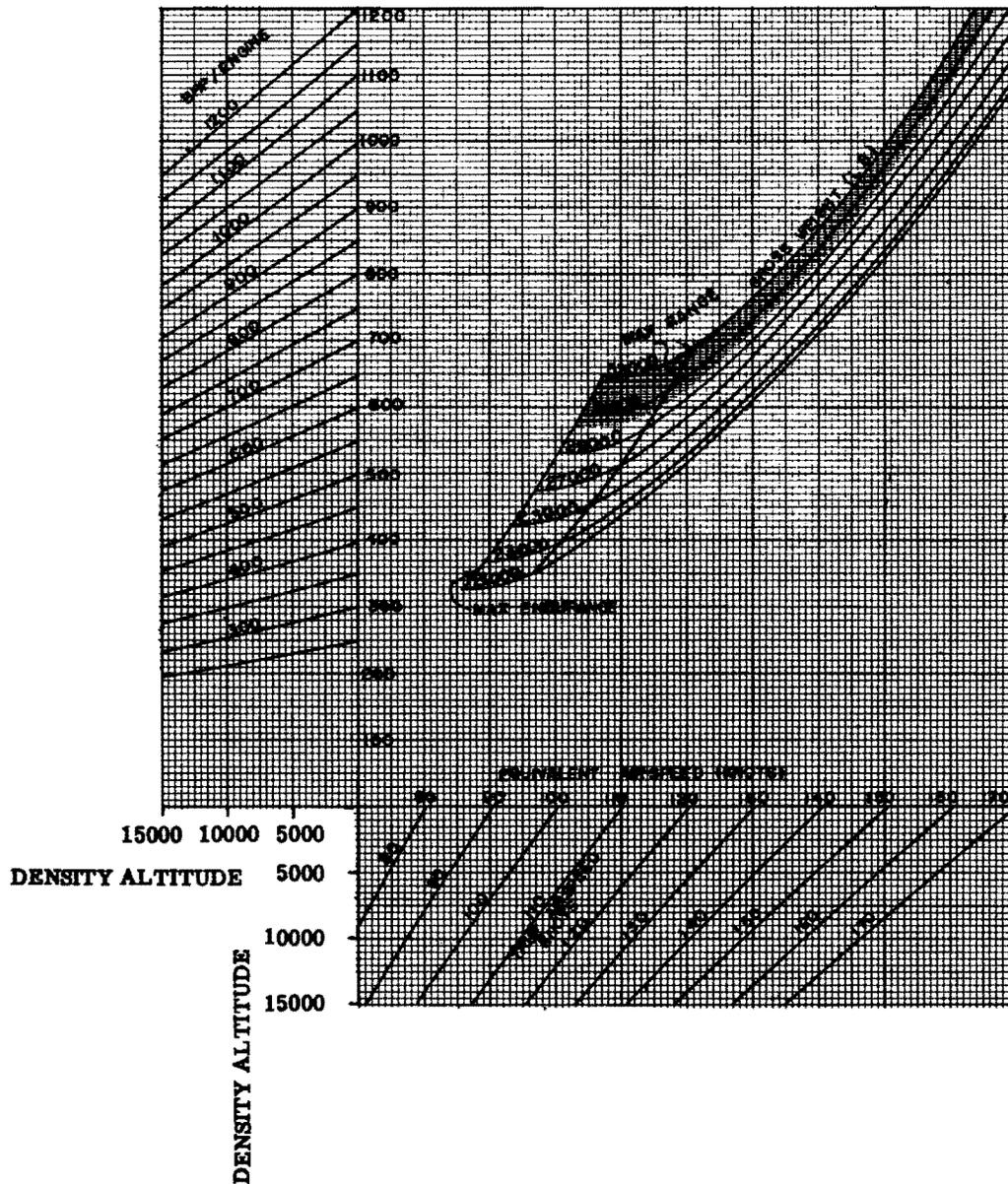
LEVEL FLIGHT PERFORMANCE - WITH SKIS TWO ENGINE

MODEL(S): C-47,
C-117 AND R4D

ENGINE(S): (2) R-1830-90C
(HIGH BLOWER INOPERATIVE)
-90D AND -92

BASED ON: FLIGHT TEST DATA
DATA AS OF: 11 JULY 1957

FUEL GRADE: 100/130
FUEL DENSITY: 6.0 LB/GAL



A5-2. Level Flight Performance - Two Engines - With Skis.

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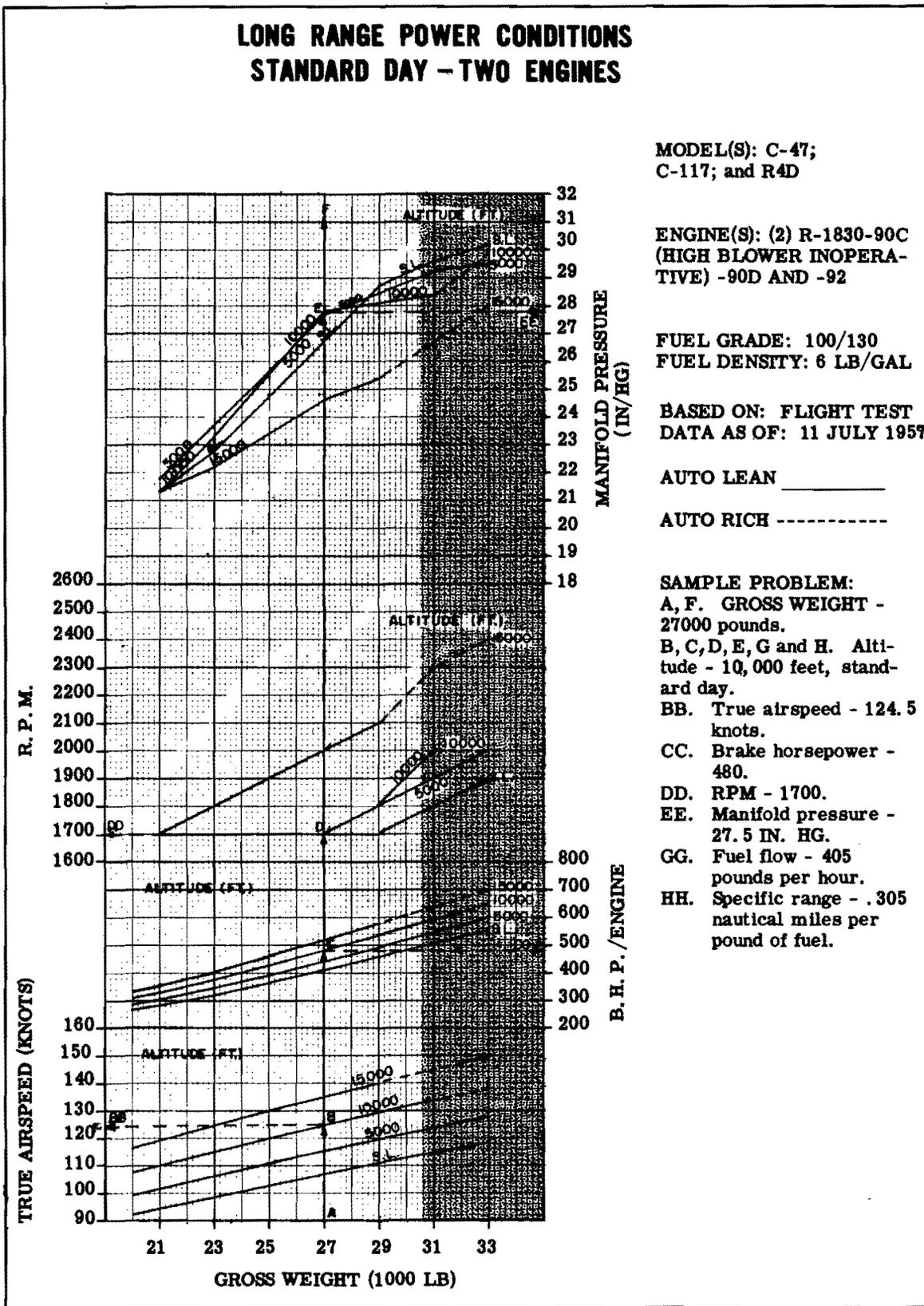


Figure A5-3. Long Range Power Conditions - Standard Day - Two Engines (Sheet 1 of 2)

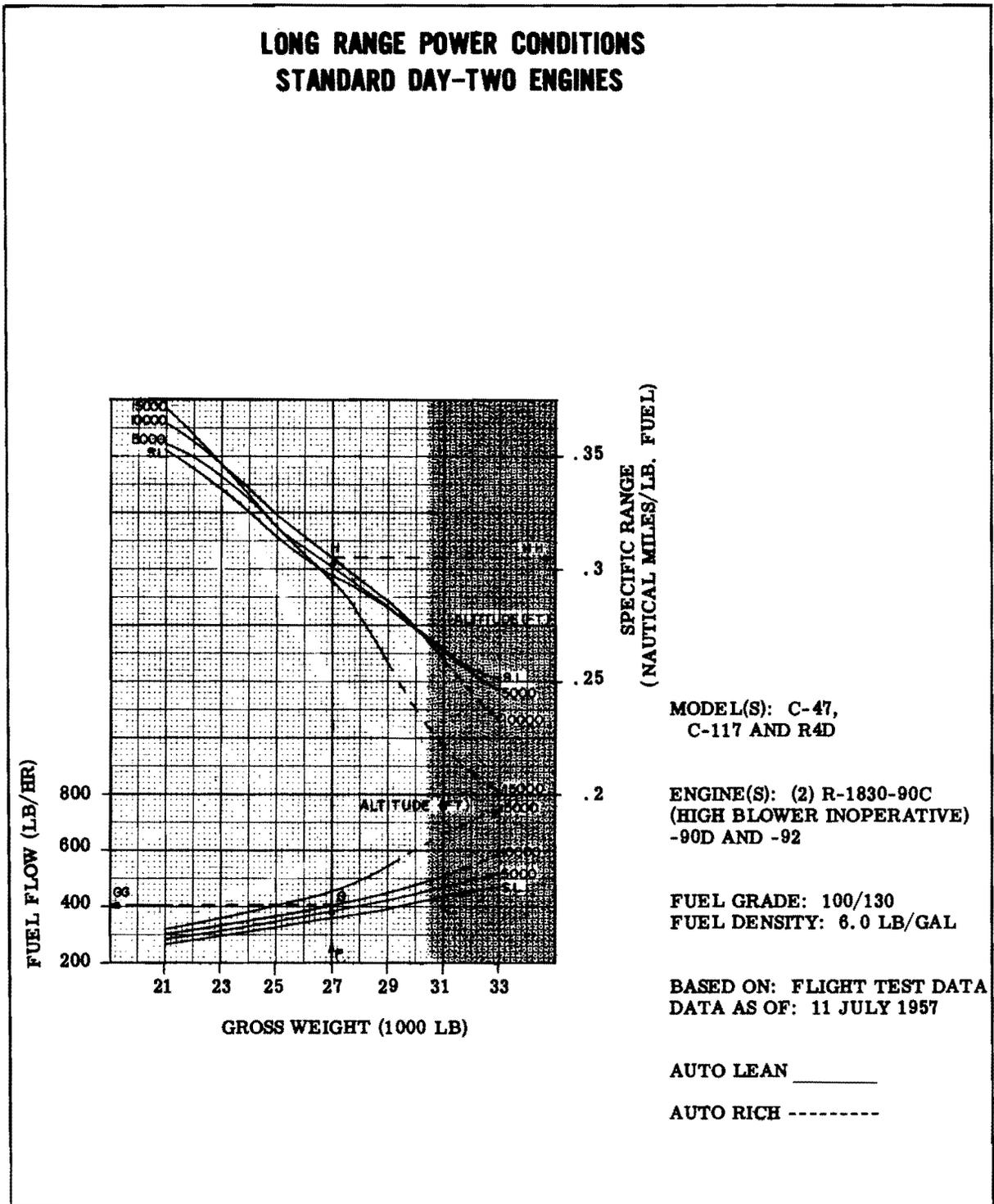
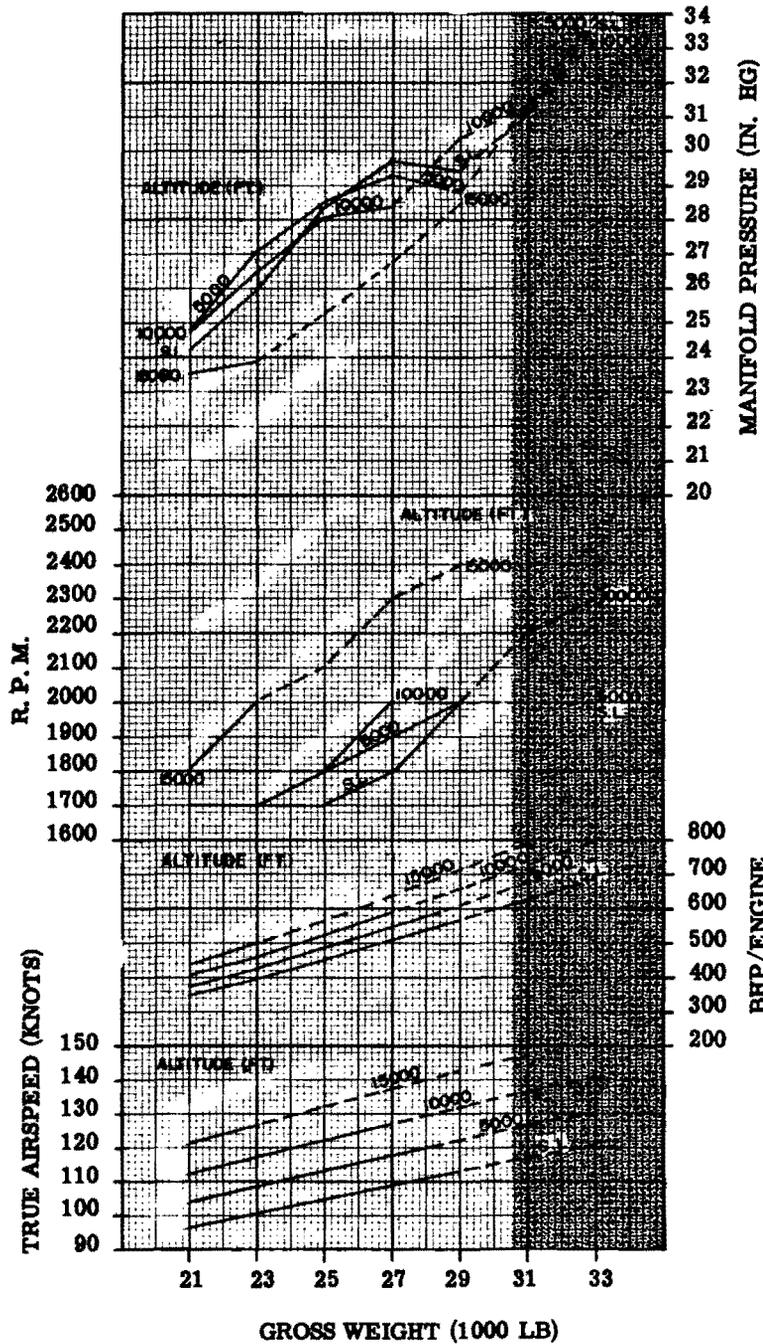


Figure A5-3. Long Range Power Conditions - Standard Day - Two Engines (Sheet 2 of 2)

LONG RANGE POWER CONDITIONS STANDARD DAY - TWO ENGINES - WITH SKIS



MODEL(S): C-47
C-117 AND R4D

ENGINE(S): (2) R-1830-90C
(HIGH BLOWER INOPERATIVE) -90D AND -92

FUEL GRADE: 100/130
FUEL DENSITY: 6.0 LB/GAL

BASED ON: FLIGHT TEST
DATA
DATA AS OF: 11 JULY 1957

AUTO LEAN _____

AUTO RICH - - - - -

Figure A5-4. Long Range Power Conditions - Standard Day - Two Engines - With Skis (Sheet 1 of 2)

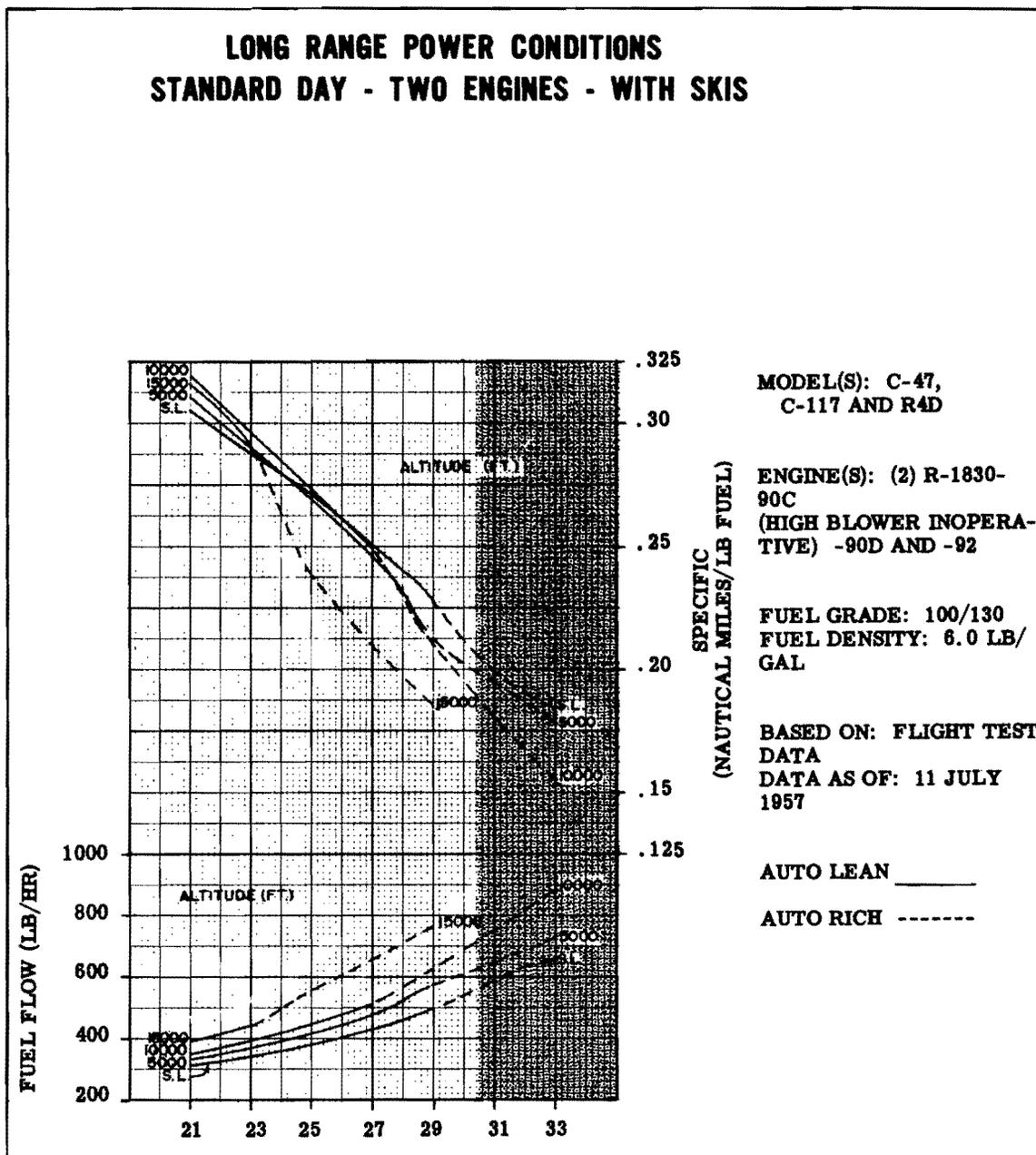


Figure A5-4. Long Range Power Conditions - Standard Day - Two Engines - With Skis (Sheet 2 of 2)

LONG RANGE POWER CONDITION - STANDARD DAY - SINGLE ENGINE
PROPELLER-FEATHERED ON INOPERATIVE ENGINE

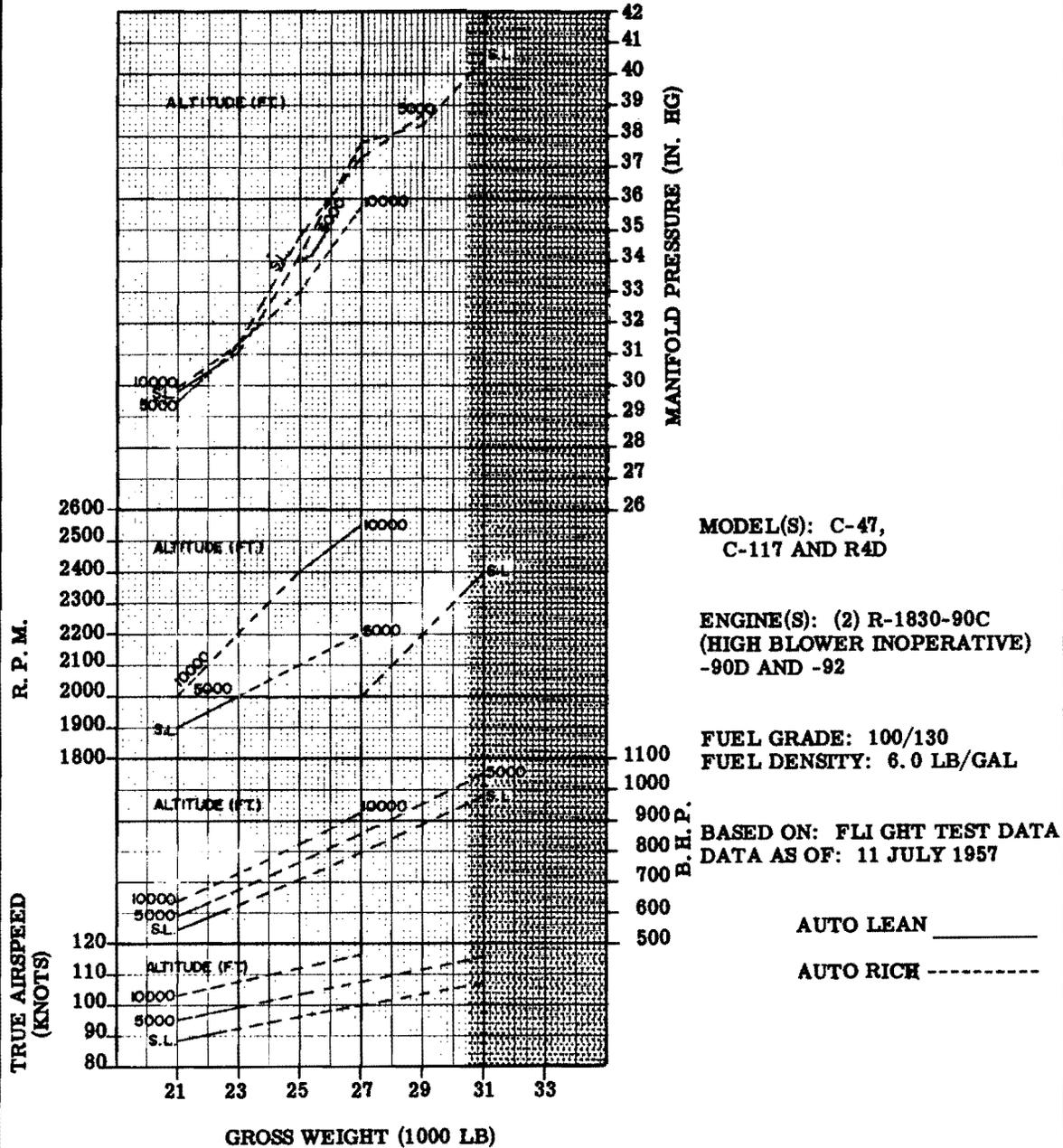


Figure A5-3. Long Range Power Condition - Standard Day - Single Engine (Sheet 1 of 2)

LONG RANGE POWER CONDITION-STANDARD DAY-SINGLE ENGINE
PROPELLER-FEATHERED ON INOPERATIVE ENGINE

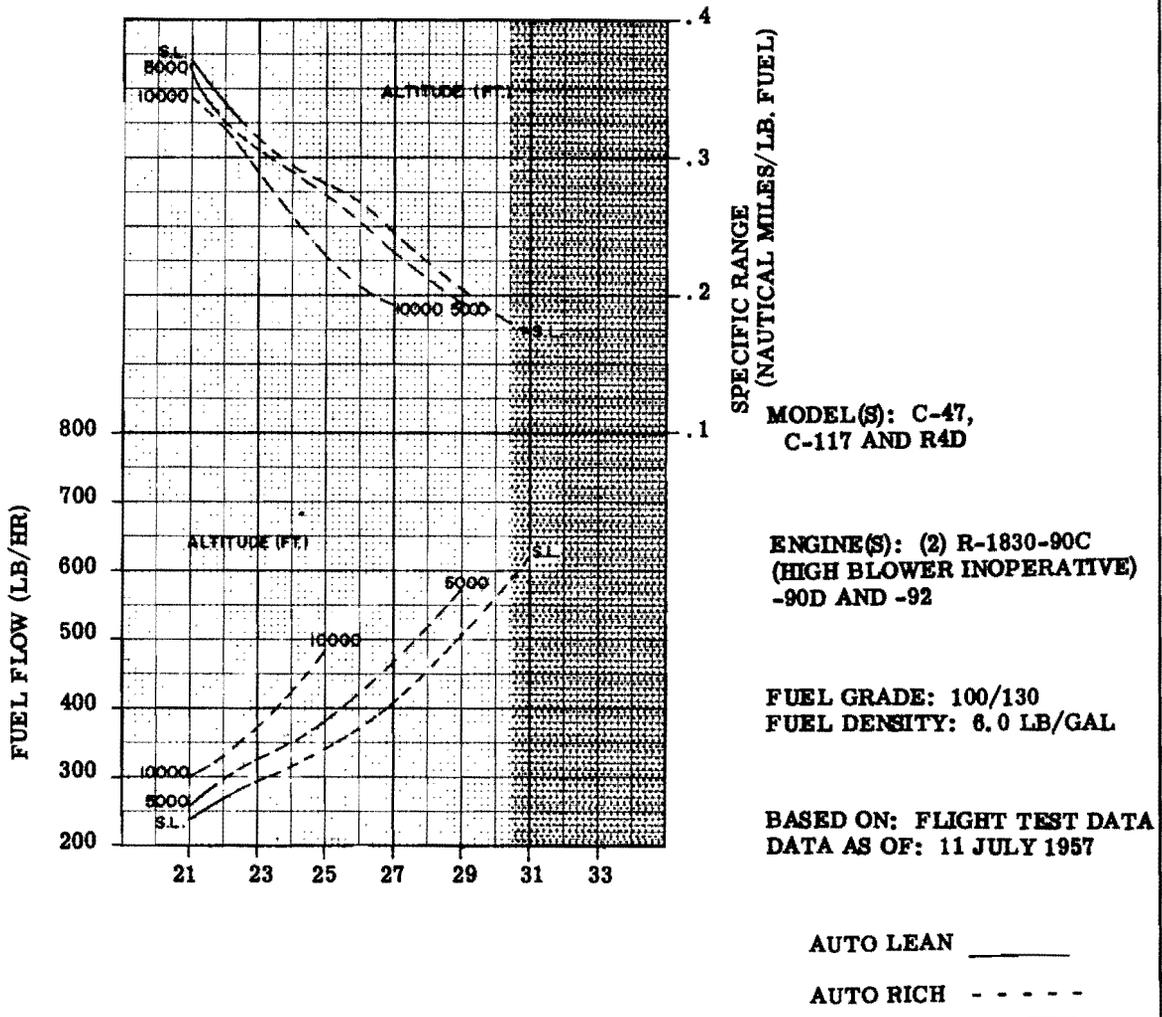


Figure A5-5. Long Range Power Condition - Standard Day - Single Engine (Sheet 2 of 2)

LONG RANGE POWER CONDITION - STANDARD DAY - SINGLE ENGINE - WITH SKIS
PROPELLER - FEATHERED ON INOPERATIVE ENGINE

MODEL(S): C-47,
C-117 AND R4D

BASED ON: FLIGHT TEST DATA
DATA AS OF: 11 JULY 1957

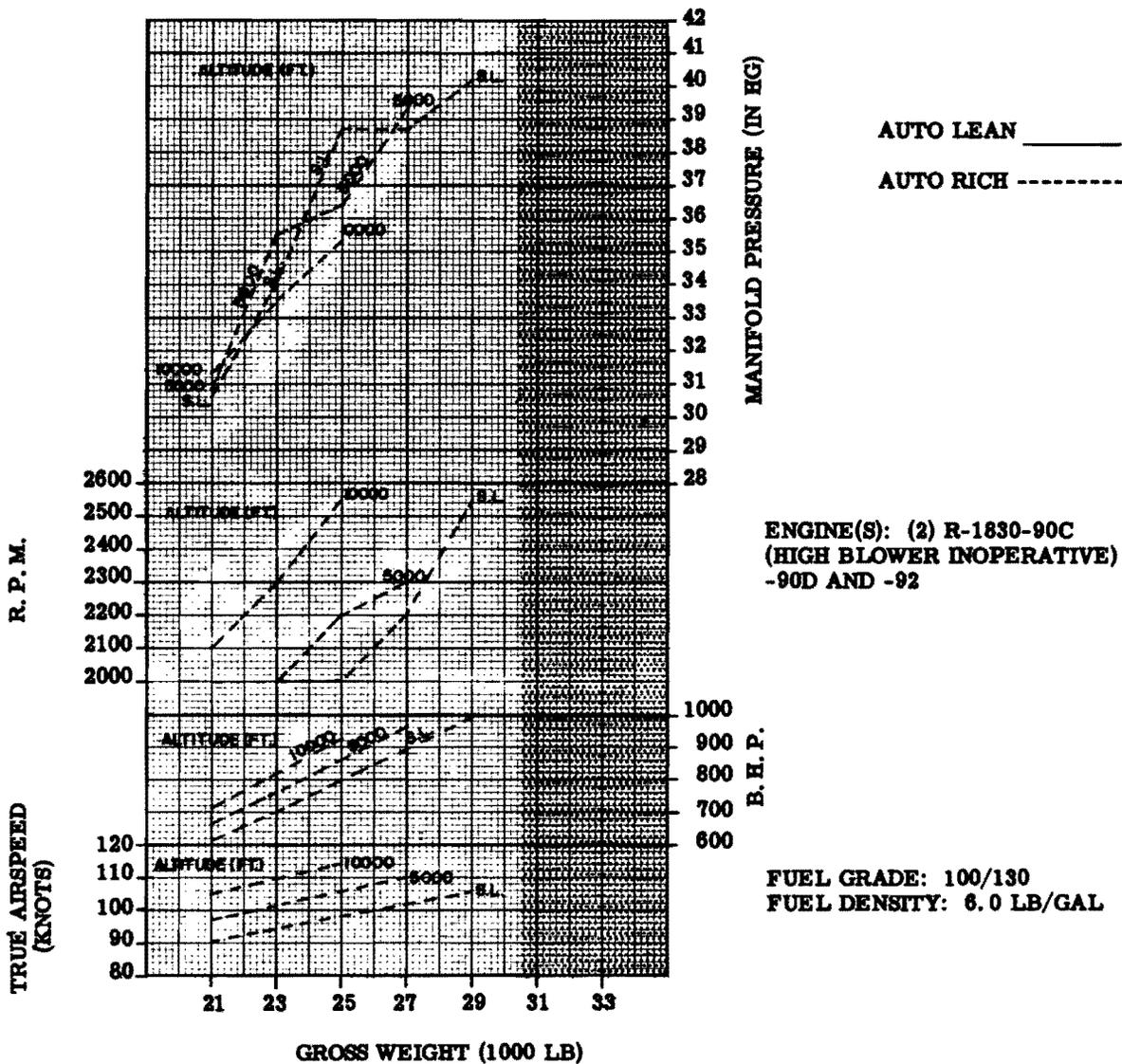


Figure A5-6. Long Range Power Condition - Standard Day - Single Engine - With Skis (Sheet 1 of 2)

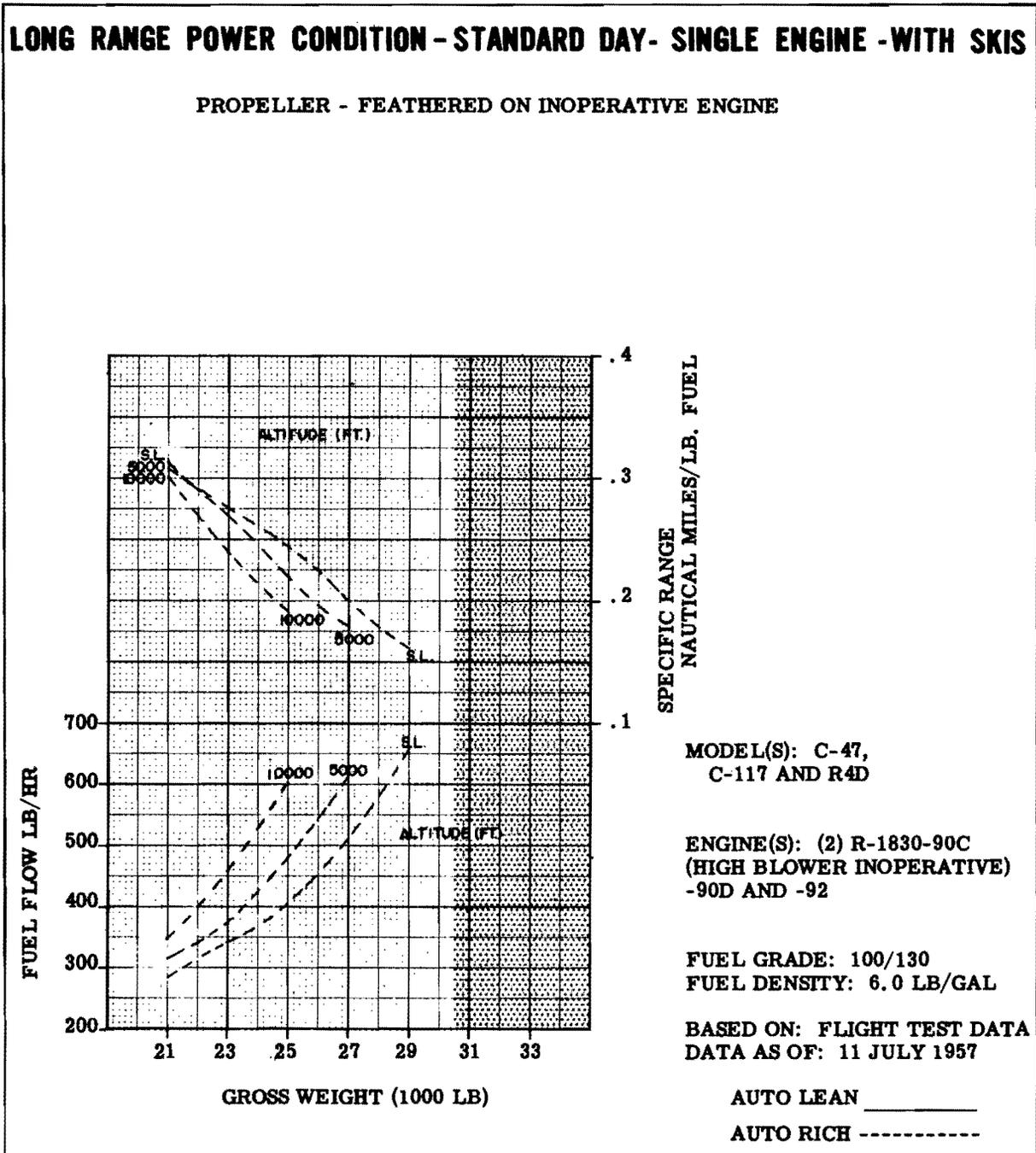


Figure A5-6. Long Range Power Condition - Standard Day - Single Engine - With Skis (Sheet 2 of 2)

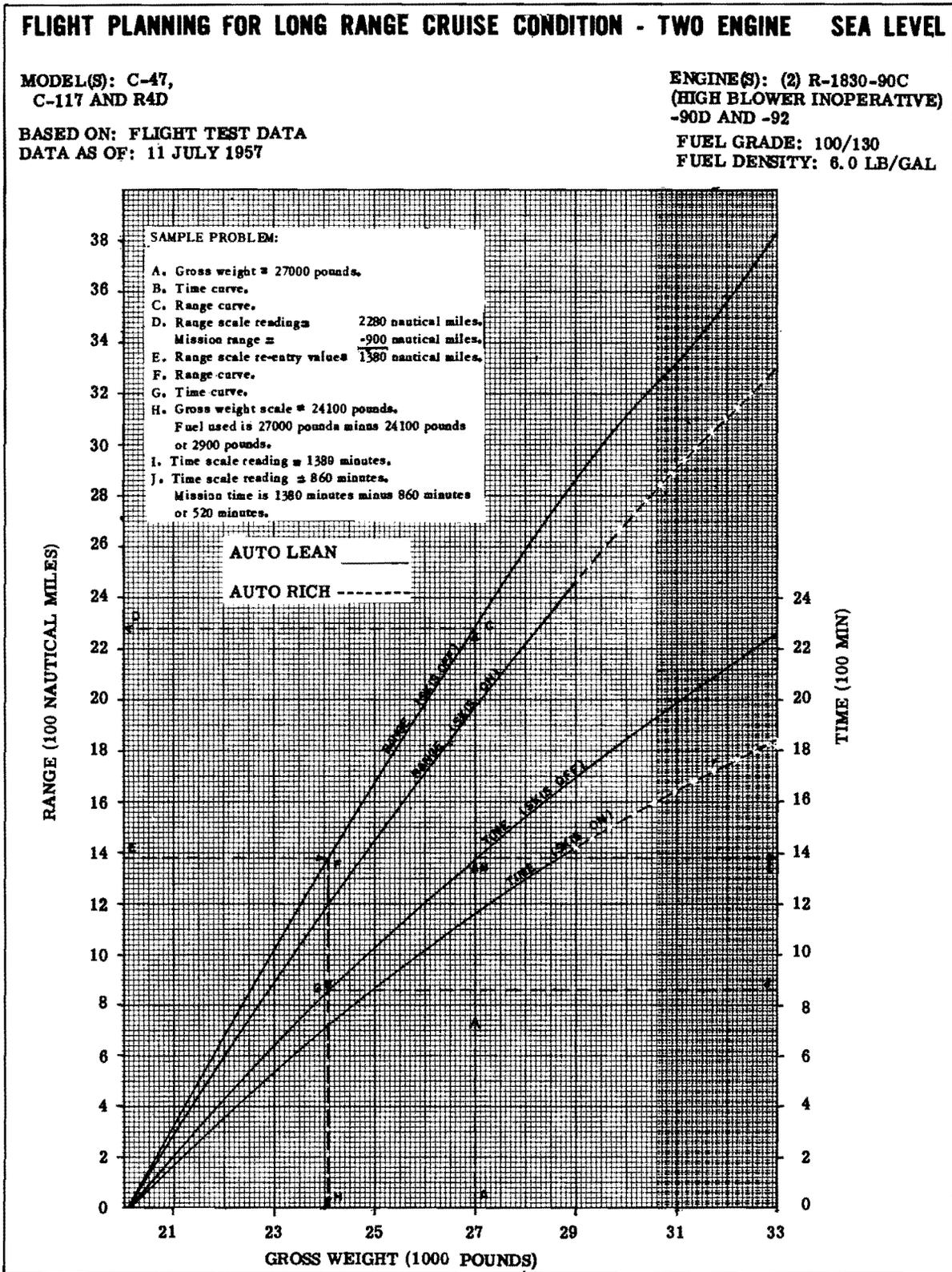


Figure A5-7. Flight Planning for Long Range Cruise Condition - Two Engines - Sea Level.

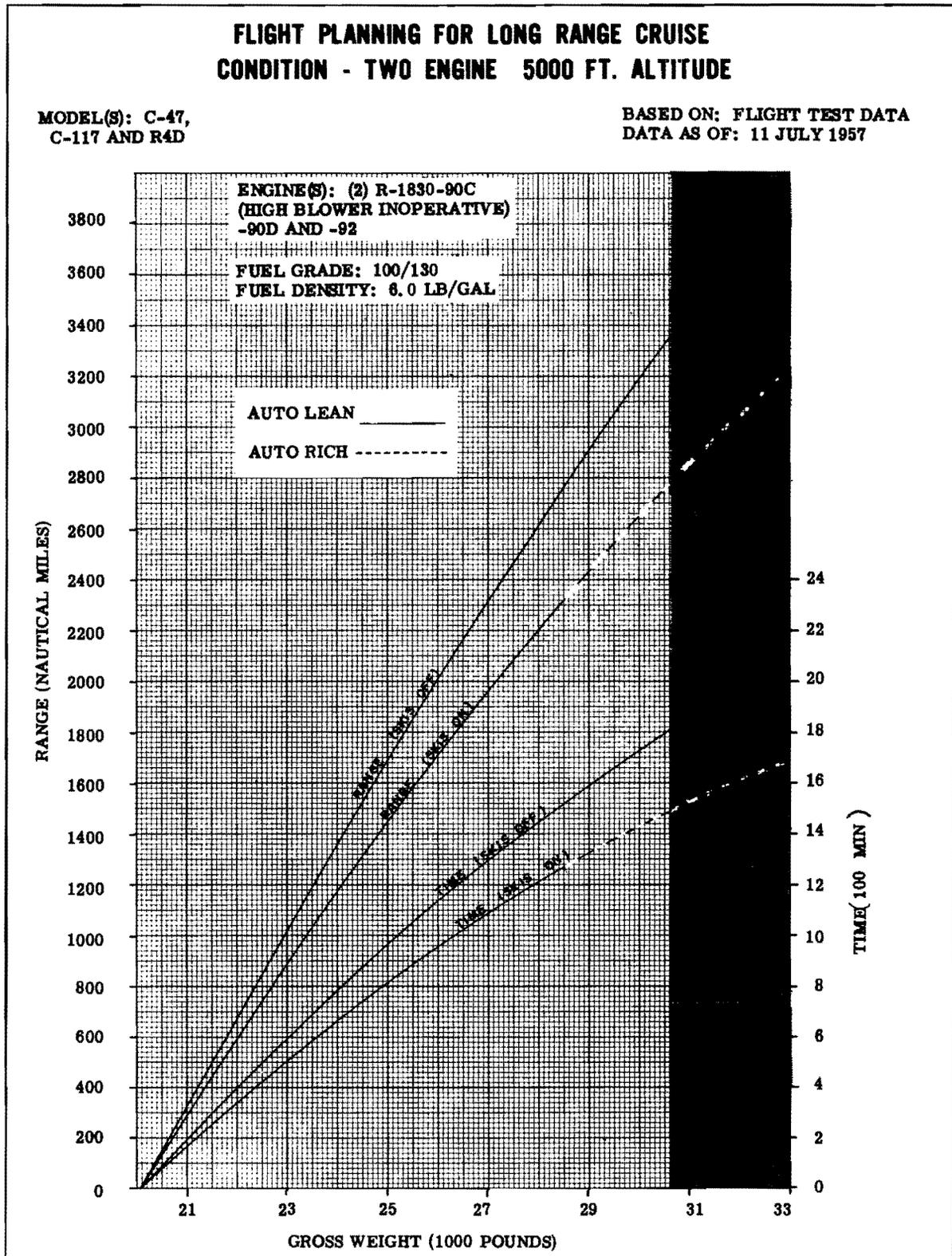


Figure A5-8. Flight Planning for Long Range Cruise Condition - Two Engines - 5000 Ft.

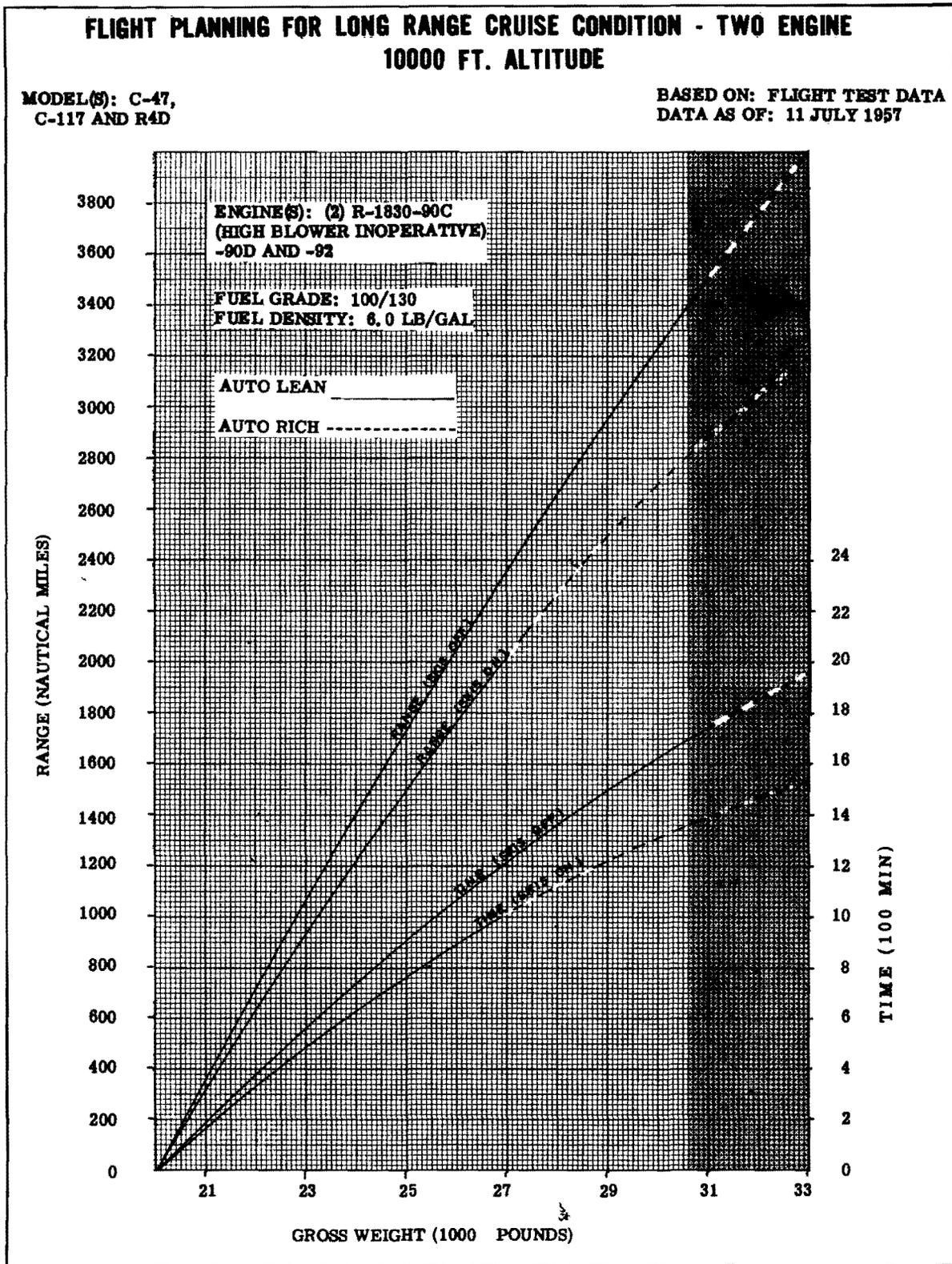


Figure A5-9. Flight Planning for Long Range Cruise Condition - Two Engines - 10000 Ft.

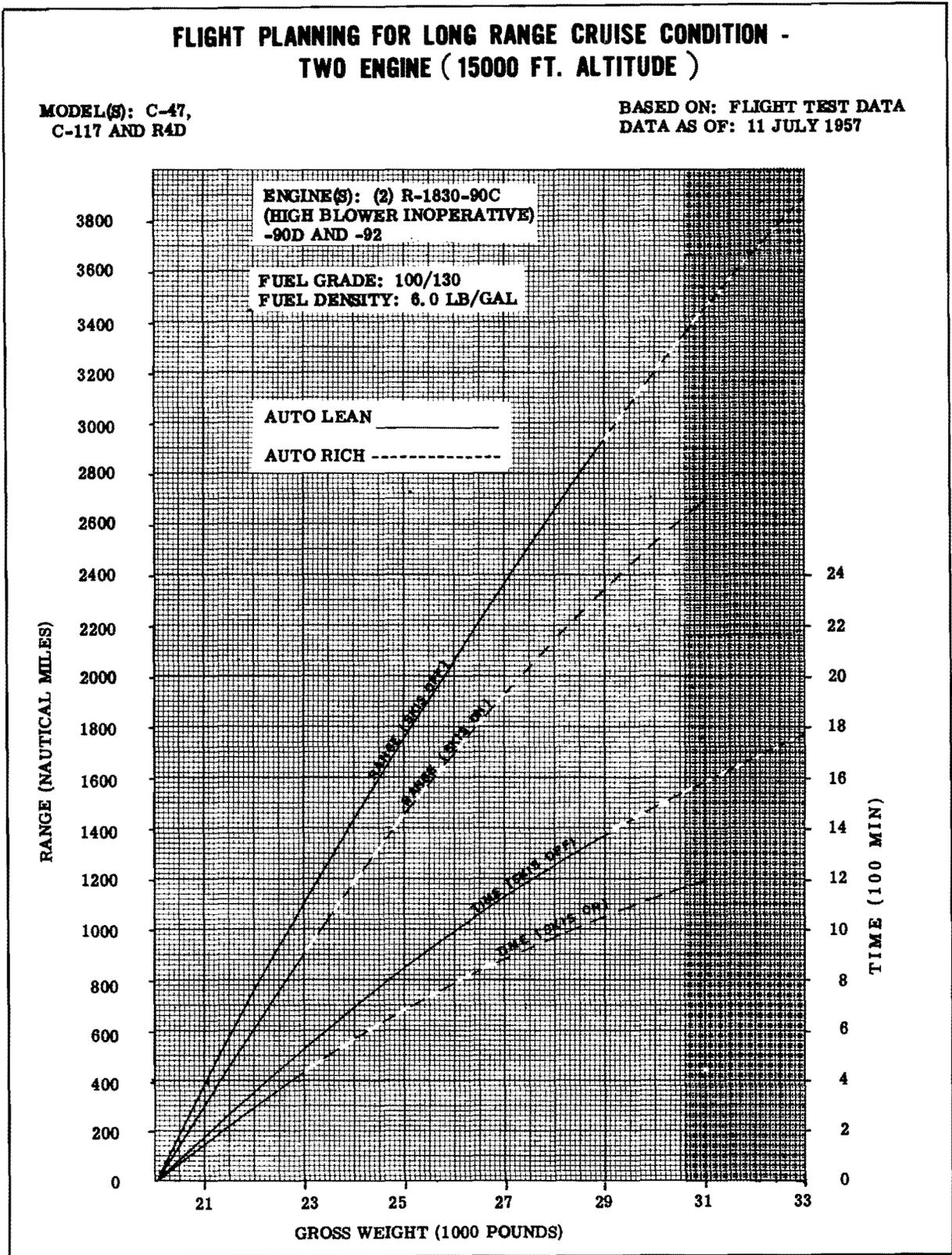


Figure A5-10. Flight Planning for Long Range Cruise Condition - Two Engines - 15000 Ft.

FLIGHT PLANNING FOR LONG RANGE CRUISE CONDITION SINGLE-ENGINE SEA LEVEL

PROPELLER: FEATHERED ON INOPERATIVE ENGINE

MODEL(S): C-47,
C-117 AND R4D

ENGINE(S): (2) R-1830-90C
(HIGH BLOWER INOPERATIVE)
-90D AND -92

BASED ON: FLIGHT TEST DATA
DATA AS OF: 11 JULY 1957

FUEL GRADE: 100/130
FUEL DENSITY: 6.0 LB/GAL

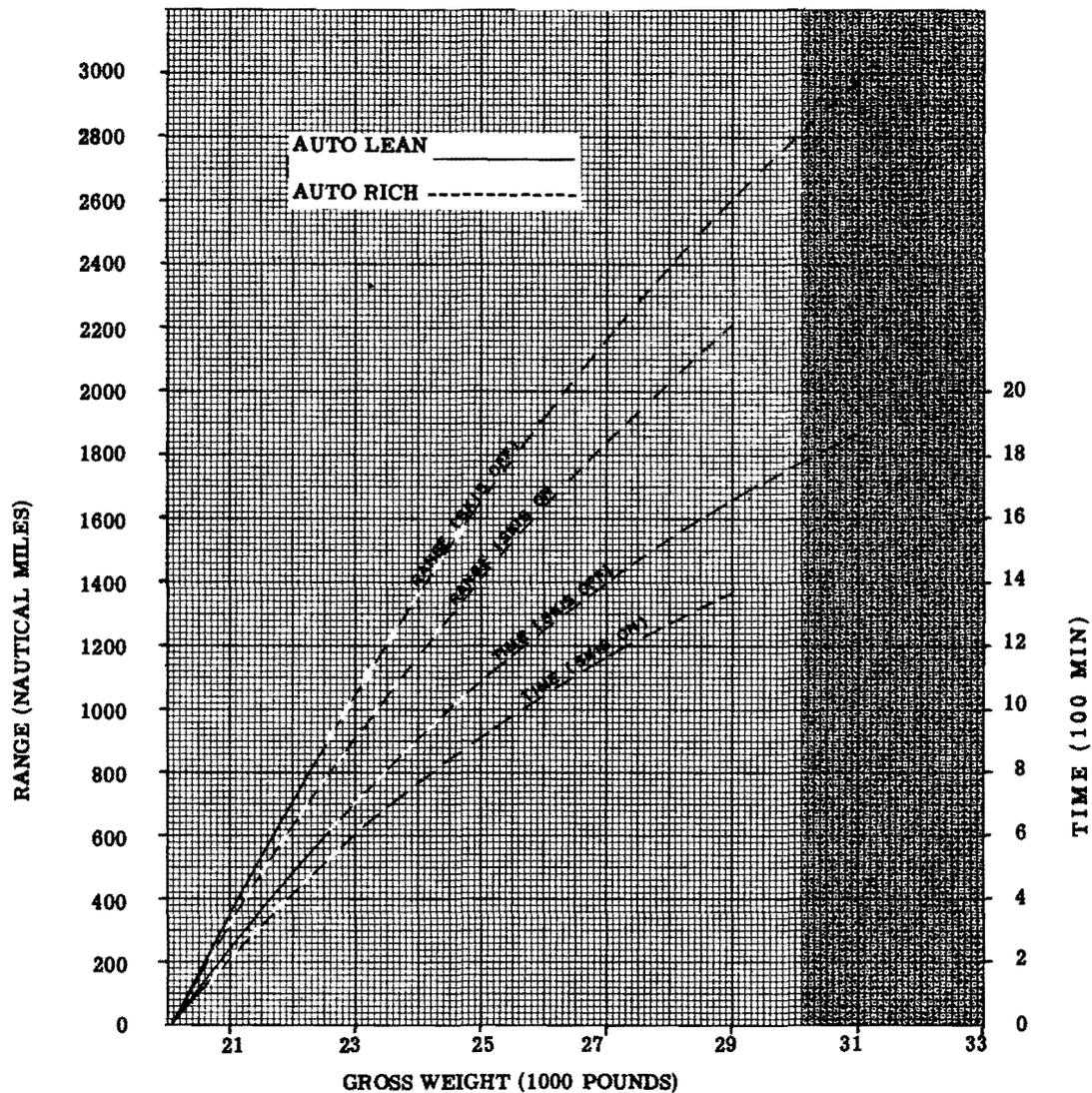


Figure A5-11. Flight Planning for Long Range Cruise Condition - Single Engine - Sea Level.

FLIGHT PLANNING FOR LONG RANGE CRUISE CONDITION SINGLE ENGINE (5000 FT.)

PROPELLER-FEATHERED ON INOPERATIVE ENGINE

MODEL(S): C-47,
C-117 AND R4D

ENGINE(S): (2) R-1830-90C
(HIGH BLOWER INOPERATIVE)
-90D AND -92

BASED ON: FLIGHT TEST DATA
DATA AS OF: 11 JULY 1957

FUEL GRADE: 100/130
FUEL DENSITY: 6.0 LB/GAL

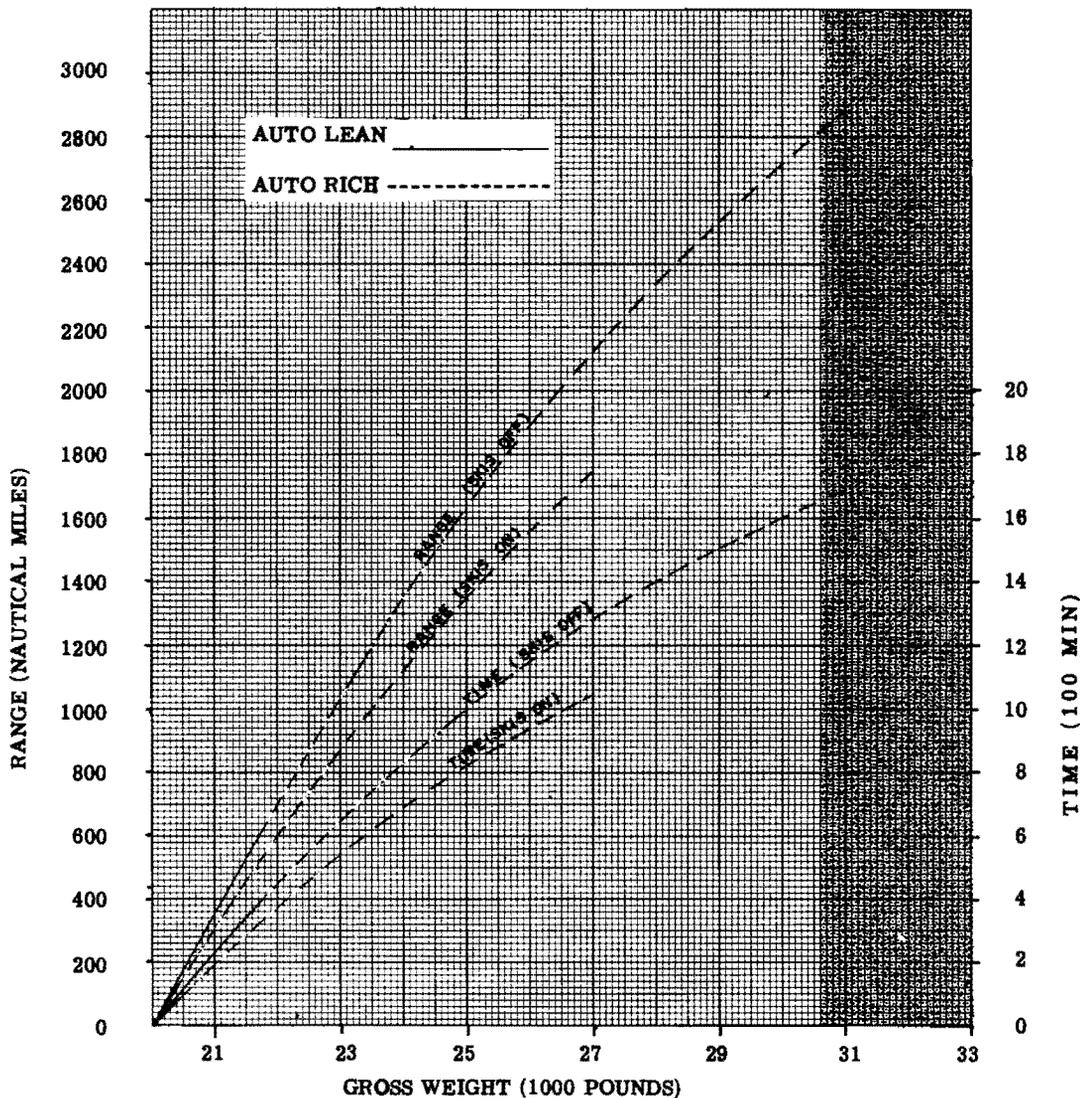


Figure A5-12. Flight Planning for Long Range Cruise Condition - Single Engine - 5000 Ft.

**FLIGHT PLANNING FOR LONG RANGE CRUISE
CONDITION - SINGLE-ENGINE (10000 FT.)**

PROPELLER-FEATHERED ON INOPERATIVE ENGINE

MODEL(S): C-47
C-117 AND R4D

ENGINE(S): (2) R-1830-90C
(HIGH BLOWER INOPERATIVE)
-90D AND -92

BASED ON: FLIGHT TEST DATA
DATA AS OF: 11 JULY 1957

FUEL GRADE: 100/130
FUEL DENSITY: 6.0 LB/GAL

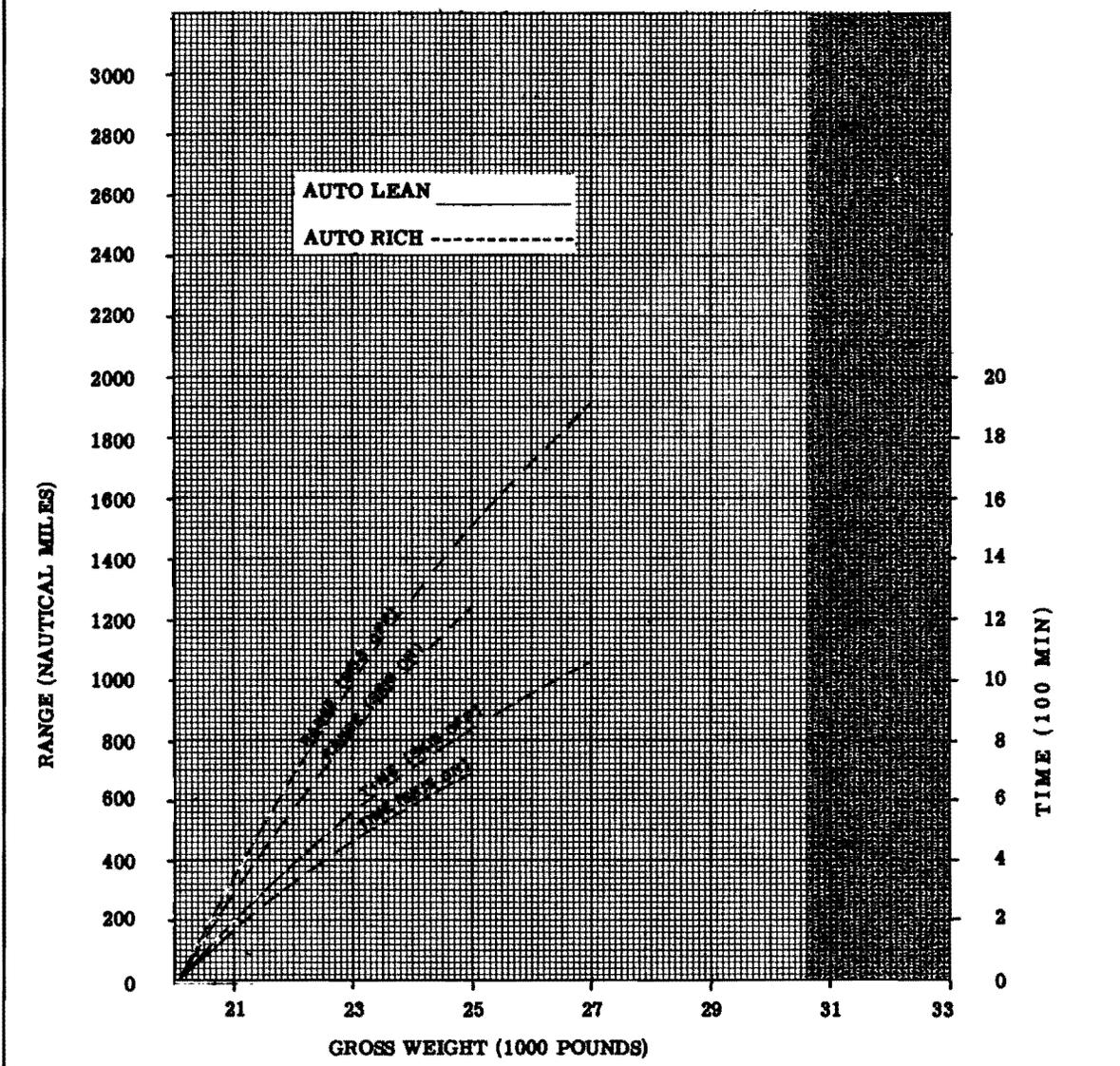


Figure A5-13. Flight Planning for Long Range Cruise Condition - Single Engine - 10000 Ft.

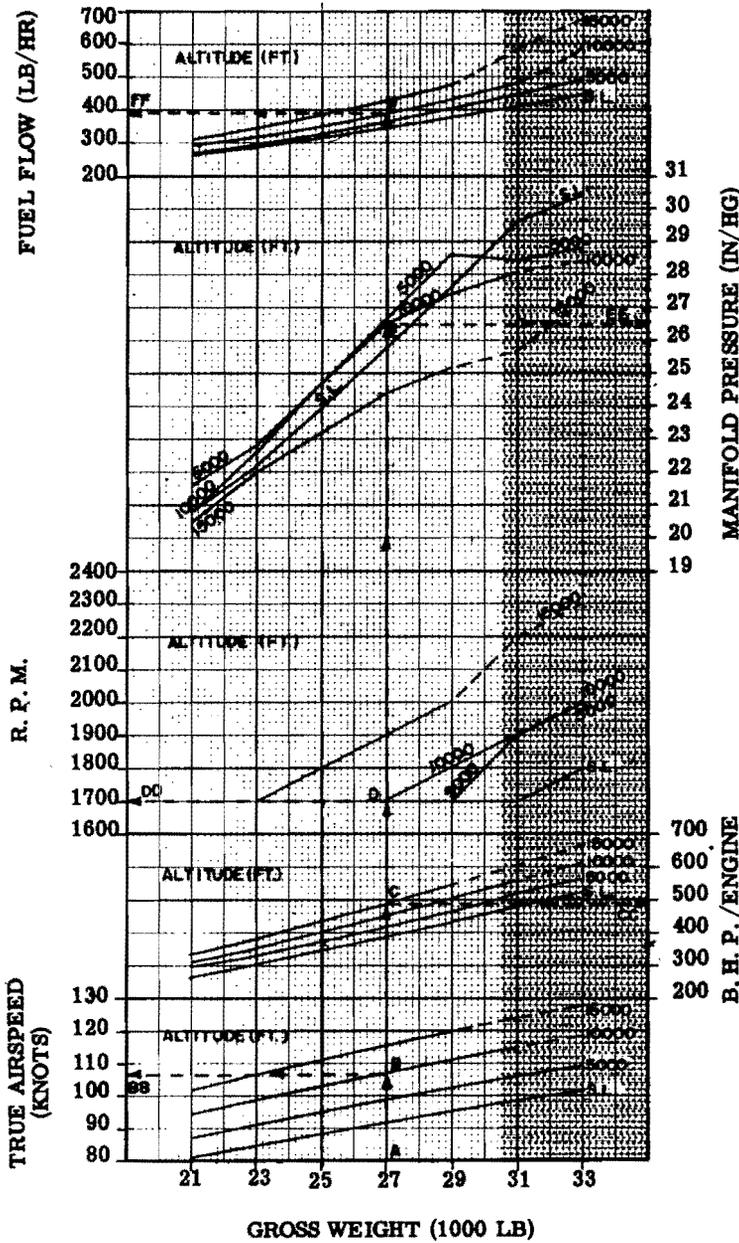
**MAXIMUM ENDURANCE POWER CONDITION - TWO-ENGINE
STANDARD DAY**

MODEL(S): C-47,
C-117 AND R4D

ENGINE(S): R-1830-90C
(HIGH BLOWER INOPERATIVE)
-90D AND -92

BASED ON: FLIGHT TEST DATA
DATA AS OF: 11 JULY 1957

FUEL GRADE: 100/130
FUEL DENSITY: 6.0 LB/GAL



AUTO LEAN _____

AUTO RICH - - - - -

SAMPLE PROBLEM

- A. GROSS WEIGHT = 27000 POUNDS.
- B, C, D, E AND F = 10,000 FEET ALTITUDE.
- BB. TRUE AIRSPEED = 106.5 KNOTS.
- CC. BRAKE HORSEPOWER = 490.
- DD. RPM = 1700.
- EE. MANIFOLD PRESSURE = 26.5.
- FF. FUEL FLOW = 390 POUNDS PER HOUR.

Figure A5-14. Maximum Endurance Power Condition - Two Engines.

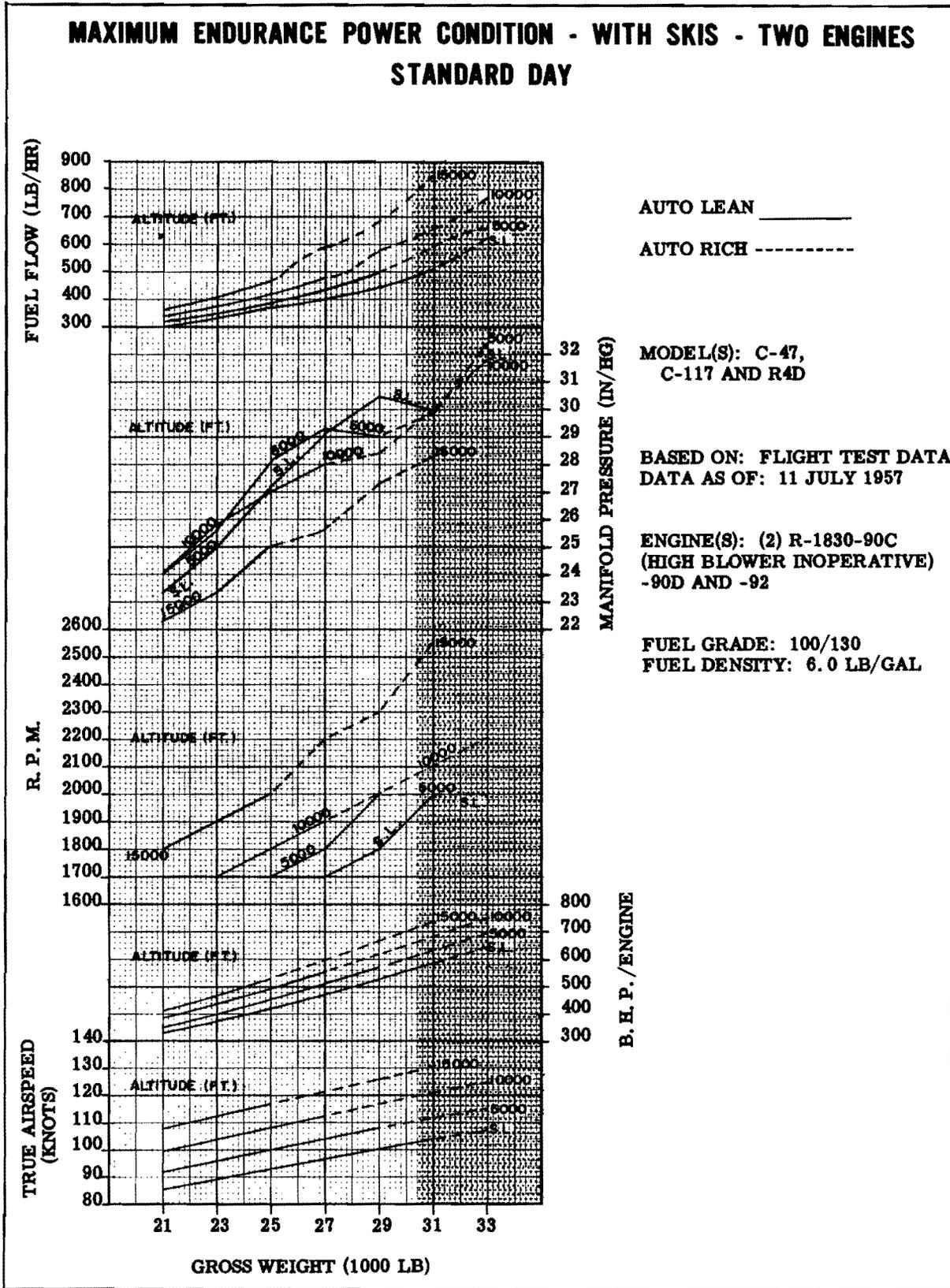


Figure A5-15. Maximum Endurance Power Condition - With Skis - Two Engines.

PART SIX LANDING

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DISCUSSION OF CHARTS.

The landing charts are included to enable the pilot to determine the length of the runway necessary to land the aircraft safely under various conditions of wind, temperature, altitude, and runway surface. Since the length of the landing ground run depends to a great extent on the coefficient of friction (μ) numerical values of μ are shown on the landing ground run charts (figures A6-1 through A6-4) corresponding to the most commonly encountered runway surface conditions.

LANDING GROUND RUN

The landing ground run charts (figures A6-1 through A6-4) are used to determine that landing ground run distance at various combinations of OAT, pressure and density altitudes (up to 16,000 feet), gross weight, actual wind component, and runway surface condition. The charts are based on the recommended touchdown speed obtained from the characteristic landing speeds chart (figure A6-5). These charts give ground run only; to compute landing distance from a 50-foot height, first determine landing ground run for prevailing runway surface conditions, then add 95 percent of the landing ground run for hard runway surface. The sum of these two distances

will give the approximate total landing distance from a 50-foot height. A sample problem is included on each chart.

CHARACTERISTIC LANDING SPEEDS.

The characteristic landing speed chart (figure A6-5) presents recommended touchdown speeds in both knots and MPH indicated airspeed with zero, $\frac{1}{4}$, $\frac{1}{2}$, and full flaps for various aircraft gross weights. All lines represent the 110 percent power off stall speed for the flap position shown. Enter the chart at the planned landing gross weight and proceed vertically to the appropriate speed curve, then proceed horizontally to the indicated airspeed.

POWER-OFF STALL SPEEDS.

Power-off stall speed charts (figure A6-6 through A6-9) are included for zero, $\frac{1}{4}$, $\frac{1}{2}$ and full DOWN (45°) flap settings. The power-off stall speeds were determined with the throttles in the CLOSED position. When power is maintained on the engines, the airflow over the wings behind the propellers is increased and therefore increases lift and lower the stalling speed. This effect varies with power setting.