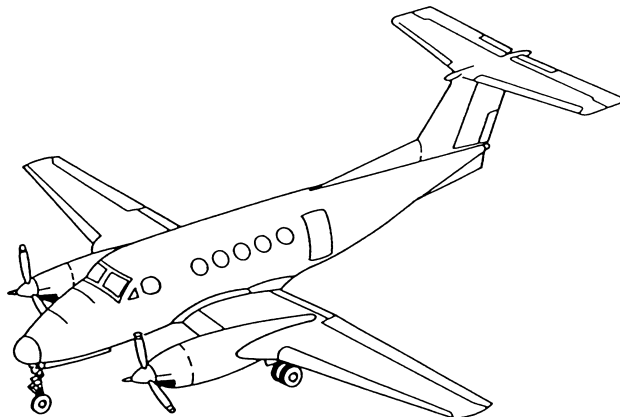


A1-C12BM-NFM-200



**SUPPLEMENT
NATOPS FLIGHT MANUAL
PERFORMANCE CHARTS FOR
NAVY MODEL
UC-12B/F/M
AIRCRAFT**

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NAVAL AIR SYSTEMS COMMAND.

**PERFORMANCE
DATA**

11

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DEPARTMENT OF THE NAVY
NAVAL AIR SYSTEMS COMMAND
RADM WILLIAM A. MOFFETT BUILDING
47123 BUSE ROAD, BLDG 2272
PATUXENT RIVER, MD 20670-1547

1 February 2007

LETTER OF PROMULGATION

1. The Naval Air Training and Operating Procedures Standardization (NATOPS) Program is a positive approach toward improving combat readiness and achieving a substantial reduction in the aircraft mishap rate. Standardization, based on professional knowledge and experience, provides the basis for development of an efficient and sound operational procedure. The standardization program is not planned to stifle individual initiative, but rather to aid the Commanding Officer in increasing the unit's combat potential without reducing command prestige or responsibility.
2. This manual standardizes ground and flight procedures but does not include tactical doctrine. Compliance with the stipulated manual requirements and procedures is mandatory except as authorized herein. In order to remain effective, NATOPS must be dynamic and stimulate rather than suppress individual thinking. Since aviation is a continuing, progressive profession, it is both desirable and necessary that new ideas and new techniques be expeditiously evaluated and incorporated if proven to be sound. To this end, Commanding Officers of aviation units are authorized to modify procedures contained herein, in accordance with the waiver provisions established by OPNAV Instruction 3710.7, for the purpose of assessing new ideas prior to initiating recommendations for permanent changes. This manual is prepared and kept current by the users in order to achieve maximum readiness and safety in the most efficient and economical manner. Should conflict exist between the training and operating procedures found in this manual and those found in other publications, this manual will govern.
3. Checklists and other pertinent extracts from this publication necessary to normal operations and training should be made and carried for use in naval aircraft.

A handwritten signature in black ink, appearing to read "S. R. Eastburg", written over the typed name and title.

S. R. EASTBURG
Rear Admiral, United States Navy
By direction of
Commander, Naval Air Systems Command

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The following Interim Changes have been previously incorporated into this manual.

INTERIM CHANGE NUMBER(S)	REMARKS/PURPOSE

The following Interim Changes have been incorporated into this Change/Revision.

INTERIM CHANGE NUMBER(S)	REMARKS/PURPOSE

Interim Changes Outstanding — To be maintained by the custodian of this manual.

INTERIM CHANGE NUMBER(S)	ORIGINATOR/DATE (or DATE/TIME GROUP)	PAGES AFFECTED	REMARKS/PURPOSE

Summary of Applicable Technical Directives

Information relating to the following technical directives has been incorporated in this manual.

CHANGE NUMBER	DESCRIPTION	DATE INC. IN MANUAL	VISUAL IDENTIFICATION

Information relating to the following applicable technical directives will be incorporated in a future change.

CHANGE NUMBER	DESCRIPTION	DATE INC. IN MANUAL	VISUAL IDENTIFICATION

NATOPS FLIGHT MANUAL SUPPLEMENT

UC-12B/F/M PERFORMANCE CHARTS

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LIST OF ABBREVIATIONS/ACRONYMS

A

ac. Alternating Current.
ADC. Air Data Computer.
ADF. Automatic Direction Finder.
ADI. Attitude Director Indicator.
ADIZ. Air Defense Identification Zone.
AFCS. Automatic Flight Control System.
AGL. Above Ground Level.
ALTSEL. Altitude Preselect Mode.
AM. Amplitude Modulated.
AP. Autopilot.
ATC. Air Traffic Control.
ATIS. Automatic Terminal Information System.
AVGAS. Aviation Gasoline.

B

BC. Back Course.
BFO. Beat Frequency Oscillator.
BIT. Built-In Test.
BTU. British Thermal Unit.

C

°C. Degrees Celsius.
CACT. Contracted Aircrew Training.
CAS. Calibrated Airspeed.
CDI. Course Deviation Indicator.
CDU. Control Display Unit.

cg. Center of Gravity.
CU. Computer Unit.
CVR. Cockpit Voice Recorder.
CW. Continuous Wave.

D

dB. Decibel.
dc. Direct Current.
DH. Decision Height.
DME. Distance Measuring Equipment.
DR. Dead Reckoning.

E

EAS. Equivalent Airspeed.
ELT. Emergency Locator Transmitter.
EODF. Emergency On Deck Fuel.
ETA. Estimated Time of Arrival.
ETE. Estimated Time En Route.
ETP. Equal Time Point.

F

°F. Degrees Fahrenheit.
FAA. Federal Aviation Administration.
FAF. Final Approach Fix.
FD. Flight Director.
FDI. Flight Director Indicator.
FDR. Flight Data Recorder.
FMS. Flight Management System.
FOD. Foreign Object Damage.

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fpm. Feet Per Minute.

FRS. Fleet Replacement Squadron/School.

ft. Feet.

G

g. Gravity.

GA. Go Around.

GAL. U.S. Gallon(s).

GCA. Ground Control Approach.

GMT. Greenwich Mean Time.

GPS. Global Positioning System.

GPU. Ground Power Unit.

GPWS. Ground Proximity Warning System.

GRU. GPS/Receiver Unit.

GS. Glidescope, Groundspeed.

GS₁. Groundspeed from Takeoff to Midpoint in Flight.

GS₂. Groundspeed from Midpoint to Departure Point.

GS_C. Groundspeed to Continue.

GS_R. Groundspeed to Return.

H

HF. High Frequency.

Hg. Mercury.

Hr. Hour.

HSI. Horizontal Situation Indicator.

Hz. Hertz.

I

IAS. Indicated Airspeed.

ICAO. International Civil Aviation Organization.

ICS. Intercommunication System.

IEC. Interstate Electronics Corporation.

IFR. Instrument Flight Rules.

ILS. Instrument Landing System.

IMC. Instrument Meteorological Condition.

IOAT. Indicated Outside Air Temperature.

ISA. International Standard Atmosphere.

ITT. Interstage Turbine Temperature.

IVSI. Instantaneous Vertical Speed Indicator.

K

KCAS. Knots Calibrated Airspeed.

kHz. Kilohertz.

KIAS. Knots Indicated Airspeed.

KTAS. Knots True Airspeed.

L

LLWAS. Low Level Windshear Alert System.

LOC. Localizer.

LOM. Locator Outer Marker.

LOP. Line Of Position.

LS. Left Seat.

LSB. Lower Sideband.

LSK. Left Select (soft) Keys.

M

MAC. Mean Aerodynamic Chord.

MAHP. Missed Approach Holding Point.

MAP. Missed Approach Point.

Mb. Millibars.

MDA. Minimum Descent Altitude.

MEA. Minimum En Route IFR Altitude.

MFD. Multi-Function Display.

MHz. Megahertz.

MIN. Minutes.

MMO. Maximum Mach Operation.

MRT. Minimum Radius Turn.

MSL. Mean Sea Level.

N

NAVAIDs. Navigational Aids.

NDB. Non-Directional Beacon.

NFO. Naval Flight Officer.

nm. Nautical Mile.

NoPT. No Procedure Turn Required.

O

OAT. Outside Air Temperature.

OBS. Observer.

OPARS. Optimum Path Aircraft Routing System.

P

PDL. Portable Data Loader.

PF. Pilot Flying.

PIC. Pilot In Command.

PNF. Pilot Not Flying.

PNR. Point of No Return.

pph. Pounds Per Hour.

psi. Pounds per Square Inch.

psid. Pounds per Square Inch Differential.

psig. Pounds per Square Inch Gauge.

PSR. Point of Safe Return.

R

RAIM. Receiver Autonomous Integrity Monitoring.

RCP. Radar Computer Unit.

RCR. Runway Condition Reading.

REV. Reverse Thrust.

RMI. Radio Magnetic Indicator.

rpm. Revolutions Per Minute.

RPU. Receiver Processor Unit.

RS. Right Seat.

RSK. Right Select (soft) Keys.

RT. Receiver/Transmitter.

S

SBY. Standby.

SEC. Second(s).

shp. Shaft Horsepower.

SID. Standard Instrument Departure.

SL. Sea Level.

STAR. Standard Terminal Arrival Routes.

STD. Standard.

T

T₁. All Fuel Aboard at Takeoff.

T2P. Transport Second Pilot.

T3P. Transport Third Pilot.

TA. Transport Aircrewman.

TACAN. Tactical Air Navigation.

TAS. True Airspeed.

TBO. Time Between Overhaul.

TCS. Touch Control Steering.

TDWR. Terminal Doppler Weather Radar.

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TGT. Turbine Gas Temperature Indicators.

TOLD. Takeoff and Landing Data.

TPC. Transport Plane Commander.

TRA. Traffic Advisory Display.

TRK. Track.

U

UHF. Ultrahigh Frequency.

USB. Upper Sideband.

V

V₁. Takeoff Decision Speed.

V₂. Takeoff Safety Speed.

V_A. Maneuvering Speed.

V_{ac}. Volts Alternating Current.

V_{dc}. Volts Direct Current.

VDP. Visual Descent Point.

V_F. Design Flap Speed.

V_{FE}. Maximum Flap Extended Speed.

VFR. Visual Flight Rules.

VHF. Very High Frequency.

V_{LE}. Maximum Landing Gear Extension/Extended Speed.

VLF. Very Low Frequency.

V_{LO}. Maximum Landing Gear Operating Speed.

V_{LOF}. Lift-Off Speed.

VMC. Visual Meteorological Condition.

V_{MCA}. Minimum Control Speed, Air.

V_{MCG}. Minimum Control Speed, Ground.

V_{MO}. Maximum Operating Limit Speed.

VOR. VHF Omnidirectional Range.

VP. Vertical Profile.

V_R. Rotation Speed.

V_{REF}. Approach Speed.

V_S. Vertical Speed, Stalling Speed.

VSI. Vertical Speed Indicator.

V_{SO}. Stalling Speed.

V_{SSE}. Safe One-Engine Inoperative Speed.

VSWR. Vertical Scan Weather Radar.

V_{XSE}. Single-Engine Angle-of-Climb Speed.

V_X. Two-Engine Angle-of-Climb Speed.

V_Y. Two-Engine Rate-of-Climb Speed.

V_{YSE}. Single-Engine Rate-of-Climb Speed.

W

WF. Wind Factor.

Z

ZFW. Zero Fuel Weight.

PREFACE

SCOPE

NATOPS manuals are issued by the authority of the Chief of Naval Operations and under the direction of the Commander, Naval Air Systems Command in conjunction with the Naval Air Training and Operating Procedures Standardization (NATOPS) program. NATOPS publications provide the best available operating instructions for most circumstances. However, no manual can cover every situation or be a substitute for sound judgment; operational situations may require modification of the procedures contained therein. Read these publications from cover to cover. It is your responsibility to have a complete knowledge of their contents.

Note

See NATOPS Flight Manual UC-12B/F/M Aircraft (Chapter 1) for more information on the scope and purpose of this manual, and for any special requirements or procedures that compliment those contained in this preface.

OTHER RELEVANT PUBLICATIONS

Current versions of the following publications comprise the family of NATOPS and tactical manual publications that complement the information contained within this manual:

A1-C12BM-NFM-000 (NATOPS Flight Manual UC-12 B/F/M Aircraft)

A1-C12BM-NFM-500 (NATOPS Pilot's Card Checklist)

A1-C12BM-NFM-800 (Passenger Information Card)

A1-C12BM-NFM-700 (Functional Checkflight Checklist)

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CHANGE SYMBOLS

Revised text is indicated by a black vertical line in the right margin of the page, like the one printed next to this paragraph. The change symbol shows where there has been a change. The change might be material added or information restated. A change symbol in the margin by the chapter number and title indicates a new or completely revised chapter. Change symbols are not normally used to mark the locations of deleted information.

SPECIAL TERMINOLOGY IN NATOPS PUBLICATIONS

The following special terminology and meanings apply to the contents of this and other NATOPS publications:

WARNINGS, CAUTIONS, AND NOTES

The following definitions apply to WARNINGS, CAUTIONS, and Notes:

WARNING

An operating procedure, practice, or condition, etc., that may result in injury or death, if not carefully observed or followed.

CAUTION

An operating procedure, practice, or condition, etc., that may result in damage to equipment if not carefully observed or followed.

Note

An operating procedure, practice, or condition, etc., that is essential to emphasize.

Requirement for compliance

“Shall” is used only when application of a procedure is mandatory.

“Should” is used only when application of a procedure is recommended.

“May” and “need not” are used only when application of a procedure is optional.

“Will” is used only to indicate futurity, and never to indicate any degree of requirement for applicability of a procedure.

Requirement for landing aircraft

Land immediately means execute a landing without delay. The primary consideration is to ensure the survival of the occupants. (Applicable to helicopters and other VTOL aircraft).

Land as soon as possible means land at the first landing site at which a safe landing may be made.

Land as soon as practical means extended flight is not recommended. The landing and duration of flight is at the discretion of the pilot in command.

Aircraft Version Markings

(B), (F), and (M) indicates the aircraft version to which the marked text is applicable (e.g., Bravo (B), Foxtrot (F), or Mike (M)).

PART XI

Performance Data

Chapter 37 — Introduction

Chapter 38 — Standard Data

Chapter 39 — Takeoff

Chapter 40 — Climb

Chapter 41 — (B/F) Range

Chapter 42 — (M) Range

Chapter 43 — Endurance

Chapter 44 — In-Flight Refueling

Chapter 45 — Descent

Chapter 46 — Landing

Chapter 47 — Emergency Operation

CHAPTER 37

Introduction

37.1 INTRODUCTION

This part presents performance data for preflight and in-flight mission planning to include a glossary of terms, list of abbreviations, sample problem, and performance charts with accompanying explanations. The charts are arranged in eight parts: standard data, takeoff, climb, range, endurance, descent, landing, and emergency operation. Aircraft performance may vary with pilot technique, but the variations can be minimized by establishing preferred operating procedures and basing the calculation of performance data on the assumption that these procedures will be followed. Normal and emergency operating procedures have been established and provided in Parts III and V of A1-C12BM-NFM-000

37.2 GLOSSARY OF TERMS

37.2.1 Airspeed Terminology

1. Minimum control speed air (V_{MCA}), 86 KIAS — The minimum flight speed at which the aircraft is directionally controllable as determined in accordance with Federal Aviation Regulations. The aircraft certification conditions include one engine becoming inoperative and windmilling, a 5° bank toward the operative engine, takeoff power on operative engine, landing gear up, flaps in takeoff position, and most rearward center of gravity (cg). For some conditions of weight and altitude, stall can be encountered at speeds above V_{MCA} as established by the certification procedure described above, in which event stall speed must be regarded as the limit of effective directional control.
2. Airspeed position error correction — Correction added to indicate airspeed to obtain calibrated airspeed.
3. Approach speed (V_{REF}) — Target approach speed for a given aircraft weight and flap configuration. V_{REF} is $1.3 \times V_{SO}$.
4. Best single-engine angle of climb speed (V_{XSE}), 115 KIAS at 12,500 lb — The airspeed that delivers the greatest gain in altitude in the shortest possible horizontal distance for single-engine operation.
5. Best single-engine rate of climb speed (V_{YSE}), 121 KIAS at 12,500 lb — The airspeed that delivers the greatest gain in altitude in the shortest possible time for single-engine operation.
6. Best two-engine angle-of-climb speed (V_X), 100 KIAS at 12,500 lb — The airspeed that provides the greatest gain in altitude for the horizontal distance traveled.
7. Best two-engine rate-of-climb speed (V_Y), 121 KIAS at 12,500 lb — The airspeed that provides the greatest gain in altitude for the elapsed time.
8. Calibrated Airspeed (CAS) — Indicated airspeed corrected for position error because of location of the static ports. $CAS = IAS +$ airspeed position error correction. Instrument error is assumed to be zero in this manual.
9. Takeoff decision speed (V_1) — V_1 is a go/no-go speed above which the takeoff continues and below which takeoff is abandoned in the event of an engine failure or other situation requiring an aborted takeoff. In the UC-12, V_1 is equal to V_R .

10. Cruise climb — A speed giving the best combination of altitude gain, fuel consumption, and distance covered.
11. Design flap speed (V_F) — The highest speed permissible at which wing flaps may be actuated.
12. Groundspeed (GS) — The speed of the aircraft relative to the ground.
13. Indicated Airspeed (IAS) — Airspeed as read from the aircraft indicator. Indicated airspeeds given in this manual assume zero instrument error.
14. Knots Calibrated Airspeed ($KCAS$) — Calibrated airspeed expressed in knots.
15. Knots Indicated Airspeed ($KIAS$) — Indicated airspeed expressed in knots.
16. Mach number — The ratio of true airspeed to local speed of sound.
17. Lift-off speed (V_{LOF}) — The speed at which the aircraft lifts off the ground. V_{LOF} is equal to V_R plus 3 knots.
18. Maneuvering speed (V_A) — 181 KIAS flaps up, 111 KIAS flaps down. The maximum speed at which full or abrupt application of aerodynamic control or penetration of approved atmospheric conditions will not overstress the aircraft.
19. Maximum flap extended speed (V_{FE}) — The highest speed permissible with wing flaps in a prescribed extended position.
20. Maximum landing gear extension/extended speed (V_{LE}) — (B) 182 KIAS, (F/M) 181 KIAS. The maximum speed at which the landing gear can be safely extended.
21. Maximum landing gear operating speed (V_{LO}) — (B) 164 KIAS, (F/M) 163 KIAS. The maximum speed at which the landing gear can be safely retracted.
22. Maximum operating limit/speed (V_{MO}) — (B) 245 KIAS, (F/M) 259 KIAS. The speed limit that may not be deliberately exceeded in normal flight operations.
23. Minimum control speed, ground (V_{MCG}) — (B/F) 85 KIAS, (M) 86 KIAS. The minimum speed at which directional control can be maintained if one engine becomes inoperative on takeoff roll with takeoff power on operative engine.
24. Rotation speed (V_R) — The speed at which the aircraft is rotated to the takeoff attitude. V_R is equal to V_1 but not less than $1.05 \times V_{MCA}$. It must also be high enough to allow V_X to be attained before the aircraft reaches a height of 50 feet.
25. Safe one-engine inoperative speed (V_{SSE}), 104 KIAS — A speed above both V_{MCA} and stall speed, selected to provide a margin of lateral and directional control when one engine suddenly becomes inoperative. Intentional failing of one engine below this speed is prohibited. Single engine operations below V_{SSE} are not recommended.
26. Stalling speed (V_S) — Minimum steady flight speed, the lowest speed at which the aircraft is controllable.
27. Stalling speed (V_{SO}) — Minimum steady flight speed at which the aircraft is controllable in the landing configuration.
28. Takeoff safety speed (V_2) — This must be not less than $1.1 \times V_{MCA}$ or $1.2 V_2$ and must be attained before reaching a height of 50 feet.

29. True Airspeed (**TAS**) — Calibrated airspeed corrected for compressibility effects and air density different from sea level standard. $TAS = CAS + \Delta V_C \times 1/\sigma$.
30. Turbulent air penetration speed, 170 KIAS — The airspeed that gives the best assurance of avoiding excessive stress loads and inadvertent stalls because of gusts.
31. Wind Factor (**WF**) — As used in this manual, consists of half the gust component not to exceed 20 knots. For example, in winds of 10 knots gusting to 20 knots, the gust component is 10 knots. WF equals 5 knots.

37.2.2 Meteorological Terminology

1. Altimeter position error correction — Correction added to indicated pressure altitude to obtain true pressure altitude.
2. Altimeter setting — Barometric pressure corrected to sea level.
3. Ambient temperature — Local temperature of undisturbed air.
4. Indicated pressure altitude — The altitude read from an altimeter when the barometric subscale has been set to 29.92 inches Hg (1,013.2 millibars). Position errors may be determined from **Figures 38-4** and **38-5**.
5. International Standard Atmosphere (**ISA**) — Standard atmosphere is composed of the following:
 - a. The air is a dry, perfect gas.
 - b. The temperature at sea level is 15 °C (59 °F).
 - c. The pressure at sea level is 29.92 inches Hg (1,013.2 millibars).
 - d. The temperature gradient from sea level to the altitude at which the temperature is -56.5 °C (-69.7 °F) is 0.00198 °C (0.003566 °F) per foot and zero above that altitude.
6. Indicated Outside Air Temperature (**IOAT**) — The temperature as read from the temperature indicator.
7. Outside Air Temperature (**OAT**) — The free air static temperature obtained either from in-flight temperature indications adjusted for instrument error and compressibility effects or from ground meteorological sources.
8. Pressure altitude — Altitude measured from standard sea level pressure (29.92 inches Hg) by a pressure (barometric) altimeter. It is the indicated pressure altitude corrected for position and instrument error. In this manual, altimeter instrument errors are assumed to be zero.
9. Specific gravity — The ratio of the weight of a volume of liquid to an equal volume of water.
10. Specific weight — This is weight (pound) per unit volume (gallon) of a liquid.
11. Station pressure — Actual atmospheric pressure at field elevation.
12. Temperature deviation from standard — The difference between the ambient temperature and the standard day temperature at a given pressure altitude.
13. Wind — Wind velocities given as variables in this manual are headwind or tailwind components of reported winds.
14. Wind angle — The angle between wind direction and runway heading.

37.2.3 Power Terminology

1. Beta range — Ground handling range. In the beta range of the power lever quadrant, the propeller blade angle is not governed by the propeller governor but is controlled by the power lever position. In the UC-12, the beta range is further subdivided into the “beta for taxi” and “beta plus power” ranges. The beta for taxi range is aft of the flight idle stop and forward of the reversing range. In this region, the blade angle can be changed without a change in gas generator rpm. Blade angles of +5° to +18° are controllable in this region. The beta plus power range is designated by red and white stripes on the power lever gate. In this region, the N₁ speed progressively increases from idle to approximately 85 percent as the power lever is moved aft to maximum reverse. This equates to blade angles from +5° to -9°.
2. Cruise climb — The maximum power approved for normal climb. These powers are torque or temperature (ITT/TGT) limited.
3. Igniter — A device used to start the burning of the fuel/air mixture in the combustion chamber of the engine.
4. Interstage Turbine Temperature/Turbine Gas Temperature (ITT/TGT) — The gas temperature as measured at the inlet of the second stage turbine stator assembly (between compressor and power turbines) in the engine.
5. Impeller — The main rotor of the engine radial compressor that increases the velocity of the air that it pumps.
6. Maximum continuous power — The maximum engine power setting. Use of this setting should be limited to normal takeoff operations and emergency situations.
7. Maximum cruise power — The maximum engine power setting approved for cruise that is not time limited.
8. Maximum endurance power — The engine power setting used to obtain maximum time aloft.
9. Maximum range power — The engine power setting used to obtain maximum distance.
10. Performance cruise power — Intermediate cruise engine power setting between maximum cruise power and maximum range power.
11. Plenum — The duct, housing, and enclosure used to contain intake air under pressure for the engine and oil cooler.
12. Reverse thrust — The thrust produced when the propeller blades are rotated past zero pitch.
13. Shaft Horsepower (shp) — Power output of the engine delivered to the propeller shaft. It is proportional to propeller rpm and torque as shown by the equation: $shp = 0.00019 \times \text{propeller rpm} \times \text{torque in foot-pounds}$.
14. Stator — A row of stationary airfoils that direct the airflow between the rows of rotor blades in the engine.
15. Takeoff power — The maximum power rating. Use of this setting should be limited to normal takeoff operations and emergency situations.
16. Torque — An indication of power output of the engine acting to turn the propeller.
17. Turbine — The rotating fan-like device actuated by a reaction to the kinetic energy of the engine exhaust gases. It is used in the gas generator portion to drive the compressor and accessories and in the power section to drive the propeller.
18. Turboprop — A type of gas turbine engine that converts heat energy primarily into propeller shaft torque.

37.2.4 Control and Instrument Terminology

1. Condition lever (fuel shutoff lever) — The fuel shutoff lever actuates a valve in the fuel control unit that controls the flow of fuel at the fuel control outlet and regulates the idle range from low to high idle.
2. ITT/TGT — Eight probes wired in parallel indicate the temperature between the compressor and power turbines.
3. N_1 tachometer (gas generator rpm) — The tachometer registers the rpm of the gas generator with 100 percent representing a gas generator speed of 37,500 rpm.
4. Power lever gas generator (N_1 rpm) — This lever modulates engine power from full reverse thrust to takeoff. The position for idle represents the lowest recommended level of power for flight operation.
5. Propeller control lever (N_2 rpm) — This lever requests the propeller governor to maintain rpm at a selected value and, in the maximum decrease rpm position, feathers the propeller.
6. Propeller governor — This governor will maintain the selected speed requested by the propeller control lever except on reverse selection where the power lever interconnection to the integral pneumatic area of the governor will select a lower speed. The pneumatic area during normal selection will act as an overspeed limiter.
7. Torquemeter — The torquemeter system measures the shaft output torque. Torque values are obtained by tapping into two outlets on the reduction gearcase and recording the differential pressure from the outlets. The relationship between torquemeter pressure and propeller shaft power is given in the Engine Operating Limitations tables in A1-C12BM-NFM-000. The instrument readout is in foot-pounds/percent.

37.2.5 Chart and Graph Terminology

1. Accelerate-go distance — The distance required to accelerate an aircraft to V_R/V_1 and, assuming failure of an engine at the instant that speed is attained, continue takeoff on the remaining engine accelerating to V_2 while climbing to 50 feet.
2. Accelerate-stop distance — The distance required to accelerate an aircraft to V_1 and, assuming failure of an engine at the instant that speed is attained, to bring the aircraft to a stop.
3. Angle of attack — The angle between the chord of the wing and the relative wind.
4. Bingo range — The distance from the operating area to the landing site.
5. C_g — The point at which an aircraft will balance longitudinally if suspended.
6. Climb gradient — The ratio of the change in altitude, during a portion of a climb, to the change in horizontal distance.
7. Data basis — The type of information used in preparation of performance data.
8. Demonstrated crosswind — The maximum 90° crosswind component for which adequate control of the aircraft during takeoff and landing was actually demonstrated during certification tests. This value is considered limiting.
9. Fuel density — Fuel weight per gallon.
10. Fuselage station — A location on the aircraft fuselage from an imaginary vertical reference plane passing through the aircraft centerline.

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11. Gross weight — The operational weight of the aircraft for the situation being considered.
12. Route segment — A part of the flight route identified by geographic locations or points at which a definite radio fix can be established.
13. Service ceiling — Maximum altitude at which a 100-fpm rate of climb is obtainable.
14. Zero Fuel Weight (ZFW) — The maximum aircraft ramp weight minus the weight of fuel on board. Any weight above the maximum allowable value must be loaded as fuel.

37.3 SAMPLE PROBLEM

The use of performance charts is illustrated by an example UC-12B mission from Billings, Montana to Denver, Colorado.

37.3.1 Conditions

At Billings:

1. OAT — 25 °C (77 °F).
2. Field elevation — 3,606 feet.
3. Altimeter setting — 29.56.
4. Wind — 360° at 10 knots.
5. Runway 34 length — 5,585 feet.
6. Route of trip:

BIL-V19-CZI-V247-DGW-V19E-CYS-V19-DEN.

Weather conditions: IMC for cruise altitude of 27,000 feet.

ROUTE SEGMENT	AVG MAG CRSE/VAR	DISTANCE NM	MEA FT
BIL-SHR	115°/15° E	88	8,000
SHR-CZI	136°/15° E	57	9,000
CZI-DGW	132°/14° E	95	8,000
DGW-CYS	138°/13° E	47	8,000
	169°/13° E	46	8,000
CYS-DEN	172°/13° E	81	8,000

WIND AT FL 270 DIR/KT	OAT AT CRUISE ALT °C	OAT AT MEA °C	MEA ALT SET. IN. HG
010°/30	-26	12	29.56
350°/40	-26	12	29.60
040°/45	-26	12	29.60
040°/45	-26	12	29.60
040°/45	-26	12	29.60
040°/45	-26	12	29.60

Reference: En route low altitude charts L-8 and L-9.

At Denver:

1. OAT — 15 °C (59 °F).
2. Field elevation — 5,331 feet.
3. Altimeter setting — 29.60.
4. Wind — 270° at 10 knots.
5. Runway 26L length — 10,004 feet.

37.3.2 Takeoff Calculations

To determine pressure altitude at origin and destination airports, add 100 feet to field elevation for each 0.1 inch Hg below 29.92 and subtract 100 feet from field elevation for each 0.1 inch Hg above 29.92.

Pressure altitude at Billings:

$$29.92 - 29.56 = 0.36 \text{ inch Hg}$$

The pressure altitude at Billings is 360 feet above the field elevation.

$$3,606 + 360 = 3,966 \text{ feet.}$$

Pressure altitude at Denver:

$$29.92 - 29.60 = 0.32 \text{ inch Hg.}$$

The pressure altitude at Denver is 320 feet above the field elevation.

$$5,331 + 320 = 5,651 \text{ feet.}$$

Takeoff performance has been presented to determine the takeoff weight, takeoff distance, field requirements (accelerate-stop and accelerate-go), and takeoff flight path assuming that an engine failure occurs at V_1 . The following illustrates the use of these charts:

Enter **Figure 39-1** at 3,966 feet and 25 °C to determine the maximum takeoff weight for these conditions.

1. Weight (flaps 0 percent) — 12,900 pounds.

The following example assumes the aircraft is loaded so that takeoff weight is 12,000 pounds:

Enter **Figure 38-12** at 10 knots windspeed at 20°. Read left to determine headwind component of 9.5 knots. Read down to determine crosswind component of 7 knots.

Enter **Figure 39-9** at 25 °C, 3,966 feet pressure altitude, 12,000 pounds, and 9.5 knots headwind.

1. Ground roll — 2,750 feet.
2. Total distance over a 50-foot obstacle — 4,200 feet.
3. V_R — 102 knots.

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4. V_2 — 118 knots.

Enter **Figure 39-17** at 25 °C, 3,966 feet pressure altitude, 12,000 pounds, and 9.5 knots headwind:

1. Accelerate–stop field length — 5,550 feet.
2. V_1 — 102 knots.

Enter **Figure 39-21** at 25 °C, 3,966 feet pressure altitude, 12,000 pounds, and 9.5 knots headwind component:

1. Takeoff distance over 50–foot obstacle — 8,920 feet.
2. Speeds:
 - a. V_R — 102 knots.
 - b. V_{LOF} — 105 knots.
 - c. V_2 — 118 knots.

For line speed, enter bottom of **Figure 39-27** with the V_{LOF} (105 knots) and trace up. Enter left side of chart at the ground–roll distance (2,750 feet) and trace right. Follow solid guidelines left, enter left side of chart with check distance of 2,000 feet, trace right following dashed guidelines to 23 seconds after brake release, and trace down to read 88 knots.

37.3.2.1 Takeoff Climb Gradient — One Engine Inoperative

Enter **Figure 39-25** at +25 °C, 3,966 feet pressure altitude, and 12,000 pounds:

1. Climb gradient — 3.8 percent.
2. Climb speed — 120 knots.

Calculation of horizontal distance required to clear an obstacle:

A 3.8 percent climb gradient is 38 feet of vertical height per 1,000 feet of horizontal distance.

Note

The graphs for takeoff climb gradient assume a zero–wind condition. Climbing into a headwind will result in higher angles of climb, hence better obstacle clearance capabilities.

Calculation of the horizontal distance to clear an obstacle 100 feet above the runway surface:

Distance from 50 feet to 100 feet Above Ground Level (AGL) = 50 feet.

$$(100-50) \times (1,000/38) = 1,316 \text{ feet.}$$

$$\text{Total Distance} = 8,920 + 1,316 = 10,236 \text{ feet.}$$

The results are illustrated in **Figure 37-1**.

37.3.3 Flight Planning

The following calculations provide examples for flight planning at various parameters of weight, power, altitude, and temperature. Charts are included for: time, fuel, and distance to cruise climb; time, fuel, and distance to descend; performance cruise power at 1,700 rpm; maximum cruise power at 1,900 rpm; maximum range power at 1,700 rpm; bingo range; and holding time.

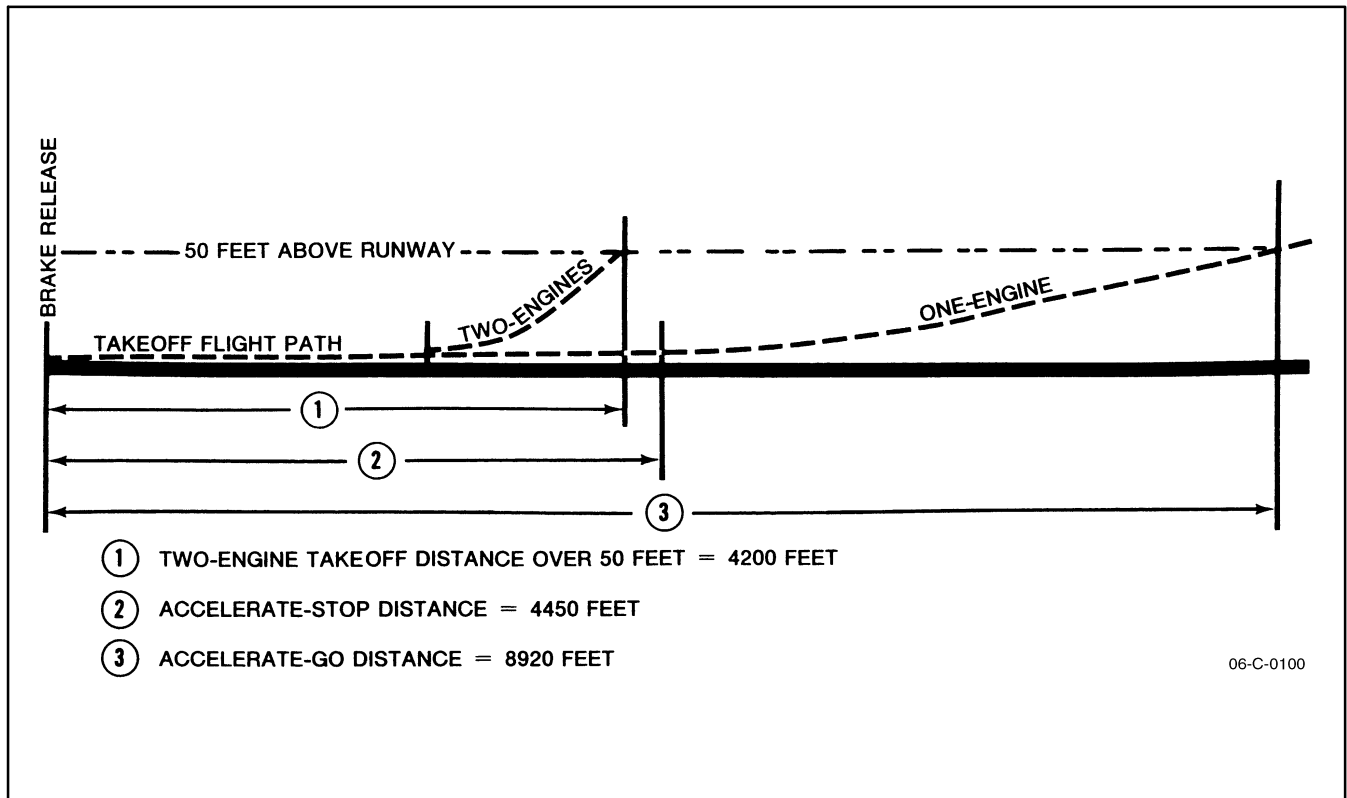


Figure 37-1. Takeoff Profile

Calculations for flight time, block speed, and fuel requirements for a proposed flight are detailed as follows:

Note

For example purposes, the differences between [MSL](#) altitudes and pressure altitudes have been ignored in en route calculations.

37.3.3.1 ISA Conversion

Enter [Figure 38-3](#) at the conditions indicated:

Billings to Denver:

1. Pressure altitude — 27,000 feet.
2. OAT — -26°C .
3. ISA condition — ISA $+12^{\circ}\text{C}$.

37.3.3.1.1 Time, Fuel, and Distance to Climb

Enter [Figure 40-10](#) at 25°C to 3,966 feet, and to 12,000 pounds. Then enter at -20°C , trace to 27,000 feet and 12,000 pounds, and read:

1. Time to climb — $22-2 = 20$ minutes.
2. Fuel used to climb — $242-20 = 222$ pounds.
3. Distance traveled — $60-4 = 56$ nm.

37.3.3.2 Performance Cruise Power True Airspeed

Enter (B) Figure 41-5 or (F) Figure 41-6 at 27,000 feet, trace right to -20 °C (IOAT), trace down to read (B) 251 Knots True Airspeed (KTAS); or enter (F) Figure 41-6 at 27,000 feet, trace right to -11 °C (IOAT), trace down to read (F) 268 KTAS.

37.3.3.3 Cruise Torque Setting

Enter Figure 41-1 at International Standard Atmosphere (ISA) +12 °C (-20 °C IOAT) and read torque at 27,000 feet as 1,340 foot-pounds torque per engine.

37.3.3.4 Cruise Fuel Flow

Enter Figure 41-3 at ISA +12 °C (-20 °C IOAT) and read fuel flow at 27,000 feet as 252 pounds per hour per engine, or a total fuel flow of 504 pounds per hour.

37.3.3.5 Flight Planning Results

Note

For flight planning, enter the charts at the forecasted ISA conditions; for en route power settings and fuel flow, enter the charts at the actual IOAT.

Time and fuel used were calculated at performance cruise power at 1,700 rpm as follows:

Time = Distance/Groundspeed.

Fuel used = (Time)(Total Fuel Flow).

MAGNETIC HEADING	ROUTE	DISTANCE NM
124°	BIL-SHR	88-56 = 32
148°	SHR-CZI	57
136°	CZI-DGW	95
141°	DGW-CYS	47
176°		46
179°	CYS-DEN	81-67 = 14

ESTIMATED GROUND SPEED KNOTS	TIME AT CRUISE ALTITUDE HR:MIN	FUEL USED FOR CRUISE LB
267	0:07	60
290	0:12	99
262	0:22	183
266	0:10	89
287	0:10	81
289	0:03	25

Note

- Distance required to climb or descend has been subtracted from segment distance.
- Wind correction has not been applied to climb or descent.

ITEM	TIME HR:MIN	FUEL POUNDS	DISTANCE NM
Start, Runup, Taxi, and Takeoff	00:00	90	0
Climb	00:20	222	56
Cruise	1:04	537	291
Descent	00:15	112	67
Total	1:39	961	414

Total flight time: 1 hour, 39 minutes.

Block speed: 414 nm divided by 1 hour, 39 minutes = 251 knots.

37.3.3.6 Reserve Fuel Requirement

Instrument Flight Rules (IFR) reserve fuel requirements shall be a minimum of 45 minutes of fuel (computed at max endurance at 10,000 feet) or 10 percent of fuel required to fly the flight, whichever is greater.

Reserve fuel = 45 minutes \times 460 lb/hr (230 lb/hr per engine) = 345 pounds.

37.3.3.7 Maximum Zero Fuel Weight Requirement

Ramp weight – total fuel weight = 12,090 – 1,306 = 10,784 pounds (zero fuel weight).

The maximum zero fuel weight limit of 11,000 pounds has not been exceeded.

37.3.4 Landing Calculations

The estimated landing weight is determined by subtracting the fuel required for the trip from the ramp weight.

1. Ramp weight — 12,090 pounds.
2. Fuel use expected for total trip — 961 pounds.
3. Landing weight (12,090 – 961) — 11,129 pounds.

Note

For the remainder of this example, a landing weight of 10,772 pounds was assumed.

37.3.4.1 For Landing Distance

Enter **Figure 46-14** at 15 °C, 5,651 feet, 10,772 pounds, and 10 knots headwind component:

1. Ground roll — 1,800 feet.
2. Total over 50-foot obstacle — 2,800 feet.
3. V_{REF} — 98 knots.

37.3.4.2 For Two-Engine Waveoff

Enter **Figure 46-7** at 15 °C, 5,651 feet, 10,772 pounds:

1. Rate of climb — 1,660 fpm.

37.3.5 Use of Performance Charts

1. In addition to presenting the answer for a particular set of conditions, the example on a chart also presents the order in which the various scales on the chart should be used. For instance, if the first item in the example is OAT, then enter the chart at the known OAT.
2. The reference lines indicate where to begin following guidelines. Always project to the reference line first, then follow the guidelines to the next known item by maintaining the same proportional distance between the guideline above and guideline below the projected line. For instance, if the projected line intersects the reference line in the ratio of 30 percent down/70 percent up between the guidelines, then maintain this same 30 percent/70 percent relationship between the guidelines all the way to the next known item or answer.
3. The associated conditions define the specific conditions from which performance parameters have been determined. They are not intended to be used as instructions; however, performance values determined from charts can only be achieved if the specified conditions exist.
4. The full amount of usable fuel is available for all approved flight conditions.
5. Notes have been provided on various graphs to approximate performance with ice vanes extended. The effect is estimated by either entering the chart at a temperature higher than the actual temperature or adjusting the final results obtained from the chart by a fixed percentage. The effect is approximate and will vary, depending upon airspeed, temperature, altitude, and ambient conditions. At lower altitudes where torque limitations are possible, the effect of ice vane extension will be less depending upon how much power can be recovered after the ice vanes have been extended.

37.4 PERFORMANCE PLANNING CARD

A Takeoff and Landing Data (TOLD) Card (**Figure 37-2**) is provided to assist the pilot in recording data applicable to the mission, and it may be reproduced at the local level. The data card provides readily available information for takeoff, takeoff emergencies, and arrival. Pertinent data required to fill in the blanks on the card should be completed from the appropriate performance charts contained in this manual and from the existing conditions at the time of takeoff or landing. The interpretation of the data entered on the card is subject to a number of variables with which the pilot should be familiar. For example, rapid changes in weather may produce marked variations between precomputed and actual performance. Such factors as braking during takeoff and runway surface conditions can seriously affect the performance that is precomputed and entered on the card; however, the card is very useful as a guide to expected aircraft performance and should be computed prior to takeoff.

TAKEOFF			
T/O DISTANCE _____		V_r _____	V_2 _____
MIN. T/O PWR _____	GROSS WT _____	C.G. _____	
ACCEL/STOP DISTANCE _____	ACCEL/GO DISTANCE _____		
LINE CHECK _____	KTS/ _____	DISTANCE	TIME
SINGLE ENGINE NET GRADIENT OF CLIMB _____			

LANDING	
GROSS WEIGHT _____	FINAL APPROACH SPEED _____
STOPPING DISTANCE _____	

06-E-00101

Figure 37-2. Performance Planning (TOLD) Card

CHAPTER 38

Standard Data

38.1 DESCRIPTION OF CHARTS

38.1.1 Standard Atmosphere

This tabular listing gives the standard day conditions at various altitudes for density ratio, temperature, speed of sound, pressure, and pressure ratio. To find the value of any item, read right of the altitude in the appropriate column. Refer to [Figure 38-1](#).

38.1.2 Temperature Conversion/Correction

For compressibility, this chart is used to determine ambient temperature from the true airspeed and indicated outside air temperature. A secondary scale is provided for Fahrenheit temperatures. To use chart, enter left side at outside air temperature and trace right to true airspeed. Trace up or down and read ambient air temperature. Refer to [Figure 38-2](#).

38.1.3 International Standard Atmosphere Conversion

This chart shows the ISA condition for various combinations of true outside temperature and pressure altitude. To use chart, enter at the true outside air temperature and trace up. Enter at the pressure altitude, trace right. Where the two tracings intersect, read the interpolated ISA condition. Refer to [Figure 38-3](#).

38.1.4 Altimeter Position Error Correction (Normal System)

This chart is used to correct the pressure altimeter reading for deviations related to the ability of the normal static system to sense true outside pressure. To use chart, enter at indicated airspeed, then trace up to interpolated pressure altitude line, then trace left to altimeter correction feet to be added. Refer to [Figure 38-4](#).

38.1.5 Altimeter Position Error Correction (Emergency System)

The altimeter position error correction is used to correct the pressure altimeter reading for deviations related to the ability of the emergency static system to sense true outside pressure. To use chart, enter at indicated airspeed, trace down to interpolated pressure altitude, then trace left to altimeter correction feet to be added. Refer to [Figure 38-5](#).

38.1.6 Airspeed Conversion

This chart gives Mach number and true airspeed from indicated or calibrated airspeed, pressure altitude, and ambient temperature. To use chart, enter left side at indicated airspeed. Trace right to pressure altitude. Trace down to Mach number and continue tracing down to ambient temperature. Trace left to read true airspeed. Refer to [Figure 38-6](#).

38.1.7 Airspeed Calibration (Normal System) Ground Roll

This chart corrects indicated airspeed to calibrated airspeed for the normal pitot static system for operation during ground roll. Indicated airspeed assumes no instrument error. To use chart, enter at IAS, trace up to reference line, then trace left to CAS during ground roll. Refer to [Figure 38-7](#).

38.1.8 Airspeed Calibration (Emergency System)

This chart corrects indicated airspeed to calibrated airspeed for the error in the pilot emergency static air source. Indicated airspeed assumes a zero instrument error. To use chart, enter at IAS, trace up to reference line, then trace left to CAS. Refer to [Figure 38-8](#).

38.1.9 Standard Units Conversion

This chart is used for conversion of units presented in the performance charts into other commonly used units. Refer to [Figure 38-9](#).

38.1.10 Fuel Density/Weight Versus Temperature

Specific weight for JP-4, JP-5, and JP-8 fuels is shown on this chart showing the variation with temperature. This chart shows average specific weight and is subject to a variation of ± 0.2 pound per gallon. For accurate results, a hydrometer should be used to find the specific gravity of the fuel. This can be multiplied by 8.35 to get specific weight in pounds per gallon. To use chart, enter at bottom at fuel temperature, trace up to fuel grade, and then left to read specific weight. To obtain fuel weight, multiply specific weight by fuel quantity in gallons. Refer to [Figure 38-10](#).

38.1.11 Stall Speeds, Power Idle

This chart gives the indicated stall speed for various flap settings and bank angles. Gross weights from 9,000 to 13,500 pounds are presented. To use chart, enter graph at weight, trace up to flap configuration, trace right to reference line, trace along guidelines to angle of bank, and then trace right to read stall speed. Refer to [Figure 38-11](#).

38.1.12 Takeoff/Landing Crosswind

This chart shows the headwind and crosswind components of the wind relative to runway or flight path. Wind angle is found by subtracting wind direction from runway heading. To use chart, enter graph at wind angle line and wind speed circle. Trace down for crosswind component or trace left for headwind component. Refer to [Figure 38-12](#).

ICAO STANDARD DAY

STANDARD SL CONDITIONS:				CONVERSION FACTORS:			
TEMPERATURE - 15°C (59°F)				1 IN. Hg - 70.727 LB/SQ FT			
PRESSURE - 29.921 IN. Hg; 2116.216 LB/SQ FT				1 IN. Hg - 0.49116 LB/SQ IN.			
DENSITY - .0023769 SLUGS/CU FT				1 KNOT - 1.151 M.P.H.			
SPEED OF SOUND - 1116.89 FT SEC; 661.7 KNOTS				1 KNOT - 1.688 FT/SEC			
ALTITUDE FEET	DENSITY RATIO σ	$\frac{1}{\sqrt{\sigma}}$	TEMPERATURE		SPEED OF SOUND KNOTS	PRESSURE IN. Hg.	PRESSURE RATIO δ
			°C	°F			
0	1.000	1.0000	15.000	59.000	661.7	29.921	1.0000
1,000	.9711	1.0148	13.019	55.434	659.5	28.856	.9644
2,000	.9428	1.0299	11.038	51.868	657.2	27.821	.9298
3,000	.9151	1.0454	9.056	48.302	654.9	26.817	.8962
4,000	.8881	1.0611	7.076	44.735	652.6	25.842	.8637
5,000	.8617	1.0773	5.094	41.169	650.3	24.896	.8320
6,000	.8359	1.0938	3.113	37.603	648.7	23.978	.8014
7,000	.8106	1.1107	1.132	34.037	645.6	23.088	.7716
8,000	.7860	1.1279	-0.850	30.471	643.3	22.225	.7428
9,000	.7620	1.1456	-2.831	26.905	640.9	21.388	.7148
10,000	.7385	1.1637	-4.812	23.338	638.6	20.577	.6877
11,000	.7155	1.1822	-6.793	19.772	636.2	19.791	.6614
12,000	.6932	1.2011	-8.774	16.206	633.9	19.029	.6360
13,000	.6713	1.2205	-10.756	12.640	631.5	18.292	.6113
14,000	.6500	1.2403	-12.737	9.074	629.0	17.577	.5875
15,000	.6292	1.2606	-14.718	5.508	626.6	16.886	.5643
16,000	.6090	1.2815	-16.699	1.941	624.2	16.216	.5420
17,000	.5892	1.3028	-18.680	-1.625	621.8	15.569	.5203
18,000	.5699	1.3246	-20.662	-5.191	619.4	14.942	.4994
19,000	.5511	1.3470	-22.643	-8.757	617.0	14.336	.4791
20,000	.5328	1.3700	-24.624	-12.323	614.6	13.750	.4595
21,000	.5150	1.3935	-26.605	-15.889	612.1	13.184	.4406
22,000	.4976	1.4176	-28.587	-19.456	609.6	12.636	.4223
23,000	.4806	1.4424	-30.568	-23.022	607.1	12.107	.4046
24,000	.4642	1.4678	-32.549	-26.588	604.6	11.597	.3876
25,000	.4481	1.4938	-34.530	-30.154	602.1	11.103	.3711
26,000	.4325	1.5206	-36.511	-33.720	599.6	10.627	.3552
27,000	.4173	1.5480	-38.492	-37.286	597.1	10.168	.3398
28,000	.4025	1.5762	-40.474	-40.852	594.6	9.725	.3250
29,000	.3881	1.6052	-42.455	-44.419	592.1	9.297	.3107
30,000	.3741	1.6349	-44.436	-47.985	589.5	8.885	.2970
31,000	.3605	1.6654	-46.417	-51.551	586.9	8.488	.2837
32,000	.3473	1.6968	-48.398	-55.117	584.4	8.106	.2709
33,000	.3345	1.7291	-50.379	-58.683	581.8	7.737	.2586
34,000	.3220	1.7623	-52.361	-62.249	579.2	7.382	.2467
35,000	.3099	1.7964	-54.342	-65.816	576.6	7.041	.2353
36,000	.2981	1.8315	-56.323	-69.382	574.0	6.712	.2243
36,089	.2971	1.8347	-56.500	-69.700	573.7	6.683	.2234
37,000	.2843	1.8753				6.397	.2138
38,000	.2710	1.9209				6.097	.2038
39,000	.2583	1.9677				5.811	.1942
40,000	.2462	2.0155				5.538	.1851

UC-12M-F0122

Figure 38-1. Standard Atmosphere

MODEL: UC-12B
 DATE: 14 MAY 1979
 DATA BASIS: ESTIMATED

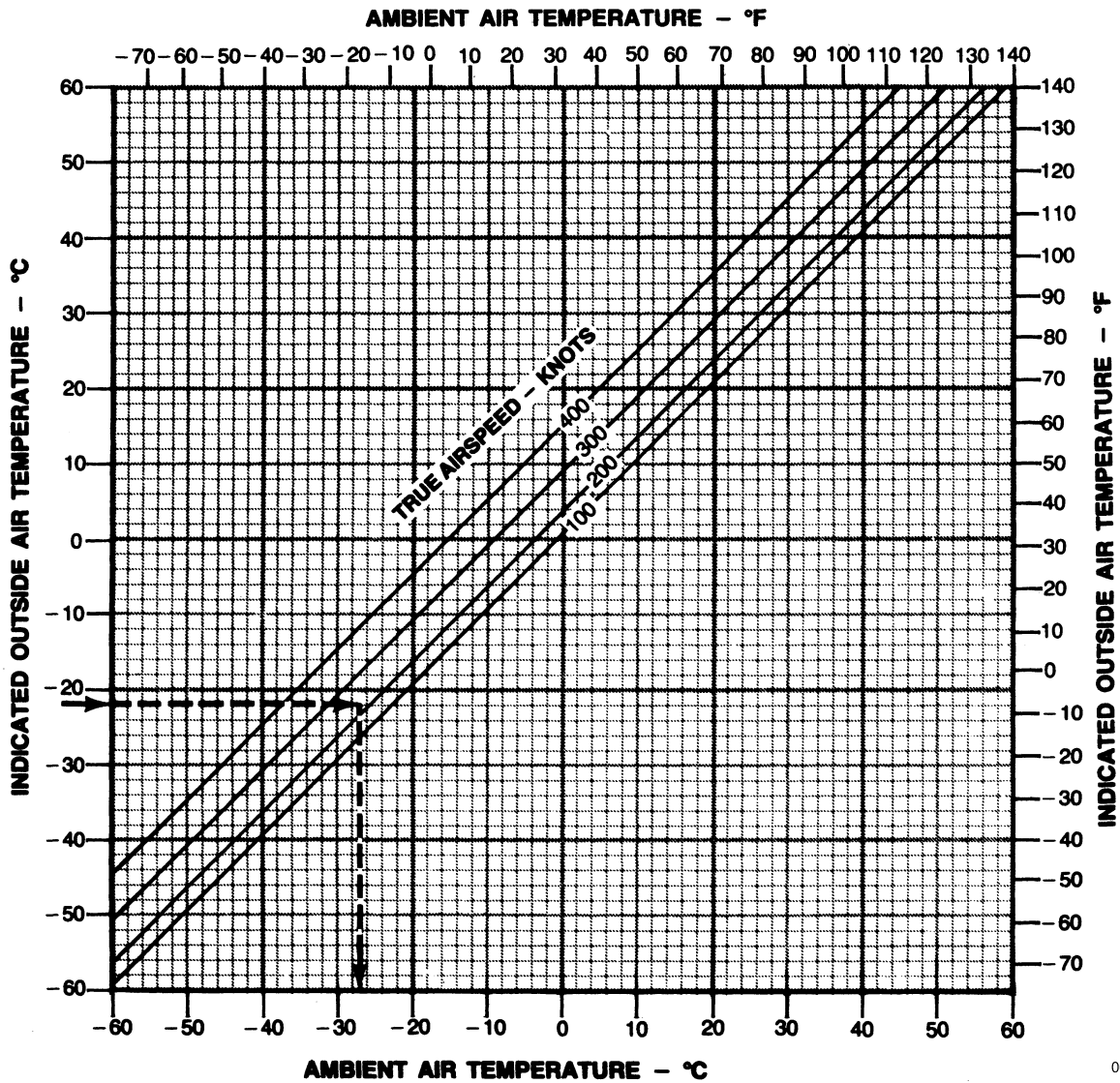
ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LB/GAL

CONFIGURATION:

GEAR: UP
 FLAPS: UP

EXAMPLE:

INDICATED AIR TEMPERATURE: -22 °C
 TRUE AIRSPEED: 220 KNOTS
 AMBIENT AIR TEMPERATURE: -27 °C



06-C-0103

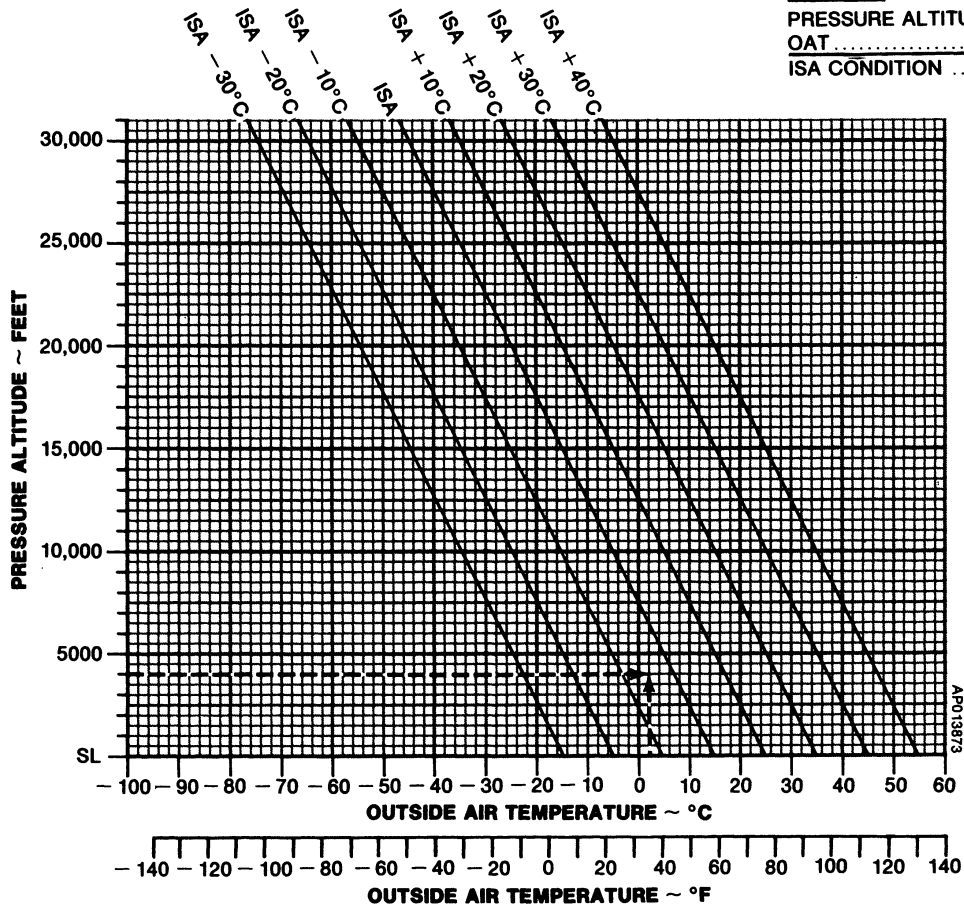
Figure 38-2. Temperature Conversion/Correction for Compressibility

PRESSURE ALTITUDE VS OUTSIDE AIR TEMPERATURE

MODEL: UC-12B
 DATE: 11 JANUARY 1988
 DATA BASIS: CALCULATED

ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:
 PRESSURE ALTITUDE.... 4000 FT
 OAT..... 2°C
 ISA CONDITION ISA - 5°C



AP013873

06-C-0104

Figure 38-3. ISA Conversion

MODEL: UC-12M
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

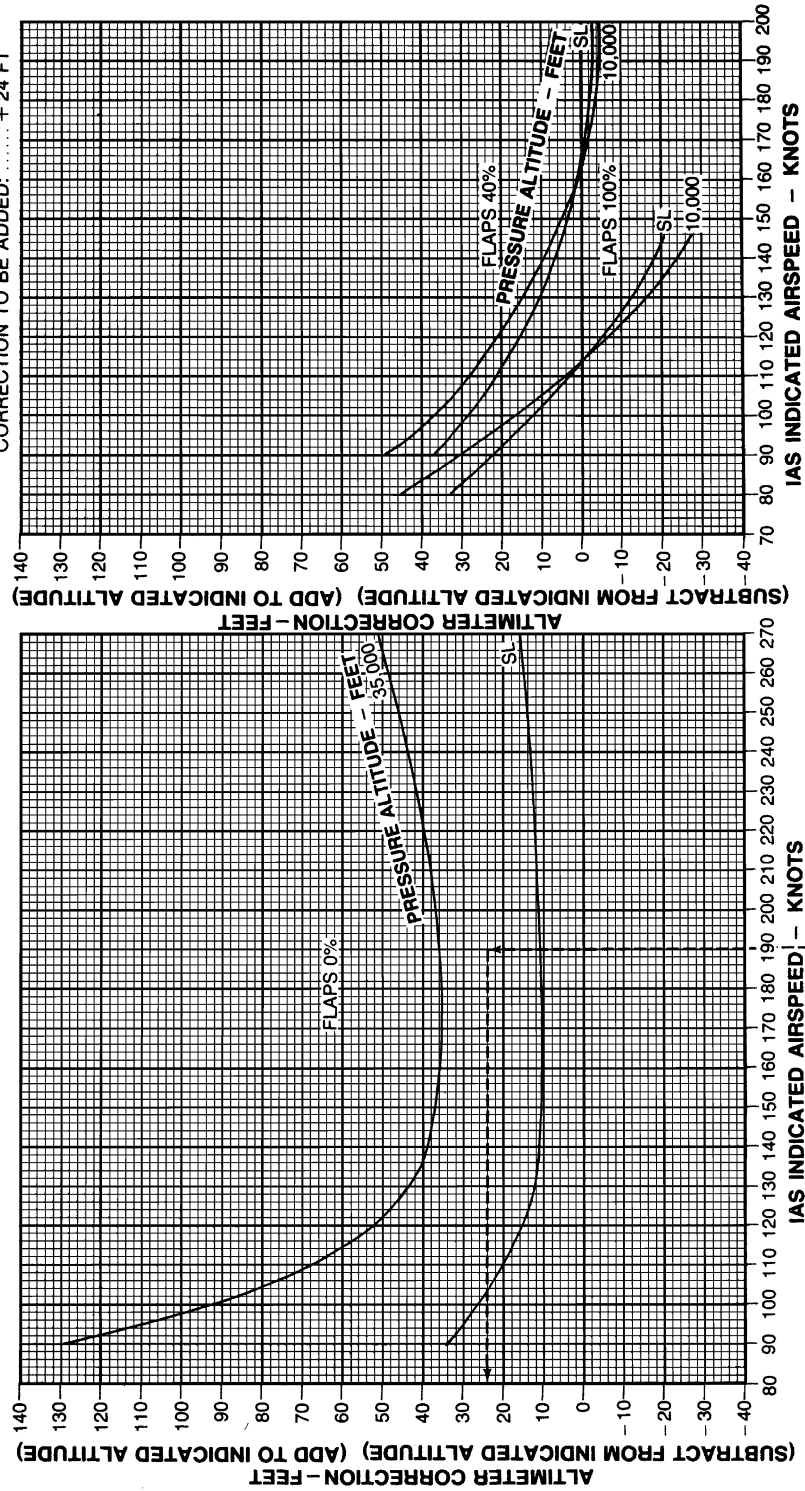
CONFIGURATION:

LANDING GEAR: ALL POSITIONS

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

FLAPS: UP (0%)
 PRESSURE ALTITUDE: 24,000 FT
 INDICATED AIRSPEED: 190 KNOTS
 CORRECTION TO BE ADDED: + 24 FT



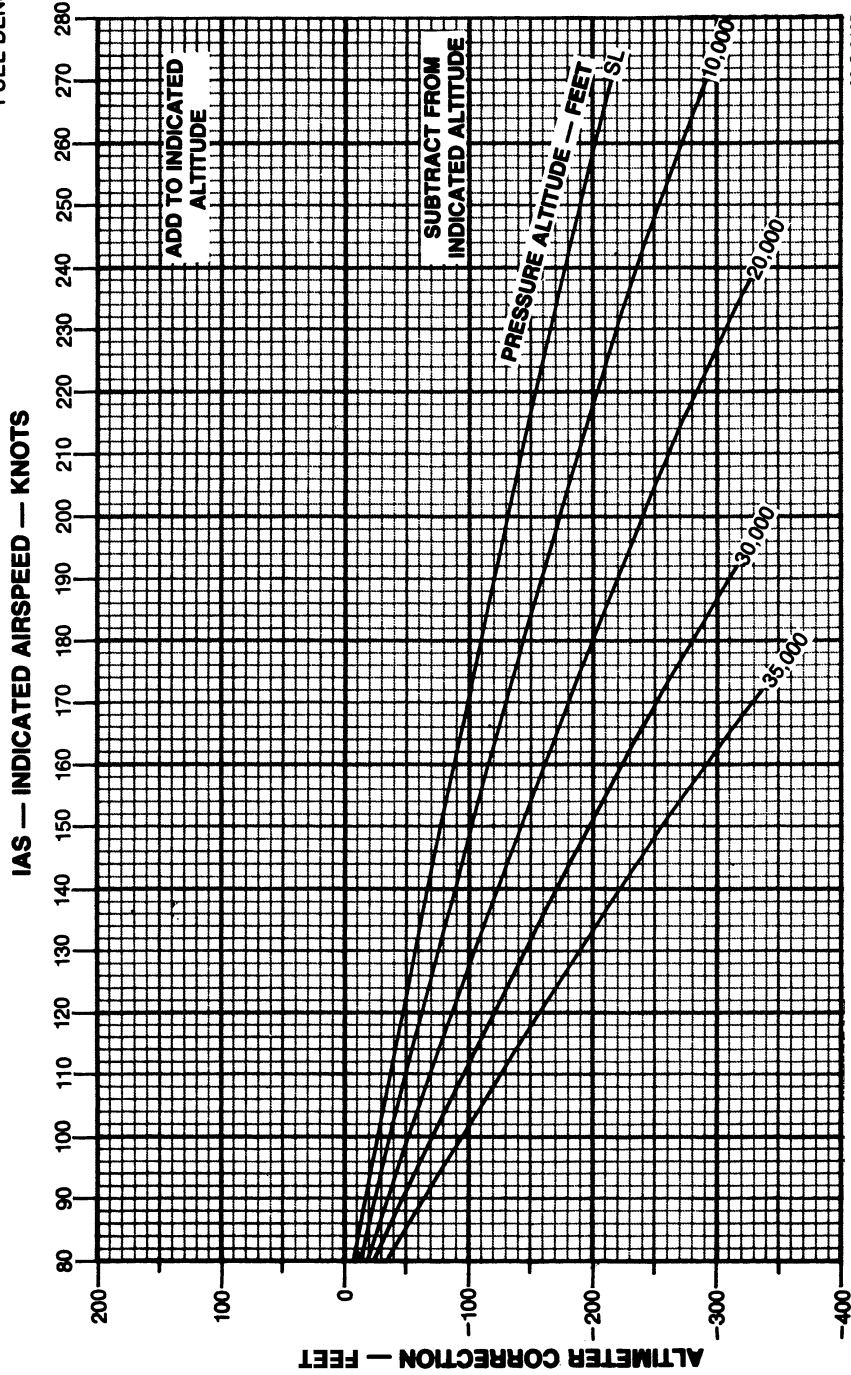
UC-12M-F0124

Figure 38-4. Altimeter Position Error Correction — Normal System

APPLICABLE FOR ALL FLAP POSITIONS

ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LB/GAL

MODEL: UC-12B
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST



06-C-0105

Figure 38-5. Altimeter Position Error Correction — Emergency System

MODEL: UC-12B
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

FLAPS: 0%
 GEAR: UP

EXAMPLE:

IAS: 176 KNOTS
 PRESSURE ALTITUDE: 17,000 FT
 AMBIENT TEMPERATURE: 10 °C

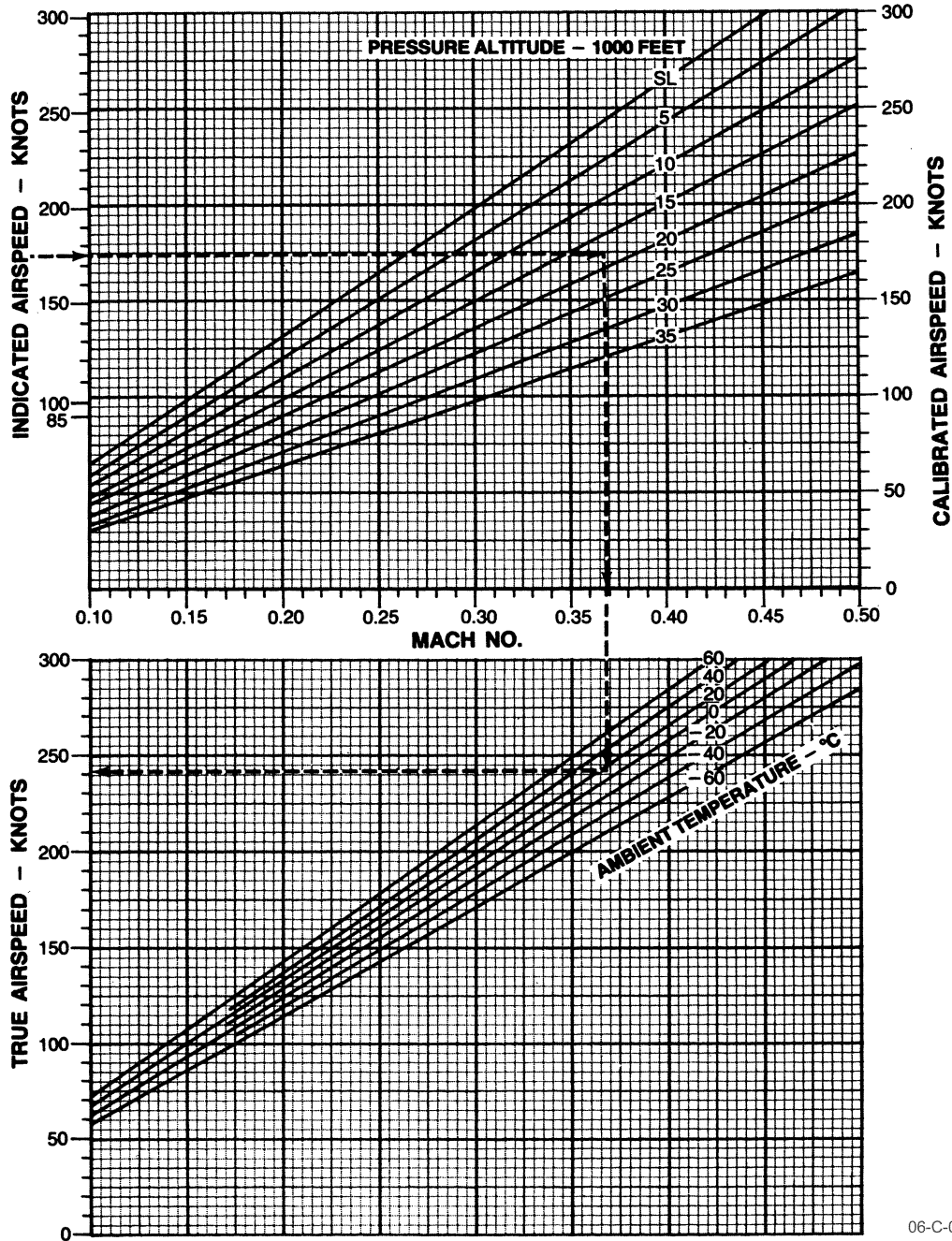
MACH NO.:368
 TRUE AIRSPEED: 242 KNOTS

NOTE

ALTIMETER AND
 AIRSPEED INDICATOR
 ALWAYS DISPLAY
 ALTITUDE AND SPEED
 THAT IS HIGHER AND
 FASTER THAN ACTUAL.

ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LB/GAL

NOTE
 NO AIRSPEED CALIBRATION
 BELOW 85 KNOTS.



06-C-0106

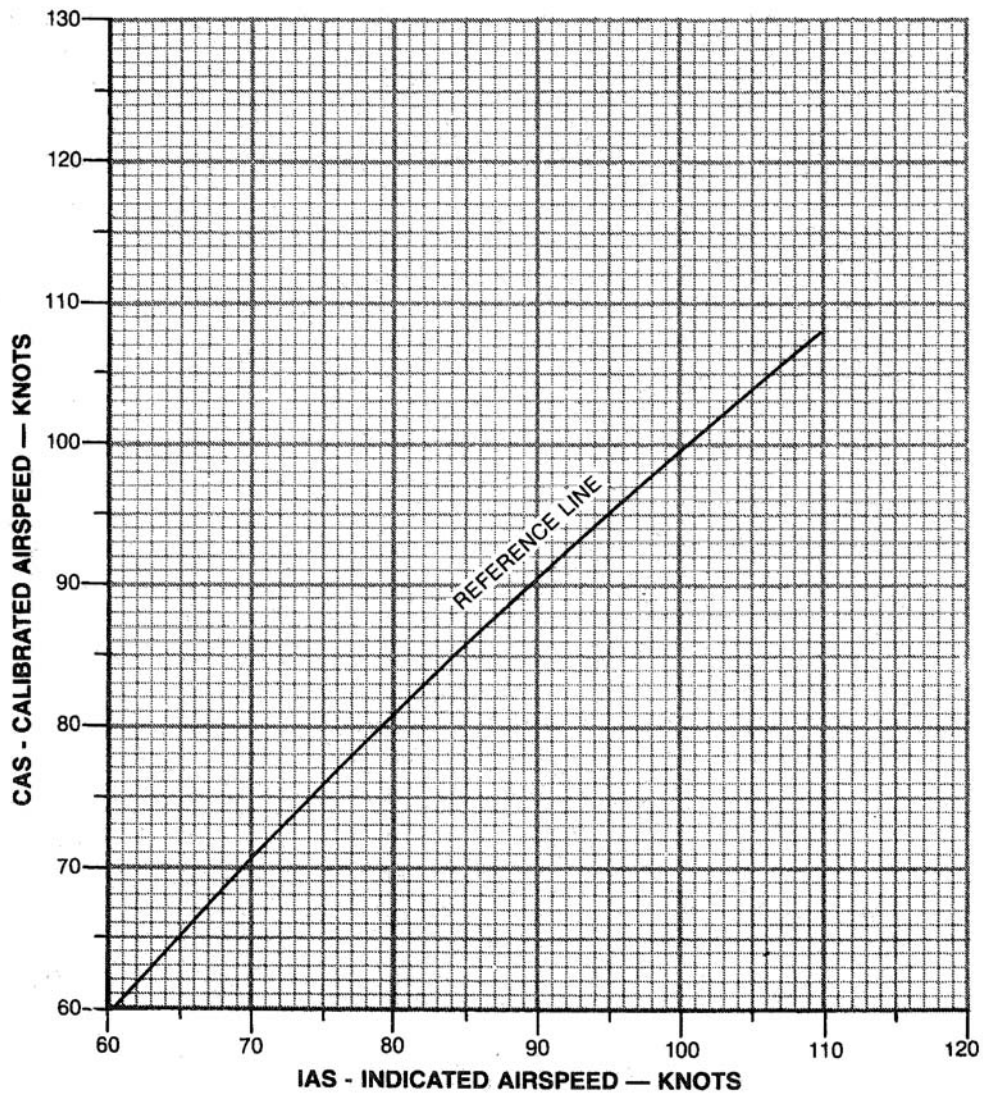
Figure 38-6. Airspeed Conversion

MODEL: UC-12M
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LB/GAL

CONFIGURATION:

FLAPS:UP (0%) OR APPROACH (40%)
 GEAR:DOWN



UC-12M-F0127

Figure 38-7. Airspeed Calibration — (Normal System) — Ground Roll

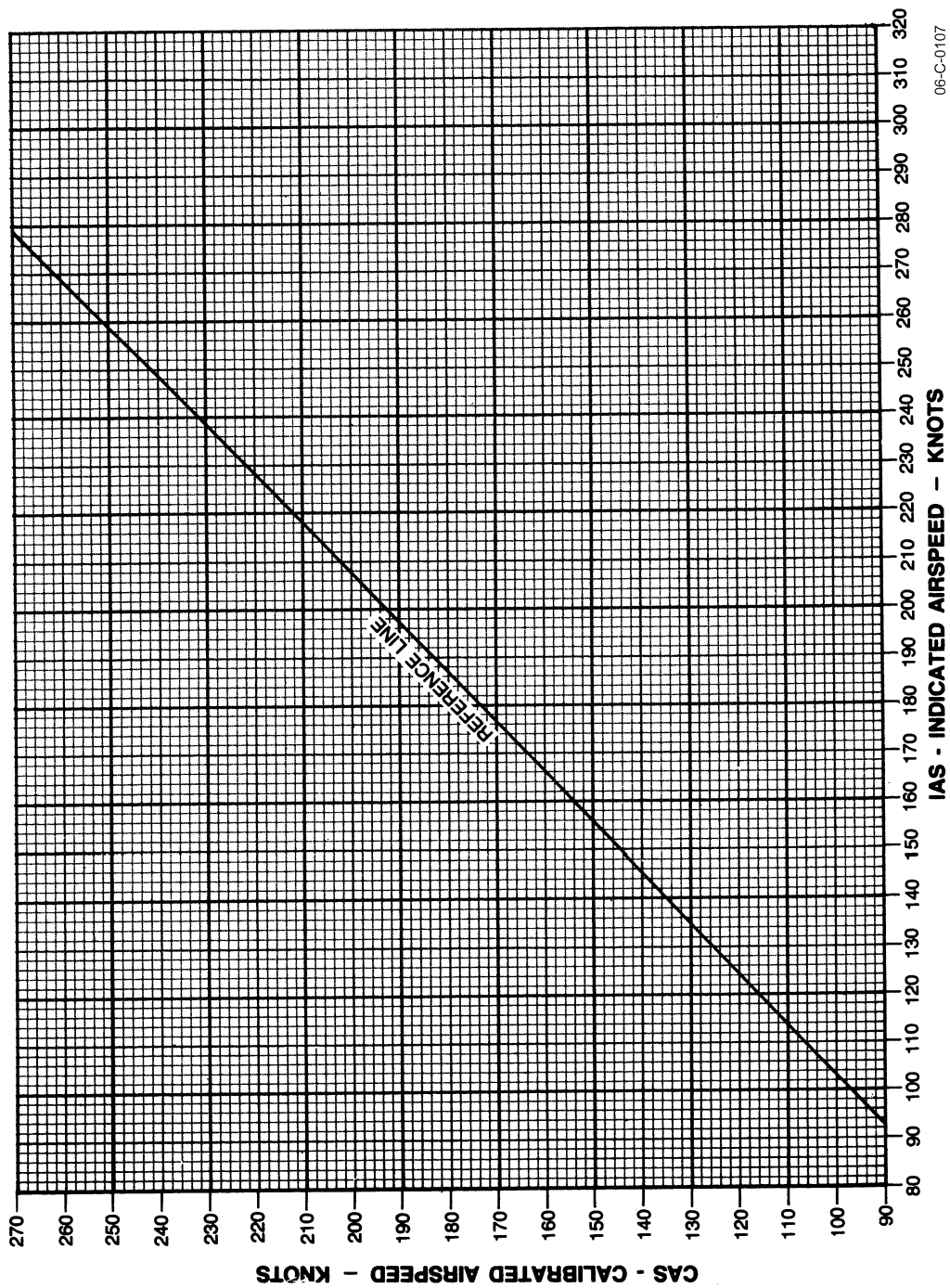
ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LB/GAL

APPLICABLE FOR ALL FLAP POSITIONS

MODEL: UC-12B
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

FLAPS: ALL POSITIONS
 GEAR: ALL POSITIONS

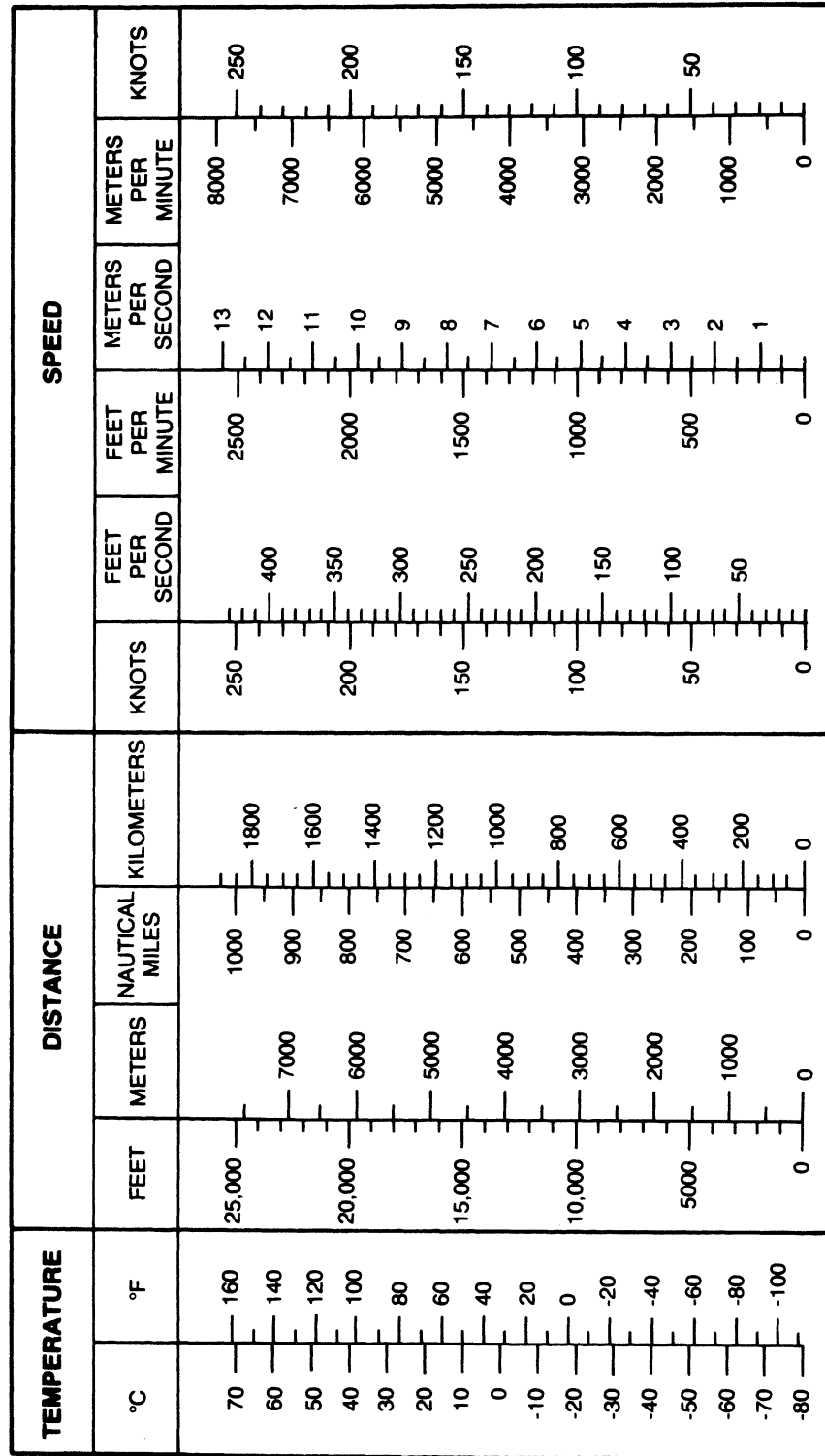


06-C-0107

Figure 38-8. Airspeed Calibration — Emergency System

NOTE

TO OBTAIN US GALLONS MULTIPLY LITERS BY 0.264
 TO OBTAIN IMPERIAL GALLONS MULTIPLY LITERS BY 0.220
 TO OBTAIN INCHES OF MERCURY MULTIPLY MILLIBARS BY 0.0295
 TO OBTAIN POUNDS MULTIPLY KILOGRAMS BY 2.20



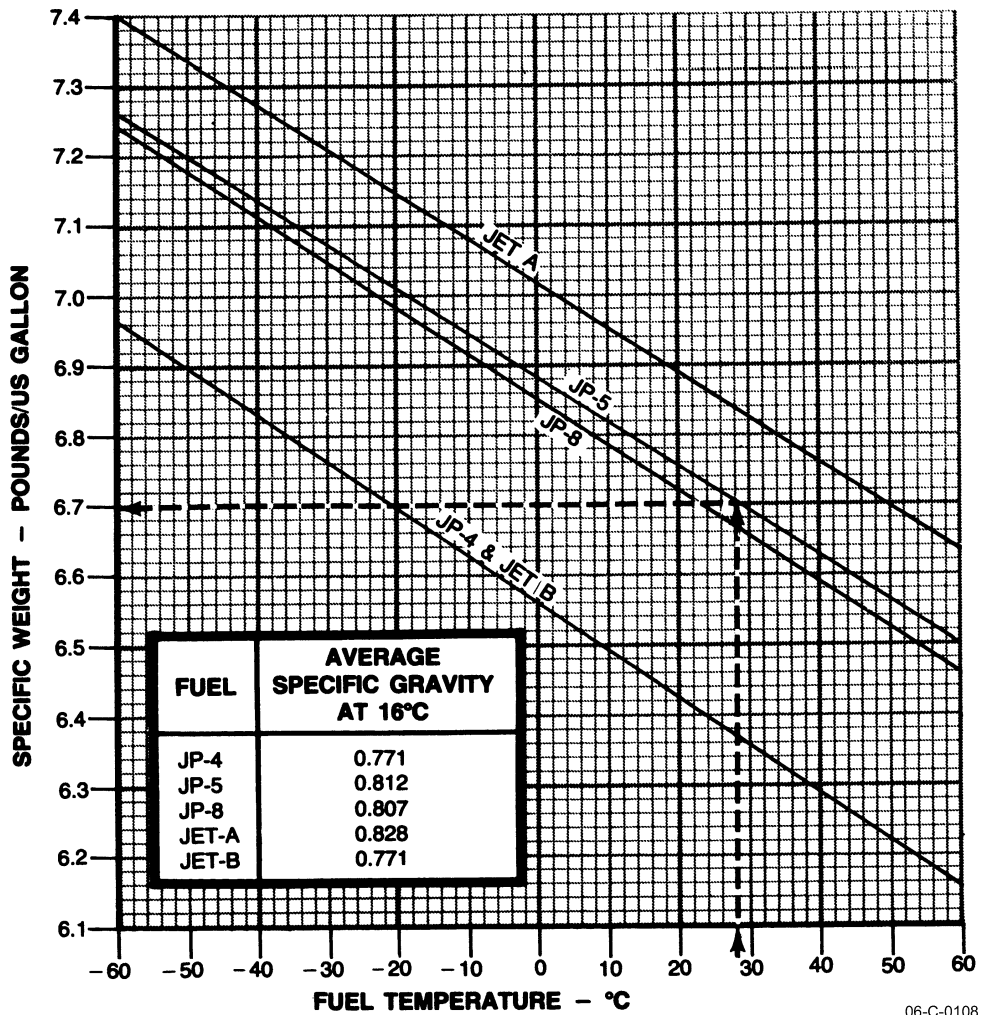
UC-12M-F0130

Figure 38-9. Standard Units Conversion

MODEL: UC-12B
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST
CONFIGURATION:

ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LB/GAL
EXAMPLE:

FUEL TEMPERATURE: 28°C
 FUEL GRADE: JP-5
 SPECIFIC WEIGHT = 6.7 LB/US GAL
 FUEL QUANTITY: 130 US GAL
 FUEL WEIGHT: (6.7 X 130) = 871 LBS



06-C-0108

Figure 38-10. Fuel Density/Weight Versus Temperature

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LB/GAL

EXAMPLE:
 WEIGHT: 13,500 LBS
 FLAPS: APPROACH (40%)
 ANGLE OF BANK: 30 DEG.
 STALL SPEED: 99 KNOTS CAS
 94 KNOTS IAS

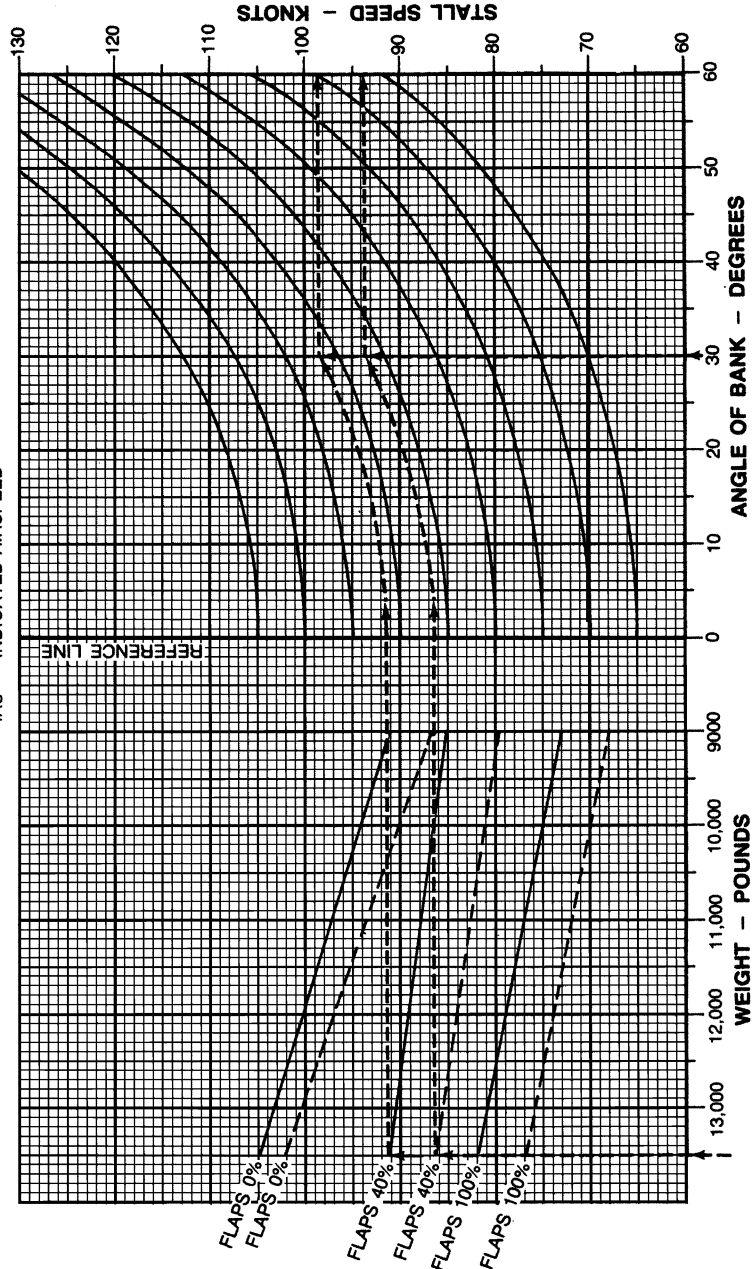
NOTE

1. MAXIMUM ALTITUDE LOSS DURING A NORMAL STALL RECOVERY IS APPROXIMATELY 800 FEET.
2. MAXIMUM NOSE DOWN PITCH ATTITUDE AND ALTITUDE LOSS DURING RECOVERY FROM ONE ENGINE INOPERATIVE STALLS PER FAR 23.205 ARE APPROXIMATELY 8° AND 300 FEET RESPECTIVELY.
3. A NORMAL STALL RECOVERY TECHNIQUE MAY BE USED. THE BEST PROCEDURE IS A BRISK FORWARD WHEEL MOVEMENT TO A NOSE DOWN ATTITUDE, LEVEL THE AIRPLANE AFTER AIRSPEED HAS INCREASED APPROXIMATELY 25 KNOTS ABOVE STALL.
4. LANDING GEAR POSITION HAS NO EFFECT ON STALL SPEED.
5. WORST CONDITION IS SHOWN (POWER IDLE).

MODEL: UC-12M
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

CONFIGURATION:
 GEAR: ALL POSITIONS
 FLAPS: NOTED

—— CAS — CALIBRATED AIRSPEED
 - - - IAS — INDICATED AIRSPEED



UC12M-F0132

Figure 38-11. Stall Speeds — Power Idle

MODEL: UC-12B
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

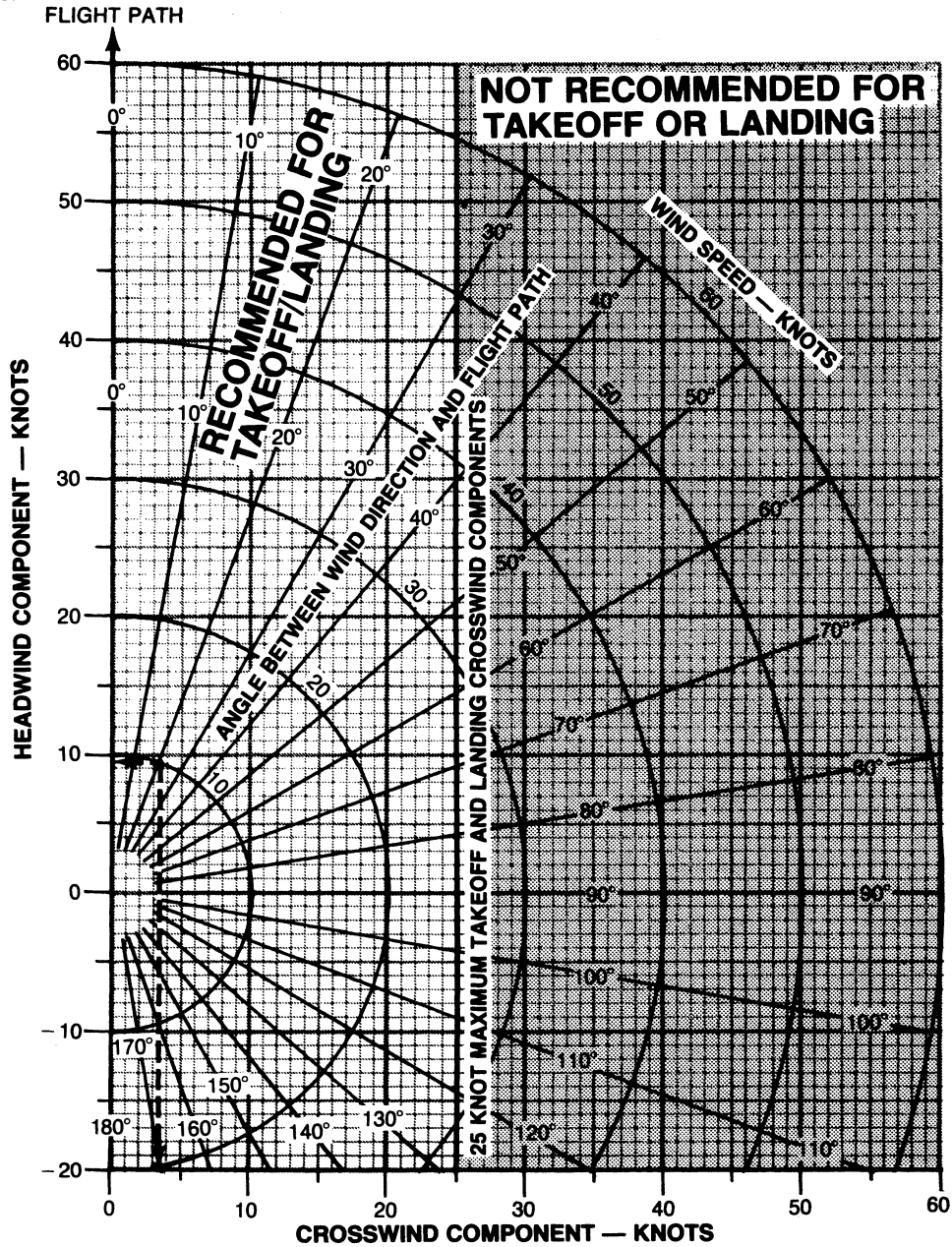
ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8LBS/GAL

NOTE

1. DO NOT EXCEED 25 KNOTS CROSSWIND COMPONENT DURING TAKEOFF OR LANDING OPERATIONS.
2. FOR WIND GUSTS USE:
 - a. STEADY SPEED FOR HEADWIND
 - b. GUST SPEED FOR CROSSWIND.

EXAMPLE:

WIND SPEED	10 KNOTS
ANGLE BETWEEN WIND DIRECTION AND FLIGHT PATH ...	20°
<hr/>	
HEADWIND COMPONENT	9.5 KNOTS
CROSSWIND COMPONENT	3.5 KNOTS



06-C-0109

Figure 38-12. Takeoff/Landing Crosswind

CHAPTER 39

Takeoff

39.1 DESCRIPTION OF CHARTS

39.1.1 Takeoff Gross Weight Limit

These charts give the maximum weight at which a 100-fpm, single-engine, landing-gear-extended climb can be achieved. Gross weight is given as a function of pressure altitude, ambient temperature, and flap setting. To use these charts, enter at pressure altitude, trace right to true OAT, then trace down to read weight. Refer to [Figures 39-1, 39-2, 39-3, and 39-4](#).

39.1.2 Minimum Power for Takeoff

The minimum torque that should be available without exceeding the ITT limit of 750 °C at zero airspeed is shown on these charts as a function of pressure altitude and ambient temperature. To use these charts, enter at true OAT, trace up to pressure altitude, then trace right to read engine torque. Refer to [Figures 39-5, 39-6, 39-7, and 39-8](#).

39.1.3 Takeoff Distance

These charts show takeoff ground roll distances for a level, dry, hard-surface runway and total distance to clear a 50-foot obstacle. V_R and V_2 are shown for pressure altitude, weight, flap setting, wind component, and ambient temperature. To use these charts, enter at true OAT, trace up to pressure altitude, trace right to reference line 1, trace along weight guidelines to takeoff weight, trace right to reference line 2, trace along wind guidelines to wind component along runway, trace right to reference line 3, then for lift-off distance, continue right to read distance for 50-foot obstacle height, trace along obstacle guidelines to read distance. Refer to [Figures 39-9, 39-10, 39-11, and 39-12](#).

39.1.4 Takeoff Flight Path

This graph gives the minimum gradient of climb required to clear an obstacle of specified height located a specific distance from the point along the runway at which the aircraft is 50 feet AGL. To use this graph, enter at the obstacle height and trace right. Then enter at the obstacle distance from reference zero and trace up. The two tracings intersect at the answer of minimum gradient of climb required. Refer to [Figures 39-13, 39-14, 39-15, and 39-16](#).

39.1.5 Accelerate-Stop Distance

These charts show the runway length required if an engine failure occurred at V_1 and a takeoff is not attempted. Influencing factors are pressure altitude, weight, flap setting, wind component, and ambient temperature. To use these charts, enter at true OAT, trace up to pressure altitude, trace right to reference line 1, trace along weight guidelines to weight, trace right to reference line 2, trace along wind guidelines to wind component along runway, then trace right to read distance. Refer to [Figures 39-17, 39-18, 39-19, and 39-20](#).

39.1.6 Accelerate-Go Distance

These charts show the total distance to a 50-foot altitude for a level, dry runway if an engine failure occurs at rotation. Influencing factors are pressure altitude, weight, flap setting, wind component, and ambient temperature. To use chart, enter at true OAT, trace up to pressure altitude, trace right to reference line 1, trace along weight guidelines to weight, trace right to reference line 2, trace along wind guidelines to wind component along runway, then trace right to read distance. Refer to [Figures 39-21, 39-22, 39-23, and 39-24](#).

39.1.7 Net Gradient of Climb

These graphs show the actual gradient of climb as a function of OAT, pressure altitude, and weight for different flap positions. To use these graphs, enter appropriate flap setting graph at true OAT, trace up to interpolated pressure altitude, trace right to reference line, follow guidelines to weight, then trace right to read net gradient of climb. If the maximum weight at which a specified net gradient of climb can be attained is desired, enter the graph at desired net gradient of climb, trace left to intersect with the tracing that begins at reference line, and follow guidelines toward weight. Then trace down to read maximum weight at which desired net gradient of climb can be obtained. Refer to [Figures 39-25](#) and [39-26](#).

39.1.8 Line Speed Check During Takeoff Ground Run

Check engine power during takeoff ground run by comparing actual speed to expected speed at a runway distance marker. To use chart, enter bottom of graph with lift-off IAS and trace up. Enter left side of graph at appropriate ground roll distance (from [Figure 39-9](#) or [39-10](#)) and trace right to lift-off IAS. Then follow constant acceleration lines left. Enter left side of graph with marker distance and trace right to intersect leftward tracing at expected time from brake release to marker. Then trace down to read expected IAS at marker. Refer to [Figures 39-27](#) and [39-28](#).

MODEL: UC-12B
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LB/GAL

CONFIGURATION:

POWER: TAKEOFF
 FLAPS: UP (0%)
 LANDING GEAR: DOWN

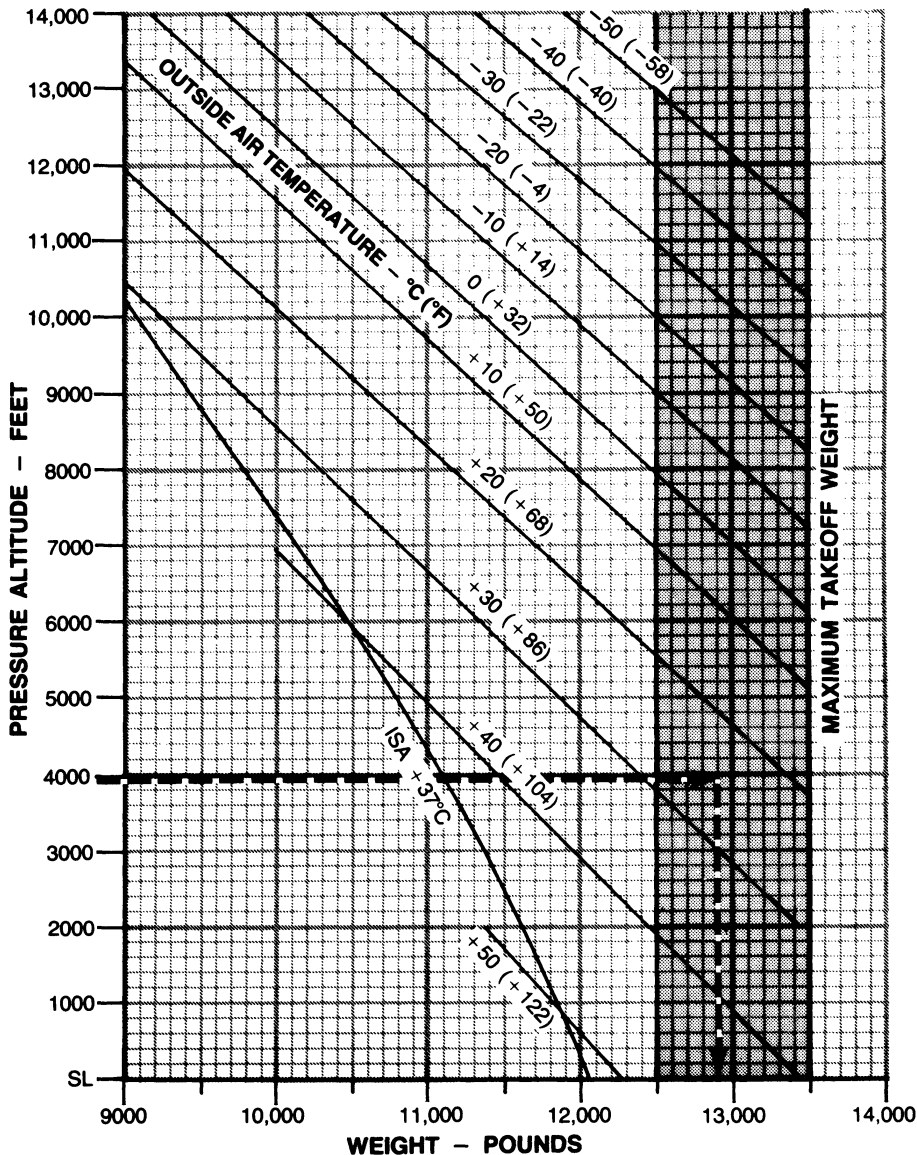
NOTE

FOR OPERATION WITH ICE VANES
 EXTENDED, ADD 10°C TO THE ACTUAL
 OAT BEFORE ENTERING THE GRAPH

EXAMPLE:

PRESSURE ALTITUDE:.. 3966 FT
 OAT:..... 25°C

TAKEOFF WEIGHT: 12,900 LBS



06-C-0110

Figure 39-1. (B/F) Takeoff Gross Weight Limit — Flaps 0 Percent (To Achieve 100-fpm, One-Engine-Inoperative Rate of Climb at Lift-Off)

MODEL: UC-12M
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LB/GAL

CONFIGURATION:

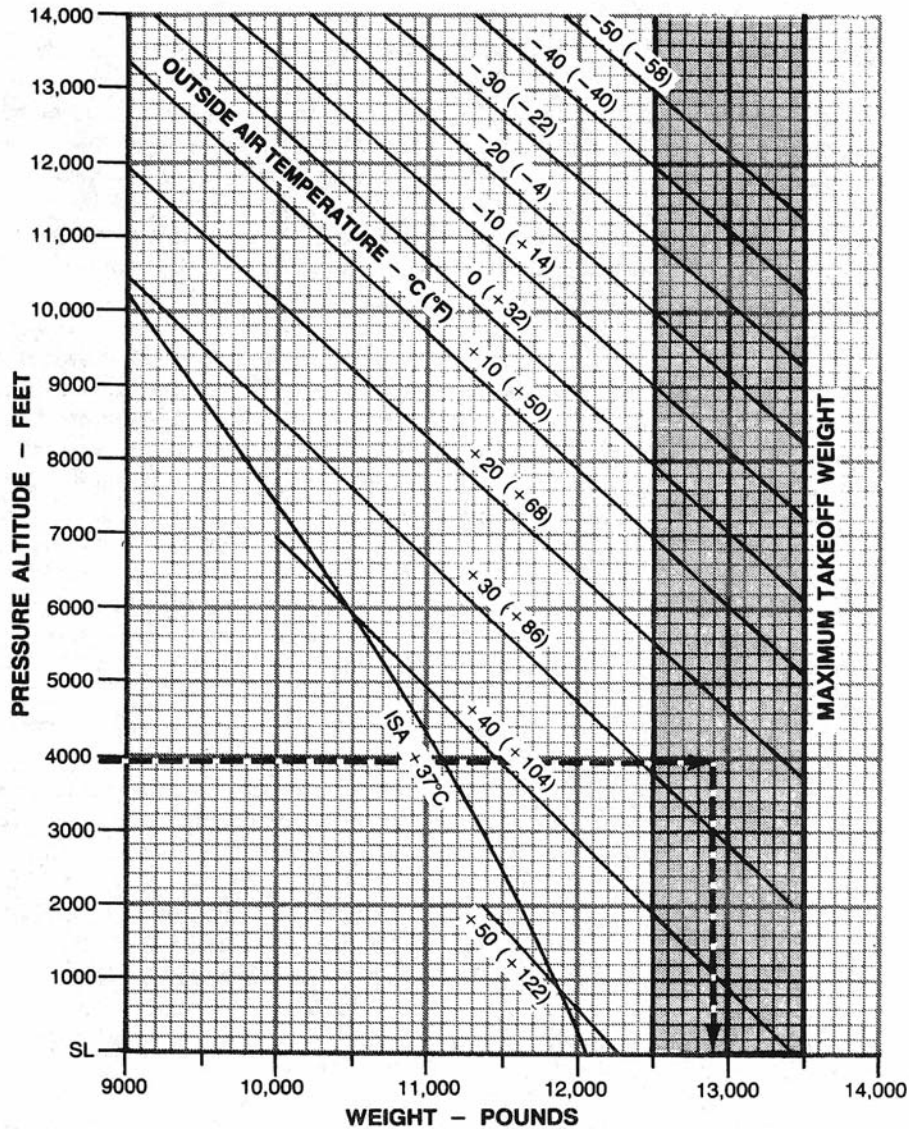
POWER: TAKEOFF
 FLAPS: UP (0%)
 LANDING GEAR: DOWN

NOTE

FOR OPERATION WITH ICE VANES
 EXTENDED, ADD 10°C TO THE ACTUAL
 OAT BEFORE ENTERING THE GRAPH.

EXAMPLE:

PRESSURE ALTITUDE: 3966 FT
 OAT: 25°C
 TAKEOFF WEIGHT: 12,900 LB



UC-12M-F0134

Figure 39-2. (M) Takeoff Gross Weight Limit — Flaps 0 Percent (To Achieve 100-fpm, One-Engine-Inoperative Rate of Climb at Lift-Off)

MODEL: UC-12B
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

NOTE

FOR OPERATION WITH ICE VANES EXTENDED,
 ADD 10°C TO THE ACTUAL OAT BEFORE
 ENTERING THE GRAPH

ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LB/GAL

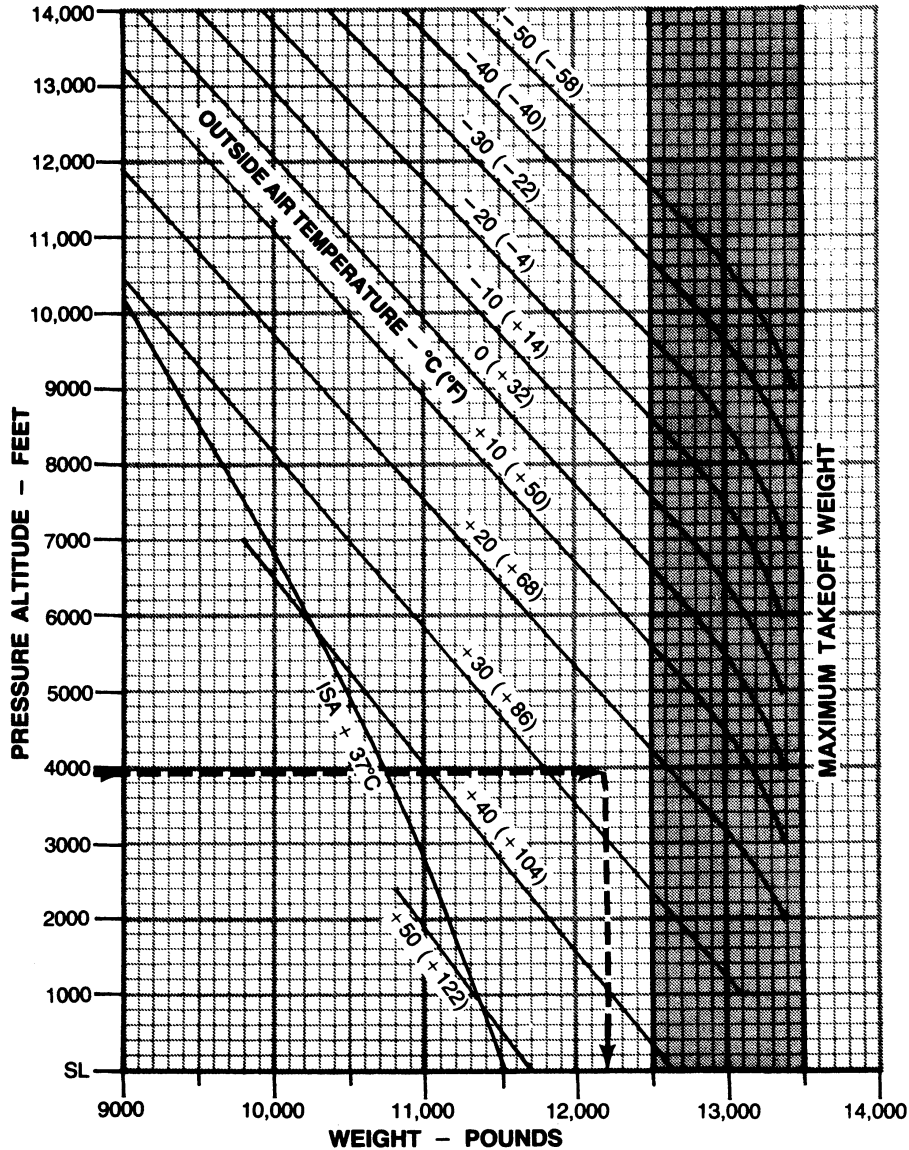
CONFIGURATION:

POWER: TAKEOFF
 FLAPS: 40%
 LANDING GEAR: .. DOWN

EXAMPLE:

PRESSURE ALTITUDE: . 3966 FT
 OAT: 25°C

TAKEOFF WEIGHT: 12,200 LBS



06-C-0111

Figure 39-3. (B/F) Takeoff Gross Weight Limit — Flaps 40 Percent (To Achieve 100-fpm, One-Engine-Inoperative Rate of Climb at Lift-Off)

MODEL: UC-12M
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LB/GAL

CONFIGURATION:

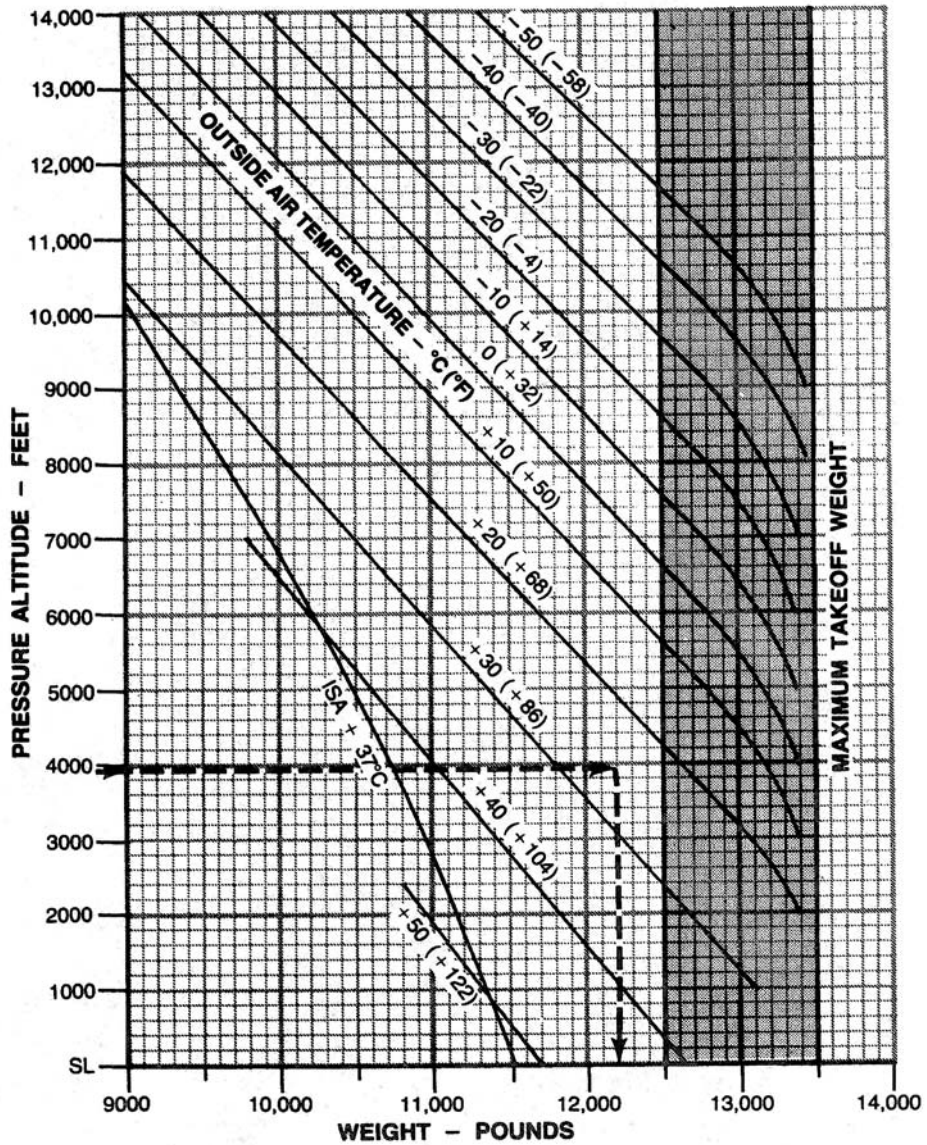
POWER: TAKEOFF
 FLAPS: APPROACH (40%)
 LANDING GEAR: DOWN

EXAMPLE:

PRESSURE ALTITUDE: 3966 FT
 OAT: 25°C
 TAKEOFF WEIGHT: 12,200 LBS

NOTE

FOR OPERATION WITH ICE VANES EXTENDED,
 ADD 10°C TO THE ACTUAL OAT BEFORE
 ENTERING THE GRAPH.



UC-12M-F0135

Figure 39-4. (M) Takeoff Gross Weight Limit — Flaps 40 Percent (To Achieve 100-fpm, One-Engine Inoperative Rate of Climb at Lift-Off)

MODEL: UC-12B
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LB/GAL

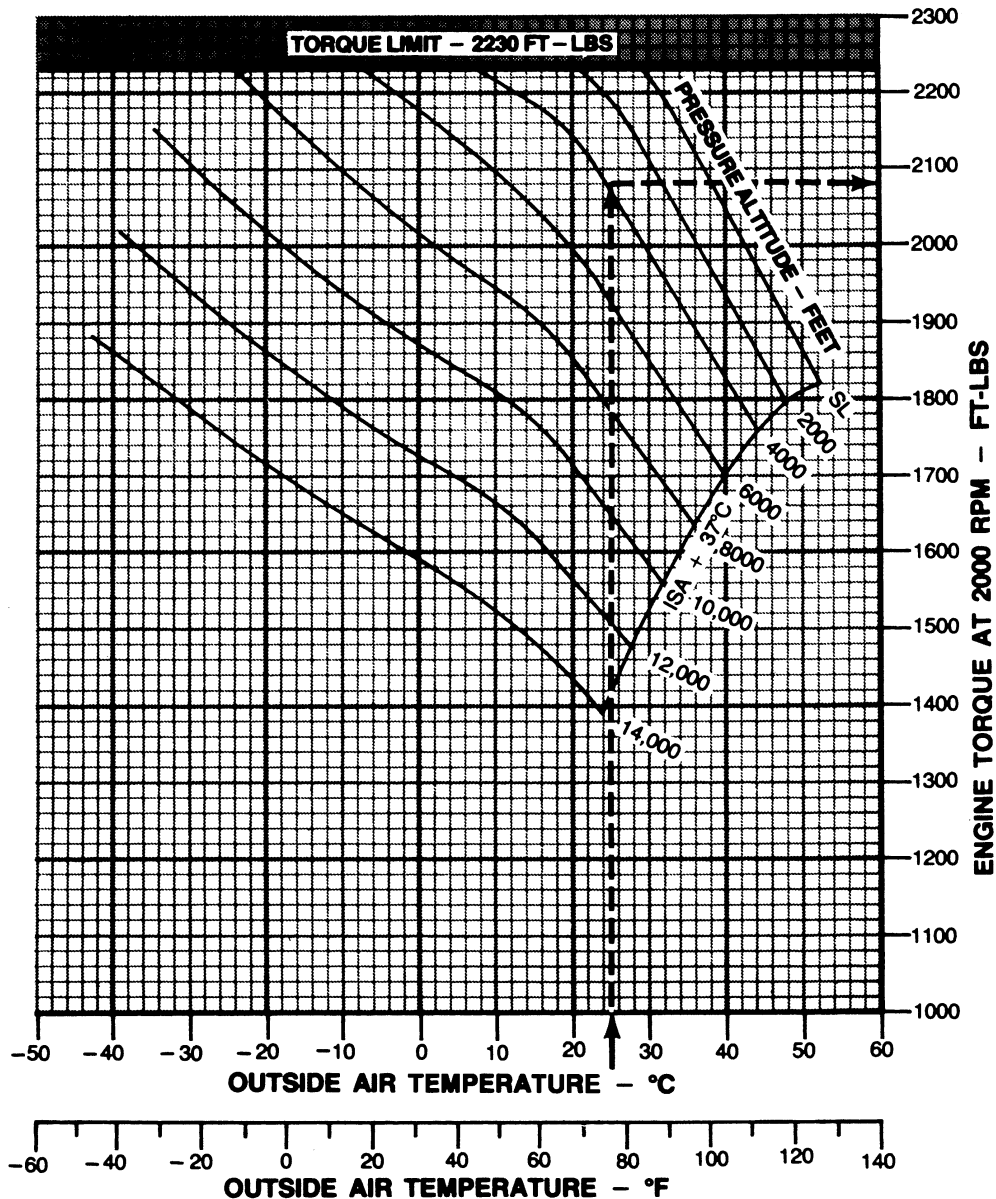
CONFIGURATION:

EXAMPLE:

OUTSIDE AIR TEMPERATURE:..... 25°C
 PRESSURE ALTITUDE:..... 3966 FEET
 ENGINE TORQUE:..... 2080 FT-LBS

NOTE

1. TORQUE INCREASES APPROXIMATELY 20 FT-LBS FROM ZERO TO 65 KNOTS.
2. CHARTED TAKEOFF PERFORMANCE REQUIRES THE MINIMUM TORQUE SHOWN HERE WHILE NOT EXCEEDING ENGINE LIMITATIONS.



06-C-0112

Figure 39-5. (B/F) Minimum Power for Takeoff — Ice Vanes Retracted

MODEL: UC-12M
 DATE: 18 AUGUST 1987
 DATA BASIS: FLIGHT TEST

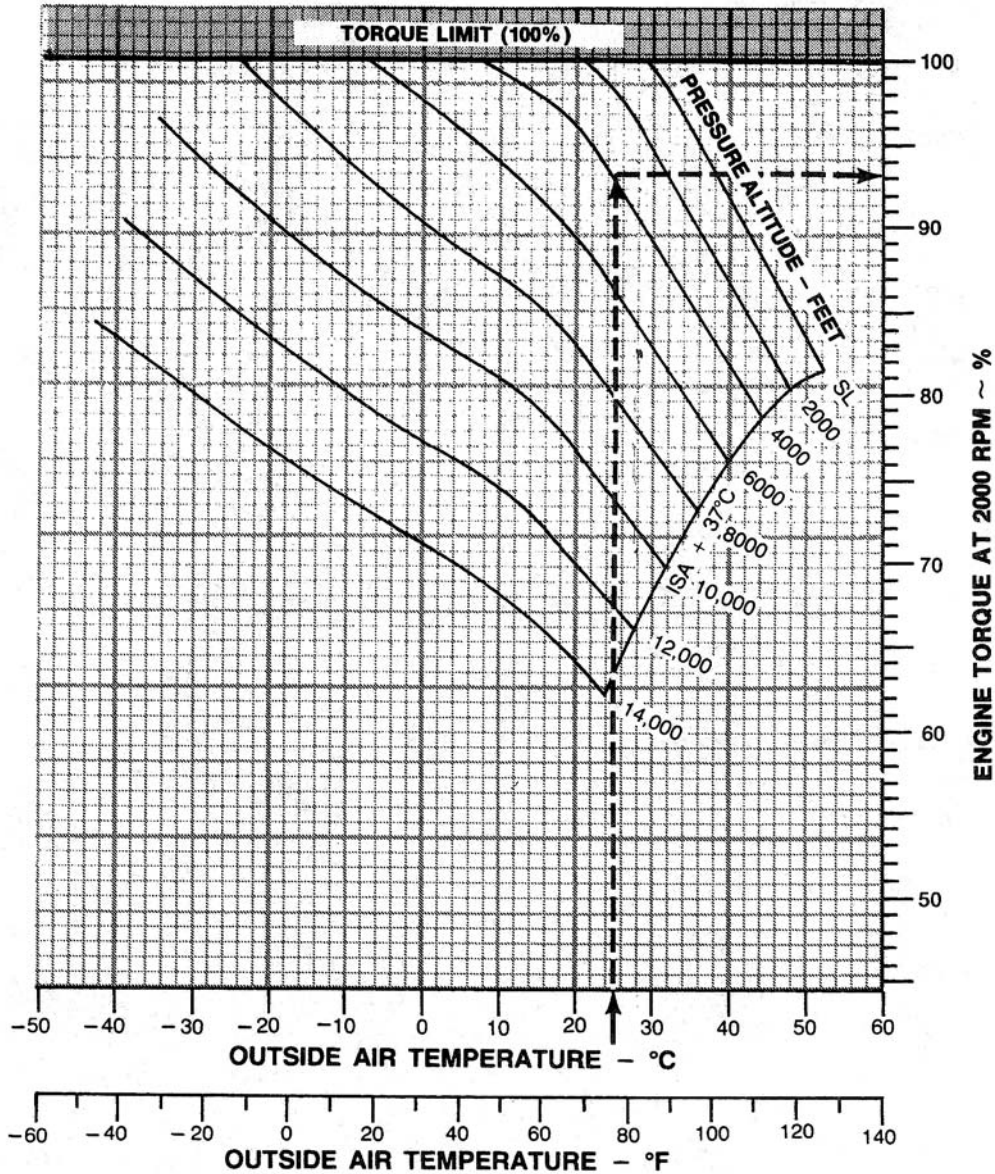
ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LB/GAL

CONFIGURATION:

EXAMPLE:

- NOTE**
- TORQUE INCREASES APPROXIMATELY 1% FROM ZERO TO 65 KNOTS.
 - CHARTED TAKEOFF PERFORMANCE REQUIRES THE MINIMUM TORQUE SHOWN HERE WHILE NOT EXCEEDING ENGINE LIMITATIONS.

OUTSIDE AIR TEMPERATURE:..... 25°C
 PRESSURE ALTITUDE:..... 3966 FEET
 ENGINE TORQUE: 93%



UC-12M-F0136

Figure 39-6. (M) Minimum Power for Takeoff with Ice Vanes Retracted (65 KIAS)

MODEL: UC-12B
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

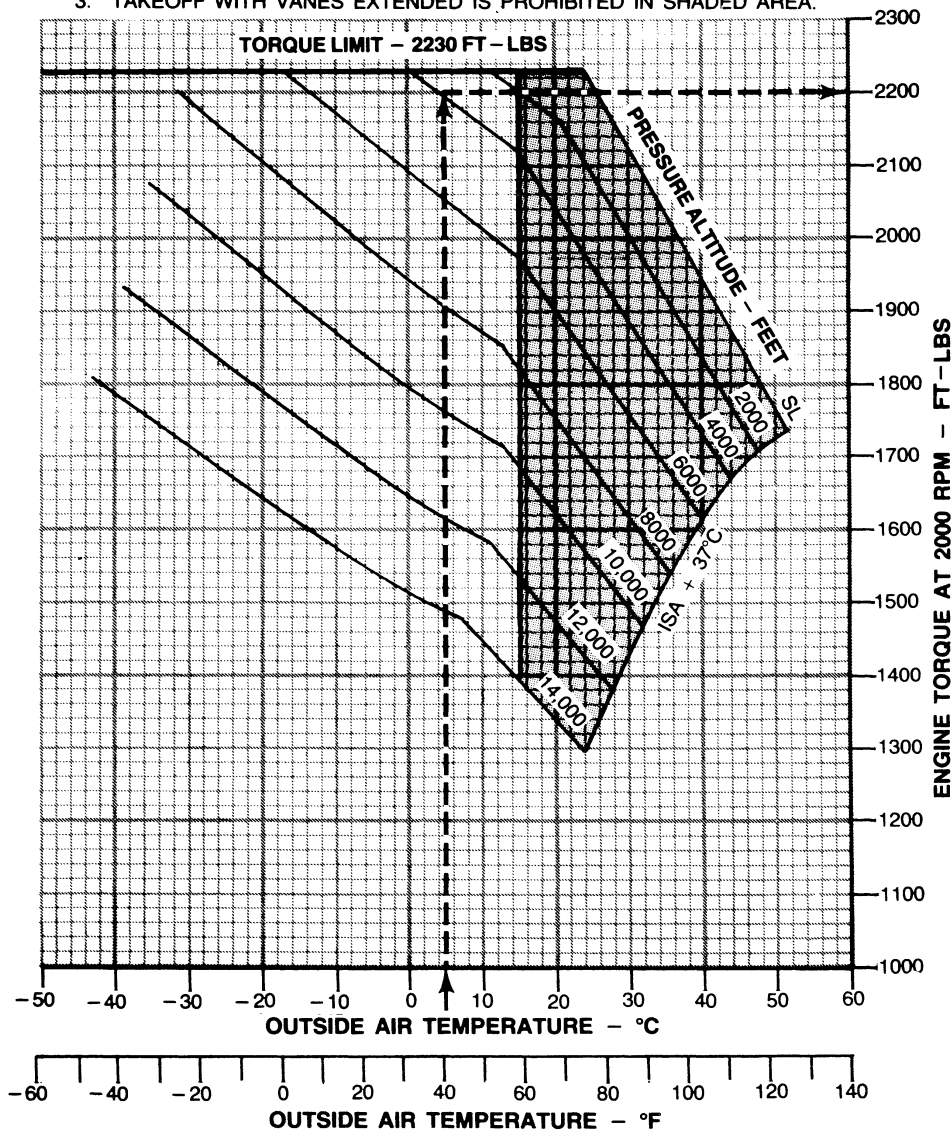
EXAMPLE:
 OUTSIDE AIR TEMPERATURE: 5°C
 PRESSURE ALTITUDE: 3966 FEET
 ENGINE TORQUE: 2200 FT-LBS

ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LB/GAL

CONFIGURATION:
 NOTED

NOTE

1. TORQUE INCREASES APPROXIMATELY 20 FT - LBS FROM ZERO TO 65 KNOTS.
2. CHARTED TAKEOFF PERFORMANCE WITH ICE VANES EXTENDED REQUIRES THE MINIMUM TORQUE SHOWN HERE WHILE NOT EXCEEDING ENGINE LIMITATIONS.
3. TAKEOFF WITH VANES EXTENDED IS PROHIBITED IN SHADED AREA.



06-C-0113

Figure 39-7. (B/F) Minimum Power for Takeoff — Ice Vanes Extended

MODEL: UC-12M
 DATE: 18 AUGUST 1987
 DATA BASIS: FLIGHT TEST

EXAMPLE:
 OUTSIDE AIR TEMPERATURE: 5°C
 PRESSURE ALTITUDE: 3966 FEET

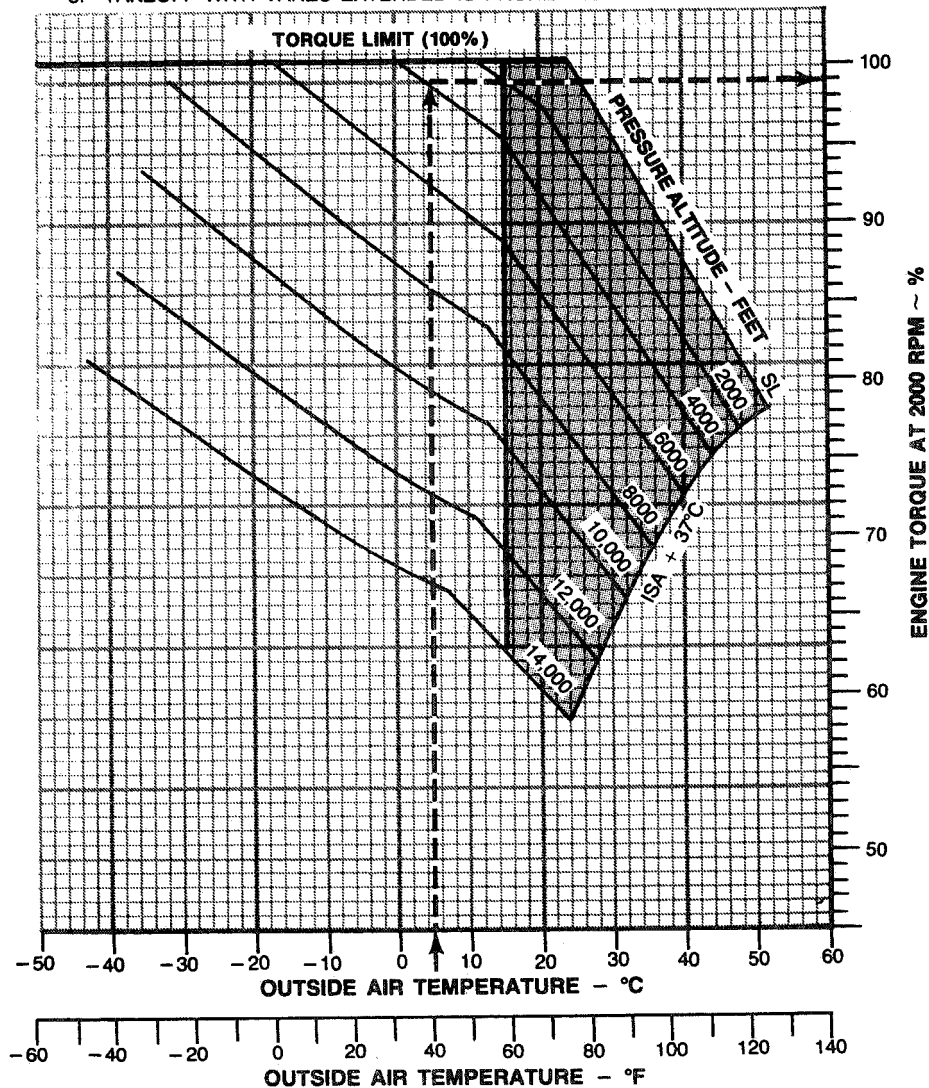
ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

CONFIGURATION:
 NOTED

ENGINE TORQUE: 99%

NOTE

1. TORQUE INCREASES APPROXIMATELY 1% FROM ZERO TO 65 KNOTS.
2. CHARTED TAKEOFF PERFORMANCE WITH ICE VANES EXTENDED REQUIRES THE MINIMUM TORQUE SHOWN HERE WHILE NOT EXCEEDING ENGINE LIMITATIONS.
3. TAKEOFF WITH VANES EXTENDED IS PROHIBITED IN SHADED AREA.



UC-12M-F0137

Figure 39-8. (M) Minimum Power for Takeoff with Ice Vanes Extended (65 KIAS)

MODEL: UC-12B/F
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

POWER: TAKEOFF POWER SET BEFORE BRAKE RELEASE
 FLAPS: 0%
 GEAR: RETRACT AFTER LIFT-OFF
 RUNWAY: PAVED, LEVEL, DRY SURFACE

WEIGHT - POUNDS	TAKEOFF SPEED - KNOTS	
	VR	V2
13,500	106	125
12,500	103	120
12,000	102	118
11,000	98	116
10,000	96	111
9000	96	108

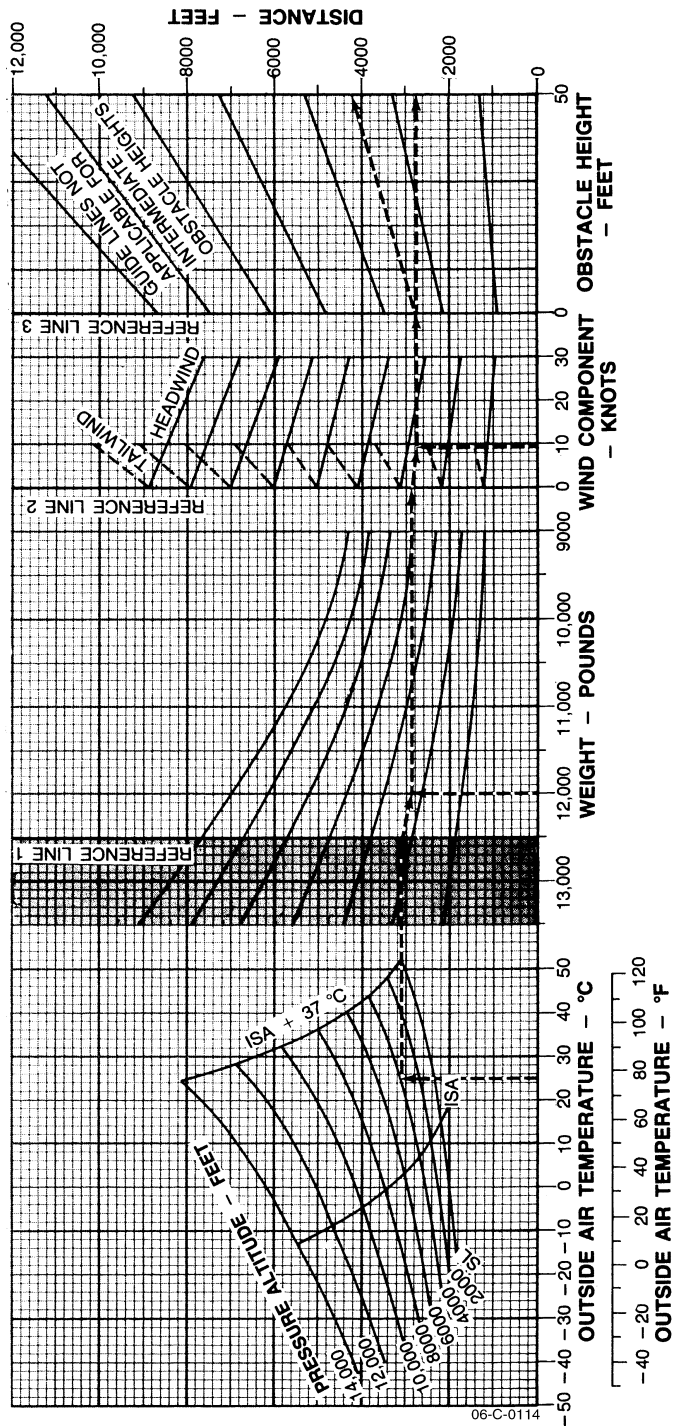
ENGINE: PT6A-41/42
 PROPELLER: T10178/P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

OAT: 25°C
 PRESSURE ALTITUDE: 3966 FT
 TAKEOFF WEIGHT: 12,000 LBS
 HEADWIND
 COMPONENT: 9.5 KNOTS
 GROUND ROLL: 2750 FT
 TOTAL DISTANCE OVER 50 FT OBSTACLE: 4200 FT
 TAKEOFF SPEED AT ROTATION: 102 KNOTS
 AT 50 FT: 118 KNOTS

NOTE

- FOR OPERATION WITH ICE VANES EXTENDED, ADD 10°C TO THE ACTUAL OAT BEFORE ENTERING CHART.
- FOR SLOPED RUNWAYS, ADD OR SUBTRACT 5% OF TAKEOFF GROUND ROLL FOR EACH 1% OF RUNWAY SLOPE (DOWN-SUBTRACT, UP-ADD).
- TAKEOFF FROM A RUNWAY WITH STANDING WATER OR SLUSH IN DEPTHS OF UP TO 1/2 INCH SIGNIFICANTLY INCREASES TAKEOFF DISTANCE.



06-C-0114

Figure 39-9. (B/F) Takeoff Distance — Flaps 0 Percent

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

OAT: 25°C
 PRESSURE ALTITUDE: 3966 FT
 TAKEOFF WEIGHT: 12,000 LBS
 HEADWIND
 COMPONENT: 9.5 KNOTS
 GROUND ROLL: 2750 FT
 TOTAL DISTANCE OVER
 50 FT OBSTACLE: 4200 FT
 TAKEOFF SPEED
 AT ROTATION: 102 KIAS
 AT 50 FT: 118 KIAS

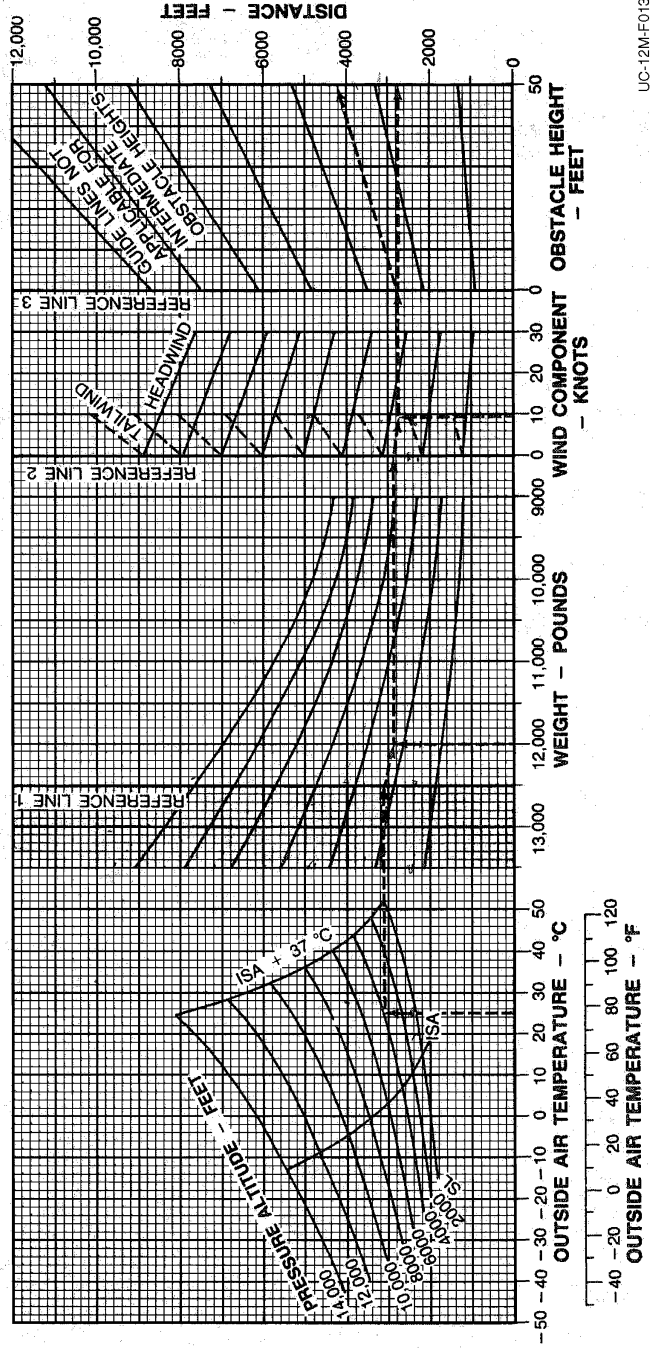
WEIGHT -- POUNDS	TAKEOFF SPEED -- KIAS	
	V _R	V ₂
13,500	106	125
12,500	103	120
12,000	102	118
11,000	98	116
10,000	96	111
9000	96	108

NOTE

- FOR OPERATION WITH ICE VANES EXTENDED, ADD 10% TO THE ACTUAL OAT BEFORE ENTERING CHART.
- FOR TAKEOFF FROM A RUNWAY WITH STANDING WATER OR SLUSH IN DEPTHS OF UP TO 1/2 INCH, SIGNIFICANTLY INCREASE TAKEOFF DISTANCE.
- ADDITION OR SUBTRACTION OF A PERCENTAGE OF THE TOTAL DISTANCE CALCULATED IS REQUIRED WHEN THE TAKEOFF SURFACE HAS A POSITIVE OR NEGATIVE GRADE I.E. ADD OR SUBTRACT 5 PERCENT OF TAKEOFF GROUND ROLL FOR EACH 1 PERCENT OF RUNWAY SLOPE. (DOWN SUBTRACT, UP ADD)

MODEL: UC-12M
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

CONFIGURATION:
 POWER: TAKEOFF POWER SET BEFORE BRAKE RELEASE
 FLAPS: UP (0%)
 GEAR: RETRACT AFTER LIFT-OFF
 RUNWAY: PAVED, LEVEL, DRY SURFACE



UC-12M-F0138

Figure 39-10. (M) Takeoff Distance — Flaps 0 Percent

WEIGHT - POUNDS	TAKEOFF SPEED - KNOTS	
	VR	V2
13,500	96	106
12,500	96	104
12,000	95	103
11,000	95	102
10,000	95	101
9000	95	100

ENGINE: PT6A-41/42
 PROPELLER: T10178/P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:
 OAT: 25°C
 PRESSURE ALTITUDE: 3966 FEET
 TAKEOFF WEIGHT: 12,000 LBS
 HEADWIND
 COMPONENT: 9.5 KNOTS
 GROUND ROLL: 2330 FEET
 TOTAL DISTANCE
 OVER 50 FT
 OBSTACLE: 3300 FEET
 TAKEOFF SPEED
 AT ROTATION: 95 KNOTS
 AT 50 FT: 103 KNOTS
 7000

- NOTE**
- FOR OPERATION WITH ICE VANES EXTENDED, ADD 10°C TO THE ACTUAL OAT BEFORE ENTERING CHART.
 - FOR SLOPED RUNWAYS, ADD OR SUBTRACT 5% OF TAKEOFF GROUND ROLL FOR EACH 1% OF RUNWAY SLOPE (DOWN-SUBTRACT, UP-ADD).
 - TAKEOFF FROM A RUNWAY WITH STANDING WATER OR SLUSH IN DEPTHS OF UP TO 1/2 INCH SIGNIFICANTLY INCREASES TAKEOFF DISTANCE.

MODEL: UC-12B/F
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

CONFIGURATION:
 POWER: TAKEOFF POWER SET BEFORE BRAKE RELEASE
 GEAR: RETRACT AFTER LIFT OFF
 RUNWAY: PAVED, LEVEL, DRY SURFACE
 FLAPS: 40%

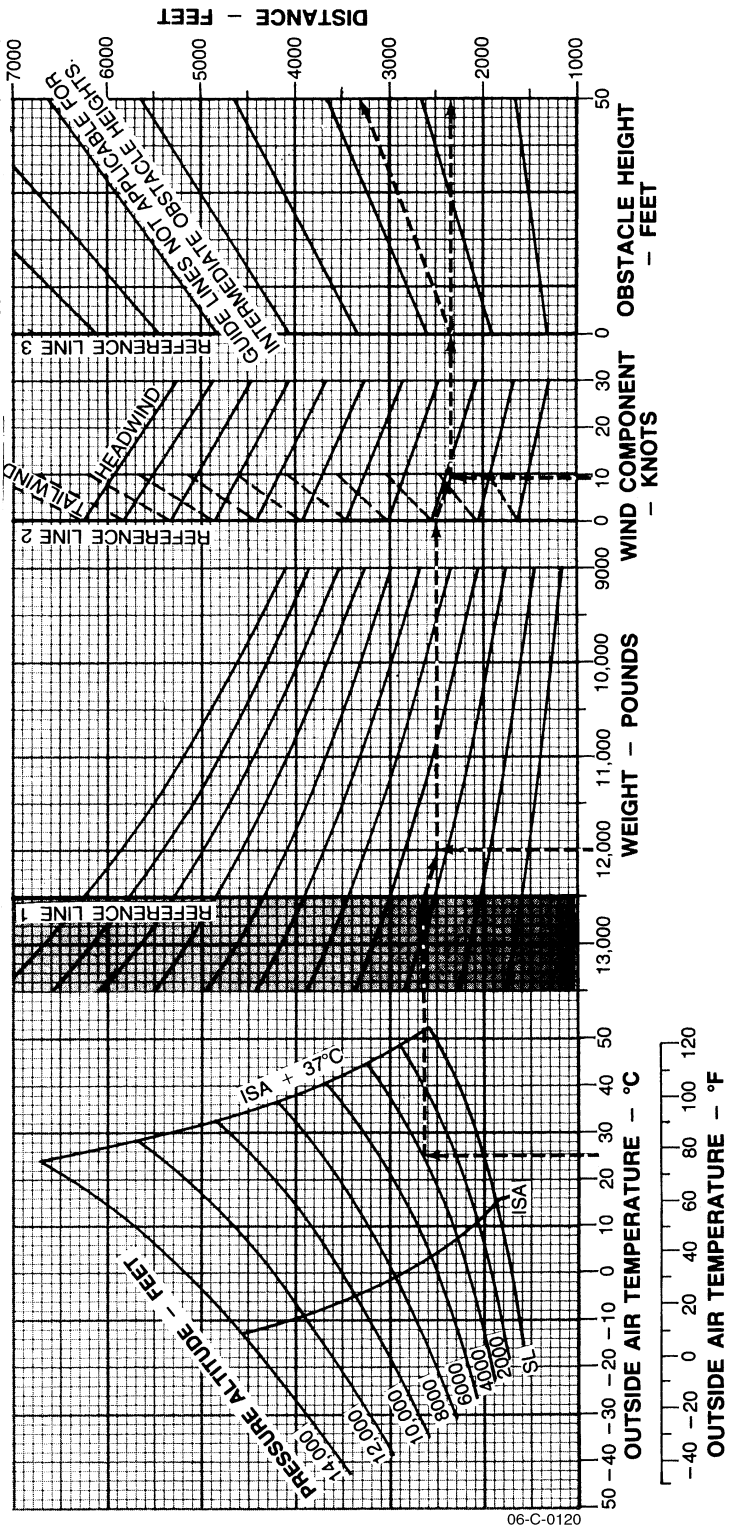


Figure 39-11. (B/F) Takeoff Distance — Flaps 40 Percent

MODEL: UC-12M
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

POWER: TAKEOFF POWER SET BEFORE BRAKE RELEASE
 GEAR: RETRACT AFTER LIFT OFF
 RUNWAY: PAVED, LEVEL, DRY SURFACE

WEIGHT - POUNDS	TAKEOFF SPEED - KIAS	
	VR	V2
13,500	96	106
12,500	96	104
12,000	95	103
11,000	95	102
10,000	95	101
9000	95	100

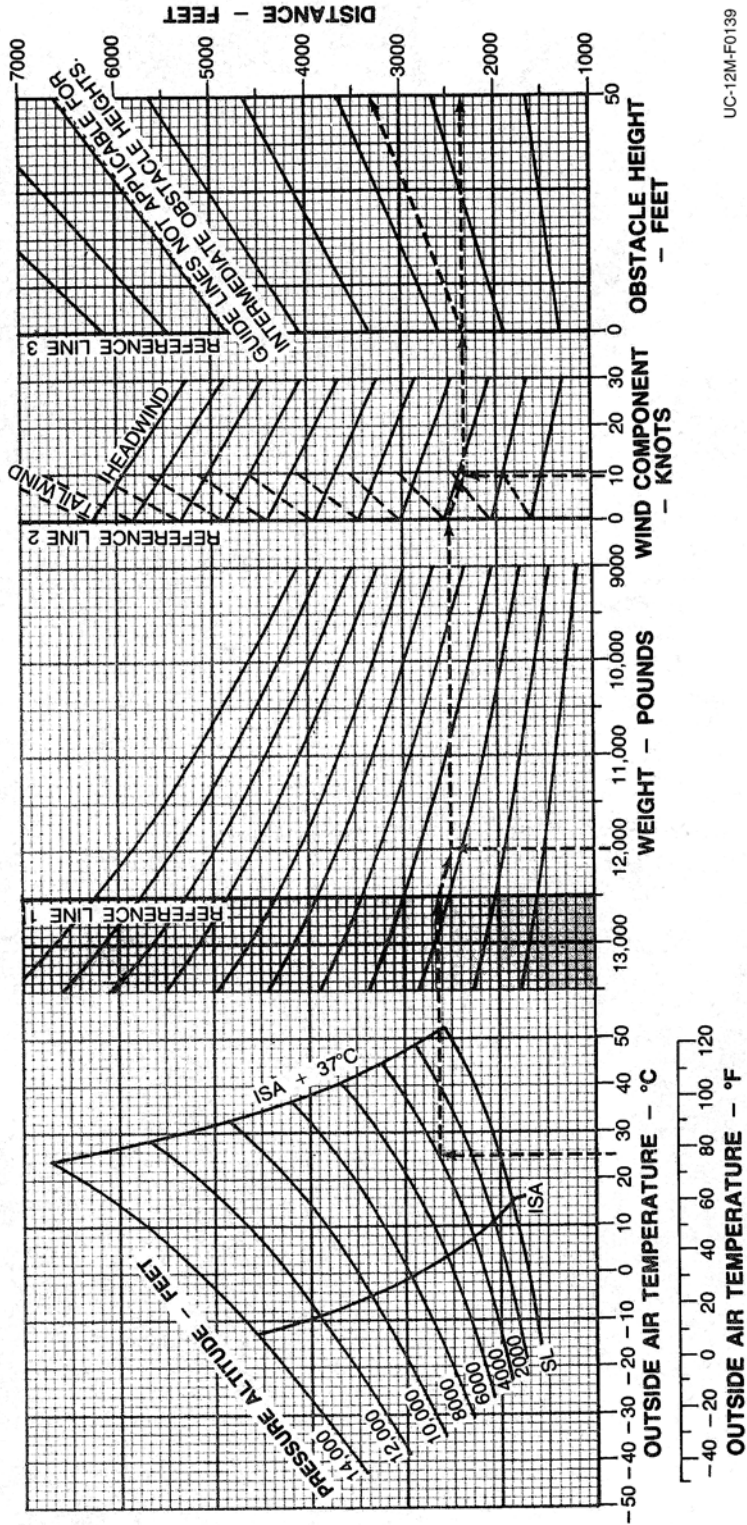
ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

OAT: 25°C
 PRESSURE ALTITUDE: 3966 FEET
 TAKEOFF WEIGHT: 12,000 LBS
 HEADWIND
 COMPONENT: 9.5 KNOTS
 GROUND ROLL: 2330 FEET
 TOTAL DISTANCE OVER 50 FT
 OBSTACLE: 3300 FEET
 TAKEOFF SPEED AT ROTATION: 95 KIAS
 AT 50 FT: 102 KIAS

NOTE

- FOR OPERATION WITH ICE VANES EXTENDED, ADD 10°C TO THE ACTUAL OAT BEFORE ENTERING CHART.
- FOR TAKEOFF FROM A RUNWAY WITH STANDING WATER OR SLUSH IN DEPTHS OF UP TO 1/2 INCH SIGNIFICANTLY INCREASE TAKEOFF DISTANCE.
- ADDITION OR SUBTRACTION OF A PERCENTAGE OF THE TOTAL DISTANCE CALCULATED IS REQUIRED WHEN THE TAKEOFF SURFACE HAS A POSITIVE OR NEGATIVE GRADE I.E. ADD OR SUBTRACT 5 PERCENT OF TAKEOFF GROUND ROLL FOR EACH 1 PERCENT OF RUNWAY SLOPE, (DOWN SUBTRACT, UP ADD).



UC-12M-F0139

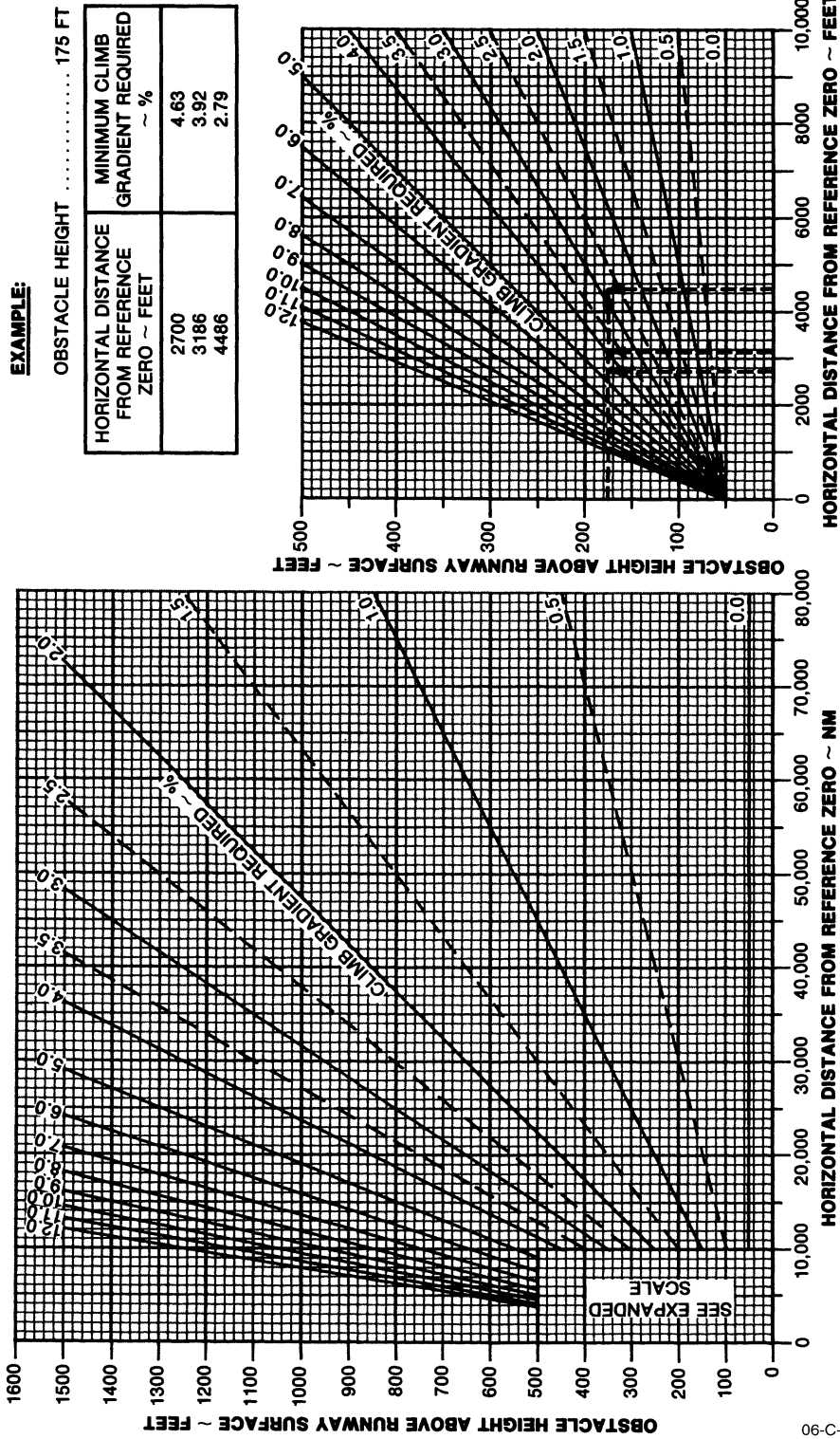
Figure 39-12. (M) Takeoff Distance — Flaps 40 Percent

TAKE-OFF FLIGHT PATH

ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

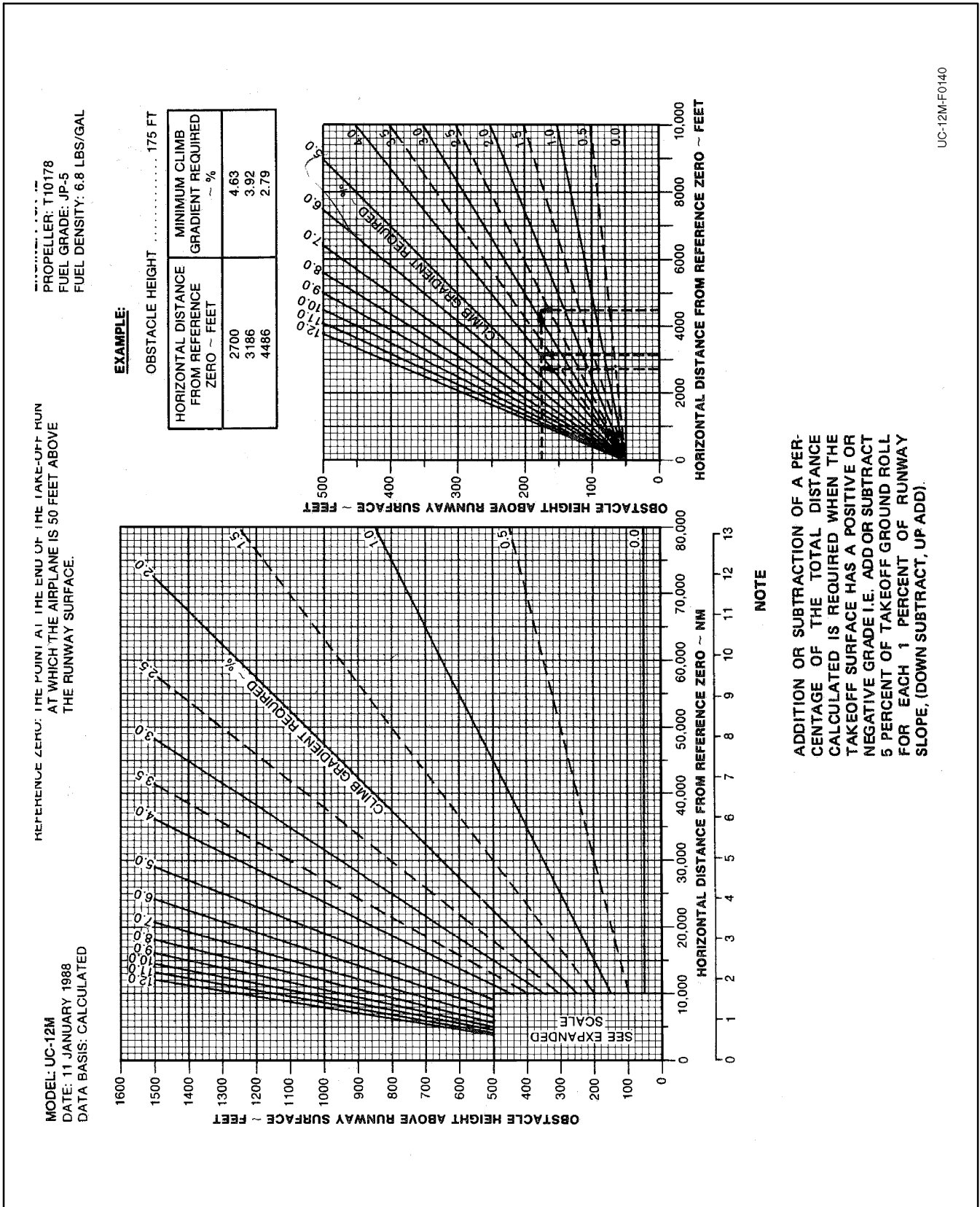
REFERENCE ZERO: THE POINT AT THE END OF THE TAKE-OFF RUN
 AT WHICH THE AIRPLANE IS 50 FEET ABOVE
 THE RUNWAY SURFACE.

MODEL: UC-12B
 DATE: 11 JANUARY 1988
 DATA BASIS: CALCULATED



06-C-0115

Figure 39-13. (B/F) Takeoff Flight Path



UC-12M-F0140

Figure 39-14. (M) Takeoff Flight Path

MODEL: UC-12B
 DATE: 11 JANUARY, 1988
 DATA BASIS: ESTIMATE
 (CONSULT APPROPRIATE CHARTS FOR EXACT VALUES AND ASSOCIATED CONDITIONS)

ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LB/GAL

FLAPS 0%
 ZERO WIND
 ICE VANES RETRACTED

WEIGHT LBS	ISA -30°C		ISA -20°C		ISA -10°C		ISA (15°C)		ISA +10°C		ISA +20°C		ISA +30°C		V ₂ KIAS		
	TORQUE=2230 FT-LBS	TORQUE=2230 FT-LBS	TORQUE=2230 FT-LBS	TORQUE=2230 FT-LBS	TORQUE=2230 FT-LBS	TORQUE=2230 FT-LBS	TORQUE=2230 FT-LBS	TORQUE=2230 FT-LBS	TORQUE=2230 FT-LBS	TORQUE=2230 FT-LBS	TORQUE=2199 FT-LBS	TORQUE=1949 FT-LBS	TORQUE=1949 FT-LBS	TORQUE=1949 FT-LBS			
13,500	3400	4700	6700	7200	3600	4900	7200	4000	5400	8200	4200	5600	8800	9800	6500	R	125
13,000	3200	4500	6100	6500	3500	4700	6900	3700	5100	7400	3900	5300	8000	8800	6100	R	123
12,500	2900	4300	5500	5900	3300	4500	6300	3500	4900	6700	3700	5100	7900	8400	5900	R	120
12,000	2700	4100	5000	5400	3000	4200	5700	3200	4600	6100	3400	4800	7100	7500	5500	R	118
11,500	2500	3900	4600	4900	2800	4000	5200	3000	4400	5500	3100	4500	6400	6800	5200	R	117
11,000	2400	3700	4200	4500	2600	3800	4700	2800	4200	5000	2900	4300	5800	6200	4900	R	116
10,500	2200	3500	3800	4000	2400	3600	4300	2500	4000	4500	2700	4100	5300	5700	4600	R	114
10,000	2000	3400	3400	3600	2100	3400	3800	2300	3900	4000	2500	4000	4300	4700	4500	R	111
9500	1800	3400	3100	3200	2000	3500	3400	2200	3800	3600	2300	3900	3800	4200	4400	R	110
9000	1700	3300	2700	2900	1900	3400	3000	2000	3700	3200	2100	3800	3400	3700	4200	R	108

WEIGHT LBS	ISA -30°C		ISA -20°C		ISA -10°C		ISA (13°C)		ISA +10°C		ISA +20°C		ISA +30°C		V ₂ KIAS	
	TORQUE=2230 FT-LBS	TORQUE=2230 FT-LBS	TORQUE=2230 FT-LBS	TORQUE=2230 FT-LBS	TORQUE=2230 FT-LBS	TORQUE=2230 FT-LBS	TORQUE=2230 FT-LBS	TORQUE=2230 FT-LBS	TORQUE=2230 FT-LBS	TORQUE=2120 FT-LBS	TORQUE=1940 FT-LBS	TORQUE=1940 FT-LBS	TORQUE=1940 FT-LBS			
13,500	3500	4900	7000	7600	4000	5400	8100	4200	5600	8700	4400	5900	9300	5000	R	125
13,000	3300	4600	6400	6900	3700	5100	7300	3900	5300	7800	4100	5600	8400	5100	R	123
12,500	3100	4400	5800	6200	3400	4800	6600	3600	5100	7100	3800	5300	7500	4700	R	120
12,000	2900	4200	5300	5600	3200	4600	6000	3400	4800	6400	3500	5000	6800	4300	R	118
11,500	2600	4000	4800	5100	3000	4400	5400	3100	4600	5800	3300	4800	6100	3600	R	117
11,000	2400	3800	4400	4600	2800	4200	4900	2900	4300	5200	3000	4500	5600	3300	R	116
10,500	2300	3600	4000	4200	2500	4000	4500	2700	4100	4700	2800	4300	5000	3100	R	114
10,000	2100	3500	3600	3800	2300	3900	4000	2400	4000	4200	2600	4200	4500	2800	R	111
9500	1900	3500	3200	3400	2100	3800	3600	2200	3900	3800	2400	4100	4000	2600	R	110
9000	1800	3400	2900	3000	2000	3700	3200	2100	3800	3400	2200	4000	3600	2300	R	108

NOTES

- Column 1 = Normal Takeoff Distance To Reach A Height of 50 Feet - FT
- Column 2 = Accelerate-Stop Distance ~ FT
- Column 3 = Accelerate-Go Distance ~ FT
- R = Distance Exceeds 10,000 FT

BT00216

06-C-0102(1)

Figure 39-15. (B/F) Takeoff Performance Planning Tabulations — Flaps 0 Percent (Sheet 1 of 2)

MODEL: UC-12B
 DATE: 11 JANUARY, 1988
 DATA BASIS: ESTIMATE
 (CONSULT APPROPRIATE CHARTS FOR
 EXACT VALUES AND ASSOCIATED CONDITIONS)

ICE VANES RETRACTED
 ZERO WIND
 FLAPS 0%

ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LB/GAL

WEIGHT LBS	ISA -30°C TORQUE = 2230 FT-LBS		ISA -20°C TORQUE = 2230 FT-LBS		ISA -10°C TORQUE = 2230 FT-LBS		ISA (0°C) TORQUE = 2230 FT-LBS		ISA +10°C TORQUE = 2200 FT-LBS		ISA +20°C TORQUE = 2070 FT-LBS		ISA +30°C TORQUE = 1900 FT-LBS		V ₂ KIAS					
	TORQUE	FT-LBS	TORQUE	FT-LBS	TORQUE	FT-LBS	TORQUE	FT-LBS	TORQUE	FT-LBS	TORQUE	FT-LBS	TORQUE	FT-LBS						
13,500	3900	5200	7800	4100	5500	8400	4300	5800	9100	4600	6100	9800	4900	6400	9400	R	6100	7400	R	125
13,000	3600	5000	7100	3800	5200	7600	4000	5500	8200	4300	5700	8800	4500	6000	9000	R	5600	6900	R	123
12,500	3300	4700	6400	3500	5000	6900	3700	5200	7300	4000	5500	7900	4200	5700	8400	R	5200	6600	R	120
12,000	3100	4500	5800	3300	4700	6200	3500	4900	6600	3700	5200	7100	3900	5400	7600	R	4800	6200	R	118
11,500	2900	4300	5300	3000	4500	5600	3200	4700	6000	3400	4900	6400	3300	5100	7000	R	4400	5900	R	117
11,000	2700	4100	4800	2800	4300	5100	3000	4500	5400	3100	4700	5800	3300	4900	6200	R	4000	5500	R	116
10,500	2400	3900	4300	2600	4000	4600	2700	4200	4900	2900	4400	5200	3100	4600	5600	R	3700	5200	R	114
10,000	2300	3800	3900	2400	3900	4100	2500	4100	4400	2700	4300	4700	2800	4500	4900	R	3400	5100	R	111
9500	2100	3700	3500	2200	3800	3700	2300	4000	3900	2400	4200	4100	2600	4400	4400	R	2800	4600	R	110
9000	1900	3600	3100	2000	3600	3300	2100	3900	3500	2200	4100	3700	2400	4300	3900	R	2600	4800	R	108

WEIGHT LBS	ISA -30°C TORQUE = 2230 FT-LBS		ISA -20°C TORQUE = 2230 FT-LBS		ISA -10°C TORQUE = 2230 FT-LBS		ISA (7°C) TORQUE = 2230 FT-LBS		ISA +10°C TORQUE = 2189 FT-LBS		ISA +20°C TORQUE = 2034 FT-LBS		ISA +30°C TORQUE = 1877 FT-LBS		V ₂ KIAS					
	TORQUE	FT-LBS	TORQUE	FT-LBS	TORQUE	FT-LBS	TORQUE	FT-LBS	TORQUE	FT-LBS	TORQUE	FT-LBS	TORQUE	FT-LBS						
13,500	4000	5400	8300	4300	5700	8900	4600	6000	9600	4800	6300	9300	5200	6700	9800	R	5800	7100	R	125
13,000	3700	5200	7500	4000	5400	8000	4200	5700	8600	4500	6000	8900	4800	6300	9000	R	5300	6800	R	123
12,500	3500	4900	6700	3700	5200	7200	3900	5400	7800	4200	5700	8300	4500	6000	8400	R	4900	6400	R	120
12,000	3200	4700	6100	3400	4900	6500	3600	5100	7000	3800	5400	7500	4100	5700	7800	R	4500	6000	R	118
11,500	3000	4400	5500	3200	4600	5900	3400	4800	6300	3600	5100	6700	3800	5400	7000	R	4200	5700	R	117
11,000	2800	4200	5000	3000	4400	5300	3100	4600	5700	3300	4800	6100	3500	5100	6600	R	3900	5400	R	116
10,500	2600	4000	4500	2700	4200	4800	2900	4400	5200	3000	4600	5500	3200	4800	5900	R	3600	5100	R	114
10,000	2400	3900	4100	2500	4100	4300	2600	4300	4600	2800	4500	4900	3000	4700	5300	R	3300	5000	R	111
9500	2200	3800	3600	2300	4000	3900	2400	4200	4100	2600	4400	4400	2700	4500	4700	R	3000	4800	R	110
9000	2000	3700	3200	2100	3900	3400	2200	4100	3700	2500	4300	3900	2700	4400	4200	R	2700	4600	R	108

NOTES

- Column 1 = Normal Takeoff Distance To Reach A Height of 50 Feet ~ FT
- Column 2 = Accelerate-Stop Distance ~ FT
- Column 3 = Accelerate-Go Distance ~ FT
- R = Distance Exceeds 10,000 FT

BT00216A

06-C-0102(2)

Figure 39-15. (B/F) Takeoff Performance Planning Tabulations — Flaps 0 Percent (Sheet 2 of 2)

MODEL: UC-12B
 DATE: 11 JANUARY, 1988
 DATA BASIS: ESTIMATE
 (CONSULT APPROPRIATE CHARTS FOR
 EXACT VALUES AND ASSOCIATED CONDITIONS)

FLAPS 40%
 ZERO WIND
 ICE VANES RETRACTED

ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LB/GAL

WEIGHT LBS	ISA -30°C		ISA -20°C		ISA -10°C		ISA (15°C)		ISA +10°C		ISA +20°C		ISA +30°C		V ₂ KIAS
	TORQUE = 2230 FT-LBS		TORQUE = 2230 FT-LBS		TORQUE = 2230 FT-LBS		TORQUE = 2230 FT-LBS		TORQUE = 2230 FT-LBS		TORQUE = 2139 FT-LBS		TORQUE = 1949 FT-LBS		
13,500	2500	4300	2700	4500	2800	4700	3000	4900	3100	5200	3400	5400	3800	5900	106
13,000	2400	4000	2500	4200	2600	4400	2800	4600	3000	4800	3200	5100	3600	5400	105
12,500	2300	3900	2400	4100	2500	4300	2700	4500	2800	4600	3000	4900	3400	5200	104
12,000	2100	3800	2200	4000	2400	4200	2500	4300	2600	4500	2800	4700	3200	5100	103
11,500	2000	3700	2100	3900	2200	4000	2300	4200	2500	4400	2700	4600	3000	4900	103
11,000	1900	3600	2000	3800	2100	4000	2200	4100	2300	4300	2500	4500	2800	4800	102
10,500	1800	3500	1900	3700	2000	3900	2100	4000	2200	4200	2400	4400	2600	4700	102
10,000	1700	3500	1800	3700	1900	3800	2000	4000	2100	4100	2300	4300	2500	4600	101
9500	1600	3400	1700	3600	1800	3700	1900	3900	2000	4000	2200	4200	2300	4500	101
9000	1500	3400	1600	3500	1700	3600	1700	3800	1900	3900	2000	4100	2200	4400	100

WEIGHT LBS	ISA -30°C		ISA -20°C		ISA -10°C		ISA (13°C)		ISA +10°C		ISA +20°C		ISA +30°C		V ₂ KIAS
	TORQUE = 2230 FT-LBS		TORQUE = 2230 FT-LBS		TORQUE = 2230 FT-LBS		TORQUE = 2230 FT-LBS		TORQUE = 2230 FT-LBS		TORQUE = 2120 FT-LBS		TORQUE = 1940 FT-LBS		
13,500	2600	4400	2800	4700	2900	4900	3100	5100	3300	5400	3600	5700	4000	6100	106
13,000	2500	4200	2600	4400	2800	4600	2900	4800	3100	5000	3400	5300	3800	5600	105
12,500	2300	4100	2500	4200	2600	4400	2800	4600	2900	4800	3200	5100	3600	5400	104
12,000	2200	3900	2300	4100	2500	4300	2600	4500	2800	4700	3000	4900	3400	5300	103
11,500	2100	3800	2200	4000	2400	4200	2500	4300	2600	4500	2800	4800	3100	5100	103
11,000	2000	3800	2100	3900	2200	4100	2300	4300	2400	4400	2600	4700	2900	5000	102
10,500	1900	3700	2000	3800	2100	4000	2200	4200	2300	4300	2500	4600	2800	4900	102
10,000	1700	3600	1800	3800	1900	3900	2000	4100	2100	4200	2300	4500	2600	4700	101
9500	1600	3500	1700	3700	1800	3800	1900	4000	2000	4200	2200	4400	2400	4600	101
9000	1600	3500	1600	3600	1700	3800	1800	3900	1900	4100	2100	4300	2300	4500	100

NOTES

- Column 1 = Normal Takeoff Distance To Reach A Height of 50 Feet - FT
- Column 2 = Accelerate-Stop Distance ~ FT
- Column 3 = Accelerate-Go Distance ~ FT
- R = Distance Exceeds 10,000 FT

BT00217

UC12-BF-002

Figure 39-16. (B/F) Takeoff Performance Planning Tabulations — Flaps 40 Percent (Sheet 1 of 2)

WEIGHT ~ POUNDS	V ₁ ~ KNOTS
13,500	106
12,500	103
12,000	102
11,000	98
10,000	96
9000	96

ENGINE: PT6A-41/42
 PROPELLER: T10178/P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

OAT: 25°C
 PRESSURE ALTITUDE: 3966 FT
 WEIGHT: 12,000 LBS
 HEADWIND COMPONENT: 9.5 KTS
 FIELD LENGTH: 5550 FT
 V₁: 102 KTS

NOTE

- FOR OPERATION WITH ICE VANES EXTENDED, PERFORMANCE IS NOT AFFECTED.
- FOR SLOPED RUNWAYS, ADD OR SUBTRACT 5% OF TAKEOFF GROUND ROLL FOR EACH 1% OF RUNWAY SLOPE (DOWN-SUBTRACT, UP-ADD).
- TAKEOFF FROM A RUNWAY WITH STANDING WATER OR SLUSH IN DEPTHS OF UP TO ONE-HALF INCH SIGNIFICANTLY INCREASES TAKEOFF DISTANCE.

MODEL: UC-12B/F
 DATE: 11 JANUARY 1988
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

- POWER: 1. TAKEOFF POWER SET BEFORE BRAKE RELEASE
 2. BOTH ENGINES IDLE AT V₁ SPEED AND REVERSE OPERATING ENGINE
 0%
- FLAPS: 0%
 AUTOFEATHER: ARMED
 BRAKING: MAXIMUM WITHOUT SLIDING TIRES
 RUNWAY: PAVED, LEVEL, DRY SURFACE

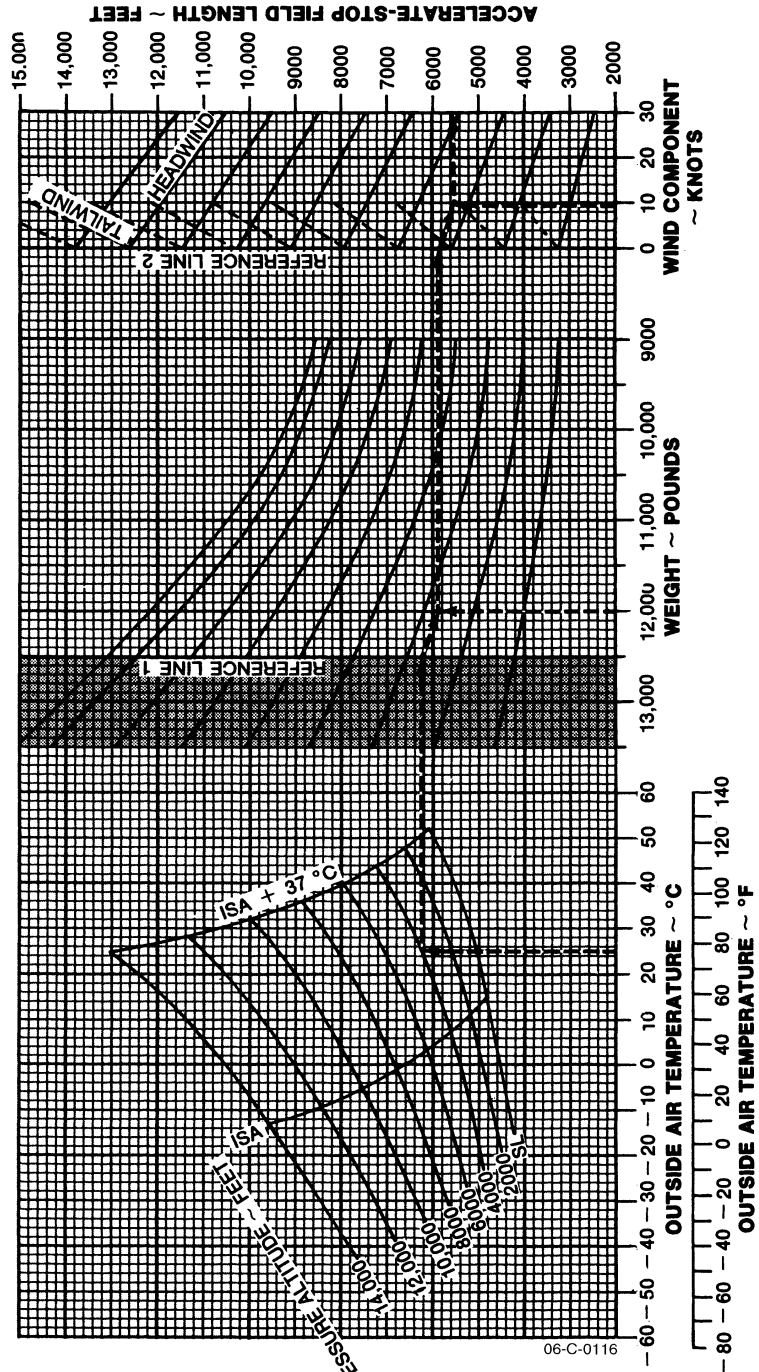


Figure 39-17. (B/F) Accelerate-Stop Distance — Flaps 0 Percent

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LB/GAL

EXAMPLE:

OAT: 25°C
 PRESSURE ALTITUDE: 3966 FT
 WEIGHT: 12,000 LBS
 HEADWIND COMPONENT: 9.5 KNOTS
 FIELD LENGTH: 4450 FT
 V₁: 102 KIAS

WEIGHT - POUNDS	V ₁ - KIAS
13,500	106
12,500	103
12,000	102
11,000	98
10,000	96
9000	96

NOTE

- ACCELERATE - STOP DISTANCE MAY EXCEED PREDICATED VALUE BY 25 PERCENT OR MORE. FOR FLIGHT PLANNING PURPOSES MULTIPLY CHART ACCELERATE - STOP DISTANCE BY 1.25.
- FOR TAKEOFF FROM A RUNWAY WITH STANDING WATER OR SLUSH IN DEPTHS OF UP TO 1/2 INCH, SIGNIFICANTLY INCREASE TAKEOFF DISTANCE.

TAKEOFF POWER SET BEFORE BRAKE RELEASE.
 BOTH ENGINES IDLE AT V₁ SPEED AND REVERSE OPERATING ENGINE.

FLAPS: ARMED
 AUTOFEATHER: MAXIMUM
 BRAKING: PAVED, LEVEL, DRY SURFACE
 RUNWAY:

MODEL: UC-12M
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

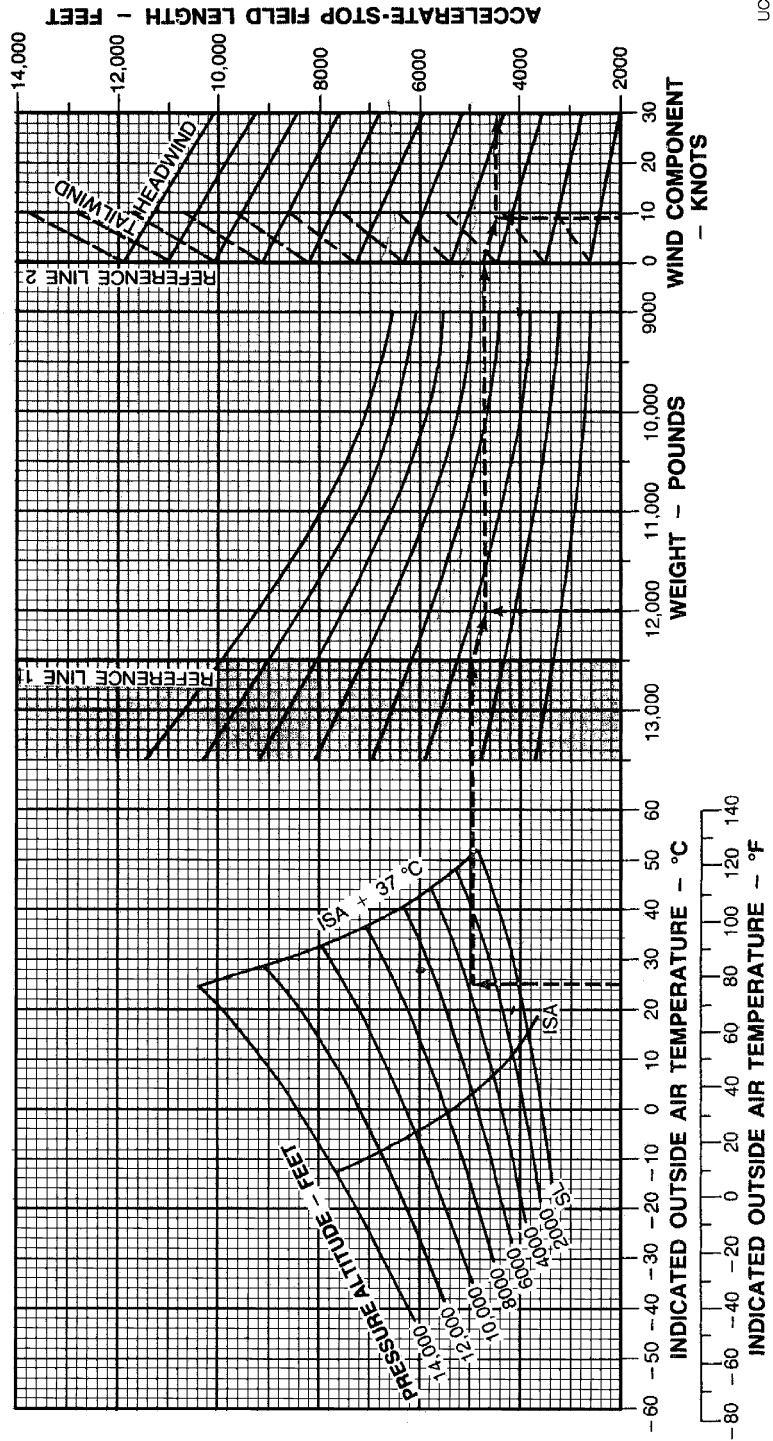
POWER:

FLAPS:

AUTOFEATHER:

BRAKING:

RUNWAY:



UC-12M-F0141

Figure 39-18. (M) Accelerate-Stop Distance — Flaps 0 Percent

MODEL: UC-12B
 DATE: 11 JANUARY 1988
 DATA BASIS: FLIGHT TEST

WEIGHT ~ POUNDS	V ₁ ~ KNOTS
13,500	96
12,500	96
12,000	95
11,000	95
10,000	95
9000	95

ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

CONFIGURATION:

- POWER: 1. TAKE-OFF POWER SET BEFORE BRAKE RELEASE.
- 2. BOTH ENGINES IDLE AT V₁ SPEED AND REVERSE OPERATING ENGINE.

FLAPS: 40%

AUTOFEATHER: ARMED

BRAKING: MAXIMUM WITHOUT SLIDING TIRES

RUNWAY: PAVED, LEVEL, DRY SURFACE

EXAMPLE:

OAT: 25°C
 PRESSURE ALTITUDE: 3966 FT
 WEIGHT: 12,000 LBS
 HEADWIND COMPONENT: 9.5 KTS
 FIELD LENGTH: 5050 FT
 V₁: 95 KTS

NOTE

1. FOR OPERATION WITH ICE VANES EXTENDED, PERFORMANCE IS NOT AFFECTED.
2. FOR SLOPED RUNWAYS, ADD OR SUBTRACT 5% OF TAKEOFF GROUND ROLL FOR EACH 1% OF RUNWAY SLOPE (DOWN-SUBTRACT, UP-ADD).
3. TAKEOFF FROM A RUNWAY WITH STANDING WATER OR SLUSH IN DEPTHS OF UP TO 1/2 INCH SIGNIFICANTLY INCREASES TAKEOFF DISTANCE.

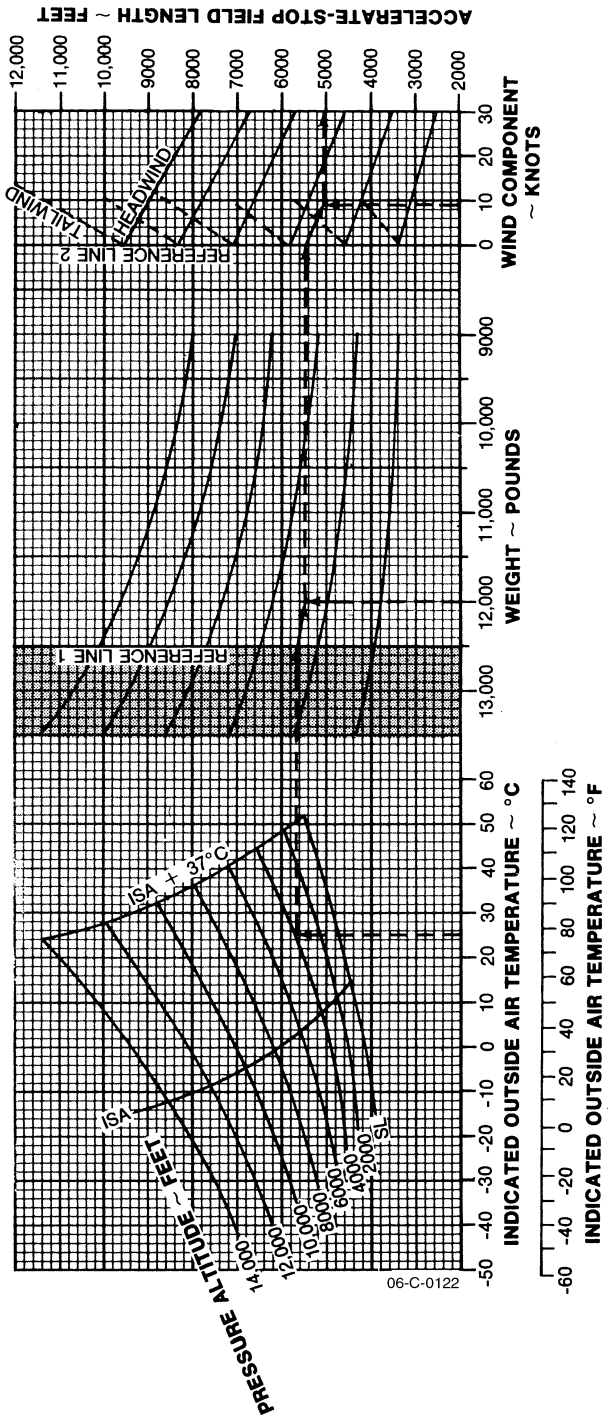


Figure 39-19. (B/F) Accelerate-Stop Distance — Flaps 40 Percent

NOTE

- ACCELERATE - STOP DISTANCE MAY EXCEED PREDICATED VALUE BY 25 PERCENT OR MORE. FOR FLIGHT PLANNING PURPOSES MULTIPLY CHART ACCELERATE - STOP DISTANCE BY 1.25.
- ADDITION OR SUBTRACTION OF A PERCENTAGE OF THE TOTAL DISTANCE CALCULATED IS REQUIRED WHEN THE TAKEOFF SURFACE HAS A POSITIVE OR NEGATIVE GRADE. I.E. ADD OR SUBTRACT 5 PERCENT OF TAKEOFF GROUND ROLL FOR EACH 1 PERCENT OF RUNWAY SLOPE, (DOWN SUBTRACT, UP ADD).

WEIGHT - POUNDS	V ₁ - KIAS
13,500	96
12,500	96
12,000	95
11,000	95
10,000	95
9000	95

MODEL: UC-12M
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

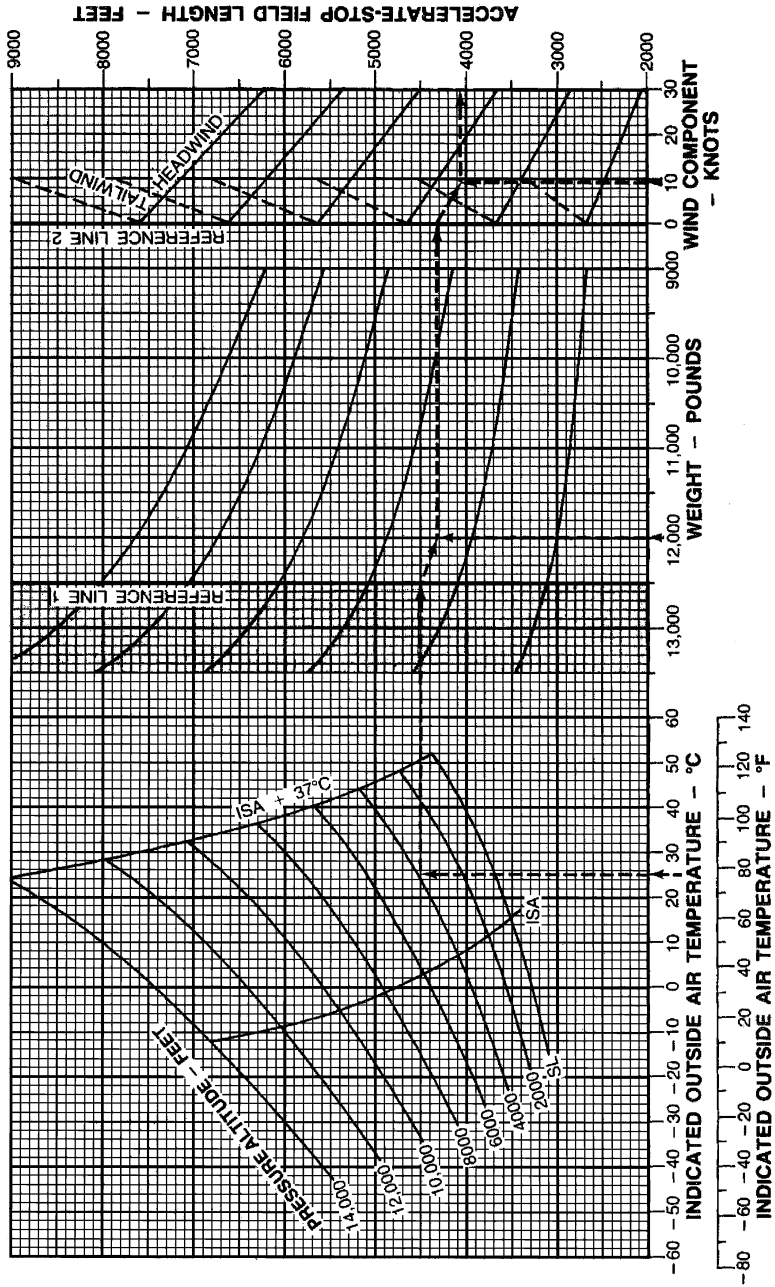
CONFIGURATION:

- POWER: 1. TAKEOFF POWER SET BEFORE BRAKE RELEASE
- 2. BOTH ENGINES IDLE AT V₁ SPEED AND REVERSE OPERATING ENGINE
- FLAPS: APPROACH (40%)
- AUTOFEATHER: ARMED
- BRAKING: MAXIMUM
- RUNWAY: PAVED, LEVEL, DRY SURFACE

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

OAT: 25°C
 PRESSURE ALTITUDE: 3966 FEET
 WEIGHT: 12,000 LBS
 HEADWIND
 COMPONENT: 9.5 KNOTS
 FIELD LENGTH: 4050 FEET
 V₁: 95 KIAS



UC-12M-F0142

Figure 39-20. (M) Accelerate-Stop Distance — Flaps 40 Percent

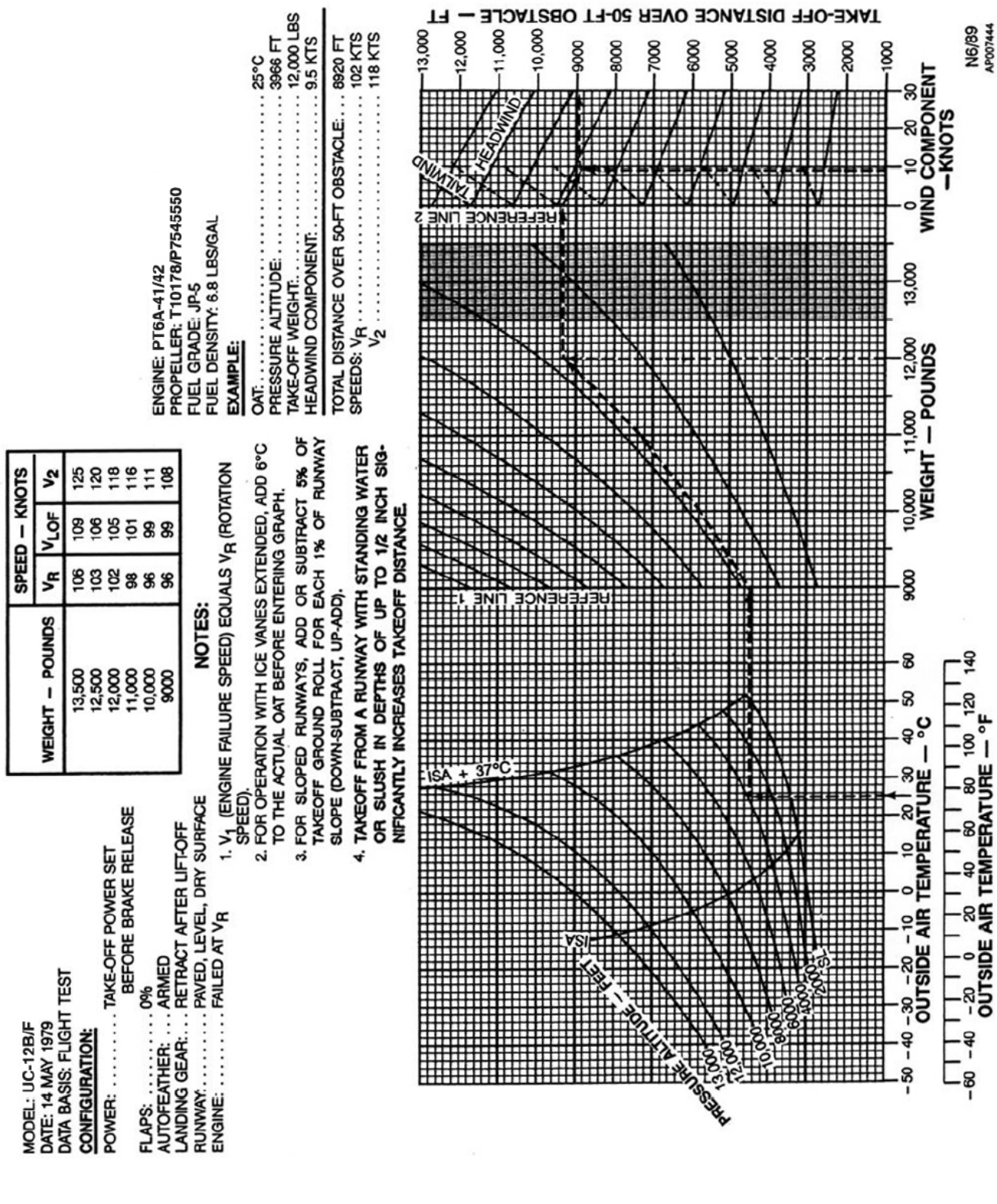


Figure 39-21. (B/F) Accelerate-Go Distance — Flaps 0 Percent

WEIGHT — POUNDS	SPEED — KIAS		
	V _R	V _L OF	V ₂
13,500	106	109	125
12,500	103	106	120
12,000	102	105	118
11,000	98	101	116
10,000	96	99	111
9000	96	99	108

MODEL: UC-12M
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

POWER: TAKE-OFF POWER SET BEFORE BRAKE RELEASE
 FLAPS: UP (0%)
 AUTOFEATHER: ARMED
 LANDING GEAR: RETRACT AFTER LIFT-OFF
 RUNWAY: PAVED, LEVEL, DRY SURFACE
 ENGINE: FAILED AT V_R

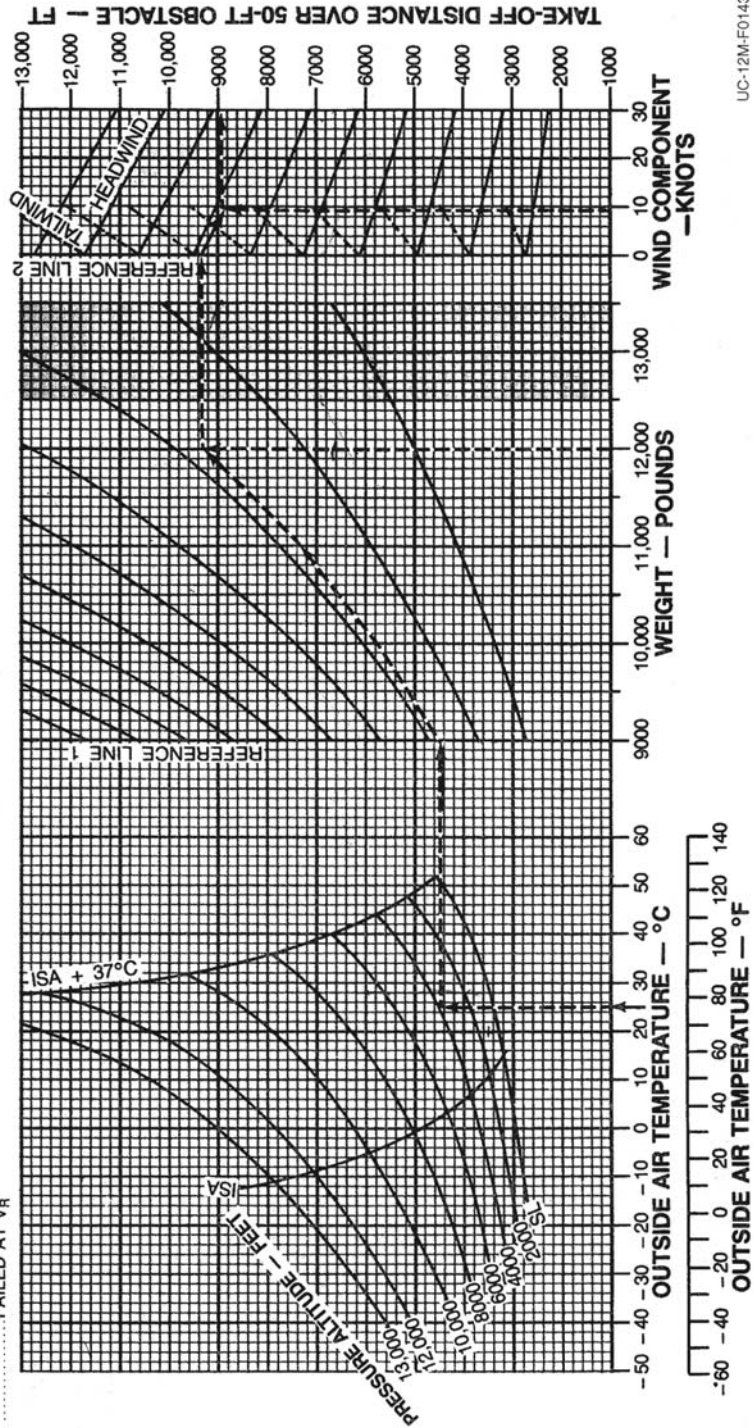
NOTE

- V₁ (ENGINE FAILURE SPEED) EQUALS V_R (ROTATION SPEED).
- FOR OPERATION WITH ICE VANES EXTENDED, ADD 6° C TO THE ACTUAL OAT BEFORE ENTERING GRAPH.
- ADDITION OR SUBTRACTION OF A PERCENTAGE OF THE TOTAL DISTANCE CALCULATED IS REQUIRED WHEN THE TAKEOFF SURFACE HAS A POSITIVE OR NEGATIVE GRADE I.E. ADD OR SUBTRACT 5 PERCENT OF TAKEOFF GROUND ROLL FOR EACH 1 PERCENT OF RUNWAY SLOPE, (DOWN SUBTRACT, UP ADD).

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LB/GAL

EXAMPLE:

OAT: 25°C
 PRESSURE ALTITUDE: 3966 FT
 TAKE-OFF WEIGHT: 12,000 LBS
 HEADWIND COMPONENT: 9.5 KNOTS
 TOTAL DISTANCE OVER 50-FT OBSTACLE: 8920 FT
 SPEEDS: V_R 102 KIAS
 V₂ 118 KIAS



UC-12M-F0143

Figure 39-22. (M) Accelerate-Go Distance — Flaps 0 Percent

WEIGHT — POUNDS	SPEED — KNOTS		
	V _R	V _{LOF}	V ₂
13,500	96	99	106
12,500	96	99	104
12,000	95	98	103
11,000	95	98	102
10,000	95	98	101
9000	95	98	100

MODEL: UC-12B
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

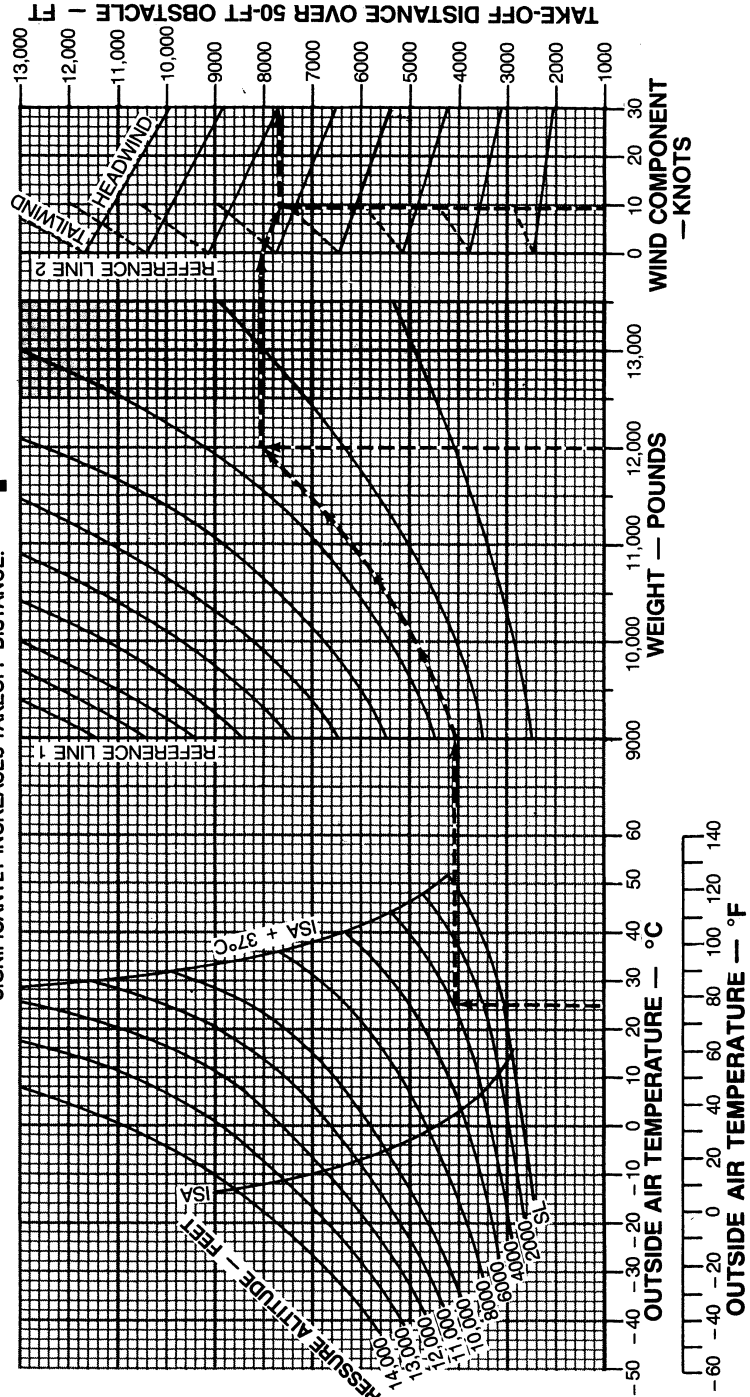
POWER: TAKE-OFF POWER SET BEFORE BRAKE RELEASE
 FLAPS: 40%
 AUTOFEATHER: ARMED
 LANDING GEAR: RETRACT AFTER LIFT-OFF
 RUNWAY: PAVED, LEVEL, DRY SURFACE
 ENGINE: FAILED AT V_R

NOTE

1. V₁ (ENGINE FAILURE SPEED) EQUALS V_R (ROTATION SPEED).
2. FOR OPERATION WITH ICE VANES EXTENDED, ADD 6°C TO THE ACTUAL OAT BEFORE ENTERING GRAPH.
3. FOR SLOPED RUNWAYS, ADD OR SUBTRACT 5% OF TAKEOFF GROUND ROLL FOR EACH 1% OF RUNWAY SLOPE (DOWN-SUBTRACT, UP-ADD).
4. TAKEOFF FROM A RUNWAY WITH STANDING WATER OR SLUSH IN DEPTHS OF UP TO ONE-HALF INCH SIGNIFICANTLY INCREASES TAKEOFF DISTANCE.

ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:
 OAT: 25°C
 PRESSURE ALTITUDE: 3966 FT
 TAKE-OFF WEIGHT: 12,000 LBS
 HEADWIND COMPONENT: 9.5 KTS
 TOTAL DISTANCE OVER 50-FT OBSTACLE: 7660 FT
 SPEEDS: V_R 95 KTS
 V₂ 103 KTS



06-C-0124

Figure 39-23. (B/F) Accelerate-Go Distance — Flaps 40 Percent

NOTE

- V1 (ENGINE FAILURE SPEED) EQUALS VR (ROTATION SPEED).
- FOR OPERATION WITH ICE VANES EXTENDED, ADD 6° C TO THE ACTUAL OAT BEFORE ENTERING GRAPH.
- ADDITION OR SUBTRACTION OF A PERCENTAGE OF THE TOTAL TAKEOFF CALCULATED IS REQUIRED WHEN THE TAKEOFF SURFACE HAS A POSITIVE OR NEGATIVE GRADE I.E. ADD OR SUBTRACT 5 PERCENT OF TAKEOFF GROUND ROLL FOR EACH 1 PERCENT OF RUNWAY SLOPE, (DOWN SUBTRACT, UP ADD).

WEIGHT — POUNDS	SPEED — KIAS		
	VR	VLOF	V2
13,500	96	99	106
12,500	96	99	104
12,000	95	98	103
11,000	95	98	102
10,000	95	98	101
9000	95	98	100

MODEL: UC-12M

DATE: 14 MAY 1979

DATA BASIS: FLIGHT TEST

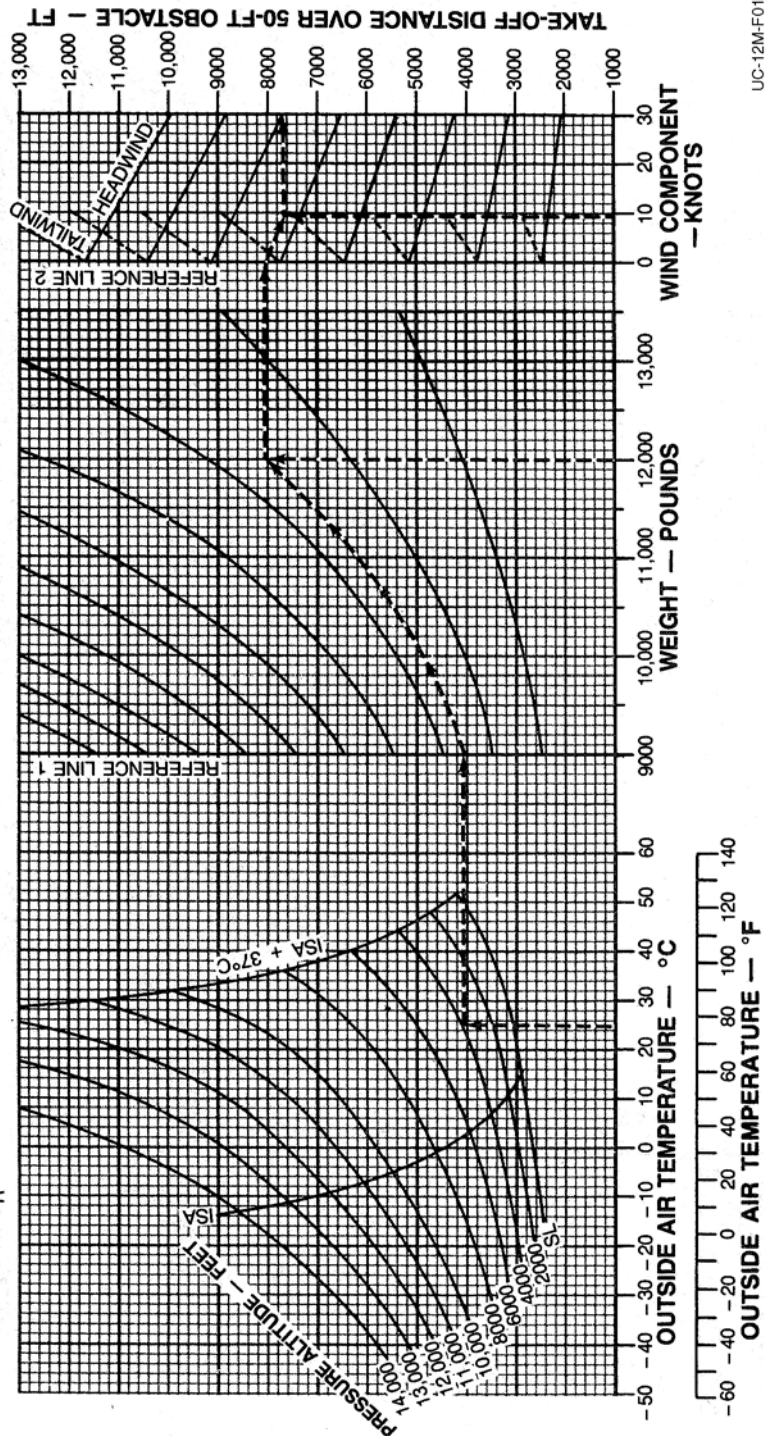
CONFIGURATION:

POWER: TAKE-OFF POWER SET BEFORE BRAKE RELEASE
 FLAPS: APPROACH (40%)
 AUTOFEATHER: ARMED
 LANDING GEAR: RETRACT AFTER LIFT-OFF
 RUNWAY: PAVED, LEVEL, DRY SURFACE
 ENGINE: FAILED AT VR

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

OAT: 25°C
 PRESSURE ALTITUDE: 3966 FT
 TAKE-OFF WEIGHT: 12,000 LBS
 HEADWIND COMPONENT: 9.5 KNOTS
 TOTAL DISTANCE OVER 50-FT OBSTACLE: 7660 FT
 SPEEDS: VR 95 KIAS
 V2 103 KIAS



UC-12M-F0144

Figure 39-24. (M) Accelerate-Go Distance — Flaps 40 Percent

MODEL: UC-12B
 DATE: 11 JANUARY 1988
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

POWER TAKE-OFF
 FLAPS 0%
 LANDING GEAR UP
 INOPERATIVE
 PROPELLER FEATHERED

WEIGHT ~ POUNDS	CLIMB SPEED ~ KNOTS
13,500	126
12,500	122
12,000	120
11,000	117
10,000	113
9000	110

ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

OAT 25°C
 PRESSURE ALTITUDE 3966 FT
 WEIGHT 12,000 LBS
 NET GRADIENT OF CLIMB 3.8%
 CLIMB SPEED 120 KTS

NOTE: FOR OPERATION WITH ICE VANES EXTENDED, CLIMB GRADIENT WILL BE REDUCED APPROXIMATELY 0.6 PERCENTAGE POINTS.

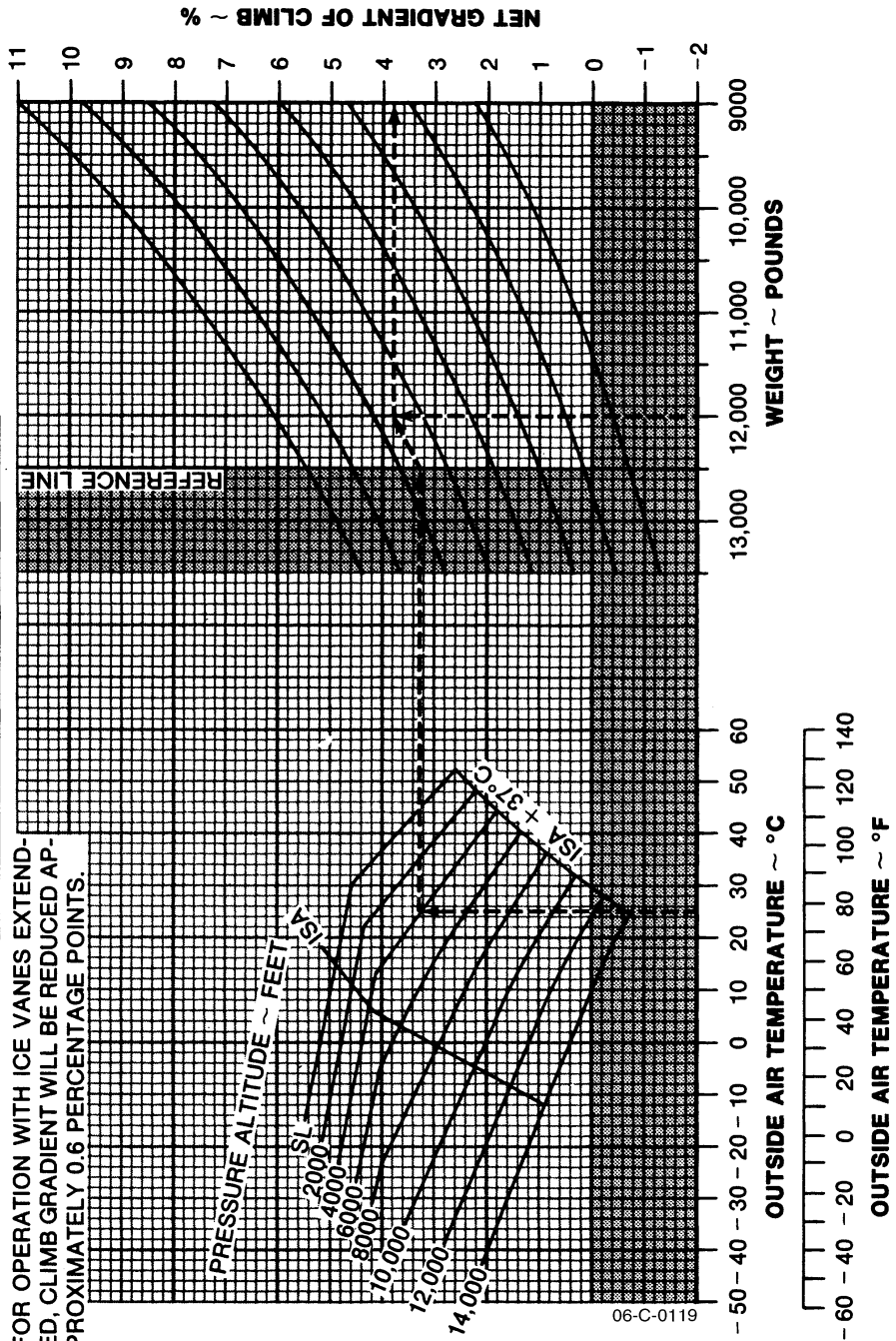


Figure 39-25. (B/F) Net Gradient of Climb — Flaps 0 Percent

MODEL: UC-12B
 DATE: 11 JANUARY 1988
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

POWER TAKE-OFF
 FLAPS 40% UP
 LANDING GEAR UP
 INOPERATIVE
 PROPELLER FEATHERED

WEIGHT ~ POUNDS	CLIMB SPEED ~ KNOTS
13,500	109
12,500	108
12,000	107
11,000	105
10,000	104
9,000	104

ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

OAT 25°C
 PRESSURE ALTITUDE 3966 FT
 WEIGHT 12,000 LBS
 NET GRADIENT OF CLIMB 2.5%
 CLIMB SPEED 107 KTS

NOTE: FOR OPERATION WITH ICE VANES EXTENDED, CLIMB GRADIENT WILL BE REDUCED APPROXIMATELY 0.6 PERCENTAGE POINTS.

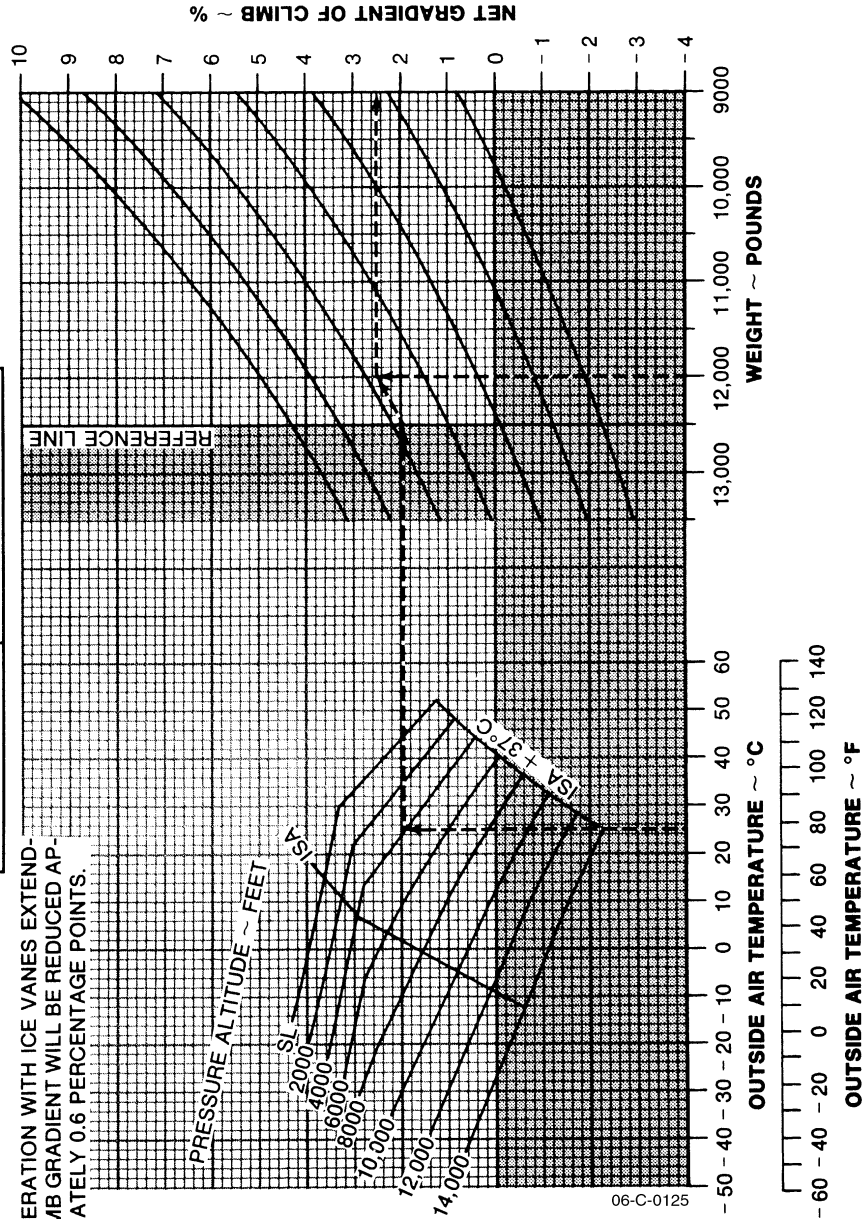


Figure 39-26. (B/F) Net Gradient of Climb — Flaps 40 Percent

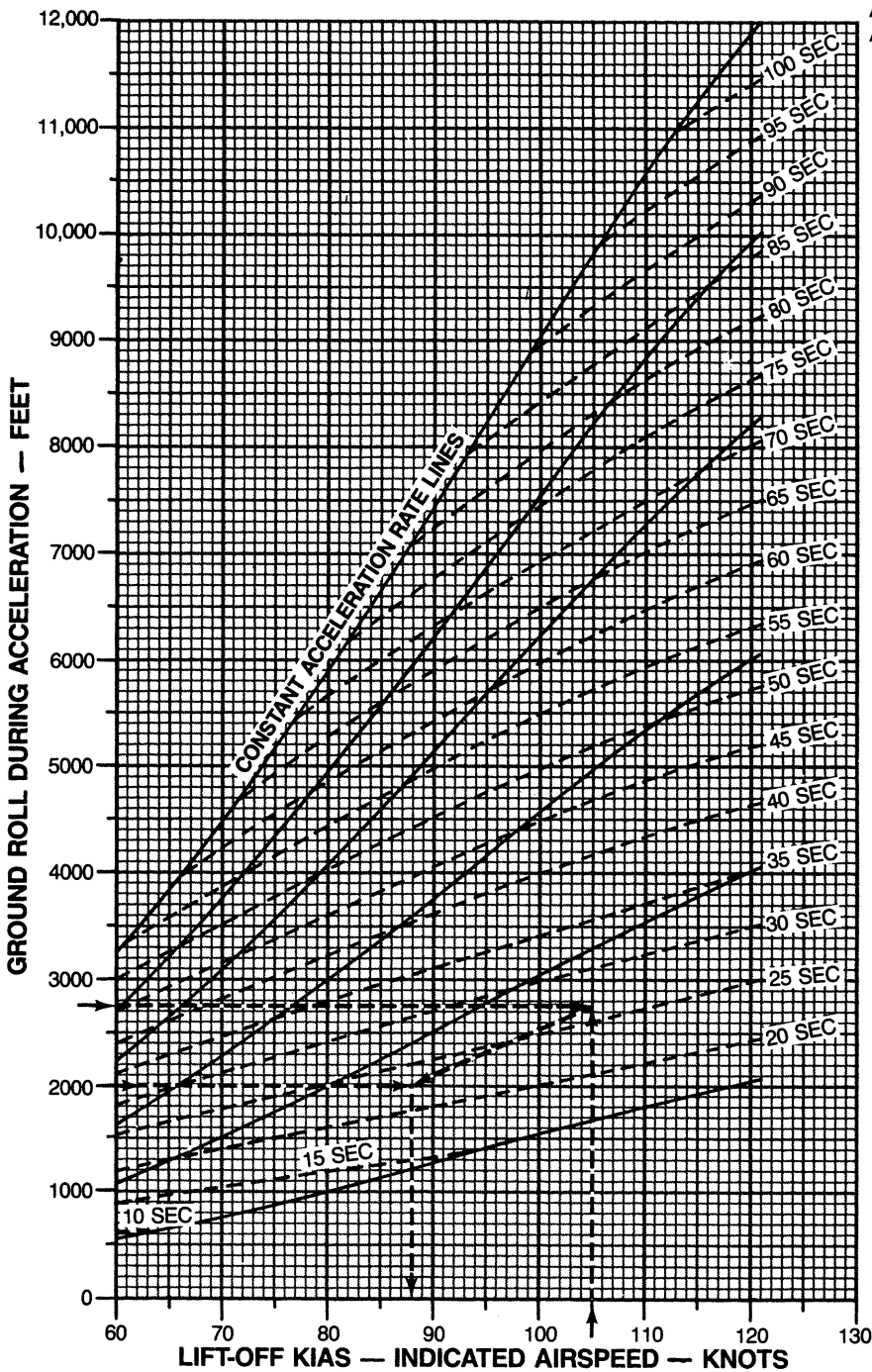
MODEL: UC-12B
 DATE: 14 MAY 1979
 DATA BASIS: ESTIMATED
CONFIGURATION:
 POWER:TAKEOFF

ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LB/GAL

EXAMPLE:
 LIFT-OFF IAS: 105 KTS
 TAKE-OFF CHART
 GROUND ROLL: 2750 FT
 LINE SPEED CHECK
 POINT DISTANCE: 2000 FT

EXPECT LINE SPEED: . . . 88 KTS
 AT APPROXIMATELY 23 SECONDS
 AFTER BRAKE RELEASE.

NOTE
 THIS DATA IS FOR DRY RUNWAY.



06-C-0126

Figure 39-27. (B/F) Line Speed Check During Takeoff Ground Run

MODEL: UC-12M
 DATE: 14 MAY 1979
 DATA BASIS: ESTIMATED

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LB/GAL

EXAMPLE:

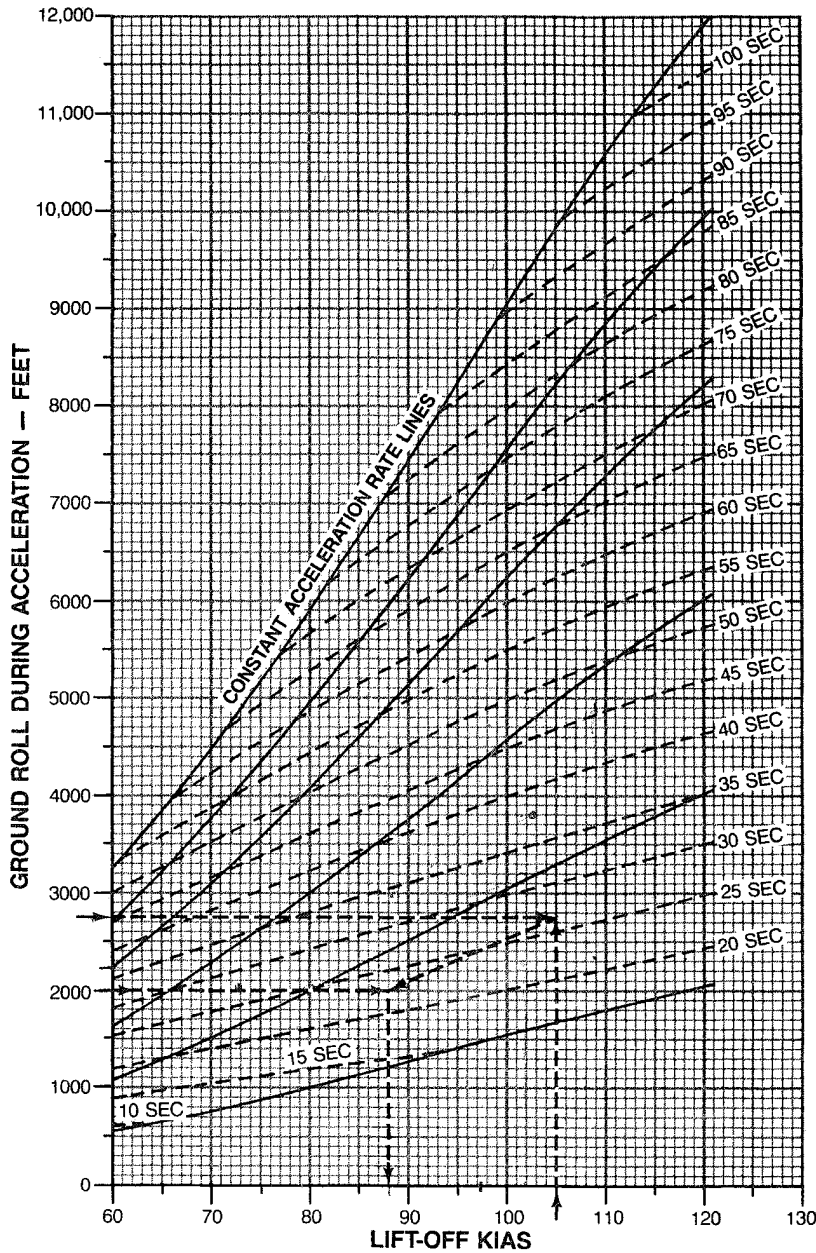
LIFT-OFF: 105 KIAS
 TAKE-OFF CHART
 GROUND ROLL: 2750 FT
 LINE SPEED CHECK
 POINT DISTANCE: 2000 FT
 EXPECT LINE SPEED: 88 KIAS
 AT APPROXIMATELY 23 SECONDS
 AFTER BRAKE RELEASE.

CONFIGURATION:

POWER: TAKEOFF

NOTE

ADDITION OR SUBTRACTION OF A PERCENTAGE OF THE TOTAL DISTANCE CALCULATED IS REQUIRED WHEN THE TAKEOFF SURFACE HAS A POSITIVE OR NEGATIVE GRADE I.E. ADD OR SUBTRACT 5 PERCENT OF TAKEOFF GROUND ROLL FOR EACH 1 PERCENT OF RUNWAY SLOPE, (DOWN SUBTRACT, UP ADD)



UC-12M-F0145

Figure 39-28. (M) Line Speed Check During Takeoff Ground Run

CHAPTER 40

Climb

40.1 DESCRIPTION OF CHARTS

40.1.1 Climb

These charts show rate of climb for ambient air temperatures, pressure altitudes, and weights for different flap and engine configurations. To use these charts, enter at true outside air temperature, trace up to pressure altitude, trace right to reference line, trace along weight guidelines to weight, then trace right to read rate of climb. Refer to [Figures 40-1, 40-2, 40-3, 40-4, 40-5, 40-6, 40-7, 40-8, and 40-9](#).

40.1.2 Time/Fuel/Distance to Climb

This chart shows time, fuel, and distance to climb for ambient temperature, weight, and pressure altitude. To use chart, enter at true outside air temperature, trace up to pressure altitude, trace right to weight, trace down to read time, fuel, and distance to climb. Refer to [Figures 40-10, 40-11, and 40-12](#).

40.1.3 Service Ceiling with One Engine Inoperative

The maximum altitude at which the aircraft can maintain a 100-fpm climb with one engine inoperative is shown for gross weight and ambient temperature. To use chart, enter at true outside air temperature, trace up to weight, then trace left to read service ceiling. Refer to [Figures 40-13, 40-14, and 40-15](#).

40.1.4 Maximum en Route Weight (To Ensure 50-fpm Climb — Single Engine)

This chart shows the maximum en route weight at which the aircraft is capable of climbing at 50 fpm as a function of OAT and altimeter setting at various Minimum En Route IFR Altitudes ([MEAs](#)). To use chart, enter at the en route OAT, trace up to the MEA, trace right to the reference line, follow the guidelines right or left as required to the altimeter setting, then trace right to the maximum en route weight. Weight of fuel required to reach the MEA may be added to the answer to determine the maximum takeoff weight that will permit meeting this requirement. Refer to [Figures 40-16 and 40-17](#).

MODEL: UC-12B

DATE: 14 MAY 1979

DATA BASIS: FLIGHT TEST

CONFIGURATION:

POWER: NOT TO EXCEED 750°C

FLAPS: 0%

GEAR: UP

WEIGHT - POUNDS	V _y AIRSPEED - KNOTS
13,500	125
13,000	123
12,000	118
11,000	115
10,000	111
9,000	109

ENGINE: FT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LB/GAL

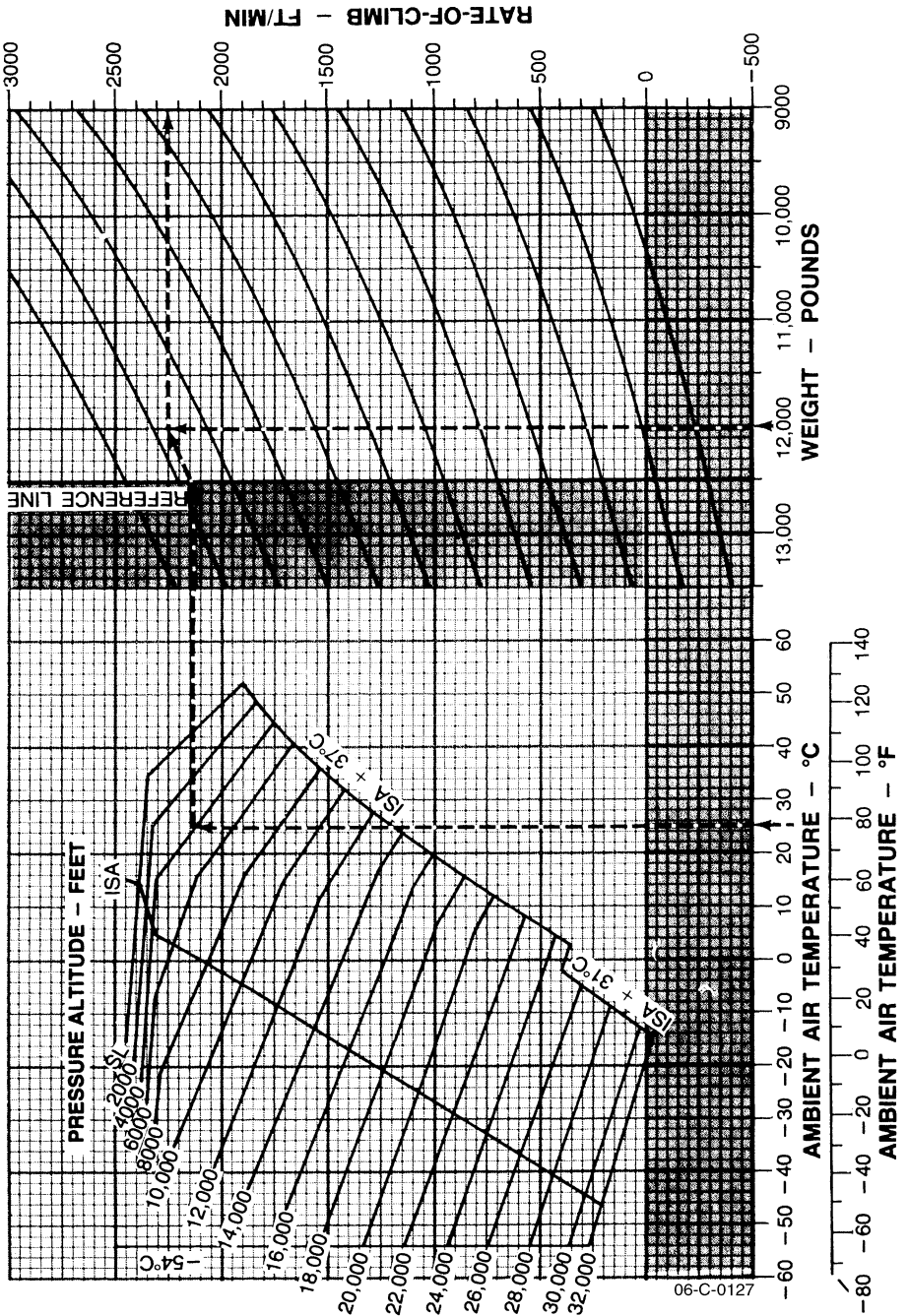
EXAMPLE:

OAT: 25°C
 PRESSURE ALTITUDE: 3966 FEET
 WEIGHT: 12,000 LBS

RATE-OF-CLIMB: 2250 FEET PER MIN
 CLIMB SPEED: 118 KNOTS

NOTE

FOR OPERATION WITH ICE VANES EXTENDED. ADD 15°C TO THE ACTUAL OAT BEFORE ENTERING CHART.



06-C-127

Figure 40-1. (B) Climb Two Engines — Flaps 0 Percent

MODEL: UC-12F
 DATE: 29, JULY 1986
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

POWER: NOT TO EXCEED 800°C
 FLAPS: UP
 GEAR: UP

WEIGHT ~ POUNDS	V _y AIRSPEED ~ KIAS
13,500	124
12,500	121
12,000	119
11,000	115
10,000	111
9,000	107

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

OAT: 25°C
 PRESSURE ALTITUDE: 3966 FT
 WEIGHT: 12,000 LBS
 RATE OF CLIMB: 2325 FT/MIN
 CLIMB SPEED: 119 KIAS

NOTE

DURING OPERATION WITH ICE VANES EXTENDED, RATE OF CLIMB WILL BE REDUCED APPROXIMATELY 250 FEET PER MINUTE.

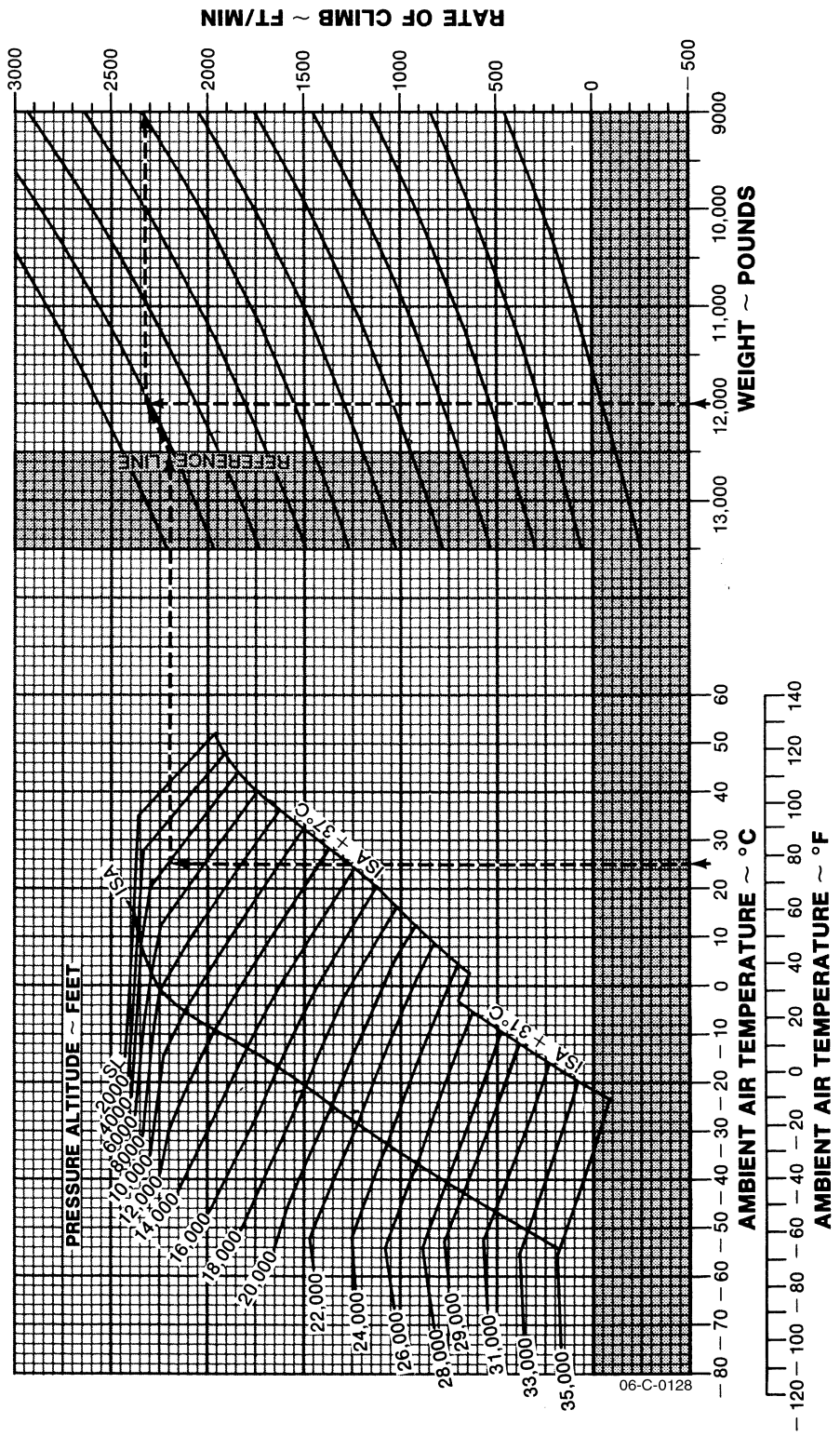


Figure 40-2. (F) Climb Two Engines — Flaps 0 Percent

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

OAT:25°C
 PRESSURE ALTITUDE:3966 FT
 WEIGHT:12,000 LBS
 RATE OF CLIMB:2325 FT/MIN
 CLIMB SPEED:119 KIAS

WEIGHT ~ POUNDS	AIR SPEED ~ KIAS Vy
13,500	124
12,500	121
12,000	119
11,000	115
10,000	111
9,000	107

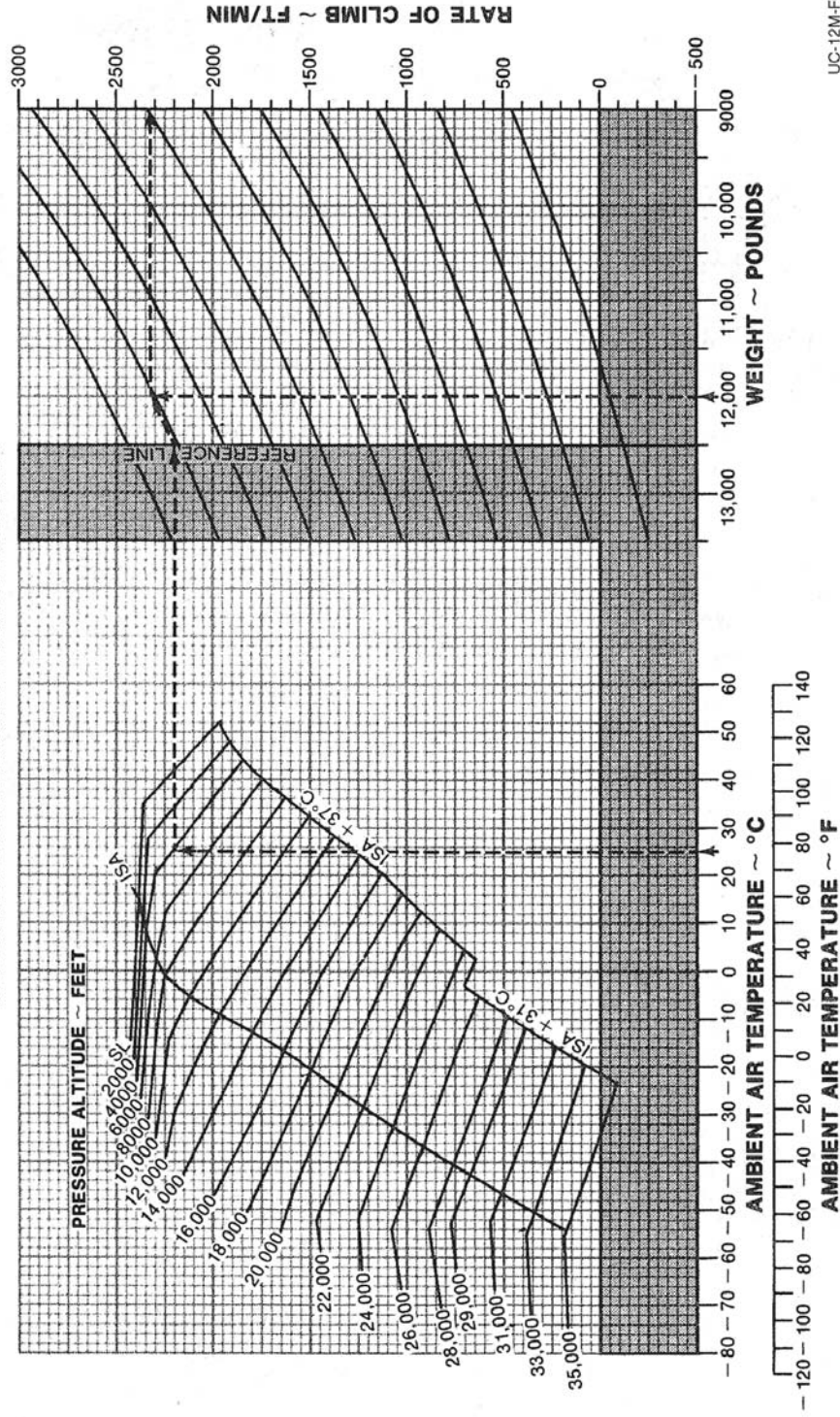
MODEL: UC-12M
 DATE: 29 JULY 1986
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

POWER: NOT TO EXCEED 100% TORQUE OR TGT 800°C
 FLAPS: UP
 GEAR: UP

NOTE

DURING OPERATION WITH ICE VANES EXTENDED, RATE OF CLIMB WILL BE REDUCED APPROXIMATELY 250 FEET PER MINUTE.



UC-12M-F0146

Figure 40-3. (M) Climb Two Engines — Flaps 0 Percent

MODEL: UC-12B
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

POWER: NOT TO EXCEED 750°C
 FLAPS: 40%
 GEAR: UP

WEIGHT - POUNDS	V _y AIRSPEED - KNOTS
13,500	107
12,500	105
12,000	104
11,000	102
10,000	101
9,000	98

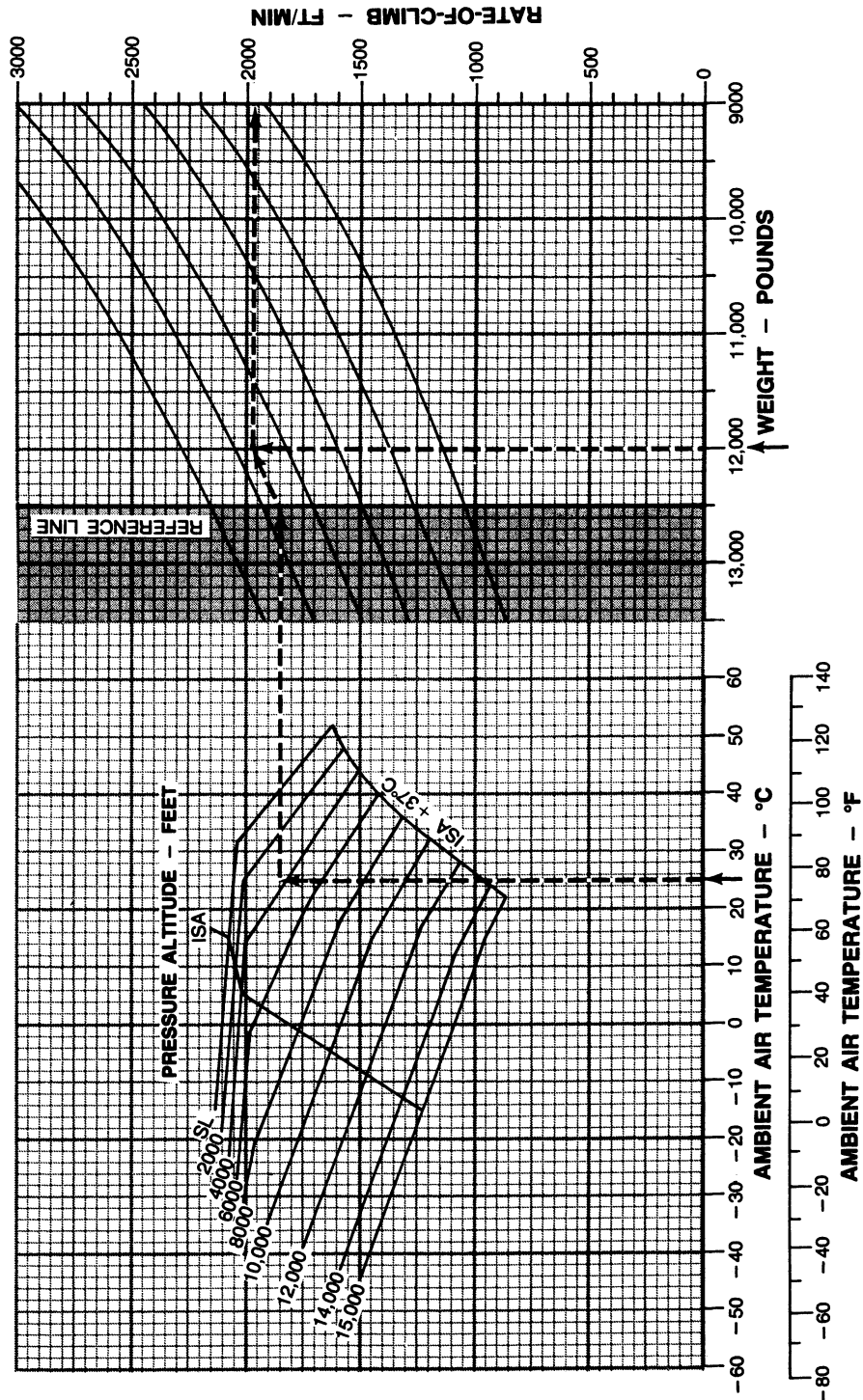
ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LB/GAL

EXAMPLE:

OAT: 25°C
 PRESSURE ALTITUDE: 3966 FEET
 WEIGHT: 12,000 LBS

RATE-OF-CLIMB 1960 FEET PER MIN
 CLIMB SPEED: 104 KNOTS

NOTE
 FOR OPERATION WITH ICE VANES EXTENDED, ADD 15°C TO THE ACTUAL OAT BEFORE ENTERING CHART.



06-C-0129

Figure 40-4. (B) Climb Two Engines — Flaps 40 Percent

MODEL: UC-12F
 DATE: 29, JULY 1986
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

POWER: NOT TO EXCEED 800°C
 FLAPS: APPROACH (40%)
 GEAR: UP

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

OAT: 25°C
 PRESSURE ALTITUDE: 3966 FT
 WEIGHT: 12,000 LBS
 RATE OF CLIMB: 2025 FT/MIN
 CLIMB SPEED: 104 KIAS

WEIGHT ~ POUNDS	V _y AIRSPEED ~ KIAS
13,500	106
12,500	105
12,000	104
11,000	102
10,000	101
9,000	100

NOTE

DURING OPERATION WITH ICE VANES EXTENDED, RATE OF CLIMB WILL BE REDUCED APPROXIMATELY 250 FEET PER MINUTE.

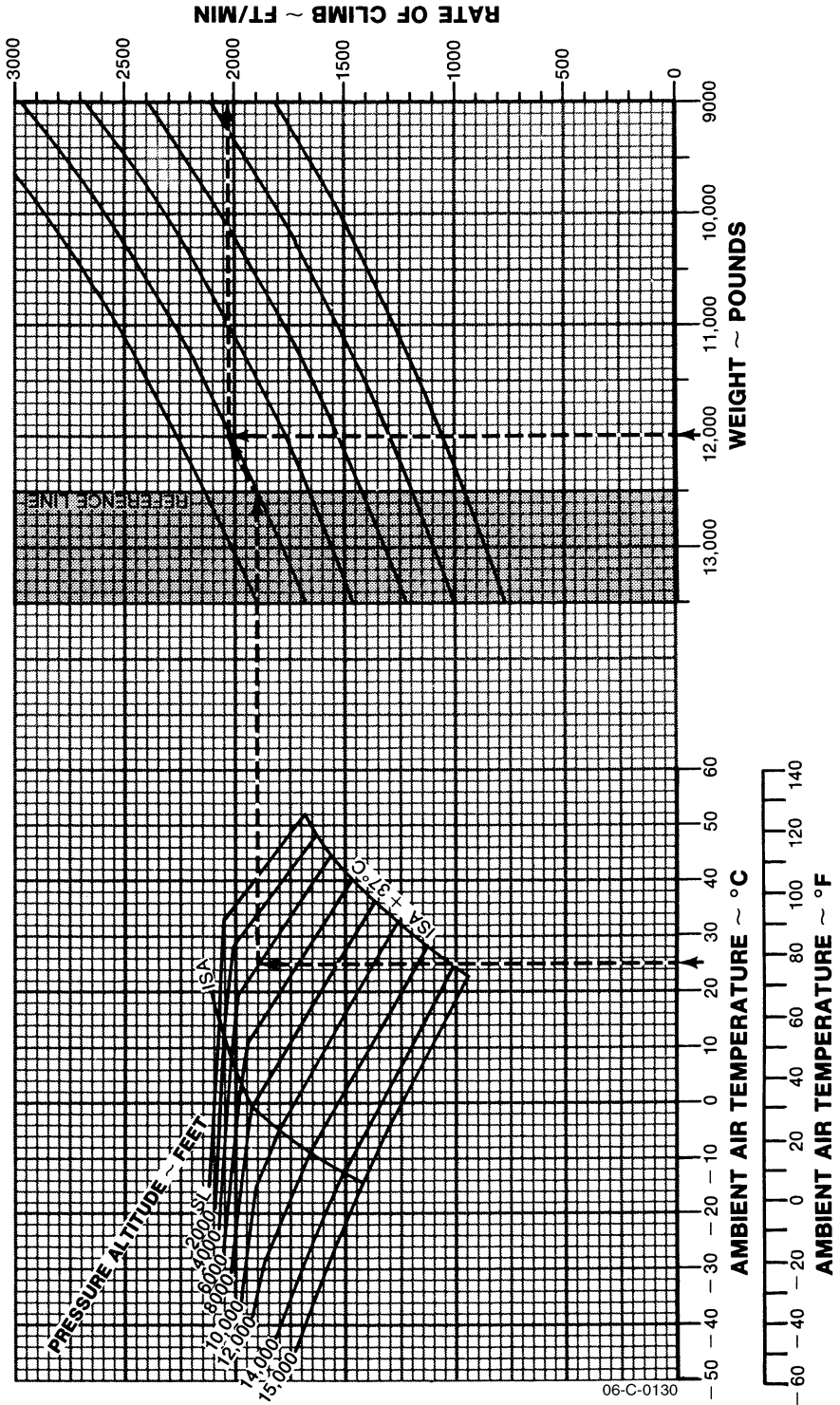


Figure 40-5. (F) Climb Two Engines — Flaps 40 Percent

MODEL: UC-12M
 DATE: 29 JULY 1986
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

POWER: NOT TO EXCEED 100%
 TORQUE OR TGT 800°C
 FLAPS: APPROACH (40%)
 GEAR: UP

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

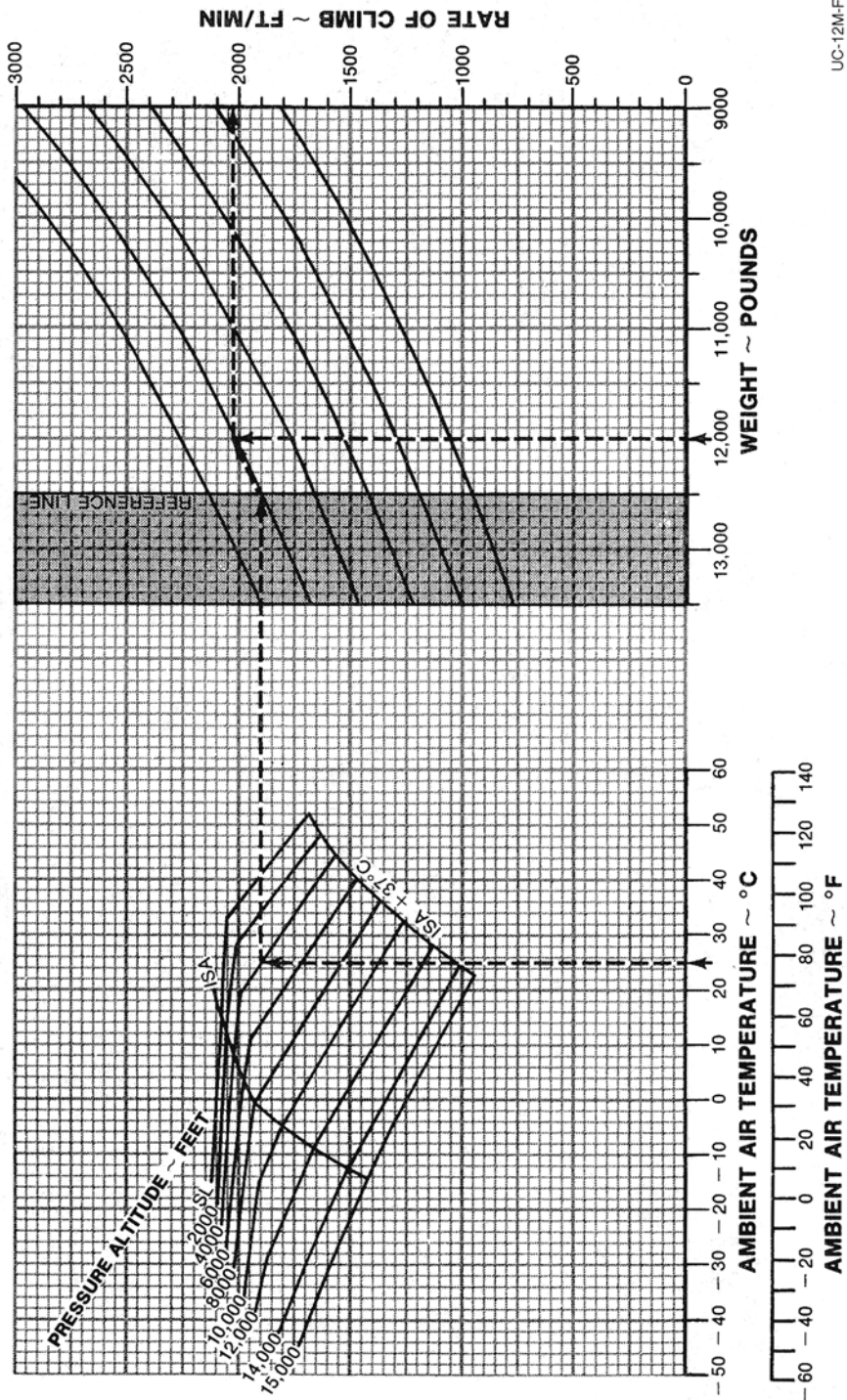
EXAMPLE:

OAT: 25°C
 PRESSURE ALTITUDE: 3966 FT
 WEIGHT: 12,000 LBS
 RATE OF CLIMB: 2025 FT/MIN
 CLIMB SPEED: 104 KIAS

WEIGHT ~ POUNDS	AIRSPEED ~ KIAS Vy
13,500	106
12,500	105
12,000	104
11,000	102
10,000	101
9,000	100

NOTE

DURING OPERATION WITH ICE VANES EXTENDED, RATE OF CLIMB WILL BE REDUCED APPROXIMATELY 250 FEET PER MINUTE.



UC-12M-F0147

Figure 40-6. (M) Two-Engine Climb — Flaps 40 Percent

MODEL: UC-12B
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

POWER: MAXIMUM CONTINUOUS
 FLAPS: UP
 GEAR: UP
 INOPERATIVE
 PROPELLER: FEATHERED

WEIGHT - POUNDS	V _{yse} AIRSPEED - KNOTS
13,500	125
13,000	123
12,000	118
11,000	115
10,000	111
9,000	109

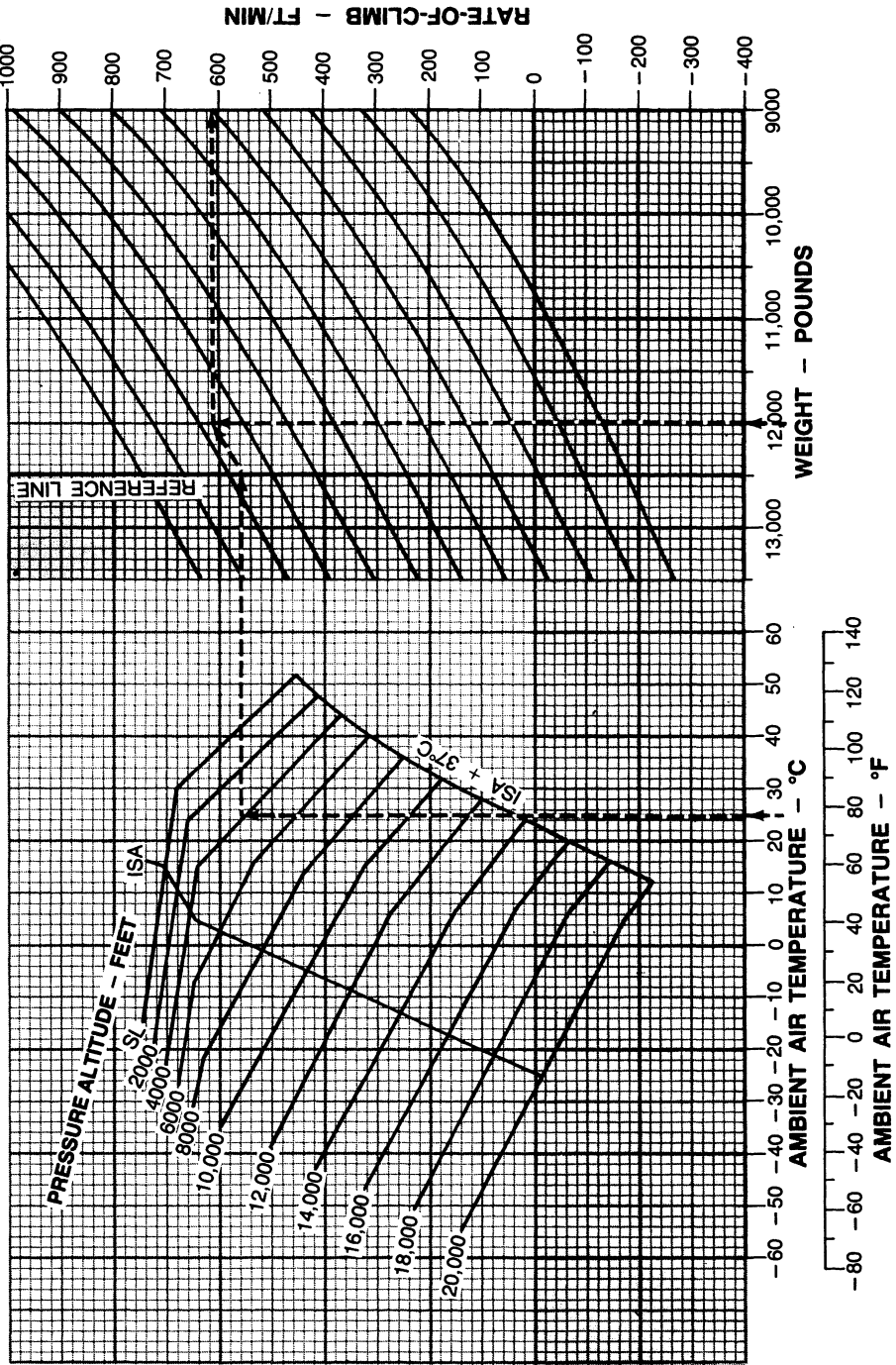
ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LB/GAL

EXAMPLE:

OAT: 25°C
 PRESSURE ALTITUDE: 3966 FEET
 WEIGHT: 12,000 LBS

RATE-OF-CLIMB: 610 FEET PER MIN.
 AIRSPEED: 118 KNOTS

NOTE
 FOR OPERATION WITH ICE VANES EXTENDED, ADD 10°C TO THE ACTUAL OAT BEFORE ENTERING CHART.



06-C-0131

Figure 40-7. (B) Climb — One Engine Inoperative

MODEL: UC-12F
 DATE: 29, JULY 1986
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

POWER: MAXIMUM CONTINUOUS
 FLAPS: UP
 GEAR: UP
 INOPERATIVE
 PROPELLER: FEATHERED

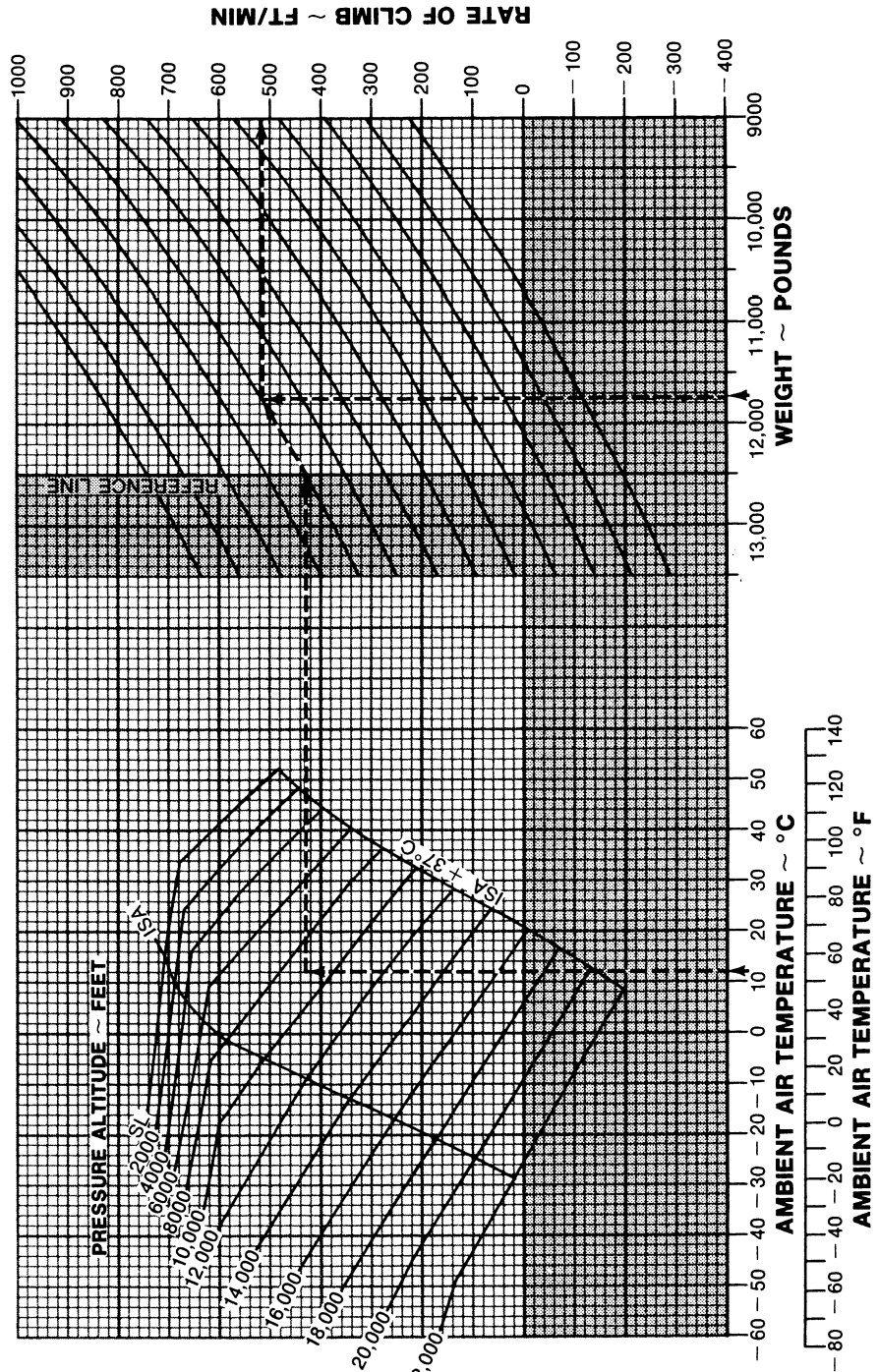
WEIGHT ~ POUNDS	V _{ye} AIRSPEED ~ KIAS
13,500	124
12,500	121
12,000	119
11,000	115
10,000	111
9,000	107

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

OAT: 12°C
 PRESSURE ALTITUDE: 9000 FT
 WEIGHT: 11,749 LBS
 RATE OF CLIMB: 519 FT/MIN
 CLIMB SPEED: 118 KIAS

NOTE
 DURING OPERATION WITH ICE VANE EXTENDED,
 RATE OF CLIMB WILL BE REDUCED APPROXIMATELY
 100 FEET PER MINUTE.



06-C-0132

Figure 40-8. (F) Climb — One Engine Inoperative

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

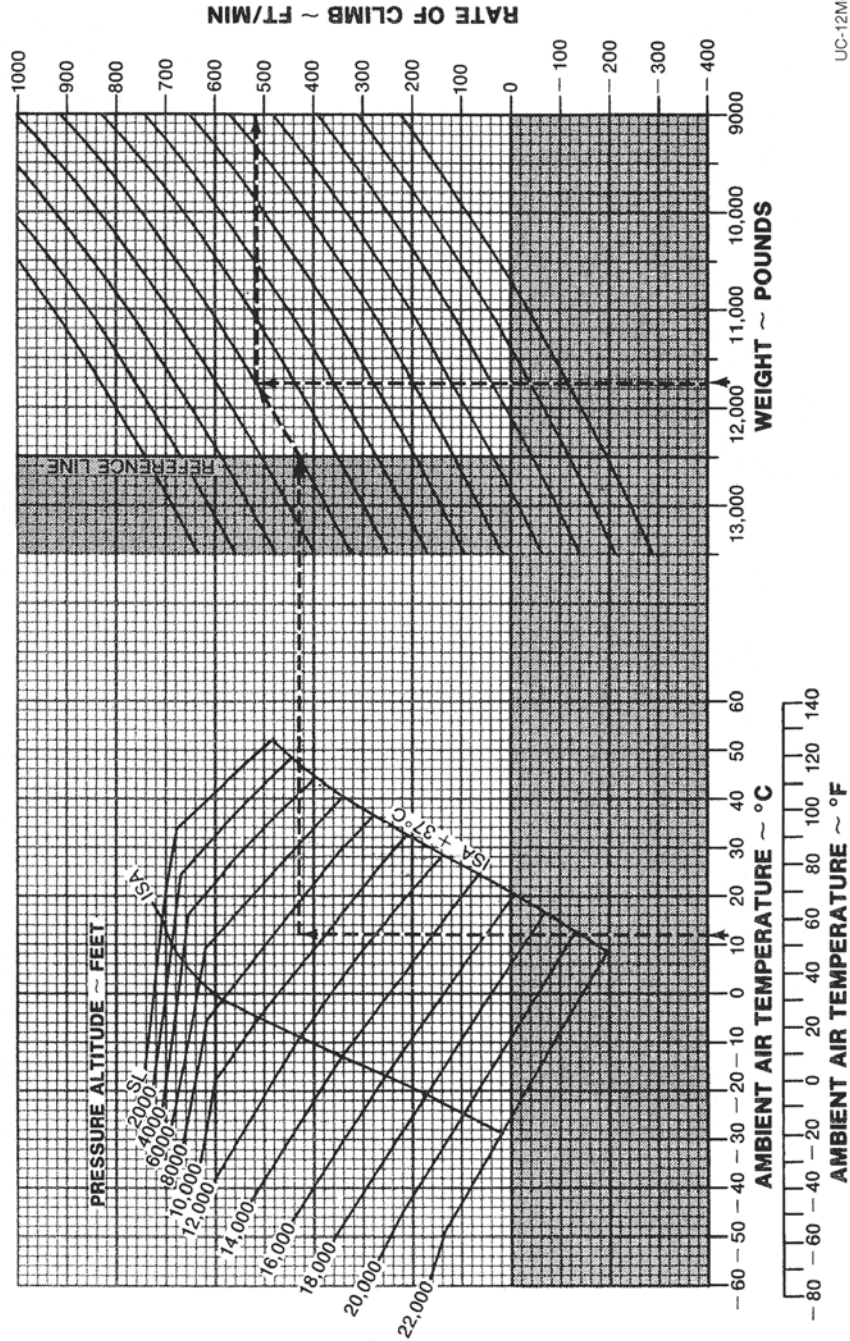
EXAMPLE:
 OAT:12°C
 PRESSURE ALTITUDE:9000 FT
 WEIGHT:11,749 LBS
 RATE OF CLIMB:519 FT/MIN
 CLIMB SPEED:118 KIAS

WEIGHT ~ POUNDS	AIRSPEED ~ KIAS	V _{ysb}
13,500	125	
12,500	121	
12,000	119	
11,000	115	
10,000	111	
9,000	109	

MODEL: UC-12M
 DATE: 29, JULY 1986
 DATA BASIS: FLIGHT TEST

CONFIGURATION:
 POWER: MAXIMUM CONTINUOUS
 FLAPS: UP
 GEAR: UP
 INOPERATIVE PROPELLER: FEATHERED

NOTE
 DURING OPERATION WITH ICE VANE EXTENDED,
 RATE OF CLIMB WILL BE REDUCED APPROXIMATELY
 100 FEET PER MINUTE.



UC-12M-F0148

Figure 40-9. (M) Climb — One Engine Inoperative

MODEL: UC-12B
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

FLAPS: 0 %
 GEAR: UP
 PROPELLER SPEED: 1900 RPM
 ITT: NOT TO EXCEED 725 °C
 TORQUE: 2230 FT.LB.

ALTITUDE - FEET	CLIMB SPEED - KNOTS
SL TO 10,000	155
10,000 TO 20,000	135
20,000 TO 25,000	125
25,000 TO 31,000	115

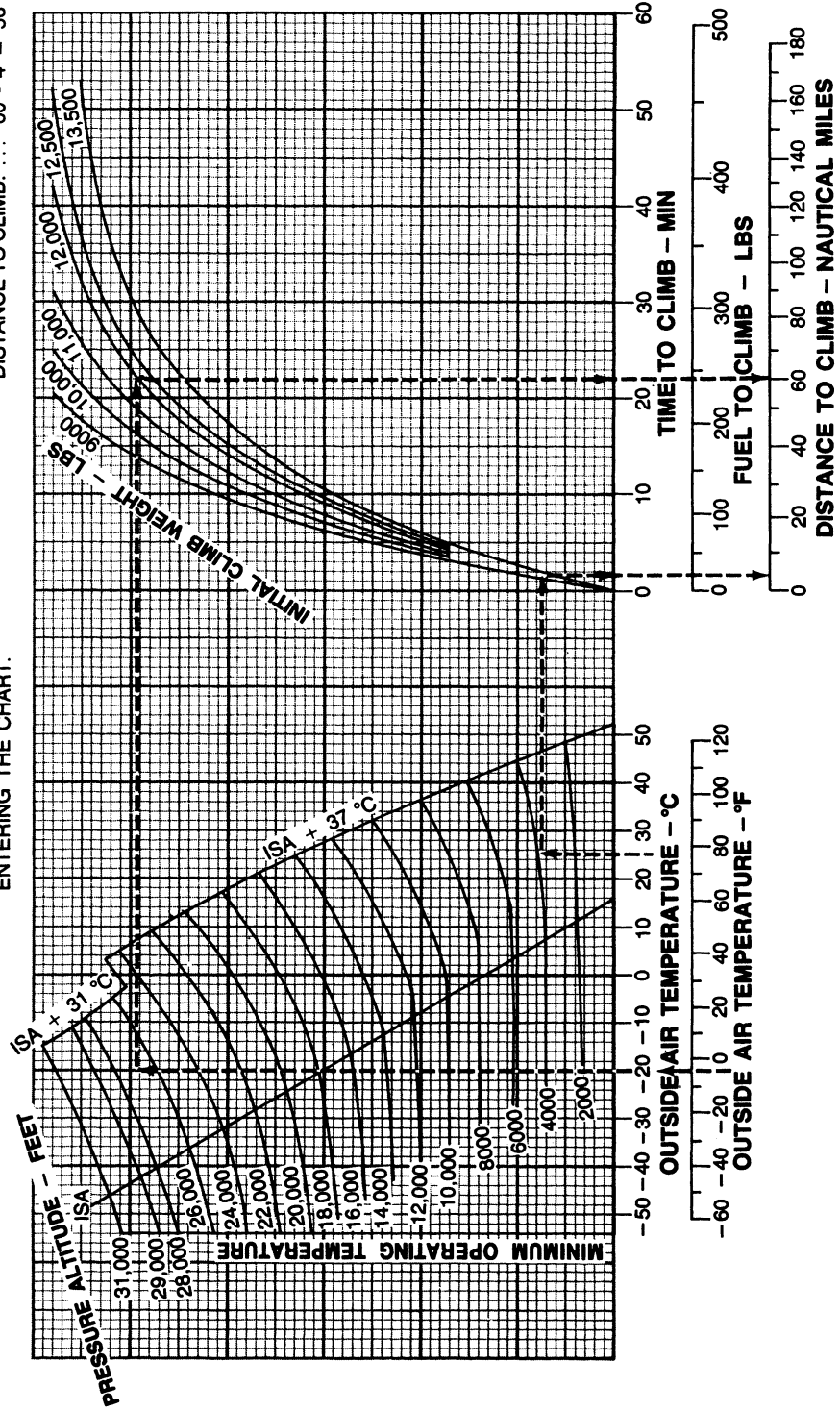
NOTE

1. ADD 90 LBS FUEL FOR START, TAXI, AND TAKEOFF.
2. FOR OPERATION WITH ICE VANES EXTENDED, ADD 20°C TO THE ACTUAL OAT BEFORE ENTERING THE CHART.

ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LB/GAL

EXAMPLE:
 OAT AT TAKEOFF: 25°C
 OAT AT CRUISE: -20 °C
 AIRPORT PRESSURE
 ALTITUDE: 3,966 FEET
 CRUISE ALTITUDE: 27,000 FEET
 INITIAL CLIMB WEIGHT: 12,000 LBS

TIME TO CLIMB: 22 - 2 = 20 MIN
 FUEL TO CLIMB: 242 - 20 = 222 LBS
 DISTANCE TO CLIMB: 60 - 4 = 56 NM



06-C-0133

Figure 40-10. (B) Time/Fuel/Distance to Climb

MODEL: UC-12F
 DATE: 29, JULY 1986
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

FLAPS: UP
 GEAR: UP
 PROPELLER SPEED: 1900 RPM
 ITT NOT TO EXCEED: 770°C
 TORQUE: 2230 FT-LBS

NOTE

1. SUBTRACT 95 POUNDS FROM AIRCRAFT RAMP WEIGHT TO DETERMINE INITIAL CLIMB WEIGHT. NINETY-FIVE POUNDS ALLOWS FOR START, TAXI, AND TAKEOFF.
2. FOR OPERATION WITH ICE VANES EXTENDED, ADD 20°C TO THE ACTUAL OAT BEFORE ENTERING THE CHART.

ALTITUDE ~ FEET	CLIMB SPEED ~ KIAS
SL TO 10,000	160
10,000 TO 20,000	140
20,000 TO 25,000	130
25,000 TO 35,000	120

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LB/GAL

EXAMPLE:

OAT AT TAKEOFF: 25°C
 OAT AT CRUISE: -20°C
 AIRPORT PRESSURE ALTITUDE: 3966 FT
 CRUISE ALTITUDE: 27,000 FT
 INITIAL CLIMB WEIGHT: 12,000 LBS
 TIME TO CLIMB (20-2): 18 MIN
 FUEL TO CLIMB (247-27): 220 LBS
 DISTANCE TO CLIMB (56-4): 52 NM

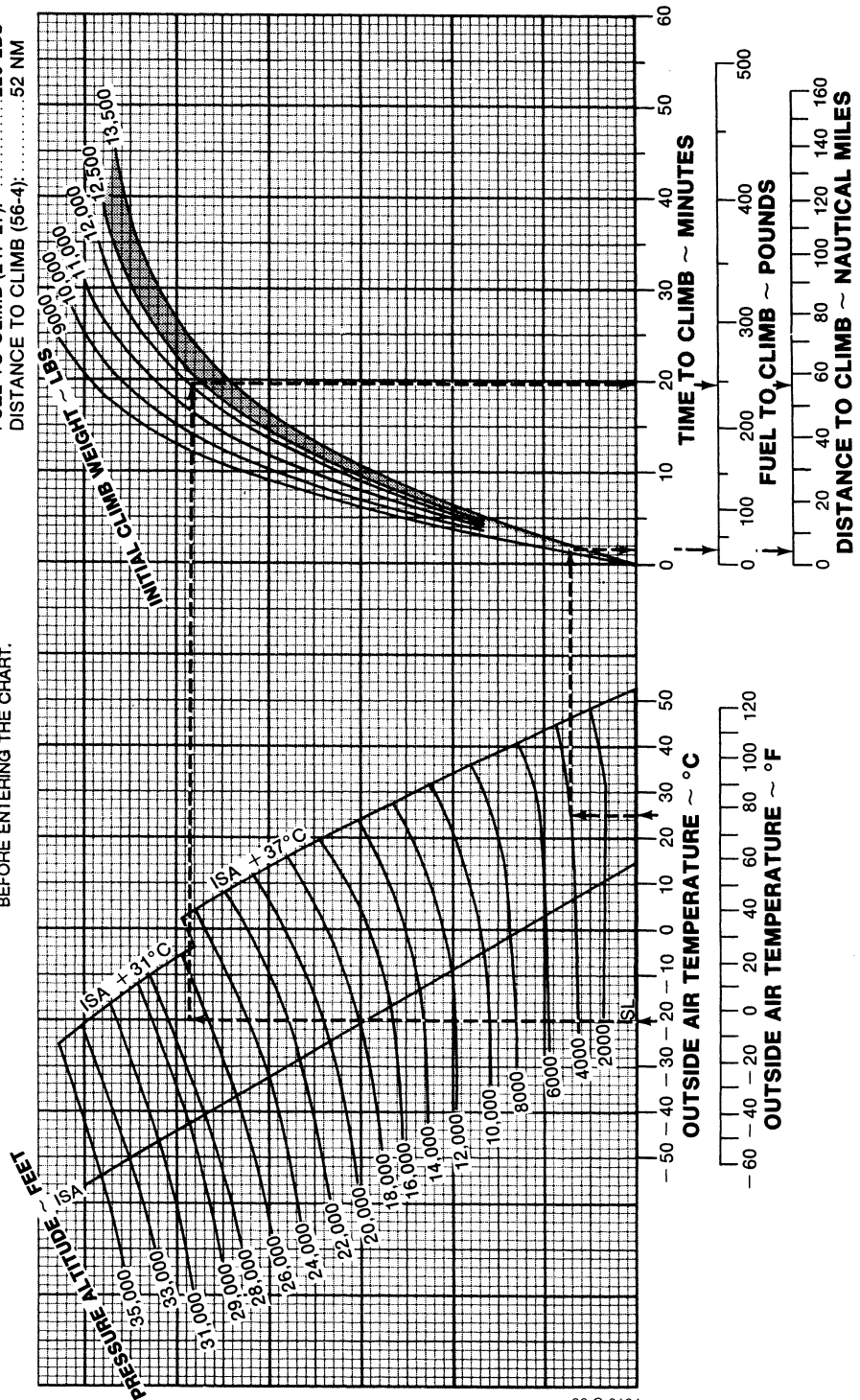


Figure 40-11. (F) Time/Fuel/Distance to Climb

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

OAT AT TAKEOFF: 25°C
 OAT AT CRUISE: -20°C
 AIRPORT PRESSURE ALTITUDE: 3966 FT
 CRUISE ALTITUDE: 27,000 FT
 INITIAL CLIMB WEIGHT: 12,000 LBS
 TIME TO CLIMB (20-2): 18 MIN
 FUEL TO CLIMB (247-27): 220 LBS
 DISTANCE TO CLIMB (56-4): 52 NM

ALTITUDE ~ FEET	CLIMB SPEED ~ KIAS
SL TO 10,000	155
10,000 TO 20,000	135
20,000 TO 25,000	125
25,000 TO 35,000	116

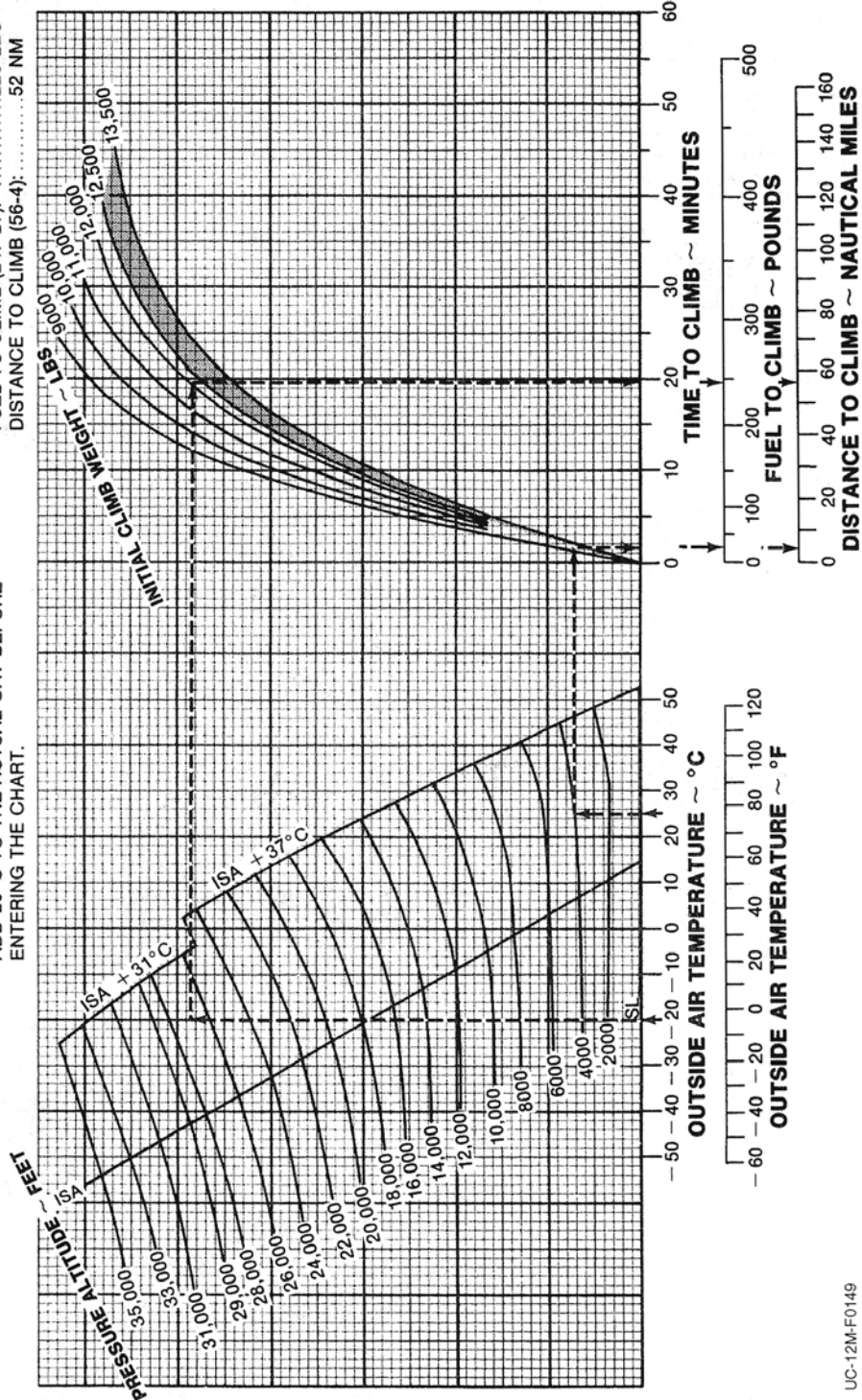
NOTE

1. ADD 90 LBS FUEL FOR START, TAXI, AND TAKEOFF.
2. FOR OPERATION WITH ICE VANES EXTENDED, ADD 20°C TO THE ACTUAL OAT BEFORE ENTERING THE CHART.

MODEL: UC-12M
 DATE: 29, JULY 1986
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

FLAPS: UP
 GEAR: UP
 PROPELLER SPEED: 1900 RPM
 TGT NOT TO EXCEED: 770°C
 TORQUE: 100%



UC-12M-F0149

Figure 40-12. (M) Time/Fuel/Distance to Climb

ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LB/GAL

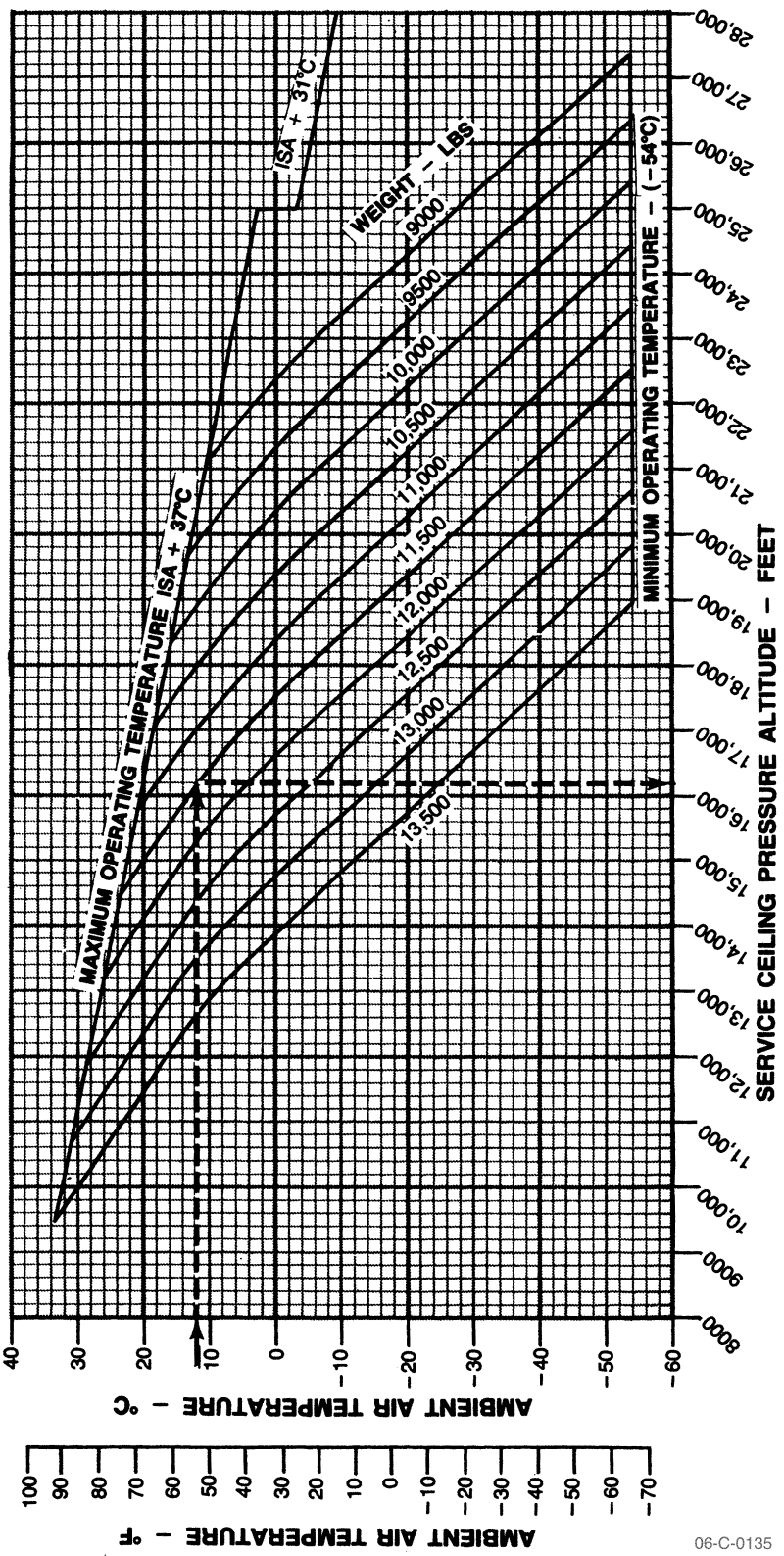
EXAMPLE:
 OAT: 12 °C
 WEIGHT: 11,500 LBS
 ROUTE SEGMENT MEA: 9000 FT
 SERVICE CEILING: 16,200 FT

MODEL: UC-12B
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

CONFIGURATION:
 POWER: MAXIMUM CONTINUOUS-ONE ENGINE
 LANDING GEAR: UP
 INOPERATIVE PROPELLER: FEATHERED
 FLAPS: UP (0%)

NOTE

1. SERVICE CEILING SHOULD BE ABOVE MEA FOR FLIGHT PLANNING PURPOSES.
2. SERVICE CEILING IS THE MAXIMUM PRESSURE ALTITUDE CAPABLE OF MAINTAINING 100 FT/MINUTE CLIMB WITH ONE PROPELLER FEATHERED.



06-C-0135

Figure 40-13. (B) Service Ceiling — One Engine Inoperative

MODEL: UC-12F
 DATE: 29, JULY 1986
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

POWER: MAX CONTINUOUS — ONE ENGINE
 LANDING GEAR: UP
 INOPERATIVE PROPELLER: FEATHERED
 FLAPS: UP

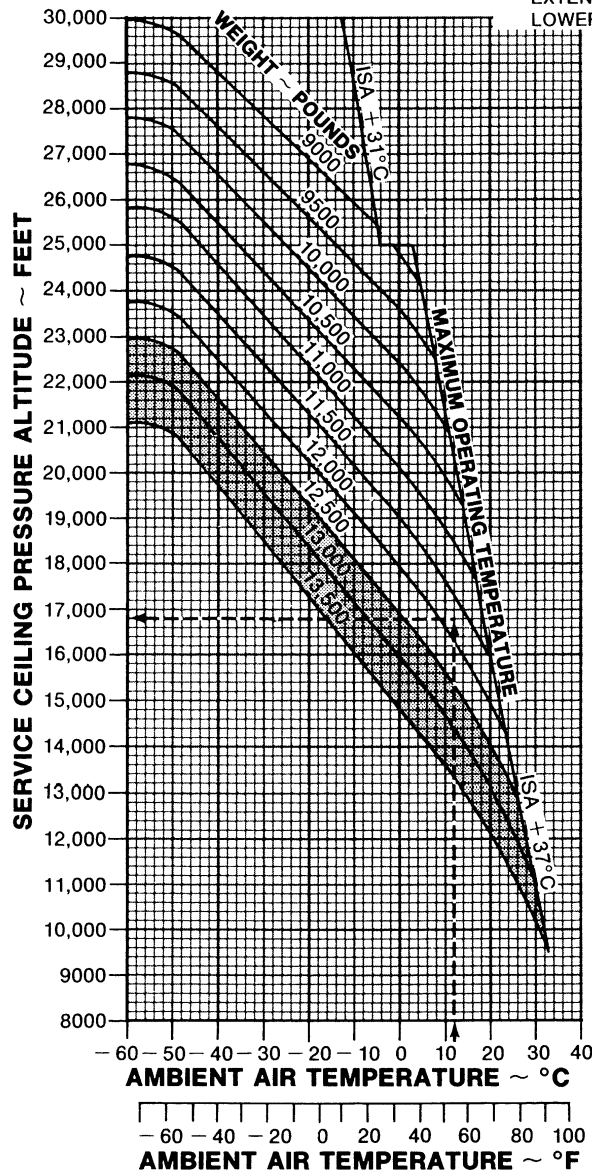
ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

OAT: 12°C
 WEIGHT: 11,749 LBS
 ROUTE SEGMENT MEA: 9000 FT
 SERVICE CEILING: 16,800 FT

NOTES

1. SERVICE CEILING SHOULD BE ABOVE MEA FOR FLIGHT PLANNING PURPOSES.
2. SERVICE CEILING IS THE MAXIMUM PRESSURE ALTITUDE AT WHICH THE AIRCRAFT IS CAPABLE OF CLIMBING 100 FT/MINUTE WITH ONE PROPELLER FEATHERED.
3. DURING OPERATION WITH ICE VANES EXTENDED, SERVICE CEILING WILL BE LOWERED APPROXIMATELY 1500 FEET.



06-C-0136

Figure 40-14. (F) Service Ceiling — One Engine Inoperative

MODEL: UC-12M
 DATE: 29, JULY 1986
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

POWER: MAX CONTINUOUS — ONE ENGINE
 LANDING GEAR: UP
 INOPERATIVE PROPELLER: FEATHERED
 FLAPS: UP

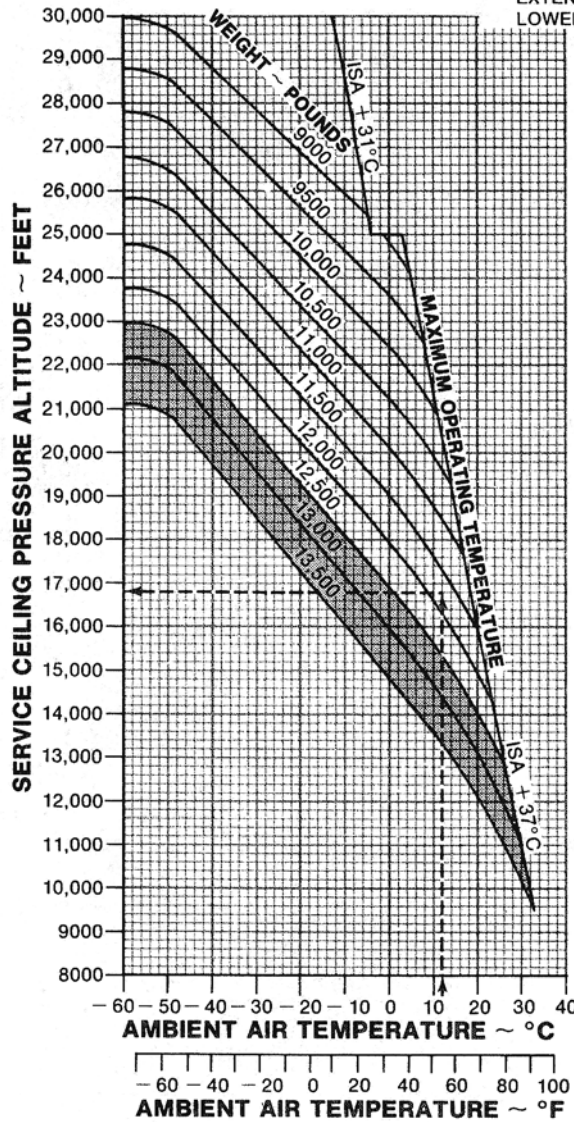
ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

OAT: 12°C
 WEIGHT: 11,749 LBS
 ROUTE SEGMENT MEA: 9000 FT
 SERVICE CEILING: 16,800 FT

NOTES

1. SERVICE CEILING SHOULD BE ABOVE MEA FOR FLIGHT PLANNING PURPOSES.
2. SERVICE CEILING IS THE MAXIMUM PRESSURE ALTITUDE AT WHICH THE AIRCRAFT IS CAPABLE OF CLIMBING 100 FT/MINUTE WITH ONE PROPELLER FEATHERED.
3. DURING OPERATION WITH ICE VANES EXTENDED, SERVICE CEILING WILL BE LOWERED APPROXIMATELY 1500 FEET.



UC-12M-F0150

Figure 40-15. (M) Service Ceiling — One Engine Inoperative

MODEL: UC-12B
 DATE: 11 JANUARY 1988
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

POWER MAXIMUM CONTINUOUS
 FLAPS 0% UP
 LANDING GEAR UP
 PROPELLER FEATHERED

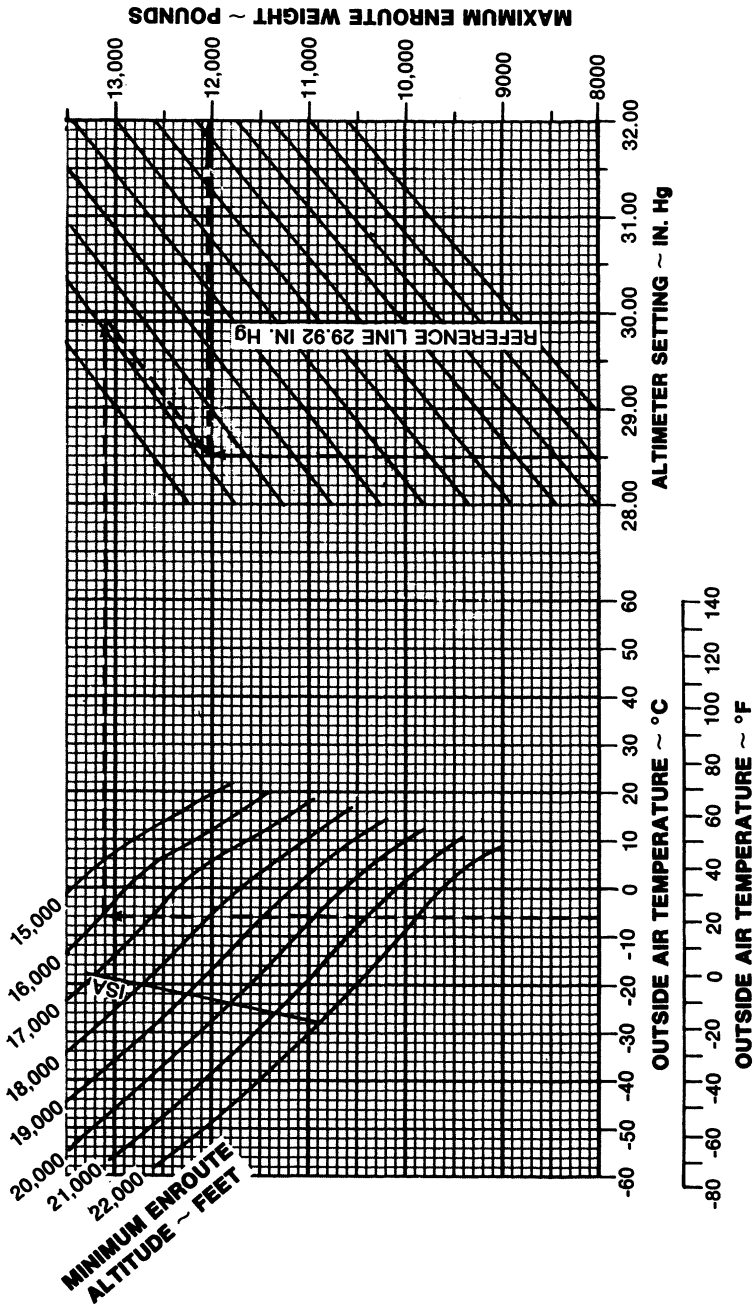
ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

OAT -6°C
 MINIMUM ENROUTE ALTITUDE 16,000 FT
 ALTIMETER SETTING 28.50 IN. Hg
 MAXIMUM ALLOWABLE WEIGHT 12,020 LBS

NOTE

PER FAR 135.145, OPERATIONS OVER THE TOP OR IN IFR CONDITIONS REQUIRE THAT THE AIRPLANE BE CAPABLE OF CLIMBING 50 FT/MIN AT THE MEAS OF THE PROPOSED ROUTE OR 5000 FEET MSL, WHICHEVER IS HIGHER.



06-C-0137

Figure 40-16. (B/F) Maximum en Route Weight (To Ensure 50-fpm, Single-Engine Climb)

ENGINE: PT6A-42
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

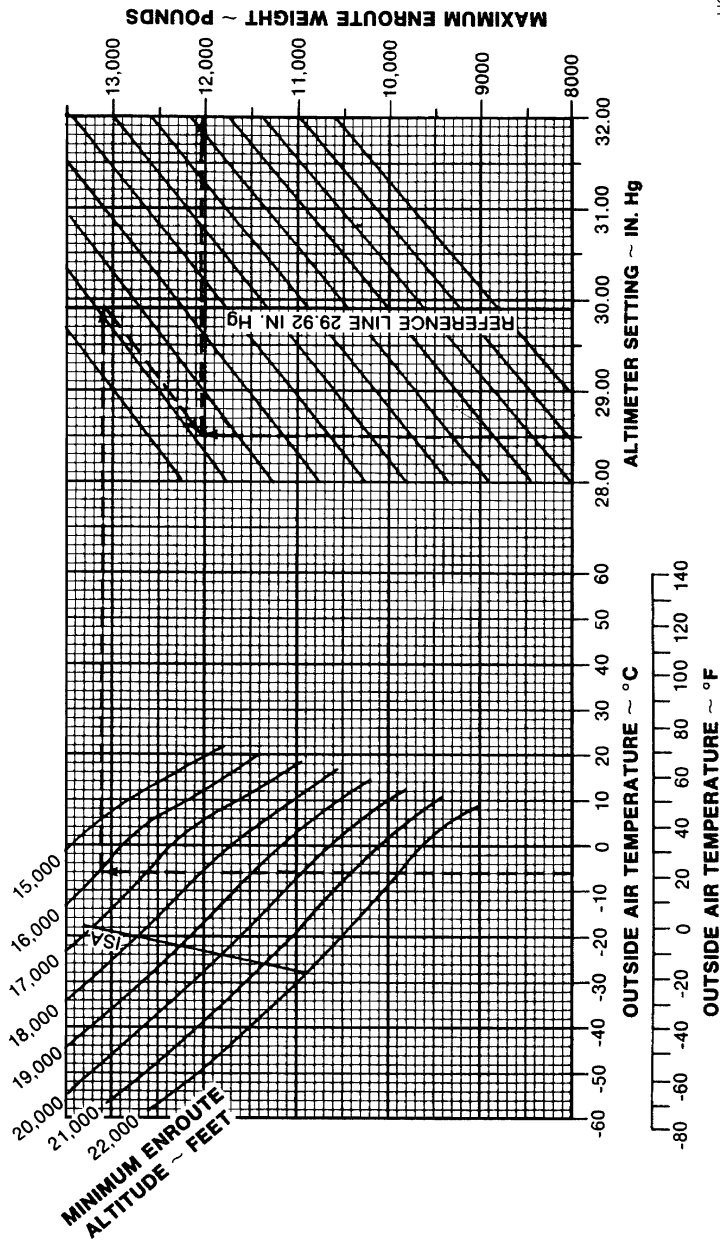
EXAMPLE:
 OAT -6°C
 MINIMUM ENROUTE ALTITUDE 16,000 FT
 ALTIMETER SETTING 28.50 IN. Hg
 MAXIMUM ALLOWABLE WEIGHT 12,020 LBS

MODEL: UC-12M
 DATE: 11 JANUARY 1988
 DATA BASIS: FLIGHT TEST

CONFIGURATION:
 POWER MAXIMUM CONTINUOUS
 FLAPS 0%
 LANDING GEAR UP
 INOPERATIVE PROPELLER FEATHERED

NOTE

PER FAR 135.145, OPERATIONS OVER THE TOP OR IN IFR CONDITIONS REQUIRE THAT THE AIRPLANE BE CAPABLE OF CLIMBING 50 FT/MIN AT THE MEAS OF THE PROPOSED ROUTE OR 5000 FEET MSL, WHICHEVER IS HIGHER.



UC-12M-F0151

Figure 40-17. (M) Maximum en Route Weight (To Ensure 50-fpm, Single-Engine Climb)

CHAPTER 41

(B/F) Range

41.1 DESCRIPTION OF CHARTS

41.1.1 Performance Cruise and Maximum Cruise Power — Torque

These charts show the torque available at cruise power for a pressure altitude and an ambient air temperature. To use charts, enter at temperature, trace right to pressure altitude, then trace down to read torque. Refer to [Figures 41-1](#) and [41-2](#).

41.1.2 Performance Cruise and Maximum Cruise Power — Fuel Flow

These charts show the fuel flow for cruise at pressure altitude and ambient air temperature. To use charts, enter at temperature, trace right to pressure altitude, then trace down to read fuel flow. Refer to [Figures 41-3](#) and [41-4](#).

41.1.3 Performance Cruise and Maximum Cruise Power — True Airspeed

These charts show the speed attainable for a pressure altitude and an ambient air temperature. To use charts, enter at pressure altitude, trace right to temperature, then trace down to read true airspeed. Refer to [Figures 41-5](#) and [41-6](#).

41.1.4 Maximum Range Power Tables

These tables show OAT, torque, fuel flow, and true airspeed for selected average cruise weights at various ISA conditions, cruise altitudes, and power settings. To use these tables, enter the appropriate table for the nearest ISA conditions above and below the forecast ISA conditions (en route, use actual IOAT) at interpolated altitude and interpolate to determine the values for the forecast or actual conditions. Refer to [Figures 41-7](#), [41-8](#), [41-9](#), and [41-10](#).

41.1.5 Mission Profile — Maximum Cruise, Performance Cruise, and Maximum Range Power

These charts show air distance including initial climb for fuel burned and/or flight time at various altitudes. To use charts, enter at pressure altitude, trace left to read true airspeed and torque, trace right to fuel burned or flight time, then trace down to read air distance. Refer to [Figures 41-11](#), [41-12](#), [41-13](#), [41-14](#), [41-15](#), [41-16](#), [41-17](#), [41-18](#), and [41-19](#).

41.1.6 Range Profile — Standard Day

These charts show range attainable for selected power settings and fuel loadings on a standard day at various pressure altitudes. To use charts, enter at pressure altitude, trace right to power setting line, then trace down to read distance. Refer to [Figures 41-20](#), [41-21](#), and [41-22](#).

41.1.7 One Engine Inoperative Maximum Range Power Tables

These tables show torque, fuel flow, and airspeed for selected average cruise weights at various ISA conditions, cruise altitudes, and power settings with one engine inoperative. Refer to [Figures 41-23](#) and [41-24](#).

ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LB/GAL

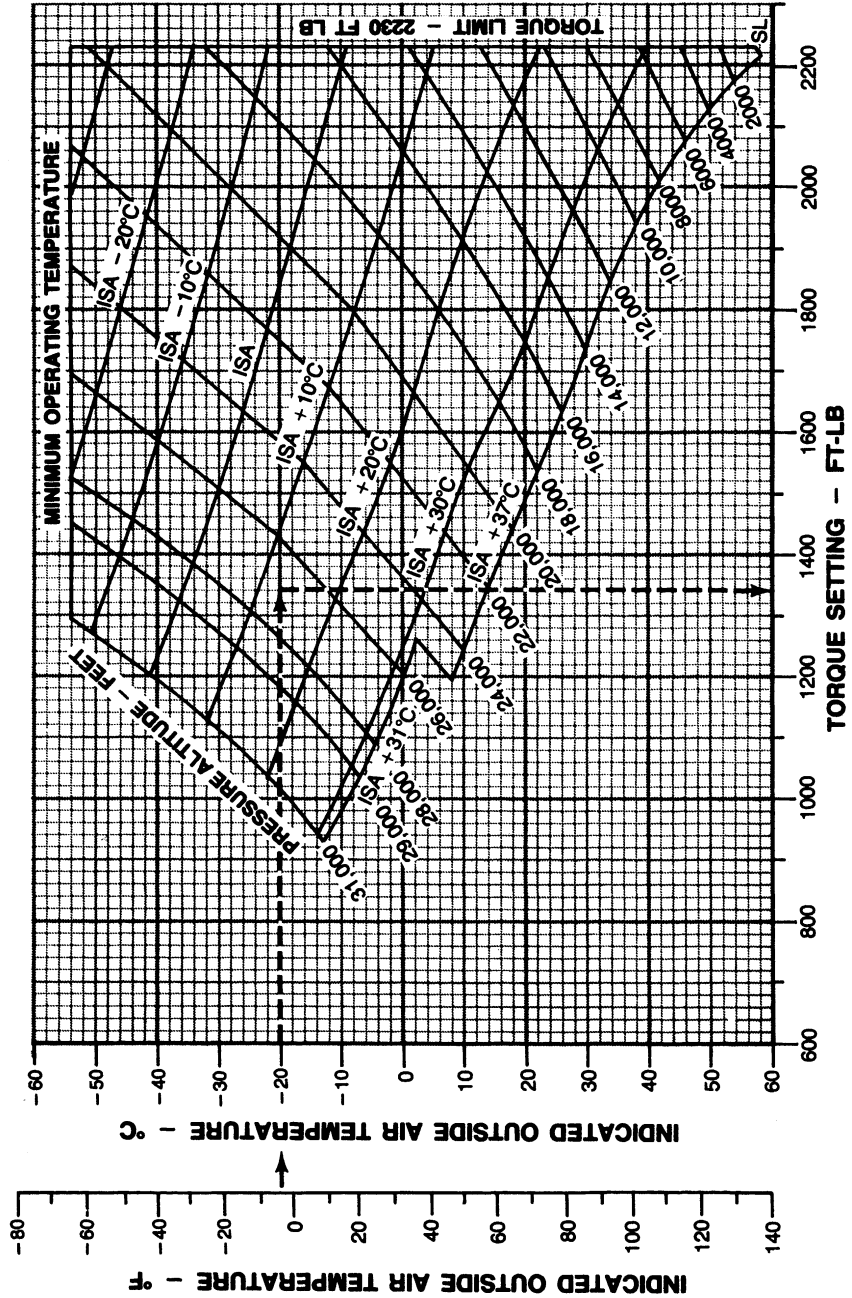
EXAMPLE:
 IOAT: -20°C
 PRESSURE ALTITUDE: 27,000 FEET
 TORQUE: 1340 FT-LBS

MODEL: UC-12B
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

CONFIGURATION:
 PROPELLER SPEED: 1700 RPM
 TORQUE: NOTED
 ITT: NOT TO EXCEED 725°C
 FLAPS: UP
 GEAR: UP

NOTE

1. FOR OPERATION WITH ICE VANES EXTENDED, ADD 35°C TO THE ACTUAL OAT BEFORE ENTERING GRAPH.
2. BASED ON AN AVERAGE CRUISE WEIGHT OF 12,000 LB.



06-C-0138

Figure 41-1. (B) Performance Cruise Power Torque — 1,700 rpm

MODEL: UC-12F
 DATE: 29, JULY 1986
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

PROPELLER SPEED: 1700 RPM
 TORQUE: NOTED
 ITT: NOT TO EXCEED 770°C
 FLAPS: UP
 GEAR: UP

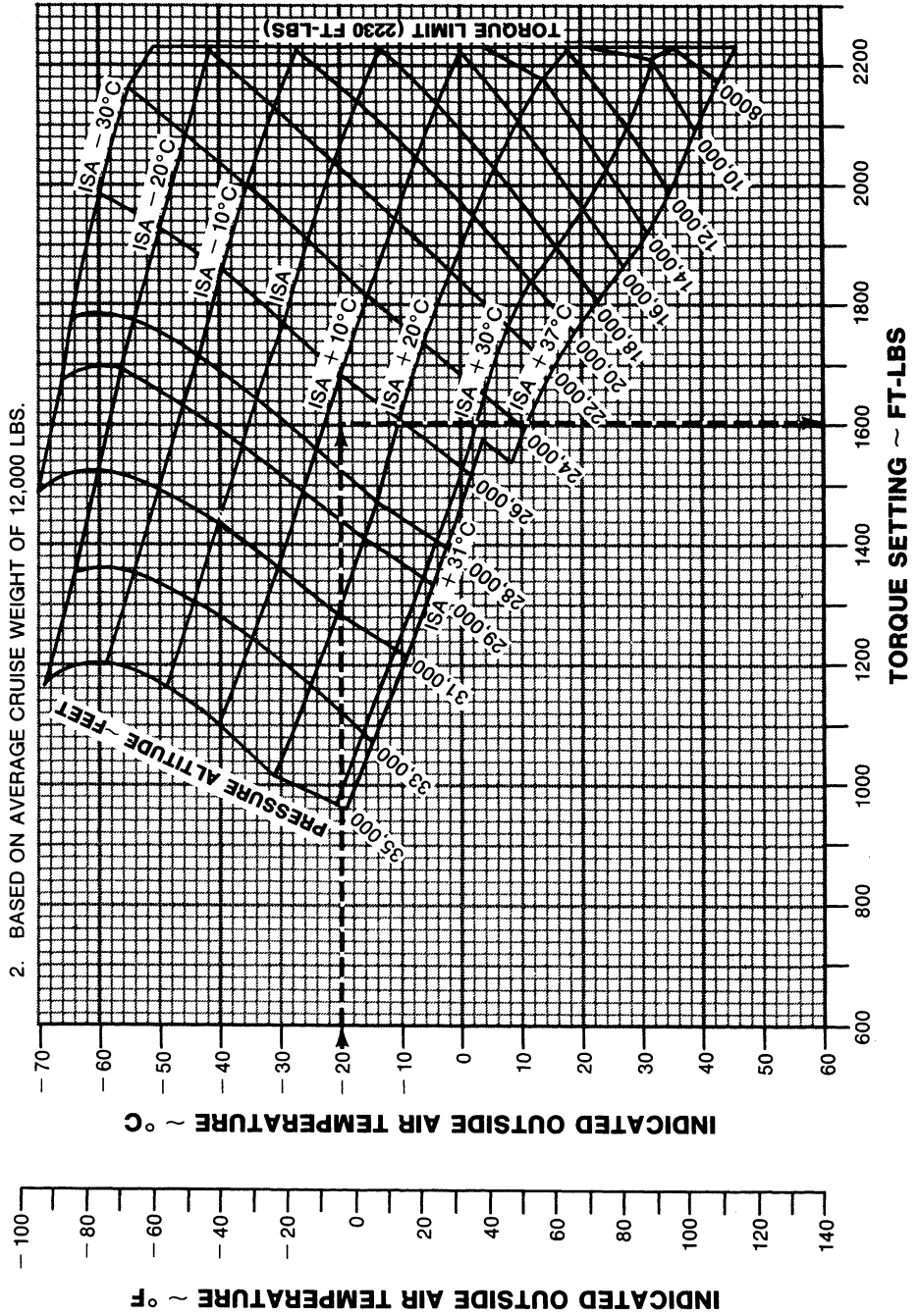
ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

OAT: -20°C
 PRESSURE ALTITUDE: 27,000 FT
 TORQUE: 1605 FT-LBS

NOTES

1. DURING OPERATION WITH ICE VANES EXTENDED, TORQUE WILL DECREASE APPROXIMATELY 20% IF DESIRED, ORIGINAL POWER MAY BE RESET, PROVIDED ITT LIMIT IS NOT EXCEEDED.
2. BASED ON AVERAGE CRUISE WEIGHT OF 12,000 LBS.



06-C-0139

Figure 41-2. (F) Performance Cruise Power Torque — 1,700 rpm

ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LB/GAL

EXAMPLE:

IOAT: -20°C
 PRESSURE ALTITUDE: 27,000 FEET
 FUEL FLOW: 252 LB/HOUR

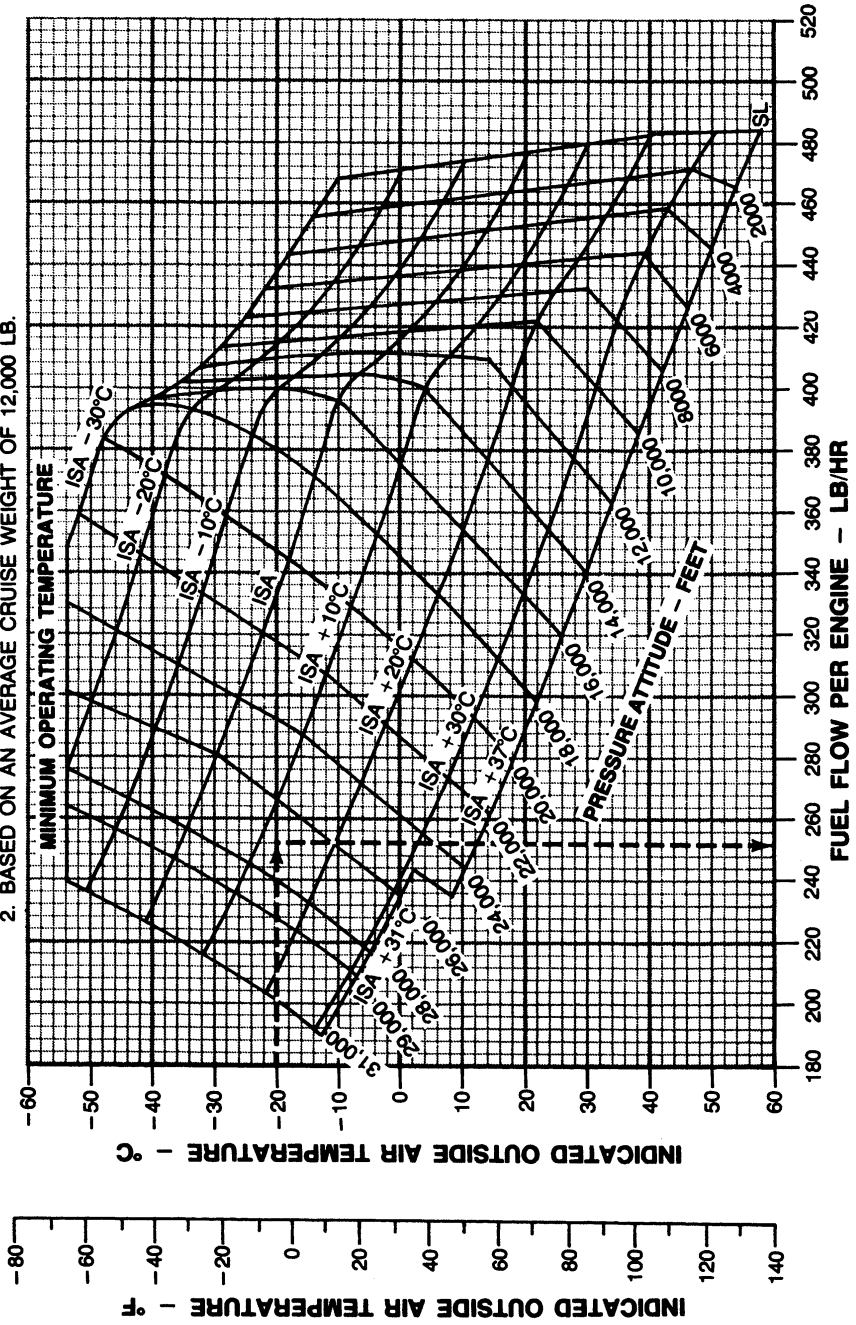
MODEL: UC-12B
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

TORQUE: NOT TO EXCEED 2230 FT-LBS
 ITT: NOT TO EXCEED 725°C
 FLAPS: UP
 LANDING GEAR: UP

NOTE

1. FOR OPERATION WITH ICE VANES EXTENDED, ADD 30°C TO THE ACTUAL IOAT BEFORE ENTERING CHART.
2. BASED ON AN AVERAGE CRUISE WEIGHT OF 12,000 LB.



06-C-0140

Figure 41-3. (B) Performance Cruise Power Fuel Flow — 1,700 rpm

MODEL: UC-12F
 DATE: 29, JULY 1986
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

TORQUE: NOT TO EXCEED 2230 FT-LBS
 ITT: NOT TO EXCEED 770°C
 FLAPS: UP
 LANDING GEAR: UP

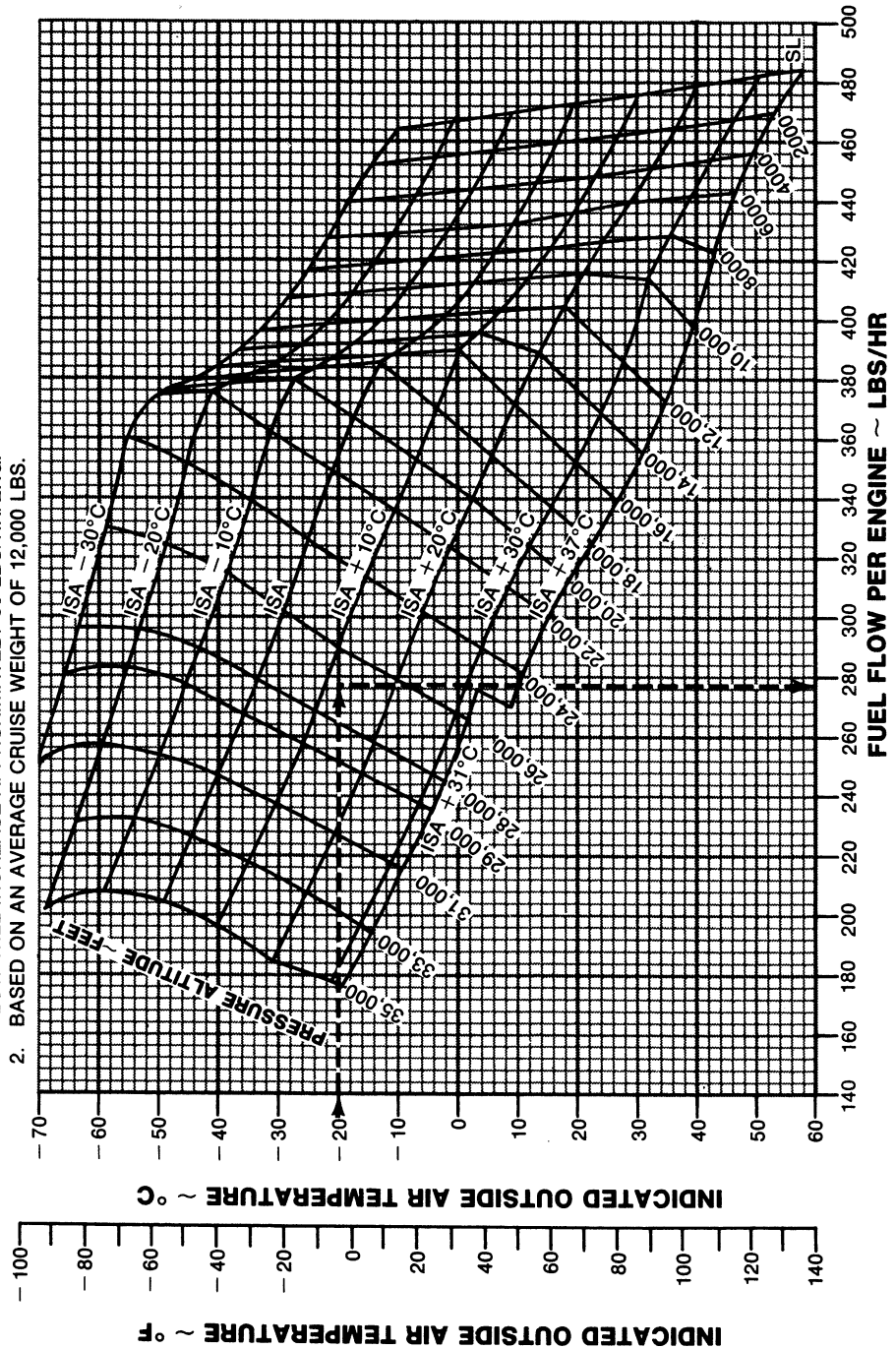
ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

OAT: -20°C
 PRESSURE ALTITUDE: 27,000 FT
 FUEL FLOW: 277 LBS/HR

NOTES

1. DURING OPERATION WITH ICE VANES EXTENDED, FUEL FLOW WILL DECREASE APPROXIMATELY 10% IF ORIGINAL POWER IS NOT OR CANNOT BE RESET. IF ORIGINAL POWER IS RESET, FUEL FLOW WILL INCREASE APPROXIMATELY 30 LBS/HR/ENG.
2. BASED ON AN AVERAGE CRUISE WEIGHT OF 12,000 LBS.



06-C-0141

Figure 41-4. (F) Performance Cruise Power Fuel Flow — 1,700 rpm

MODEL: UC-12B
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

CONFIGURATION:

TORQUE:..... NOT TO EXCEED 2230 FT-LBS
 ITT:..... NOT TO EXCEED 725 °C
 FLAPS:..... UP
 GEAR:..... UP

EXAMPLE:

PRESSURE ALTITUDE:..... 27,000 FEET
 INDICATED OUTSIDE AIR TEMP: .. -20 °C
 TRUE AIRSPEED:..... 251 KNOTS

NOTE

1. FOR OPERATION WITH ICE VANES EXTENDED, TAS WILL BE REDUCED BY APPROXIMATELY 25 KNOTS.
2. BASED ON AVERAGE CRUISE WEIGHT OF 12,000 LBS.

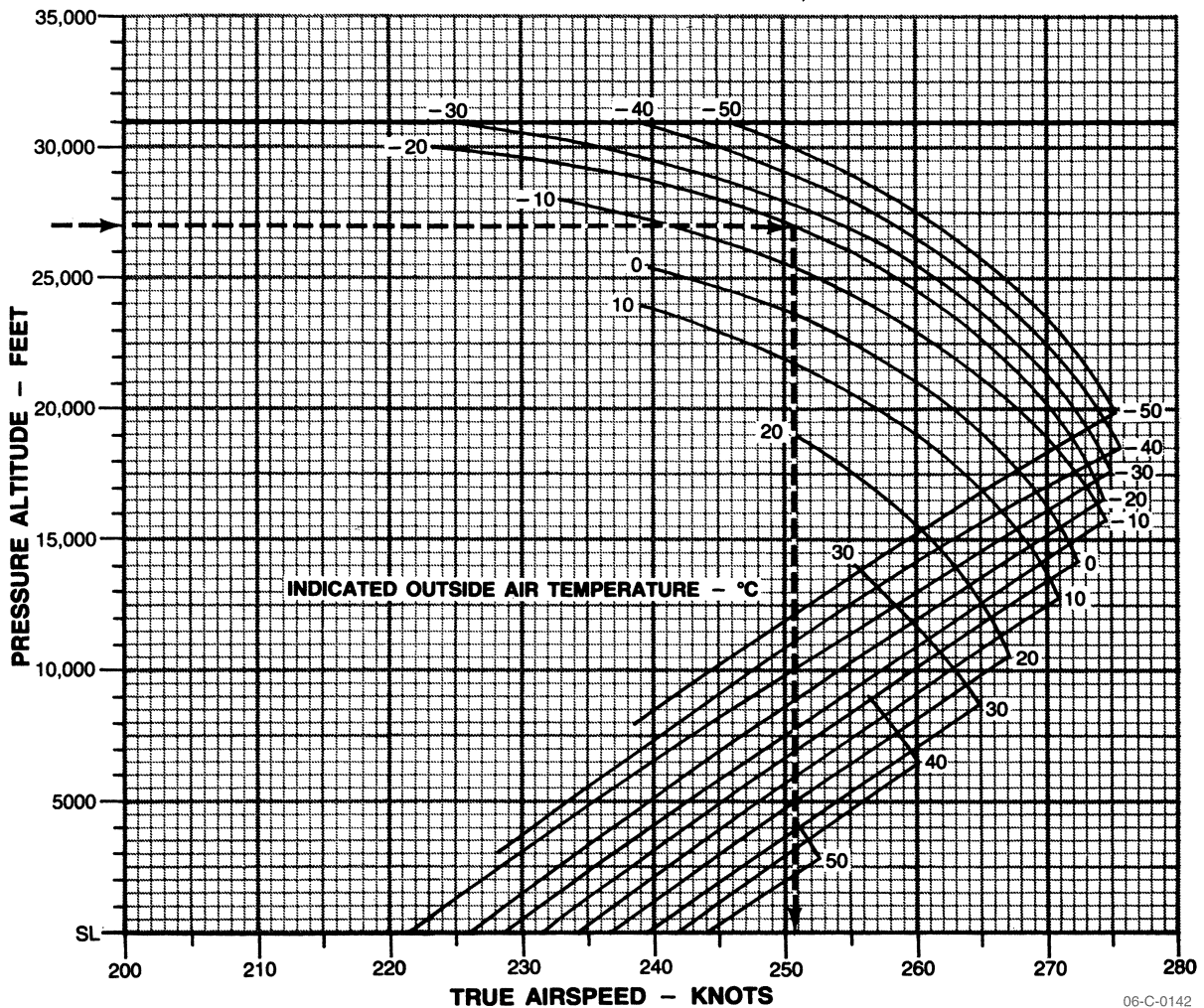


Figure 41-5. (B) Performance Cruise True Airspeed — 1,700 rpm

MODEL: UC-12F
 DATE: 29, JULY 1986
 DATA BASIS: FLIGHT TEST

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

CONFIGURATION:

TORQUE: NOT TO EXCEED 2230 FT-LBS
 ITT: NOT TO EXCEED 770°C
 FLAPS: UP
 GEAR: UP

EXAMPLE:

PRESSURE ALTITUDE: 27,000 FT
 INDICATED OUTSIDE AIR TEMP: - 11°C
 TRUE AIRSPEED: 268 KNOTS

NOTE

1. DURING OPERATION WITH ICE VANES EXTENDED, TRUE AIRSPEED WILL BE REDUCED APPROXIMATELY 30 KNOTS IF ORIGINAL POWER IS NOT OR CANNOT BE RESET, BUT WILL BE UNCHANGED IF THE ORIGINAL POWER IS RESET.
2. BASED ON AVERAGE CRUISE WEIGHT OF 12,000 LBS.

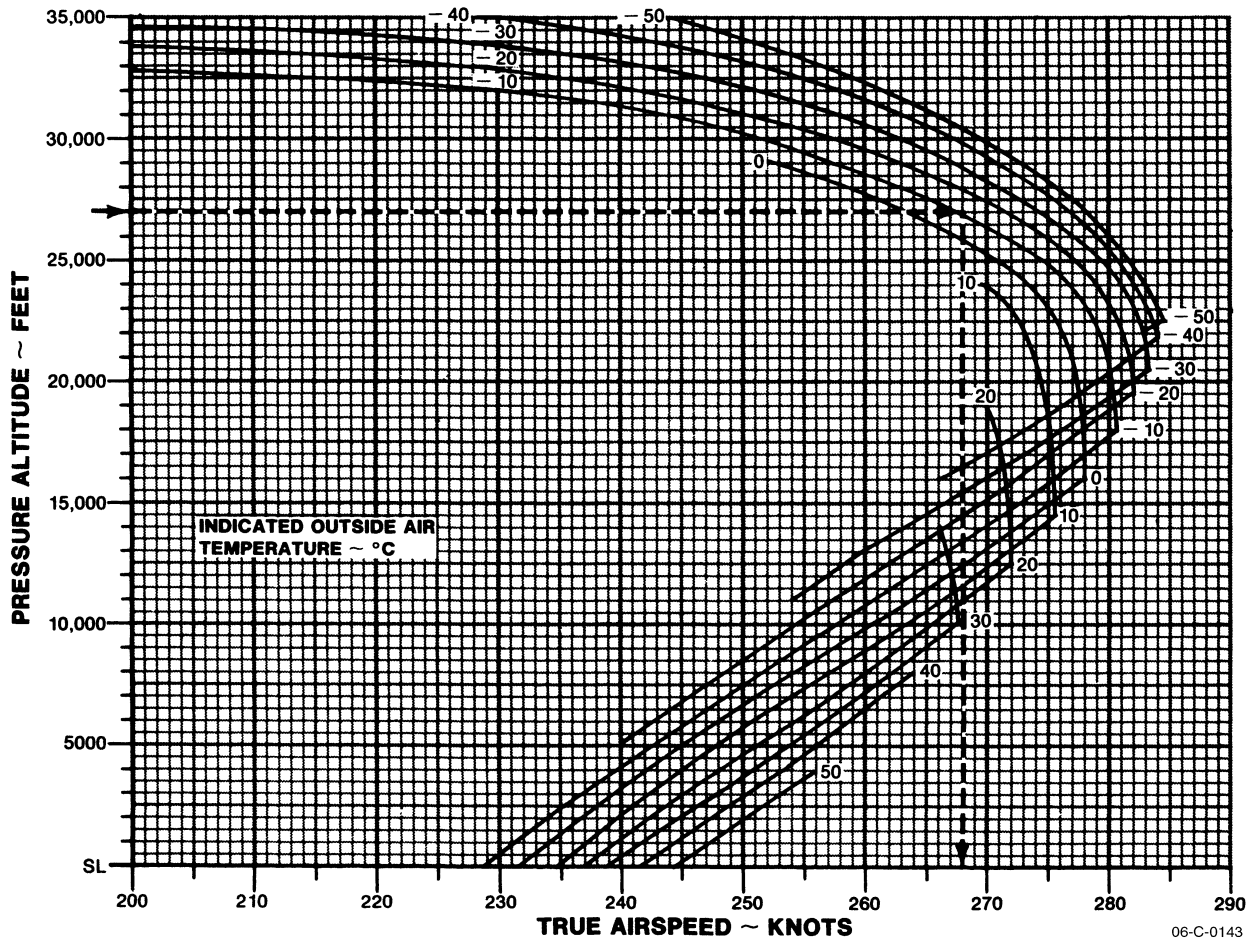


Figure 41-6. (F) Performance Cruise Power True Airspeed — 1,700 rpm

A1-C12BM-NFM-200

MODEL: UC-12B

**MAXIMUM RANGE POWER
1700 RPM
ISA -30 °C**

WEIGHT			13,000 Pounds					12,000 Pounds				
PRESSURE ALTITUDE	IOAT	OAT	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS
FEET	°C	°C	FT-LBS	LBS/HR	LBS/HR	KTS	KTS	FT-LBS	LBS/HR	LBS/HR	KTS	KTS
SL	-11	-15	1599	391	782	211	200	1532	383	766	209	198
2000	-15	-19	1483	363	726	202	198	1408	353	706	200	195
4000	-19	-23	1384	337	674	195	195	1303	326	652	191	192
6000	-23	-27	1314	315	630	188	194	1224	303	606	185	191
8000	-27	-31	1268	297	594	183	195	1175	285	570	179	191
10,000	-31	-35	1225	280	560	178	195	1128	267	534	174	191
12,000	-35	-39	1205	268	536	174	197	1103	255	510	170	192
14,000	-39	-43	1192	258	516	171	199	1088	244	488	166	194
16,000	-43	-47	1184	249	498	167	201	1077	235	470	163	196
18,000	-47	-51	1182	242	484	165	204	1070	227	454	160	198
20,000	-51	-55	1183	236	472	162	207	1070	221	442	157	201
22,000	-54	-59	1198	234	468	160	212	1074	216	432	155	205
24,000	-58	-63	1214	231	462	158	216	1086	214	428	153	209
26,000	-62	-67	1200	227	454	154	218	1110	213	426	152	215
28,000	-66	-70	1187	223	446	150	219	1110	211	422	149	218
29,000	-68	-72	1222	228	456	151	224	1090	207	414	146	216
31,000	-72	-76	—	—	—	—	—	1121	211	422	145	223

BT00157

Figure 41-7. (B) Maximum Range Power — 1,700 rpm (Sheet 1 of 16)

MODEL: UC-12B

MAXIMUM RANGE POWER
1700 RPM
ISA -30 °C

WEIGHT			11,000 Pounds					10,000 Pounds				
PRESSURE ALTITUDE	IOAT	OAT	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS
FEET	°C	°C	FT-LBS	LBS/HR	LBS/HR	KTS	KTS	FT-LBS	LBS/HR	LBS/HR	KTS	KTS
SL	-11	-15	1472	375	750	207	196	1414	368	736	205	195
2000	-16	-19	1340	345	690	197	193	1273	336	672	195	190
4000	-20	-23	1226	316	632	189	189	1149	306	612	185	186
6000	-24	-27	1137	292	584	181	187	1051	281	562	177	183
8000	-28	-31	1083	273	546	175	187	990	261	522	171	182
10,000	-32	-35	1028	254	508	169	186	927	241	482	165	181
12,000	-36	-39	996	241	482	165	187	895	227	454	160	181
14,000	-39	-43	981	230	460	162	188	871	216	432	156	182
16,000	-43	-47	972	221	442	158	191	860	206	412	153	184
18,000	-47	-51	966	213	426	156	193	858	199	398	150	187
20,000	-51	-55	961	206	412	153	196	856	192	384	148	190
22,000	-55	-59	959	201	402	150	198	855	186	372	145	192
24,000	-59	-63	965	197	394	147	202	849	181	362	142	195
26,000	-63	-67	978	194	388	146	206	860	178	356	140	199
28,000	-66	-70	1003	195	390	145	212	873	176	352	139	203
29,000	-68	-72	1011	195	390	144	215	884	176	352	138	206
31,000	-72	-76	1005	192	384	141	217	901	176	352	137	211

BT00158

Figure 41-7. (B) Maximum Range Power — 1,700 rpm (Sheet 2 of 16)

A1-C12BM-NFM-200

MODEL: UC-12B

**MAXIMUM RANGE POWER
1700 RPM
ISA -20 °C**

WEIGHT			13,000 Pounds					12,000 Pounds				
PRESSURE ALTITUDE	IOAT	OAT	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS
FEET	°C	°C	FT-LBS	LBS/HR	LBS/HR	KTS	KTS	FT-LBS	LBS/HR	LBS/HR	KTS	KTS
SL	-1	-5	1640	398	796	212	205	1598	392	784	211	204
2000	-5	-9	1581	376	752	207	206	1513	368	736	204	203
4000	-9	-13	1485	351	702	199	204	1395	340	680	196	200
6000	-13	-17	1404	329	658	192	202	1314	317	634	188	199
8000	-17	-21	1350	310	620	186	202	1255	298	596	183	198
10,000	-21	-25	1296	292	584	181	202	1198	279	558	177	198
12,000	-25	-29	1278	279	558	177	204	1174	266	532	173	199
14,000	-29	-33	1273	270	540	174	207	1161	255	510	169	202
16,000	-33	-37	1266	261	522	171	210	1152	246	492	167	205
18,000	-36	-41	1265	253	506	169	214	1145	238	476	164	207
20,000	-40	-45	1249	246	492	165	216	1140	231	462	161	210
22,000	-44	-49	1223	238	476	160	216	1150	227	454	159	215
24,000	-48	-53	1195	231	462	155	216	1134	221	442	155	216
26,000	-52	-57	1228	232	464	154	222	1109	214	428	150	216
28,000	-56	-60	1244	233	466	152	227	1116	213	426	147	220
29,000	-58	-62	1268	236	472	152	231	1132	215	430	147	223
31,000	-61	-66	—	—	—	—	—	1168	219	438	146	230

BT00155

Figure 41-7. (B) Maximum Range Power — 1,700 rpm (Sheet 3 of 16)

MODEL: UC-12B

MAXIMUM RANGE POWER
1700 RPM
ISA -20 °C

WEIGHT			11,000 Pounds					10,000 Pounds				
PRESSURE ALTITUDE	IOAT	OAT	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS
FEET	°C	°C	FT-LBS	LBS/HR	LBS/HR	KTS	KTS	FT-LBS	LBS/HR	LBS/HR	KTS	KTS
SL	-1	-5	1563	388	776	211	204	1496	380	760	208	201
2000	-5	-9	1437	359	718	202	201	1375	351	702	199	199
4000	-9	-13	1322	331	662	193	198	1256	322	644	190	195
6000	-13	-17	1237	307	614	186	196	1167	298	596	183	193
8000	-17	-21	1176	288	576	180	195	1099	278	556	177	192
10,000	-21	-25	1112	268	536	173	194	1026	257	514	170	190
12,000	-25	-29	1082	254	508	169	195	991	242	484	165	191
14,000	-29	-33	1061	242	484	165	197	967	230	460	161	192
16,000	-33	-37	1045	232	464	162	199	950	220	440	158	194
18,000	-37	-41	1036	224	448	159	202	933	210	420	154	196
20,000	-41	-45	1025	216	432	156	204	916	201	402	151	197
22,000	-45	-49	1025	211	422	153	207	916	196	392	148	201
24,000	-48	-53	1032	207	414	151	211	911	190	380	145	203
26,000	-52	-57	1037	203	406	149	215	916	187	374	143	207
28,000	-56	-60	1021	198	396	144	216	927	185	370	141	212
29,000	-58	-62	1005	195	390	141	216	932	184	368	140	214
31,000	-62	-66	1019	195	390	139	220	917	179	358	136	215
BT00156												

Figure 41-7. (B) Maximum Range Power — 1,700 rpm (Sheet 4 of 16)

MODEL: UC-12B

**MAXIMUM RANGE POWER
1700 RPM
ISA -10 °C**

WEIGHT			13,000 Pounds					12,000 Pounds				
PRESSURE ALTITUDE	IOAT	OAT	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS
FEET	°C	°C	FT-LBS	LBS/HR	LBS/HR	KTS	KTS	FT-LBS	LBS/HR	LBS/HR	KTS	KTS
SL	9	5	1539	387	774	205	202	1504	382	764	205	202
2000	5	1	1507	369	738	201	204	1483	365	730	201	204
4000	1	-3	1484	353	706	197	206	1447	347	694	197	206
6000	-3	-7	1447	336	672	193	208	1397	329	658	192	207
8000	-7	-11	1409	319	638	189	209	1338	310	620	187	207
10,000	-11	-15	1366	302	604	184	210	1280	291	582	181	206
12,000	-15	-19	1338	289	578	180	211	1254	278	556	177	208
14,000	-19	-23	1311	276	552	175	213	1226	265	530	173	210
16,000	-22	-27	1279	264	528	170	214	1207	255	510	169	212
18,000	-26	-31	1239	252	504	165	213	1188	245	490	165	214
20,000	-30	-35	1221	244	488	161	215	1151	234	468	160	214
22,000	-34	-39	1237	242	484	159	219	1119	225	450	154	213
24,000	-38	-43	1257	240	480	157	224	1125	221	442	152	217
26,000	-42	-47	1250	237	474	153	226	1152	222	444	151	223
28,000	-45	-50	1294	242	484	153	235	1149	219	438	147	225
29,000	-47	-52	1330	247	494	155	241	1151	219	438	146	227
31,000	-51	-56	—	—	—	—	—	1220	228	456	148	239

BT00153

Figure 41-7. (B) Maximum Range Power — 1,700 rpm (Sheet 5 of 16)

MODEL: UC-12B

MAXIMUM RANGE POWER
1700 RPM
ISA -10 °C

WEIGHT			11,000 Pounds					10,000 Pounds				
PRESSURE ALTITUDE	IOAT	OAT	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS
FEET	°C	°C	FT-LBS	LBS/HR	LBS/HR	KTS	KTS	FT-LBS	LBS/HR	LBS/HR	KTS	KTS
SL	9	5	1486	380	760	205	202	1466	377	754	205	202
2000	5	1	1457	362	724	202	204	1416	357	714	201	203
4000	1	-3	1395	341	682	196	204	1340	334	668	194	203
6000	-3	-7	1334	321	642	190	205	1257	312	624	187	202
8000	-7	-11	1253	299	598	183	203	1171	289	578	180	199
10,000	-11	-15	1183	279	558	177	202	1098	268	536	173	198
12,000	-15	-19	1148	264	528	172	203	1056	252	504	168	198
14,000	-19	-23	1120	252	504	168	204	1023	239	478	164	199
16,000	-23	-27	1103	241	482	165	206	996	227	454	160	200
18,000	-27	-31	1095	232	464	162	209	983	218	436	156	203
20,000	-30	-35	1089	225	450	159	212	977	210	420	154	206
22,000	-34	-39	1068	217	434	155	214	978	205	410	152	210
24,000	-38	-43	1035	208	416	149	214	974	199	398	149	213
26,000	-42	-47	1018	202	404	145	215	952	192	384	144	214
28,000	-46	-50	1043	203	406	144	221	932	186	372	140	215
29,000	-48	-52	1052	203	406	143	223	924	184	368	138	215
31,000	-52	-56	1050	201	402	140	226	940	184	368	136	220

BT00154

Figure 41-7. (B) Maximum Range Power — 1,700 rpm (Sheet 6 of 16)

MODEL: UC-12B

**MAXIMUM RANGE POWER
1700 RPM
ISA**

WEIGHT			13,000 Pounds					12,000 Pounds				
PRESSURE ALTITUDE	IOAT	OAT	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS
FEET	°C	°C	FT-LBS	LBS/HR	LBS/HR	KTS	KTS	FT-LBS	LBS/HR	LBS/HR	KTS	KTS
SL	19	15	1590	397	794	206	207	1493	385	770	202	203
2000	15	11	1478	368	736	198	204	1402	359	718	195	202
4000	11	7	1412	345	690	192	204	1365	339	678	191	203
6000	7	3	1378	328	656	187	205	1330	322	644	187	204
8000	3	-1	1355	314	628	184	207	1300	307	614	183	206
10,000	-1	-5	1321	298	596	179	208	1267	291	582	178	207
12,000	-15	-9	1292	285	570	175	210	1232	277	554	174	208
14,000	-19	-13	1290	275	550	172	213	1205	264	528	169	210
16,000	-12	-17	1296	268	536	170	217	1185	254	508	162	212
18,000	-16	-21	1299	261	522	167	221	1172	245	490	166	214
20,000	-20	-25	1287	254	508	163	223	1179	239	478	162	218
22,000	-24	-29	1265	247	494	159	224	1177	234	468	160	221
24,000	-28	-33	1272	244	488	156	228	1167	229	458	157	223
26,000	-31	-37	1310	247	494	156	235	1165	225	450	150	226
28,000	-35	-40	1329	249	498	154	241	1198	227	454	149	233
29,000	-37	-42	—	—	—	—	—	1206	228	256	148	236
31,000	—	—	—	—	—	—	—	—	—	—	—	—

BT00151

Figure 41-7. (B) Maximum Range Power — 1,700 rpm (Sheet 7 of 16)

MODEL: UC-12B

**MAXIMUM RANGE POWER
1700 RPM
ISA**

WEIGHT			11,000 Pounds					10,000 Pounds				
PRESSURE ALTITUDE	IOAT	OAT	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS
FEET	°C	°C	FT-LBS	LBS/HR	LBS/HR	KTS	KTS	FT-LBS	LBS/HR	LBS/HR	KTS	KTS
SL	19	15	1417	376	752	200	200	1360	368	736	198	199
2000	15	11	1352	352	704	194	200	1316	347	694	194	200
4000	11	7	1330	334	668	191	203	1300	331	662	191	203
6000	7	3	1299	318	636	187	205	1262	313	626	187	204
8000	3	-1	1262	302	604	183	206	1211	295	590	181	205
10,000	-1	-5	1223	285	570	178	207	1171	279	558	177	206
12,000	-5	-9	1174	269	538	173	207	1110	261	522	171	205
14,000	-9	-13	1145	256	512	168	209	1074	247	494	166	206
16,000	-13	-17	1119	245	490	164	210	1048	235	470	162	208
18,000	-17	-21	1093	234	468	160	211	1028	225	450	159	210
20,000	-20	-25	1071	225	450	156	213	1006	216	432	155	211
22,000	-24	-29	1062	218	436	152	215	976	206	412	150	212
24,000	-28	-33	1059	213	426	149	218	949	198	396	145	212
26,000	-32	-37	1062	210	420	147	222	939	192	384	141	214
28,000	-36	-40	1059	206	412	143	224	955	191	382	140	219
29,000	-38	-42	1064	206	412	142	226	963	190	380	139	222
31,000	-41	-46	1096	209	418	142	234	960	188	376	136	225

BT00152

Figure 41-7. (B) Maximum Range Power — 1,700 rpm (Sheet 8 of 16)

A1-C12BM-NFM-200

MODEL: UC-12B

**MAXIMUM RANGE POWER
1700 RPM
ISA +10 °C**

WEIGHT			13,000 Pounds					12,000 Pounds				
PRESSURE ALTITUDE	IOAT	OAT	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS
FEET	°C	°C	FT-LBS	LBS/HR	LBS/HR	KTS	KTS	FT-LBS	LBS/HR	LBS/HR	KTS	KTS
SL	29	25	1626	404	808	207	211	1571	397	794	205	210
2000	25	21	1573	383	766	202	212	1500	373	746	200	210
4000	21	17	1511	361	722	196	212	1407	348	696	192	208
6000	17	13	1456	341	682	191	212	1335	325	650	186	207
8000	13	9	1411	323	646	186	213	1289	307	614	180	207
10,000	9	5	1373	305	610	181	214	1245	289	578	175	208
12,000	6	1	1365	294	588	178	217	1239	278	556	173	211
14,000	2	-3	1362	286	572	175	221	1238	270	540	170	215
16,000	-2	-7	1329	274	548	170	222	1246	263	526	168	219
18,000	-6	-11	1287	262	524	165	222	1229	253	506	164	221
20,000	-10	-15	1265	253	506	160	223	1196	243	486	159	222
22,000	-14	-19	1290	252	504	158	228	1164	234	468	154	222
24,000	-17	-23	1318	252	504	157	234	1176	231	462	152	226
26,000	-21	-27	1338	253	506	156	240	1211	233	466	151	233
28,000	-25	-30	—	—	—	—	—	1221	232	464	149	238
29,000	—	—	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—	—	—

BT00149

Figure 41-7. (B) Maximum Range Power — 1,700 rpm (Sheet 9 of 16)

MODEL: UC-12B

MAXIMUM RANGE POWER
1700 RPM
ISA +10 °C

WEIGHT			11,000 Pounds					10,000 Pounds				
PRESSURE ALTITUDE	IOAT	OAT	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS
FEET	°C	°C	FT-LBS	LBS/HR	LBS/HR	KTS	KTS	FT-LBS	LBS/HR	LBS/HR	KTS	KTS
SL	29	25	1513	389	778	204	208	1428	379	758	201	205
2000	25	21	1411	362	724	196	206	1327	352	704	193	203
4000	21	17	1301	334	668	188	203	1218	324	648	185	200
6000	17	13	1228	312	624	181	202	1174	305	610	180	200
8000	13	9	1202	296	592	177	204	1156	290	580	177	203
10,000	9	5	1174	280	560	173	205	1125	274	548	172	205
12,000	15	1	1151	267	534	169	207	1098	260	520	169	206
14,000	1	-3	1126	255	510	165	209	1054	246	492	163	206
16,000	-3	-7	1115	246	492	162	212	1021	234	468	159	207
18,000	-6	-11	1118	238	476	160	216	996	223	446	155	208
20,000	-10	-15	1122	232	464	158	220	992	215	430	152	212
22,000	-14	-19	1104	225	450	154	222	1005	211	422	150	217
24,000	-18	-23	1070	216	432	148	221	997	205	410	147	220
26,000	-22	-27	1067	212	424	145	224	980	199	398	143	221
28,000	-25	-30	1103	214	428	145	232	962	193	386	139	222
29,000	-27	-32	1109	214	428	144	234	973	193	386	138	225
31,000	-31	-36	—	—	—	—	—	1001	195	390	137	232

BT00150

Figure 41-7. (B) Maximum Range Power — 1,700 rpm (Sheet 10 of 16)

MODEL: UC-12B

**MAXIMUM RANGE POWER
1700 RPM
ISA +20 °C**

WEIGHT			13,000 Pounds					12,000 Pounds				
PRESSURE ALTITUDE	IOAT	OAT	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS
FEET	°C	°C	FT-LBS	LBS/HR	LBS/HR	KTS	KTS	FT-LBS	LBS/HR	LBS/HR	KTS	KTS
SL	39	35	1556	397	794	201	209	1502	390	780	200	208
2000	35	31	1519	378	756	197	211	1464	371	742	196	209
4000	31	27	1486	360	720	193	212	1433	353	706	192	212
6000	27	23	1463	344	688	189	215	1396	335	670	188	213
8000	23	19	1428	328	656	185	216	1354	318	636	183	214
10,000	20	15	1388	310	620	180	217	1318	301	602	179	216
12,000	16	11	1358	297	594	176	219	1294	288	576	175	218
14,000	12	7	1333	283	566	171	220	1267	275	550	171	219
16,000	8	3	1315	273	546	168	223	1232	261	522	166	220
18,000	4	-1	1315	265	530	165	226	1203	250	500	161	221
20,000	0	-5	1327	263	526	162	230	1201	245	490	158	224
22,000	-4	-9	1319	258	516	159	233	1213	242	484	156	229
24,000	-7	-13	1368	261	522	159	242	1216	238	476	153	232
26,000	-11	-17	—	—	—	—	—	1245	239	478	152	239
28,000	—	—	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—	—	—

BT00147

Figure 41-7. (B) Maximum Range Power — 1,700 rpm (Sheet 11 of 16)

MODEL: UC-12B

MAXIMUM RANGE POWER
1700 RPM
ISA +20 °C

WEIGHT			11,000 Pounds					10,000 Pounds				
PRESSURE ALTITUDE	IOAT	OAT	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS
FEET	°C	°C	FT-LBS	LBS/HR	LBS/HR	KTS	KTS	FT-LBS	LBS/HR	LBS/HR	KTS	KTS
SL	39	35	1448	383	766	199	206	1403	377	754	198	205
2000	35	31	1410	364	728	195	208	1350	356	712	193	206
4000	31	27	1371	345	690	191	210	1310	337	674	189	208
6000	27	23	1333	327	654	186	211	1237	315	630	182	207
8000	23	19	1272	307	614	181	211	1161	293	586	176	205
10,000	19	15	1217	288	576	175	211	1104	273	546	170	205
12,000	15	11	1197	275	550	171	213	1077	260	520	166	207
14,000	12	7	1182	263	526	168	216	1060	248	496	162	209
16,000	8	3	1166	252	504	164	218	1052	238	476	160	212
18,000	4	-1	1141	241	482	160	220	1052	230	460	157	216
20,000	0	-5	1102	231	462	155	220	1040	223	446	154	219
22,000	-4	-9	1087	224	448	151	222	1015	214	428	150	220
24,000	-8	-13	1092	220	440	148	226	977	204	408	144	219
26,000	-12	-17	1108	219	438	146	231	973	199	398	141	222
28,000	-15	-20	1121	218	436	144	236	998	199	398	140	228
29,000	-17	-22	1142	220	440	145	241	1006	199	398	139	231
31,000	-21	-26	—	—	—	—	—	1011	198	396	136	236

BT00148

Figure 41-7. (B) Maximum Range Power — 1,700 rpm (Sheet 12 of 16)

A1-C12BM-NFM-200

MODEL: UC-12B

**MAXIMUM RANGE POWER
1700 RPM
ISA +30 °C**

WEIGHT			13,000 Pounds					12,000 Pounds				
PRESSURE ALTITUDE	IOAT	OAT	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS
FEET	°C	°C	FT-LBS	LBS/HR	LBS/HR	KTS	KTS	FT-LBS	LBS/HR	LBS/HR	KTS	KTS
SL	49	45	1680	415	830	207	218	1573	402	804	203	214
2000	45	41	1576	388	776	199	216	1464	373	746	195	211
4000	41	37	1500	364	728	193	215	1398	351	702	189	211
6000	37	33	1447	344	688	187	216	1360	333	666	184	213
8000	34	29	1411	328	656	183	217	1325	316	632	180	214
10,000	30	25	1400	314	628	179	220	1297	301	602	176	216
12,000	26	21	1389	303	606	176	223	1277	288	576	172	218
14,000	22	17	1381	292	584	173	226	1264	277	554	169	221
16,000	18	13	1369	282	564	169	229	1259	267	534	166	224
18,000	14	9	1349	272	544	165	231	1260	259	518	163	228
20,000	10	5	1323	262	524	160	232	1249	251	502	159	230
22,000	7	1	1369	265	530	161	240	1217	243	486	154	231
24,000	3	-3	—	—	—	—	—	1247	244	488	153	238
26,000	—	—	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—	—	—

BT00145

Figure 41-7. (B) Maximum Range Power — 1,700 rpm (Sheet 13 of 16)

MODEL: UC-12B

MAXIMUM RANGE POWER
1700 RPM
ISA +30 °C

WEIGHT			11,000 Pounds					10,000 Pounds				
PRESSURE ALTITUDE	IOAT	OAT	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS
FEET	°C	°C	FT-LBS	LBS/HR	LBS/HR	KTS	KTS	FT-LBS	LBS/HR	LBS/HR	KTS	KTS
SL	49	45	1469	389	778	199	210	1386	379	758	196	206
2000	45	41	1380	363	726	192	208	1309	354	708	189	206
4000	41	37	1325	341	682	187	209	1268	334	668	185	207
6000	37	33	1295	324	648	183	211	1239	317	634	181	209
8000	33	29	1261	308	616	178	212	1201	300	600	177	211
10,000	29	25	1233	292	584	174	214	1170	284	568	173	212
12,000	26	21	1196	277	554	170	215	1124	267	534	168	213
14,000	22	17	1161	263	526	165	216	1094	254	508	164	214
16,000	18	13	1145	252	504	161	218	1070	242	484	160	216
18,000	14	9	1138	243	486	158	221	1054	232	464	156	218
20,000	10	5	1142	237	474	156	226	1031	222	444	152	220
22,000	6	1	1139	232	464	153	229	1023	216	432	149	223
24,000	2	-3	1110	224	448	148	229	1024	211	422	146	226
26,000	-1	-7	1127	223	446	146	235	1013	206	412	142	229
28,000	-5	-10	—	—	—	—	—	1010	202	404	139	232
29,000	-7	-12	—	—	—	—	—	1035	205	410	140	237
31,000	—	—	—	—	—	—	—	—	—	—	—	—
BT00146												

Figure 41-7. (B) Maximum Range Power — 1,700 rpm (Sheet 14 of 16)

A1-C12BM-NFM-200

MODEL: UC-12B

**MAXIMUM RANGE POWER
1700 RPM
ISA +37 °C**

WEIGHT			13,000 Pounds					12,000 Pounds				
PRESSURE ALTITUDE	IOAT	OAT	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS
FEET	°C	°C	FT-LBS	LBS/HR	LBS/HR	KTS	KTS	FT-LBS	LBS/HR	LBS/HR	KTS	KTS
SL	56	52	1644	413	826	204	217	1576	404	808	202	216
2000	53	48	1614	394	788	200	220	1527	383	766	197	217
4000	49	44	1564	373	746	195	221	1458	360	720	191	217
6000	45	40	1511	353	706	190	221	1393	338	676	185	216
8000	41	36	1479	337	674	186	223	1354	321	642	181	217
10,000	37	32	1442	321	642	181	225	1327	306	612	177	219
12,000	33	28	1414	307	614	177	226	1307	293	586	173	222
14,000	29	24	1380	294	588	172	227	1301	283	566	170	225
16,000	25	20	1351	282	564	167	229	1277	271	542	166	227
18,000	21	16	1337	273	546	163	231	1251	260	520	161	228
20,000	17	12	—	—	—	—	—	1228	251	502	157	230
22,000	14	8	—	—	—	—	—	1248	249	498	155	235
24,000	—	—	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—	—	—

BT00143

Figure 41-7. (B) Maximum Range Power — 1,700 rpm (Sheet 15 of 16)

MODEL: UC-12B

**MAXIMUM RANGE POWER
1700 RPM
ISA +37 °C**

WEIGHT			11,000 Pounds					10,000 Pounds				
PRESSURE ALTITUDE	IOAT	OAT	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS
FEET	°C	°C	FT-LBS	LBS/HR	LBS/HR	KTS	KTS	FT-LBS	LBS/HR	LBS/HR	KTS	KTS
SL	56	52	1644	390	780	198	211	1366	377	754	194	207
2000	52	48	1416	369	738	193	212	1309	355	710	189	207
4000	48	44	1342	345	690	187	211	1251	333	666	183	207
6000	44	40	1292	325	650	182	212	1211	315	630	179	208
8000	40	36	1246	307	614	177	212	1176	298	596	174	210
10,000	36	32	1217	291	582	172	214	1145	282	564	170	212
12,000	33	28	1193	278	556	169	216	1107	267	534	166	212
14,000	29	24	1176	266	532	165	219	1075	253	506	161	214
16,000	25	20	1178	258	516	163	223	1052	242	484	157	215
18,000	21	16	1170	249	498	160	226	1044	232	464	154	219
20,000	17	12	1153	240	480	156	228	1057	227	454	153	224
22,000	13	8	1129	232	464	151	229	1052	221	442	150	227
24,000	9	4	1118	225	450	147	232	1031	213	426	145	229
26,000	5	0	—	—	—	—	—	1012	206	412	141	230
28,000	2	-3	—	—	—	—	—	1043	207	414	141	238
29,000	—	—	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—	—	—

BT00144

Figure 41-7. (B) Maximum Range Power — 1,700 rpm (Sheet 16 of 16)

A1-C12BM-NFM-200

MODEL: UC-12F
 DATE: JULY 26, 1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS: UP (0%)
 GEAR: UP
 PROPELLER SPEED: 1700 RPM
 ITT NOT TO EXCEED: 770 °C
 TORQUE: NOTED

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**MAXIMUM RANGE POWER
 ISA -30 °C
 SEE NOTES BELOW**

PRESSURE ALTITUDE	IOAT		13,000 Pounds				12,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	FT-LBS	LBS/HR	LBS/HR	KNOTS	FT-LBS	LBS/HR	LBS/HR	KNOTS
SL	-11	12	1719	402	804	206	1652	394	788	204
2000	-15	5	1576	373	746	203	1501	363	726	200
4000	-19	-2	1458	344	688	200	1382	335	670	197
6000	-23	-9	1370	320	640	198	1291	310	620	195
8000	-27	-17	1311	299	598	197	1226	288	576	194
10,000	-31	-24	1261	280	560	197	1173	269	538	194
12,000	-35	-31	1240	265	530	199	1144	253	506	195
14,000	-39	-38	1209	252	504	200	1107	240	480	195
16,000	-43	-45	1185	241	482	201	1080	228	456	196
18,000	-47	-53	1162	231	462	202	1049	216	432	197
20,000	-51	-60	1139	221	442	203	1014	204	408	196
22,000	-55	-67	1136	215	430	205	1005	197	394	198
24,000	-59	-74	1171	214	428	212	1035	196	392	204
26,000	-62	-80	1197	213	426	217	1065	195	390	209
28,000	-66	-87	1215	213	426	222	1091	195	390	215
29,000	-68	-90	1215	212	424	223	1107	196	392	218
31,000	-72	-98	1200	207	414	223	1053	183	366	214
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

Note

1. During operation with ice vanes extended, torque will decrease, in order to maintain maximum range configuration. Do not reset power to original setting. Fuel flow will remain about the same, but true airspeed will be reduced approximately 10 knots.

Figure 41-8. (F) Maximum Range Power — 1,700 rpm (Sheet 1 of 16)

MODEL: UC-12F
 DATE: JULY 29, 1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS: UP (0%)
 GEAR: UP
 PROPELLER SPEED: 1700 RPM
 ITT NOT TO EXCEED: 770 °C
 TORQUE: NOTED

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

MAXIMUM RANGE POWER
ISA -30 °C
SEE NOTES BELOW

PRESSURE ALTITUDE	IOAT		11,000 Pounds				10,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	FT-LBS	LBS/HR	LBS/HR	KNOTS	FT-LBS	LBS/HR	LBS/HR	KNOTS
SL	-11	12	1583	386	772	202	1520	379	758	200
2000	-15	5	1435	356	712	198	1371	348	696	196
4000	-19	-2	1313	326	652	195	1241	317	634	192
6000	-23	-9	1218	301	602	192	1138	291	582	181
8000	-27	-17	1143	278	556	191	1059	267	534	187
10,000	-31	-24	1082	257	514	190	991	245	490	186
12,000	-35	-31	1048	241	482	191	951	229	458	186
14,000	-39	-38	1006	227	454	190	900	213	426	185
16,000	-43	-45	976	214	428	191	868	201	402	185
18,000	-47	-53	942	202	404	191	831	188	376	185
20,000	-51	-60	893	188	376	189	767	171	342	181
22,000	-55	-67	870	179	358	190	727	159	318	179
24,000	-59	-74	905	178	356	196	769	160	320	186
26,000	-63	-80	935	177	354	201	807	160	320	193
28,000	-67	-89	960	177	354	207	834	159	318	199
29,000	-68	-90	971	177	354	209	845	159	318	201
31,000	-72	-98	932	164	328	207	845	151	302	204
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

Note

1. During operation with ice vanes extended, torque will decrease, in order to maintain maximum range configuration. Do not reset power to original setting. Fuel flow will remain about the same, but true airspeed will be reduced approximately 10 knots.

Figure 41-8. (F) Maximum Range Power — 1,700 rpm (Sheet 2 of 16)

A1-C12BM-NFM-200

MODEL: UC-12F
 DATE: JULY 29, 1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS: UP (0%)
 GEAR: UP
 PROPELLER SPEED: 1700 RPM
 ITT NOT TO EXCEED: 770 °C
 TORQUE: NOTED

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**MAXIMUM RANGE POWER
 ISA -20 °C
 SEE NOTES BELOW**

PRESSURE ALTITUDE	IOAT		13,000 Pounds				12,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	FT-LBS	LBS/HR	LBS/HR	KNOTS	FT-LBS	LBS/HR	LBS/HR	KNOTS
SL	-1	30	1673	399	798	207	1642	395	790	206
2000	-5	23	1625	379	758	208	1595	375	750	208
4000	-9	16	1557	357	714	208	1477	347	694	205
6000	-13	9	1469	333	666	206	1384	322	644	203
8000	-17	1	1398	311	622	206	1307	300	600	202
10,000	-21	-6	1323	289	578	204	1228	278	556	200
12,000	-25	-13	1305	275	550	206	1203	263	526	202
14,000	-29	-20	1280	263	526	208	1174	249	498	203
16,000	-33	-27	1255	251	502	209	1144	237	474	204
18,000	-37	-35	1241	242	484	211	1122	227	454	205
20,000	-41	-42	1219	233	466	213	1090	216	432	205
22,000	-45	-49	1209	226	452	215	1079	209	418	207
24,000	-48	-54	1228	223	446	220	1095	205	410	212
26,000	-52	-62	1231	219	438	223	1119	203	406	217
28,000	-56	-69	1218	215	430	224	1135	202	404	222
29,000	-58	-72	1255	219	438	230	1119	199	398	222
31,000	-62	-80	1327	228	456	242	1153	202	404	228
33,000	-65	-85	—	—	—	—	1217	210	420	240
35,000	—	—	—	—	—	—	—	—	—	—

Note

1. During operation with ice vanes extended, torque will decrease, in order to maintain maximum range configuration. Do not reset power to original setting. Fuel flow will remain about the same, but true airspeed will be reduced approximately 10 knots.

Figure 41-8. (F) Maximum Range Power — 1,700 rpm (Sheet 3 of 16)

MODEL: UC-12F
 DATE: JULY 29, 1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS: UP (0%)
 GEAR: UP
 PROPELLER SPEED: 1700 RPM
 ITT NOT TO EXCEED: 770 °C
 TORQUE: NOTED

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

MAXIMUM RANGE POWER
ISA -20 °C
SEE NOTES BELOW

PRESSURE ALTITUDE	IOAT		11,000 Pounds				10,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	FT-LBS	LBS/HR	LBS/HR	KNOTS	FT-LBS	LBS/HR	LBS/HR	KNOTS
SL	-1	30	1619	392	784	207	1571	385	770	205
2000	-5	23	1530	367	734	206	1460	359	718	203
4000	-9	16	1401	338	676	202	1327	329	658	199
6000	-13	9	1306	313	626	200	1233	304	608	197
8000	-17	1	1225	290	580	199	1150	281	462	196
10,000	-21	6	1143	267	534	196	1063	257	414	193
12,000	-25	-13	1111	251	502	197	1024	240	480	193
14,000	-29	-20	1075	237	474	198	981	225	450	193
16,000	-33	-27	1039	224	448	198	940	211	422	193
18,000	-37	-35	1013	213	426	200	911	200	400	194
20,000	-41	-42	976	201	402	199	864	187	374	193
22,000	-45	-49	955	192	384	200	837	176	352	193
24,000	-49	-59	968	188	376	204	846	171	342	196
26,000	-52	-62	987	185	370	209	858	168	336	200
28,000	-56	-69	1013	185	370	215	884	167	334	206
29,000	-58	-72	1026	185	370	218	897	167	334	209
31,000	-62	-80	1030	183	366	222	920	167	334	215
33,000	-66	-87	1049	185	370	227	934	167	334	220
35,000	-69	-92	1100	191	382	237	945	167	334	225

Note

1. During operation with ice vanes extended, torque will decrease, in order to maintain maximum range configuration. Do not reset power to original setting. Fuel flow will remain about the same, but true airspeed will be reduced approximately 10 knots.

Figure 41-8. (F) Maximum Range Power — 1,700 rpm (Sheet 4 of 16)

A1-C12BM-NFM-200

MODEL: UC-12F
 DATE: JULY 29, 1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS: UP (0%)
 GEAR: UP
 PROPELLER SPEED: 1700 RPM
 ITT NOT TO EXCEED: 770 °C
 TORQUE: NOTED

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**MAXIMUM RANGE POWER
 ISA -10 °C
 SEE NOTES BELOW**

PRESSURE ALTITUDE	IOAT		13,000 Pounds				12,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	FT-LBS	LBS/HR	LBS/HR	KNOTS	FT-LBS	LBS/HR	LBS/HR	KNOTS
SL	9	48	1574	390	780	204	1533	385	770	203
2000	5	41	1526	369	738	205	1504	366	732	205
4000	1	34	1516	354	708	208	1485	350	700	208
6000	-3	27	1482	336	672	210	1431	329	658	209
8000	-7	19	1434	317	634	210	1378	309	618	209
10,000	-11	12	1379	297	594	211	1300	287	574	208
12,000	-15	5	1349	282	564	212	1269	272	544	209
14,000	-19	-2	1331	271	542	214	1234	258	516	210
16,000	-23	-9	1307	259	518	216	1214	247	494	212
18,000	-26	-15	1292	249	498	218	1198	237	474	214
20,000	-30	-22	1278	241	482	220	1167	227	454	215
22,000	-34	-29	1262	234	468	222	1147	219	438	216
24,000	-38	-36	1241	226	452	223	1154	214	428	220
26,000	-42	-44	1242	222	444	226	1144	208	416	222
28,000	-46	-51	1278	224	448	233	1133	203	406	224
29,000	-48	-54	1301	227	454	237	1158	205	410	228
31,000	-51	-60	1329	230	460	243	1201	210	420	237
33,000	-55	-67	—	—	—	—	1233	214	428	244
35,000	—	—	—	—	—	—	—	—	—	—

Note

1. During operation with ice vanes extended, torque will decrease, in order to maintain maximum range configuration. Do not reset power to original setting. Fuel flow will remain about the same, but true airspeed will be reduced approximately 10 knots.

Figure 41-8. (F) Maximum Range Power — 1,700 rpm (Sheet 5 of 16)

MODEL: UC-12F
 DATE: JULY 29, 1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS: UP (0%)
 GEAR: UP
 PROPELLER SPEED: 1700 RPM
 ITT NOT TO EXCEED: 770 °C
 TORQUE: NOTED

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

MAXIMUM RANGE POWER
ISA -10 °C
SEE NOTES BELOW

PRESSURE ALTITUDE	IOAT		11,000 Pounds				10,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	FT-LBS	LBS/HR	LBS/HR	KNOTS	FT-LBS	LBS/HR	LBS/HR	KNOTS
SL	9	48	1514	382	764	204	1491	379	758	204
2000	5	41	1484	364	728	206	1450	359	718	205
4000	1	34	1446	345	690	208	1393	338	676	206
6000	-3	27	1376	322	644	207	1299	313	626	204
8000	-7	19	1291	299	598	206	1208	289	578	202
10,000	-11	12	1210	276	552	204	1126	265	530	200
12,000	-15	5	1170	260	520	204	1078	249	498	200
14,000	-19	-2	1128	245	490	205	1031	233	466	200
16,000	-23	-9	1100	233	466	206	997	220	440	200
18,000	-27	-17	1072	221	442	207	963	203	416	201
20,000	-31	-24	1043	211	422	208	930	197	394	201
22,000	-35	-31	1020	202	404	209	901	187	374	201
24,000	-38	-36	1028	197	394	213	907	181	362	205
26,000	-42	-44	1041	194	388	217	915	177	354	209
28,000	-46	-51	1049	191	382	221	932	174	348	214
29,000	-48	-54	1039	188	376	222	941	174	348	217
31,000	-52	-62	1047	187	374	226	947	172	344	221
33,000	-55	-67	1093	192	384	235	934	168	336	222
35,000	-59	-74	1130	197	394	243	980	173	346	232

Note

1. During operation with ice vanes extended, torque will decrease, in order to maintain maximum range configuration. Do not reset power to original setting. Fuel flow will remain about the same, but true airspeed will be reduced approximately 10 knots.

Figure 41-8. (F) Maximum Range Power — 1,700 rpm (Sheet 6 of 16)

A1-C12BM-NFM-200

MODEL: UC-12F
 DATE: JULY 29, 1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS: UP (0%)
 GEAR: UP
 PROPELLER SPEED: 1700 RPM
 ITT NOT TO EXCEED: 770 °C
 TORQUE: NOTED

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**MAXIMUM RANGE POWER
 ISA
 SEE NOTES BELOW**

PRESSURE ALTITUDE	IOAT		13,000 Pounds				12,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	FT-LBS	LBS/HR	LBS/HR	KNOTS	FT-LBS	LBS/HR	LBS/HR	KNOTS
SL	19	66	1640	401	802	209	1534	389	778	205
2000	15	59	1510	371	742	206	1432	361	722	203
4000	11	52	1436	347	694	205	1388	341	682	204
6000	7	45	1415	330	660	208	1369	324	648	207
8000	3	37	1370	311	622	208	1332	306	612	208
10,000	-1	30	1341	293	586	210	1299	288	576	210
12,000	-5	23	1324	280	560	212	1272	273	546	212
14,000	-9	16	1304	256	536	214	1251	261	522	214
16,000	-12	10	1288	258	516	216	1228	250	500	216
18,000	-16	3	1262	248	496	217	1203	240	480	217
20,000	-20	-4	1249	239	478	219	1200	232	464	220
22,000	-24	-11	1243	233	466	222	1178	224	448	221
24,000	-28	-18	1262	230	460	227	1149	215	430	222
26,000	-32	-26	1294	231	462	233	1149	210	420	224
28,000	-35	-31	1318	232	464	239	1190	212	424	232
29,000	-37	-35	1337	234	468	243	1189	211	422	237
31,000	-41	-42	1360	236	472	248	1233	216	432	243
33,000	-45	-49	—	—	—	—	1247	218	436	247
35,000	—	—	—	—	—	—	—	—	—	—

Note

1. During operation with ice vanes extended, torque will decrease, in order to maintain maximum range configuration. Do not reset power to original setting. Fuel flow will remain about the same, but true airspeed will be reduced approximately 10 knots.

Figure 41-8. (F) Maximum Range Power — 1,700 rpm (Sheet 7 of 16)

MODEL: UC-12F
 DATE: JULY 29, 1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS: UP (0%)
 GEAR: UP
 PROPELLER SPEED: 1700 RPM
 ITT NOT TO EXCEED: 770 °C
 TORQUE: NOTED

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**MAXIMUM RANGE POWER
 ISA
 SEE NOTES BELOW**

PRESSURE ALTITUDE	IOAT		11,000 Pounds				10,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	FT-LBS	LBS/HR	LBS/HR	KNOTS	FT-LBS	LBS/HR	LBS/HR	KNOTS
SL	19	66	1460	379	758	203	1411	373	746	202
2000	15	59	1383	355	710	202	1351	351	702	202
4000	11	52	1364	338	676	205	1335	334	668	205
6000	7	45	1336	320	640	207	1293	314	628	206
8000	3	37	1295	301	602	208	1253	296	592	208
10,000	-1	30	1251	282	564	209	1188	274	548	207
12,000	-5	23	1218	266	532	211	1145	257	514	208
14,000	-9	16	1181	252	504	212	1092	241	482	207
16,000	-12	20	1158	241	482	214	1042	226	452	207
18,000	-16	3	1127	229	458	215	1013	215	430	208
20,000	-20	-4	1113	220	440	217	990	205	410	209
22,000	-24	-11	1089	210	420	218	962	196	392	210
24,000	-28	-18	1077	204	408	220	961	189	378	213
26,000	-32	-26	1058	197	394	221	967	184	368	218
28,000	-36	-33	1048	193	386	223	964	180	360	221
29,000	-38	-36	1065	192	384	227	956	177	354	221
31,000	-41	-42	1086	193	386	233	949	173	346	223
33,000	-45	-49	1030	199	398	242	981	176	352	231
35,000	-49	-56	1138	199	398	246	1018	180	360	240

Note

1. During operation with ice vanes extended, torque will decrease, in order to maintain maximum range configuration. Do not reset power to original setting. Fuel flow will remain about the same, but true airspeed will be reduced approximately 10 knots.

Figure 41-8. (F) Maximum Range Power — 1,700 rpm (Sheet 8 of 16)

A1-C12BM-NFM-200

MODEL: UC-12F
 DATE: JULY 29, 1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS: UP (0%)
 GEAR: UP
 PROPELLER SPEED: 1700 RPM
 ITT NOT TO EXCEED: 770 °C
 TORQUE: NOTED

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**MAXIMUM RANGE POWER
 ISA +10 °C
 SEE NOTES BELOW**

PRESSURE ALTITUDE	IOAT		13,000 Pounds				12,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	FT-LBS	LBS/HR	LBS/HR	KNOTS	FT-LBS	LBS/HR	LBS/HR	KNOTS
SL	29	84	1681	408	816	214	1630	402	804	213
2000	25	77	1626	387	774	215	1537	376	752	212
4000	21	70	1543	362	724	214	1432	349	698	209
6000	17	63	1458	338	776	212	1348	324	648	208
8000	13	55	1405	317	634	213	1295	304	608	208
10,000	9	48	1354	297	594	213	1259	285	570	209
12,000	5	41	1347	284	568	216	1231	270	540	210
14,000	1	34	1343	274	548	219	1225	259	518	213
16,000	-2	28	1331	264	528	222	1208	248	496	216
18,000	-6	21	1317	254	508	224	1199	239	578	218
20,000	-10	14	1283	244	488	224	1179	230	460	220
22,000	-14	7	1283	240	480	227	1160	223	446	221
24,000	-18	0	1302	237	474	233	1167	218	436	225
26,000	-22	-8	1341	238	476	241	1196	217	434	232
28,000	-25	-13	1334	235	470	243	1216	217	434	237
29,000	-27	-17	1342	236	472	245	1239	219	438	242
31,000	-31	-24	—	—	—	—	1240	218	436	245
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

Note

1. During operation with ice vanes extended, torque will decrease, in order to maintain maximum range configuration. Do not reset power to original setting. Fuel flow will remain about the same, but true airspeed will be reduced approximately 10 knots.

Figure 41-8. (F) Maximum Range Power — 1,700 rpm (Sheet 9 of 16)

MODEL: UC-12F
 DATE: JULY 29, 1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS: UP (0%)
 GEAR: UP
 PROPELLER SPEED: 1700 RPM
 ITT NOT TO EXCEED: 770 °C
 TORQUE: NOTED

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

MAXIMUM RANGE POWER
ISA +10 °C
SEE NOTES BELOW

PRESSURE ALTITUDE	IOAT		11,000 Pounds				10,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	FT-LBS	LBS/HR	LBS/HR	KNOTS	FT-LBS	LBS/HR	LBS/HR	KNOTS
SL	29	84	1551	392	784	210	1474	383	766	207
2000	25	77	1443	365	730	208	1354	354	708	204
4000	21	70	1331	336	672	205	1271	329	658	203
6000	17	63	1275	315	630	205	1235	310	620	205
8000	13	55	1231	295	590	206	1190	290	580	205
10,000	9	48	1201	278	556	207	1161	273	546	207
12,000	5	41	1177	263	526	209	1137	258	516	209
14,000	1	34	1156	251	502	212	1111	245	490	211
16,000	-2	28	1141	240	480	214	1084	232	464	213
18,000	-6	21	1128	230	460	217	1056	221	442	214
20,000	-10	14	1120	222	444	220	1031	210	420	216
22,000	-14	7	1097	213	426	221	1021	203	406	218
24,000	-18	0	1058	203	406	220	1000	195	390	220
26,000	-22	-8	1056	198	396	223	966	185	370	220
28,000	-26	-15	1091	199	398	230	954	179	358	221
29,000	-27	-17	1093	197	394	232	959	178	356	223
31,000	-31	-24	1127	200	400	240	990	180	360	231
33,000	-35	-31	1131	200	400	244	1003	180	360	236
35,000	-39	-38	—	—	—	—	1024	182	364	242

Note

1. During operation with ice vanes extended, torque will decrease, in order to maintain maximum range configuration. Do not reset power to original setting. Fuel flow will remain about the same, but true airspeed will be reduced approximately 10 knots.

Figure 41-8. (F) Maximum Range Power — 1,700 rpm (Sheet 10 of 16)

A1-C12BM-NFM-200

MODEL: UC-12F
 DATE: JULY 29, 1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS: UP (0%)
 GEAR: UP
 PROPELLER SPEED: 1700 RPM
 ITT NOT TO EXCEED: 770 °C
 TORQUE: NOTED

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**MAXIMUM RANGE POWER
 ISA +20 °C
 SEE NOTES BELOW**

PRESSURE ALTITUDE	IOAT		13,000 Pounds				12,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	FT-LBS	LBS/HR	LBS/HR	KNOTS	FT-LBS	LBS/HR	LBS/HR	KNOTS
SL	39	102	1622	404	808	213	1568	397	794	211
2000	35	95	1577	384	768	214	1529	377	754	213
4000	31	88	1553	366	732	217	1487	357	714	215
6000	28	82	1512	347	694	218	1449	338	676	217
8000	24	75	1460	326	652	219	1380	316	632	216
10,000	20	68	1409	306	612	219	1314	294	588	215
12,000	16	61	1391	292	584	221	1315	282	564	219
14,000	12	54	1363	279	558	223	1284	268	536	221
16,000	8	46	1345	267	534	225	1263	257	514	222
18,000	4	39	1332	258	516	227	1249	247	494	225
20,000	0	32	1322	250	500	230	1225	237	474	226
22,000	-4	25	1313	243	486	232	1204	229	458	228
24,000	-7	19	1343	243	486	239	1208	224	448	231
26,000	-11	12	1363	242	484	245	1232	223	446	238
28,000	-15	5	1354	240	480	246	1255	224	448	244
29,000	-17	1	—	—	—	—	1236	220	440	243
31,000	-21	-6	—	—	—	—	1268	224	448	249
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

Note

1. During operation with ice vanes extended, torque will decrease, in order to maintain maximum range configuration. Do not reset power to original setting. Fuel flow will remain about the same, but true airspeed will be reduced approximately 10 knots.

Figure 41-8. (F) Maximum Range Power — 1,700 rpm (Sheet 11 of 16)

MODEL: UC-12F
 DATE: JULY 29, 1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS: UP (0%)
 GEAR: UP
 PROPELLER SPEED: 1700 RPM
 ITT NOT TO EXCEED: 770 °C
 TORQUE: NOTED

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

MAXIMUM RANGE POWER
ISA +20 °C
SEE NOTES BELOW

PRESSURE ALTITUDE	IOAT		11,000 Pounds				10,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	FT-LBS	LBS/HR	LBS/HR	KNOTS	FT-LBS	LBS/HR	LBS/HR	KNOTS
SL	39	102	1515	390	780	210	1458	383	766	209
2000	35	95	1465	369	738	211	1407	362	724	210
4000	31	88	1415	348	696	212	1328	338	676	209
6000	27	81	1355	327	654	213	1248	314	628	208
8000	23	73	1278	303	606	211	1180	291	582	207
10,000	19	66	1196	279	558	209	1105	268	536	205
12,000	15	59	1185	266	532	212	1093	255	510	208
14,000	11	52	1155	252	504	213	1066	241	482	209
16,000	8	46	1141	241	482	216	1050	230	460	212
18,000	4	39	1130	232	464	219	1044	221	442	215
20,000	0	32	1108	222	444	220	1038	213	426	219
22,000	-4	25	1080	212	424	221	1021	204	408	221
24,000	-8	18	1081	206	412	224	984	193	386	220
26,000	-12	10	1099	204	408	230	967	185	370	221
28,000	-15	5	1119	203	406	236	990	185	370	227
29,000	-17	1	1142	205	410	240	996	184	368	230
31,000	-21	-6	1133	203	406	243	1015	185	370	236
33,000	-25	-13	—	—	—	—	1032	186	372	242
35,000	—	—	—	—	—	—	—	—	—	—

Note

1. During operation with ice vanes extended, torque will decrease, in order to maintain maximum range configuration. Do not reset power to original setting. Fuel flow will remain about the same, but true airspeed will be reduced approximately 10 knots.

Figure 41-8. (F) Maximum Range Power — 1,700 rpm (Sheet 12 of 16)

A1-C12BM-NFM-200

MODEL: UC-12F
 DATE: JULY 29, 1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS: UP (0%)
 GEAR: UP
 PROPELLER SPEED: 1700 RPM
 ITT NOT TO EXCEED: 770 °C
 TORQUE: NOTED

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**MAXIMUM RANGE POWER
 ISA +30 °C
 SEE NOTES BELOW**

PRESSURE ALTITUDE	IOAT		13,000 Pounds				12,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	FT-LBS	LBS/HR	LBS/HR	KNOTS	FT-LBS	LBS/HR	LBS/HR	KNOTS
SL	49	120	1660	411	822	217	1562	399	798	213
2000	45	113	1564	384	768	216	1487	374	748	213
4000	41	106	1514	363	726	216	1451	355	710	214
6000	37	99	1474	344	688	217	1417	337	674	216
8000	34	93	1437	326	652	219	1373	317	634	217
10,000	30	86	1387	306	612	219	1330	298	596	218
12,000	26	79	1365	291	582	221	1292	281	562	219
14,000	22	72	1343	279	558	223	1270	269	538	221
16,000	18	64	1335	268	536	226	1251	257	514	223
18,000	14	57	1324	259	518	228	1243	248	496	226
20,000	10	50	1332	253	506	233	1235	240	480	229
22,000	7	45	1347	250	500	238	1223	232	464	231
24,000	3	37	1372	248	496	244	1232	226	452	235
26,000	-1	30	1354	242	484	245	1266	228	456	244
28,000	-5	23	—	—	—	—	1248	223	446	244
29,000	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

Note

1. During operation with ice vanes extended, torque will decrease, in order to maintain maximum range configuration. Do not reset power to original setting. Fuel flow will remain about the same, but true airspeed will be reduced approximately 10 knots.

Figure 41-8. (F) Maximum Range Power — 1,700 rpm (Sheet 13 of 16)

MODEL: UC-12F
 DATE: JULY 29, 1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS: UP (0%)
 GEAR: UP
 PROPELLER SPEED: 1700 RPM
 ITT NOT TO EXCEED: 770 °C
 TORQUE: NOTED

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

MAXIMUM RANGE POWER
ISA +30 °C
SEE NOTES BELOW

PRESSURE ALTITUDE	IOAT		11,000 Pounds				10,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	FT-LBS	LBS/HR	LBS/HR	KNOTS	FT-LBS	LBS/HR	LBS/HR	KNOTS
SL	49	120	1493	390	780	211	1423	381	762	209
2000	45	113	1427	366	732	211	1365	359	718	209
4000	41	106	1391	348	696	213	1332	340	680	211
6000	37	99	1351	328	656	214	1293	321	642	213
8000	33	91	1312	309	618	216	1234	300	600	213
10,000	30	86	1274	291	582	217	1187	280	560	214
12,000	26	79	1233	274	548	218	1146	262	524	214
14,000	22	72	1212	261	522	220	1113	249	498	216
16,000	18	64	1186	249	498	222	1080	235	470	217
18,000	14	57	1170	238	476	225	1060	224	448	219
20,000	10	50	1149	228	456	226	1030	213	426	219
22,000	6	43	1137	220	440	229	1011	204	408	221
24,000	2	36	1117	212	424	230	1012	198	396	225
26,000	-1	30	1107	205	410	232	1013	192	384	229
28,000	-5	23	1159	209	418	243	1004	187	374	231
29,000	-7	19	1152	207	414	244	1020	187	374	235
31,000	-11	12	1147	205	410	246	1050	189	378	243
33,000	-15	5	—	—	—	—	1034	186	372	244
35,000	—	—	—	—	—	—	—	—	—	—

Note

1. During operation with ice vanes extended, torque will decrease, in order to maintain maximum range configuration. Do not reset power to original setting. Fuel flow will remain about the same, but true airspeed will be reduced approximately 10 knots.

Figure 41-8. (F) Maximum Range Power — 1,700 rpm (Sheet 14 of 16)

A1-C12BM-NFM-200

MODEL: UC-12F
 DATE: JULY 29, 1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS: UP (0%)
 GEAR: UP
 PROPELLER SPEED: 1700 RPM
 ITT NOT TO EXCEED: 770 °C
 TORQUE: NOTED

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

MAXIMUM RANGE POWER
 ISA +37 °C
 SEE NOTES BELOW

PRESSURE ALTITUDE	IOAT		13,000 Pounds				12,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
			FT-LBS	LBS/HR	LBS/HR	KNOTS	FT-LBS	LBS/HR	LBS/HR	KNOTS
FEET	°C	°F								
SL	56	133	1714	419	838	221	1623	408	816	218
2000	52	126	1635	394	788	221	1527	381	762	217
4000	48	118	1556	370	740	220	1450	357	714	216
6000	44	111	1482	347	694	219	1394	335	670	216
8000	41	106	1449	328	656	221	1358	317	634	218
10,000	37	99	1410	310	620	222	1315	298	596	218
12,000	33	91	1398	296	592	225	1289	282	564	220
14,000	29	84	1382	285	570	227	1267	270	540	222
16,000	25	77	1373	275	550	230	1246	258	516	224
18,000	21	70	1376	267	537	234	1237	249	498	227
20,000	17	63	1386	262	524	239	1232	241	482	230
22,000	13	55	1382	256	512	243	1232	235	470	234
24,000	10	50	1368	249	498	244	1269	234	468	242
26,000	6	43	1386	247	494	249	1260	228	456	244
28,000	2	36	—	—	—	—	1277	228	456	249
29,000	0	36	—	—	—	—	1282	228	456	251
31,000	—	—	—	—	—	—	—	—	—	—
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

Note

1. During operation with ice vanes extended, torque will decrease, in order to maintain maximum range configuration. Do not reset power to original setting. Fuel flow will remain about the same, but true airspeed will be reduced approximately 10 knots.

Figure 41-8. (F) Maximum Range Power — 1,700 rpm (Sheet 15 of 16)

MODEL: UC-12F
 DATE: JULY 29, 1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS: UP (0%)
 GEAR: UP
 PROPELLER SPEED: 1700 RPM
 ITT NOT TO EXCEED: 770 °C
 TORQUE: NOTED

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**MAXIMUM RANGE POWER
 ISA +37 °C
 SEE NOTES BELOW**

PRESSURE ALTITUDE	IOAT		11,000 Pounds				10,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	FT-LBS	LBS/HR	LBS/HR	KNOTS	FT-LBS	LBS/HR	LBS/HR	KNOTS
SL	56	133	1516	394	788	214	1444	385	770	211
2000	52	126	1433	369	738	213	1354	359	718	210
4000	48	118	1373	347	694	213	1305	338	676	211
6000	44	111	1328	327	654	214	1267	319	638	212
8000	40	104	1288	308	616	216	1232	301	602	214
10,000	37	99	1255	290	580	217	1195	282	564	216
12,000	33	91	1220	273	546	218	1164	266	532	217
14,000	29	84	1194	260	520	220	1136	253	506	219
16,000	25	77	1167	248	496	222	1102	239	478	220
18,000	21	70	1159	238	476	225	1090	229	458	223
20,000	17	63	1146	230	460	227	1061	218	436	224
22,000	13	55	1141	222	444	230	1041	209	418	226
24,000	9	48	1121	214	428	232	1036	201	402	229
26,000	6	43	1150	212	424	239	1019	194	388	231
28,000	2	36	1153	209	418	243	1026	190	380	235
29,000	0	32	1150	207	414	244	1049	192	384	240
31,000	-4	25	1169	209	418	249	1041	188	376	243
33,000	-8	18	—	—	—	—	1056	190	380	248
35,000	—	—	—	—	—	—	—	—	—	—

Note

1. During operation with ice vanes extended, torque will decrease, in order to maintain maximum range configuration. Do not reset power to original setting. Fuel flow will remain about the same, but true airspeed will be reduced approximately 10 knots.

Figure 41-8. (F) Maximum Range Power — 1,700 rpm (Sheet 16 of 16)

ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LB/GAL

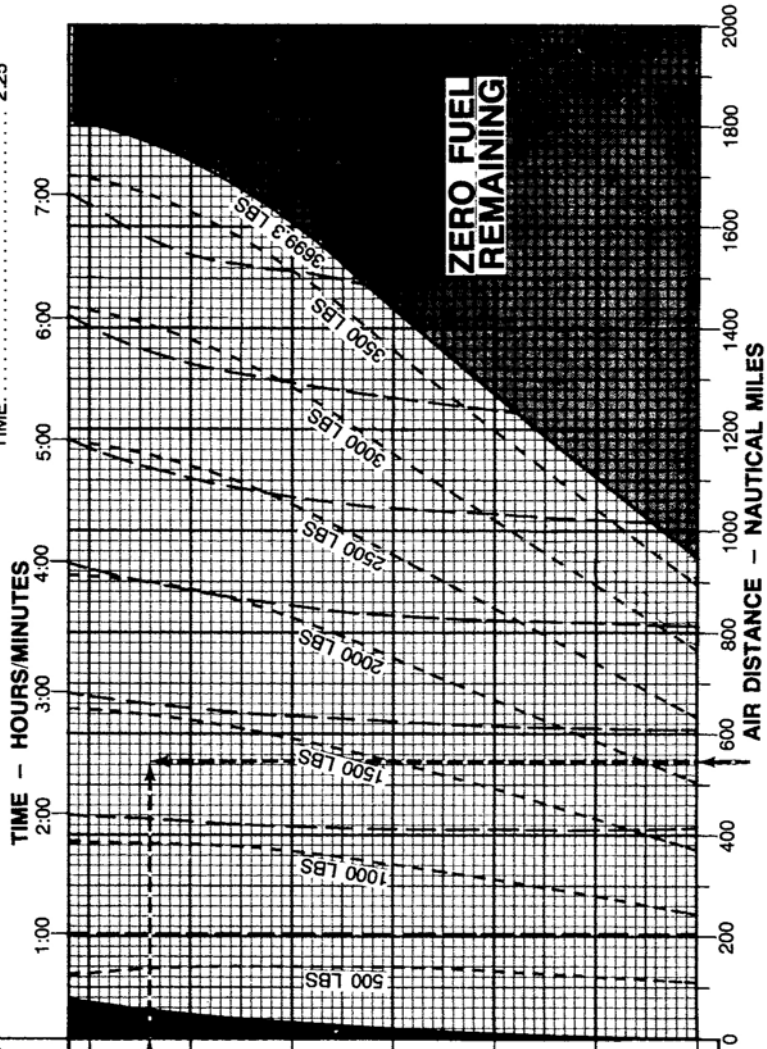
EXAMPLE:
 PRESSURE ALTITUDE: 27,000 FEET
 AIR DISTANCE: 545 N.M.
 AIRSPEED: 233 KTAS
 TORQUE: 1185 FT-LBS
 FUEL: 1318 LBS
 TIME: 2:25

- NOTE**
1. FOR OPERATION WITH ICE VANES EXTENDED, RANGE IS REDUCED APPROXIMATELY 15%.
 2. 90 LBS FUEL ALLOWANCE FOR ENGINE START, TAXI, AND TAKE-OFF INCLUDED.
 3. NO ALLOWANCE OR RESERVE FOR LOITER, DESCENT, OR LANDING.
 4. WEIGHT: 13,500 LBS TAKEOFF. AIRSPEEDS ARE FOR AVERAGE CRUISE WEIGHT. (2500 LBS FUEL REQUIRED DUE TO 11,000 LBS MAXIMUM ZERO FUEL WEIGHT.)

MODEL: UC-12B
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

CONFIGURATION:
 PROPELLER SPEED: 1700 RPM
 TORQUE: AS NOTED
 FLAPS: UP
 GEAR: UP
 ICE VANES: RETRACTED

TORQUE - FT-LBS	AIRSPEED - KNOTS KTAS	PRESSURE ALTITUDE - FEET
1219	245	30,000
1162	224	25,000
1178	218	20,000
1195	211	15,000
1268	208	10,000
1343	204	5000
1492	203	SL



06-C-0153

Figure 41-9. (B) Mission Profile — Maximum Range Power — 1,700 rpm Standard Day Zero Wind

MODEL: UC-12F
 DATE: 29, JULY 1986
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

PROPELLER SPEED: 1700 RPM
 TORQUE: AS NOTED
 FLAPS: UP
 GEAR: UP
 ICE VANES: RETRACTED

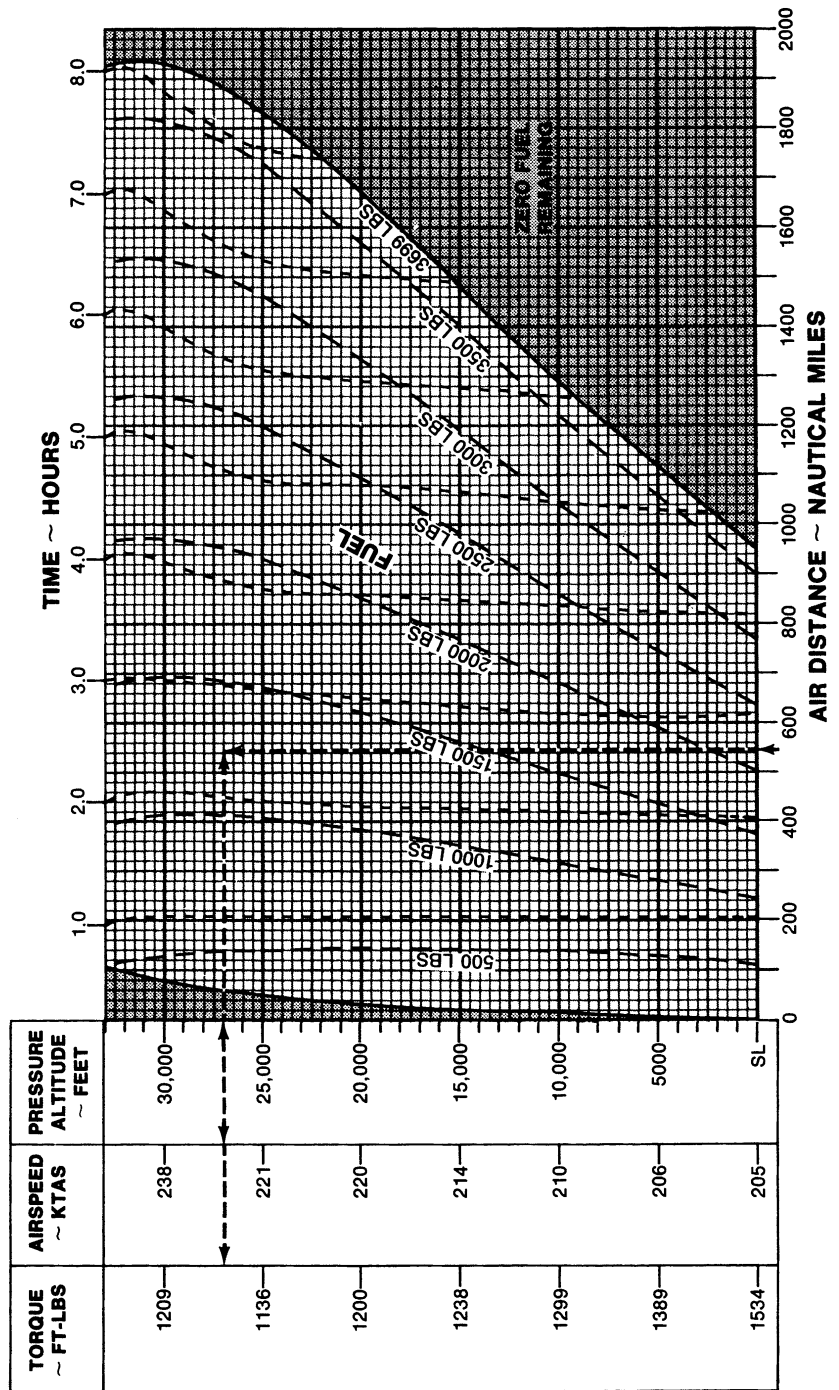
NOTES

1. FOR OPERATION WITH ICE VANES EXTENDED, RANGE IS REDUCED BY APPROXIMATELY 15%.
2. 95 LBS FUEL ALLOWANCE FOR ENGINE START, TAXI, AND TAKEOFF INCLUDED.
3. NO ALLOWANCE OR RESERVE FOR LOITER, DESCENT OR LANDING.
4. WEIGHT: 13,500 LBS TAKEOFF, 12,000 LBS CRUISE (2500 LBS FUEL REQUIRED DUE TO 11,000 LB MAX ZERO FUEL WEIGHT).

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

PRESSURE ALTITUDE: 27,000 FT
 AIR DISTANCE: 545 NM
 AIRSPEED: 228 KTAS
 TORQUE: 1165 FT-LBS
 FUEL: 1250 LBS
 TIME: 2.45 HRS



06-C-0154

Figure 41-10. (F) Mission Profile — Maximum Range Power — 1,700 rpm Standard Day Zero Wind

STANDARD DAY ZERO WIND

NOTE

1. FOR OPERATION WITH ICE VANES EXTENDED, RANGE IS REDUCED APPROXIMATELY 15%.
2. 90 LBS FUEL ALLOWANCE FOR ENGINE START, TAXI, AND TAKE-OFF INCLUDED.
3. NO ALLOWANCE OR RESERVE FOR LOITER, DESCENT, OR LANDING.
4. WEIGHT: 13,500 LBS TAKEOFF. AIRSPEEDS ARE FOR AVERAGE CRUISE WEIGHT. (2500 LBS FUEL REQUIRED DUE TO 11,000 LBS MAXIMUM ZERO FUEL WEIGHT.)

ENGINE: PT6A-41/42
 PROPELLER: T10178/P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

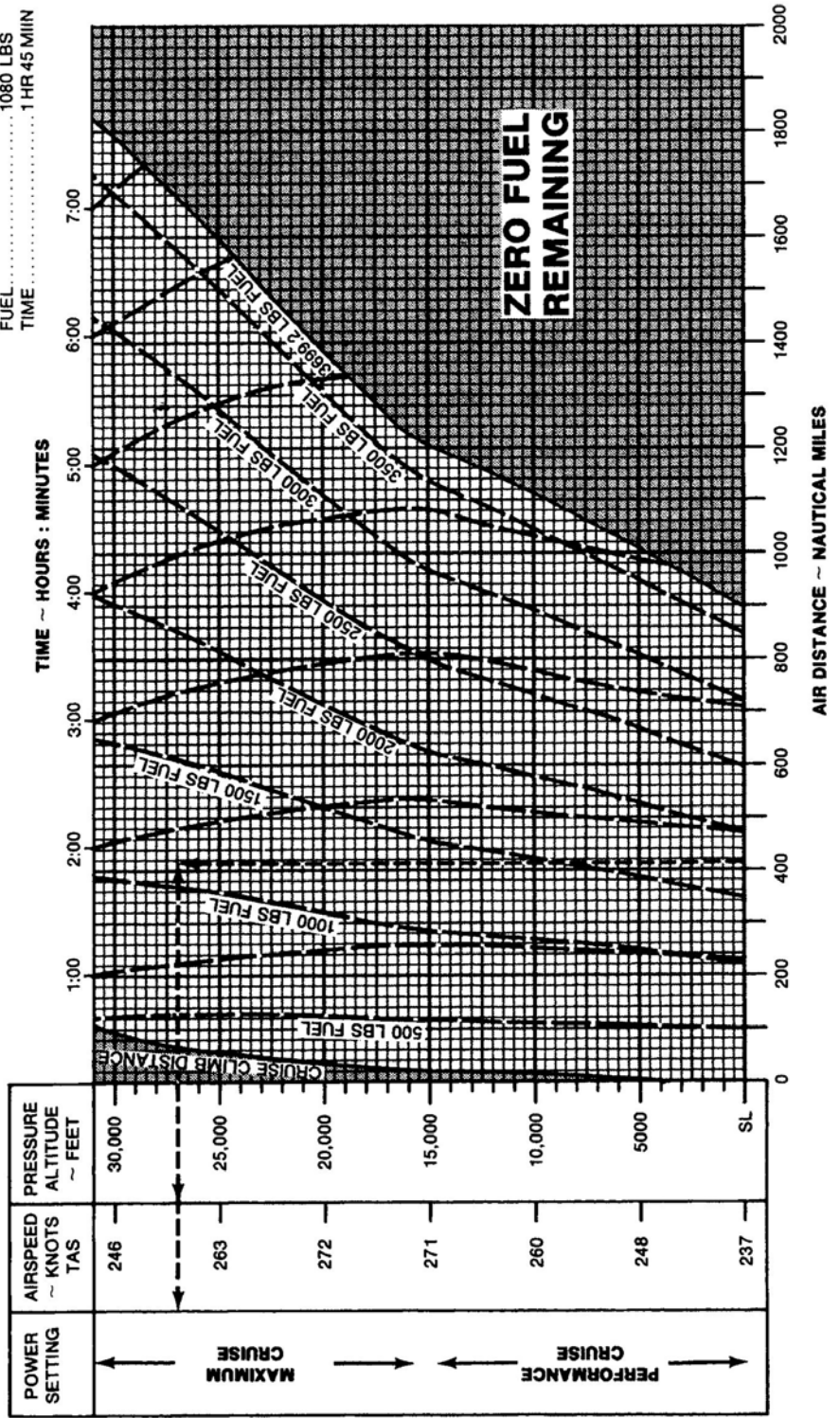
PRESSURE ALTITUDE ... 27,000 FT
 AIR DISTANCE ... 414 NM

AIRSPEED ... 256 KTAS
 POWER SETTING ... MAX CRUISE
 FUEL ... 1080 LBS
 TIME ... 1 HR 45 MIN

MODEL: UC-12B/F
 DATE: 11 JANUARY 1988
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

FLAPS UP
 GEAR UP
 ICE VANES RETRACTED



06-C-0144

Figure 41-11. Mission Profile — Performance Cruise Power — 1,700 rpm Standard Day Zero Wind

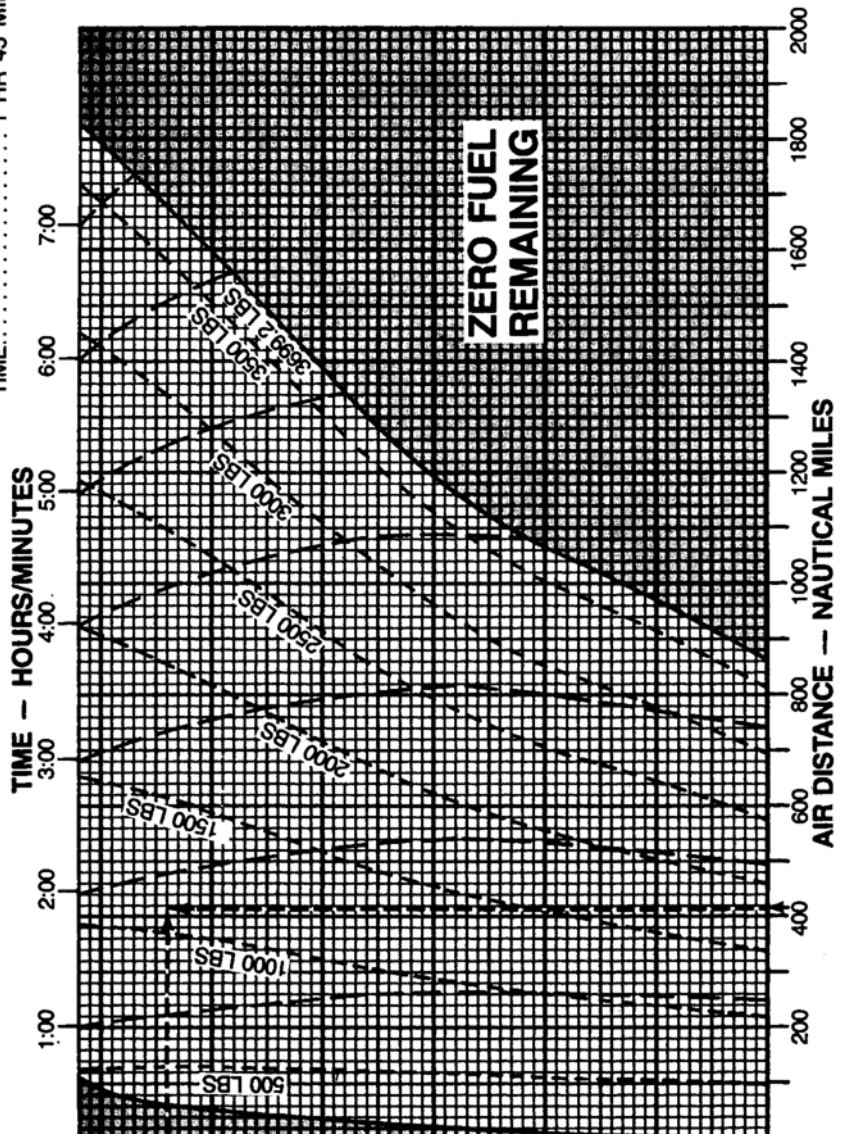
STANDARD DAY ZERO WIND

MODEL: UC-12B
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST
CONFIGURATION:
 PROPELLER SPEED: . . . 1900 RPM
 TORQUE: AS NOTED
 FLAPS: UP
 GEAR: UP
 ICE VANES: RETRACTED

ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL
EXAMPLE:
 PRESSURE ALTITUDE: . . . 27,000 FT
 AIR DISTANCE 414 NM
 AIRSPEED: 256 KTAS
 TORQUE: 1300 FT-LBS
 FUEL: 1080 LBS
 TIME: 1 HR 45 MIN

- NOTE**
1. FOR OPERATION WITH ICE VANES EXTENDED, RANGE IS REDUCED APPROXIMATELY 15%.
 2. 90 LBS FUEL ALLOWANCE FOR ENGINE START, TAXI, AND TAKE-OFF INCLUDED.
 3. NO ALLOWANCE OR RESERVE FOR LOITER, FOR DESCENT, OR LANDING.
 4. WEIGHT: 13,500 LBS TAKEOFF. AIRSPEEDS ARE FOR AVERAGE CRUISE WEIGHT. (2500 LBS FUEL REQUIRED DUE TO 11,000 LBS MAXIMUM ZERO FUEL WEIGHT.)

TORQUE — FT-LBS	AIRSPEED — KNOTS TAS	PRESSURE ALTITUDE — FEET
1136	246	30,000
1411	263	25,000
1718	272	20,000
2048	277	15,000
2230	272	10,000
2230	259	5000
2230	247	SL



06-C-0145

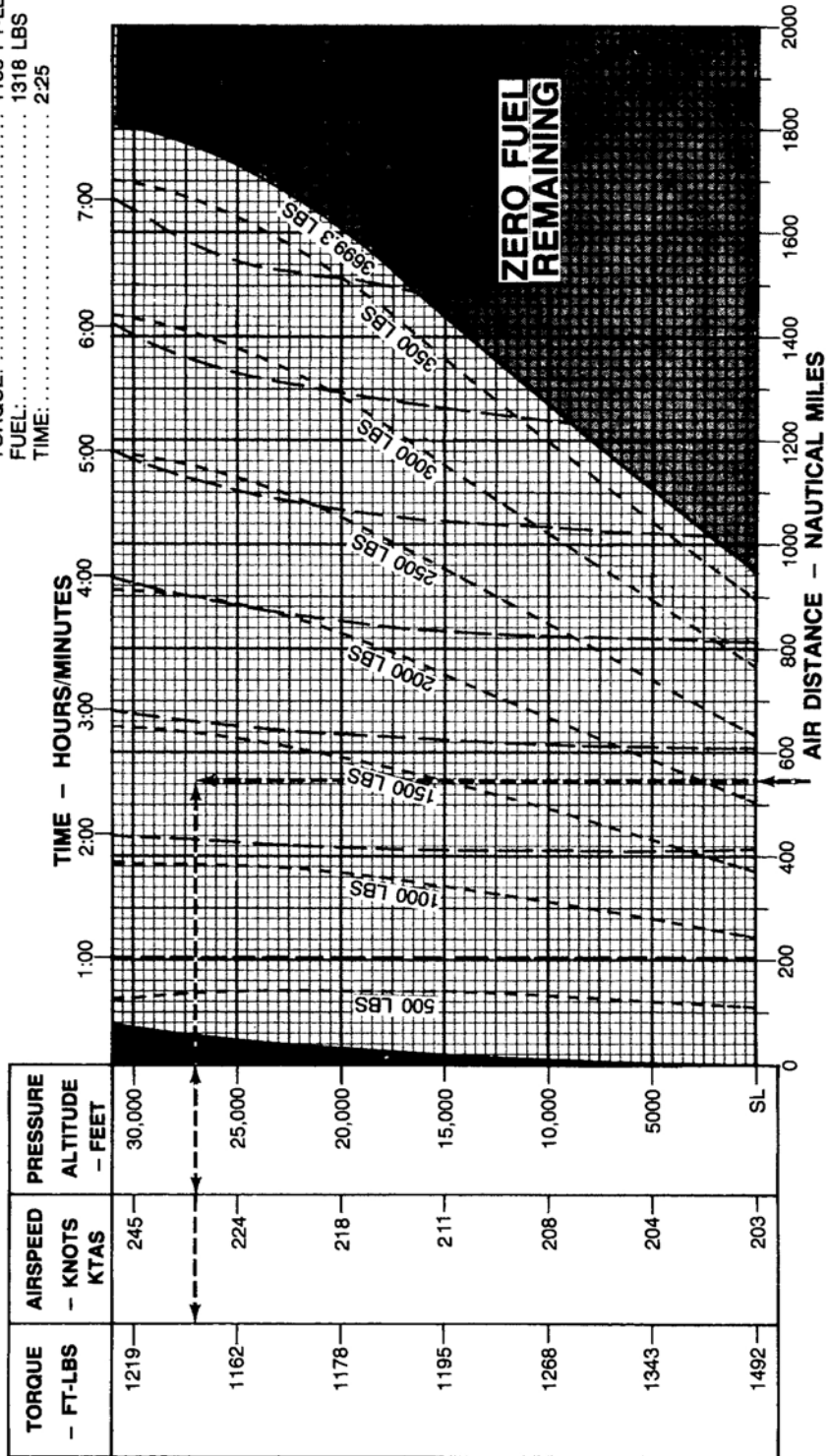
Figure 41-12. (B) Mission Profile — Maximum Cruise Power — 1,900 rpm Standard Day Zero Wind

NOTE

1. FOR OPERATION WITH ICE VANES EXTENDED, RANGE IS REDUCED APPROXIMATELY 15%.
2. 90 LBS FUEL ALLOWANCE FOR ENGINE START, TAXI, AND TAKE-OFF INCLUDED.
3. NO ALLOWANCE OR RESERVE FOR LOITER, DESCENT, OR LANDING.
4. WEIGHT: 13,500 LBS TAKEOFF. AIRSPEEDS ARE FOR AVERAGE CRUISE WEIGHT. (2500 LBS FUEL REQUIRED DUE TO 11,000 LBS MAXIMUM ZERO FUEL WEIGHT.)

MODEL: UC-12B
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST
CONFIGURATION:
 PROPELLER SPEED: ... 1700 RPM
 TORQUE: ... AS NOTED
 FLAPS: ... UP
 GEAR: ... UP
 ICE VANES: ... RETRACTED

ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LB/GAL
EXAMPLE:
 PRESSURE ALTITUDE: ... 27,000 FEET
 AIR DISTANCE: ... 545 N.M.
 AIRSPEED: ... 233 KTAS
 TORQUE: ... 1185 FT-LBS
 FUEL: ... 1318 LBS
 TIME: ... 2:25



06-C-0153

Figure 41-13. (F) Mission Profile — Maximum Cruise (Standard Day)

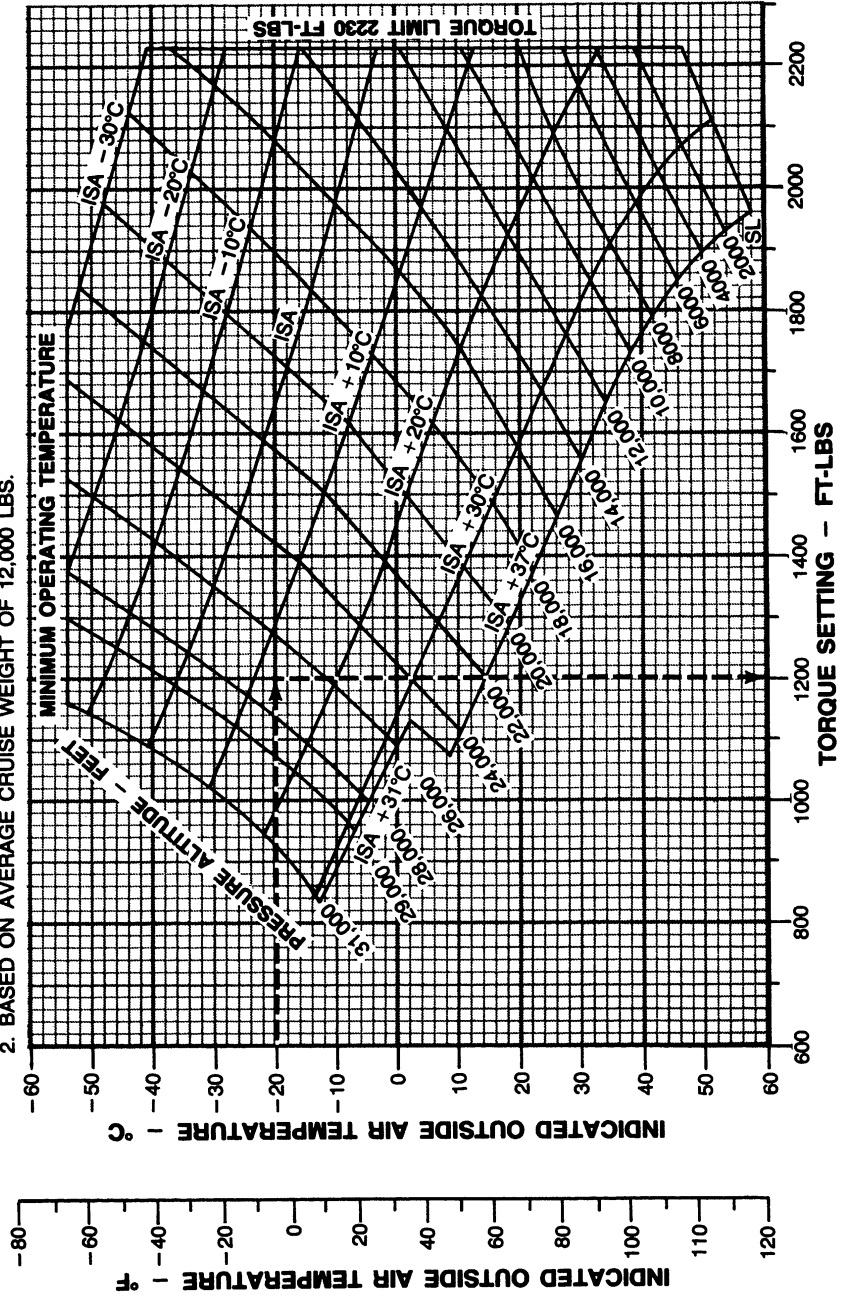
ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:
 IOAT: -20°C
 PRESSURE ALTITUDE: 27,000 FEET
 TORQUE: 1200 FT-LBS

MODEL: UC-12B
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

CONFIGURATION:
 PROPELLER SPEED: 1900 RPM
 TORQUE: NOT TO EXCEED 2230 FT-LBS
 ITT: NOT TO EXCEED 725°C
 FLAPS: UP
 GEAR: UP

NOTE
 1. FOR OPERATION WITH ICE VANES EXTENDED ADD 40°C TO THE ACTUAL IOAT BEFORE ENTERING CHART.
 2. BASED ON AVERAGE CRUISE WEIGHT OF 12,000 LBS.



06-C-0147

Figure 41-14. (B) Maximum Cruise Power Torque — 1,900 rpm

MODEL: UC-12F
 DATE: 29, JULY 1986
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

PROPELLER SPEED: 1800 RPM
 TORQUE: NOTED
 ITT: NOT TO EXCEED 800°C
 FLAPS: UP
 GEAR: UP

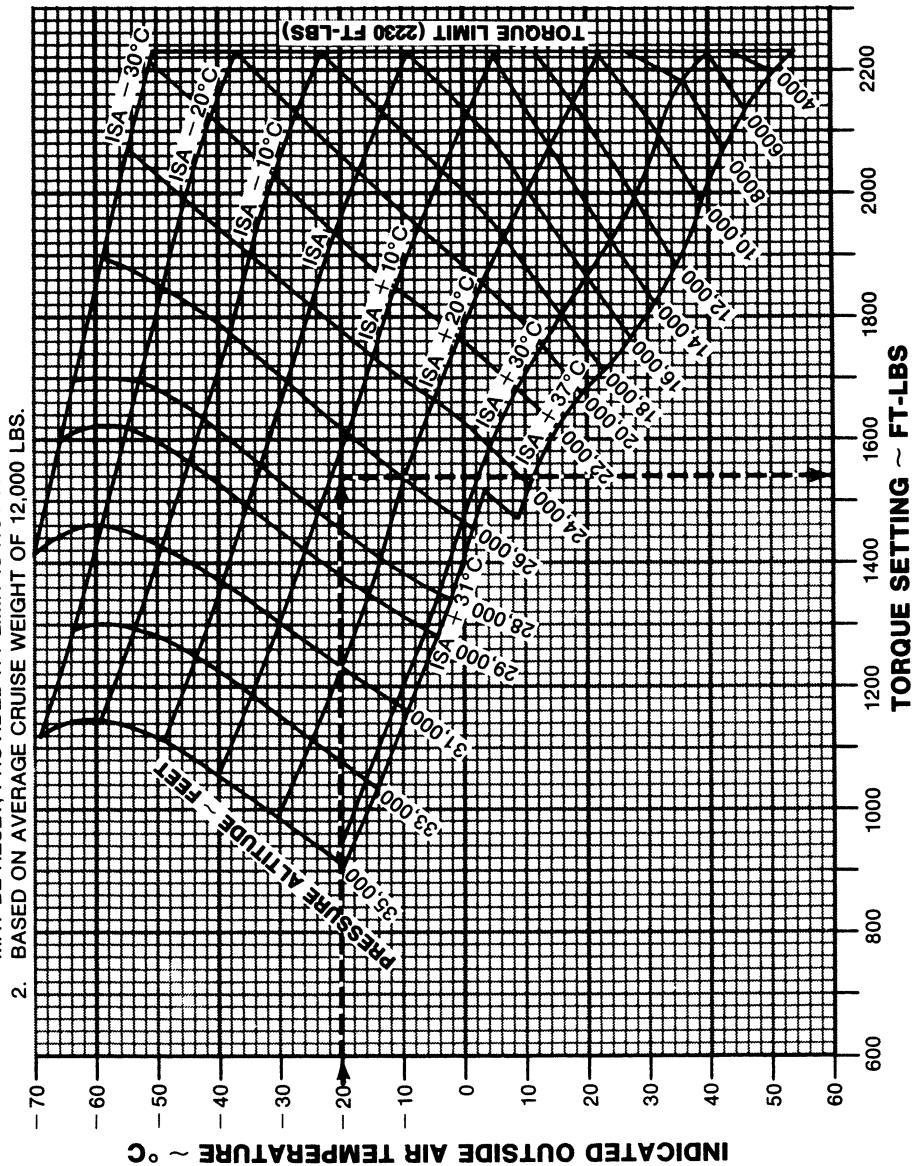
ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

OAT: -20°C
 PRESSURE ALTITUDE: 27,000 FT
 TORQUE: 1540 FT-LBS

NOTES

1. DURING OPERATION WITH ICE VANES EXTENDED, TORQUE WILL DECREASE APPROXIMATELY 20%. IF DESIRED, ORIGINAL POWER MAY BE RESET, PROVIDED ITT LIMIT IS NOT EXCEEDED.
2. BASED ON AVERAGE CRUISE WEIGHT OF 12,000 LBS.



06-C-0148

Figure 41-15. (F) Maximum Cruise Power Torque — 1,800 rpm

ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

IOAT: -20°C
 PRESSURE ALTITUDE: 27,000 FEET
 FUEL FLOW: 251 LB/HR

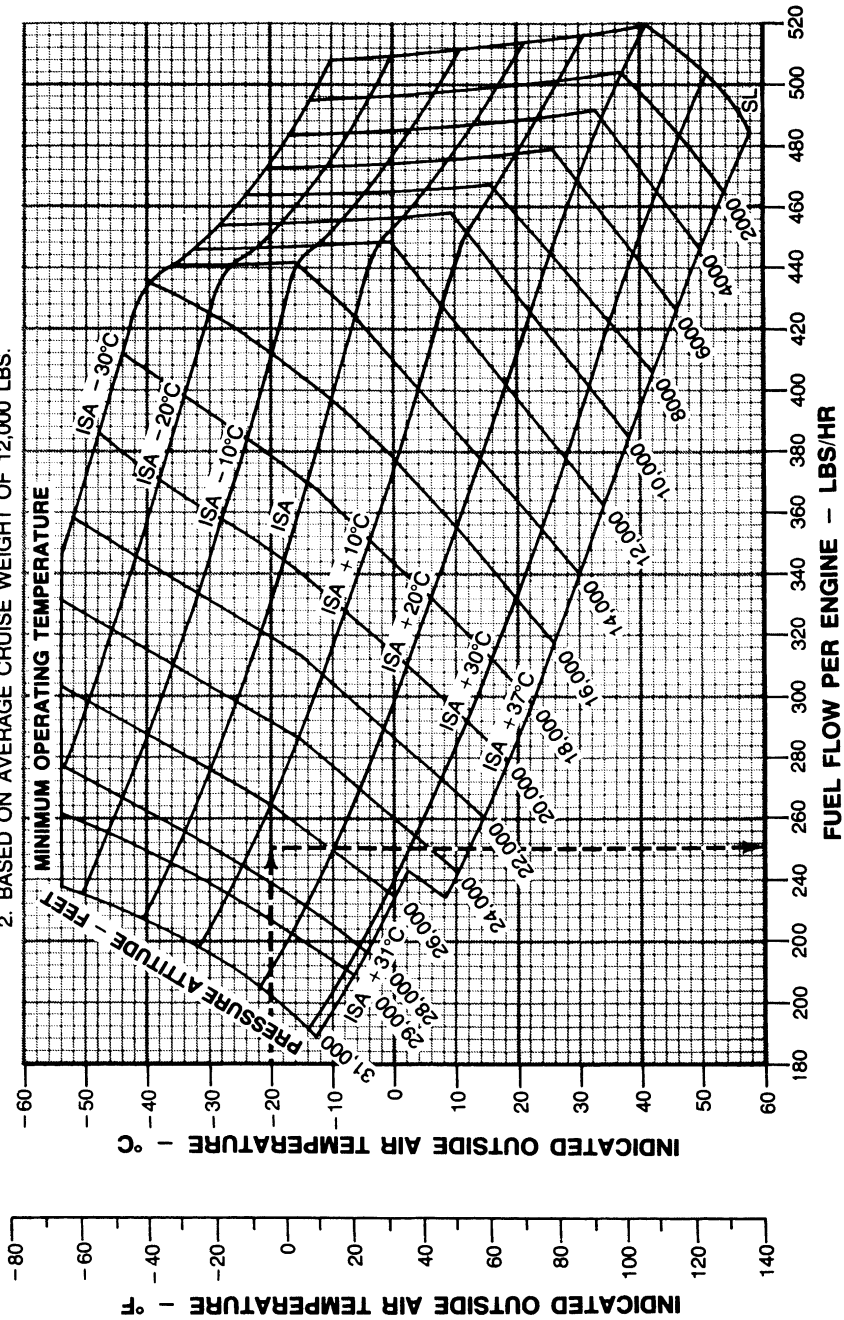
MODEL: UC-12B
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

TORQUE: NOT TO EXCEED 2230 FT-LBS
 ITT: NOT TO EXCEED 725°C
 FLAPS: UP
 GEAR: UP

NOTE

1. FOR OPERATION WITH ICE VANES EXTENDED, ADD 30°C TO THE INDICATED IOAT BEFORE ENTERING CHART.
2. BASED ON AVERAGE CRUISE WEIGHT OF 12,000 LBS.



06-C-0149

Figure 41-16. (B) Maximum Cruise Power Fuel Flow — 1,900 rpm

MODEL: UC-12F
 DATE: 29, JULY 1986
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

TORQUE: NOT TO EXCEED 2230 FT-LBS
 ITT: NOT TO EXCEED 800°C
 FLAPS: UP
 LANDING GEAR: UP

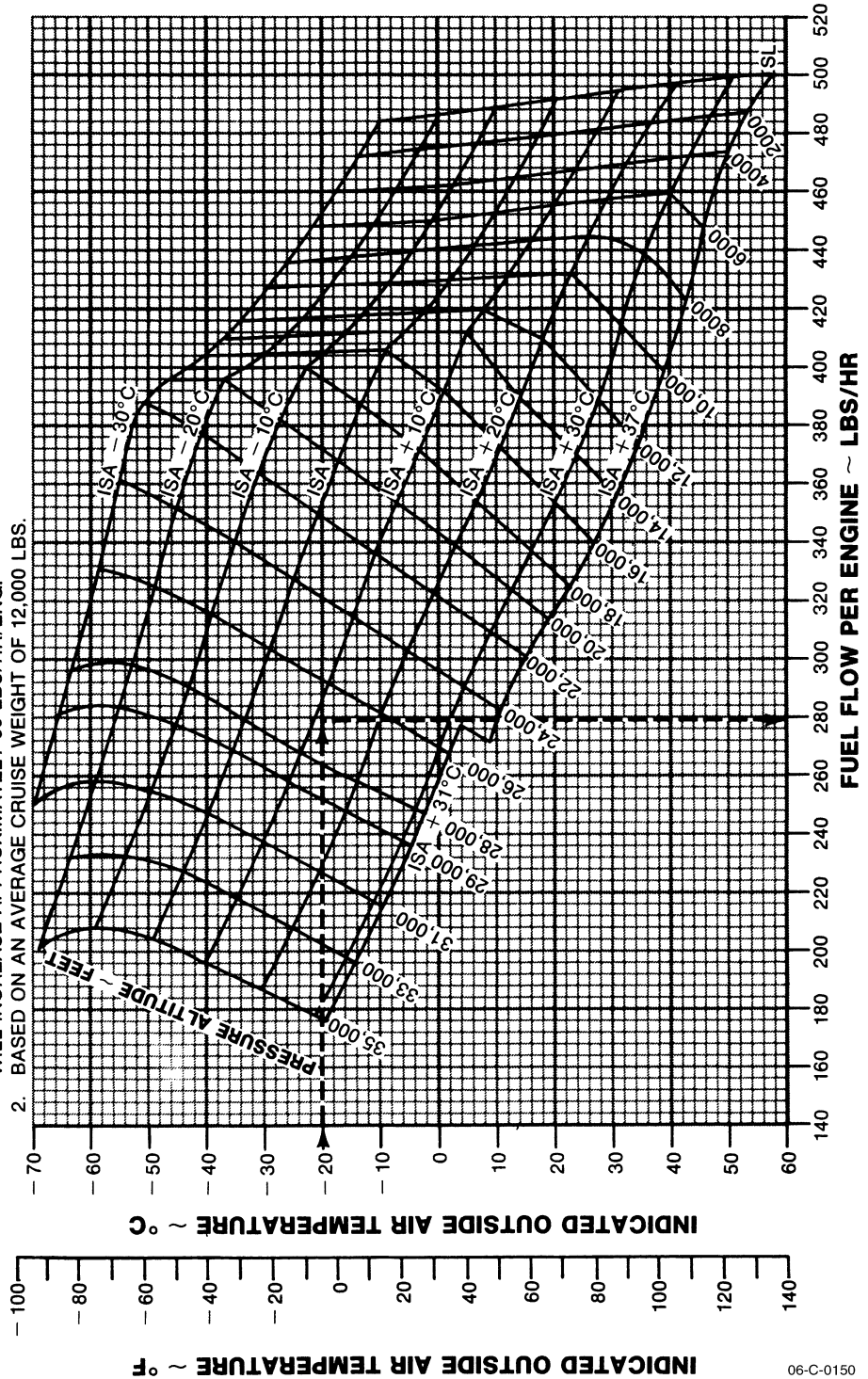
ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

OAT: -20°C
 PRESSURE ALTITUDE: 27,000 FT
 FUEL FLOW: 279 LBS/HR

NOTES

1. DURING OPERATION WITH ICE VANES EXTENDED, FUEL FLOW WILL DECREASE APPROXIMATELY 10% IF ORIGINAL POWER IS NOT OR CANNOT BE RESET. IF ORIGINAL POWER IS RESET, FUEL FLOW WILL INCREASE APPROXIMATELY 30 LBS/HR/ENG.
2. BASED ON AN AVERAGE CRUISE WEIGHT OF 12,000 LBS.



06-C-0150

Figure 41-17. (F) Maximum Cruise Power Fuel Flow — 1,800 rpm

MODEL: UC-12B
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

CONFIGURATION:

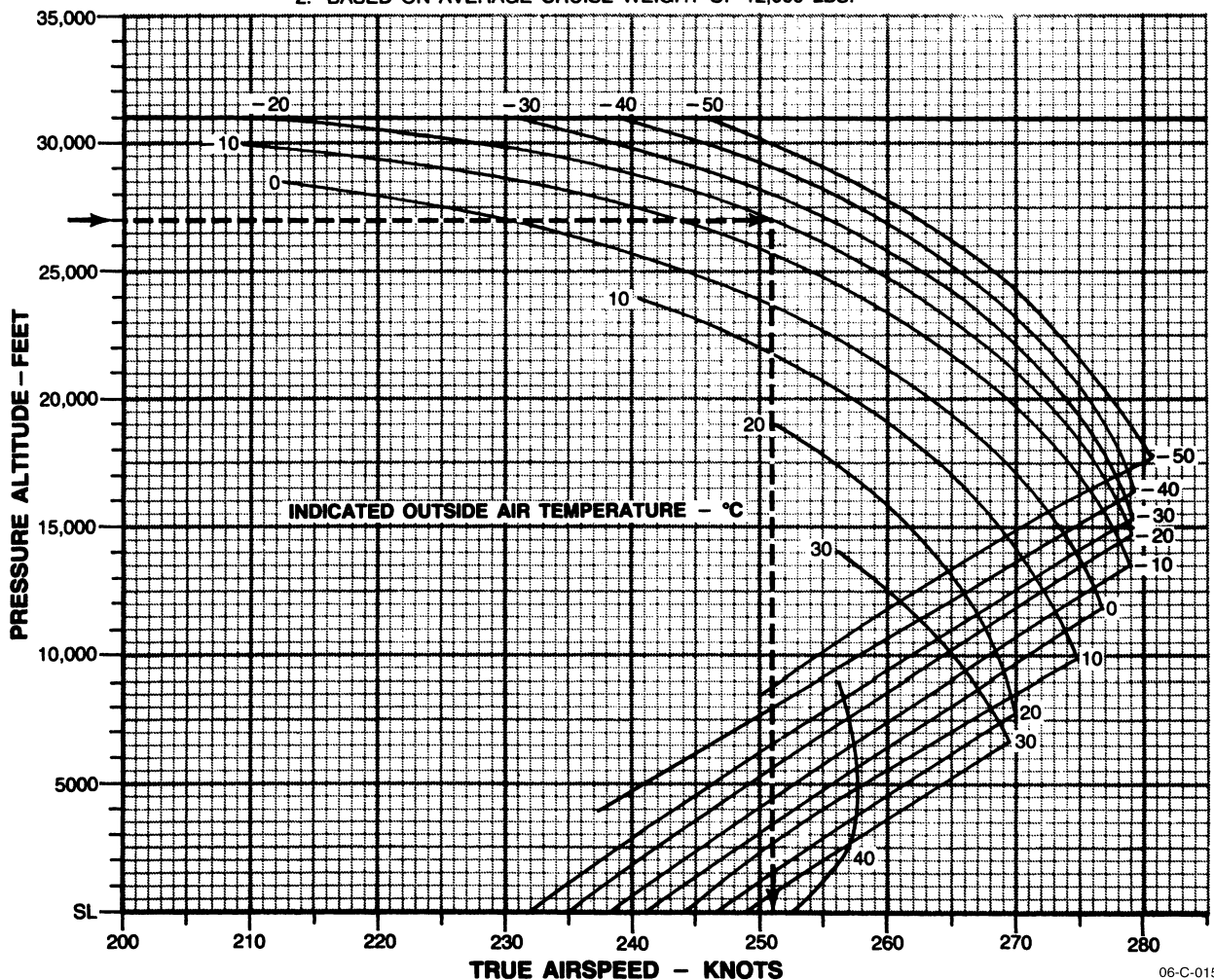
TORQUE: NOT TO EXCEED 2230 FT-LBS
 ITT: NOT TO EXCEED 725°C
 FLAPS: UP
 GEAR: UP

EXAMPLE:

PRESSURE ALTITUDE: 27,000 FEET
 INDICATED OUTSIDE AIR TEMP: ... -20°C
 TRUE AIRSPEED: 251 KNOTS

NOTE

1. FOR OPERATION WITH ICE VANES EXTENDED, TAS WILL BE REDUCED BY APPROXIMATELY 25 KNOTS.
2. BASED ON AVERAGE CRUISE WEIGHT OF 12,000 LBS.



06-C-0151

Figure 41-18. (B) Maximum Cruise Power True Airspeed — 1,900 rpm

A1-C12BM-NFM-200

MODEL: UC-12F
 DATE: 29 JULY 1986
 DATA BASIS: FLIGHT TEST

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

CONFIGURATION:

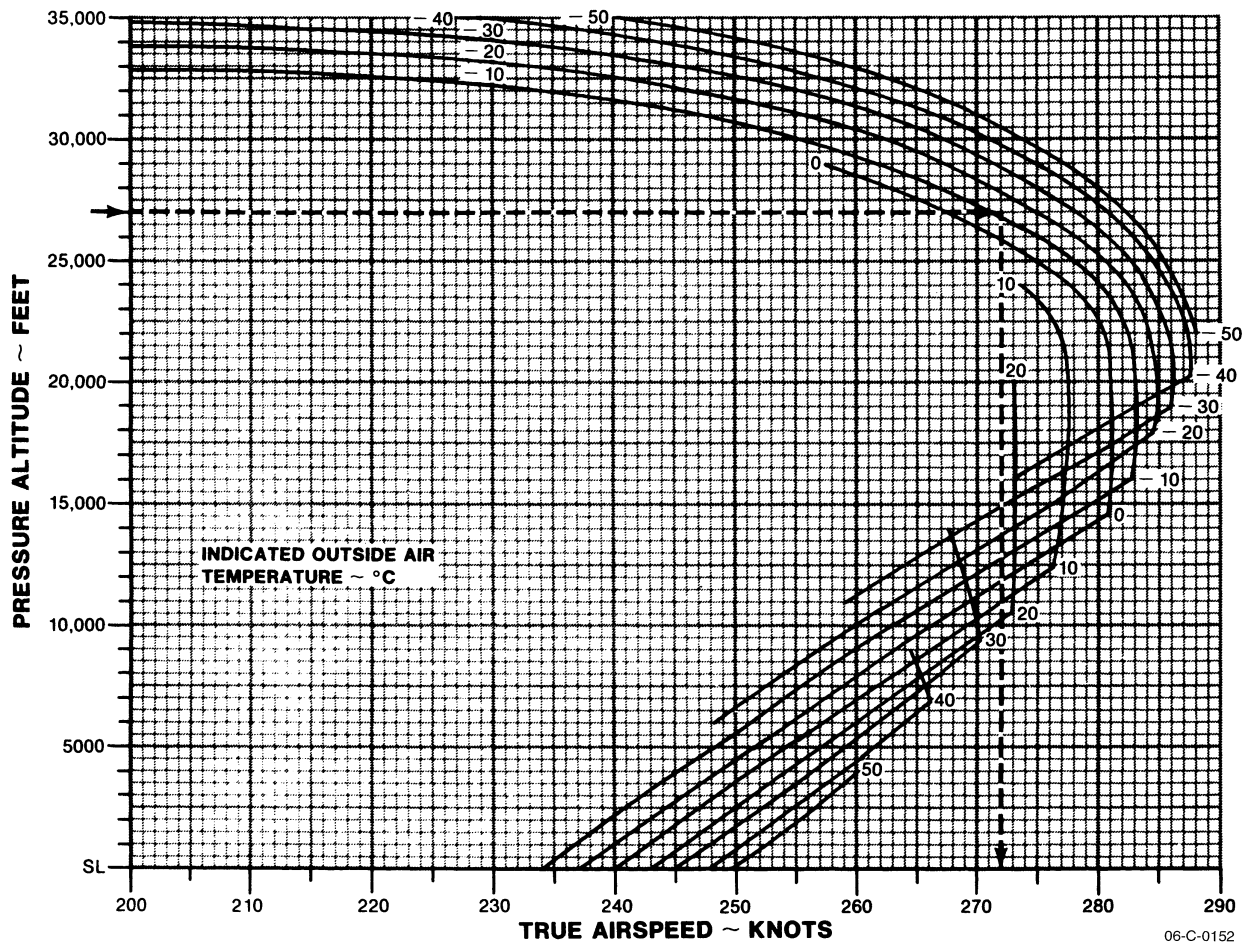
TORQUE: NOT TO EXCEED 2230 FT-LBS
 ITT: NOT TO EXCEED 800°C
 FLAPS: UP
 GEAR: UP

EXAMPLE:

PRESSURE ALTITUDE: 27,000 FT
 INDICATED OUTSIDE AIR TEMP: -11°C
 TRUE AIRSPEED: 272 KNOTS

NOTES

1. DURING OPERATION WITH ICE VANES EXTENDED, TRUE AIRSPEED WILL BE REDUCED APPROXIMATELY 30 KNOTS IF ORIGINAL POWER IS NOT OR CANNOT BE RESET, BUT WILL BE UNCHANGED IF THE ORIGINAL POWER IS RESET.
2. BASED ON AVERAGE CRUISE WEIGHT OF 12,000 LBS.



06-C-0152

Figure 41-19. (F) Maximum Cruise Power True Airspeed — 1,800 rpm

ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

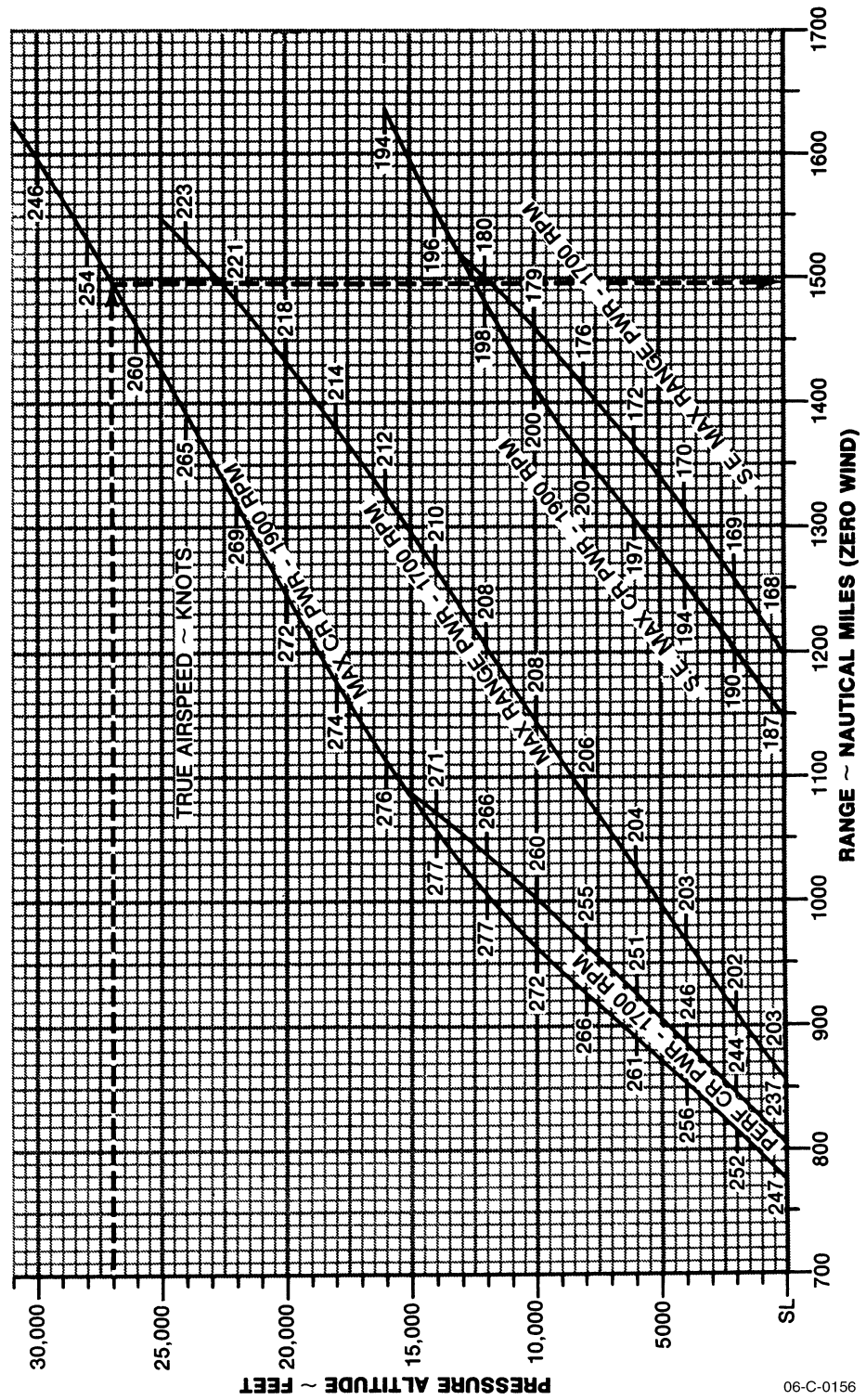
EXAMPLE:
 PRESSURE ALTITUDE: 27,000 FT
 RANGE @ MAX CRUISE
 POWER - 1900 RPM ... 1497 NM

NOTE

1. AIRSPEEDS SHOWN ARE FOR AN AVERAGE WEIGHT OF 12,000 LBS.
2. RANGE INCLUDES START, TAXI, TAKEOFF, CLIMB, AND DESCENT, WITH A 370 LB FUEL RESERVE.

MODEL: UC-12B
 DATE: 11 JANUARY 1988
 DATA: BASIC FLIGHT TEST

CONFIGURATION:
 WEIGHT 13 590 LBS BEFORE ENGINE START
 ICE VANES RETRACTED
 PROPELLER SPEED ... AS NOTED
 FLAPS UP
 GEAR UP



06-C-0156

Figure 41-20. (B) Range Profile — Full Main and Auxiliary Tanks — Standard Day

MODEL: UC-12F
 DATE: 29 JULY 1986
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

PROPELLER SPEED: AS NOTED
 TORQUE: AS REQUIRED
 ITT: NOT TO EXCEED 770°C
 FLAPS: UP
 GEAR: UP
 WEIGHT: 13,590 LBS BEFORE
 ENGINE START
 ICE VANES: RETRACTED

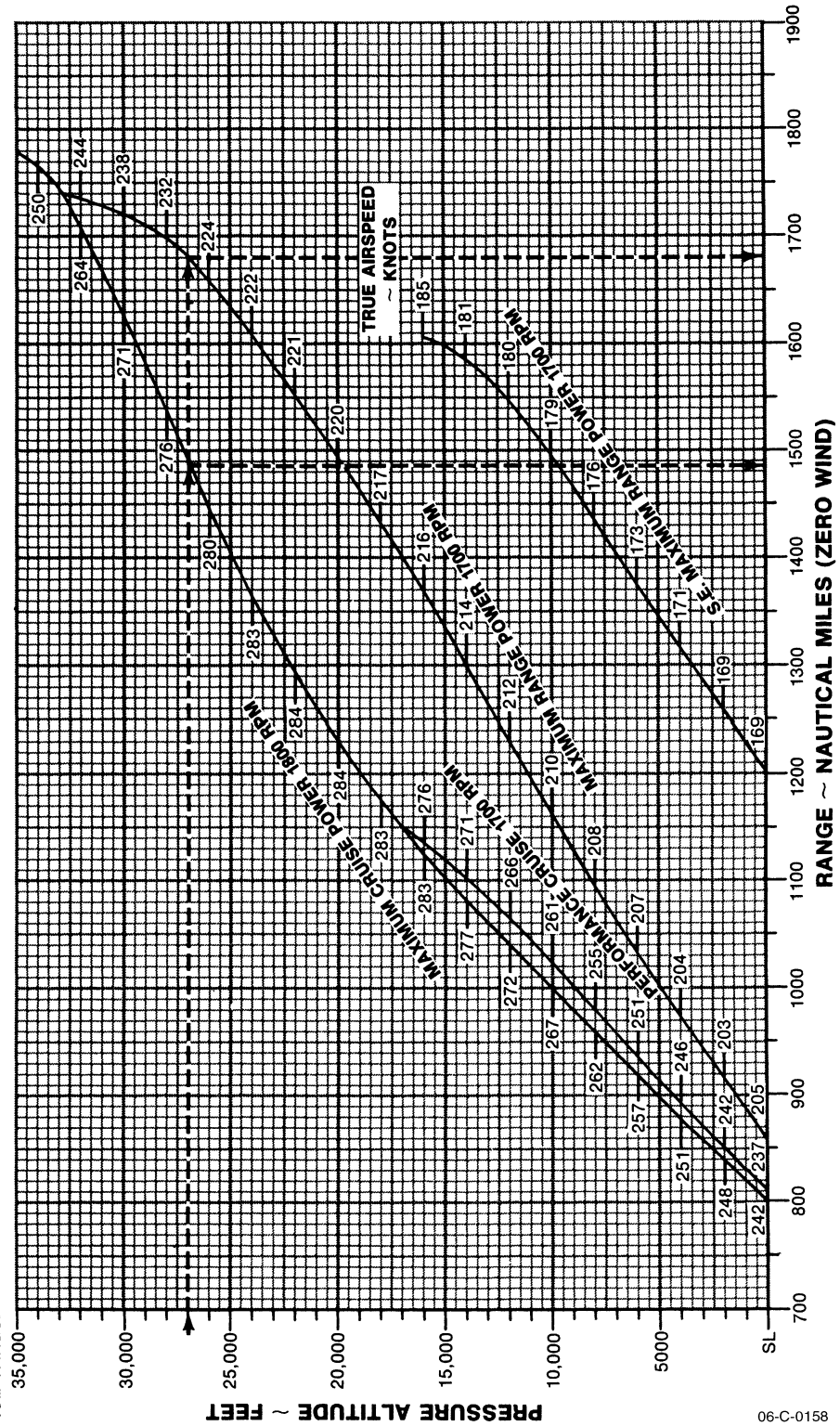
NOTES

1. AIRSPEEDS SHOWN ARE FOR AN AVERAGE WEIGHT OF 12,000 LBS.
2. RANGE INCLUDES START, TAXI, TAKEOFF, CLIMB, CRUISE AND DESCENT, WITH 370 LBS OF RESERVE FUEL REMAINING.

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

PRESSURE ALTITUDE: 27,000 FT
 RANGE @ MAX CRUISE POWER: 1485 NM
 RANGE @ PERFORMANCE CRUISE POWER: 1485 NM
 RANGE @ MAXIMUM RANGE POWER: 1680 NM



06-C-0158

Figure 41-22. (F) Range Profile — Full Main and Auxiliary Tanks — Standard Day

MODEL: UC-12B

**ONE ENGINE INOPERATIVE MAXIMUM RANGE POWER
1700 RPM
ISA -30 °C**

WEIGHT			13,000 Pounds					12,000 Pounds				
PRESSURE ALTITUDE	IOAT	OAT	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS
FEET	°C	°C	FT-LBS	LBS/HR	LBS/HR	KTS	KTS	FT-LBS	LBS/HR	LBS/HR	KTS	KTS
SL	-13	-15	2039	454	454	171	163	1928	439	439	170	161
2000	-16	-19	2050	442	442	169	165	1899	422	422	166	163
4000	-20	-23	2025	426	426	166	167	1900	409	409	164	165
6000	-24	-27	2026	414	414	163	169	1861	392	392	160	165
8000	-28	-31	2041	406	406	160	171	1844	379	379	156	167
10,000	-32	-35	2050	397	397	158	173	1831	366	366	153	168
12,000	-36	-39	2052	390	390	155	175	1853	361	361	151	171
14,000	-40	-43	2057	385	385	151	176	1885	359	359	149	174
16,000	-44	-47	2117	390	390	150	181	1882	353	353	145	175
18,000	-48	-51	—	—	—	—	—	1923	355	355	143	178
20,000	—	—	—	—	—	—	—	—	—	—	—	—
22,000	—	—	—	—	—	—	—	—	—	—	—	—
24,000	—	—	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—	—	—

BT00189

Figure 41-23. (B) One Engine Inoperative Maximum Range Power — 1,700 rpm (Sheet 1 of 16)

MODEL: UC-12B

ONE ENGINE INOPERATIVE MAXIMUM RANGE POWER
1700 RPM
ISA -30 °C

WEIGHT			11,000 Pounds					10,000 Pounds				
PRESSURE ALTITUDE	IOAT	OAT	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS
FEET	°C	°C	FT-LBS	LBS/HR	LBS/HR	KTS	KTS	FT-LBS	LBS/HR	LBS/HR	KTS	KTS
SL	-13	-15	1862	430	430	170	162	1802	422	422	170	162
2000	-17	-19	1831	412	412	167	163	1743	400	400	166	162
4000	-20	-23	1809	396	396	164	165	1679	379	379	161	162
6000	-24	-27	1767	379	379	159	165	1631	360	360	157	162
8000	-28	-31	1749	365	365	156	167	1612	346	346	154	164
10,000	-32	-35	1722	351	351	152	168	1593	333	333	150	165
12,000	-36	-39	1674	335	335	147	167	1580	321	321	147	167
14,000	-40	-43	1663	326	326	144	168	1552	310	310	143	168
16,000	-44	-47	1700	325	325	142	172	1529	300	300	139	168
18,000	-48	-51	1725	324	324	140	175	1512	292	292	135	169
20,000	-52	-55	1721	320	320	136	175	1557	294	294	135	173
22,000	-56	-59	—	—	—	—	—	1554	291	291	131	174
24,000	—	—	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—	—	—

BT00190

Figure 41-23. (B) One Engine Inoperative Maximum Range Power — 1,700 rpm (Sheet 2 of 16)

MODEL: UC-12B

**ONE ENGINE INOPERATIVE MAXIMUM RANGE POWER
1700 RPM
ISA -20 °C**

WEIGHT			13,000 Pounds					12,000 Pounds				
PRESSURE ALTITUDE	IOAT	OAT	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS
FEET	°C	°C	FT-LBS	LBS/HR	LBS/HR	KTS	KTS	FT-LBS	LBS/HR	LBS/HR	KTS	KTS
SL	-2	-5	2149	471	471	174	169	1978	448	448	170	165
2000	-6	-9	2134	456	456	171	170	1948	431	431	167	166
4000	-10	-13	2115	440	440	167	172	1931	415	415	163	168
6000	-14	-17	2094	426	426	164	173	1940	404	404	161	170
8000	-18	-21	2062	411	411	159	173	1939	393	393	159	173
10,000	-22	-25	2038	398	398	155	174	1919	380	380	155	174
12,000	-26	-29	2052	392	392	152	176	1896	369	369	151	174
14,000	-30	-33	2145	400	400	152	182	1887	361	361	146	175
16,000	-34	-37	—	—	—	—	—	1967	367	367	147	181
18,000	—	—	—	—	—	—	—	—	—	—	—	—
20,000	—	—	—	—	—	—	—	—	—	—	—	—
22,000	—	—	—	—	—	—	—	—	—	—	—	—
24,000	—	—	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—	—	—

BT00187

Figure 41-23. (B) One Engine Inoperative Maximum Range Power — 1,700 rpm (Sheet 3 of 16)

MODEL: UC-12B

ONE ENGINE INOPERATIVE MAXIMUM RANGE POWER
1700 RPM
ISA -20 °C

WEIGHT			11,000 Pounds					10,000 Pounds				
PRESSURE ALTITUDE	IOAT	OAT	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS
FEET	°C	°C	FT-LBS	LBS/HR	LBS/HR	KTS	KTS	FT-LBS	LBS/HR	LBS/HR	KTS	KTS
SL	-3	-5	1795	424	424	166	161	1679	408	408	164	159
2000	-7	-9	1756	405	405	162	161	1671	393	393	161	161
4000	-10	-13	1732	388	388	158	163	1643	376	376	158	162
6000	-14	-17	1744	378	378	157	165	1631	363	363	155	164
8000	-18	-21	1718	363	363	153	166	1595	347	347	151	165
10,000	-22	-25	1707	351	351	150	168	1574	333	333	148	166
12,000	-26	-29	1736	346	346	148	172	1542	319	319	144	166
14,000	-30	-33	1740	339	339	145	174	1530	309	309	140	168
16,000	-34	-37	1719	330	330	141	174	1557	306	306	139	171
18,000	-38	-41	1761	331	331	140	178	1567	302	302	136	174
20,000	-42	-45	1798	334	334	138	181	1567	297	297	133	175
22,000	-46	-49	—	—	—	—	—	1623	303	303	132	180
24,000	—	—	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—	—	—

BT00188

Figure 41-23. (B) One Engine Inoperative Maximum Range Power — 1,700 rpm (Sheet 4 of 16)

MODEL: UC-12B

**ONE ENGINE INOPERATIVE MAXIMUM RANGE POWER
1700 RPM
ISA -10 °C**

WEIGHT			13,000 Pounds					12,000 Pounds				
PRESSURE ALTITUDE	IOAT	OAT	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS
FEET	°C	°C	FT-LBS	LBS/HR	LBS/HR	KTS	KTS	FT-LBS	LBS/HR	LBS/HR	KTS	KTS
SL	8	5	2091	465	465	170	168	2006	454	454	170	168
2000	4	1	2084	451	451	167	169	1983	437	437	167	169
4000	0	-3	2071	436	436	163	171	1963	421	421	163	171
6000	-4	-7	2061	424	424	160	172	1927	405	405	159	171
8000	-8	-11	2071	415	415	157	175	1907	392	392	155	172
10,000	-12	-15	2114	411	411	156	178	1886	378	378	151	173
12,000	-16	-19	2139	407	407	153	181	1892	371	371	148	175
14,000	-20	-23	—	—	—	—	—	1974	376	376	148	181
16,000	-24	-27	—	—	—	—	—	1988	372	372	145	182
18,000	—	—	—	—	—	—	—	—	—	—	—	—
20,000	—	—	—	—	—	—	—	—	—	—	—	—
22,000	—	—	—	—	—	—	—	—	—	—	—	—
24,000	—	—	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—	—	—

BT00185

Figure 41-23. (B) One Engine Inoperative Maximum Range Power — 1,700 rpm (Sheet 5 of 16)

MODEL: UC-12B

ONE ENGINE INOPERATIVE MAXIMUM RANGE POWER
1700 RPM
ISA -10 °C

WEIGHT			11,000 Pounds					10,000 Pounds				
PRESSURE ALTITUDE	IOAT	OAT	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS
FEET	°C	°C	FT-LBS	LBS/HR	LBS/HR	KTS	KTS	FT-LBS	LBS/HR	LBS/HR	KTS	KTS
SL	8	5	1897	439	439	169	166	1739	418	418	165	163
2000	4	1	1844	418	418	164	167	1653	392	392	159	161
4000	0	-3	1820	402	402	161	168	1620	375	375	155	162
6000	-4	-7	1807	388	388	158	170	1595	560	560	152	164
8000	-8	-11	1807	377	377	155	172	1611	351	351	150	167
10,000	-12	-15	1780	363	363	151	173	1619	340	340	148	170
12,000	-16	-19	1729	347	347	146	173	1616	330	330	145	172
14,000	-20	-23	1706	336	336	141	173	1598	320	320	142	175
16,000	-24	-27	1779	341	341	142	178	1559	308	308	137	172
18,000	-28	-31	1808	340	340	139	181	1557	302	302	133	174
20,000	-32	-35	—	—	—	—	—	1629	308	308	134	180
22,000	—	—	—	—	—	—	—	—	—	—	—	—
24,000	—	—	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—	—	—

BT00186

Figure 41-23. (B) One Engine Inoperative Maximum Range Power — 1,700 rpm (Sheet 6 of 16)

MODEL: UC-12B

ONE ENGINE INOPERATIVE MAXIMUM RANGE POWER
1700 RPM
ISA °C

WEIGHT			13,000 Pounds					12,000 Pounds				
PRESSURE ALTITUDE	IOAT	OAT	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS
FEET	°C	°C	FT-LBS	LBS/HR	LBS/HR	KTS	KTS	FT-LBS	LBS/HR	LBS/HR	KTS	KTS
SL	18	15	2197	483	483	172	173	1976	454	454	167	168
2000	14	11	2160	464	464	168	174	1945	435	435	163	169
4000	10	7	2152	449	449	165	176	1919	418	418	159	170
6000	6	3	2169	440	440	163	179	1935	408	408	157	172
8000	2	-1	2150	428	428	159	179	1965	401	401	156	176
10,000	-2	-5	2123	415	415	154	179	1988	394	394	154	179
12,000	-6	-9	—	—	—	—	—	1970	384	384	149	180
14,000	-10	-13	—	—	—	—	—	1976	378	378	146	181
16,000	—	—	—	—	—	—	—	—	—	—	—	—
18,000	—	—	—	—	—	—	—	—	—	—	—	—
20,000	—	—	—	—	—	—	—	—	—	—	—	—
22,000	—	—	—	—	—	—	—	—	—	—	—	—
24,000	—	—	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—	—	—

BT00183

Figure 41-23. (B) One Engine Inoperative Maximum Range Power — 1,700 rpm (Sheet 7 of 16)

MODEL: UC-12B

**ONE ENGINE INOPERATIVE MAXIMUM RANGE POWER
1700 RPM
ISA °C**

WEIGHT			11,000 Pounds					10,000 Pounds				
PRESSURE ALTITUDE	IOAT	OAT	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS
FEET	°C	°C	FT-LBS	LBS/HR	LBS/HR	KTS	KTS	FT-LBS	LBS/HR	LBS/HR	KTS	KTS
SL	18	15	1849	436	436	165	166	1767	425	425	165	166
2000	14	11	1810	416	416	161	167	1729	405	405	161	167
4000	10	7	1805	402	402	158	169	1701	387	387	158	168
6000	6	3	1768	385	385	154	169	1666	371	371	154	169
8000	2	-1	1760	373	373	151	171	1650	358	358	151	170
10,000	-2	-5	1752	361	361	148	173	1634	345	345	147	172
12,000	-6	-9	1778	356	356	148	176	1585	329	329	142	171
14,000	-10	-13	1804	352	352	144	179	1565	318	318	138	172
16,000	-14	-17	1804	346	346	141	180	1601	316	316	137	176
18,000	-18	-21	—	—	—	—	—	1628	314	314	135	179
20,000	—	—	—	—	—	—	—	—	—	—	—	—
22,000	—	—	—	—	—	—	—	—	—	—	—	—
24,000	—	—	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—	—	—

BT00184

Figure 41-23. (B) One Engine Inoperative Maximum Range Power — 1,700 rpm (Sheet 8 of 16)

MODEL: UC-12B

**ONE ENGINE INOPERATIVE MAXIMUM RANGE POWER
1700 RPM
ISA +10 °C**

WEIGHT			13,000 Pounds					12,000 Pounds				
PRESSURE ALTITUDE	IOAT	OAT	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS
FEET	°C	°C	FT-LBS	LBS/HR	LBS/HR	KTS	KTS	FT-LBS	LBS/HR	LBS/HR	KTS	KTS
SL	28	25	2164	482	482	169	173	2067	468	468	169	173
2000	24	21	2151	467	467	166	175	2051	452	452	166	175
4000	20	17	2123	450	450	162	176	2011	434	434	162	175
6000	16	13	2112	436	436	158	177	2000	420	420	158	177
8000	12	9	2134	428	428	156	179	1986	407	407	155	178
10,000	8	5	2209	428	428	155	184	1971	393	393	151	179
12,000	4	1	—	—	—	—	—	1983	387	387	148	181
14,000	—	—	—	—	—	—	—	—	—	—	—	—
16,000	—	—	—	—	—	—	—	—	—	—	—	—
18,000	—	—	—	—	—	—	—	—	—	—	—	—
20,000	—	—	—	—	—	—	—	—	—	—	—	—
22,000	—	—	—	—	—	—	—	—	—	—	—	—
24,000	—	—	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—	—	—

BT00181

Figure 41-23. (B) One Engine Inoperative Maximum Range Power — 1,700 rpm (Sheet 9 of 16)

MODEL: UC-12B

**ONE ENGINE INOPERATIVE MAXIMUM RANGE POWER
1700 RPM
ISA +10 °C**

WEIGHT			11,000 Pounds					10,000 Pounds				
PRESSURE ALTITUDE	IOAT	OAT	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS
FEET	°C	°C	FT-LBS	LBS/HR	LBS/HR	KTS	KTS	FT-LBS	LBS/HR	LBS/HR	KTS	KTS
SL	28	25	1890	444	444	165	169	1713	421	421	161	164
2000	24	21	1862	427	427	162	170	1687	403	403	158	166
4000	20	17	1821	408	408	158	171	1643	383	383	153	166
6000	16	13	1812	394	394	155	173	1626	368	368	150	168
8000	12	9	1826	384	384	152	176	1602	353	353	147	169
10,000	8	5	1834	373	373	150	178	1611	343	343	144	172
12,000	4	1	1815	362	362	146	179	1635	336	336	143	175
14,000	0	-3	1809	355	355	142	180	1647	331	331	140	178
16,000	-4	-7	—	—	—	—	—	1629	322	322	136	179
18,000	-8	-11	—	—	—	—	—	1651	320	320	134	181
20,000	—	—	—	—	—	—	—	—	—	—	—	—
22,000	—	—	—	—	—	—	—	—	—	—	—	—
24,000	—	—	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—	—	—

BT00182

Figure 41-23. (B) One Engine Inoperative Maximum Range Power — 1,700 rpm (Sheet 10 of 16)

MODEL: UC-12B

ONE ENGINE INOPERATIVE MAXIMUM RANGE POWER
1700 RPM
ISA +20 °C

WEIGHT			13,000 Pounds					12,000 Pounds				
PRESSURE ALTITUDE	IOAT	OAT	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS
FEET	°C	°C	FT-LBS	LBS/HR	LBS/HR	KTS	KTS	FT-LBS	LBS/HR	LBS/HR	KTS	KTS
SL	38	35	2164	485	485	168	174	1997	462	462	165	171
2000	34	31	2158	471	471	164	176	1978	446	446	161	173
4000	30	27	2180	460	460	162	179	1973	431	431	158	174
6000	26	23	—	—	—	—	—	1949	416	416	154	175
8000	22	19	—	—	—	—	—	1983	410	410	153	179
10,000	18	15	—	—	—	—	—	2053	409	409	152	184
12,000	—	—	—	—	—	—	—	—	—	—	—	—
14,000	—	—	—	—	—	—	—	—	—	—	—	—
16,000	—	—	—	—	—	—	—	—	—	—	—	—
18,000	—	—	—	—	—	—	—	—	—	—	—	—
20,000	—	—	—	—	—	—	—	—	—	—	—	—
22,000	—	—	—	—	—	—	—	—	—	—	—	—
24,000	—	—	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—	—	—

BT00179

Figure 41-23. (B) One Engine Inoperative Maximum Range Power — 1,700 rpm (Sheet 11 of 16)

MODEL: UC-12B

**ONE ENGINE INOPERATIVE MAXIMUM RANGE POWER
1700 RPM
ISA +20 °C**

WEIGHT			11,000 Pounds					10,000 Pounds				
PRESSURE ALTITUDE	IOAT	OAT	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS
FEET	°C	°C	FT-LBS	LBS/HR	LBS/HR	KTS	KTS	FT-LBS	LBS/HR	LBS/HR	KTS	KTS
SL	38	35	1917	451	451	165	171	1805	435	435	164	170
2000	34	31	1887	433	433	161	173	1752	414	414	159	170
4000	30	27	1868	416	416	158	174	1726	397	397	156	172
6000	26	23	1831	399	399	154	175	1699	381	381	152	173
8000	22	19	1810	385	385	150	176	1695	369	369	150	175
10,000	18	15	1809	374	374	147	178	1671	354	354	146	176
12,000	14	11	1835	369	369	145	181	1652	342	342	142	177
14,000	10	7	—	—	—	—	—	1622	329	329	137	177
16,000	6	3	—	—	—	—	—	1652	326	326	135	181
18,000	—	—	—	—	—	—	—	—	—	—	—	—
20,000	—	—	—	—	—	—	—	—	—	—	—	—
22,000	—	—	—	—	—	—	—	—	—	—	—	—
24,000	—	—	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—	—	—

BT00180

Figure 41-23. (B) One Engine Inoperative Maximum Range Power — 1,700 rpm (Sheet 12 of 16)

MODEL: UC-12B

ONE ENGINE INOPERATIVE MAXIMUM RANGE POWER
1700 RPM
ISA +30 °C

WEIGHT			13,000 Pounds					12,000 Pounds				
PRESSURE ALTITUDE	IOAT	OAT	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS
FEET	°C	°C	FT-LBS	LBS/HR	LBS/HR	KTS	KTS	FT-LBS	LBS/HR	LBS/HR	KTS	KTS
SL	48	45	—	—	—	—	—	2065	474	474	166	175
2000	44	41	—	—	—	—	—	2047	458	458	162	177
4000	—	—	—	—	—	—	—	—	—	—	—	—
6000	—	—	—	—	—	—	—	—	—	—	—	—
8000	—	—	—	—	—	—	—	—	—	—	—	—
10,000	—	—	—	—	—	—	—	—	—	—	—	—
12,000	—	—	—	—	—	—	—	—	—	—	—	—
14,000	—	—	—	—	—	—	—	—	—	—	—	—
16,000	—	—	—	—	—	—	—	—	—	—	—	—
18,000	—	—	—	—	—	—	—	—	—	—	—	—
20,000	—	—	—	—	—	—	—	—	—	—	—	—
22,000	—	—	—	—	—	—	—	—	—	—	—	—
24,000	—	—	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—	—	—

BT00177

Figure 41-23. (B) One Engine Inoperative Maximum Range Power — 1,700 rpm (Sheet 13 of 16)

MODEL: UC-12B

**ONE ENGINE INOPERATIVE MAXIMUM RANGE POWER
1700 RPM
ISA +30 °C**

WEIGHT			11,000 Pounds					10,000 Pounds				
PRESSURE ALTITUDE	IOAT	OAT	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS
FEET	°C	°C	FT-LBS	LBS/HR	LBS/HR	KTS	KTS	FT-LBS	LBS/HR	LBS/HR	KTS	KTS
SL	48	45	1865	447	447	161	170	1767	433	433	161	170
2000	44	41	1828	428	428	157	171	1716	412	412	156	170
4000	40	37	1818	412	412	154	173	1711	397	397	154	172
6000	36	33	1815	400	400	151	175	1671	379	379	149	173
8000	32	29	1839	391	391	149	178	1658	366	366	146	174
10,000	28	25	—	—	—	—	—	1650	354	354	143	176
12,000	24	21	—	—	—	—	—	1659	345	345	140	179
14,000	—	—	—	—	—	—	—	—	—	—	—	—
16,000	—	—	—	—	—	—	—	—	—	—	—	—
18,000	—	—	—	—	—	—	—	—	—	—	—	—
20,000	—	—	—	—	—	—	—	—	—	—	—	—
22,000	—	—	—	—	—	—	—	—	—	—	—	—
24,000	—	—	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—	—	—

BT00178

Figure 41-23. (B) One Engine Inoperative Maximum Range Power — 1,700 rpm (Sheet 14 of 16)

MODEL: UC-12B

**ONE ENGINE INOPERATIVE MAXIMUM RANGE POWER
1700 RPM
ISA +37 °C**

WEIGHT			13,000 Pounds					12,000 Pounds				
PRESSURE ALTITUDE	IOAT	OAT	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS
FEET	°C	°C	FT-LBS	LBS/HR	LBS/HR	KTS	KTS	FT-LBS	LBS/HR	LBS/HR	KTS	KTS
SL	—	—	—	—	—	—	—	—	—	—	—	—
2000	—	—	—	—	—	—	—	—	—	—	—	—
4000	—	—	—	—	—	—	—	—	—	—	—	—
6000	—	—	—	—	—	—	—	—	—	—	—	—
8000	—	—	—	—	—	—	—	—	—	—	—	—
10,000	—	—	—	—	—	—	—	—	—	—	—	—
12,000	—	—	—	—	—	—	—	—	—	—	—	—
14,000	—	—	—	—	—	—	—	—	—	—	—	—
16,000	—	—	—	—	—	—	—	—	—	—	—	—
18,000	—	—	—	—	—	—	—	—	—	—	—	—
20,000	—	—	—	—	—	—	—	—	—	—	—	—
22,000	—	—	—	—	—	—	—	—	—	—	—	—
24,000	—	—	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—	—	—
BT00175												

Figure 41-23. (B) One Engine Inoperative Maximum Range Power — 1,700 rpm (Sheet 15 of 16)

MODEL: UC-12B

**ONE ENGINE INOPERATIVE MAXIMUM RANGE POWER
1700 RPM
ISA +37 °C**

WEIGHT			11,000 Pounds					10,000 Pounds				
PRESSURE ALTITUDE	IOAT	OAT	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	IAS	TAS
FEET	°C	°C	FT-LBS	LBS/HR	LBS/HR	KTS	KTS	FT-LBS	LBS/HR	LBS/HR	KTS	KTS
SL	55	52	1946	460	460	164	175	1760	434	434	159	170
2000	51	48	1901	440	440	159	175	1725	422	422	157	170
4000	47	44	1879	423	423	156	177	1675	401	401	152	170
6000	43	40	1891	412	412	154	180	1673	394	394	151	171
8000	39	36	—	—	—	—	—	1669	369	369	145	176
10,000	—	—	—	—	—	—	—	1711	359	359	143	181
12,000	—	—	—	—	—	—	—	—	—	—	—	—
14,000	—	—	—	—	—	—	—	—	—	—	—	—
16,000	—	—	—	—	—	—	—	—	—	—	—	—
18,000	—	—	—	—	—	—	—	—	—	—	—	—
20,000	—	—	—	—	—	—	—	—	—	—	—	—
22,000	—	—	—	—	—	—	—	—	—	—	—	—
24,000	—	—	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—	—	—

BT00176

Figure 41-23. (B) One Engine Inoperative Maximum Range Power — 1,700 rpm (Sheet 16 of 16)

MODEL: UC-12F
 DATE: JULY 29, 1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS: UP (0%)
 GEAR: UP
 PROPELLER SPEED: 1700 RPM
 ITT NOT TO EXCEED: 770 °C
 TORQUE: NOTED

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**SINGLE ENGINE
 MAXIMUM RANGE POWER
 ISA -30 °C
 SEE NOTES BELOW**

PRESSURE ALTITUDE	IOAT		13,000 Pounds				12,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	FT-LBS	LBS/HR	LBS/HR	KNOTS	FT-LBS	LBS/HR	LBS/HR	KNOTS
SL	-13	9	2094	459	459	165	1911	435	435	161
2000	-16	3	2098	447	447	167	1914	423	423	163
4000	-20	4	2098	434	434	170	1896	407	407	165
6000	-24	-11	2088	419	419	171	1891	393	393	167
8000	-28	-18	2081	406	406	173	1858	376	376	167
10,000	-32	-26	2061	391	391	174	1851	362	362	169
12,000	-36	-33	2046	379	379	175	1883	356	356	172
14,000	-40	-40	2056	374	374	176	1889	349	349	174
16,000	-44	-47	2119	378	378	181	1889	343	343	176
18,000	-48	-54	2138	377	377	182	1909	341	341	178
20,000	-52	-62	—	—	—	—	1980	349	349	183
22,000	-55	-67	—	—	—	—	2024	354	354	185
24,000	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

Notes

1. During operation with ice vane extended, maintain same power as with ice vane retracted. Fuel flow will increase approximately 15%.

Figure 41-24. (F) One Engine Inoperative Maximum Range Power — 1,700 rpm (Sheet 1 of 16)

MODEL: UC-12F
 DATE: JULY 29, 1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS: UP (0%)
 GEAR: UP
 PROPELLER SPEED: 1700 RPM
 ITT NOT TO EXCEED: 770 °C
 TORQUE: NOTED

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**SINGLE ENGINE
 MAXIMUM RANGE POWER
 ISA -30 °C
 SEE NOTES BELOW**

PRESSURE ALTITUDE	IOAT		11,000 Pounds				10,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	FT-LBS	LBS/HR	LBS/HR	KNOTS	FT-LBS	LBS/HR	LBS/HR	KNOTS
SL	-13	9	1838	425	425	161	1787	418	418	161
2000	-17	1	1824	411	411	163	1763	402	402	163
4000	-20	-4	1802	394	394	164	1781	383	383	164
6000	-24	-11	1775	378	378	166	1672	364	364	164
8000	-28	-18	1732	359	359	166	1628	345	345	165
10,000	-32	-26	1710	343	343	167	1611	329	329	167
12,000	-36	-33	1684	328	328	167	1583	314	314	167
14,000	-40	-40	1671	318	318	169	1557	302	302	168
16,000	-44	-47	1677	312	312	170	1548	293	293	170
18,000	-48	-54	1730	313	313	175	1520	283	283	170
20,000	-52	-62	1743	311	311	177	1535	280	280	172
22,000	-56	-69	1798	317	317	181	1549	278	278	174
24,000	-59	-74	1835	320	320	184	1609	284	284	179
26,000	-63	-81	—	—	—	—	1650	287	287	183
28,000	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

Notes

1. During operation with ice vane extended, maintain same power as with ice vane retracted. Fuel flow will increase approximately 15%.

Figure 41-24. (F) One Engine Inoperative Maximum Range Power — 1,700 rpm (Sheet 2 of 16)

MODEL: UC-12F
 DATE: JULY 29, 1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS: UP (0%)
 GEAR: UP
 PROPELLER SPEED: 1700 RPM
 ITT NOT TO EXCEED: 770 °C
 TORQUE: NOTED

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**SINGLE ENGINE
 MAXIMUM RANGE POWER
 ISA -20 °C
 SEE NOTES BELOW**

PRESSURE ALTITUDE	IOAT		13,000 Pounds				12,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	FT-LBS	LBS/HR	LBS/HR	KNOTS	FT-LBS	LBS/HR	LBS/HR	KNOTS
SL	-2	28	2179	473	473	170	2023	452	452	167
2000	-6	21	2151	456	456	171	1975	432	432	167
4000	-10	14	2131	439	439	172	1967	417	417	169
6000	-14	7	2103	423	423	173	1967	404	404	172
8000	-18	0	2059	404	404	173	1957	390	390	173
10,000	-22	-8	2023	388	388	173	1924	373	373	174
12,000	-26	-15	2058	383	383	176	1899	360	360	174
14,000	-30	-22	2143	388	388	182	1886	351	351	175
16,000	-34	-29	2133	382	382	182	1953	354	354	180
18,000	-38	-36	—	—	—	—	1979	353	353	182
20,000	-41	-42	—	—	—	—	2010	356	356	184
22,000	—	—	—	—	—	—	—	—	—	—
24,000	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

Notes

1. During operation with ice vane extended, maintain same power as with ice vane retracted. Fuel flow will increase approximately 15%.

Figure 41-24. (F) One Engine Inoperative Maximum Range Power — 1,700 rpm (Sheet 3 of 16)

MODEL: UC-12F
 DATE: JULY 29, 1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS: UP (0%)
 GEAR: UP
 PROPELLER SPEED: 1700 RPM
 ITT NOT TO EXCEED: 770 °C
 TORQUE: NOTED

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**SINGLE ENGINE
 MAXIMUM RANGE POWER
 ISA -20 °C
 SEE NOTES BELOW**

PRESSURE ALTITUDE	IOAT		11,000 Pounds				10,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	FT-LBS	LBS/HR	LBS/HR	KNOTS	FT-LBS	LBS/HR	LBS/HR	KNOTS
SL	-3	27	1835	428	428	162	1704	411	411	160
2000	-7	19	1760	404	404	162	1678	393	393	161
4000	-10	14	1757	390	390	164	1655	376	376	163
6000	-14	7	1765	377	377	167	1646	361	361	165
8000	-18	0	1751	362	362	168	1598	342	342	165
10,000	-22	-8	1759	350	350	171	1578	327	327	166
12,000	-26	-15	1758	340	340	173	1562	314	314	168
14,000	-30	-22	1751	331	331	174	1535	301	301	168
16,000	-34	-29	1743	323	323	175	1549	296	296	171
18,000	-38	-36	1758	319	319	178	1548	288	288	172
20,000	-42	-44	1797	321	321	181	1582	288	288	176
22,000	-45	-49	1815	321	321	183	1599	287	287	178
24,000	-49	-56	—	—	—	—	1640	290	290	182
26,000	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

Notes

1. During operation with ice vane extended, maintain same power as with ice vane retracted. Fuel flow will increase approximately 15%.

Figure 41-24. (F) One Engine Inoperative Maximum Range Power — 1,700 rpm (Sheet 4 of 16)

MODEL: UC-12F
 DATE: JULY 29, 1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS: UP (0%)
 GEAR: UP
 PROPELLER SPEED: 1700 RPM
 ITT NOT TO EXCEED: 770 °C
 TORQUE: NOTED

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**SINGLE ENGINE
 MAXIMUM RANGE POWER
 ISA -10 °C
 SEE NOTES BELOW**

PRESSURE ALTITUDE	IOAT		13,000 Pounds				12,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	FT-LBS	LBS/HR	LBS/HR	KNOTS	FT-LBS	LBS/HR	LBS/HR	KNOTS
SL	8	46	2113	468	468	169	2027	456	456	168
2000	4	39	2099	452	452	170	1997	438	438	170
4000	0	32	2091	437	437	172	1983	422	422	171
6000	-4	25	2070	421	421	173	1953	405	405	172
8000	-8	18	2073	408	408	175	1927	388	388	173
10,000	-12	10	2110	401	401	178	1892	370	370	173
12,000	-16	3	2140	397	397	181	1900	362	362	175
14,000	-20	-4	2142	391	391	182	1966	364	364	180
16,000	-24	-11	—	—	—	—	1967	358	358	181
18,000	-28	-18	—	—	—	—	2003	359	359	184
20,000	—	—	—	—	—	—	—	—	—	—
22,000	—	—	—	—	—	—	—	—	—	—
24,000	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

Notes

1. During operation with ice vane extended, maintain same power as with ice vane retracted. Fuel flow will increase approximately 15%.

Figure 41-24. (F) One Engine Inoperative Maximum Range Power — 1,700 rpm (Sheet 5 of 16)

MODEL: UC-12F
 DATE: JULY 29, 1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS: UP (0%)
 GEAR: UP
 PROPELLER SPEED: 1700 RPM
 ITT NOT TO EXCEED: 770 °C
 TORQUE: NOTED

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**SINGLE ENGINE
 MAXIMUM RANGE POWER
 ISA -10 °C
 SEE NOTES BELOW**

PRESSURE ALTITUDE	IOAT		11,000 Pounds				10,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	FT-LBS	LBS/HR	LBS/HR	KNOTS	FT-LBS	LBS/HR	LBS/HR	KNOTS
SL	8	46	1931	443	443	168	1786	424	424	165
2000	4	39	1876	421	421	168	1679	396	396	163
4000	0	32	1846	403	403	169	1647	377	377	164
6000	-4	25	1832	388	388	171	1615	359	359	165
8000	-8	18	1819	372	372	173	1618	346	346	167
10,000	-12	10	1786	355	355	173	1620	333	333	170
12,000	-16	3	1742	339	339	173	1630	324	324	173
14,000	-20	-4	1713	328	328	173	1620	314	314	174
16,000	-24	-11	1744	325	325	176	1608	305	305	176
18,000	-28	-18	1817	329	329	182	1598	297	297	176
20,000	-32	-26	1823	326	326	183	1614	294	294	179
22,000	-35	-31	1873	332	332	186	1659	297	297	183
24,000	-39	-38	—	—	—	—	1674	297	297	184
26,000	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

Notes

1. During operation with ice vane extended, maintain same power as with ice vane retracted. Fuel flow will increase approximately 15%.

Figure 41-24. (F) One Engine Inoperative Maximum Range Power — 1,700 rpm (Sheet 6 of 16)

MODEL: UC-12F
 DATE: JULY 29, 1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS: UP (0%)
 GEAR: UP
 PROPELLER SPEED: 1700 RPM
 ITT NOT TO EXCEED: 770 °C
 TORQUE: NOTED

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**SINGLE ENGINE
 MAXIMUM RANGE POWER
 ISA
 SEE NOTES BELOW**

PRESSURE ALTITUDE	IOAT		13,000 Pounds				12,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	FT-LBS	LBS/HR	LBS/HR	KNOTS	FT-LBS	LBS/HR	LBS/HR	KNOTS
SL	18	64	2213	484	484	174	2007	457	457	169
2000	14	57	2175	465	465	174	1953	436	436	169
4000	10	50	2177	451	451	177	1951	421	421	171
6000	6	43	2184	439	439	179	1942	406	406	173
8000	2	36	2172	424	424	180	1963	395	395	176
10,000	-2	28	2138	407	407	180	1984	384	384	179
12,000	-6	21	2150	399	399	182	1983	374	374	180
14,000	-10	14	—	—	—	—	1972	365	365	181
16,000	-14	7	—	—	—	—	2031	368	368	185
18,000	—	—	—	—	—	—	—	—	—	—
20,000	—	—	—	—	—	—	—	—	—	—
22,000	—	—	—	—	—	—	—	—	—	—
24,000	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

Notes

1. During operation with ice vane extended, maintain same power as with ice vane retracted. Fuel flow will increase approximately 15%.

Figure 41-24. (F) One Engine Inoperative Maximum Range Power — 1,700 rpm (Sheet 7 of 16)

MODEL: UC-12F
 DATE: JULY 29, 1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS: UP (0%)
 GEAR: UP
 PROPELLER SPEED: 1700 RPM
 ITT NOT TO EXCEED: 770 °C
 TORQUE: NOTED

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**SINGLE ENGINE
 MAXIMUM RANGE POWER
 ISA
 SEE NOTES BELOW**

PRESSURE ALTITUDE	IOAT		11,000 Pounds				10,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	FT-LBS	LBS/HR	LBS/HR	KNOTS	FT-LBS	LBS/HR	LBS/HR	KNOTS
SL	18	64	1888	441	441	167	1811	430	430	167
2000	14	57	1837	420	420	168	1753	408	408	168
4000	10	50	1830	404	404	170	1724	390	390	169
6000	6	43	1800	386	386	171	1690	371	371	170
8000	2	36	1788	371	371	172	1678	356	356	172
10,000	-2	28	1756	353	353	173	1647	338	338	173
12,000	-6	21	1752	342	342	175	1618	323	323	173
14,000	-10	14	1789	338	338	178	1607	313	313	175
16,000	-14	7	1816	336	336	181	1589	303	303	175
18,000	-18	0	1828	333	333	183	1608	300	300	178
20,000	-22	-8	1856	334	334	185	1672	304	304	183
22,000	-25	-13	—	—	—	—	1653	298	298	183
24,000	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

Notes

1. During operation with ice vane extended, maintain same power as with ice vane retracted. Fuel flow will increase approximately 15%.

Figure 41-24. (F) One Engine Inoperative Maximum Range Power — 1,700 rpm (Sheet 8 of 16)

MODEL: UC-12F
 DATE: JULY 29, 1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS: UP (0%)
 GEAR: UP
 PROPELLER SPEED: 1700 RPM
 ITT NOT TO EXCEED: 770 °C
 TORQUE: NOTED

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**SINGLE ENGINE
 MAXIMUM RANGE POWER
 ISA +10 °C
 SEE NOTES BELOW**

PRESSURE ALTITUDE	IOAT		13,000 Pounds				12,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	FT-LBS	LBS/HR	LBS/HR	KNOTS	FT-LBS	LBS/HR	LBS/HR	KNOTS
SL	28	82	2230	489	489	176	2114	473	473	175
2000	24	75	2188	470	470	176	2063	452	452	175
4000	20	68	2172	454	454	178	2037	435	435	176
6000	16	61	2159	439	439	179	2035	421	421	179
8000	12	54	2146	424	424	180	2015	405	405	180
10,000	8	46	2194	417	417	184	1978	386	386	179
12,000	4	39	—	—	—	—	1990	378	378	181
14,000	—	—	—	—	—	—	—	—	—	—
16,000	—	—	—	—	—	—	—	—	—	—
18,000	—	—	—	—	—	—	—	—	—	—
20,000	—	—	—	—	—	—	—	—	—	—
22,000	—	—	—	—	—	—	—	—	—	—
24,000	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

Notes

1. During operation with ice vane extended, maintain same power as with ice vane retracted. Fuel flow will increase approximately 15%.

Figure 41-24. (F) One Engine Inoperative Maximum Range Power — 1,700 rpm (Sheet 9 of 16)

MODEL: UC-12F
 DATE: JULY 29, 1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS: UP (0%)
 GEAR: UP
 PROPELLER SPEED: 1700 RPM
 ITT NOT TO EXCEED: 770 °C
 TORQUE: NOTED

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**SINGLE ENGINE
 MAXIMUM RANGE POWER
 ISA +10 °C
 SEE NOTES BELOW**

PRESSURE ALTITUDE	IOAT		11,000 Pounds				10,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	FT-LBS	LBS/HR	LBS/HR	KNOTS	FT-LBS	LBS/HR	LBS/HR	KNOTS
SL	28	82	1896	444	444	169	1754	424	424	166
2000	24	75	1860	425	425	170	1705	405	405	167
4000	20	68	1828	407	407	171	1687	388	388	169
6000	16	61	1805	390	390	172	1646	369	369	169
8000	12	54	1826	379	379	176	1638	353	353	171
10,000	8	46	1836	366	366	178	1615	336	336	172
12,000	4	39	1834	355	355	180	1620	326	326	174
14,000	0	32	1823	345	345	181	1636	319	319	177
16,000	-4	25	1823	338	338	182	1664	315	315	181
18,000	-7	19	1899	344	344	188	1664	308	308	182
20,000	-11	12	—	—	—	—	1674	305	305	184
22,000	-15	5	—	—	—	—	1714	310	310	187
24,000	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

Notes

1. During operation with ice vane extended, maintain same power as with ice vane retracted. Fuel flow will increase approximately 15%.

Figure 41-24. (F) One Engine Inoperative Maximum Range Power — 1,700 rpm (Sheet 10 of 16)

MODEL: UC-12F
 DATE: JULY 29, 1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS: UP (0%)
 GEAR: UP
 PROPELLER SPEED: 1700 RPM
 ITT NOT TO EXCEED: 770 °C
 TORQUE: NOTED

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**SINGLE ENGINE
 MAXIMUM RANGE POWER
 ISA +20 °C
 SEE NOTES BELOW**

PRESSURE ALTITUDE	IOAT		13,000 Pounds				12,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	FT-LBS	LBS/HR	LBS/HR	KNOTS	FT-LBS	LBS/HR	LBS/HR	KNOTS
SL	38	100	2159	483	483	174	2061	469	469	174
2000	34	93	2151	468	468	176	2035	451	451	175
4000	30	86	2138	452	452	177	2007	434	434	176
6000	26	79	2186	445	445	181	2000	419	419	178
8000	22	72	—	—	—	—	1995	405	405	179
10,000	18	64	—	—	—	—	2027	396	396	183
12,000	—	—	—	—	—	—	—	—	—	—
14,000	—	—	—	—	—	—	—	—	—	—
16,000	—	—	—	—	—	—	—	—	—	—
18,000	—	—	—	—	—	—	—	—	—	—
20,000	—	—	—	—	—	—	—	—	—	—
22,000	—	—	—	—	—	—	—	—	—	—
24,000	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

Notes

1. During operation with ice vane extended, maintain same power as with ice vane retracted. Fuel flow will increase approximately 15%.

Figure 41-24. (F) One Engine Inoperative Maximum Range Power — 1,700 rpm (Sheet 11 of 16)

MODEL: UC-12F
 DATE: JULY 29, 1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS: UP (0%)
 GEAR: UP
 PROPELLER SPEED: 1700 RPM
 ITT NOT TO EXCEED: 770 °C
 TORQUE: NOTED

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**SINGLE ENGINE
 MAXIMUM RANGE POWER
 ISA +20 °C
 SEE NOTES BELOW**

PRESSURE ALTITUDE	IOAT		11,000 Pounds				10,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	FT-LBS	LBS/HR	LBS/HR	KNOTS	FT-LBS	LBS/HR	LBS/HR	KNOTS
SL	38	100	1972	466	466	174	1812	435	435	170
2000	34	93	1934	437	437	175	1758	414	414	171
4000	30	86	1904	419	419	176	1724	395	395	172
6000	26	79	1889	404	404	178	1685	376	376	172
8000	22	72	1855	385	385	178	1684	362	362	175
10,000	18	64	1826	368	368	179	1674	347	347	176
12,000	14	57	1810	355	355	179	1691	338	338	180
14,000	10	50	1834	349	349	182	1679	327	327	181
16,000	7	45	1909	353	353	188	1651	315	315	181
18,000	2	36	—	—	—	—	1633	310	310	183
20,000	—	—	—	—	—	—	—	—	—	—
22,000	—	—	—	—	—	—	—	—	—	—
24,000	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

Notes

1. During operation with ice vane extended, maintain same power as with ice vane retracted. Fuel flow will increase approximately 15%.

Figure 41-24. (F) One Engine Inoperative Maximum Range Power — 1,700 rpm (Sheet 12 of 16)

MODEL: UC-12F
 DATE: JULY 29, 1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS: UP (0%)
 GEAR: UP
 PROPELLER SPEED: 1700 RPM
 ITT NOT TO EXCEED: 770 °C
 TORQUE: NOTED

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**SINGLE ENGINE
 MAXIMUM RANGE POWER
 ISA +30 °C
 SEE NOTES BELOW**

PRESSURE ALTITUDE	IOAT		13,000 Pounds				12,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	FT-LBS	LBS/HR	LBS/HR	KNOTS	FT-LBS	LBS/HR	LBS/HR	KNOTS
SL	48	118	2273	501	501	180	2021	467	467	173
2000	44	111	2267	487	487	182	2020	453	453	175
4000	40	104	—	—	—	—	2002	436	436	177
6000	36	97	—	—	—	—	2014	424	424	179
8000	—	—	—	—	—	—	—	—	—	—
10,000	—	—	—	—	—	—	—	—	—	—
12,000	—	—	—	—	—	—	—	—	—	—
14,000	—	—	—	—	—	—	—	—	—	—
16,000	—	—	—	—	—	—	—	—	—	—
18,000	—	—	—	—	—	—	—	—	—	—
20,000	—	—	—	—	—	—	—	—	—	—
22,000	—	—	—	—	—	—	—	—	—	—
24,000	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

Notes

1. During operation with ice vane extended, maintain same power as with ice vane retracted. Fuel flow will increase approximately 15%.

Figure 41-24. (F) One Engine Inoperative Maximum Range Power — 1,700 rpm (Sheet 13 of 16)

MODEL: UC-12F
 DATE: JULY 29, 1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS: UP (0%)
 GEAR: UP
 PROPELLER SPEED: 1700 RPM
 ITT NOT TO EXCEED: 770 °C
 TORQUE: NOTED

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**SINGLE ENGINE
 MAXIMUM RANGE POWER
 ISA +30 °C
 SEE NOTES BELOW**

PRESSURE ALTITUDE	IOAT		11,000 Pounds				10,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	FT-LBS	LBS/HR	LBS/HR	KNOTS	FT-LBS	LBS/HR	LBS/HR	KNOTS
SL	48	118	1908	452	452	172	1833	441	441	172
2000	44	111	1887	434	434	174	1797	421	421	174
4000	40	104	1853	415	415	175	1765	403	403	175
6000	36	97	1846	400	400	177	1741	386	386	177
8000	32	90	1827	384	384	178	1704	367	367	177
10,000	28	82	1849	373	373	181	1673	344	344	178
12,000	24	75	—	—	—	—	1669	337	337	179
14,000	20	68	—	—	—	—	1682	330	330	182
16,000	16	61	—	—	—	—	1700	325	325	184
18,000	—	—	—	—	—	—	—	—	—	—
20,000	—	—	—	—	—	—	—	—	—	—
22,000	—	—	—	—	—	—	—	—	—	—
24,000	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

Notes

1. During operation with ice vane extended, maintain same power as with ice vane retracted. Fuel flow will increase approximately 15%.

Figure 41-24. (F) One Engine Inoperative Maximum Range Power — 1,700 rpm (Sheet 14 of 16)

MODEL: UC-12F
 DATE: JULY 29, 1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS: UP (0%)
 GEAR: UP
 PROPELLER SPEED: 1700 RPM
 ITT NOT TO EXCEED: 770 °C
 TORQUE: NOTED

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**SINGLE ENGINE
 MAXIMUM RANGE POWER
 ISA +37 °C
 SEE NOTES BELOW**

PRESSURE ALTITUDE	IOAT		13,000 Pounds				12,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	FT-LBS	LBS/HR	LBS/HR	KNOTS	FT-LBS	LBS/HR	LBS/HR	KNOTS
SL	55	131	—	—	—	—	2114	482	482	178
2000	51	124	—	—	—	—	2101	466	466	180
4000	—	—	—	—	—	—	—	—	—	—
6000	—	—	—	—	—	—	—	—	—	—
8000	—	—	—	—	—	—	—	—	—	—
10,000	—	—	—	—	—	—	—	—	—	—
12,000	—	—	—	—	—	—	—	—	—	—
14,000	—	—	—	—	—	—	—	—	—	—
16,000	—	—	—	—	—	—	—	—	—	—
18,000	—	—	—	—	—	—	—	—	—	—
20,000	—	—	—	—	—	—	—	—	—	—
22,000	—	—	—	—	—	—	—	—	—	—
24,000	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

Notes

1. During operation with ice vane extended, maintain same power as with ice vane retracted. Fuel flow will increase approximately 15%.

Figure 41-24. (F) One Engine Inoperative Maximum Range Power — 1,700 rpm (Sheet 15 of 16)

MODEL: UC-12F
 DATE: JULY 29, 1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS: UP (0%)
 GEAR: UP
 PROPELLER SPEED: 1700 RPM
 ITT NOT TO EXCEED: 770 °C
 TORQUE: NOTED

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**SINGLE ENGINE
 MAXIMUM RANGE POWER
 ISA +37 °C
 SEE NOTES BELOW**

PRESSURE ALTITUDE	IOAT		11,000 Pounds				10,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	FT-LBS	LBS/HR	LBS/HR	KNOTS	FT-LBS	LBS/HR	LBS/HR	KNOTS
SL	55	131	1891	451	451	172	1790	438	438	172
2000	51	124	1864	433	433	174	1737	416	416	172
4000	47	117	1852	417	417	175	1741	402	402	175
6000	43	109	1849	403	403	177	1694	381	381	175
8000	39	102	1879	393	393	181	1669	364	364	176
10,000	35	95	—	—	—	—	1667	350	350	178
12,000	31	88	—	—	—	—	1693	342	342	181
14,000	—	—	—	—	—	—	—	—	—	—
16,000	—	—	—	—	—	—	—	—	—	—
18,000	—	—	—	—	—	—	—	—	—	—
20,000	—	—	—	—	—	—	—	—	—	—
22,000	—	—	—	—	—	—	—	—	—	—
24,000	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

Notes

1. During operation with ice vane extended, maintain same power as with ice vane retracted. Fuel flow will increase approximately 15%.

Figure 41-24. (F) One Engine Inoperative Maximum Range Power — 1,700 rpm (Sheet 16 of 16)

CHAPTER 42

(M) Range

42.1 DESCRIPTION OF CHARTS

42.1.1 Performance Cruise Power Tables

These tables show IOAT, torque, fuel flow, and true airspeed for selected average cruise weights at various ISA conditions, cruise altitudes, and power settings. To use these tables, enter the appropriate table for the nearest ISA conditions above and below the forecast ISA conditions (en route, use actual IOAT) at interpolated altitude and interpolate to determine the values for the forecast or actual conditions. Refer to [Figure 42-1](#).

42.1.2 Performance Cruise Power — Torque

This chart shows the torque available at cruise power for a pressure altitude and an ambient air temperature. To use chart, enter at temperature, trace right to pressure altitude, then trace down to read torque. Refer to [Figure 42-2](#).

42.1.3 Performance Cruise Power — Fuel Flow

This chart shows the fuel flow for cruise at pressure altitude and ambient temperature. To use chart, enter at temperature, trace right to pressure altitude, then trace down to read fuel flow. Refer to [Figure 42-3](#).

42.1.4 Performance Cruise Power — True Airspeed

This chart shows that speed attainable for a pressure altitude and an ambient air temperature. To use chart, enter at pressure altitude, trace right to temperature, then trace down to read true airspeed. Refer to [Figure 42-4](#).

42.1.5 Mission Profile — Performance Cruise/Maximum Cruise Power

This chart shows air distance including initial climb for fuel burned and/or flight time at various altitudes. To use chart, enter at pressure altitude, trace left to read true airspeed and power setting, trace right to fuel burned or flight time, then trace down to read air distance. Refer to [Figure 42-5](#).

42.1.6 Maximum Cruise Power

These tables show IOAT, torque, fuel flow, and true airspeed for selected average cruise weights at various ISA conditions, cruise altitudes, and power settings. To use these tables, enter the appropriate table for the nearest ISA conditions above and below the forecast ISA conditions (en route, use actual IOAT) at interpolated altitude and interpolate to determine the values for the forecast or actual conditions. Refer to [Figure 42-6](#).

42.1.7 Mission Profile — Maximum Cruise Power

This chart shows air distance including initial climb for fuel burned and/or flight time at various altitudes. To use chart, enter at pressure altitude, trace left to read true airspeed and torque, trace right to fuel burned or flight time, then trace down to read air distance. Refer to [Figure 42-7](#).

42.1.8 Maximum Cruise Power — Torque

This chart shows the torque available at cruise power for a pressure altitude and an ambient air temperature. To use chart, enter at temperature, trace right to pressure altitude, then trace down to read torque. Refer to [Figure 42-8](#).

42.1.9 Maximum Cruise Power — Fuel Flow

This chart shows the torque available at cruise power for a pressure altitude and an ambient air temperature. To use chart, enter at temperature, trace right to pressure altitude, then trace down to read torque. Refer to [Figure 42-9](#).

42.1.10 Performance Cruise and Maximum Cruise Power — True Airspeed

These charts show the speed attainable for a pressure altitude and an ambient air temperature. To use charts, enter at pressure altitude, trace right to temperature, then trace down to read true airspeed. Refer to [Figure 42-10](#).

42.1.11 Maximum Range Power Tables

These tables show IOAT, torque, fuel flow, and true airspeed for selected average cruise weights at various ISA conditions, cruise altitudes, and power settings. To use these tables, enter the appropriate table for the nearest ISA conditions above and below the forecast ISA conditions (en route, use actual IOAT) at interpolated altitude and interpolate to determine the values for the forecast or actual conditions. Refer to [Figure 42-11](#).

42.1.12 Mission Profile — Maximum Range

This chart shows air distance for fuel burned and flight time on a standard day and including initial climb. To use chart, enter at pressure altitude, read KTAS, trace right to fuel burned or flight time, then trace down to read air distance. Refer to [Figure 42-12](#).

42.1.13 Single-Engine Maximum Range Power — 1,700 rpm Tables

These tables show IOAT, torque, fuel flow, and true airspeed for selected average cruise weights at various ISA conditions, cruise altitudes, and power settings with one engine inoperative. To use these tables, enter the appropriate table for the nearest ISA conditions above and below the forecast ISA conditions (en route, use actual IOAT) at interpolated altitude and interpolate to determine the values for the forecast or actual conditions. Refer to [Figure 42-13](#).

42.1.14 Bingo Range

This chart shows time and fuel required to reach a specified range. The chart presents data for a standard day with no wind. Refer to [Figure 42-14](#).

42.1.15 Range Wind Correction

This chart shows wind effects on ground distance traveled for relative wind direction, wind speed, and aircraft speed. To use chart, enter at appropriate relative wind direction, trace up to wind speed line, trace right to aircraft speed line, trace down to read range factor. Use this range factor on all distance calculations. Refer to [Figure 42-15](#).

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS UP
 GEAR UP
 PROPELLER SPEED 1700 RPM
 TGT NOT TO EXCEED... 770°C
 TORQUE NOTED

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

PERFORMANCE CRUISE POWER
1700 RPM
ISA -30°C

PRESSURE ALTITUDE	IOAT		TORQUE PER ENGINE	FUEL FLOW PER ENGINE	TOTAL FUEL FLOW	AIRSPEED / KNOTS							
						13,000 LBS		12,000 LBS		11,000 LBS		10,000 LBS	
FEET	°C	°F	%	LBS/HR	LBS/HR	IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	-10	14	100	465	930	241	228	242	229	243	230	244	231
2000	-14	7	100	453	906	239	232	240	233	241	234	241	235
4000	-18	0	100	441	882	236	236	237	237	238	239	239	239
6000	-22	-8	100	429	858	234	241	235	242	236	243	237	244
8000	-25	-18	100	418	836	232	245	233	247	234	248	235	249
10,000	-29	-20	100	407	814	230	250	231	252	232	253	233	254
12,000	-33	-27	100	397	794	227	255	228	256	230	258	231	259
14,000	-36	-33	100	390	780	225	260	226	261	227	262	228	264
16,000	-40	-40	100	385	770	222	265	224	266	225	268	226	269
18,000	-44	-47	100	380	760	220	270	221	272	223	273	224	275
20,000	-48	-54	100	377	754	217	275	219	277	220	278	221	280
22,000	-51	-60	100	374	748	214	279	216	281	217	283	218	285
24,000	-55	-67	97	361	722	208	281	210	283	212	286	214	288
26,000	-59	-74	89	330	660	198	276	201	280	203	283	205	285
28,000	-64	-83	80	297	594	186	269	189	273	192	277	194	280
29,000	-66	-87	75	280	560	178	264	183	269	186	273	189	277
31,000	-70	-94	67	250	500	166	253	171	260	175	266	178	270
33,000	—	—	—	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—	—	—	—

NOTE:
 1. IOAT Based on 12,000 pounds.
 BT00022

UC-12M-F0152

Figure 42-1. Performance Cruise Power — 1,700 rpm (Sheet 1 of 8)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS UP (0%)
 GEAR UP
 PROPELLER SPEED 1700 RPM
 TGT NOT TO EXCEED... 770 °C
 TORQUE NOTED

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

PERFORMANCE CRUISE POWER
1700 RPM
ISA -20 °C

PRESSURE ALTITUDE	IOAT		TORQUE PER ENGINE	FUEL FLOW PER ENGINE	TOTAL FUEL FLOW	AIRSPEED ~ KNOTS							
						13,000 LBS		12,000 LBS		11,000 LBS		10,000 LBS	
FEET	°C	°F	%	LBS/HR	LBS/HR	IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	0	32	100	467	934	239	231	240	232	241	233	242	233
2000	-4	25	100	454	908	237	235	238	236	239	237	240	238
4000	-8	18	100	441	882	235	240	236	241	237	242	238	243
6000	-9	16	100	429	858	233	244	234	245	235	246	236	247
8000	-15	5	100	419	838	230	249	231	250	232	251	233	252
10,000	-19	-2	100	409	818	228	253	229	255	230	256	231	257
12,000	-23	-9	100	399	798	225	258	226	259	227	261	229	262
14,000	-26	-15	100	391	782	223	263	224	264	225	266	226	267
16,000	-30	-22	100	386	772	221	268	222	270	223	272	224	273
18,000	-34	-29	100	382	764	218	273	219	275	220	276	221	278
20,000	-37	-35	100	379	758	214	278	216	280	217	281	219	283
22,000	-41	-42	100	377	754	211	283	213	285	215	287	216	288
24,000	-45	-49	94	352	704	203	280	205	283	207	286	209	288
26,000	-49	-56	87	325	650	194	277	196	280	199	283	201	286
28,000	-53	-63	80	298	596	184	271	187	276	189	280	192	283
29,000	-56	-69	76	285	570	178	268	182	273	185	278	187	281
31,000	-60	-76	69	258	516	166	259	171	266	174	272	178	276
33,000	-64	-83	56	230	460	151	244	158	255	163	263	167	269
35,000	-69	-92	52	201	402	103	175	140	235	149	250	154	259

NOTE:
 1. IOAT Based on 12,000 pounds.
 BT00023

UC-12M-F0153

Figure 42-1. Performance Cruise Power — 1,700 rpm (Sheet 2 of 8)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS UP (0%)
 GEAR UP
 PROPELLER SPEED 1700 RPM
 TGT NOT TO EXCEED... 770 °C
 TORQUE NOTED

ENGINE: PT6A-42
 PROPELLER: P7025432-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

PERFORMANCE CRUISE POWER
1700 RPM
ISA -10 °C

PRESSURE ALTITUDE	IOAT		TORQUE PER ENGINE	FUEL FLOW PER ENGINE	TOTAL FUEL FLOW	AIRSPEED ~ KNOTS							
						13,000 LBS		12,000 LBS		11,000 LBS		10,000 LBS	
						IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR								
SL	10	50	100	470	940	238	234	239	235	240	236	241	236
2000	6	43	100	457	914	235	238	236	239	237	240	238	241
4000	3	37	100	444	888	233	242	234	243	235	245	236	245
6000	-1	30	100	432	864	231	247	232	248	233	249	234	250
8000	-5	23	100	420	840	228	252	229	253	230	254	231	255
10,000	-9	16	100	409	818	226	256	227	258	228	259	229	260
12,000	-12	10	100	400	800	224	262	224	262	226	264	227	265
14,000	-16	3	100	393	786	221	266	222	268	224	269	225	271
16,000	-20	-4	100	388	776	218	271	220	273	221	275	222	276
18,000	-24	-11	100	384	768	215	276	217	278	218	279	220	281
20,000	-27	-17	100	381	762	212	281	214	283	215	285	216	286
22,000	-31	-24	95	363	726	205	280	207	283	209	286	211	288
24,000	-35	-31	90	340	680	197	279	200	282	202	285	203	287
26,000	-39	-38	83	316	632	188	275	191	279	193	283	196	286
28,000	-43	-45	77	290	580	178	270	182	275	185	279	187	283
29,000	-46	-51	74	278	556	173	267	177	272	180	277	183	281
31,000	-50	-58	67	255	510	161	258	166	266	170	272	174	277
33,000	-54	-65	61	232	464	148	246	155	257	160	265	164	272
35,000	-59	-74	54	208	416	104	181	140	241	148	255	154	264

NOTE:
 1. IOAT Based on 12,000 pounds.
 BT00024

UC-12M-F0154

Figure 42-1. Performance Cruise Power — 1,700 rpm (Sheet 3 of 8)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS UP (0%)
 GEAR UP
 PROPELLER SPEED 1700 RPM
 TGT NOT TO EXCEED... 770 °C
 TORQUE NOTED

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**PERFORMANCE CRUISE POWER
 1700 RPM
 ISA**

PRESSURE ALTITUDE	IOAT		TORQUE PER ENGINE	FUEL FLOW PER ENGINE	TOTAL FUEL FLOW	AIRSPEED ~ KNOTS							
						13,000 LBS		12,000 LBS		11,000 LBS		10,000 LBS	
						IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR								
SL	20	68	100	474	948	236	236	237	237	238	238	239	239
2000	16	61	100	461	922	234	240	235	242	236	243	237	243
4000	13	55	100	447	894	231	245	232	246	233	247	234	248
6000	9	48	100	434	868	229	250	230	251	231	252	232	253
8000	5	41	100	422	844	226	254	228	255	229	259	230	258
10,000	1	34	100	411	822	224	260	226	261	227	262	228	263
12,000	-2	28	100	401	802	222	264	223	266	224	267	225	269
14,000	-6	21	100	394	788	219	269	221	271	222	273	223	274
16,000	-10	14	100	389	778	216	274	217	276	219	277	220	279
18,000	-13	9	100	386	772	213	278	214	281	216	282	217	284
20,000	-17	1	96	367	734	206	279	208	281	210	283	211	285
22,000	-21	-6	91	349	698	199	278	201	281	203	284	205	286
24,000	-25	-13	85	327	654	191	276	194	280	196	283	199	286
26,000	-29	-20	79	303	606	182	272	185	277	188	281	190	284
28,000	-34	-29	73	279	558	172	266	176	272	179	277	182	281
29,000	-36	-33	70	268	536	167	263	171	269	174	275	177	279
31,000	-40	-40	64	247	494	155	254	161	263	165	270	167	276
33,000	-44	-47	59	227	454	140	238	149	253	155	263	159	270
35,000	-49	-56	52	205	410	104	186	133	236	143	253	149	263

NOTE:
 1. IOAT Based on 12,000 pounds.
 BT00025

UC-12M-F0155

Figure 42-1. Performance Cruise Power — 1,700 rpm (Sheet 4 of 8)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS UP (0%)
 GEAR UP
 PROPELLER SPEED 1700 RPM
 TGT NOT TO EXCEED... 770 °C
 TORQUE NOTED

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

PERFORMANCE CRUISE POWER
1700 RPM
ISA + 10 °C

PRESSURE ALTITUDE	IOAT		TORQUE PER ENGINE	FUEL FLOW PER ENGINE	TOTAL FUEL FLOW	AIRSPEED ~ KNOTS							
						13,000 LBS		12,000 LBS		11,000 LBS		10,000 LBS	
						IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR								
SL	30	86	100	476	952	234	238	235	239	236	240	237	241
2000	27	81	100	463	926	232	243	233	244	234	245	235	246
4000	23	73	100	450	900	230	248	231	249	232	250	233	251
6000	19	66	100	437	874	228	253	229	254	230	255	231	256
8000	15	59	100	425	850	225	257	226	259	227	260	228	261
10,000	12	54	100	413	826	223	262	224	264	225	265	226	266
12,000	8	46	100	403	806	220	267	221	269	223	270	224	272
14,000	4	39	100	395	790	217	272	218	274	220	275	221	277
16,000	0	32	100	389	778	214	276	215	278	217	280	218	282
18,000	3	27	96	370	740	207	277	209	279	211	281	212	283
20,000	-7	19	92	354	708	201	277	203	280	205	282	206	285
22,000	-11	12	87	336	672	193	276	196	279	198	282	200	285
24,000	-15	5	81	314	628	185	273	188	277	190	281	192	284
26,000	-20	-4	76	291	582	176	268	179	274	182	278	185	282
28,000	-24	-11	70	268	536	165	262	170	269	173	274	176	279
29,000	-26	-15	67	257	514	160	258	165	265	168	272	172	277
31,000	-30	-22	61	237	474	147	247	154	258	159	266	163	272
33,000	-35	-31	56	218	436	127	221	142	247	149	259	154	267
35,000	-40	-40	49	196	392	105	191	120	218	137	247	144	259

NOTE:
 1. IOAT Based on 12,000 pounds.
 BT00026

UC-12M-F0156

Figure 42-1. Performance Cruise Power — 1,700 rpm (Sheet 5 of 8)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS UP (0%)
 GEAR UP
 PROPELLER SPEED 1700 RPM
 TGT NOT TO EXCEED... 770 °C
 TORQUE NOTED

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**PERFORMANCE CRUISE POWER
 1700 RPM
 ISA +20 °C**

PRESSURE ALTITUDE	IOAT		TORQUE PER ENGINE	FUEL FLOW PER ENGINE	TOTAL FUEL FLOW	AIRSPEED ~ KNOTS							
						13,000 LBS		12,000 LBS		11,000 LBS		10,000 LBS	
						IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR								
SL	40	104	100	479	958	233	241	234	242	235	243	236	244
2000	37	99	100	466	932	231	246	232	247	233	248	234	249
4000	33	91	100	453	906	228	250	230	252	231	253	232	254
6000	29	84	100	440	880	226	255	227	256	228	258	229	259
8000	25	77	100	428	856	223	260	225	261	226	263	227	264
10,000	22	72	100	416	832	221	265	222	266	223	268	224	269
12,000	18	64	100	405	810	218	270	219	271	221	273	222	274
14,000	14	57	98	390	780	213	272	215	274	216	276	218	278
16,000	10	50	94	372	744	207	273	209	275	211	277	212	280
18,000	6	43	91	355	710	201	274	203	276	205	279	207	281
20,000	3	37	87	339	678	195	275	197	277	199	280	201	283
22,000	-1	30	83	324	648	188	274	191	278	193	281	195	284
24,000	-6	21	78	303	606	180	271	183	275	186	279	188	283
26,000	-10	14	72	280	560	170	265	174	271	177	276	180	280
28,000	-14	7	66	257	514	158	256	163	264	167	271	171	276
29,000	-16	3	63	247	494	152	252	158	261	163	268	166	274
31,000	-21	-6	58	227	454	137	235	147	257	153	261	157	269
33,000	-25	-13	52	208	416	105	187	132	235	142	252	148	263
35,000	-31	-24	45	185	370	105	196	101	187	127	235	137	253

NOTE:
 1. IOAT Based on 12,000 pounds.
 BT00027

UC-12M-F0157

Figure 42-1. Performance Cruise Power — 1,700 rpm (Sheet 6 of 8)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS UP (0%)
 GEAR UP
 PROPELLER SPEED 1700 RPM
 TGT NOT TO EXCEED... 770 °C
 TORQUE NOTED

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**PERFORMANCE CRUISE POWER
 1700 RPM
 ISA + 30 °C**

PRESSURE ALTITUDE	IOAT		TORQUE PER ENGINE	FUEL FLOW PER ENGINE	TOTAL FUEL FLOW	AIRSPEED ~Knots							
						13,000 LBS		12,000 LBS		11,000 LBS		10,000 LBS	
						IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR	IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	51	124	100	482	964	232	243	233	245	234	246	235	247
2000	47	117	100	469	938	229	248	230	249	231	250	232	251
4000	43	109	100	455	910	227	253	228	254	229	255	230	256
6000	39	102	100	442	884	224	257	225	259	227	260	228	261
8000	36	97	100	430	860	222	262	223	264	224	265	225	266
10,000	32	90	99	415	830	218	266	220	268	221	270	222	271
12,000	28	82	94	388	776	211	266	213	268	214	270	216	271
14,000	24	75	91	370	740	206	267	207	269	209	272	211	273
16,000	20	68	88	353	706	200	268	202	271	204	273	205	275
18,000	16	61	85	337	674	194	269	196	272	198	275	200	277
20,000	12	54	83	325	650	189	271	191	274	194	277	195	280
22,000	8	46	79	311	622	182	271	185	275	188	278	190	281
24,000	4	39	74	290	580	174	267	177	272	180	276	183	280
26,000	0	32	69	268	536	164	261	168	268	172	273	175	278
28,000	-4	25	63	247	494	152	252	158	261	163	268	166	274
29,000	-6	21	61	237	474	146	246	153	257	158	265	162	272
31,000	-11	12	55	218	436	123	215	140	246	148	258	153	266
33,000	-16	3	49	197	394	105	192	116	211	135	246	142	258
35,000	-21	6	43	179	358	106	201	101	192	109	206	130	246

NOTE:
 1. IOAT Based on 12,000 pounds.
 BT00028

UC-12M-F0158

Figure 42-1. Performance Cruise Power — 1,700 rpm (Sheet 7 of 8)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS UP (0%)
 GEAR UP
 PROPELLER SPEED 1700 RPM
 TGT NOT TO EXCEED... 770 °C
 TORQUE NOTED

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

PERFORMANCE CRUISE POWER
1700 RPM
ISA +37 °C

PRESSURE ALTITUDE	IOAT		TORQUE PER ENGINE	FUEL FLOW PER ENGINE	TOTAL FUEL FLOW	AIRSPEED ~ KNOTS							
						13,000 LBS		12,000 LBS		11,000 LBS		10,000 LBS	
						IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR								
SL	58	136	100	485	970	231	245	232	246	233	247	234	248
2000	54	129	100	471	942	228	250	229	251	230	252	231	253
4000	50	122	100	457	914	226	254	227	256	228	257	229	258
6000	46	115	100	444	888	223	259	224	260	225	262	226	263
8000	43	109	98	424	848	218	261	220	263	221	265	222	266
10,000	39	102	94	400	800	213	262	214	264	216	266	217	268
12,000	35	95	89	373	746	205	262	207	264	209	266	210	268
14,000	31	88	86	357	714	200	264	202	266	204	264	206	271
16,000	27	81	84	341	682	195	265	197	268	199	270	200	273
18,000	23	73	81	326	652	189	266	192	269	194	272	196	274
20,000	19	66	79	314	628	184	267	186	271	189	274	191	277
22,000	15	59	76	301	602	178	267	181	272	184	276	186	279
24,000	11	52	71	282	564	169	263	173	269	176	274	179	278
26,000	7	45	66	260	520	159	257	164	264	168	270	171	276
28,000	3	37	61	240	480	147	246	154	257	158	265	162	271
29,000	0	32	58	230	460	139	237	148	252	154	262	158	269
31,000	-4	25	53	211	422	105	187	134	237	143	253	149	263
33,000	-10	14	46	189	378	105	195	101	186	130	239	139	255
35,000	-14	7	42	174	348	106	204	101	195	96	185	126	240

NOTE:
 1. IOAT Based on 12,000 pounds.
 BT00029

UC-12M-F0159

Figure 42-1. Performance Cruise Power — 1,700 rpm (Sheet 8 of 8)

MODEL: UC-12M
 DATE: 14 AUGUST 1987
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

PROPELLER SPEED:1700 RPM
 TORQUE:NOTED
 TGT:NOT TO EXCEED 770°C
 FLAPS:UP
 GEAR:UP

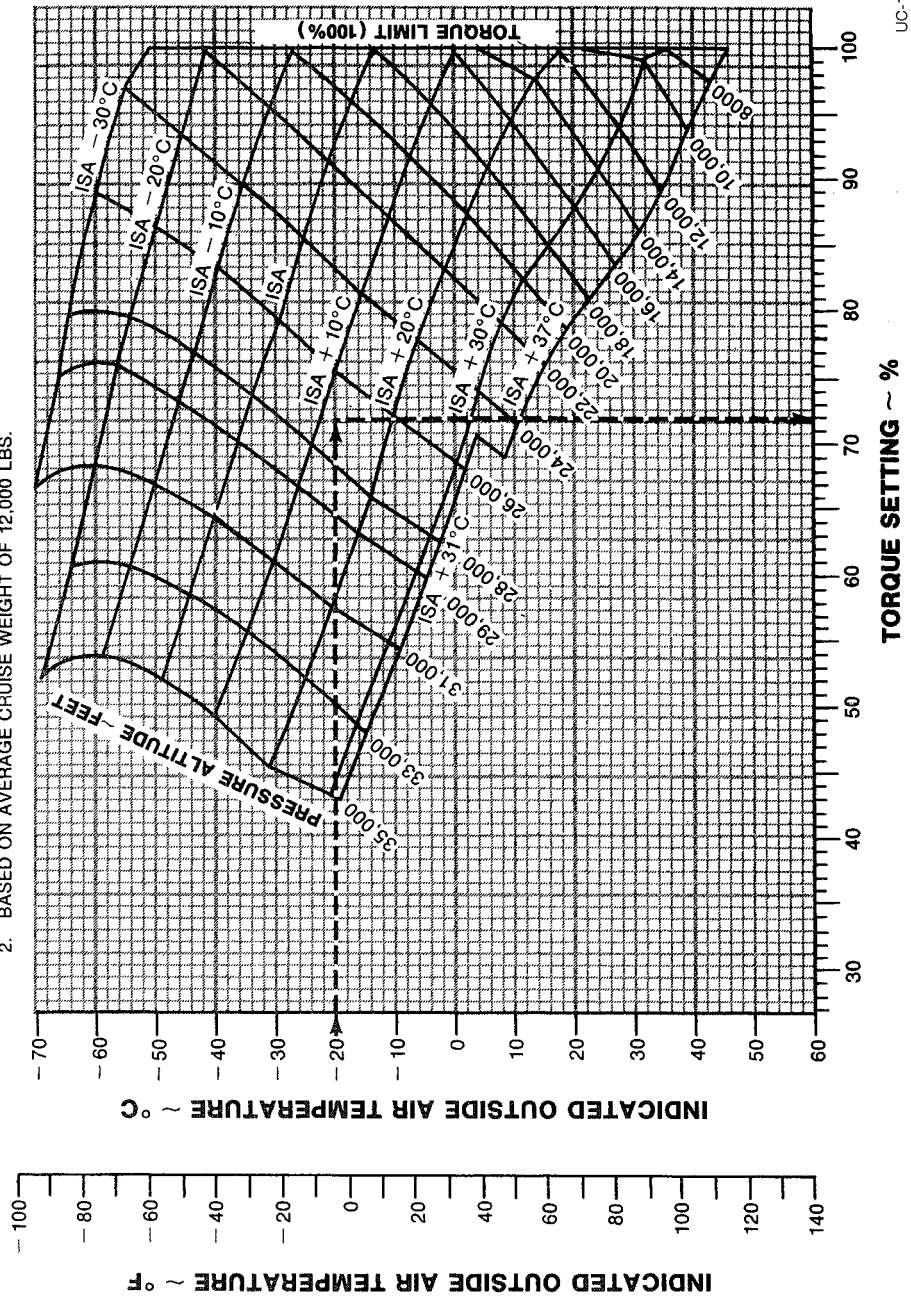
ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

***EXAMPLE:**

OAT: -20°C
 PRESSURE ALTITUDE: 27,000 FT
 TORQUE: 72%

NOTES

1. DURING OPERATION WITH ICE VANES EXTENDED, TORQUE WILL DECREASE APPROXIMATELY 20% IF DESIRED, ORIGINAL POWER MAY BE RESET, PROVIDED TGT LIMIT IS NOT EXCEEDED.
2. BASED ON AVERAGE CRUISE WEIGHT OF 12,000 LBS.



UC-12-F0160

Figure 42-2. Performance Cruise Power Torque — 1,700 rpm

MODEL: UC-12M
 DATE: 29, JULY 1986
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

TORQUE: NOT TO EXCEED 100%
 TGT: NOT TO EXCEED 770°C
 FLAPS: UP
 LANDING GEAR: UP

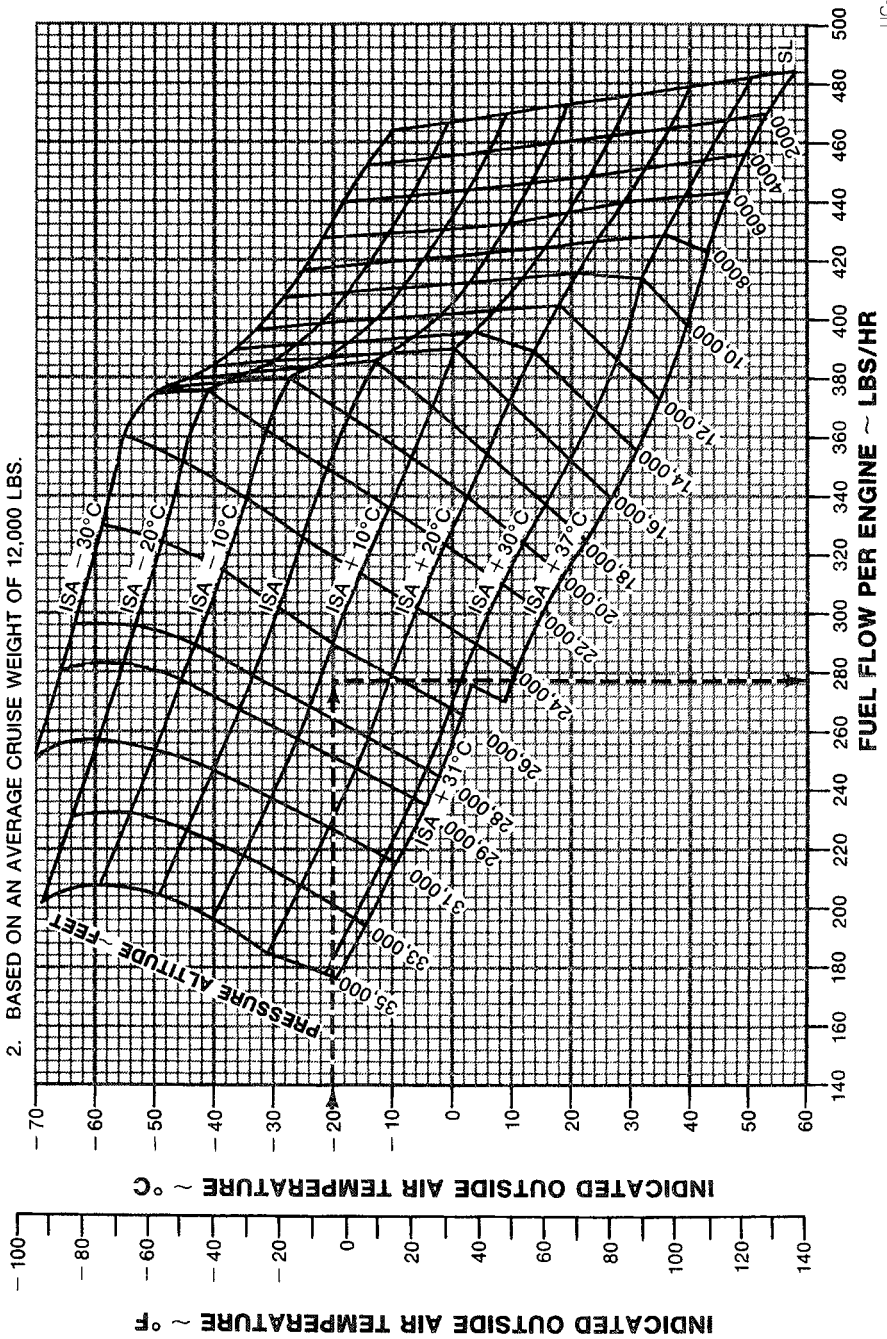
ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

OAT: -20°C
 PRESSURE ALTITUDE: 27,000 FT
 FUEL FLOW: 277 LBS/HR

NOTES

1. DURING OPERATION WITH ICE VANES EXTENDED, FUEL FLOW WILL DECREASE APPROXIMATELY 10% IF ORIGINAL POWER IS NOT OR CANNOT BE RESET. IF ORIGINAL POWER IS RESET, FUEL FLOW WILL INCREASE APPROXIMATELY 30 LBS/HR/ENG.
2. BASED ON AN AVERAGE CRUISE WEIGHT OF 12,000 LBS.



UC-12M-F0161

Figure 42-3. Performance Cruise Power Fuel Flow — 1,700 rpm

MODEL: UC-12M
 DATE: 29, JULY 1986
 DATA BASIS: FLIGHT TEST

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

CONFIGURATION:

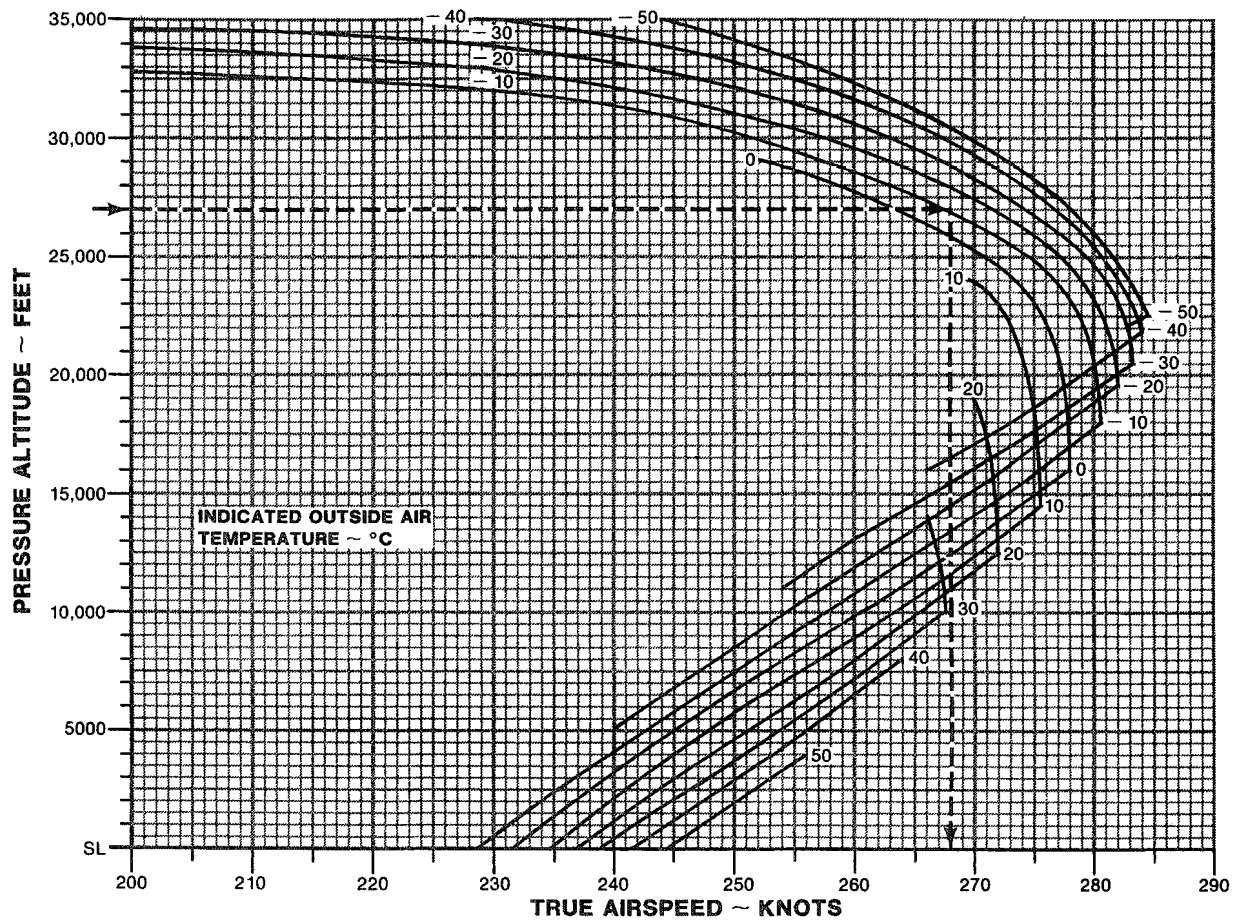
TORQUE: NOT TO EXCEED 100%
 TGT: NOT TO EXCEED 770°C
 FLAPS: UP
 GEAR: UP

EXAMPLE:

PRESSURE ALTITUDE: 27,000 FT
 INDICATED OUTSIDE AIR TEMP: -11°C
 TRUE AIRSPEED: 268 KNOTS

NOTE

1. DURING OPERATION WITH ICE VANES EXTENDED, TRUE AIRSPEED WILL BE REDUCED APPROXIMATELY 30 KNOTS IF ORIGINAL POWER IS NOT OR CANNOT BE RESET, BUT WILL BE UNCHANGED IF THE ORIGINAL POWER IS RESET.
2. BASED ON AVERAGE CRUISE WEIGHT OF 12,000 LBS.



UC-12M-F0162

Figure 42-4. Performance Cruise Power True Airspeed — 1,700 rpm

STANDARD DAY ZERO WIND

NOTE

1. FOR OPERATION WITH ICE VANES EXTENDED, RANGE IS REDUCED APPROXIMATELY 15%.
2. 90 LBS FUEL ALLOWANCE FOR ENGINE START, TAXI, AND TAKE-OFF INCLUDED.
3. NO ALLOWANCE OR RESERVE FOR LOITER, DESCENT, OR LANDING.
4. WEIGHT: 13,500 LBS TAKEOFF. AIRSPEEDS ARE FOR AVERAGE CRUISE WEIGHT. (3100 LBS FUEL REQUIRED DUE TO 11,000 LBS MAXIMUM ZERO FUEL WEIGHT.)

ENGINE: PT6A-42
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

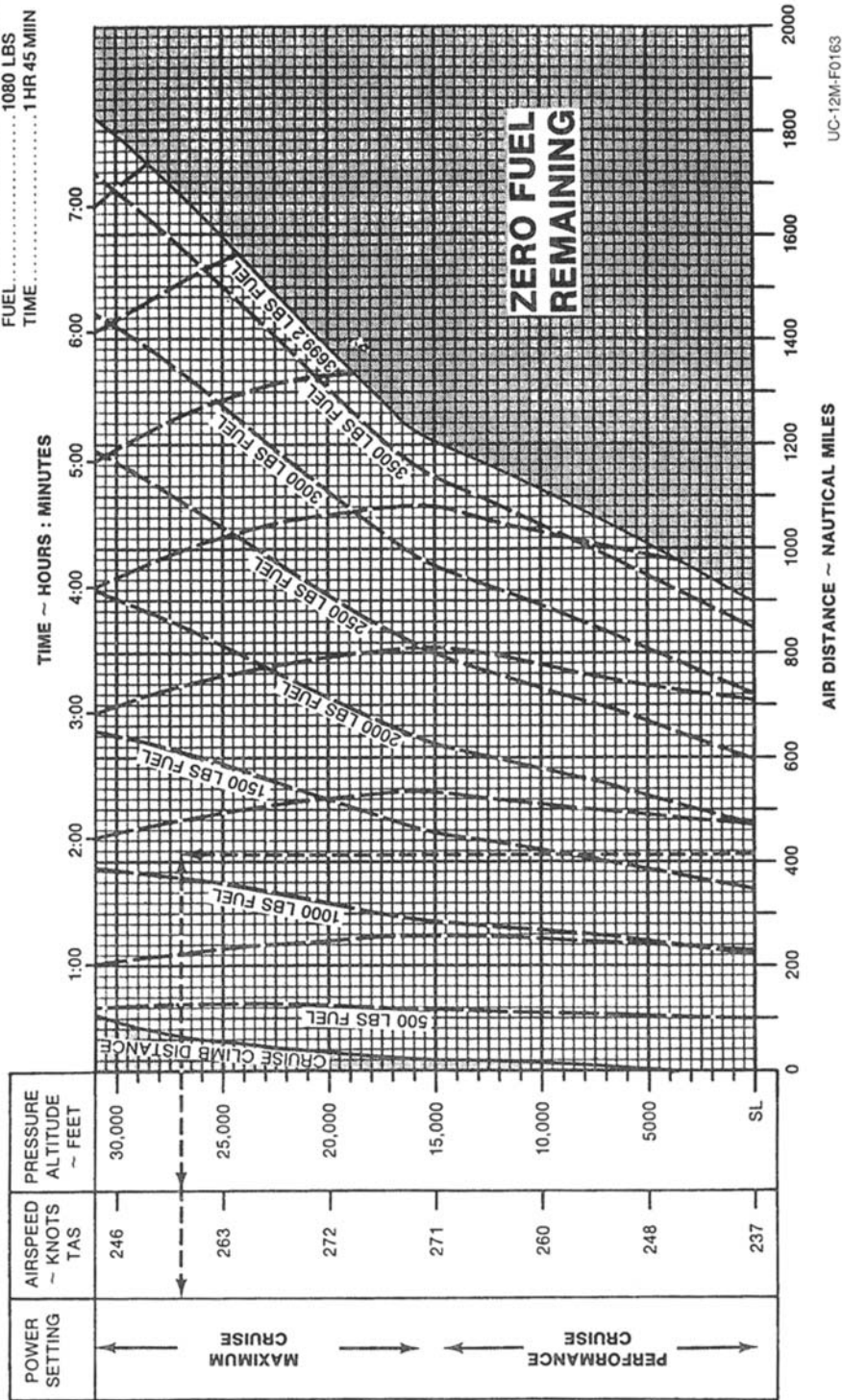
PRESSURE ALTITUDE ...27,000 FT
 AIR DISTANCE414 NM

AIRSPEED256 KTAS
 POWER SETTINGMAX CRUISE
 FUEL1080 LBS
 TIME1 HR 45 MIN

MODEL: UC-12M
 DATE: 11 JANUARY 1988
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

FLAPS UP
 GEAR UP
 ICE VANES RETRACTED



UC-12M-F0163

Figure 42-5. Mission Profile — Performance Cruise/Maximum Cruise Power — 1,700 rpm

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS UP
 GEAR UP
 PROPELLER SPEED 1800 RPM
 TGT NOT TO EXCEED... 770°C
 TORQUE NOTED

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**MAXIMUM CRUISE POWER
 1800 RPM
 ISA -30°C**

PRESSURE ALTITUDE	IOAT		TORQUE PER ENGINE	FUEL FLOW PER ENGINE	TOTAL FUEL FLOW	AIRSPEED/KNOTS							
						13,000 LBS		12,000 LBS		11,000 LBS		10,000 LBS	
FEET	°C	°F	%	LBS/HR	LBS/HR	IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	-10	14	100	485	970	246	233	247	234	248	235	249	235
2000	-14	7	100	473	946	244	237	245	238	246	239	246	240
4000	-18	0	100	460	920	242	242	242	243	243	243	244	244
6000	-21	-6	100	448	896	240	246	241	248	242	249	242	244
8000	-25	-13	100	438	876	237	251	238	252	239	253	240	254
10,000	-29	-20	100	427	854	235	256	236	257	237	258	238	259
12,000	-32	-26	100	417	834	232	261	234	262	235	263	236	264
14,000	-36	-33	100	410	820	230	266	231	267	232	268	233	269
16,000	-40	-40	100	404	808	228	271	229	273	230	274	233	275
18,000	-44	-47	100	400	800	225	276	227	278	228	280	229	281
20,000	-47	-53	100	395	790	223	282	224	284	225	285	227	286
22,000	-51	-60	99	389	778	219	286	221	288	222	290	224	292
24,000	-55	-67	93	362	724	211	284	213	287	214	289	216	291
26,000	-59	-74	85	332	664	201	280	203	283	205	286	207	288
28,000	-63	-81	76	298	596	188	272	192	276	194	280	196	283
29,000	-66	-87	72	281	562	182	267	185	272	188	276	191	278
31,000	-70	-94	63	251	502	167	254	172	262	176	268	179	272
33,000	—	—	—	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—	—	—	—

NOTE:
 1. IOAT Based on 12,000 pounds.
 BT00013

UC-12M-F0164

Figure 42-6. Maximum Cruise Power — 1,800 rpm (Sheet 1 of 8)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS UP (0%)
 GEAR UP
 PROPELLER SPEED 1800 RPM
 TGT NOT TO EXCEED... 770 °C
 TORQUE NOTED

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

MAXIMUM CRUISE POWER
1800 RPM
ISA -20 °C

PRESSURE ALTITUDE	IOAT		TORQUE PER ENGINE	FUEL FLOW PER ENGINE	TOTAL FUEL FLOW	AIRSPEED ~ KNOTS							
						13,000 LBS		12,000 LBS		11,000 LBS		10,000 LBS	
						IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR								
SL	0	32	100	487	974	245	236	246	237	247	238	247	239
2000	-4	25	100	474	948	242	241	243	241	244	242	245	248
4000	-7	19	100	461	922	240	245	241	246	242	247	243	248
6000	-11	12	100	449	898	238	250	239	251	240	252	241	252
8000	-15	5	100	439	878	235	254	236	255	237	256	238	257
10,000	-19	-2	100	429	858	233	259	234	260	235	261	236	262
12,000	-22	-8	100	418	839	230	264	231	265	233	266	233	267
14,000	-26	-15	100	411	822	228	269	229	271	231	272	232	273
16,000	-30	-22	100	405	810	226	275	227	276	228	277	229	279
18,000	-33	-27	100	401	802	223	280	224	282	226	283	227	284
20,000	-37	-35	100	397	794	220	285	222	287	223	289	224	290
22,000	-41	-42	96	378	756	214	286	215	289	217	290	218	292
24,000	-45	-49	90	353	706	205	284	207	286	204	289	211	291
26,000	-49	-56	83	326	652	196	280	199	284	201	287	203	280
28,000	-53	-56	76	299	598	186	276	189	280	192	283	194	286
29,000	-55	-67	73	286	572	181	272	184	277	187	281	190	285
31,000	-60	-76	66	259	518	169	263	173	270	177	275	180	280
33,000	-64	-83	58	231	462	151	245	159	258	165	266	169	272
35,000	-69	-92	49	201	402	121	205	140	236	149	250	155	260

NOTES:
 1. IOAT Based on 12,000 pounds.
 BT00014

UC-12M-F0165

Figure 42-6. Maximum Cruise Power — 1,800 rpm (Sheet 2 of 8)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS UP (0%)
 GEAR UP
 PROPELLER SPEED 1800 RPM
 TGT NOT TO EXCEED... 770 °C
 TORQUE NOTED

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

MAXIMUM CRUISE POWER
 1800 RPM
 ISA -10 °C

PRESSURE ALTITUDE	IOAT		TORQUE PER ENGINE	FUEL FLOW PER ENGINE	TOTAL FUEL FLOW	AIRSPEED ~ KNOTS							
						13,000 LBS		12,000 LBS		11,000 LBS		10,000 LBS	
						IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR	IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	10	50	100	489	978	243	239	244	240	245	241	246	241
2000	7	45	100	476	952	241	243	242	244	242	245	243	246
4000	3	37	100	463	926	238	248	239	249	240	250	241	250
6000	-1	30	100	451	902	236	252	237	253	238	254	239	255
8000	-5	23	100	439	878	233	257	234	258	235	259	236	260
10,000	-8	18	100	428	856	231	262	232	263	233	264	234	265
12,000	-12	10	100	420	840	229	267	230	269	231	270	232	271
14,000	-16	3	100	413	826	226	278	227	274	224	275	230	276
16,000	-19	-2	100	407	814	224	278	225	279	226	281	227	282
18,000	-23	-9	100	402	804	221	283	222	285	224	287	225	288
20,000	-27	-17	96	382	764	214	284	216	286	218	288	219	289
22,000	-31	-24	91	363	726	208	284	209	286	211	288	213	290
24,000	-35	-31	86	341	682	200	282	202	285	204	288	205	290
26,000	-39	-38	80	317	634	191	279	193	283	196	286	197	289
28,000	-43	-45	73	291	582	181	274	184	279	187	283	189	286
29,000	-45	-49	70	279	558	176	271	179	276	182	281	185	284
31,000	-50	-58	64	256	512	165	263	169	270	173	276	176	281
33,000	-54	-65	58	234	468	150	249	158	262	163	270	167	276
35,000	-59	-74	51	209	418	123	214	142	244	151	259	156	268

NOTE:
 1. IOAT Based on 12,000 pounds.
 BT00015

UC-12M-F0166

Figure 42-6. Maximum Cruise Power — 1,800 rpm (Sheet 3 of 8)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS UP
 GEAR UP
 PROPELLER SPEED 1800 RPM
 TGT NOT TO EXCEED... 770°C
 TORQUE NOTED

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**MAXIMUM CRUISE POWER
 1800 RPM
 ISA**

PRESSURE ALTITUDE	IOAT		TORQUE PER ENGINE	FUEL FLOW PER ENGINE	TOTAL FUEL FLOW	AIRSPEED / KNOTS							
						13,000 LBS		12,000 LBS		11,000 LBS		10,000 LBS	
FEET	°C	°F	%	LBS/HR	LBS/HR	IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	20	68	100	492	984	241	241	242	242	243	243	244	244
2000	17	63	100	478	956	239	246	240	247	241	248	241	248
4000	13	55	100	464	928	236	250	237	251	238	252	239	253
6000	9	48	100	451	902	234	255	236	257	236	258	237	259
8000	5	41	100	440	880	232	260	233	262	234	263	235	264
10,000	2	36	100	430	860	229	265	231	267	232	268	233	269
12,000	-2	28	100	419	833	227	270	228	272	229	273	230	274
14,000	-6	21	100	412	824	224	276	226	277	227	279	228	280
16,000	-9	16	100	407	814	222	281	223	283	224	284	225	285
18,000	-13	-9	95	387	774	215	281	217	283	218	285	219	287
20,000	-17	1	91	368	736	208	282	210	284	212	286	213	288
22,000	-21	-6	87	350	700	202	282	204	284	205	287	207	289
24,000	-35	-13	82	327	654	193	280	196	283	198	286	200	289
26,000	-29	-20	76	304	608	185	276	187	280	190	284	192	287
28,000	-33	-27	70	280	560	175	271	178	276	181	280	184	284
29,000	-36	-33	67	269	538	170	268	174	274	177	279	180	283
31,000	-40	-40	62	248	496	158	250	164	268	168	279	171	279
33,000	-44	-47	56	227	454	143	243	152	258	158	268	162	274
35,000	-49	-56	50	206	412	104	186	136	240	146	257	152	267

NOTE:
 1. IOAT Based on 12,000 pounds.
 BT00016

UC-12M-F0167

Figure 42-6. Maximum Cruise Power — 1,800 rpm (Sheet 4 of 8)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS UP (0%)
 GEAR UP
 PROPELLER SPEED 1800 RPM
 TGT NOT TO EXCEED... 770 °C
 TORQUE NOTED

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

MAXIMUM CRUISE POWER
1800 RPM
ISA + 10 °C

PRESSURE ALTITUDE	IOAT		TORQUE PER ENGINE	FUEL FLOW PER ENGINE	TOTAL FUEL FLOW	AIRSPEED ~ KNOTS							
						13,000 LBS		12,000 LBS		11,000 LBS		10,000 LBS	
						IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR								
SL	31	88	100	495	990	240	244	241	245	242	246	243	247
2000	27	81	100	482	964	238	249	239	250	239	251	240	252
4000	23	73	100	468	936	235	253	236	255	237	256	238	257
6000	19	66	100	455	910	233	258	234	260	235	261	236	262
8000	16	61	100	443	886	230	263	231	264	232	266	233	267
10,000	12	54	100	432	864	228	268	229	269	230	271	231	272
12,000	8	46	100	421	842	225	273	226	275	227	276	228	277
14,000	5	41	100	412	824	222	278	224	280	225	282	226	283
16,000	1	34	96	391	782	216	279	217	281	219	283	220	285
18,000	-3	27	91	371	742	209	279	211	282	213	284	214	286
20,000	-7	19	88	354	708	203	280	205	283	207	285	208	287
22,000	-11	12	83	337	674	196	279	198	282	200	285	202	287
24,000	-15	5	78	314	628	188	277	190	281	192	284	195	287
26,000	-19	-2	72	292	584	178	273	182	277	184	281	187	285
28,000	-24	-11	67	269	538	168	267	172	273	176	278	178	282
29,000	-26	-15	64	258	516	163	263	167	270	171	275	174	280
31,000	-30	-22	59	238	476	150	251	157	263	162	270	165	276
33,000	-35	-31	53	219	438	131	229	144	251	152	264	156	271
35,000	-40	-40	47	198	396	105	191	125	227	139	259	146	264

NOTE:
 1. IOAT Based on 12,000 pounds.
 BT00017

UC-12M-F0168

Figure 42-6. Maximum Cruise Power — 1,800 rpm (Sheet 5 of 8)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS UP (0%)
 GEAR UP
 PROPELLER SPEED 1800 RPM
 TGT NOT TO EXCEED... 770 °C
 TORQUE NOTED

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

MAXIMUM CRUISE POWER
1800 RPM
ISA +20 °C

PRESSURE ALTITUDE	IOAT		TORQUE PER ENGINE	FUEL FLOW PER ENGINE	TOTAL FUEL FLOW	AIRSPEED ~ KNOTS							
						13,000 LBS		12,000 LBS		11,000 LBS		10,000 LBS	
						IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR								
SL	41	106	100	498	996	238	247	239	248	240	249	241	249
2000	37	99	100	484	968	236	251	237	252	238	253	239	254
4000	33	91	100	470	940	233	256	235	257	235	258	236	259
6000	29	84	100	457	914	231	261	232	262	233	263	234	264
8000	26	79	100	446	892	228	266	230	267	231	268	232	269
10,000	22	72	100	434	868	226	271	227	272	228	274	229	275
12,000	18	64	96	410	820	220	272	221	274	223	275	224	277
14,000	14	57	93	391	782	214	274	216	276	217	277	219	279
16,000	10	50	90	372	744	209	275	211	277	212	279	214	281
18,000	7	45	86	355	710	203	276	205	279	207	281	208	283
20,000	3	37	83	340	680	197	277	199	280	201	283	203	285
22,000	-1	30	80	324	648	191	278	193	281	195	284	197	287
24,000	-5	23	75	303	606	182	275	185	279	188	283	190	286
26,000	-10	14	69	281	562	173	270	176	275	179	279	182	283
28,000	-14	7	63	258	516	162	262	166	269	170	275	173	279
29,000	-16	3	60	248	496	155	256	161	266	165	272	167	277
31,000	-20	-4	55	228	456	140	240	150	256	156	266	160	273
33,000	-25	-13	50	208	416	105	187	135	239	144	257	151	267
35,000	-31	-24	43	185	370	105	196	101	187	120	239	139	257

NOTE:
 1. IOAT Based on 12,000 pounds.
 BT00018

UC-12M-F0169

Figure 42-6. Maximum Cruise Power — 1,800 rpm (Sheet 6 of 8)

MODEL: UC-12M
 DATE: JULY 29, 1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS UP (0%)
 GEAR UP
 PROPELLER SPEED 1800 RPM
 TGT NOT TO EXCEED ... 770 °C
 TORQUE NOTED

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

MAXIMUM CRUISE POWER
1800 RPM
ISA +30 °C

PRESSURE ALTITUDE	IOAT		TORQUE PER ENGINE	FUEL FLOW PER ENGINE	TOTAL FUEL FLOW	AIRSPEED ~ KNOTS							
						13,000 LBS		12,000 LBS		11,000 LBS		10,000 LBS	
						IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR								
SL	51	124	100	500	1000	237	249	238	250	239	251	239	252
2000	47	117	100	487	974	234	253	235	255	236	256	237	257
4000	43	109	100	473	946	232	258	233	260	234	261	235	262
6000	40	104	100	459	918	229	263	230	264	231	266	232	267
8000	36	97	98	440	880	225	266	226	267	227	269	228	270
10,000	32	90	94	415	830	219	267	220	269	222	270	223	272
12,000	28	82	89	388	776	212	266	213	269	215	270	216	272
14,000	24	75	86	370	740	206	268	208	271	210	273	211	275
16,000	20	68	84	354	708	201	270	203	273	205	275	206	277
18,000	16	61	81	338	676	196	272	198	275	200	277	202	280
20,000	13	55	79	325	650	191	274	193	277	195	280	197	283
22,000	9	48	76	311	622	185	274	188	278	190	282	192	284
24,000	5	41	71	291	582	176	271	180	276	182	280	185	283
26,000	0	32	66	269	538	167	266	171	272	174	277	177	281
28,000	-4	25	61	248	496	155	256	161	266	165	272	169	278
29,000	-6	21	58	238	476	148	250	156	262	161	270	164	276
31,000	-11	12	53	219	438	129	226	143	249	150	263	155	270
33,000	-16	3	47	198	396	105	192	123	223	137	249	145	263
35,000	-21	-6	41	179	358	106	201	101	192	117	221	132	248

NOTE:
 1. IOAT Based on 12,000 pounds.
 BT00019

UC-12M-F0170

Figure 42-6. Maximum Cruise Power — 1,800 rpm (Sheet 7 of 8)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS UP (0%)
 GEAR UP
 PROPELLER SPEED 1800 RPM
 TGT NOT TO EXCEED... 770 °C
 TORQUE NOTED

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

MAXIMUM CRUISE POWER
1800 RPM
ISA +37 °C

PRESSURE ALTITUDE	IOAT		TORQUE PER ENGINE	FUEL FLOW PER ENGINE	TOTAL FUEL FLOW	AIRSPEED ~ KNOTS							
						13,000 LBS		12,000 LBS		11,000 LBS		10,000 LBS	
FEET	°C	°F	%	LBS/HR	LBS/HR	IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	58	136	100	502	1004	236	250	237	251	238	252	238	253
2000	54	129	100	488	976	233	255	234	256	235	257	236	258
4000	50	122	99	470	940	229	258	231	260	232	261	233	262
6000	46	115	96	448	896	224	261	226	262	227	264	228	265
8000	43	109	92	424	848	219	262	220	264	222	265	223	267
10,000	39	102	89	400	800	213	263	215	265	216	267	217	268
12,000	35	95	84	373	746	206	263	208	265	210	267	211	267
14,000	31	88	82	357	714	201	264	203	267	205	270	206	271
16,000	27	81	79	341	682	196	266	198	269	200	272	202	274
18,000	23	73	77	326	652	191	268	193	271	195	274	197	276
20,000	19	66	75	314	628	186	270	188	274	191	277	193	280
22,000	15	59	73	302	604	180	271	183	275	186	279	188	282
24,000	11	52	68	282	564	172	268	175	273	178	278	181	281
26,000	7	45	63	261	522	162	262	167	269	170	274	173	279
28,000	3	37	58	241	482	149	250	157	262	161	270	165	275
29,000	1	34	56	231	462	141	241	150	257	156	266	160	273
31,000	-4	25	51	212	424	105	287	136	242	146	258	151	267
33,000	-10	14	44	189	378	105	195	101	186	132	243	141	259
35,000	-14	7	40	174	348	106	204	101	195	96	185	127	244

NOTE:
 1. IOAT Based on 12,000 pounds.
 BT00020

UC-12M-F0171

Figure 42-6. Maximum Cruise Power — 1,800 rpm (Sheet 8 of 8)

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

PRESSURE ALTITUDE: 27,000 FT
 AIR DISTANCE: 545 NM
 AIRSPEED: 278 KTAS
 TORQUE: 73%
 FUEL: 1350 LBS
 TIME: 2.07 HRS

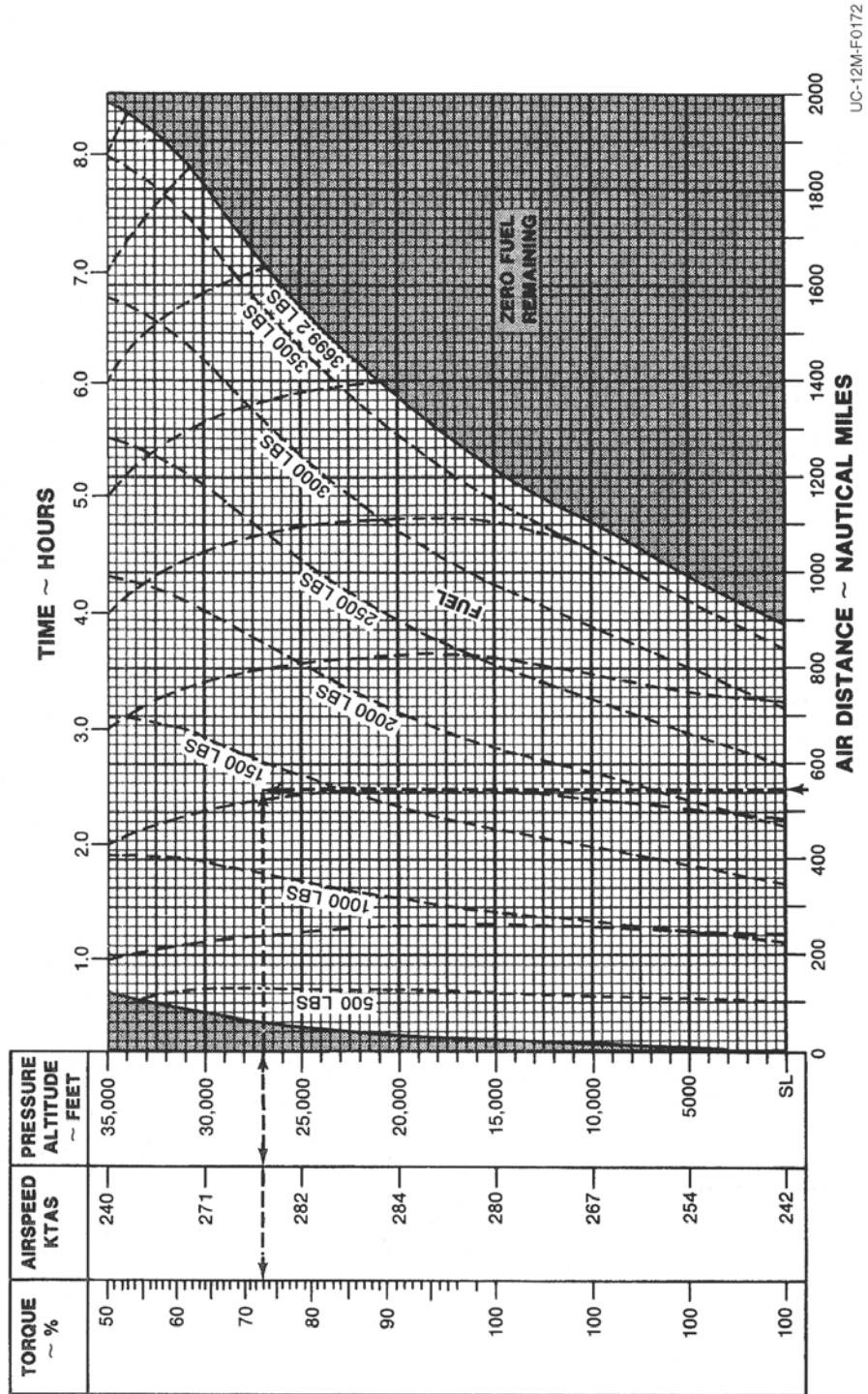
NOTES

1. FOR OPERATION WITH ICE VANES EXTENDED, RANGE IS REDUCED BY APPROXIMATELY 15%.
2. 90 LBS FUEL ALLOWANCE FOR ENGINE START, TAXI, AND TAKEOFF INCLUDED.
3. NO ALLOWANCE OR RESERVE FOR LOITER, DESCENT OR LANDING.
4. WEIGHT: 13,500 LBS TAKEOFF, 12,000 LBS CRUISE (2500 LBS FUEL REQUIRED DUE TO 11,000 LB MAX ZERO FUEL WEIGHT).

MODEL: UC-12M
 DATE: 29 JULY 1986
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

PROPELLER SPEED: 1800 RPM
 TORQUE: AS NOTED
 FLAPS: UP
 GEAR: UP
 ICE VANES: RETRACTED



UC-12M-F0172

Figure 42-7. Mission Profile — Maximum Cruise Power — Standard Day, Zero Wind

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

OAT: -20°C
 PRESSURE ALTITUDE: 27,000 FT
 TORQUE: 69%

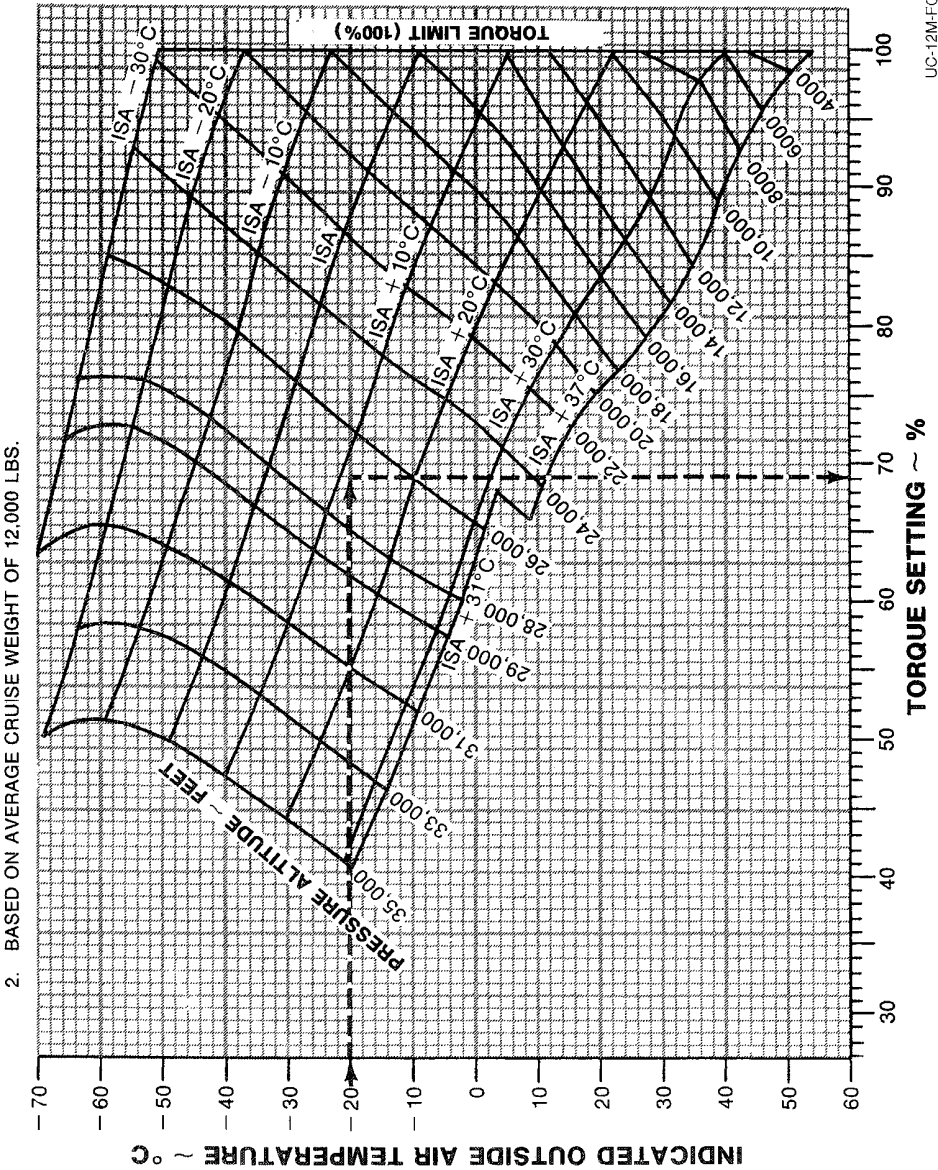
MODEL: UC-12M
 DATE: 29 JULY 1986
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

PROPELLER SPEED: 1800 RPM
 TORQUE: NOTED
 TGT: NOT TO EXCEED 800°C
 FLAPS: UP
 GEAR: UP

NOTES

1. DURING OPERATION WITH ICE VANES EXTENDED, TORQUE WILL DECREASE APPROXIMATELY 20%. IF DESIRED, ORIGINAL POWER MAY BE RESET, PROVIDED TGT LIMIT IS NOT EXCEEDED.
2. BASED ON AVERAGE CRUISE WEIGHT OF 12,000 LBS.



UC-12M-F0173

Figure 42-8. Maximum Cruise Power Torque — 1,800 rpm

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

MODEL: UC-12M
 DATE: 29, JULY 1986
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

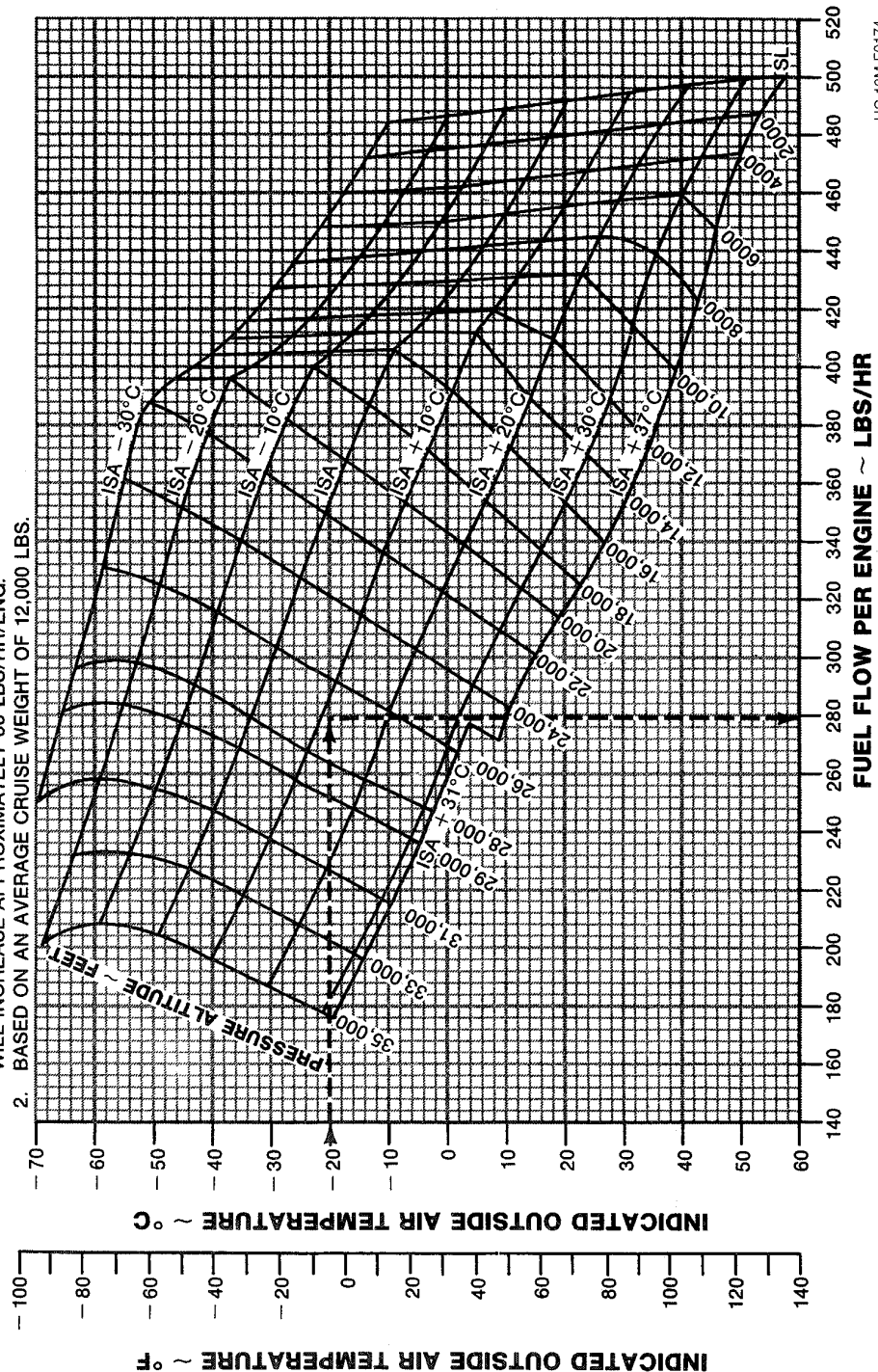
TORQUE: NOT TO EXCEED 100%
 TGT: NOT TO EXCEED 800°C
 FLAPS: UP
 LANDING GEAR: UP

EXAMPLE:

OAT: -20°C
 PRESSURE ALTITUDE: 27,000 FT
 FUEL FLOW: 279 LBS/HR

NOTES

1. DURING OPERATION WITH ICE VANES EXTENDED, FUEL FLOW WILL DECREASE APPROXIMATELY 10% IF ORIGINAL POWER IS NOT OR CANNOT BE RESET. IF ORIGINAL POWER IS RESET, FUEL FLOW WILL INCREASE APPROXIMATELY 30 LBS/HR/ENG.
2. BASED ON AN AVERAGE CRUISE WEIGHT OF 12,000 LBS.



UC-12M-F0174

Figure 42-9. Maximum Cruise Power Fuel Flow — 1,800 rpm

MODEL: UC-12M
 DATE: 29, JULY 1986
 DATA BASIS: FLIGHT TEST

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

CONFIGURATION:

TORQUE: NOT TO EXCEED 100%
 TGT NOT TO EXCEED 800 °C
 FLAPS: UP
 GEAR: UP

EXAMPLE:

PRESSURE ALTITUDE: 27,000 FT
 INDICATED OUTSIDE AIR TEMP: - 11°C
 TRUE AIRSPEED: 272 KNOTS

NOTES

1. DURING OPERATION WITH ICE VANES EXTENDED, TRUE AIRSPEED WILL BE REDUCED APPROXIMATELY 30 KNOTS IF ORIGINAL POWER IS NOT OR CANNOT BE RESET, BUT WILL BE UNCHANGED IF THE ORIGINAL POWER IS RESET.
2. BASED ON AVERAGE CRUISE WEIGHT OF 12,000 LBS.

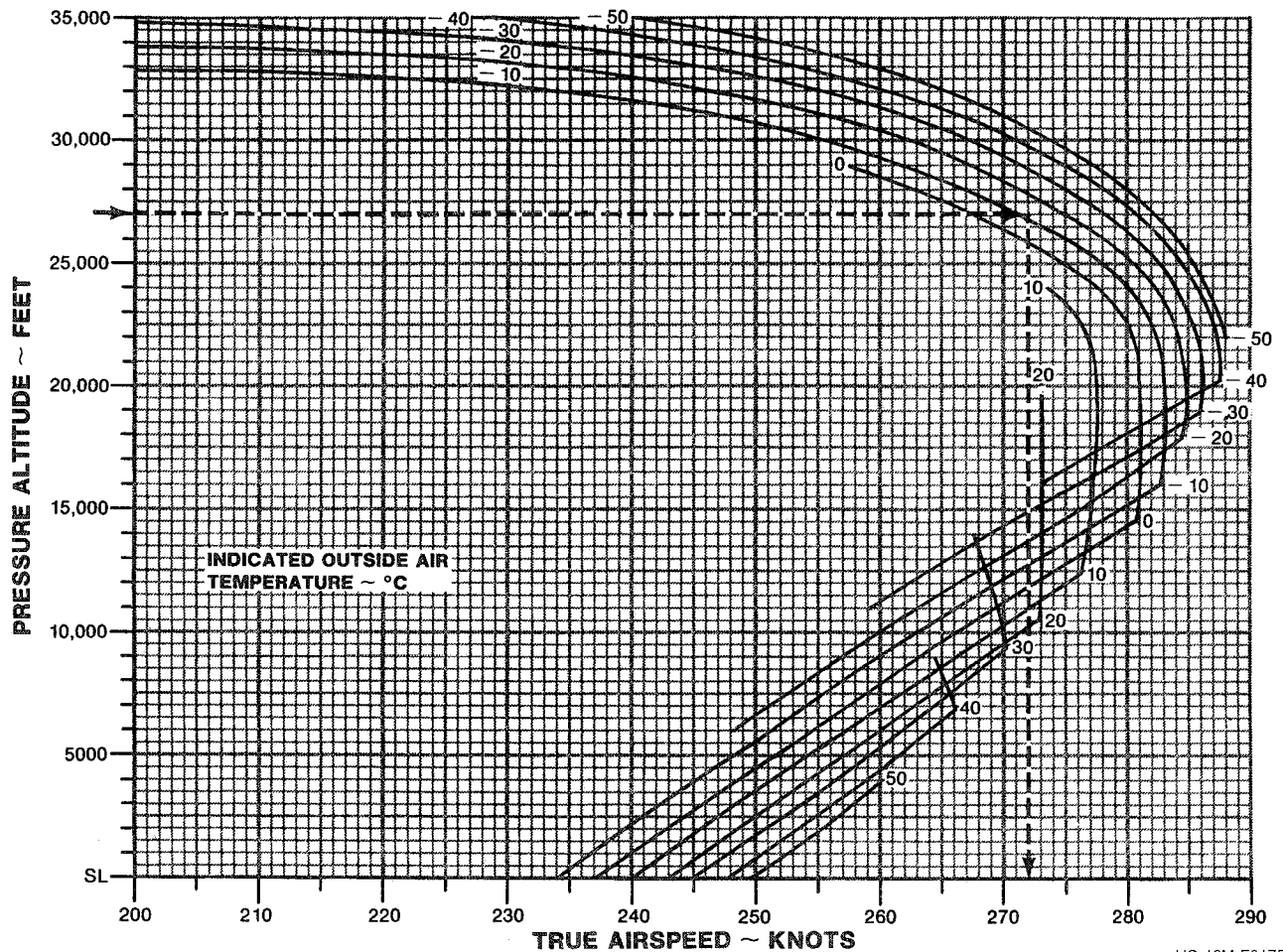


Figure 42-10. Maximum Cruise Power True Airspeed — 1,800 rpm

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS UP (0%)
 GEAR UP
 PROPELLER SPEED 1700 RPM
 TGT NOT TO EXCEED... 770 °C
 TORQUE NOTED

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

MAXIMUM RANGE POWER
ISA -30 °C
SEE NOTES BELOW

PRESSURE ALTITUDE	IOAT		13,000 Pounds				12,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR	KNOTS	%	LBS/HR	LBS/HR	KNOTS
SL	-11	12	77	402	804	206	74	394	788	204
2000	-15	5	71	373	746	203	67	363	726	200
4000	-19	-2	65	344	688	200	62	335	670	197
6000	-23	-9	61	320	640	198	58	310	620	195
8000	-27	-17	59	299	598	197	55	288	576	194
10,000	-31	-24	57	280	560	197	53	269	538	194
12,000	-35	-31	56	265	530	199	51	253	506	195
14,000	-39	-38	54	252	504	200	50	240	480	195
16,000	-43	-45	53	241	482	201	48	228	456	196
18,000	-47	-53	52	231	462	202	47	216	432	197
20,000	-51	-60	51	221	442	203	45	204	408	196
22,000	-55	-67	51	215	430	205	45	197	394	198
24,000	-59	-74	53	214	428	212	46	196	392	204
26,000	-62	-80	54	213	426	217	48	195	390	209
28,000	-66	-87	54	213	426	222	49	195	390	215
29,000	-68	-90	54	212	424	223	50	196	392	218
31,000	-72	-98	54	207	414	223	47	183	366	214
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

NOTES:

1. During operation with ice vanes extended, torque will decrease, in order to maintain maximum range configuration. Do not reset power to original setting. Fuel flow will remain about the same, but true airspeed will be reduced approximately 10 knots.

2. IOAT based on a weight of 12,000 lbs.

BT00046

UC-12M-F0176

Figure 42-11. Maximum Range Power (Sheet 1 of 16)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS UP (0%)
 GEAR UP
 PROPELLER SPEED 1700 RPM
 TGT NOT TO EXCEED... 770 °C
 TORQUE NOTED

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

MAXIMUM RANGE POWER
ISA -30 °C
SEE NOTES BELOW

PRESSURE ALTITUDE	IOAT		11,000 Pounds				10,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR	KNOTS	%	LBS/HR	LBS/HR	KNOTS
SL	-11	12	71	386	772	202	68	379	758	200
2000	-15	5	64	356	712	198	61	348	696	196
4000	-19	-2	59	326	652	195	56	317	634	192
6000	-23	-9	55	301	602	192	51	291	582	181
8000	-27	-17	51	278	556	191	47	267	534	187
10,000	-31	-24	49	257	514	190	44	245	490	186
12,000	-35	-31	47	241	482	191	43	229	458	186
14,000	-39	-38	45	227	454	190	40	213	426	185
16,000	-43	-45	44	214	428	191	39	201	402	185
18,000	-47	-53	42	202	404	191	37	188	376	185
20,000	-51	-60	40	188	376	189	34	171	342	181
22,000	-55	-67	39	179	358	190	33	159	318	179
24,000	-59	-74	41	178	356	196	34	160	320	186
26,000	-63	-81	42	177	354	201	36	160	320	193
28,000	-67	-89	43	177	354	207	37	159	318	199
29,000	-68	-90	44	177	354	209	38	159	318	201
31,000	-72	-98	42	164	328	207	38	151	302	204
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

NOTES:

1. During operation with ice vanes extended, torque will decrease, in order to maintain maximum range configuration. Do not reset power to original setting. Fuel flow will remain about the same, but true airspeed will be reduced approximately 10 knots.

2. IOAT based on a weight of 11,000 lbs.

BT00047

UC-12M-F0177

Figure 42-11. Maximum Range Power (Sheet 2 of 16)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS UP (0%)
 GEAR UP
 PROPELLER SPEED 1700 RPM
 TGT NOT TO EXCEED... 770 °C
 TORQUE NOTED

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

MAXIMUM RANGE POWER
ISA - 20 °C
SEE NOTES BELOW

PRESSURE ALTITUDE	IOAT		13,000 Pounds				12,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR	KNOTS	%	LBS/HR	LBS/HR	KNOTS
SL	-1	30	75	399	798	207	74	395	790	206
2000	-5	23	73	379	758	208	72	375	750	208
4000	-9	16	70	357	714	208	66	347	694	205
6000	-13	9	66	333	666	206	62	322	644	203
8000	-17	1	63	311	622	206	59	300	600	202
10,000	-21	-6	59	289	578	204	55	278	556	200
12,000	-25	-13	59	275	550	206	54	263	526	202
14,000	-29	-20	57	263	526	208	53	249	498	203
16,000	-33	-27	56	251	502	209	51	237	474	204
18,000	-37	-35	56	242	484	211	50	227	454	205
20,000	-41	-42	55	233	466	213	49	216	432	205
22,000	-45	-49	54	226	452	215	48	209	418	207
24,000	-48	-54	55	223	446	220	49	205	410	212
26,000	-52	-62	55	219	438	223	50	203	406	217
28,000	-56	-69	55	215	430	224	51	202	404	222
29,000	-58	-72	56	219	438	230	50	199	398	222
31,000	-62	-80	60	228	456	242	52	202	404	228
33,000	-65	-85	—	—	—	—	55	210	420	240
35,000	—	—	—	—	—	—	—	—	—	—

NOTES:

1. During operation with ice vanes extended, torque will decrease. In order to maintain maximum range configuration, do not reset power to original setting. Fuel flow will remain about the same, but true airspeed will be reduced approximately 10 knots.

2. IOAT based on a weight of 12,000 lbs.

BT00048

UC-12M-F0178

Figure 42-11. Maximum Range Power (Sheet 3 of 16)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 PROPELLER SPEED 1700 RPM
 TORQUE NOTED
 TGT NOT TO EXCEED .. 770°C
 FLAPS UP
 GEARS UP

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

MAXIMUM RANGE POWER
ISA -20°C
SEE NOTES BELOW

PRESSURE ALTITUDE	IOAT		11,000 Pounds				10,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	%	FT-LBS	LBS/HR	KNOTS	%	LBS/HR	LBS/HR	KNOTS
SL	-1	30	73	392	784	207	70	385	770	205
2000	-5	23	69	367	734	206	65	359	718	203
4000	-9	16	63	338	676	202	60	329	658	199
6000	-13	9	59	313	626	200	55	304	608	197
8000	-17	1	55	290	580	199	52	281	462	196
10,000	-21	6	51	267	534	196	48	257	414	193
12,000	-25	-13	50	251	502	197	46	240	480	193
14,000	-29	-20	48	237	474	198	44	225	450	193
16,000	-33	-27	47	224	448	198	42	211	422	193
18,000	-37	-35	45	213	426	200	41	200	400	194
20,000	-41	-42	44	201	402	199	39	187	374	193
22,000	-45	-49	43	192	384	200	38	176	352	193
24,000	-49	-59	43	188	376	204	38	171	342	196
26,000	-52	-62	44	185	370	209	38	168	336	200
28,000	-56	-69	45	185	370	215	40	167	334	206
29,000	-58	-72	46	185	370	218	40	167	334	200
31,000	-62	-80	46	183	366	222	41	167	334	215
33,000	-66	-87	47	185	370	227	42	167	334	220
35,000	-69	-92	49	191	382	237	42	167	334	225

NOTES:

1. During operation with ice vanes extended, torque will decrease, in order to maintain maximum range configuration. Do not reset power to original setting. Fuel flow will remain about the same, but true airspeed will be reduced approximately 10 knots.
 2. IOAT based on a weight of 11,000 lbs.
- BT00049

UC-12M-F0179

Figure 42-11. Maximum Range Power (Sheet 4 of 16)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS UP (0%)
 GEAR UP
 PROPELLER SPEED 1700 RPM
 TGT NOT TO EXCEED... 770 °C
 TORQUE NOTED

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

MAXIMUM RANGE POWER
ISA -10 °C
SEE NOTES BELOW

PRESSURE ALTITUDE	IOAT		13,000 Pounds				12,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR	KNOTS	%	LBS/HR	LBS/HR	KNOTS
SL	9	48	71	390	780	204	69	385	770	203
2000	5	41	68	369	738	205	67	366	732	205
4000	1	34	68	354	708	208	67	350	700	208
6000	-3	27	66	336	672	210	64	329	658	209
8000	-7	19	64	317	634	210	62	309	618	209
10,000	-11	12	62	297	594	211	58	287	574	208
12,000	-15	5	60	282	564	212	57	272	544	209
14,000	-19	-2	60	271	542	214	55	258	516	210
16,000	-23	-9	59	259	518	216	54	247	494	212
18,000	-26	-15	58	249	498	218	54	237	474	214
20,000	-30	-22	57	241	482	220	52	227	454	215
22,000	-34	-29	57	234	468	222	51	219	438	216
24,000	-38	-36	56	226	452	223	52	214	428	220
26,000	-42	-44	56	222	444	226	51	208	416	222
28,000	-46	-51	57	224	448	233	51	203	406	224
29,000	-48	-54	58	227	454	237	52	205	410	228
31,000	-51	-60	60	230	460	243	54	210	420	237
33,000	-55	-67	—	—	—	—	55	214	428	244
35,000	—	—	—	—	—	—	—	—	—	—

NOTES:
 1. During operation with ice vanes extended, torque will decrease. In order to maintain maximum range configuration, do not reset power to original setting. Fuel flow will remain about the same, but true airspeed will be reduced approximately 10 knots.
 2. IOAT based on a weight of 12,000 lbs.
 BT00050

UC-12M-F0180

Figure 42-11. Maximum Range Power (Sheet 5 of 16)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS UP (0%)
 GEAR UP
 PROPELLER SPEED 1700 RPM
 TGT NOT TO EXCEED... 770 °C
 TORQUE NOTED

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**MAXIMUM RANGE POWER
 ISA -10 °C
 SEE NOTES BELOW**

PRESSURE ALTITUDE	IOAT		11,000 Pounds				10,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR	KNOTS	%	LBS/HR	LBS/HR	KNOTS
SL	9	48	68	382	764	204	67	379	758	204
2000	5	41	67	364	728	206	65	359	718	205
4000	1	34	65	345	690	208	62	338	676	206
6000	-3	27	62	322	644	207	58	313	626	204
8000	-7	19	58	299	598	206	54	289	578	202
10,000	-11	12	54	276	552	204	50	265	530	200
12,000	-15	5	52	260	520	204	48	249	498	200
14,000	-19	-2	51	245	490	205	46	233	466	200
16,000	-23	-9	49	233	466	206	45	220	440	200
18,000	-27	-17	48	221	442	207	43	203	416	201
20,000	-31	-24	47	211	422	208	42	197	394	201
22,000	-35	-31	46	202	404	209	40	187	374	201
24,000	-38	-36	46	197	394	213	41	181	362	205
26,000	-42	-44	47	194	388	217	41	177	354	209
28,000	-46	-51	47	191	382	221	42	174	348	214
29,000	-48	-54	47	188	376	222	42	174	348	217
31,000	-52	-62	47	187	374	226	42	172	344	221
33,000	-55	-67	49	192	384	235	42	168	336	222
35,000	-59	-74	51	197	394	243	44	173	346	232

NOTES:

1. During operation with ice vanes extended, torque will decrease, in order to maintain maximum range configuration. Do not reset power to original setting. Fuel flow will remain about the same, but true airspeed will be reduced approximately 10 knots.

2. IOAT based on a weight of 11,000 lbs.

BT00051

UC-12M-F0181

Figure 42-11. Maximum Range Power (Sheet 6 of 16)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS UP (0%)
 GEAR UP
 PROPELLER SPEED 1700 RPM
 TGT NOT TO EXCEED... 770 °C
 TORQUE NOTED

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**MAXIMUM RANGE POWER
 ISA
 SEE NOTES BELOW**

PRESSURE ALTITUDE	IOAT		13,000 Pounds				12,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER PER	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER PER	FUEL FLOW TOTAL	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR	KNOTS	%	LBS/HR	LBS/HR	KNOTS
SL	19	66	74	401	802	209	69	389	778	205
2000	15	59	68	371	742	206	64	361	722	203
4000	11	52	64	347	694	205	62	341	682	204
6000	7	45	63	330	660	208	61	324	648	207
8000	3	37	61	311	622	208	60	306	612	208
10,000	-1	30	60	293	586	210	58	288	576	210
12,000	-5	23	59	280	560	212	57	273	546	212
14,000	-9	16	58	268	536	214	56	261	522	214
16,000	-12	10	58	258	516	216	55	250	500	216
18,000	-16	3	57	248	496	217	54	240	480	217
20,000	-20	-4	56	239	478	219	54	232	464	220
22,000	-24	-11	56	233	466	222	53	224	448	221
24,000	-28	-18	57	230	460	227	52	215	430	222
26,000	-32	-26	58	231	462	233	52	210	420	224
28,000	-35	-31	59	232	464	239	53	212	424	232
29,000	-37	-35	60	234	468	243	53	211	422	237
31,000	-41	-42	61	236	472	248	55	216	432	243
33,000	-45	-49	—	—	—	—	53	218	436	247
35,000	—	—	—	—	—	—	—	—	—	—

NOTES:

1. During operation with ice vanes extended, torque will decrease. In order to maintain maximum range configuration, do not reset power to original setting. Fuel flow will remain about the same, but true airspeed will be reduced approximately 10 knots.

2. IOAT based on a weight of 12,000 lbs.

BT00052

UC-12M-F0182

Figure 42-11. Maximum Range Power (Sheet 7 of 16)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS UP (0%)
 GEAR UP
 PROPELLER SPEED 1700 RPM
 TGT NOT TO EXCEED... 770 °C
 TORQUE NOTED

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

MAXIMUM RANGE POWER
ISA
SEE NOTES BELOW

PRESSURE ALTITUDE	IOAT		11,000 Pounds				10,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR	KNOTS	%	LBS/HR	LBS/HR	KNOTS
SL	19	66	65	379	758	203	63	373	746	202
2000	15	59	62	355	710	202	61	351	702	202
4000	11	52	61	338	676	205	60	334	668	205
6000	7	45	60	320	640	207	58	314	628	206
8000	3	37	58	301	602	208	56	296	592	208
10,000	-1	30	56	282	564	209	53	274	548	207
12,000	-5	23	55	266	532	211	51	257	514	208
14,000	-9	16	53	252	504	212	49	241	482	207
16,000	-12	20	52	241	482	214	47	226	452	207
18,000	-16	3	51	229	458	215	45	215	430	208
20,000	-20	-4	50	220	440	217	44	205	410	209
22,000	-24	-11	49	210	420	218	43	196	392	210
24,000	-28	-18	48	204	408	220	43	189	378	213
26,000	-32	-26	47	197	394	221	43	184	368	218
28,000	-36	-33	47	193	386	223	43	180	360	221
29,000	-38	-36	48	192	384	227	43	177	354	221
31,000	-41	-42	49	193	386	233	43	173	346	223
33,000	-45	-49	51	199	398	242	44	176	352	231
35,000	-49	-56	51	199	398	246	46	180	360	240

NOTES:

1. During operation with ice vanes extended, torque will decrease, in order to maintain maximum range configuration. Do not reset power to original setting. Fuel flow will remain about the same, but true airspeed will be reduced approximately 10 knots.

2. IOAT based on a weight of 11,000 lbs.

BT00053

UC-12M-F0183

Figure 42-11. Maximum Range Power (Sheet 8 of 16)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS UP (0%)
 GEAR UP
 PROPELLER SPEED 1700 RPM
 TGT NOT TO EXCEED... 770 °C
 TORQUE NOTED

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**MAXIMUM RANGE POWER
 ISA +10 °C**

PRESSURE ALTITUDE	IOAT		13,000 Pounds				12,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR	KNOTS	%	LBS/HR	LBS/HR	KNOTS
SL	29	84	75	408	816	214	73	402	804	213
2000	25	77	73	387	774	215	69	376	752	212
4000	21	70	69	362	724	214	64	349	698	209
6000	17	63	65	338	676	212	60	324	648	208
8000	13	55	63	317	634	213	58	304	608	208
10,000	9	48	61	297	594	213	56	285	570	209
12,000	5	41	60	284	568	216	55	270	540	210
14,000	1	34	60	274	548	219	55	259	518	213
16,000	-2	28	60	264	528	222	54	248	496	216
18,000	-6	21	59	254	508	224	54	239	478	218
20,000	-10	14	58	244	488	224	53	230	460	220
22,000	-14	7	58	240	480	227	52	223	446	221
24,000	-18	0	58	237	474	233	52	218	436	225
26,000	-22	-8	60	238	476	241	54	217	434	232
28,000	-25	-13	60	235	470	243	55	217	434	237
29,000	-27	-17	60	236	472	245	56	219	438	242
31,000	-31	-24	—	—	—	—	56	218	436	245
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

NOTES.
 1. During operation with ice vanes extended, torque will decrease. In order to maintain maximum range configuration, do not reset power to original setting. Fuel flow will remain about the same, but true airspeed will be reduced approximately 10 knots.
 2. IOAT based on a weight of 12,000 lbs.
 BT00054

UC-12M-F0184

Figure 42-11. Maximum Range Power (Sheet 9 of 16)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS UP (0%)
 GEAR UP
 PROPELLER SPEED 1700 RPM
 TGT NOT TO EXCEED... 770 °C
 TORQUE NOTED

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

MAXIMUM RANGE POWER
ISA +10 °C
SEE NOTES BELOW

PRESSURE ALTITUDE	IOAT		11,000 Pounds				10,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR	KNOTS	%	LBS/HR	LBS/HR	KNOTS
SL	29	84	70	392	784	210	66	383	766	207
2000	25	77	65	365	730	208	61	354	708	204
4000	21	70	60	336	672	205	57	329	658	203
6000	17	63	57	315	630	205	55	310	620	205
8000	13	55	55	295	590	206	53	290	580	205
10,000	9	48	54	278	556	207	52	273	546	207
12,000	5	41	53	263	526	209	51	258	516	209
14,000	1	34	52	251	502	212	50	245	490	211
16,000	-2	28	51	240	480	214	49	232	464	213
18,000	-6	21	51	230	460	217	47	221	442	214
20,000	-10	14	50	222	444	220	46	210	420	216
22,000	-14	7	49	213	426	221	46	203	406	218
24,000	-18	0	47	203	406	220	45	195	390	220
26,000	-22	-8	47	198	396	223	43	185	370	220
28,000	-26	-15	49	199	398	230	43	179	358	221
29,000	-27	-17	49	197	394	232	43	178	356	223
31,000	-31	-24	51	200	400	240	44	180	360	231
33,000	-35	-31	51	200	400	244	45	180	360	236
35,000	-39	-38	—	—	—	—	1024	46	364	242

NOTES:
 1. During operation with ice vanes extended, torque will decrease, in order to maintain maximum range configuration. Do not reset power to original setting. Fuel flow will remain about the same, but true airspeed will be reduced approximately 10 knots.
 2. IOAT based on a weight of 11,000 lbs.
 BT00055

UC-12M-F0185

Figure 42-11. Maximum Range Power (Sheet 10 of 16)

MODEL: UC-12M
 DATE: JULY 29, 1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS UP (0%)
 GEAR UP
 PROPELLER SPEED 1700 RPM
 TGT NOT TO EXCEED... 770 °C
 TORQUE NOTED

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

MAXIMUM RANGE POWER
ISA +20 °C
SEE NOTES BELOW

PRESSURE ALTITUDE	IOAT		13,000 Pounds				12,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR	KNOTS	%	LBS/HR	LBS/HR	KNOTS
SL	39	102	73	404	808	213	70	397	794	211
2000	35	95	71	384	768	214	69	377	754	213
4000	31	88	70	366	732	217	67	357	714	215
6000	28	82	68	347	694	218	65	338	676	217
8000	24	75	65	326	652	219	62	316	632	216
10,000	20	68	63	306	612	219	59	294	588	215
12,000	16	61	62	292	584	221	59	282	564	219
14,000	12	54	61	279	558	223	58	268	536	221
16,000	8	46	60	267	534	225	57	257	514	222
18,000	4	39	60	258	516	227	56	247	494	225
20,000	0	32	59	250	500	230	55	237	474	226
22,000	-4	25	59	243	486	232	54	229	458	228
24,000	-7	19	60	243	486	239	54	224	448	231
26,000	-11	12	61	242	484	245	55	223	446	238
28,000	-15	5	61	240	480	246	56	224	448	244
29,000	-17	1	—	—	—	—	55	220	440	243
31,000	-21	-6	—	—	—	—	57	224	448	249
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

NOTES:
 1. During operation with ice vanes extended, torque will decrease. In order to maintain maximum range configuration, do not reset power to original setting. Fuel flow will remain about the same, but true airspeed will be reduced approximately 10 knots.
 2. IOAT based on a weight of 12,000 lbs.
 BT00056

UC-12M-F0186

Figure 42-11. Maximum Range Power (Sheet 11 of 16)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIC: FLIGHT TEST
 CONFIGURATION:
 PROPELLER SPEED 1700 RPM
 TORQUE NOTED
 TGT NOT TO EXCEED 770°C
 GEARS UP
 FLAPS UP

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 BLS/GAL

MAXIMUM RANGE POWER
ISA +20°C
SEE NOTES BELOW

PRESSURE ALTITUDE	IOAT		11,000 Pounds				10,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR	KNOTS	%	LBS/HR	LBS/HR	KNOTS
SL	39	102	68	390	780	210	65	383	766	209
2000	35	95	66	369	738	211	63	362	724	210
4000	31	88	63	348	696	212	60	338	676	209
6000	27	81	61	327	654	213	56	314	628	208
8000	23	73	57	303	606	211	53	291	582	207
10,000	19	66	54	279	558	209	50	268	536	205
12,000	15	59	53	266	532	212	49	255	510	208
14,000	11	52	52	252	504	213	48	241	482	209
16,000	8	46	51	241	482	216	47	230	460	212
18,000	4	39	51	232	464	219	47	221	442	215
20,000	0	32	50	222	444	220	47	213	426	219
22,000	-4	25	48	212	424	221	46	204	408	221
24,000	-8	18	48	206	412	224	44	193	386	220
26,000	-12	10	49	204	408	230	43	185	370	221
28,000	-15	5	50	203	406	236	44	185	370	227
29,000	-17	1	51	205	410	240	45	184	368	230
31,000	-21	-6	51	203	406	243	46	185	370	236
33,000	-25	-13	—	—	—	—	46	186	372	242
35,000	—	—	—	—	—	—	—	—	—	—

NOTES:
 1. During operation with ice vanes extended, torque will decrease, in order to maintain maximum range configuration. Do not reset power to original setting. Fuel flow will remain about the same, but true airspeed will be reduced approximately 10 knots.
 2. IOAT based on a weight of 11,000 lbs.
 BT00057

UC-12M-F0187

Figure 42-11. Maximum Range Power (Sheet 12 of 16)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS UP (0%)
 GEAR UP
 PROPELLER SPEED 1700 RPM
 TGT NOT TO EXCEED... 770 °C
 TORQUE NOTED

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

MAXIMUM RANGE POWER
ISA +30 °C
SEE NOTES BELOW

PRESSURE ALTITUDE	IOAT		13,000 Pounds				12,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR	KNOTS	%	LBS/HR	LBS/HR	KNOTS
SL	49	120	74	411	822	217	70	399	798	213
2000	45	113	70	384	768	216	67	374	748	213
4000	41	106	68	363	726	216	65	355	710	214
6000	37	99	66	344	688	217	64	337	674	216
8000	34	93	64	326	652	219	62	317	634	217
10,000	30	86	62	306	612	219	60	298	596	218
12,000	26	79	61	291	582	221	58	281	562	219
14,000	22	72	60	279	558	223	57	269	538	221
16,000	18	64	60	268	536	226	56	257	514	223
18,000	14	57	59	259	518	228	56	248	496	226
20,000	10	50	60	253	506	233	55	240	480	229
22,000	7	45	60	250	500	238	55	232	464	231
24,000	3	37	62	248	496	244	55	226	452	235
26,000	-1	30	61	242	484	245	57	228	456	244
28,000	-5	23	—	—	—	—	56	223	446	244
29,000	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

NOTES:

1. During operation with ice vanes extended, torque will decrease. In order to maintain maximum range configuration, do not reset power to original setting. Fuel flow will remain about the same, but true airspeed will be reduced approximately 10 knots.

2. IOAT based on a weight of 12,000 lbs.

BT00058

UC-12M-F0188

Figure 42-11. Maximum Range Power (Sheet 13 of 16)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS UP (0%)
 GEAR UP
 PROPELLER SPEED 1700 RPM
 TGT NOT TO EXCEED... 770 °C
 TORQUE NOTED

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

MAXIMUM RANGE POWER
ISA +30 °C
SEE NOTES BELOW

PRESSURE ALTITUDE	IOAT		11,000 Pounds				10,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR	KNOTS	%	LBS/HR	LBS/HR	KNOTS
SL	49	120	67	390	780	211	64	381	762	209
2000	45	113	64	366	732	211	61	359	718	209
4000	41	106	62	348	696	213	60	340	680	211
6000	37	99	61	328	656	214	58	321	642	213
8000	33	91	59	309	618	216	55	300	600	213
10,000	30	86	57	291	582	217	53	280	560	214
12,000	26	79	55	274	548	218	51	262	524	214
14,000	22	72	54	261	522	220	50	249	498	216
16,000	18	64	53	249	498	222	48	235	470	217
18,000	14	57	52	238	476	225	48	224	448	219
20,000	10	50	52	228	456	226	46	213	426	219
22,000	6	43	51	220	440	229	45	204	408	221
24,000	2	36	50	212	424	230	45	198	396	225
26,000	-1	30	50	205	410	232	45	192	384	229
28,000	-5	23	52	209	418	243	45	187	374	231
29,000	-7	19	52	207	414	244	46	187	374	235
31,000	-11	12	51	205	410	246	47	189	378	243
33,000	-15	5	—	—	—	—	46	186	372	244
35,000	—	—	—	—	—	—	—	—	—	—

NOTES:
 1. During operation with ice vanes extended, torque will decrease, in order to maintain maximum range configuration. Do not reset power to original setting. Fuel flow will remain about the same, but true airspeed will be reduced approximately 10 knots.
 2. IOAT based on a weight of 11,000 lbs.
 BT00059

UC-12M-F0189

Figure 42-11. Maximum Range Power (Sheet 14 of 16)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS UP (0%)
 GEAR UP
 PROPELLER SPEED 1700 RPM
 TGT NOT TO EXCEED... 770 °C
 TORQUE NOTED

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

MAXIMUM RANGE POWER
ISA +37 °C
SEE NOTES BELOW

PRESSURE ALTITUDE	IOAT		13,000 Pounds				12,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR	KNOTS	%	LBS/HR	LBS/HR	KNOTS
SL	56	133	77	419	838	221	73	408	816	218
2000	52	126	73	394	788	221	68	381	762	217
4000	48	118	70	370	740	220	65	357	714	216
6000	44	111	66	347	694	219	63	335	670	216
8000	41	106	65	328	656	221	61	317	634	218
10,000	37	99	63	310	620	222	59	298	596	218
12,000	33	91	63	296	592	225	58	282	564	220
14,000	29	84	62	285	570	227	57	270	540	222
16,000	25	77	62	275	550	230	56	258	516	224
18,000	21	70	62	267	537	234	55	249	498	227
20,000	17	63	62	262	524	239	55	241	482	230
22,000	13	55	62	256	512	243	55	235	470	234
24,000	10	50	61	249	498	244	57	234	468	242
26,000	6	43	62	247	494	249	57	228	456	244
28,000	2	36	—	—	—	—	57	228	456	249
29,000	0	36	—	—	—	—	57	228	456	251
31,000	—	—	—	—	—	—	—	—	—	—
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

NOTES:

1. During operation with ice vanes extended, torque will decrease. In order to maintain maximum range configuration, do not reset power to original setting. Fuel flow will remain about the same, but true airspeed will be reduced approximately 10 knots.

2. IOAT based on a weight of 12,000 lbs.

BT00060

UC-12M-F0190

Figure 42-11. Maximum Range Power (Sheet 15 of 16)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS UP (0%)
 GEAR UP
 PROPELLER SPEED 1700 RPM
 TGT NOT TO EXCEED... 770 °C
 TORQUE NOTED

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

MAXIMUM RANGE POWER
ISA +37 °C
SEE NOTES BELOW

PRESSURE ALTITUDE	IOAT		11,000 Pounds				10,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR	KNOTS	%	LBS/HR	LBS/HR	KNOTS
SL	56	133	68	394	788	214	65	385	770	211
2000	52	126	64	369	738	213	61	359	718	210
4000	48	118	62	347	694	213	59	338	676	211
6000	44	111	60	327	654	214	57	319	638	212
8000	40	104	58	308	616	216	55	301	602	214
10,000	37	99	56	290	580	217	54	282	564	216
12,000	33	91	55	273	546	218	52	266	532	217
14,000	29	84	54	260	520	220	51	253	506	219
16,000	25	77	52	248	496	222	49	239	478	220
18,000	21	70	52	238	476	225	49	229	458	223
20,000	17	63	51	230	460	227	48	218	436	224
22,000	13	55	51	222	444	230	47	209	418	226
24,000	9	48	50	214	428	232	46	201	402	229
26,000	6	43	52	212	424	239	46	194	388	231
28,000	2	36	52	209	418	243	46	190	380	235
29,000	0	32	52	207	414	244	47	192	384	240
31,000	-4	25	52	209	418	249	47	188	376	243
33,000	-8	18	—	—	—	—	47	190	380	248
35,000	—	—	—	—	—	—	—	—	—	—

NOTES:
 1. During operation with ice vanes extended, torque will decrease, in order to maintain maximum range configuration. Do not reset power to original setting. Fuel flow will remain about the same, but true airspeed will be reduced approximately 10 knots.
 2. IOAT based on a weight of 11,000 lbs.
 BT00061

UC-12M-F0191

Figure 42-11. Maximum Range Power (Sheet 16 of 16)

MODEL: UC-12M
 DATE: 29 JULY 1986
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

PROPELLER SPEED: 1700 RPM
 TORQUE: AS NOTED
 FLAPS: UP
 GEAR: UP
 ICE VANES: RETRACTED

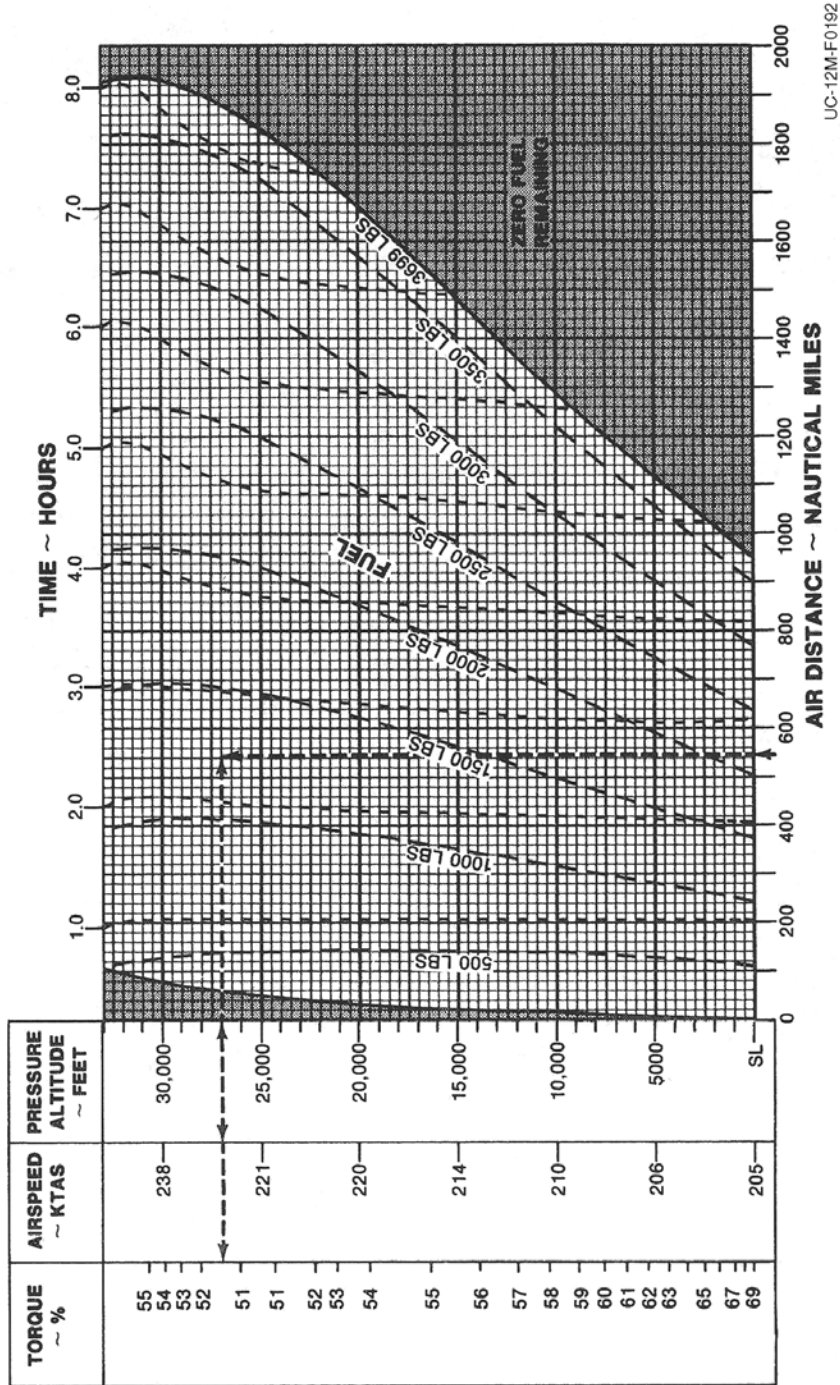
ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

PRESSURE ALTITUDE: 27,000 FT
 AIR DISTANCE: 545 NM
 AIRSPEED: 228 KTAS
 TORQUE: 52%
 FUEL: 1250 LBS
 TIME: 2.45 HRS

NOTES

1. FOR OPERATION WITH ICE VANES EXTENDED, RANGE IS REDUCED BY APPROXIMATELY 15%.
2. 90 LBS FUEL ALLOWANCE FOR ENGINE START, TAXI, AND TAKEOFF INCLUDED.
3. NO ALLOWANCE OR RESERVE FOR LOITER, DESCENT OR LANDING.
4. WEIGHT: 13,500 LBS TAKEOFF, 12,000 LBS CRUISE (2500 LBS FUEL REQUIRED DUE TO 11,000 LBS MAX ZERO FUEL WEIGHT).



UC-12M-F0192

Figure 42-12. Mission Profile — Maximum Range, Standard Day, Zero Wind

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIC: FLIGHT TEST
 CONFIGURATION:
 PROPELLER 1700 RPM
 TORQUE NOTED
 TGT NOT TO EXCEED.... 770 °C
 FLAPS UP
 GEARS UP

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**SINGLE ENGINE
 MAXIMUM RANGE POWER
 ISA -30 °C
 SEE NOTE BELOW**

PRESSURE ALTITUDE	IOAT		13,000 Pounds				12,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR	KNOTS	%	LBS/HR	LBS/HR	KNOTS
SL	-13	9	94	459	459	165	86	435	435	161
2000	-16	9	94	447	447	167	86	423	423	163
4000	-20	4	94	434	434	170	85	407	407	165
6000	-24	-11	94	419	419	171	85	393	393	167
8000	-28	-18	93	406	406	173	83	376	376	167
10,000	-32	-26	92	391	391	174	83	362	362	169
12,000	-36	-33	92	379	379	175	84	356	356	172
14,000	-40	-40	92	374	374	176	85	349	349	174
16,000	-44	-47	95	378	378	181	85	343	343	176
18,000	-48	-54	96	377	377	182	86	341	341	178
20,000	-52	-62	—	—	—	—	89	349	349	183
22,000	-55	-67	—	—	—	—	91	354	354	185
24,000	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

NOTES:
 1. During operation with ice vane extended, maintain same power as with ice vane retracted. Fuel flow will increase approximately 15%.
 2. IOAT based on a weight of 12,000 lbs.
 BT00030

UC-12M-F0193

Figure 42-13. Single-Engine Maximum Range Power (Sheet 1 of 16)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIC: FLIGHT TEST
 CONFIGURATION:
 PROPELLER 1700 RPM
 TORQUE NOTED
 TGT NOT TO EXCEED.... 770 °C
 FLAPS UP
 GEARS UP

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**SINGLE ENGINE
 MAXIMUM RANGE POWER
 ISA -30 °C
 SEE NOTE BELOW**

PRESSURE ALTITUDE	IOAT		11,000 Pounds				10,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR	KNOTS	%	LBS/HR	LBS/HR	KNOTS
SL	-13	9	82	425	425	161	80	418	418	161
2000	-11	1	82	411	411	163	79	402	402	163
4000	-20	-4	81	394	394	164	80	383	383	164
6000	-24	-11	80	378	378	166	75	364	364	164
8000	-28	-18	78	359	359	166	73	345	345	165
10,000	-32	-26	77	343	343	167	72	329	329	167
12,000	-36	-33	76	338	338	167	71	314	314	167
14,000	-40	-40	75	313	313	169	70	302	302	168
16,000	-44	-47	75	312	312	170	69	293	293	170
18,000	-48	-54	78	313	313	175	68	283	283	170
20,000	-52	-62	78	311	311	177	69	280	280	172
22,000	-56	-69	81	317	317	181	69	278	278	174
24,000	-59	-74	82	320	320	184	72	284	284	179
26,000	-63	-81	—	—	—	—	74	287	287	188
28,000	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

NOTES:
 1. During operation with ice vane extended, maintain same power as with ice vane retracted. Fuel flow will increase approximately 15%.
 2. IOAT based on a weight of 11,000 lbs.
 BT00031

UC-12M-F0194

Figure 42-13. Single-Engine Maximum Range Power (Sheet 2 of 16)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIC: FLIGHT TEST
 CONFIGURATION:
 PROPELLER 1700 RPM
 TORQUE NOTED
 TGT NOT TO EXCEED.... 770 °C
 FLAPS UP
 GEARS UP

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**SINGLE ENGINE
 MAXIMUM RANGE POWER
 ISA -20 °C
 SEE NOTE BELOW**

PRESSURE ALTITUDE	IOAT		13,000 Pounds				12,00 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR	KNOTS	%	LBS/HR	LBS/HR	KNOTS
SL	-2	28	98	473	473	170	91	452	452	167
2000	-6	21	96	456	456	171	89	432	432	167
4000	-10	14	96	439	439	172	88	417	417	169
6000	-14	7	94	423	423	173	88	404	404	172
8000	-18	0	92	404	404	173	88	390	390	173
10,000	-22	-8	91	388	388	173	86	373	373	174
12,000	-36	-15	92	383	383	176	85	360	360	174
14,000	-30	-22	96	388	388	182	85	351	351	175
16,000	-34	-29	96	382	382	182	88	354	354	180
18,000	-38	-36	—	—	—	—	89	353	353	182
20,000	-41	-42	—	—	—	—	90	356	356	184
22,000	—	—	—	—	—	—	—	—	—	—
24,000	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

NOTE:
 1. During operation with ice vane extended, maintain same power as with ice vane retracted. Fuel flow will increase approximately 15%.
 2. IOAT based on a weight of 12,000 lbs.
 BT00032

UC-12M-F0195

Figure 42-13. Single-Engine Maximum Range Power (Sheet 3 of 16)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIC: FLIGHT TEST
 CONFIGURATION:
 PROPELLER 1700 RPM
 TORQUE NOTED
 TGT NOT TO EXCEED.... 770 °C
 FLAPS UP
 GEARS UP

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**SINGLE ENGINE
 MAXIMUM RANGE POWER
 ISA -20 °C
 SEE NOTE BELOW**

PRESSURE ALTITUDE	IOAT		11,000 Pounds				10,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR	KNOTS	%	LBS/HR	LBS/HR	KNOTS
SL	-3	27	82	428	428	162	76	411	411	160
2000	-7	19	79	404	404	162	75	393	393	161
4000	-10	14	79	390	390	164	74	376	376	163
6000	-14	7	79	377	377	167	74	361	361	165
8000	-18	0	78	362	362	168	72	342	342	165
10,000	-22	8	79	350	350	171	71	327	327	166
12,000	-26	-15	79	340	340	173	70	314	314	168
14,000	-30	-22	79	331	331	174	69	301	301	168
16,000	-34	-29	78	323	323	175	69	296	296	171
18,000	-38	-36	79	319	319	178	69	288	288	172
20,000	-42	-44	81	321	321	181	71	288	288	176
22,000	-45	-49	81	321	321	183	72	287	287	178
24,000	-49	-56	—	—	—	—	74	290	290	182
26,000	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

NOTES:

1. During operation with ice vane extended, maintain same power as with ice vane retracted. Fuel flow will increase approximately 15%.
 2. IOAT based on a weight of 11,000 lbs.
- BT00033

UC-12M-F0196

Figure 42-13. Single-Engine Maximum Range Power (Sheet 4 of 16)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIC: FLIGHT TEST
 CONFIGURATION:
 PROPELLER 1700 RPM
 TORQUE NOTED
 TGT NOT TO EXCEED.... 770 °C
 FLAPS UP
 GEARS UP

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**SINGLE ENGINE
 MAXIMUM RANGE POWER
 ISA -10 °C
 SEE NOTE BELOW**

PRESSURE ALTITUDE	IOAT		13,000 Pounds				12,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR	KNOTS	%	LBS/HR	LBS/HR	KNOTS
SL	8	46	95	468	468	169	91	456	456	168
2000	4	39	94	452	452	170	90	438	438	170
4000	0	32	94	479	479	172	89	422	422	171
6000	-4	25	93	421	421	173	88	405	405	172
8000	-8	18	93	408	408	175	86	388	388	173
10,000	-12	10	95	401	401	178	85	370	370	173
12,000	-16	3	96	397	397	181	85	362	362	175
14,000	-20	-4	96	391	391	182	88	364	364	180
16,000	-24	-11	—	—	—	—	88	358	358	181
18,000	-28	-18	—	—	—	—	90	359	359	184
20,000	—	—	—	—	—	—	—	—	—	—
22,000	—	—	—	—	—	—	—	—	—	—
24,000	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

NOTES:
 1. During operation with ice vane extended, maintain same power as with ice vane retracted. Fuel flow will increase approximately 15%.
 2. IOAT based on a weight of 12,000 lbs.
 BT00034

UC-12M-F0197

Figure 42-13. Single-Engine Maximum Range Power (Sheet 5 of 16)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIC: FLIGHT TEST
 CONFIGURATION:
 PROPELLER 1700 RPM
 TORQUE NOTED
 TGT NOT TO EXCEED.... 770 °C
 FLAPS UP
 GEARS UP

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**SINGLE ENGINE
 MAXIMUM RANGE POWER
 ISA -10 °C
 SEE NOTE BELOW**

PRESSURE ALTITUDE	IOAT		11,000 Pounds				10,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR	KNOTS	%	LBS/HR	LBS/HR	KNOTS
SL	8	46	87	443	443	168	80	424	424	165
2000	4	39	84	421	421	168	75	396	396	163
4000	0	32	83	403	403	169	74	377	377	164
6000	-4	25	82	388	388	171	72	359	359	165
8000	-8	18	82	372	372	173	73	346	346	167
10,000	-12	10	80	355	355	173	73	333	333	170
12,000	-16	3	78	339	339	173	73	324	324	173
14,000	-20	-4	77	328	328	173	73	314	314	174
16,000	-24	-11	78	325	325	176	72	305	305	176
18,000	-28	-18	81	329	329	182	72	297	297	176
20,000	-32	-26	82	326	326	183	72	294	294	179
22,000	-35	-31	84	332	332	186	74	297	297	183
24,000	-39	-38	—	—	—	—	75	297	297	184
26,000	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

NOTES:

1. During operation with ice vane extended, maintain same power as with ice vane retracted. Fuel flow will increase approximately 15%.
 2. IOAT based on a weight of 11,000 lbs.
- BT00035

UC-12M-F0198

Figure 42-13. Single-Engine Maximum Range Power (Sheet 6 of 16)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIC: FLIGHT TEST
 CONFIGURATION:
 PROPELLER 1700 RPM
 TORQUE NOTED
 TGT NOT TO EXCEED.... 770 °C
 FLAPS UP
 GEARS UP

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**SINGLE ENGINE
 MAXIMUM RANGE POWER
 ISA
 SEE NOTE BELOW**

PRESSURE ALTITUDE	IOAT		13,000 Pounds				12,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR	KNOTS	%	LBS/HR	LBS/HR	KNOTS
SL	18	64	99	484	484	174	90	457	457	169
2000	14	57	98	465	465	174	88	436	436	169
4000	10	50	98	451	451	177	87	421	421	171
6000	6	43	98	439	439	179	87	406	406	173
8000	2	36	97	424	424	180	88	395	395	176
10,000	-2	28	96	407	407	180	89	384	384	179
12,000	-6	21	96	399	399	182	89	374	374	180
14,000	-10	14	—	—	—	—	88	365	365	181
16,000	-14	7	—	—	—	—	91	368	368	185
18,000	—	—	—	—	—	—	—	—	—	—
20,000	—	—	—	—	—	—	—	—	—	—
22,000	—	—	—	—	—	—	—	—	—	—
24,000	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

NOTES:

1. During operation with ice vane extended, maintain same power as with ice vane retracted. Fuel flow will increase approximately 15%.
 2. IOAT based on a weight of 12,000 lbs.
- BT00036

UC-12M-F0199

Figure 42-13. Single-Engine Maximum Range Power (Sheet 7 of 16)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS UP (0%)
 GEAR UP
 PROPELLER SPEED 1700 RPM
 TGT NOT TO EXCEED... 770 °C
 TORQUE NOTED

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**SINGLE ENGINE
 MAXIMUM RANGE POWER
 ISA
 SEE NOTES BELOW**

PRESSURE ALTITUDE	IOAT		11,000 Pounds				10,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR	KNOTS	%	LBS/HR	LBS/HR	KNOTS
SL	18	64	85	441	441	167	81	430	430	167
2000	14	57	82	420	420	168	79	408	408	168
4000	10	50	82	404	404	170	77	390	390	169-
6000	6	43	81	386	386	171	76	371	371	170
8000	2	36	80	371	371	172	75	356	356	172
10,000	-2	28	79	353	353	173	74	338	338	173
12,000	-6	21	79	342	342	175	73	323	323	173
14,000	-10	14	80	338	338	178	72	313	313	175
16,000	-14	7	81	336	336	181	71	303	303	175
18,000	-18	0	82	333	333	183	72	300	300	178
20,000	-22	-8	83	334	334	185	75	304	304	183
22,000	-25	-13	—	—	—	—	74	298	298	183
24,000	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

NOTES:
 1. During operation with ice vane extended, maintain same power as with ice vane retracted. Fuel flow will increase approximately 15%.
 2. IOAT based on a weight of 11,000 lbs.
 BT00037

UC-12M-F0200

Figure 42-13. Single-Engine Maximum Range Power (Sheet 8 of 16)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS UP (0%)
 GEAR UP
 PROPELLER SPEED 1700 RPM
 TGT NOT TO EXCEED... 770 °C
 TORQUE NOTED

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**SINGLE ENGINE
 MAXIMUM RANGE POWER
 ISA +10 °C
 SEE NOTES BELOW**

PRESSURE ALTITUDE	IOAT		13,000 Pounds				12,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR	KNOTS	%	LBS/HR	LBS/HR	KNOTS
SL	28	82	100	489	489	176	95	473	473	175
2000	24	75	99	470	470	176	93	452	452	175
4000	20	68	97	454	454	178	90	435	435	176
6000	16	61	99	439	439	179	90	421	421	179
8000	12	54	96	424	424	180	90	405	405	180
10,000	8	46	98	417	417	184	89	386	386	179
12,000	4	39	—	—	—	—	89	378	378	181
14,000	—	—	—	—	—	—	—	—	—	—
16,000	—	—	—	—	—	—	—	—	—	—
18,000	—	—	—	—	—	—	—	—	—	—
20,000	—	—	—	—	—	—	—	—	—	—
22,000	—	—	—	—	—	—	—	—	—	—
24,000	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

NOTES:
 1. During operation with ice vane extended, maintain same power as with ice vane retracted. Fuel flow will increase approximately 15%.
 2. IOAT based on a weight of 12,000 lbs.
 BT00038

UC-12M-F0201

Figure 42-13. Single-Engine Maximum Range Power (Sheet 9 of 16)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS UP (0%)
 GEAR UP
 PROPELLER SPEED 1700 RPM
 TGT NOT TO EXCEED... 770 °C
 TORQUE NOTED

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**SINGLE ENGINE
 MAXIMUM RANGE POWER
 ISA +10 °C
 SEE NOTES BELOW**

PRESSURE ALTITUDE	IOAT		11,000 Pounds				10,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR	KNOTS	%	LBS/HR	LBS/HR	KNOTS
SL	28	82	85	444	444	169	79	424	424	166
2000	24	75	83	425	425	170	76	405	405	167
4000	20	68	82	407	407	171	76	388	388	169
6000	16	61	81	390	390	172	74	369	369	169
8000	12	54	82	379	379	176	73	353	353	171
10,000	8	46	82	366	366	178	72	336	336	172
12,000	4	39	82	355	355	180	73	326	326	174
14,000	0	32	82	345	345	181	73	319	319	177
16,000	-4	25	82	338	338	182	75	315	315	181
18,000	-7	19	85	344	344	188	75	308	308	182
20,000	-11	12	—	—	—	—	75	305	305	184
22,000	-15	5	—	—	—	—	77	310	310	187
24,000	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

NOTES:

1. During operation with ice vane extended, maintain same power as with ice vane retracted. Fuel flow will increase approximately 15%.
 2. IOAT based on a weight of 11,000 lbs.
- BT00039

UC-12M-F0202

Figure 42-13. Single-Engine Maximum Range Power (Sheet 10 of 16)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS UP (0%)
 GEAR UP
 PROPELLER SPEED 1700 RPM
 TGT NOT TO EXCEED... 770 °C
 TORQUE NOTED

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**SINGLE ENGINE
 MAXIMUM RANGE POWER
 ISA +20 °C
 SEE NOTES BELOW**

PRESSURE ALTITUDE	IOAT		13,000 Pounds				12,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR	KNOTS	%	LBS/HR	LBS/HR	KNOTS
SL	38	100	97	483	483	174	92	469	469	174
2000	34	93	96	468	468	176	91	451	451	175
4000	30	86	96	452	452	177	90	434	434	176
6000	26	79	98	445	445	181	90	419	419	178
8000	22	72	—	—	—	—	89	405	405	179
10,000	18	64	—	—	—	—	91	396	396	183
12,000	—	—	—	—	—	—	—	—	—	—
14,000	—	—	—	—	—	—	—	—	—	—
16,000	—	—	—	—	—	—	—	—	—	—
18,000	—	—	—	—	—	—	—	—	—	—
20,000	—	—	—	—	—	—	—	—	—	—
22,000	—	—	—	—	—	—	—	—	—	—
24,000	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

NOTES:

1. During operation with ice vane extended, maintain same power as with ice vane retracted. Fuel flow will increase approximately 15%.
 2. IOAT based on a weight of 12,000 lbs.
- BT00040

UC-12M-F0203

Figure 42-13. Single-Engine Maximum Range Power (Sheet 11 of 16)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIC: FLIGHT TEST
 CONFIGURATION:
 PROPELLER 1700 RPM
 TORQUE NOTED
 TGT NOT TO EXCEED.... 770 °C
 FLAPS UP
 GEARS UP

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**SINGLE ENGINE
 MAXIMUM RANGE POWER
 ISA +20 °C
 SEE NOTE BELOW**

PRESSURE ALTITUDE	IOAT		11,000 Pounds				10,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR	KNOTS	%	LBS/HR	LBS/HR	KNOTS
SL	38	100	88	466	466	174	81	435	435	170
2000	34	93	87	437	437	175	79	414	414	171
4000	30	86	85	419	419	176	77	395	395	172-
6000	26	79	85	404	404	178	76	376	376	172
8000	22	72	83	385	385	178	76	362	362	175
10,000	18	64	82	368	368	179	75	347	347	176
12,000	14	57	81	355	355	179	76	338	338	180
14,000	10	59	82	349	349	182	75	327	327	181
16,000	7	45	86	353	353	188	74	315	315	181
18,000	2	36	—	—	—	—	73	310	310	183
20,000	—	—	—	—	—	—	—	—	—	—
22,000	—	—	—	—	—	—	—	—	—	—
24,000	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

NOTES:

1. During operation with ice vane extended, maintain same power as with ice vane retracted. Fuel flow will increase approximately 15%.
 2. IOAT based on a weight of 11,000 lbs.
- BT00041

UC-12M-F0204

Figure 42-13. Single-Engine Maximum Range Power (Sheet 12 of 16)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS UP (0%)
 GEAR UP
 PROPELLER SPEED 1700 RPM
 TGT NOT TO EXCEED... 770 °C
 TORQUE NOTED

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**SINGLE ENGINE
 MAXIMUM RANGE POWER
 ISA +30 °C
 SEE NOTES BELOW**

PRESSURE ALTITUDE	IOAT		13,000 Pounds				12,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR	KNOTS	%	LBS/HR	LBS/HR	KNOTS
SL	48	118	102	501	501	180	91	467	467	173
2000	44	111	102	487	487	182	91	453	453	175
4000	40	104	—	—	—	—	90	436	436	177
6000	36	97	—	—	—	—	90	424	424	179
8000	—	—	—	—	—	—	—	—	—	—
10,000	—	—	—	—	—	—	—	—	—	—
12,000	—	—	—	—	—	—	—	—	—	—
14,000	—	—	—	—	—	—	—	—	—	—
16,000	—	—	—	—	—	—	—	—	—	—
18,000	—	—	—	—	—	—	—	—	—	—
20,000	—	—	—	—	—	—	—	—	—	—
22,000	—	—	—	—	—	—	—	—	—	—
24,000	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

NOTES:
 1. During operation with ice vane extended, maintain same power as with ice vane retracted. Fuel flow will increase approximately 15%.
 2. IOAT based on a weight of 12,000 lbs.
 BT00042

UC-12M-F0205

Figure 42-13. Single-Engine Maximum Range Power (Sheet 13 of 16)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS UP (0%)
 GEAR UP
 PROPELLER SPEED 1700 RPM
 TGT NOT TO EXCEED... 770 °C
 TORQUE NOTED

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**SINGLE ENGINE
 MAXIMUM RANGE POWER
 ISA +30 °C
 SEE NOTES BELOW**

PRESSURE ALTITUDE	IOAT		11,000 Pounds				10,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR	KNOTS	%	LBS/HR	LBS/HR	KNOTS
SL	48	118	56	452	452	172	82	441	441	172
2000	44	111	85	434	434	174	81	421	421	174
4000	40	104	83	415	415	175	79	403	403	175
6000	36	97	83	400	400	177	78	386	386	177
8000	32	90	82	384	384	178	76	367	367	177
10,000	28	82	83	373	373	181	75	344	344	178
12,000	24	75	—	—	—	—	75	337	337	179
14,000	20	68	—	—	—	—	75	330	330	182
16,000	16	61	—	—	—	—	76	325	325	184
18,000	—	—	—	—	—	—	—	—	—	—
20,000	—	—	—	—	—	—	—	—	—	—
22,000	—	—	—	—	—	—	—	—	—	—
24,000	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

NOTES:
 1. During operation with ice vane extended, maintain same power as with ice vane retracted. Fuel flow will increase approximately 15%.
 2. IOAT based on a weight of 11,000 lbs.
 BT00043

UC-12M-F0206

Figure 42-13. Single-Engine Maximum Range Power (Sheet 14 of 16)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS UP (0%)
 GEAR UP
 PROPELLER SPEED 1700 RPM
 TGT NOT TO EXCEED... 770 °C
 TORQUE NOTED

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**SINGLE ENGINE
 MAXIMUM RANGE POWER
 ISA +37 °C
 SEE NOTES BELOW**

PRESSURE ALTITUDE	IOAT		13,000 Pounds				12,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR	KNOTS	%	LBS/HR	LBS/HR	KNOTS
SL	55	131	—	—	—	—	95	482	482	178
2000	51	124	—	—	—	—	94	466	466	180
4000	—	—	—	—	—	—	—	—	—	—
6000	—	—	—	—	—	—	—	—	—	—
8000	—	—	—	—	—	—	—	—	—	—
10,000	—	—	—	—	—	—	—	—	—	—
12,000	—	—	—	—	—	—	—	—	—	—
14,000	—	—	—	—	—	—	—	—	—	—
16,000	—	—	—	—	—	—	—	—	—	—
18,000	—	—	—	—	—	—	—	—	—	—
20,000	—	—	—	—	—	—	—	—	—	—
22,000	—	—	—	—	—	—	—	—	—	—
24,000	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

NOTES:
 1. During operation with ice vane extended, maintain same power as with ice vane retracted. Fuel flow will increase approximately 15%.
 2. IOAT based on a weight of 12,000 lbs.
 BT00044

UC-12M-F0207

Figure 42-13. Single-Engine Maximum Range Power (Sheet 15 of 16)

MODEL: UC-12M
 DATE: JULY 29,1986
 DATA BASIS: FLIGHT TEST
 CONFIGURATION:
 FLAPS UP (0%)
 GEAR UP
 PROPELLER SPEED 1700 RPM
 TGT NOT TO EXCEED... 770 °C
 TORQUE NOTED

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

**SINGLE ENGINE
 MAXIMUM RANGE POWER
 ISA +37 °C
 SEE NOTES BELOW**

PRESSURE ALTITUDE	IOAT		11,000 Pounds				10,000 Pounds			
			TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS	TORQUE PER ENGINE	FUEL FLOW PER ENGINE	FUEL FLOW TOTAL	TAS
FEET	°C	°F	%	LBS/HR	LBS/HR	KNOTS	%	LBS/HR	LBS/HR	KNOTS
SL	55	131	88	451	451	172	80	438	438	172
2000	51	124	84	433	433	174	78	416	416	172
4000	47	117	83	417	417	175	78	402	402	175
6000	43	109	83	403	403	177	76	381	381	175
8000	39	102	84	393	393	181	75	364	364	176
10,000	35	95	—	—	—	—	75	350	350	178
12,000	31	88	—	—	—	—	76	342	342	181
14,000	—	—	—	—	—	—	—	—	—	—
16,000	—	—	—	—	—	—	—	—	—	—
18,000	—	—	—	—	—	—	—	—	—	—
20,000	—	—	—	—	—	—	—	—	—	—
22,000	—	—	—	—	—	—	—	—	—	—
24,000	—	—	—	—	—	—	—	—	—	—
26,000	—	—	—	—	—	—	—	—	—	—
28,000	—	—	—	—	—	—	—	—	—	—
29,000	—	—	—	—	—	—	—	—	—	—
31,000	—	—	—	—	—	—	—	—	—	—
33,000	—	—	—	—	—	—	—	—	—	—
35,000	—	—	—	—	—	—	—	—	—	—

NOTES:
 1. During operation with ice vane extended, maintain same power as with ice vane retracted. Fuel flow will increase approximately 15%.
 2. IOAT based on a weight of 11,000 lbs.
 BT00045

UC-12M-F0208

Figure 42-13. Single-Engine Maximum Range Power (Sheet 16 of 16)

MODEL: UC-12M
DATE: 29 JULY, 1986
DATA BASIS: FLIGHT TEST
ENGINE: PT6A-42
PROPELLER: P7025423-0150
FUEL GRADE: JP-5
FUEL DENSITY: 6.8 LBS/GAL

NOTE

1. INITIAL ALTITUDE IS SEA LEVEL
2. CRUISE AT 1700 RPM
3. DESCEND AT 1500 FT/MIN

CONFIGURATION:
 FLAPS:.....UP
 GEAR:.....UP
 PROPELLER.....AS NOTED
 TORQUE.....AS NOTED
 FUEL RESERVE.....370 LBS
 STANDARD DAY NO WIND

DISTANCE TO BASE -NAUTICAL MILES	TWO ENGINE, MAXIMUM RANGE CRUISE						DISTANCE TO BASE -NAUTICAL MILES	ONE ENGINE, MAXIMUM RANGE CRUISE					
	FUEL REQUIRED -POUNDS	TIME REQUIRED -MINUTES	CRUISE ALTITUDE -FEET	CRUISE IAS KNOTS	CRUISE TORQUE %	DESCENT DISTANCE -NAUTICAL MILES		FUEL REQUIRED -POUNDS	TIME REQUIRED -MINUTES	CRUISE ALTITUDE -FEET	CRUISE IAS KNOTS	CRUISE TORQUE %	DESCENT DISTANCE -NAUTICAL MILES
50	538	14	10,000	180	58	30	505	18	SL	169	90	—	
100	675	28	10,000	180	58	30	596	34	10,000	153	89	22	
150	774	40	20,000	161	54	61	692	51	15,000	144	89	33	
200	879	54	20,000	161	54	61	792	68	15,000	144	89	33	
250	984	67	20,000	161	54	61	892	84	15,000	144	89	33	
300	1089	81	20,000	161	54	61	991	101	15,000	144	89	33	
350	1195	95	20,000	161	54	61	1091	117	15,000	144	89	33	
400	1300	108	20,000	161	54	61	1191	134	15,000	144	89	33	
450	1405	122	20,000	161	54	61	1291	150	15,000	144	89	33	
500	1399	129	30,000	146	54	90	1390	167	15,000	144	89	33	
550	1488	141	30,000	146	54	90	1490	183	15,000	144	89	33	
600	1577	154	30,000	146	54	90	1590	200	15,000	144	89	33	
650	1667	167	30,000	146	54	90	1690	216	15,000	144	89	33	
700	1756	179	30,000	146	54	90	1789	233	15,000	144	89	33	

CLIMB TORQUE IS 100% OR TGT OF 770 °C WHICHEVER IS LOWER
 CLIMB PROP SPEED - 1900 RPM
 CLIMB IAS:
 SL 10,000 FT 155 KNOTS
 10,000 20,000 FT 135 KNOTS
 20,000 25,000 FT 124 KNOTS
 25,000 30,000 FT 113 KNOTS

CLIMB TORQUE IS 100% OR TGT OF 800 °C WHICHEVER IS LOWER
 CLIMB PROP SPEED - 2000 RPM
 CLIMB IAS:
 SL 10,000 FT 155 KNOTS
 10,000 15,000 FT 135 KNOTS

BT00220

Figure 42-14. Bingo Range

MODEL: UC-12M
 DATE: 14 MAY 1979
 DATA BASIS: ESTIMATED

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LB/GAL

CONFIGURATIONS: ALL

RELATIVE WIND DIRECTION

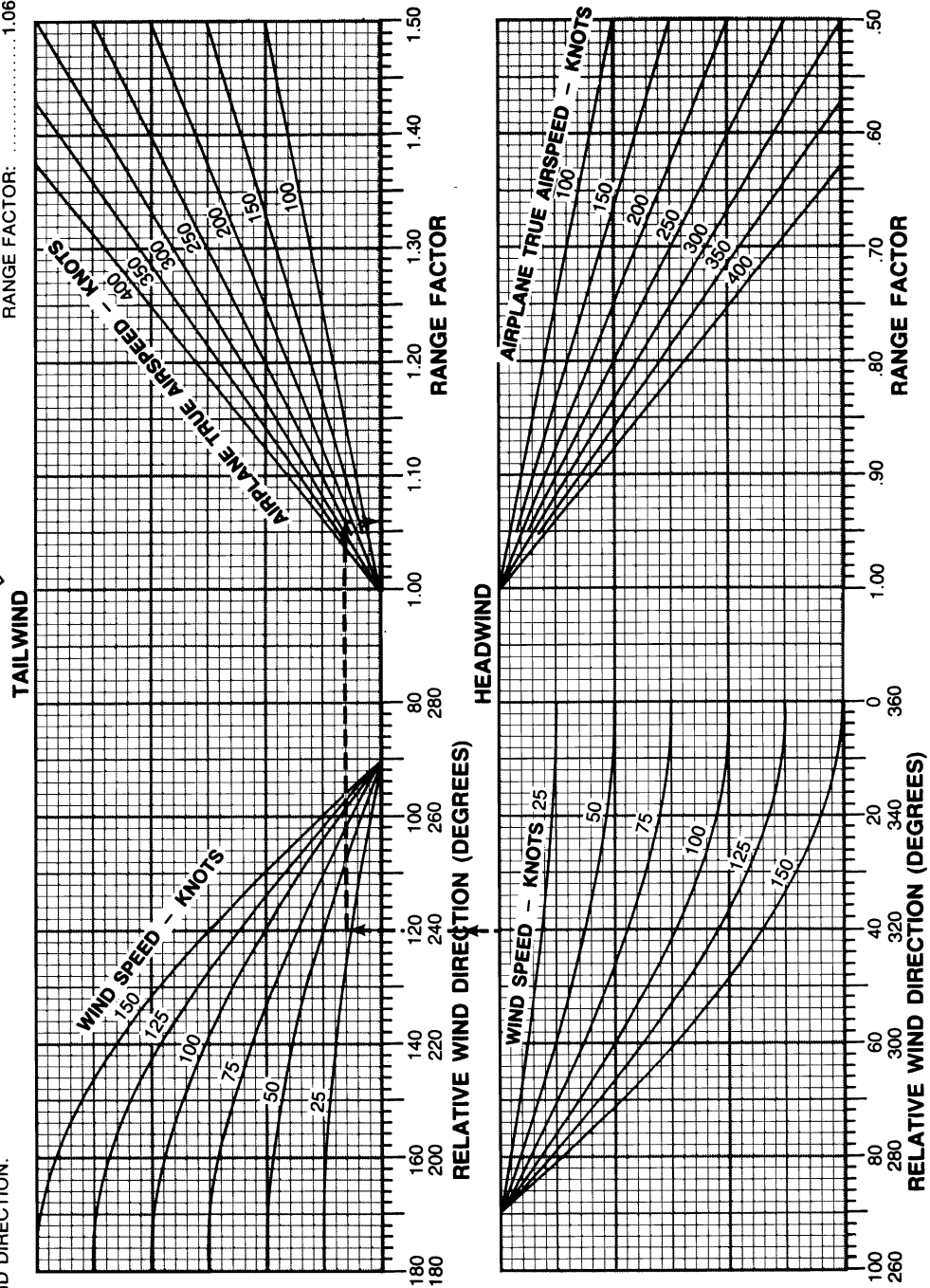


NOTE

RELATIVE WIND DIRECTION EQUALS ANGULAR DIFFERENCE MEASURED CLOCKWISE BETWEEN AIRCRAFT HEADING AND TRUE WIND DIRECTION.

EXAMPLE:

RELATIVE WIND DIR: 120°
 WIND SPEED: 30 KNOTS
 AIRPLANE TAS: 251 KNOTS
 RANGE FACTOR: 1.06



UC-12M-F0209

Figure 42-15. Range Wind Correction

CHAPTER 43

Endurance

43.1 DESCRIPTION OF CHARTS

43.1.1 Endurance Profile — Standard Day

These charts show endurance attainable for selected power settings and pressure altitudes on a standard day. To use chart, enter at pressure altitude, trace right to power setting line, then trace down to read time. Refer to [Figures 43-1](#), [43-2](#), and [43-3](#).

43.1.2 Mission Profile — Maximum Endurance

This chart shows air time for fuel burned at a pressure altitude including initial climb. To use chart, enter at pressure altitude, trace right to fuel burned, then trace down to read time. Refer to [Figures 43-4](#), [43-5](#), and [43-6](#).

43.1.3 Holding Time

This chart shows the amount of fuel required to hold at an altitude for a specified time. To use chart, enter at holding time, trace right to pressure altitude, then trace down to fuel required. Refer to [Figures 43-7](#), [43-8](#), and [43-9](#).

ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

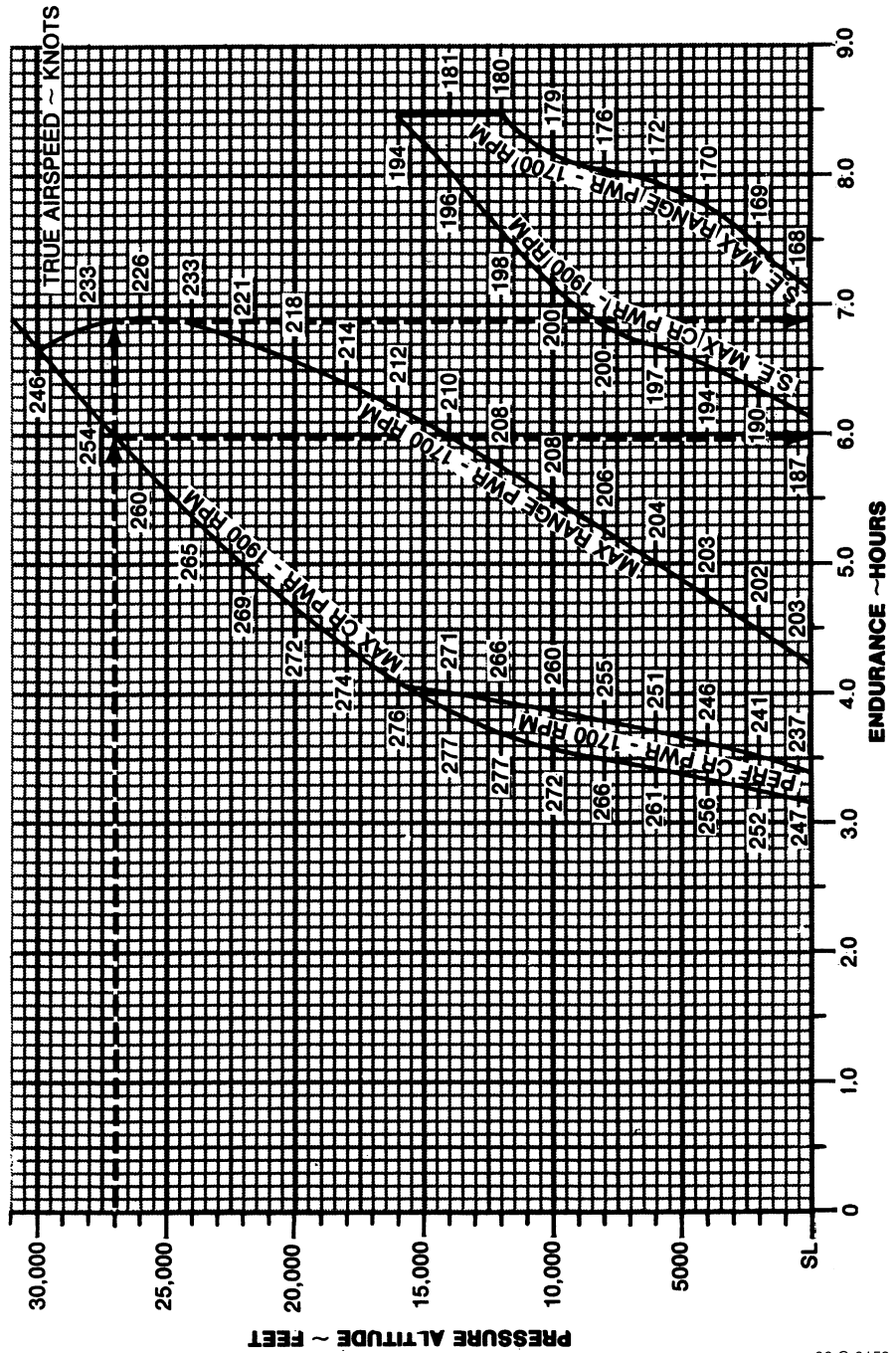
EXAMPLE:
 PRESSURE ALTITUDE.....27,000 FT
 ENDURANCE @ MAX CRUISE
 POWER - 1900 RPM5.98 HRS
 ENDURANCE @ MAX
 RANGE POWER - 1700 RPM.....6.89 HRS

NOTE

1. AIRSPEEDS SHOWN ARE FOR AN AVERAGE WEIGHT OF 12,000 LBS.
2. ENDURANCE INCLUDES START, TAXI, TAKEOFF, CLIMB, AND DESCENT, WITH A 370 LB FUEL RESERVE.

MODEL: UC-12B
 DATE: 11 JANUARY 1988
 DATA BASIS: FLIGHT TEST

CONFIGURATION:
 PROPELLER SPEED ...AS NOTED
 TORQUEAS REQUIRED
 FLAPSUP
 GEARUP
 WEIGHT13,590 LBS BEFORE ENGINE START
 ICE VANESRETRACTED



06-C-0159

Figure 43-1. (B) Endurance Profile — Full Main and Auxiliary Tanks — Standard Day

MODEL: UC-12B
 DATE: 11 JANUARY 1988
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

PROPELLER SPEED AS NOTED
 TORQUE AS REQUIRED
 FLAPS UP
 GEAR UP
 WEIGHT 13,590 LBS BEFORE
 ENGINE START
 ICE VANES RETRACTED

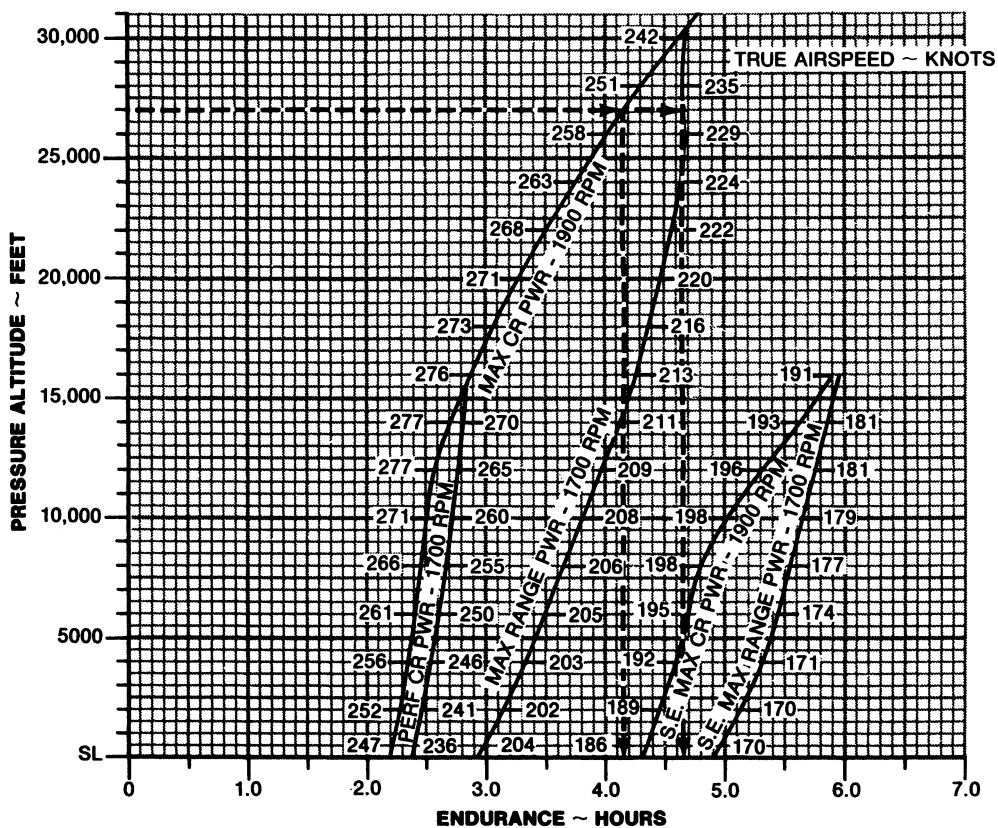
NOTE

1. AIRSPEEDS SHOWN ARE FOR AN AVERAGE WEIGHT OF 12,000 LBS.
2. ENDURANCE INCLUDES START, TAXI, TAKEOFF, CLIMB, AND DESCENT, WITH A 263 LB FUEL RESERVE.

ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

PRESSURE ALTITUDE 27,000 FT
 ENDURANCE @ MAX CRUISE
 POWER - 1900 RPM 4.16 HRS
 ENDURANCE @ MAX
 RANGE POWER - 1700 RPM 4.66 HRS



06-C-0160

Figure 43-2. (B) Endurance Profile — Full Main Tanks — Standard Day

MODEL: UC-12F
 DATE: 29, JULY 1986
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

PROPELLER SPEED: AS NOTED
 TORQUE: AS REQUIRED
 ITT: NOT TO EXCEED 770°C
 FLAPS: UP
 GEAR: UP
 WEIGHT: 13,590 LBS BEFORE ENGINE START
 ICE VANES: RETRACTED

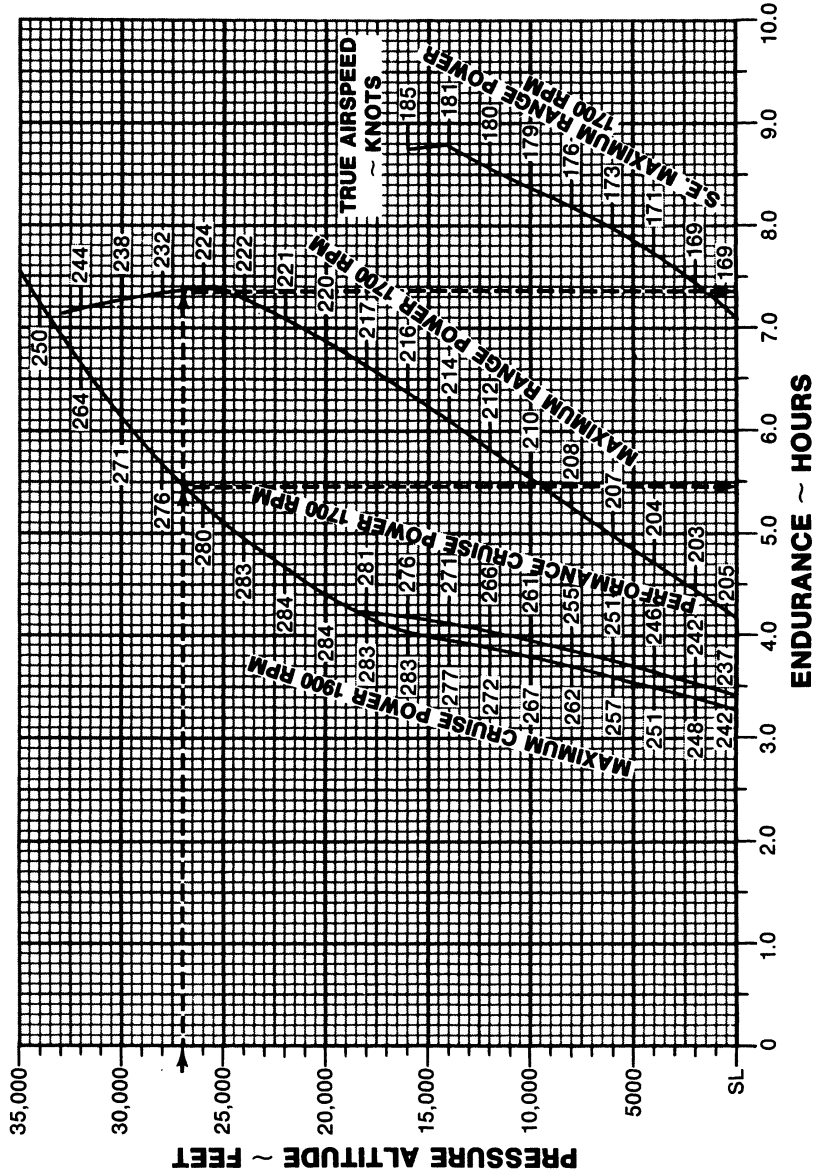
ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

PRESSURE ALTITUDE: 27,000 FT
 ENDURANCE @ MAX
 CRUISE POWER: 5.46 HRS
 ENDURANCE @ PERFORMANCE
 CRUISE POWER: 5.46 HRS
 ENDURANCE @ MAX
 RANGE POWER: 7.36 HRS

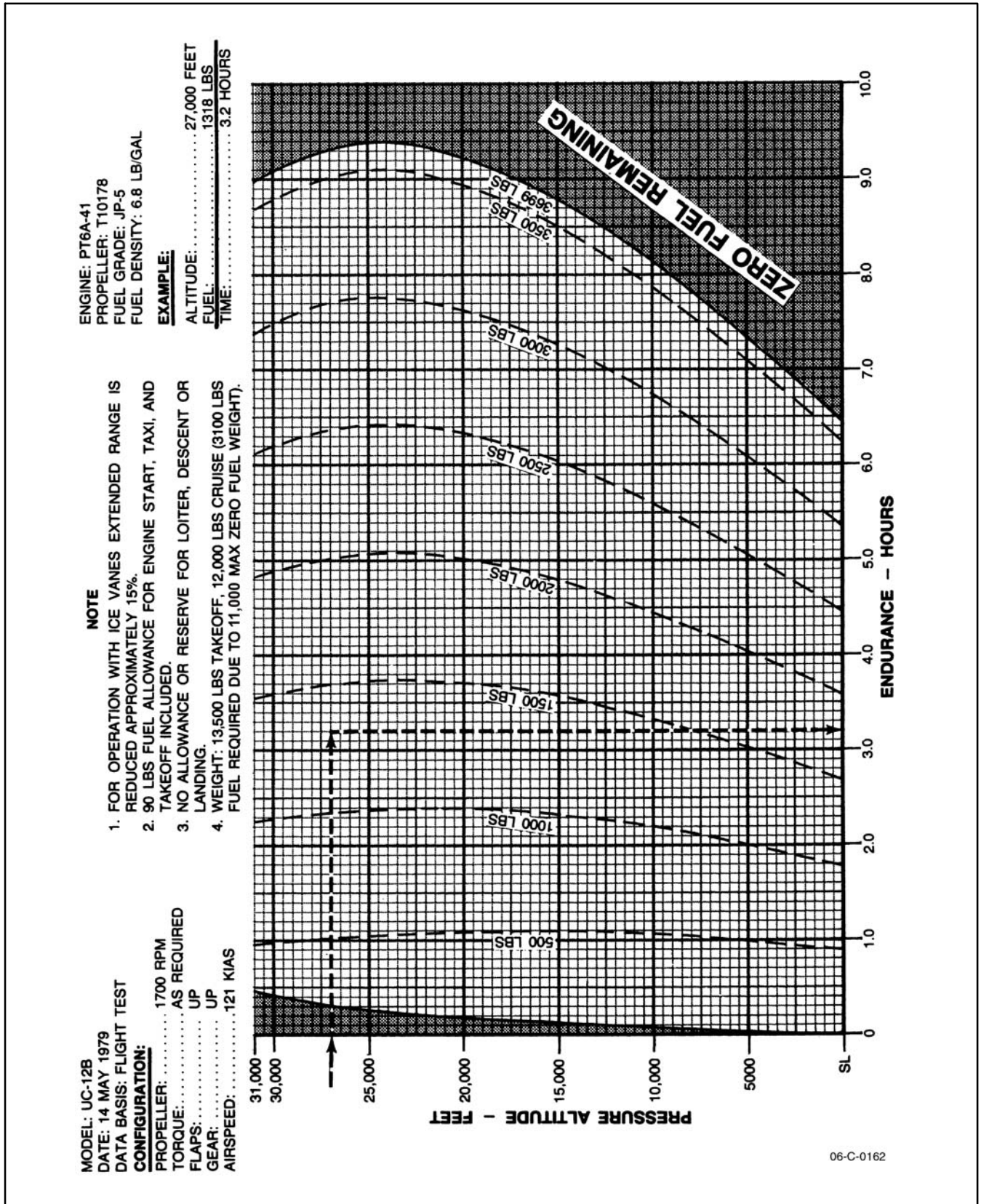
NOTES

1. AIRSPEEDS SHOWN ARE FOR AN AVERAGE WEIGHT OF 12,000 LBS.
2. ENDURANCE INCLUDES START, TAXI, TAKEOFF, CLIMB AND DESCENT, WITH 370 LBS OF RESERVE FUEL REMAINING.



06-C-0161

Figure 43-3. (F) Endurance Profile — Full Main and Auxiliary Tanks — Standard Day



06-C-0162

Figure 43-4. (B) Mission Profile — Maximum Endurance — Two Engines — ISA

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

ALTITUDE: 27,000 FT
 FUEL: 1300 LBS
 TIME: 3.05 HRS

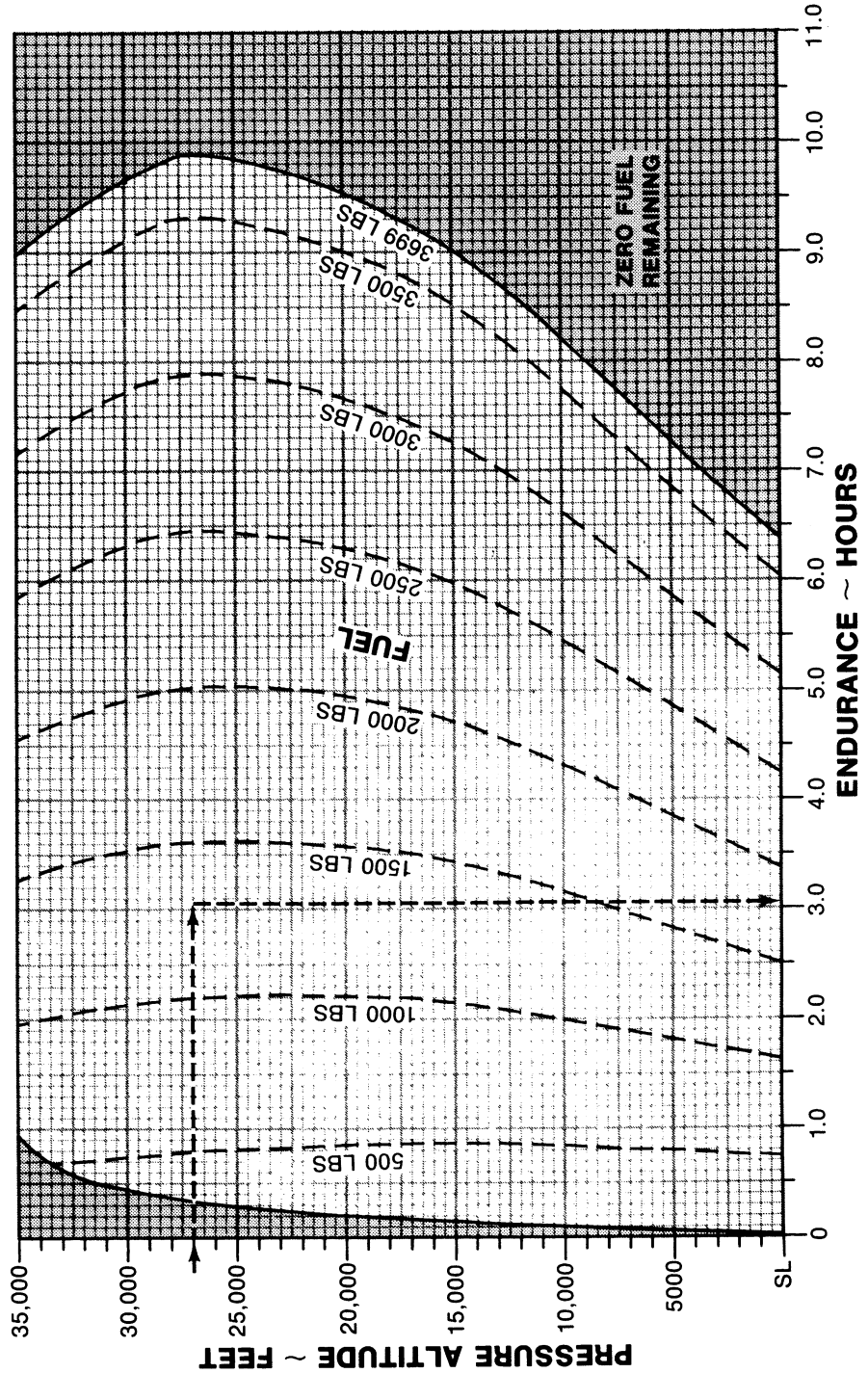
NOTES

1. FOR OPERATION WITH ICE VANES EXTENDED, RANGE IS REDUCED APPROXIMATELY 15%.
2. 95 LBS FUEL ALLOWANCE FOR ENGINE START, TAXI, AND TAKEOFF INCLUDED.
3. NO ALLOWANCE OR RESERVE FOR LOITER, DESCENT, OR LANDING.
4. WEIGHT: 13,500 LBS, TAKEOFF, 12,000 LBS
 CRUISE (2500 LBS FUEL REQUIRED DUE TO 11,000 LBS MAX ZERO FUEL WEIGHT).

MODEL: UC-12F
 DATE: 29, JULY 1986
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

PROPELLER: 1700 RPM
 TORQUE: AS REQUIRED
 FLAPS: UP
 GEAR: UP
 AIRSPEED: 121 KIAS



06-C-0163

Figure 43-5. (F) Mission Profile — Maximum Endurance — Two Engines — Standard Day

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

ALTITUDE:27,000 FT
 FUEL:1300 LBS
 TIME:3.05 HRS

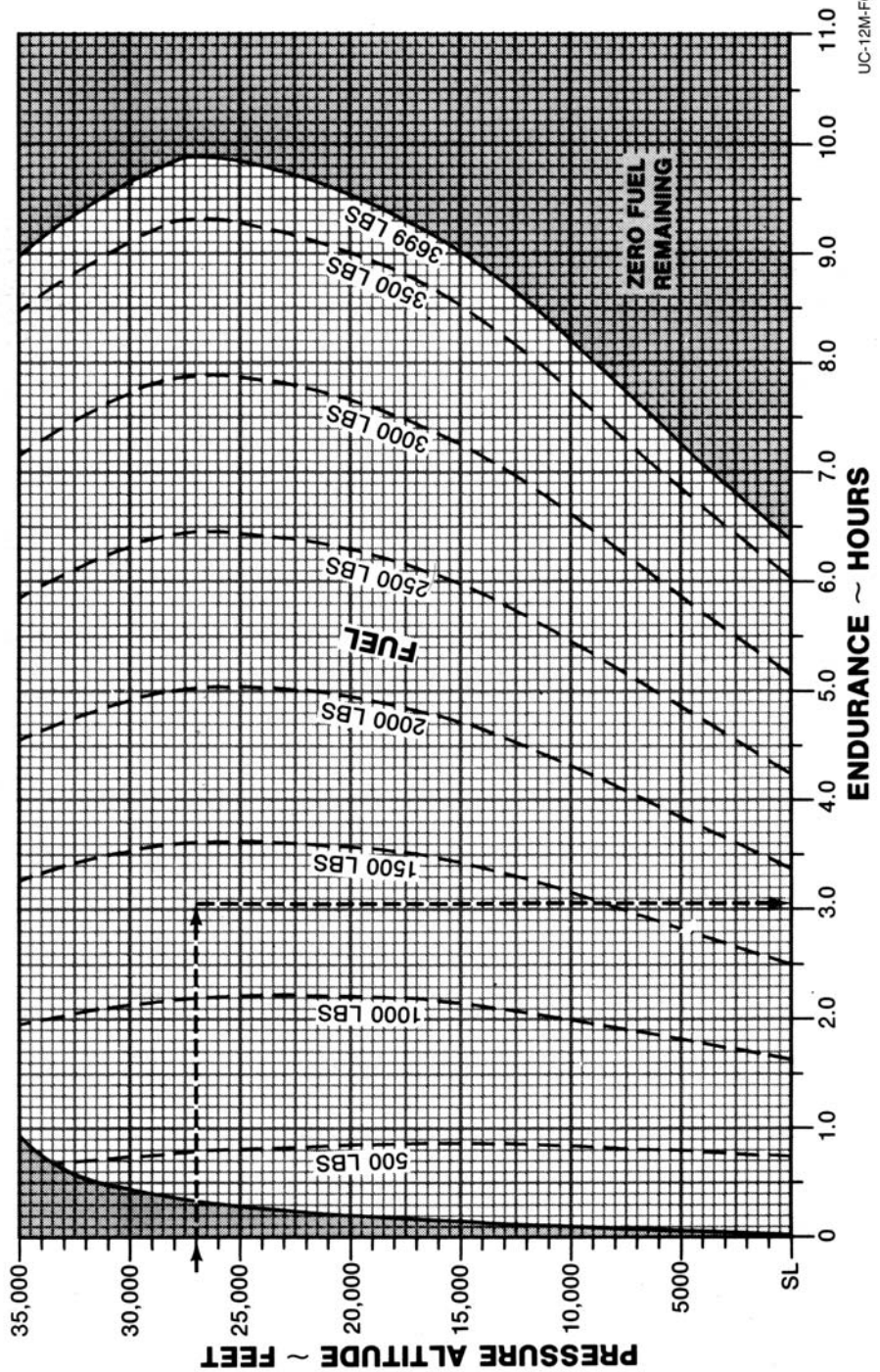
NOTES

1. FOR OPERATION WITH ICE VANES EXTENDED, RANGE IS REDUCED APPROXIMATELY 15%.
2. 95 LBS FUEL ALLOWANCE FOR ENGINE START, TAXI, AND TAKEOFF INCLUDED.
3. NO ALLOWANCE OR RESERVE FOR LOITER, DE-SCENT, OR LANDING.
4. WEIGHT: 13,500 LBS, TAKEOFF, 12,000 LBS CRUISE (2500 LBS FUEL REQUIRED DUE TO 11,000 LBS MAX ZERO FUEL WEIGHT).

MODEL: UC-12M
 DATE: 29, JULY 1986
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

PROPELLER:1700 RPM
 TORQUE:AS REQUIRED
 FLAPS:UP
 GEAR:UP
 AIRSPEED:121 KIAS



UC-12M-F0229

Figure 43-6. (M) Mission Profile — Maximum Endurance — Two Engines — Standard Day

ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

HOLDING TIME: 2.0 HR
 PRESSURE ALTITUDE: 10,000 FEET
 FUEL REQUIRED: 930 LBS

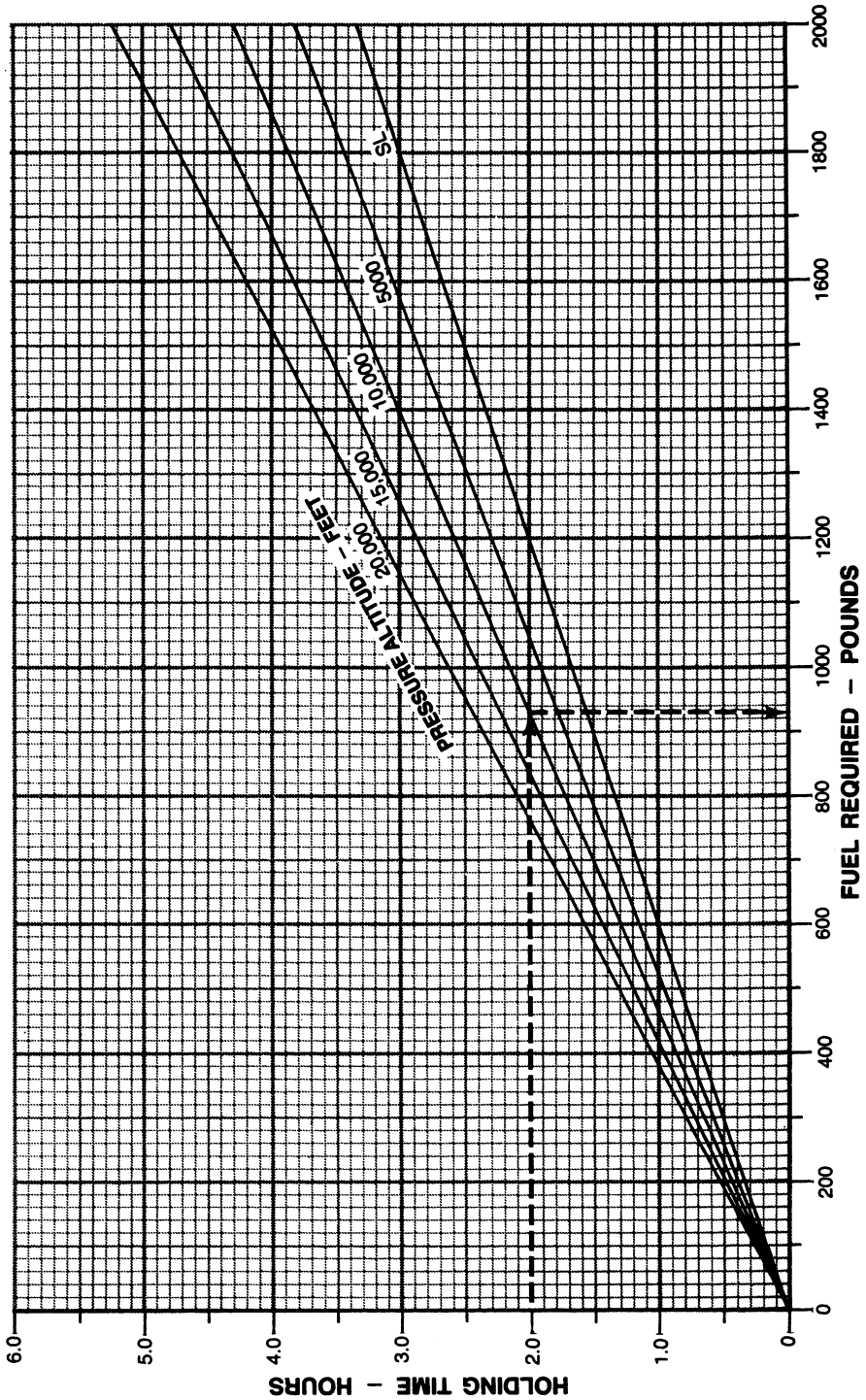
NOTE

1. FOR OPERATION WITH ICE VANES EXTENDED, HOLDING TIME WILL BE REDUCED APPROXIMATELY 15%.
2. BASED ON AN AVERAGE WEIGHT OF 12,000 LBS.

MODEL: UC-12B
 DATE: 4 MAY 1979
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

PROPELLER SPEED: . 1700 RPM
 TORQUE: 800 FT-LBS
 ITT: NOT TO EXCEED 725°C
 FLAPS: UP
 GEAR: UP



06-C-0164

Figure 43-7. (B) Holding Time

MODEL: UC-12F
 DATE: 29, JULY 1986
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

PROPELLER SPEED: 1700 RPM
 TORQUE: 800 FT-LBS
 ITT: NOT TO EXCEED 770°C
 FLAPS: UP
 GEAR: UP

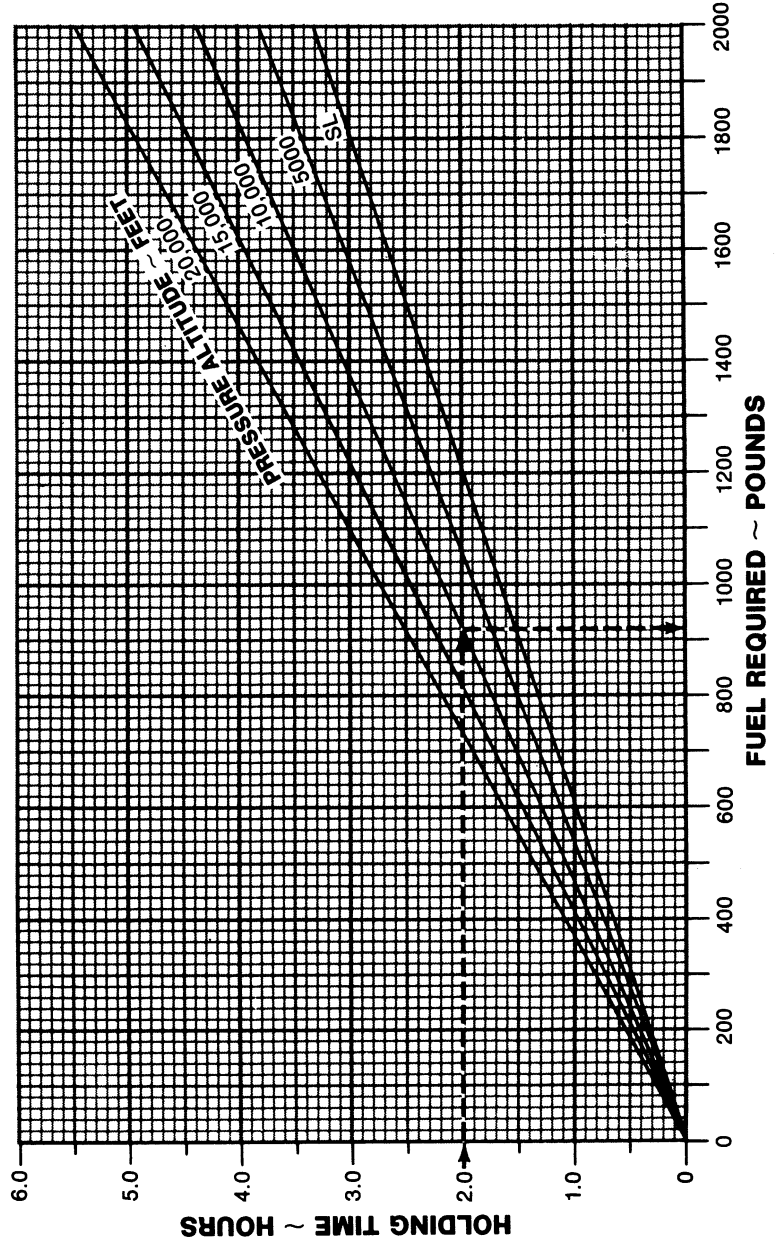
ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LB/GAL

EXAMPLE:

HOLDING TIME: 2.0 HRS
 PRESSURE ALTITUDE: 10,000 FT
 FUEL REQUIRED: 920 LBS

NOTE

1. FOR OPERATION WITH ICE VANES EXTENDED, HOLDING TIME WILL BE REDUCED APPROXIMATELY 15%.
2. BASED ON AN AVERAGE WEIGHT OF 12,000 LBS.



06-C-0165

Figure 43-8. (F) Holding Time

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LB/GAL

EXAMPLE:

HOLDING TIME: 2.0 HRS
 PRESSURE ALTITUDE: 10,000 FT
 FUEL REQUIRED: 920 LBS

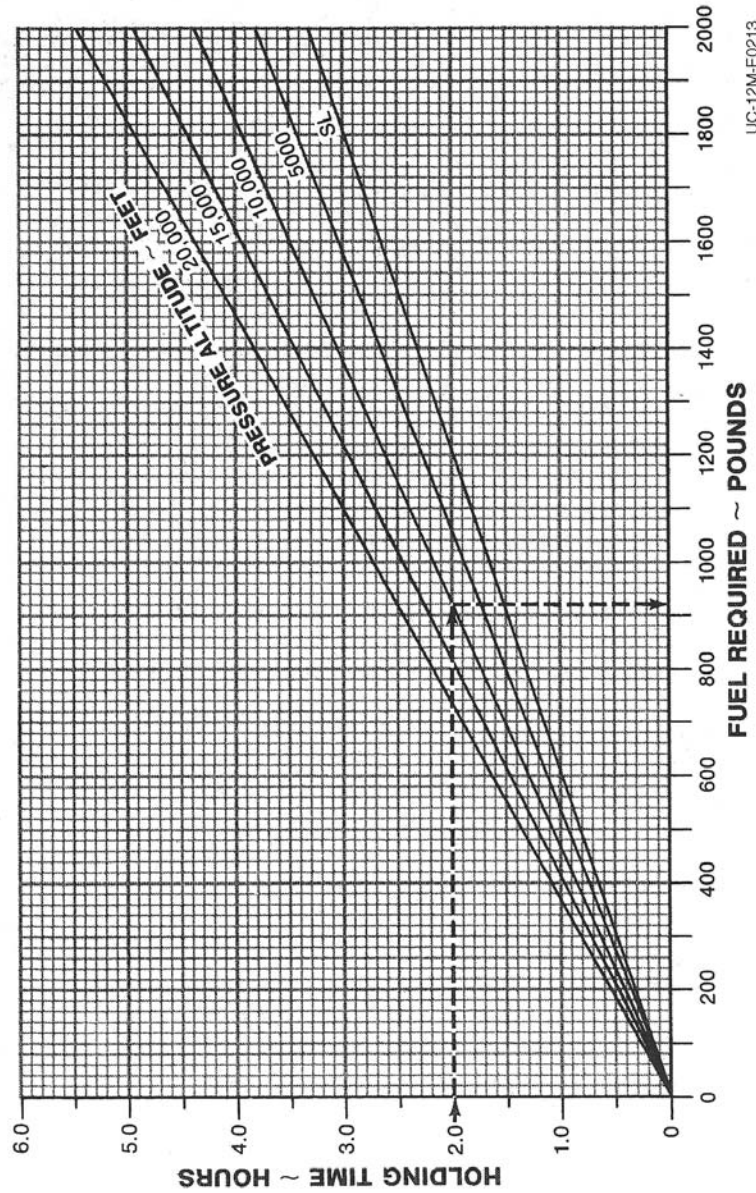
MODEL: UC-12M
 DATE: 29, JULY 1986
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

PROPELLER SPEED: 1700 RPM
 TORQUE: 36%
 TGT: NOT TO EXCEED 770°C
 FLAPS: UP
 GEAR: UP

NOTE

1. FOR OPERATION WITH ICE VANES EXTENDED, HOLDING TIME WILL BE REDUCED APPROXIMATELY 15%.
2. BASED ON AN AVERAGE WEIGHT OF 12,000 LBS.



UC-12M-F0213

Figure 43-9. (M) Holding Time

CHAPTER 44

In-Flight Refueling

Not applicable to UC-12 aircraft.

CHAPTER 45

Descent

45.1 DESCRIPTION OF CHARTS

45.1.1 Cabin Altitude for Various Aircraft Altitudes

This graph shows the cabin pressure altitude as a function of cabin differential pressure and aircraft altitude. To use this graph, enter at the aircraft altitude, trace right to the cabin differential pressure, then trace down to read the cabin pressure altitude. Refer to [Figures 45-1](#) and [45-2](#).

45.1.2 (M) Time/Fuel/Distance to Descend

Time, distance, and fuel to descend for the appropriate rate of descent on a standard day is shown for the gear up, flaps up configuration. To use chart, enter at pressure altitude, trace up to reference line, then trace right to read time, fuel, and distance. Refer to [Figure 45-3](#).

45.1.3 Cabin Pressurization Controller Setting for Landing

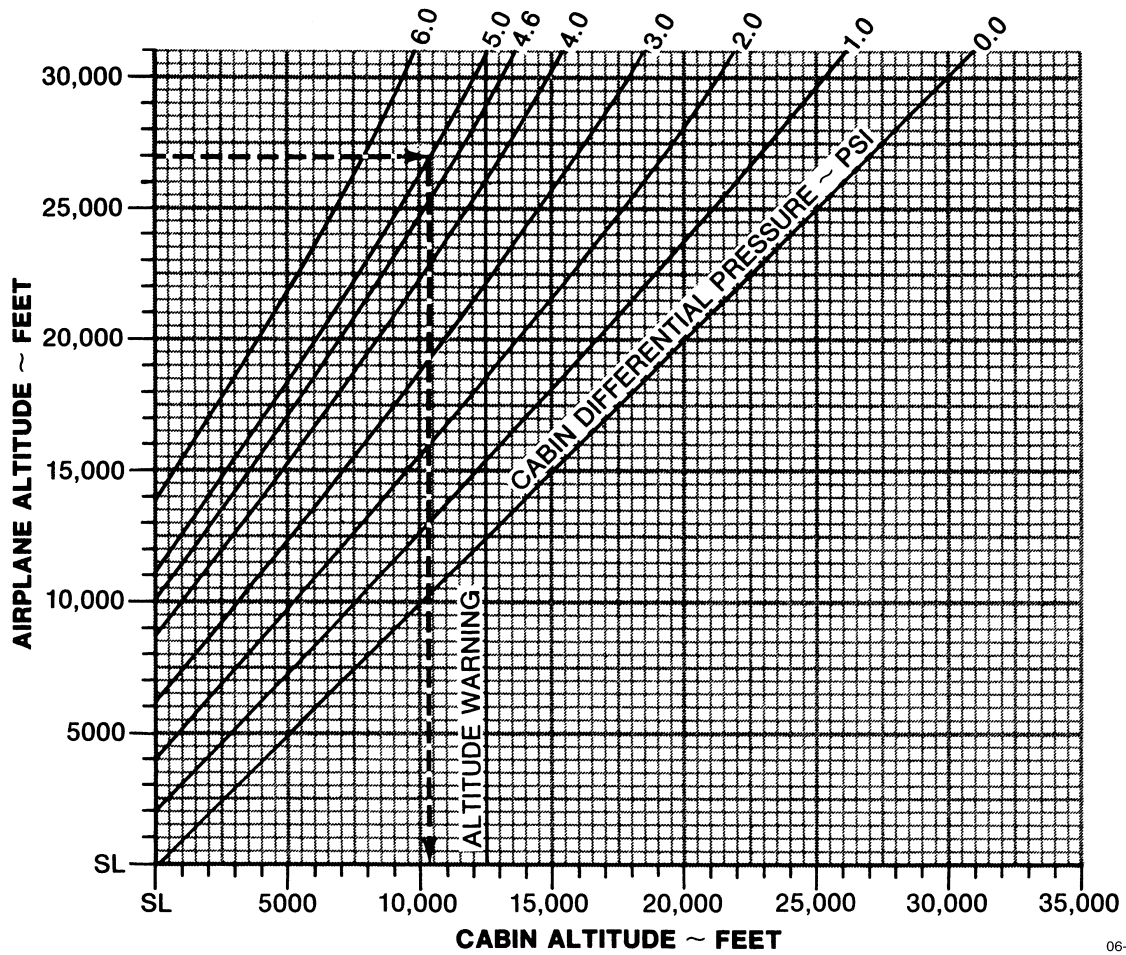
The pressurization controller should be set for the appropriate landing field elevation with the reported altimeter setting for passenger comfort. To use chart, enter at reported field altimeter setting, trace up to field elevation, then trace right to pressurization controller setting. Refer to [Figures 45-4](#) and [45-5](#).

MODEL: UC-12B
 DATE: 11 JANUARY 1988
 DATA BASIS: CALCULATED

ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

AIRPLANE ALTITUDE 27,000 FT
 CABIN DIFFERENTIAL PRESSURE 5.0 PSI
 CABIN ALTITUDE 10,300 FT



06-C-0166

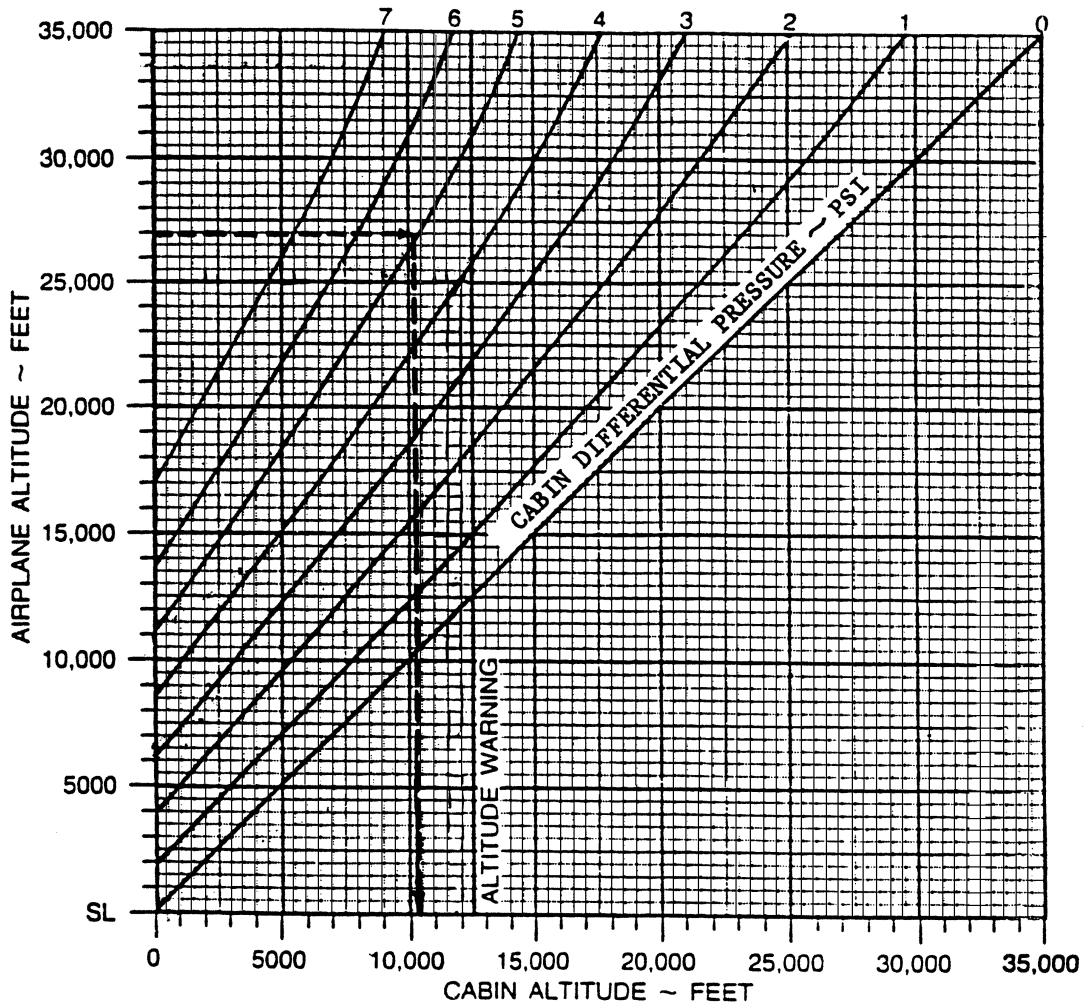
Figure 45-1. (B) Cabin Altitude for Various Aircraft Altitudes

MODEL: UC-12F
 DATE: 11 JANUARY 1988
 DATA BASIS: CALCULATED

ENGINE: PT6A-42
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

AIRPLANE ALTITUDE 27,000 FT
 CABIN DIFFERENTIAL PRESSURE 5.0 PSI
 CABIN ALTITUDE 10,300 FT



06-C-0167

Figure 45-2. (F/M) Cabin Altitude for Various Aircraft Altitudes

MODEL: UC-12M
 DATE: 29, JULY 1987
 DATA BASIS: FLIGHT TEST

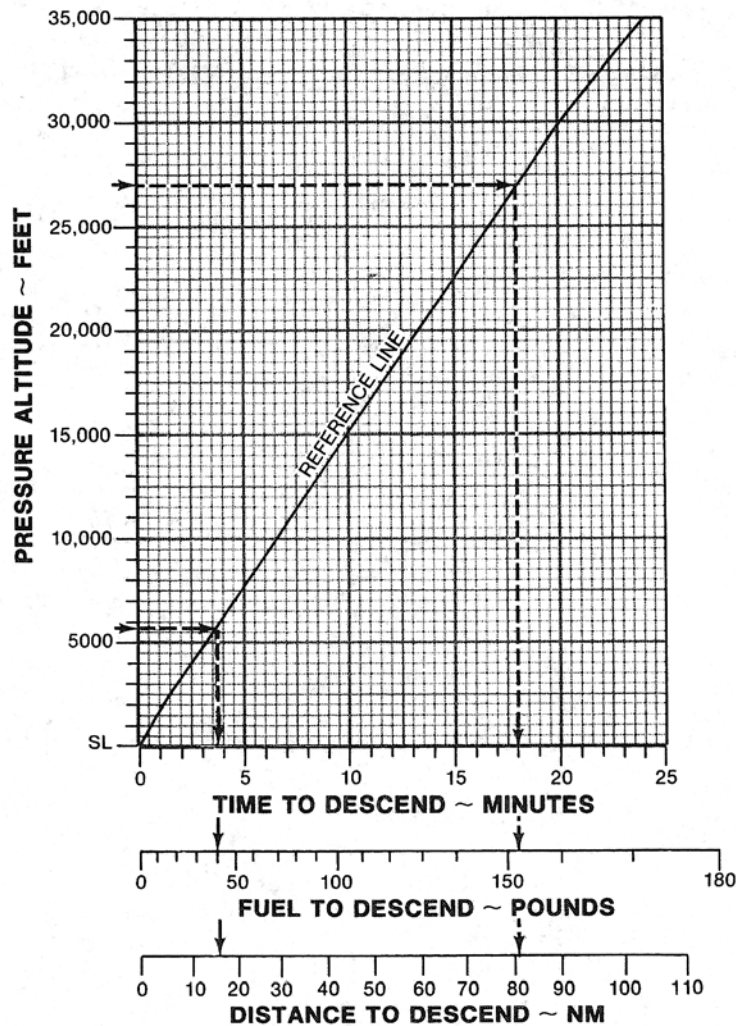
ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

CONFIGURATION:

POWER: AS REQUIRED TO
 DESCEND AT 1500 FT/MIN
 GEAR: UP
 FLAPS: UP
 DESCENT SPEED: M_{MO} OR 259 KIAS,
 WHICHEVER IS LESS

EXAMPLE:

INITIAL ALTITUDE: 27,000 FT
 FINAL ALTITUDE: 5651 FT
 TIME TO DESCEND (18-3.7): = 14 MIN
 FUEL TO DESCEND (152-40): = 112 LBS
 DISTANCE TO DESCEND (81-16): = 65 NM



UC-12M-F0214

Figure 45-3. (M) Time/Fuel/Distance to Descend

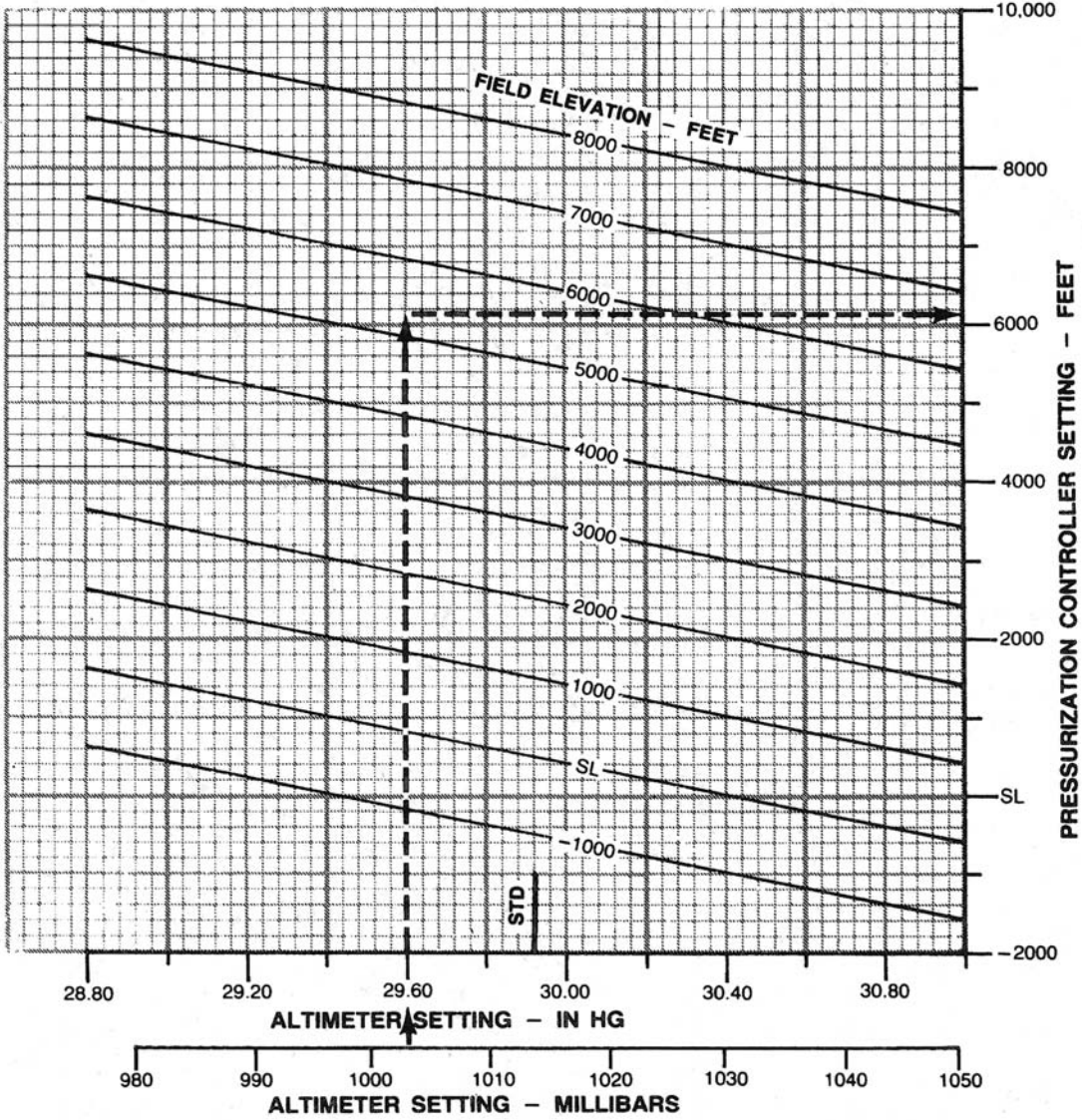
MODEL: UC-12M
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LB/GAL

CONFIGURATION: ALL

EXAMPLE:

ALTIMETER SETTING: 29.60 IN HG
 LANDING FIELD ELEVATION: 5330 FEET
 CABIN ALTITUDE SETTING: 6150 FEET



UC-12M 5021E

Figure 45-4. Cabin Pressurization Controller Setting for Landing

CLOSEST ALTIMETER SETTING	CHANGE OUTER SCALE BY AIRFIELD ELEVATION
28.00	+2,400
28.10	+2,300
28.20	+2,200
28.30	+2,100
28.40	+2,000
28.50	+1,900
28.60	+1,800
28.70	+1,700
28.80	+1,600
28.90	+1,500
29.00	+1,400
29.10	+1,300
29.20	+1,200
29.30	+1,100
29.40	+1,000
29.50	+900
29.60	+800
28.70	+700
29.80	+600
29.90	+500
30.00	+400
30.10	+300
30.20	+200
30.30	+100
30.40	0
30.50	-100
30.60	-200
30.70	-300
30.80	-400
30.90	-500

Figure 45-5. Cabin Altitude Selector Adjustment for Landing

CHAPTER 46

Landing

46.1 DESCRIPTION OF CHARTS

46.1.1 Waveoff Climb

These charts show rate of climb for ambient air temperatures, pressure altitudes, and weights for different flap and engine configurations. To use these charts, enter at the true outside air temperature, trace up to pressure altitude, trace right to reference line, trace along weight guidelines to weight, then trace right to read rate of climb. Refer to **Figures 46-1, 46-2, 46-3, 46-4, 46-5, 46-6, 46-7, 46-8, and 46-9.**

46.1.2 Landing Distance

These charts show landing ground roll and 50-foot obstacle distance and approach speeds for pressure altitude, ambient temperature, wind component, and weight. To use these charts, enter at the true outside air temperature, trace up to pressure altitude, trace right to reference line 1, trace along weight guidelines to weight, trace right to reference line 2, trace along wind guidelines to wind component along runway, then trace right to reference line 3 for rollout distance. Continue right to read distance, or for 50-foot obstacle height, trace along obstacle guidelines to read distance. Refer to **Figures 46-10, 46-11, 46-12, 46-13, 46-14, 46-15, 46-16, 46-17, 46-18, 46-19, 46-20, and 46-21.**

46.1.3 Stopping Distance Factors

This chart shows the aircraft stopping factor for weight and runway condition to be used with the landing ground roll distance. To use the chart, enter at the reported Runway Condition Reading (**RCR**), trace up to aircraft configuration line, trace right to reference line, trace along weight guidelines to weight, then trace right to read stopping factor. Refer to **Figures 46-22 and 46-23.**

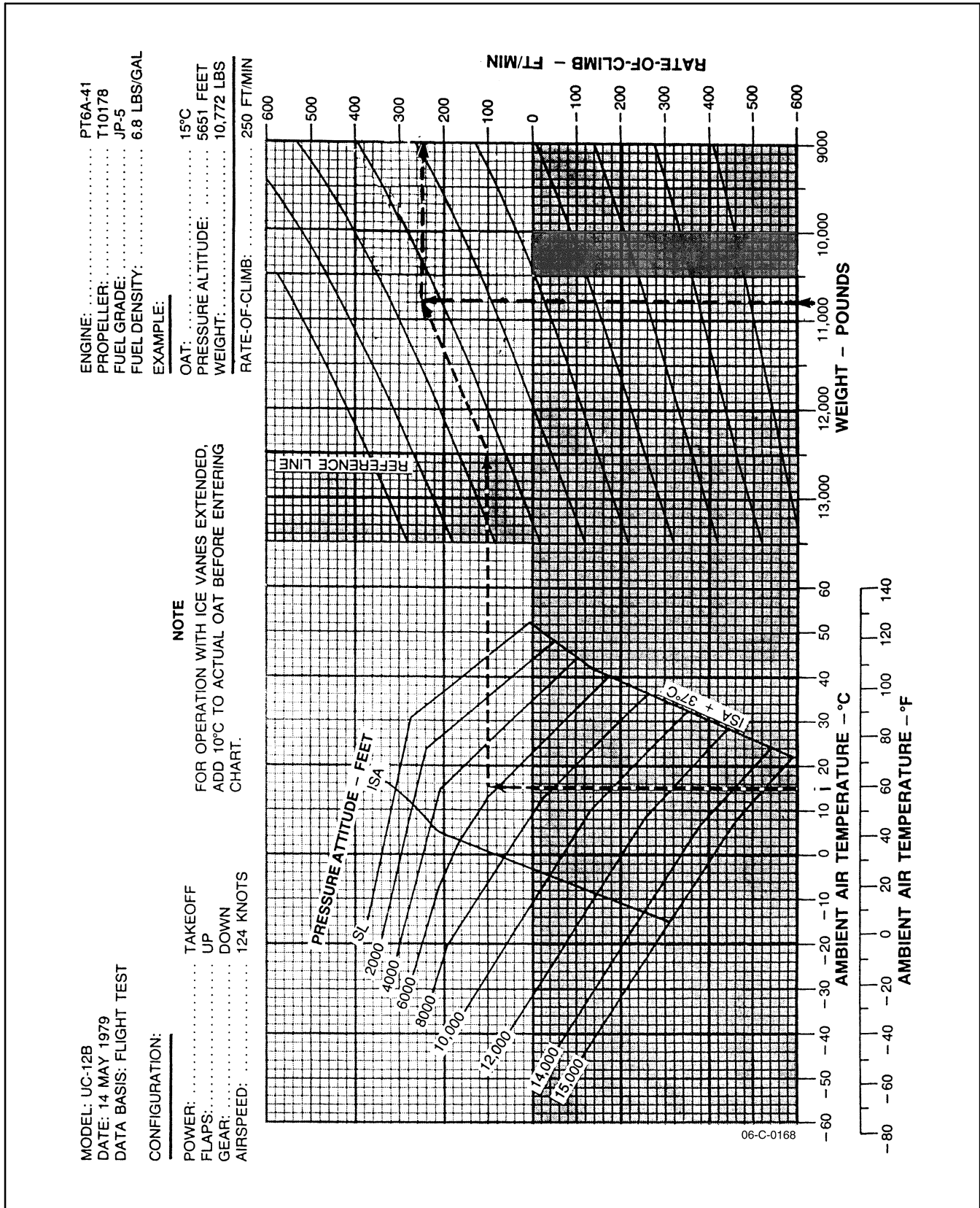


Figure 46-1. (B) Single-Engine Waveoff Climb — Flaps 0 Percent

MODEL: UC-12F
 DATE: 29 JULY 1986
 DATA BASIS: FLIGHT TEST

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

CONFIGURATION:

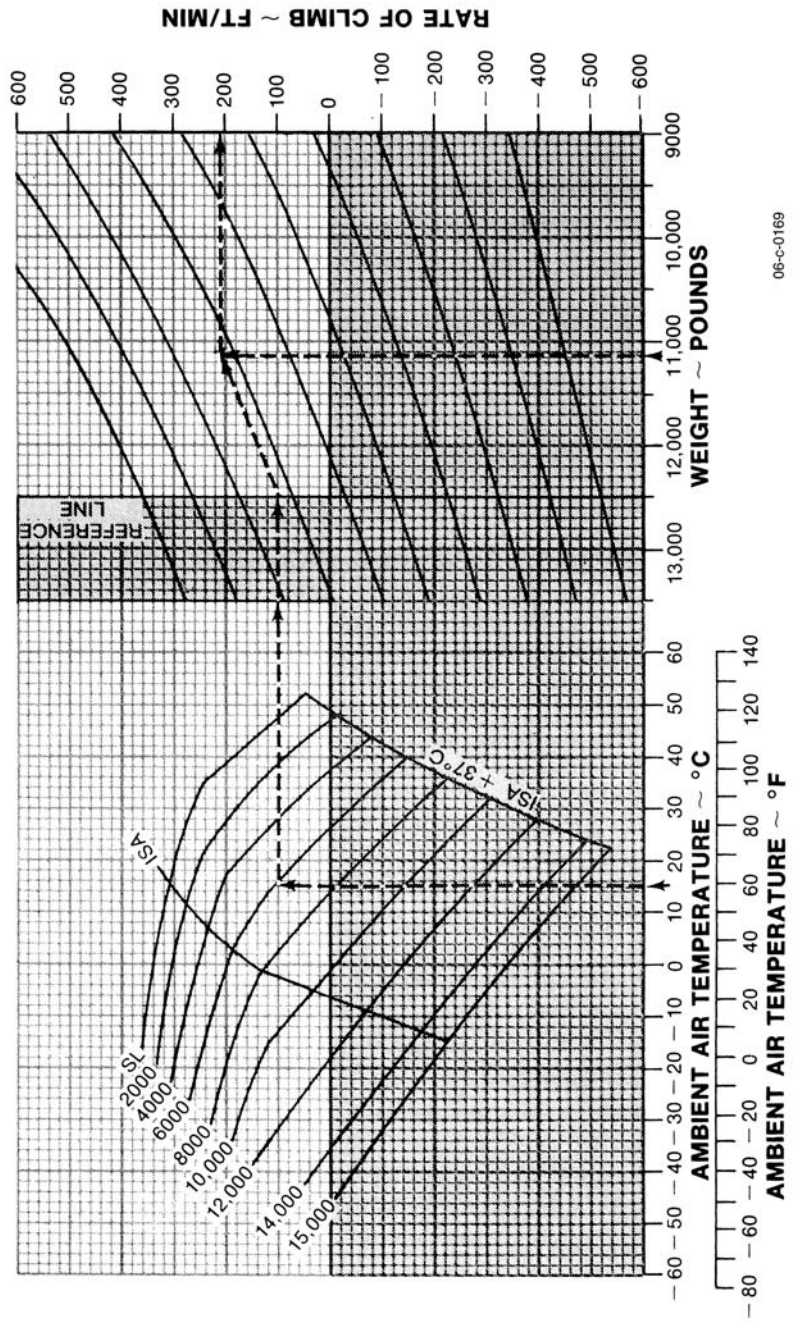
POWER: TAKEOFF
 FLAPS: UP
 GEAR: DOWN
 AIRSPEED: 124 KIAS

NOTES

1. DURING OPERATION WITH ICE VANE EXTENDED, RATE OF CLIMB WILL BE REDUCED APPROXIMATELY 100 FEET PER MINUTE.
2. ENTER GRAPH AT PRESSURE ALTITUDE FROM WHICH A WAVE-OFF WOULD BE EXECUTED.

EXAMPLE:

OAT: 15°C
 PRESSURE ALTITUDE: 6100 FT
 WEIGHT: 11,137 LBS
 RATE OF CLIMB: 205 FT/MIN



06-c-0169

Figure 46-2. (F) Single-Engine Waveoff Climb — Flaps 0 Percent

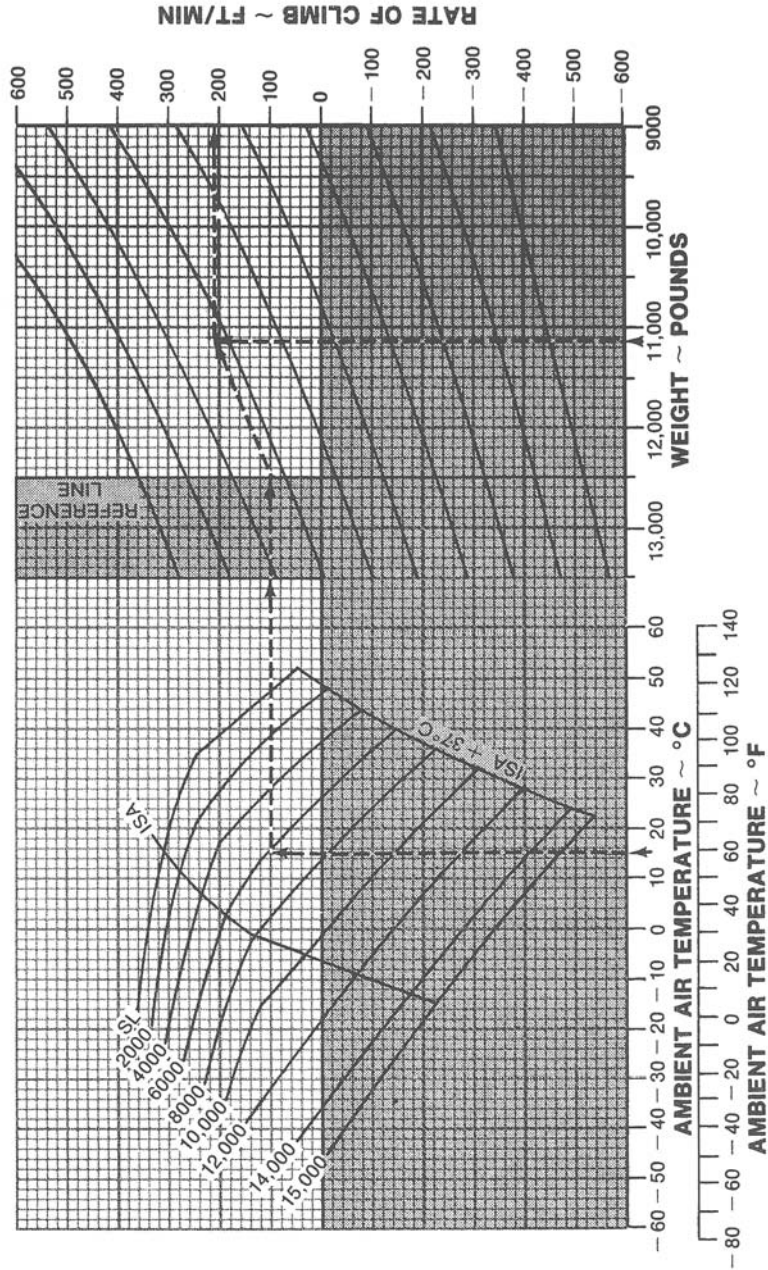
ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:
 OAT:15°C
 PRESSURE ALTITUDE:6100 FT
 WEIGHT:11,137 LBS
 RATE OF CLIMB:205 FT/MIN

MODEL: UC-12M
 DATE: 29 JULY 1986
 DATA BASIS: FLIGHT TEST

CONFIGURATION:
 POWER:TAKEOFF
 FLAPS:UP
 GEAR:DOWN
 AIRSPEED:124 KIAS

NOTES
 1. DURING OPERATION WITH ICE VANE EXTENDED, RATE OF CLIMB WILL BE REDUCED APPROXIMATELY 100 FEET PER MINUTE.
 2. ENTER GRAPH AT PRESSURE ALTITUDE FROM WHICH A WAVE-OFF WOULD BE EXECUTED.



UC-12M-F0216

Figure 46-3. (M) Single-Engine Waveoff Climb — Flaps 0 Percent

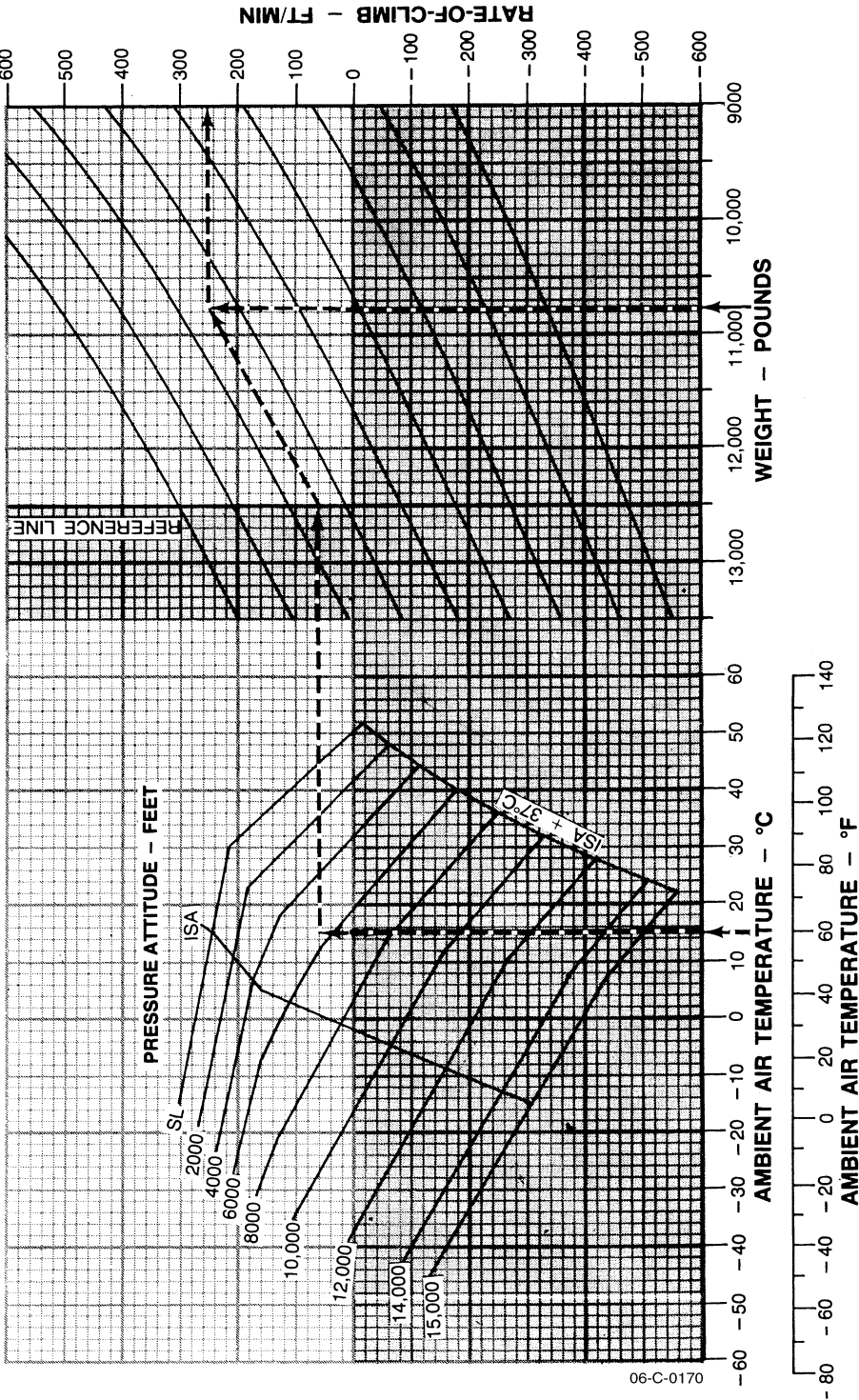
ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:
 OAT: 15°C
 PRESSURE ALTITUDES: 5651 FEET
 WEIGHT: 10,772 LBS
 RATE-OF-CLIMB: 250 FT/MIN

CONFIGURATION:
 POWER: TAKEOFF
 FLAPS: 40%
 GEAR: DOWN
 AIRSPEED: 107 KNOTS

NOTE
 FOR OPERATION WITH ICE VANES EXTENDED, ADD
 10°C TO THE ACTUAL OAT BEFORE ENTERING CHART.

MODEL: UC-12B
 DATE: 4 MAY 1979
 DATA BASIS: FLIGHT TEST



06-C-0170

Figure 46-4. (B) Single-Engine Waveoff Climb — Flaps 40 Percent

MODEL: UC-12F
 DATE: 29, JULY 1986
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

POWER: TAKEOFF
 FLAPS: APPROACH (40%)
 GEAR: DOWN
 AIRSPEED: 107 KIAS

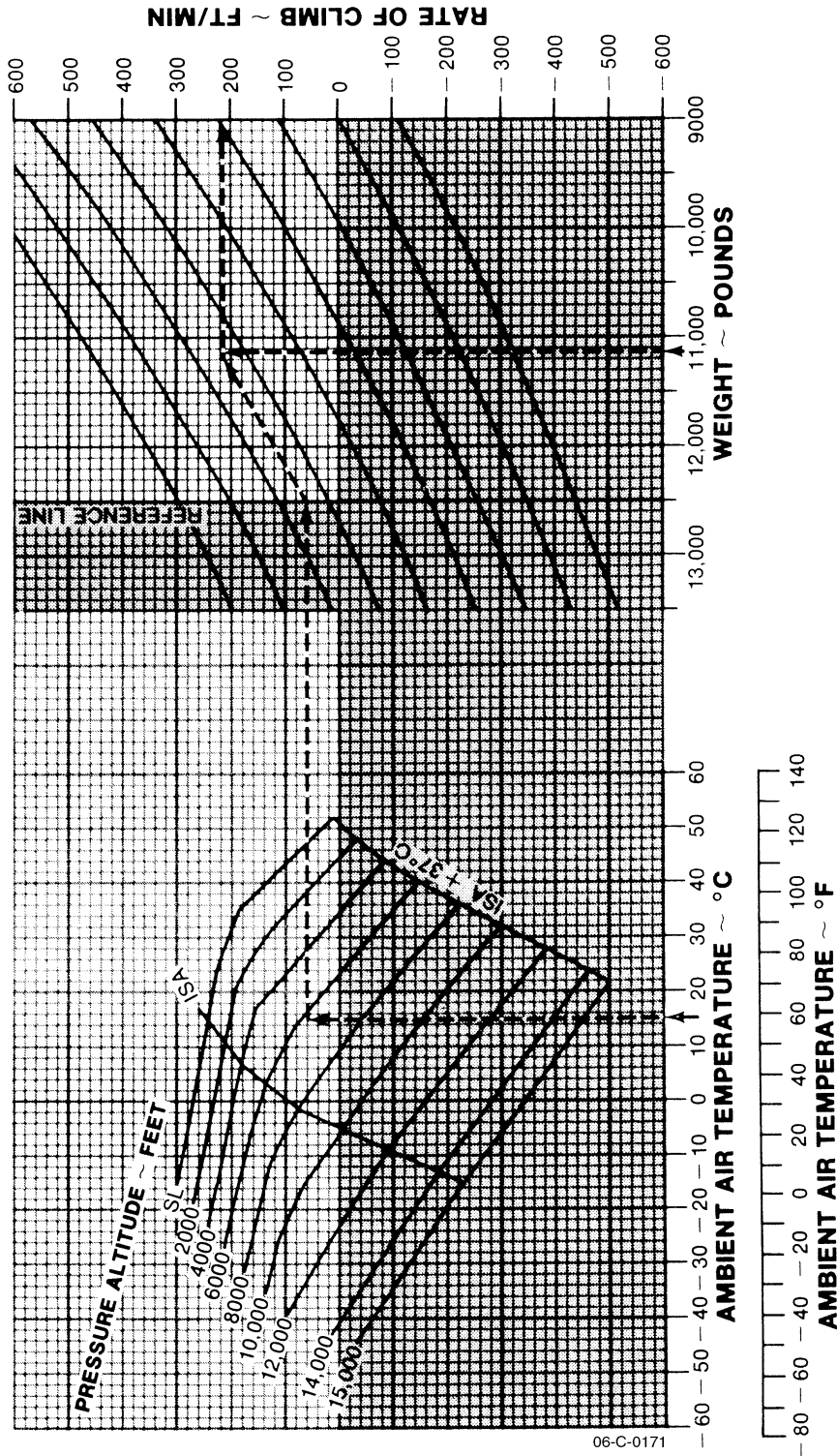
NOTES

1. DURING OPERATION WITH ICE VANE EXTENDED, RATE OF CLIMB WILL BE REDUCED APPROXIMATELY 100 FEET PER MINUTE.
2. ENTER GRAPH AT PRESSURE ALTITUDE FROM WHICH A WAVE-OFF WOULD BE EXECUTED.

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

OAT: 15°C
 PRESSURE ALTITUDE: 6100 FT
 WEIGHT: 11,137 LBS
 RATE OF CLIMB: 215 FT/MIN



06-C-0171

Figure 46-5. (F) Single-Engine Waveoff Climb — Flaps 40 Percent

UC-12M-F0217

MODEL: UC-12M
 DATE: 29, JULY 1986
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

POWER: TAKEOFF
 FLAPS: APPROACH (40%)
 GEAR: DOWN
 AIRSPEED: 107 KIAS

NOTES

1. DURING OPERATION WITH ICE VANE EXTENDED, RATE OF CLIMB WILL BE REDUCED APPROXIMATELY 100 FEET PER MINUTE.
2. ENTER GRAPH AT PRESSURE ALTITUDE FROM WHICH A WAVE-OFF WOULD BE EXECUTED.

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

OAT: 15°C
 PRESSURE ALTITUDE: 6100 FT
 WEIGHT: 11,137 LBS
 RATE OF CLIMB: 215 FT/MIN

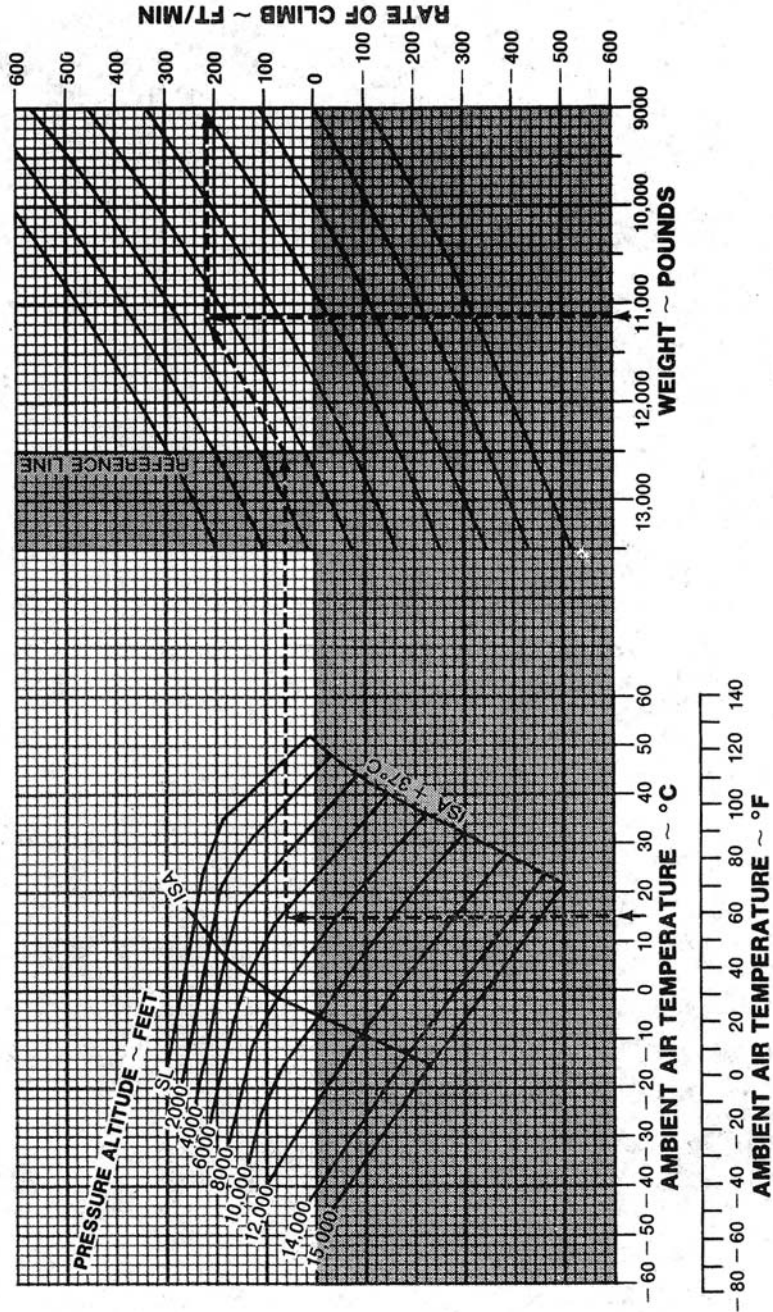


Figure 46-6. (M) Single-Engine Waveoff Climb — Flaps 40 Percent

ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

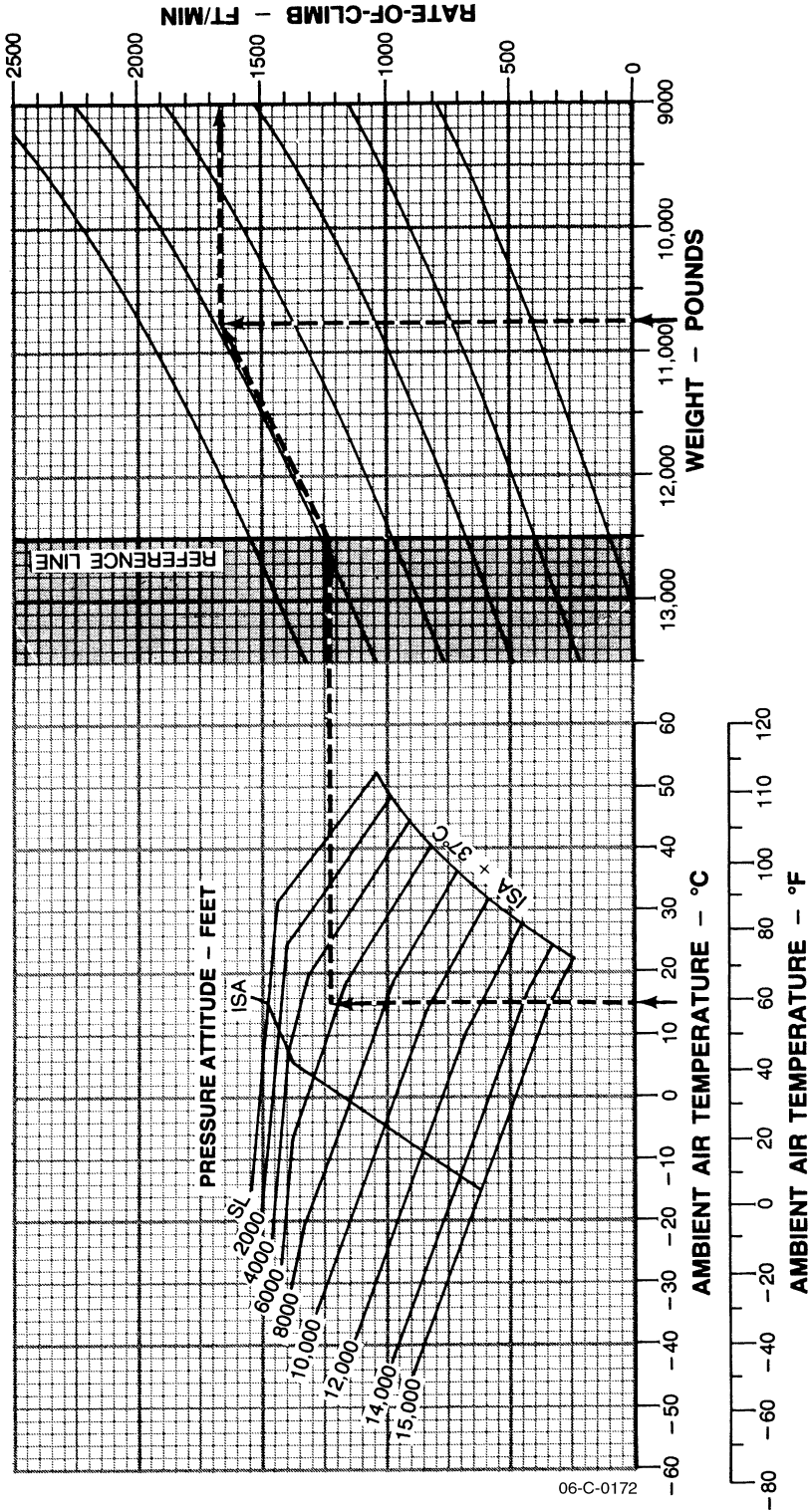
EXAMPLE:
 OAT: 15°C
 PRESSURE ALTITUDE: 5651 FEET
 WEIGHT: 10,772 LBS

RATE-OF-CLIMB: 1660 FPM

MODEL: UC-12B
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

CONFIGURATION:
 POWER: TAKEOFF
 FLAPS: 100%
 GEAR: DOWN
 AIRSPEED: 96 KNOTS

NOTE
 FOR OPERATION WITH ICE VANES EXTENDED, ADD 10°C TO THE ACTUAL OAT BEFORE ENTERING.



06-C-0172

Figure 46-7. (B) Two-Engine Waveoff Climb — Flaps 100 Percent

MODEL: UC-12F
 DATE: 29, JULY 1986
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

POWER: TAKEOFF
 FLAPS: DOWN (100%)
 GEAR: DOWN
 AIRSPEED: 96 KIAS

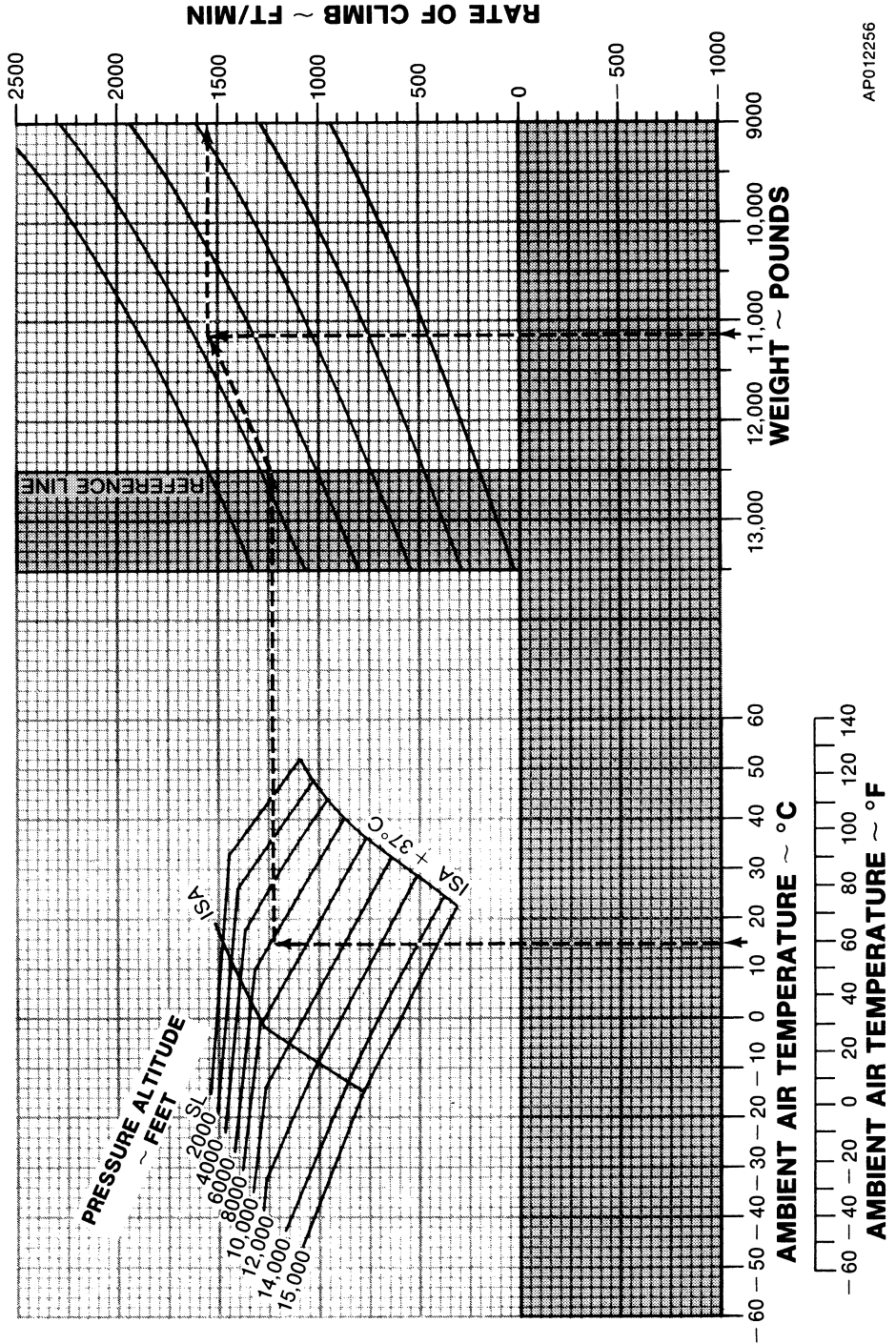
NOTES

- FOR OPERATION WITH ICE VANES EXTENDED, RATE OF CLIMB WILL BE REDUCED BY APPROXIMATELY 250 FT/MIN.
- ENTER GRAPH AT PRESSURE ALTITUDE FROM WHICH A WAVE-OFF WOULD BE EXECUTED.

ENGINE: PT6A-42
 PROPELLER: P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

OAT: 15°C
 PRESSURE ALTITUDE: 6100 FT
 WEIGHT: 11,137 LBS
 RATE OF CLIMB: 1550 FT/MIN



06-C-0173

AF012256

Figure 46-8. (F) Two-Engine Waveoff Climb — Flaps 100 Percent

MODEL: UC-12M
 DATE: 29, JULY 1986
 DATA BASIS: FLIGHT TEST

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

NOTES

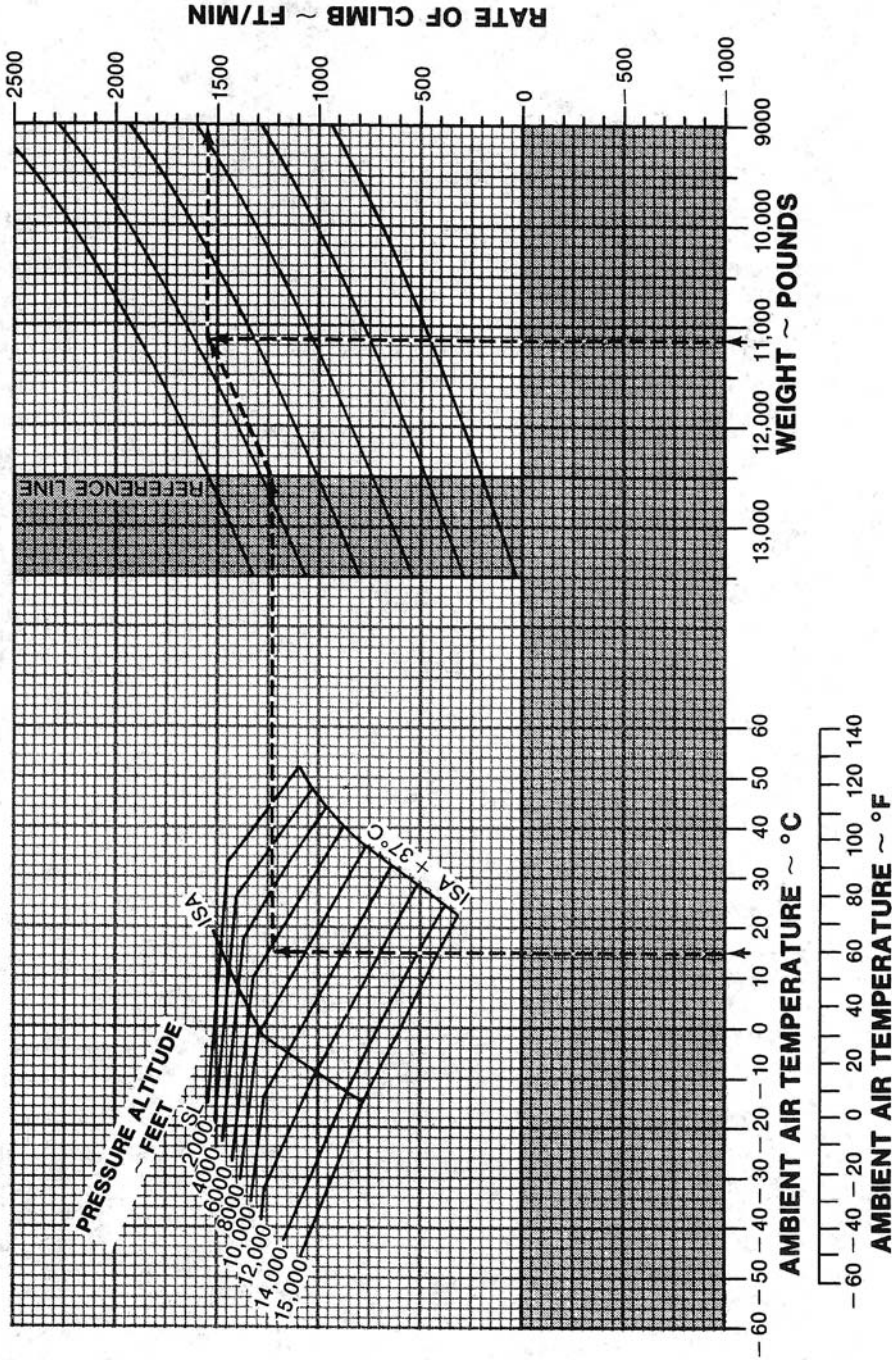
1. FOR OPERATION WITH ICE VANES EXTENDED, RATE OF CLIMB WILL BE REDUCED BY APPROXIMATELY 250 FT/MIN.
2. ENTER GRAPH AT PRESSURE ALTITUDE FROM WHICH A WAVE-OFF WOULD BE EXECUTED.

CONFIGURATION:

POWER: TAKEOFF
 FLAPS: DOWN (100%)
 GEAR: DOWN
 AIRSPEED: 96 KIAS

EXAMPLE:

OAT: 15°C
 PRESSURE ALTITUDE: 6100 FT
 WEIGHT: 11,137 LBS
 RATE OF CLIMB: 1550 FT/MIN



UC-12M-F0218

Figure 46-9. (M) Two-Engine Waveoff Climb— Flaps 100 Percent

ENGINE: PT6A-41/42
 PROPELLER: T10178/P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:
 OAT: 15°C
 PRESSURE ALTITUDE: ... 5651 FEET
 LANDING WEIGHT: 10,772 LBS
 HEADWIND
 COMPONENT: 10 KNOTS

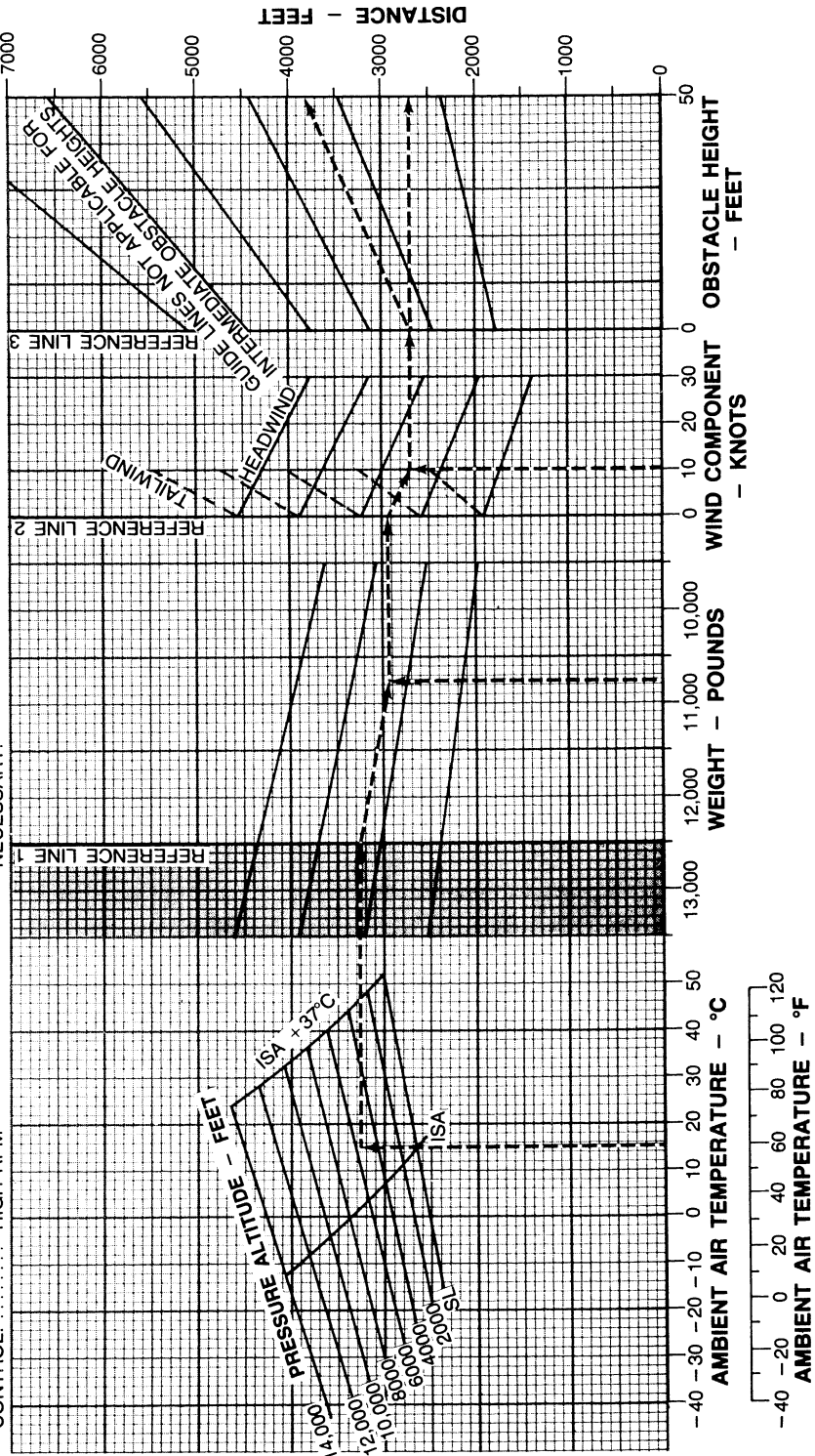
GROUND ROLL: 2700 FEET
 TOTAL OVER 50 FT
 OBSTACLE: 3800 FEET
 APPROACH SPEED: 125 KNOTS

WEIGHT - POUNDS	APPROACH SPEED - KNOTS
13,500	136
13,000	134
12,000	129
11,000	126
10,000	122
9,000	117

NOTE
 LANDING WITH FLAPS 100% IS PREFERRED. LAND-
 ING WITH FLAPS 0% IS PERMITTED ONLY WHEN
 NECESSARY.

MODEL: UC-12B/F
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

CONFIGURATION:
 POWER: RETARD TO MAINTAIN 900 FT/MIN
 ON FINAL APPROACH
 FLAPS: 0%
 RUNWAY: PAVED, LEVEL, DRY SURFACE
 BRAKING: MAXIMUM
 PROPELLER CONTROL: HIGH RPM



06-C-0176

Figure 46-10. (B/F) Landing Distance without Propeller Reversing — Flaps 0 Percent

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

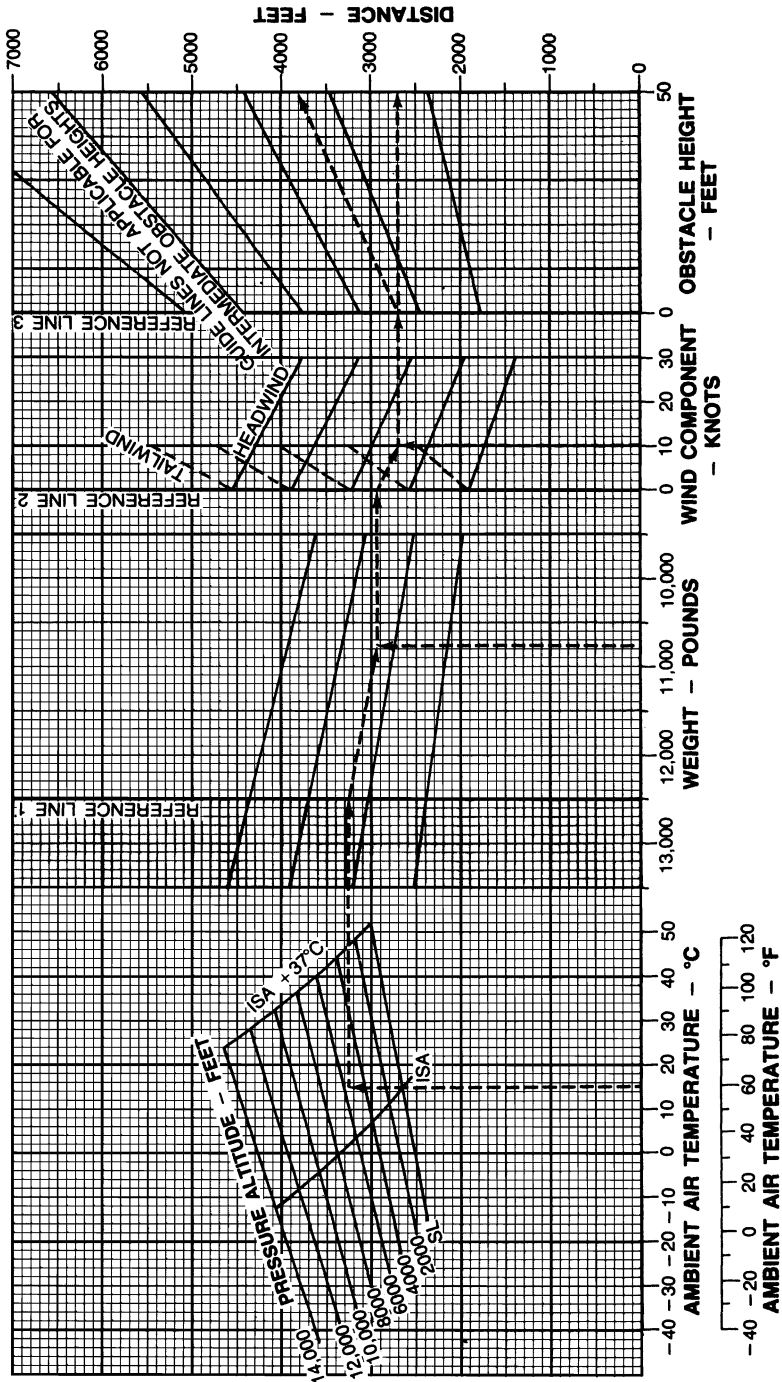
EXAMPLE:
 OAT: 15°C
 PRESSURE ALTITUDE: 5651 FEET
 LANDING WEIGHT: 10,772 LBS
 HEADWIND
 COMPONENT: 10 KNOTS
 GROUND ROLL: 2700 FEET
 TOTAL OVER 50 FT
 OBSTACLE: 3800 FEET
 APPROACH SPEED: 125 KIAS

WEIGHT — POUNDS	APPROACH SPEED — KIAS
13,500	136
13,000	134
12,000	129
11,000	126
10,000	122
9,000	117

MODEL: UC-12M
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

CONFIGURATION:
 POWER: RETARD TO MAINTAIN 900 FT/MIN ON FINAL APPROACH
 FLAPS: UP (0%)
 RUNWAY: PAVED, LEVEL, DRY SURFACE
 BRAKING: MAXIMUM
 PROPELLER CONTROL: HIGH RPM

NOTE
 LANDING WITH FLAPS DOWN (100%) PREFERRED.
 LANDING WITH FLAPS UP (0%) IS PERMITTED ONLY WHEN NECESSARY.



UC-12M-F0220

Figure 46-11. (M) Landing Distance without Propeller Reversing — Flaps 0 Percent

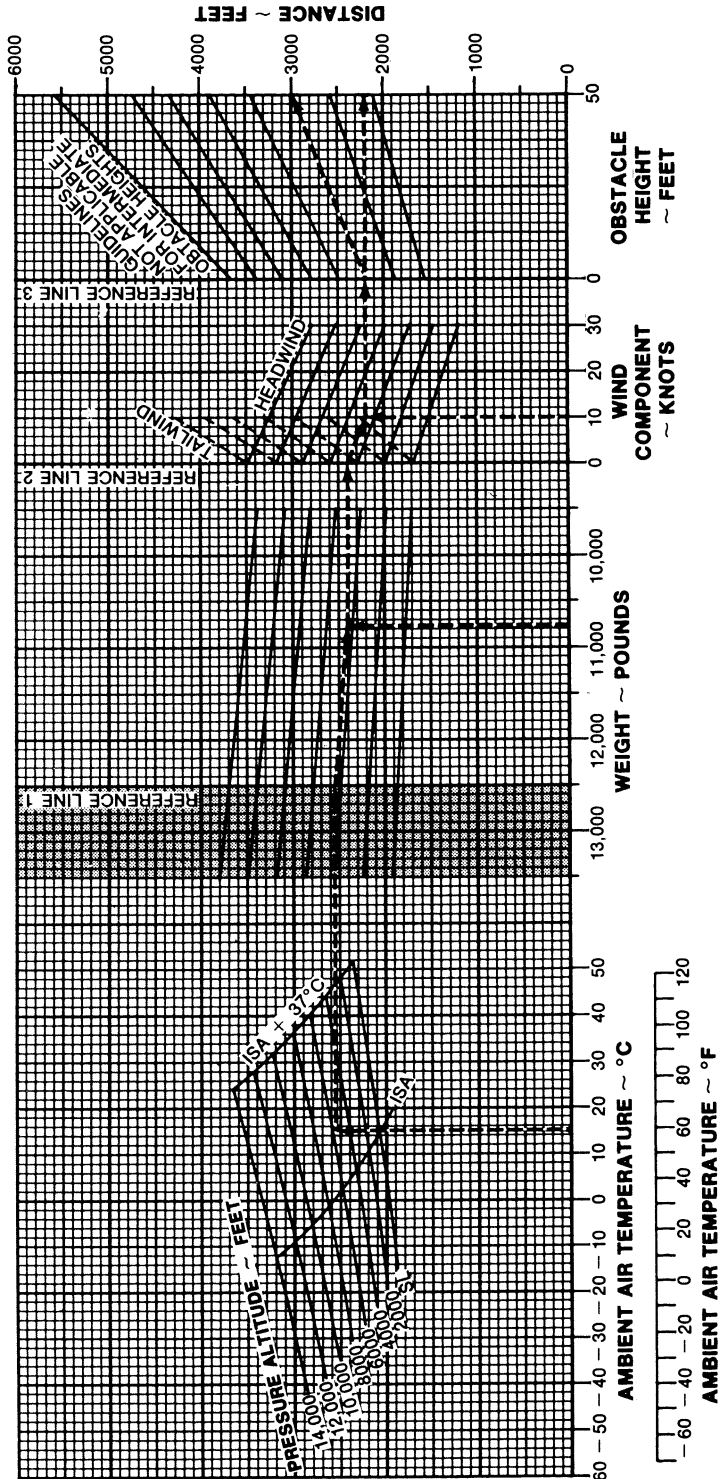
ENGINE: PT6A-41/42
 PROPELLER: T10178/P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:
 OAT 15°C
 PRESSURE ALTITUDE 5651 FEET
 LANDING WEIGHT 10,772 LBS
 HEADWIND COMPONENT 10 KNOTS
 GROUND ROLL 2200 FEET
 TOTAL OVER 50-FT OBSTACLE 2995 FEET
 APPROACH SPEED 112 KNOTS

WEIGHT ~ POUNDS	APPROACH SPEED ~ KNOTS
13,500	117
13,000	116
12,000	114
11,000	112
10,000	110
9000	108

MODEL: UC-12B/F
 DATE: 11 JANUARY 1988
 DATA BASIS: ESTIMATED

CONFIGURATION:
 POWER RETARD TO MAINTAIN 900 FT/MIN ON FINAL APPROACH
 FLAPS 40%
 RUNWAY PAVED, LEVEL, DRY SURFACE
 BRAKING MAXIMUM
 PROPELLER HIGH RPM



06-C-0175

Figure 46-12. (B/F) Landing Distance without Propeller Reversing — Flaps 40 Percent

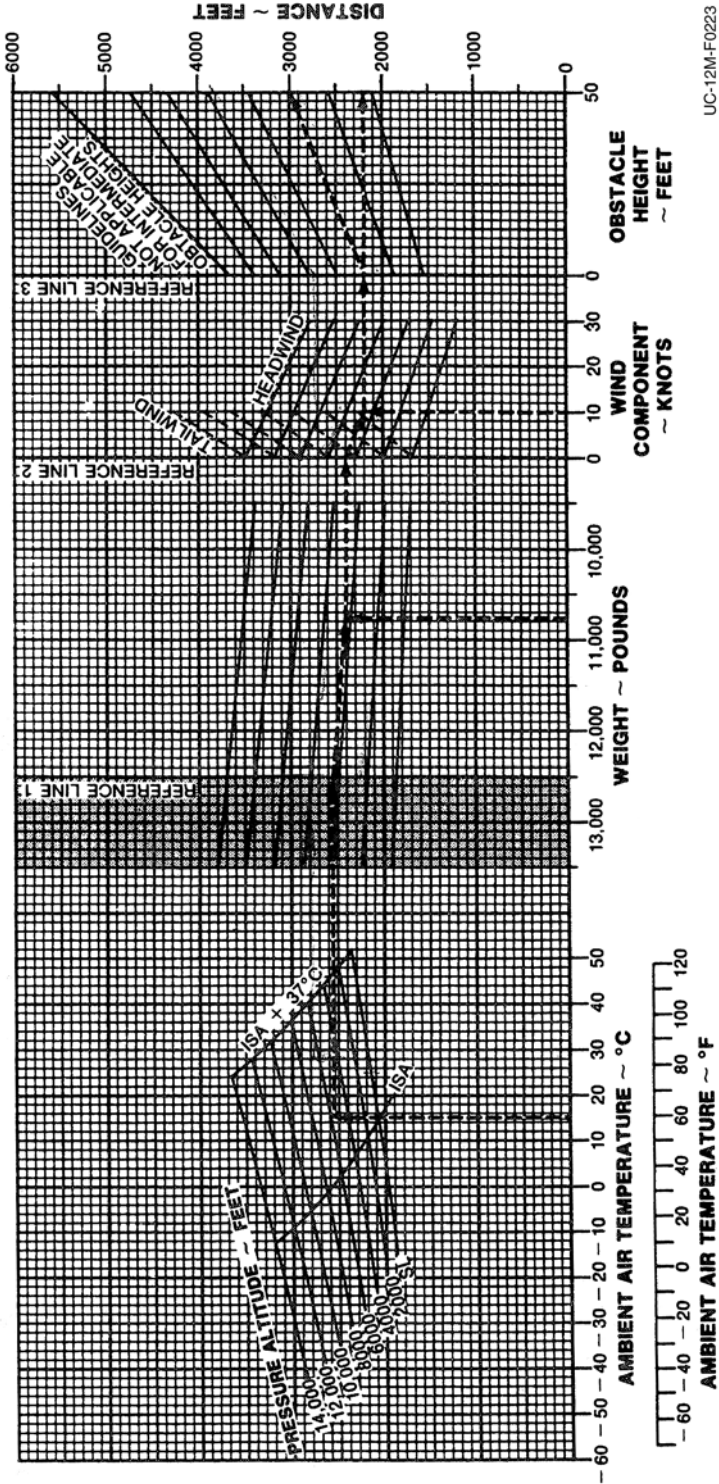
ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:
 OAT 15°C
 PRESSURE ALTITUDE 5651 FEET
 LANDING WEIGHT 10,772 LBS
 HEADWIND COMPONENT 10 KNOTS
 GROUND ROLL 2200 FEET
 TOTAL OVER 50-FT OBSTACLE 2995 FEET
 APPROACH SPEED 112 KNOTS

WEIGHT ~ POUNDS	APPROACH SPEED ~ KNOTS
13,500	117
13,000	116
12,000	114
11,000	112
10,000	110
9000	108

MODEL: UC-12B
 DATE: 11 JANUARY 1988
 DATA BASIS: ESTIMATED

CONFIGURATION:
 POWER RETARD TO MAINTAIN 900 FT/MIN ON FINAL APPROACH
 FLAPS 40%
 RUNWAY PAVED, LEVEL, DRY SURFACE
 BRAKING MAXIMUM
 PROPELLER HIGH RPM



UC-12M-F0223

Figure 46-13. (M) Landing Distance without Propeller Reversing — Flaps 40 Percent

ENGINE: PT6A-41/42
 PROPELLER: T10178/P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

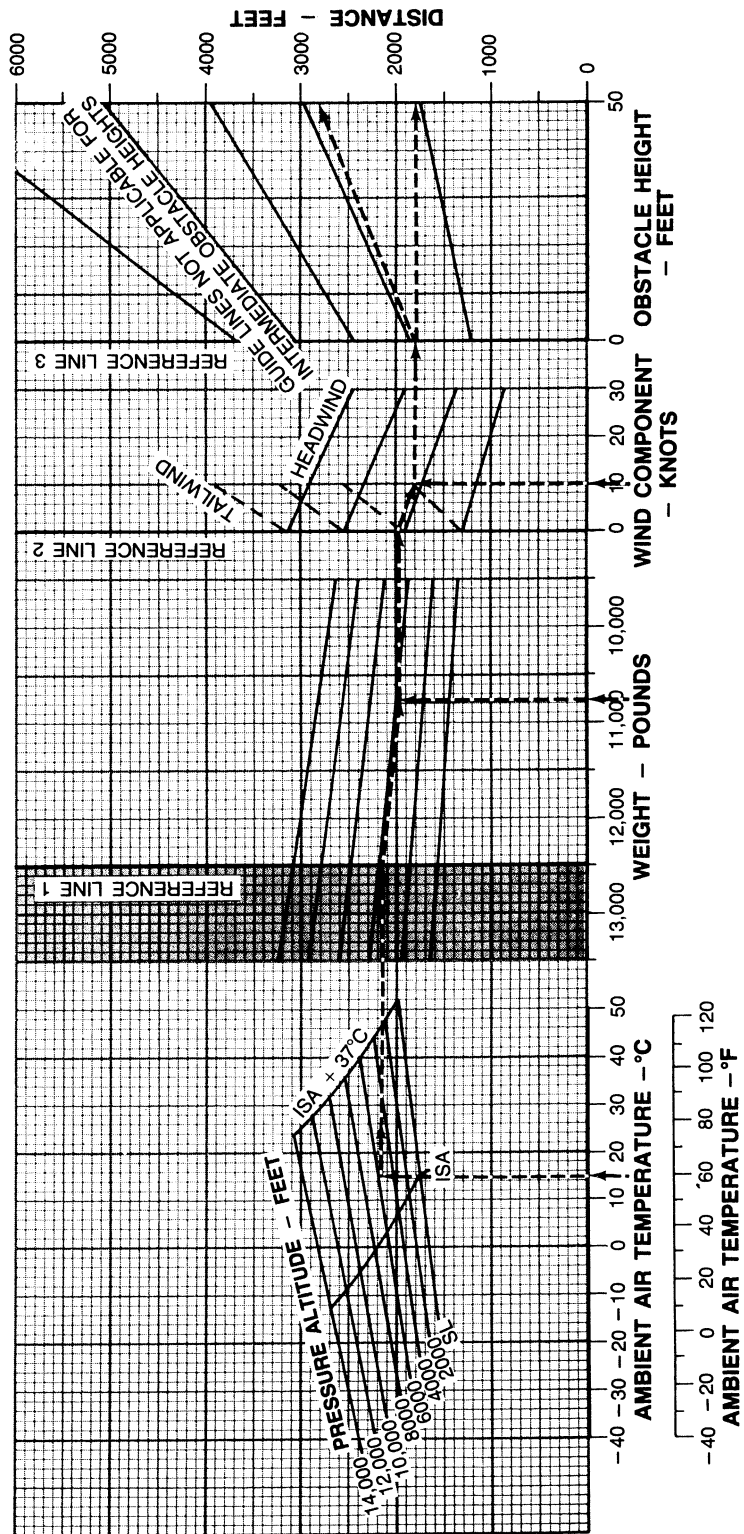
EXAMPLE:
 OAT: 15°C
 PRESSURE ALTITUDE: 5651 FEET
 LANDING WEIGHT: 10,772 LBS
 HEADWIND
 COMPONENT: 10 KNOTS
 GROUND ROLL: 1800 FEET
 TOTAL OVER 50 FT.
 OBSTACLE: 2800 FEET
 APPROACH SPEED: 98 KNOTS

WEIGHT — POUNDS	APPROACH SPEED — KNOTS
13,500	106
13,000	105
12,000	102
11,000	99
10,000	96
9000	93

MODEL: UC-12B/F
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

POWER: RETARD TO MAINTAIN 800 FT/MIN
 ON FINAL APPROACH
 FLAPS: 100%
 RUNWAY: PAVED LEVEL, DRY SURFACE
 BRAKING: MAXIMUM
 PROPELLER: HIGH RPM



06-C-0174

Figure 46-14. (B/F) Landing Distance without Propeller Reversing — Flaps 100 Percent

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:

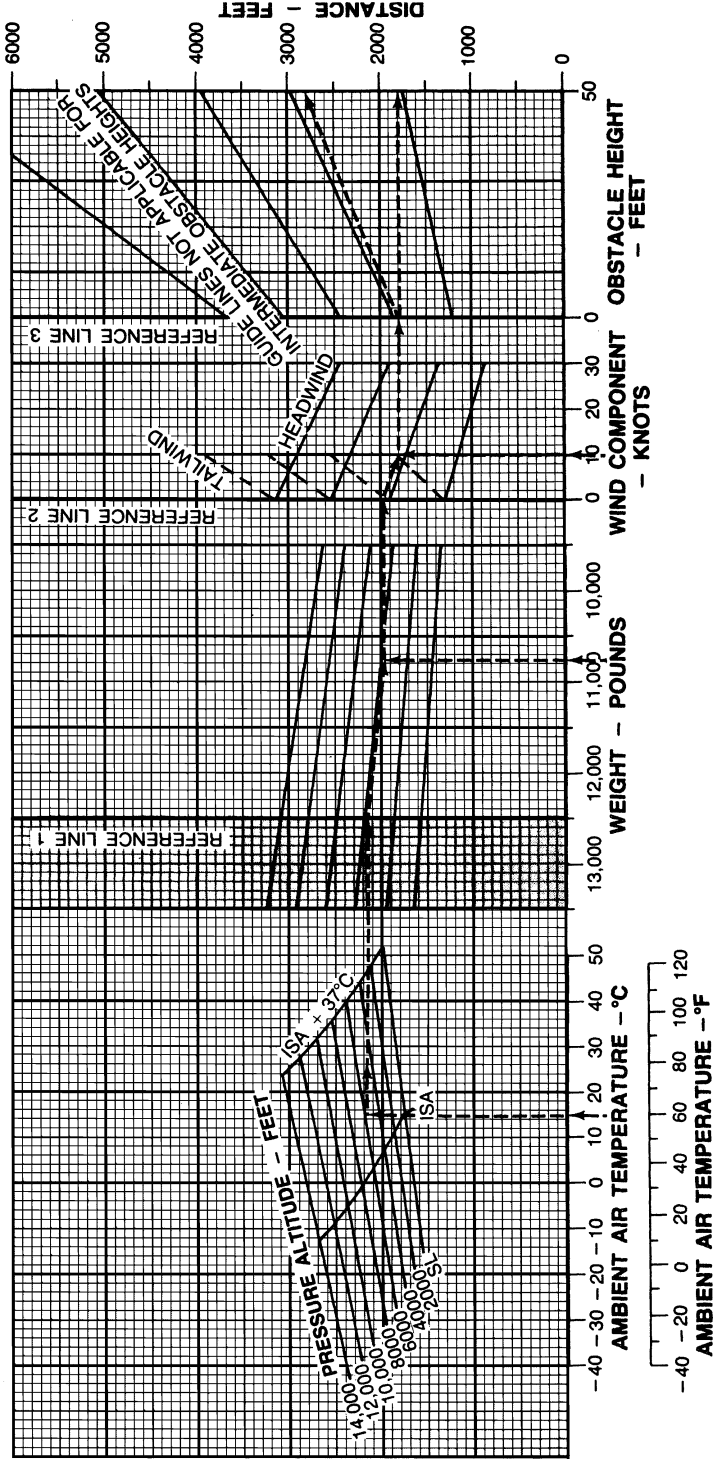
OAT: 15°C
 PRESSURE ALTITUDE: 5651 FEET
 LANDING WEIGHT: 10,772 LBS
 HEADWIND
 COMPONENT 10 KNOTS
 GROUND ROLL: 1800 FEET
 TOTAL OVER 50 FT.
 OBSTACLE: 2800 FEET
 APPROACH SPEED: 98 KIAS

WEIGHT — POUNDS	APPROACH SPEED — KIAS
13,500	106
13,000	105
12,000	102
11,000	99
10,000	96
9000	93

MODEL: UC-12M
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

POWER: RETARD TO MAINTAIN 800 FT/MIN
 ON FINAL APPROACH
 FLAPS: DOWN (100%)
 RUNWAY: PAVED, LEVEL, DRY SURFACE
 BRAKING: MAXIMUM
 PROPELLER: HIGH RPM



UC-12M-F0219

Figure 46-15. (M) Landing Distance without Propeller Reversing — Flaps 100 Percent

ENGINE: PT6A-41/42
 PROPELLER: T10178/P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:
 OAT: 15°C
 PRESSURE ALTITUDE: ... 5651 FEET
 LANDING WEIGHT: 10,772 LBS
 HEADWIND
 COMPONENT: 10 KNOTS

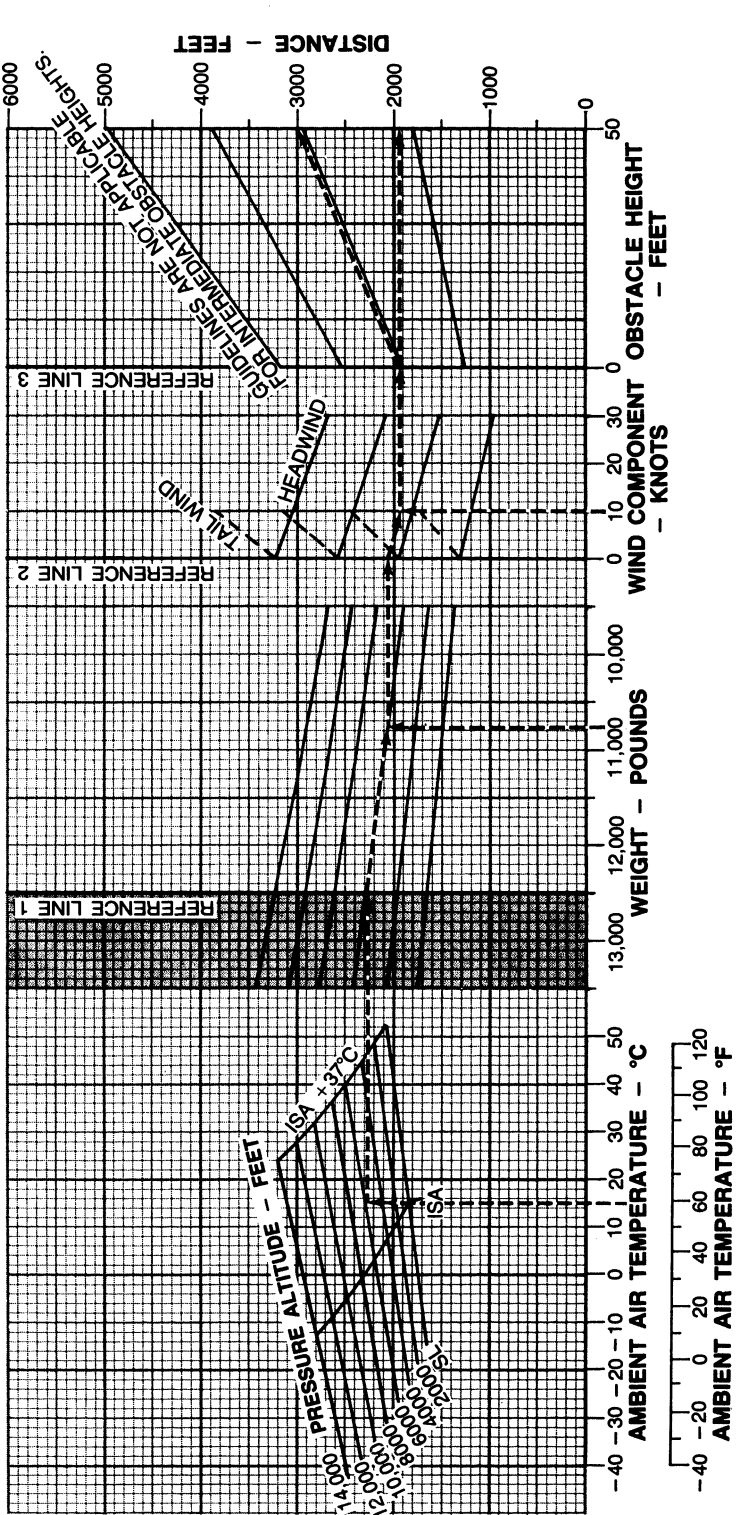
WEIGHT - POUNDS	APPROACH SPEED - KNOTS
13,500	136
13,000	134
12,000	129
11,000	126
10,000	122
9000	117

NOTE
 LANDING WITH FLAPS 100% IS PREFERRED.
 LANDING WITH FLAPS 0% IS PERMITTED ONLY WHEN NECESSARY.

MODEL: UC-12B/F
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

CONFIGURATION:

POWER: RETARD TO MAINTAIN 1000 FT/MIN ON FINAL APPROACH
 FLAPS: 0%
 RUNWAY: PAVED LEVEL DRY SURFACE
 BRAKING: MAXIMUM
 CONDITION LEVERS: HIGH IDLE
 PROPELLER CONTROL: FULL FORWARD
 POWER LEVERS: MAXIMUM REVERSE AFTER TOUCHDOWN UNTIL FULLY STOPPED



06-C-0179

Figure 46-16. (B/F) Landing Distance with Propeller Reversing — Flaps 0 Percent

ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:
 OAT: 15°C
 PRESSURE ALTITUDE: 5651 FEET
 LANDING WEIGHT: 10,772 LBS
 HEADWIND COMPONENT: 10 KNOTS
 GROUND ROLL: 1920 FEET
 TOTAL OVER 50 FT OBSTACLE: 3000 FEET
 APPROACH SPEED: 125 KIAS

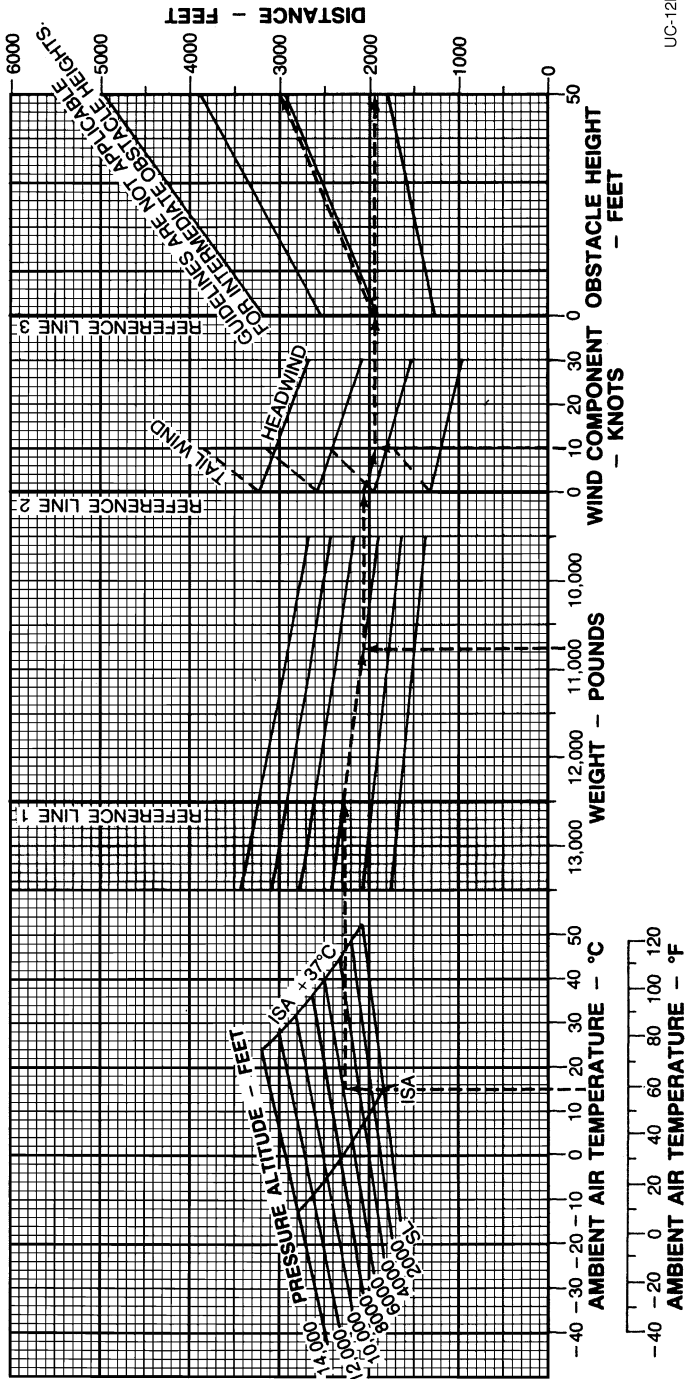
WEIGHT — POUNDS	APPROACH SPEED — KIAS
13,500	136
13,000	134
12,000	129
11,000	126
10,000	122
9000	117

NOTE

LANDING WITH FLAPS DOWN (100%) IS PREFERRED.
 LANDING WITH FLAPS UP (0%) IS PERMITTED ONLY WHEN NECESSARY.

MODEL: UC-12M
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

CONFIGURATION:
 POWER: RETARD TO MAINTAIN 1000 FT/MIN ON FINAL APPROACH
 FLAPS: UP (0%)
 RUNWAY: PAVED LEVEL DRY SURFACE
 BRAKING: MAXIMUM
 CONDITION LEVERS: HIGH IDLE
 PROPELLER CONTROL: FULL FORWARD
 POWER LEVERS: MAXIMUM REVERSE AFTER TOUCHDOWN UNTIL FULLY STOPPED



UC-12M-F0222

Figure 46-17. (M) Landing Distance with Propeller Reversing — Flaps 0 Percent

ENGINE: PT6A-41/42
 PROPELLER: T10178/P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:
 OAT 15°C
 PRESSURE ALTITUDE 5651 FEET
 LANDING WEIGHT 10,772 LBS
 HEADWIND COMPONENT 10 KNOTS
 GROUND ROLL 1500 FEET
 TOTAL OVER 50-FT OBSTACLE 2225 FEET
 APPROACH SPEED 112 KNOTS

WEIGHT ~ POUNDS	APPROACH SPEED ~ KNOTS
13,500	116
13,000	116
12,000	114
11,000	112
10,000	110
9000	108

MODEL: UC-12B/F
 DATE: 11 JANUARY 1988
 DATA BASIS: ESTIMATED

CONFIGURATION:
 POWER RETARD TO MAINTAIN 900 FT/MIN ON FINAL APPROACH
 FLAPS 40%
 RUNWAY PAVED, LEVEL, DRY SURFACE
 BRAKING MAXIMUM
 CONDITION LEVERS HIGH IDLE
 PROPELLER CONTROLS FULL FORWARD
 POWER LEVERS MAXIMUM REVERSE AFTER TOUCHDOWN UNTIL FULLY STOPPED

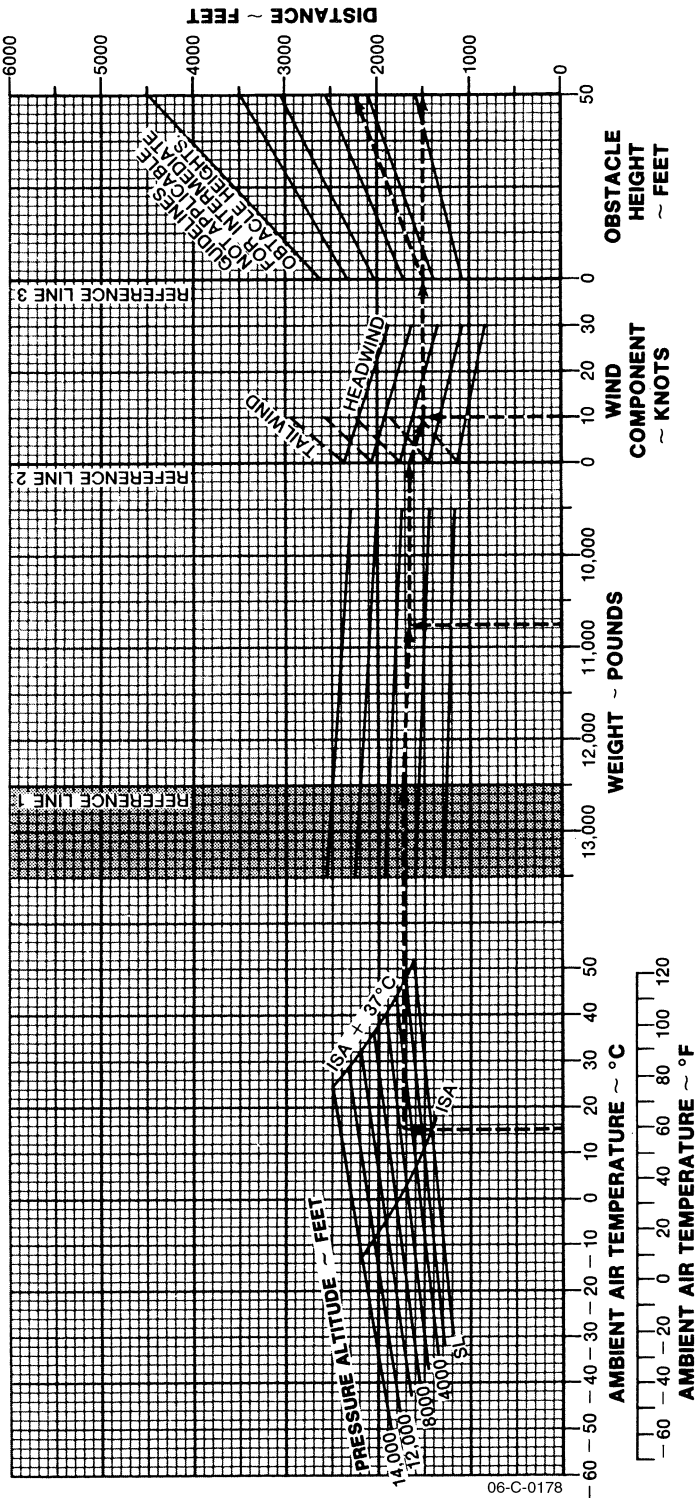


Figure 46-18. (B/F) Landing Distance with Propeller Reversing — Flaps 40 Percent

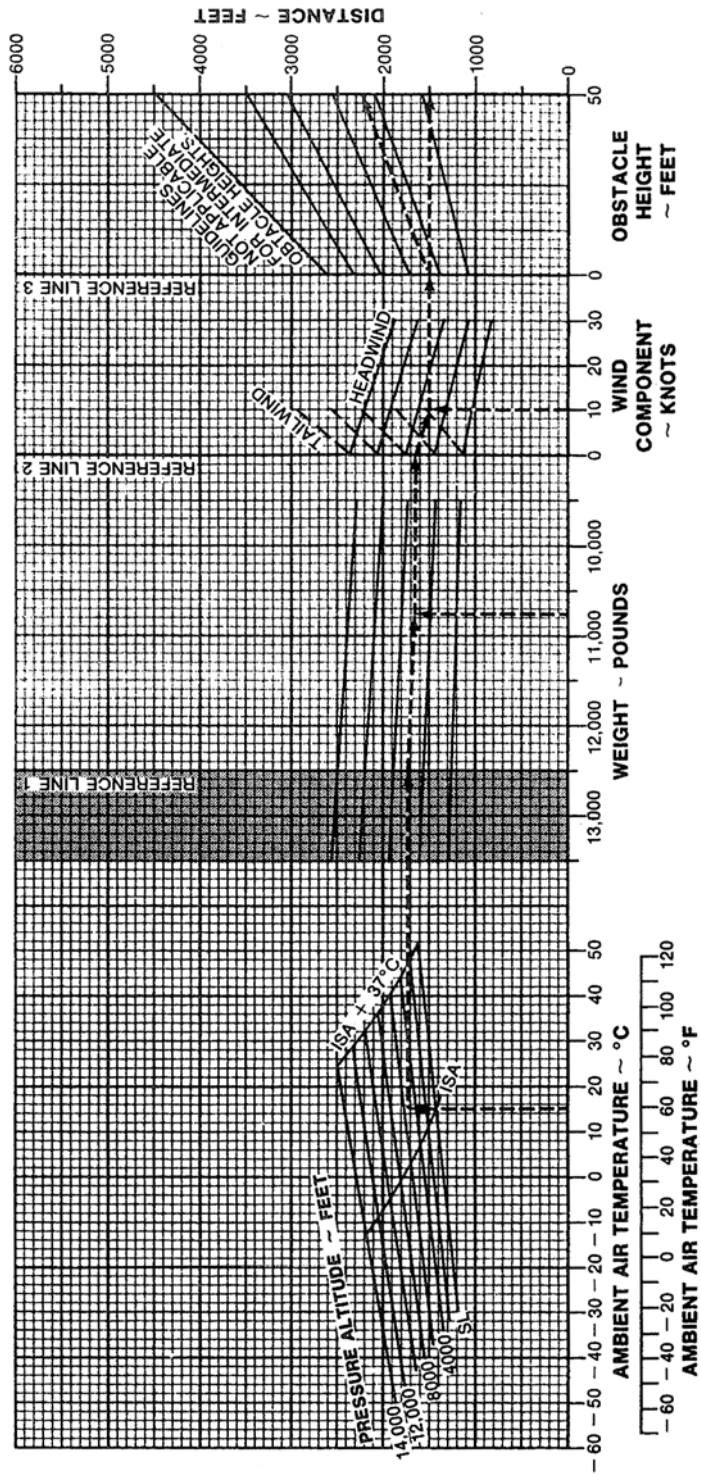
ENGINE: PT6A-41
 PROPELLER: T10178
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:
 OAT 15°C
 PRESSURE ALTITUDE 5651 FEET
 LANDING WEIGHT 10,772 LBS
 HEADWIND COMPONENT 10 KNOTS
 GROUND ROLL 1500 FEET
 TOTAL OVER 50-FT 2225 FEET
 OBSTACLE 112 KNOTS
 APPROACH SPEED 112 KNOTS

WEIGHT ~ POUNDS	APPROACH SPEED ~ KNOTS
13,500	116
13,000	116
12,000	114
11,000	112
10,000	110
9000	108

MODEL: UC-12B
 DATE: 11 JANUARY 1988
 DATA BASIS: ESTIMATED

CONFIGURATION:
 POWER RETARD TO MAINTAIN 900 FT/MIN ON FINAL APPROACH
 FLAPS 40%
 RUNWAY PAVED, LEVEL, DRY SURFACE
 BRAKING MAXIMUM
 CONDITION LEVERS HIGH IDLE
 PROPELLER CONTROLS FULL FORWARD
 POWER LEVERS MAXIMUM REVERSE AFTER TOUCHDOWN UNTIL FULLY STOPPED



UC-12M-F0224

Figure 46-19. (M) Landing Distance with Propeller Reversing — Flaps 40 Percent

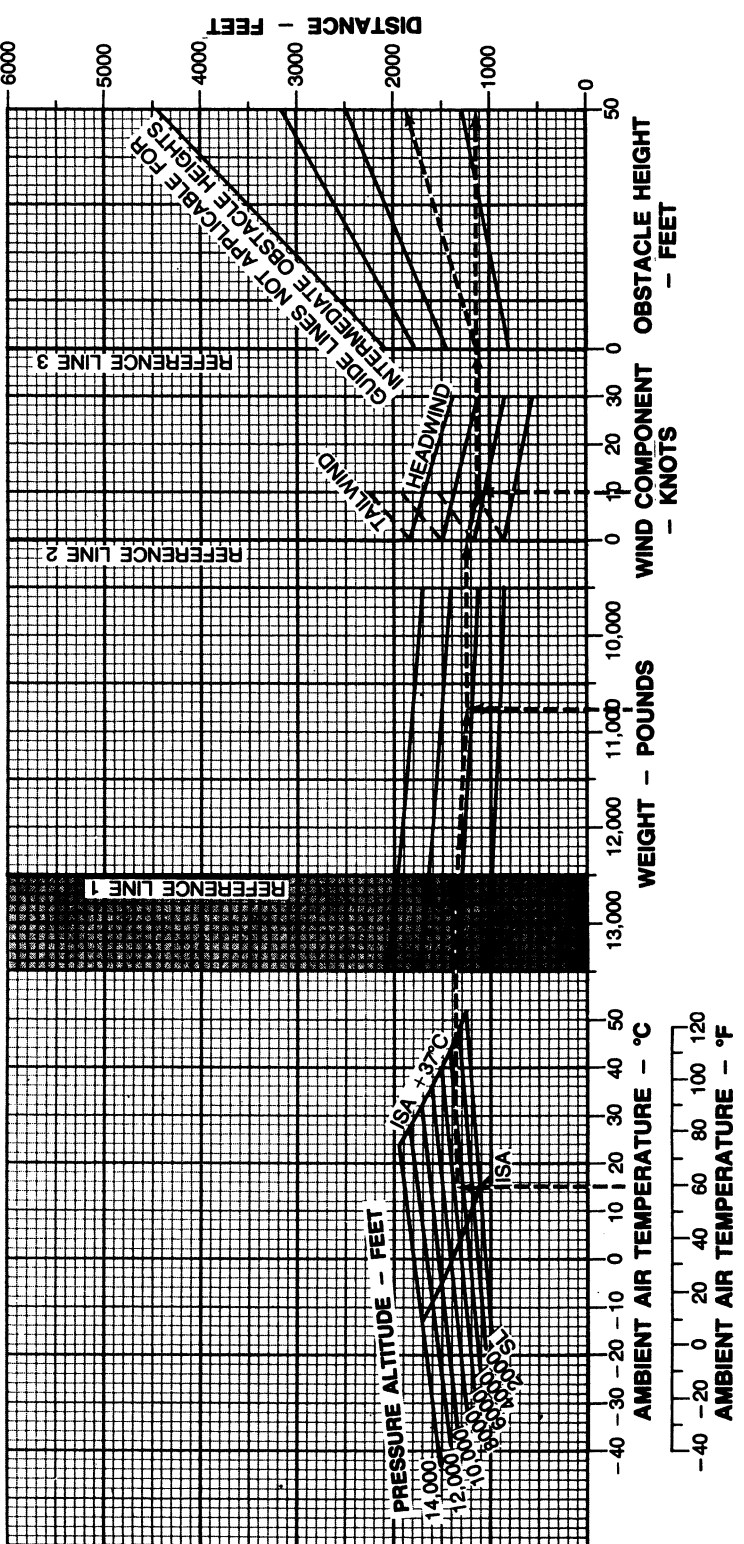
ENGINE: PT6A-41/42
 PROPELLER: T10178/P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:
 OAT: 15° C
 PRESSURE ALTITUDE: ... 5651 FEET
 LANDING WEIGHT: 10,772 LBS
 HEADWIND COMPONENT: 10 KNOTS
 GROUND ROLL: 1130 FEET
 TOTAL OVER 50 FT OBSTACLE: 1860 FEET
 APPROACH SPEED: 98 KNOTS

WEIGHT - POUNDS	APPROACH SPEED - KNOTS
13,500	106
13,000	105
12,000	102
11,000	99
10,000	96
9000	93

MODEL: UC-12B/F
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

CONFIGURATION:
 POWER: RETARD TO MAINTAIN 1000 FT/MIN ON FINAL APPROACH
 FLAPS: 100%
 RUNWAY: PAVED LEVEL DRY SURFACE
 BRAKING: MAXIMUM
 CONDITION LEVERS: HIGH IDLE
 PROPELLER CONTROLS: FULL FORWARD
 POWER LEVERS: MAXIMUM REVERSE AFTER TOUCHDOWN UNTIL FULLY STOPPED



06-C-0177

Figure 46-20. (B/F) Landing Distance with Propeller Reversing — Flaps 100 Percent

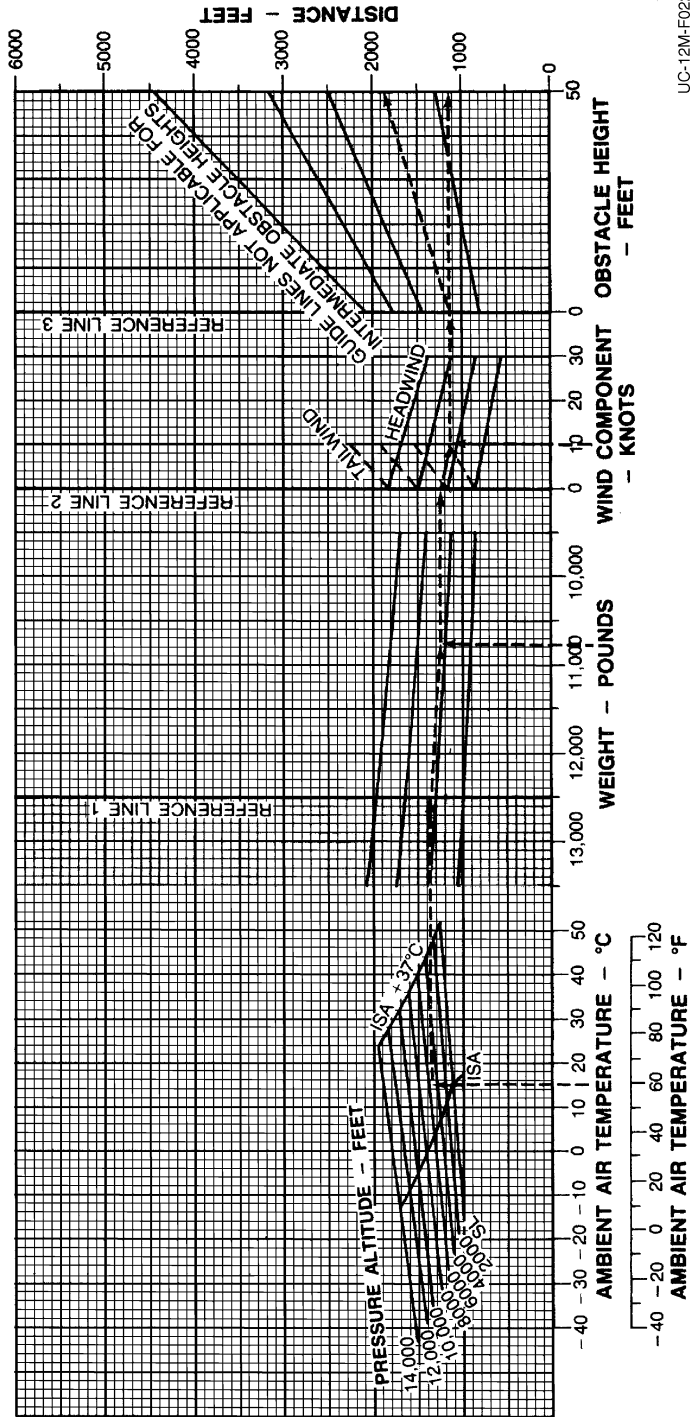
ENGINE: PT6A-42
 PROPELLER: P70254230-150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE:
 OAT: 15°C
 PRESSURE ALTITUDE: 5651 FEET
 LANDING WEIGHT: 10,772 LBS
 HEADWIND
 COMPONENT: 10 KNOTS
 GROUND ROLL: 1130 FEET
 TOTAL OVER 50 FT
 OBSTACLE: 1860 FEET
 APPROACH SPEED: 98 KIAS

WEIGHT — POUNDS	APPROACH SPEED — KIAS
13,500	106
13,000	105
12,000	102
11,000	99
10,000	96
9,000	93

MODEL: UC-12M
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

CONFIGURATION:
 POWER: RETARD TO MAINTAIN 1000 FT/MIN ON FINAL APPROACH
 FLAPS: DOWN (100%)
 RUNWAY: PAVED, LEVEL, DRY SURFACE
 BRAKING: MAXIMUM
 CONDITION LEVERS: HIGH IDLE
 PROPELLER CONTROLS: FULL FORWARD
 POWER LEVERS: MAXIMUM REVERSE AFTER TOUCHDOWN UNTIL FULLY STOPPED



UC-12M-F0221

Figure 46-21. (M) Landing Distance with Propeller Reversing — Flaps 100 Percent

MODEL: UC-12B/F
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

CONFIGURATION: NOTED

ENGINE: PT6A-41/42
 PROPELLER: T10178/P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

EXAMPLE: GIVEN THE FOLLOWING, CALCULATE STOPPING DISTANCE FACTORS:

1. LANDING DISTANCE (FLAPS 100%NO REV)	
GROUND ROLL (DRY)	1580 FT
TOTAL OVER 50 FT OBSTACLE.....	2700 FT
RUNWAY CONDITION READING	8.0
LANDING WEIGHT	11,180 LBS

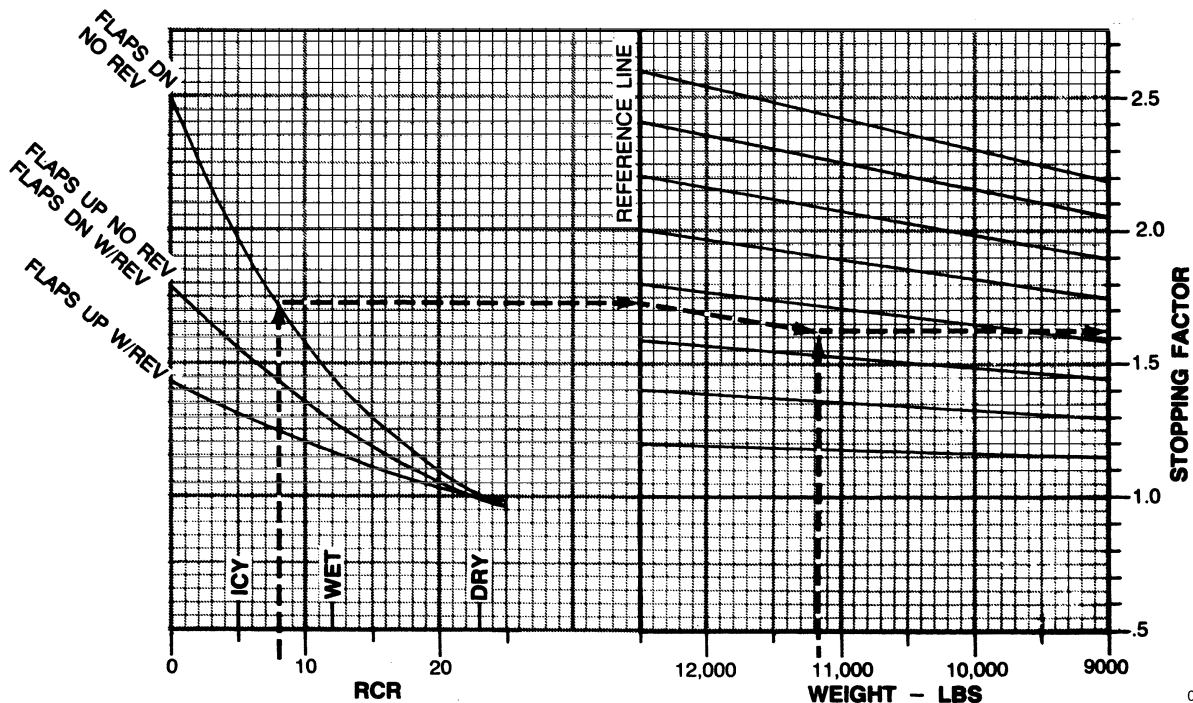
STOPPING FACTOR	1.62
LANDING DISTANCE (FACTORED)	
GROUND ROLL (1580 x 1.62).....	2560
AIR DISTANCE (2700 - 1580).....	1120
TOTAL OVER 50 FT OBSTACLE....(2560 + 1120)	3680

NOTE

- IF RCR READING IS NOT AVAILABLE, ASSUME ICY RUNWAY RCR = 5.0 AND WET RUNWAY RCR = 12.0
- ONE ENGINE INOPERATIVE STOPPING DISTANCES WILL NOT ACCOUNT FOR REVERSING

2. ACCELERATE - STOP DISTANCE (FLAPS 0% NO REV)	
ACCELERATE - STOP DISTANCE.....	5890 FT
GROUND ROLL	4750 FT
RUNWAY CONDITION READING	10.0
TAKEOFF WEIGHT	12,500 LBS

STOPPING FACTOR	1.34
STOPPING DISTANCE	
[(5890 - 4750) x 1.34].....	1528 FT
ACCELERATE DISTANCE	4750 FT
ACCELERATE - STOP DISTANCE	
(1528 + 4750).....	6278 FT



06-C-0180

Figure 46-22. (B/F) Stopping Distance Factors

MODEL: UC-12M
 DATE: 14 MAY 1979
 DATA BASIS: FLIGHT TEST

CONFIGURATION: NOTED

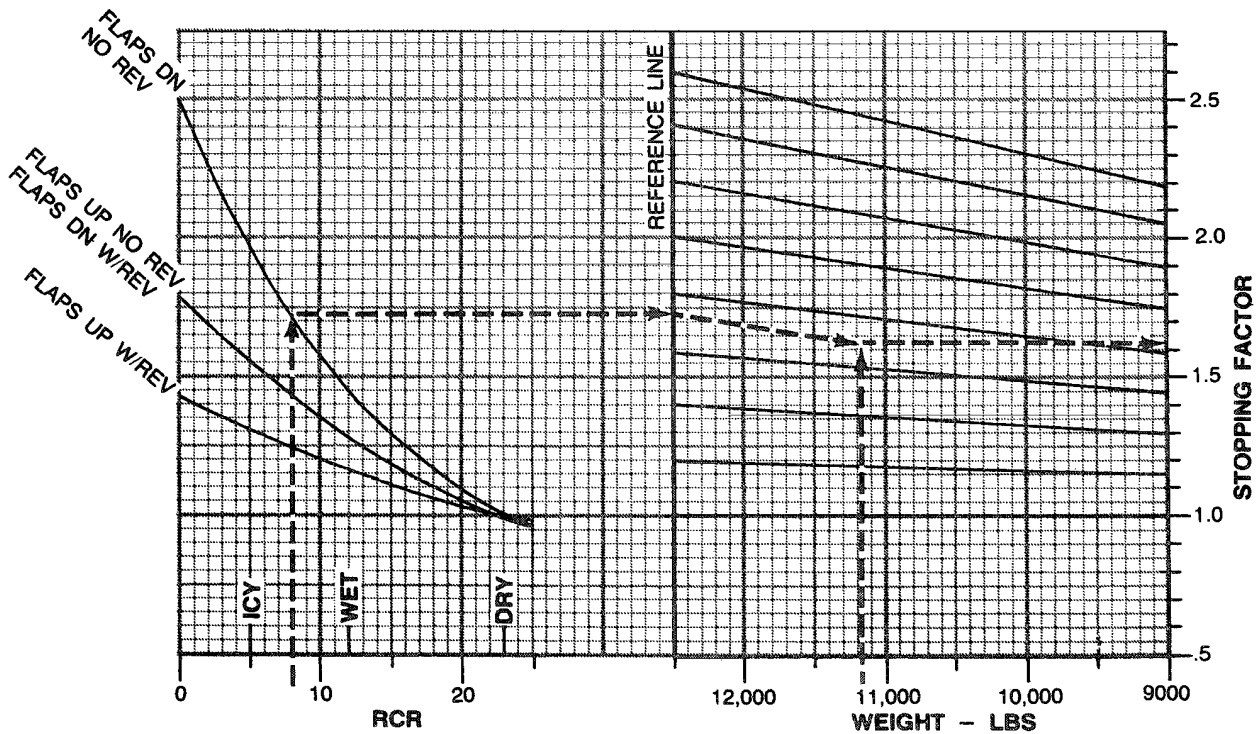
ENGINE: PT6A-42
 PROPELLER: P7025423-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LB/GAL

NOTE

- IF RCR READING IS NOT AVAILABLE, ASSUME ICY RUNWAY RCR = 5.0 AND WET RUNWAY RCR = 12.0
- ONE ENGINE INOPERATIVE STOPPING DISTANCES WILL NOT ACCOUNT FOR REVERSING

EXAMPLE:

1. LANDING DISTANCE (FLAPS DOWN (100%) NO REV)	
GROUND ROLL (DRY):	1580 FT
TOTAL OVER 50 FT OBSTACLE:	2700 FT
RUNWAY CONDITION READING:	8.0
LANDING WEIGHT:	11,180 LBS
<hr/>	
STOPPING FACTOR:	1.62
LANDING DISTANCE (FACTORED)	
GROUND ROLL (1580 x 1.62):	2560
AIR DISTANCE (2700 - 1580):	1120
TOTAL OVER 50 FT OBSTACLE (2560 + 1120):	3680
<hr/>	
2. ACCELERATE - STOP DISTANCE (FLAPS UP (0%) NO REV)	
ACCELERATE - STOP DISTANCE:	5890 FT
ACCELERATE AFTER LIFT-OFF	
GROUND ROLL:	4750 FT
RUNWAY CONDITION READING:	10.0
TAKEOFF WEIGHT:	12,500 LBS
<hr/>	
STOPPING FACTOR:	1.34
STOPPING DISTANCE	
[(5890 - 4750) x 1.34]:	1528 FT
ACCELERATE DISTANCE:	4750 FT
ACCELERATE - STOP DISTANCE	
(1528 + 4750):	6278 FT



UC-12M-F0225

Figure 46-23. (M) Stopping Distance Factors

CHAPTER 47

Emergency Operation

47.1 DESCRIPTION OF CHARTS

47.1.1 Glide

Distance and time to glide with the gear up, flaps 0 percent, both propellers feathered, at a glide-indicated airspeed of 140 knots are furnished. To use the chart, enter the left side at gross weight and trace right to initial and final pressure altitudes. Trace down to read initial and final distance to descend and time to descend. To obtain distance to descend and time to descend, subtract initial from final value. (Figures 47-1 and 47-2.)

A1-C12BM-NFM-200

MODEL: UC-12B/F
 DATE: 14 MAY 1979
 DATA BASIS: ESTIMATED

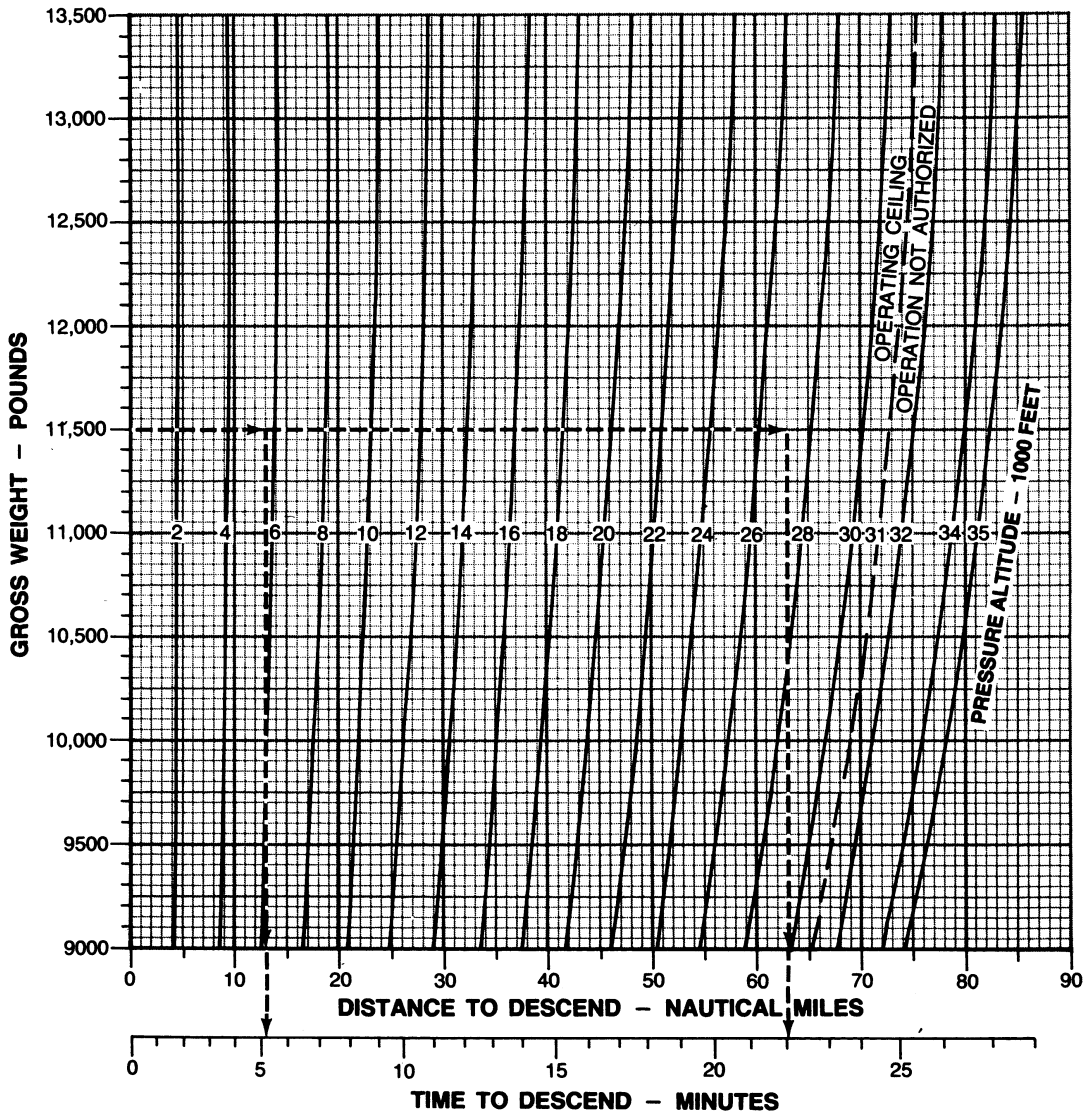
ENGINE: PT6A-41/42
 PROPELLER: T10178/P7545550
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LBS/GAL

CONFIGURATION:

FLAPS: UP (0%)
 GEAR: UP
 PROPELLER: FEATHERED (BOTH ENGINES)
 AIRSPEED: 140 KNOTS
 WEIGHTS: ALL

EXAMPLE:

GROSS WEIGHT: 11,500 POUNDS
 FINAL ALTITUDE: 5700 FEET
 INITIAL ALTITUDE: 27,000 FEET
 FINAL DISTANCE: 13 NAUTICAL MILES
 INITIAL DISTANCE: 63 NAUTICAL MILES
 FINAL TIME: 5 MINUTES
 INITIAL TIME: 22 MINUTES
 DISTANCE TO DESCEND:.. 63 - 13 = 50 NAUTICAL MILES
 TIME TO DESCEND: 22 - 5 = 17 MINUTES



06-C-0182

Figure 47-1. (B/F) Glide

MODEL: UC-12M
 DATE: 14 MAY 1979
 DATA BASIS: ESTIMATED

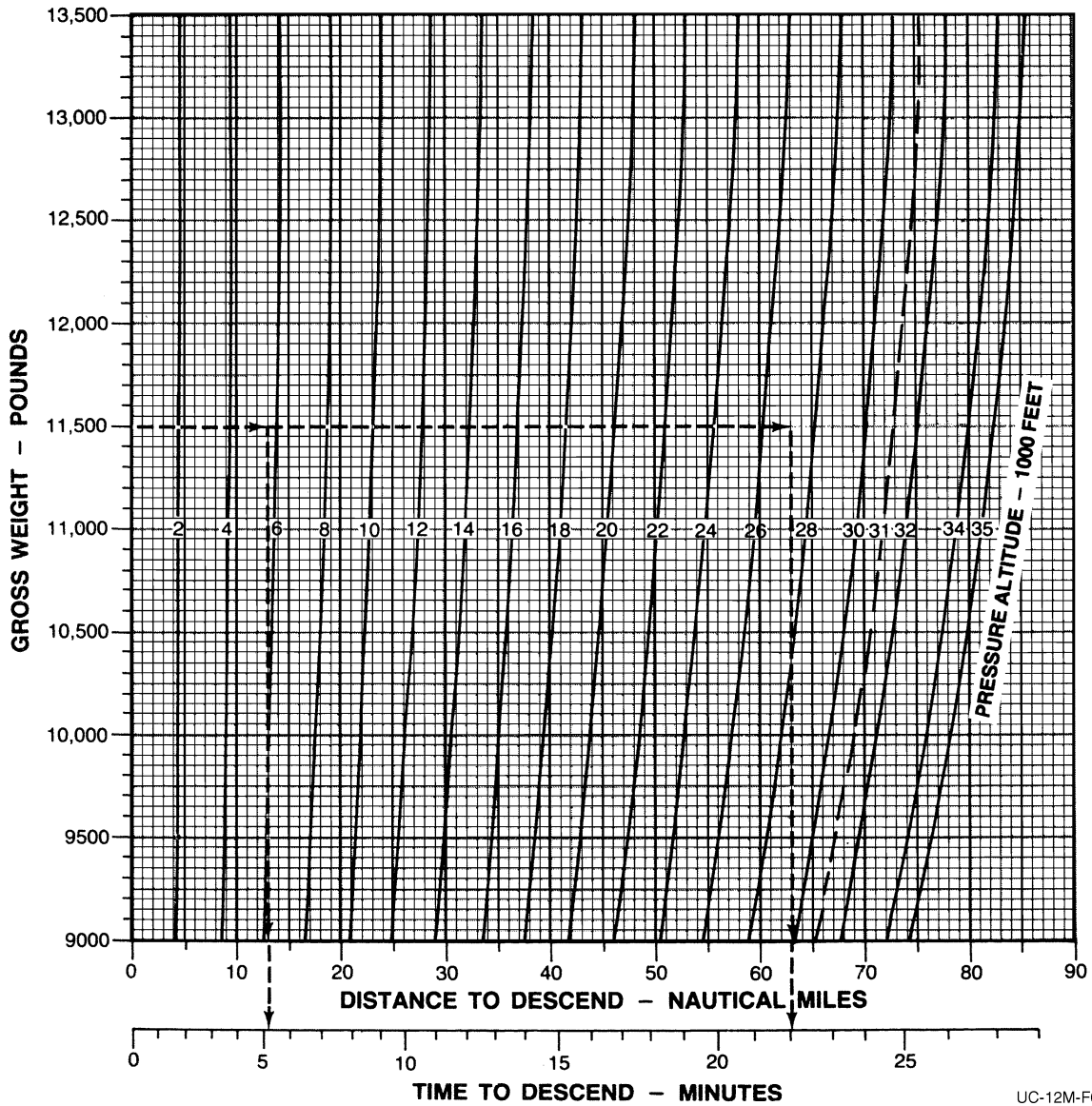
ENGINE: PT6A-42
 PROPELLER: P7025432-0150
 FUEL GRADE: JP-5
 FUEL DENSITY: 6.8 LB/GAL

CONFIGURATION:

FLAPS:UP (0%)
 GEAR:UP
 PROPELLER:FEATHERED (BOTH ENGINES)
 AIRSPEED:140 KIAS
 WEIGHTS:ALL

EXAMPLE:

GROSS WEIGHT:11,500 POUNDS
 FINAL ALTITUDE:5700 FEET
 INITIAL ALTITUDE:27,000 FEET
 FINAL DISTANCE:13 NAUTICAL MILES
 INITIAL DISTANCE:63 NAUTICAL MILES
 FINAL TIME:5 MINUTES
 INITIAL TIME:22 MINUTES
 DISTANCE TO DESCEND:63 - 13 = 50 NAUTICAL MILES
 TIME TO DESCEND:22 - 5 = 17 MINUTES



UC-12M-F0226

Figure 47-2. (M) Glide

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