



SUPPLEMENTAL TYPE CERTIFICATE NUMBER SA11103SC
HALO 275 COMMUTER CATEGORY CONVERSION OF
BEECHCRAFT KING AIR B200GT AIRPLANES
AND
BEECHCRAFT B200 AND B200C AIRPLANES
WITH ROCKWELL COLLINS PROLINE 21 AVIONICS
AND HIGH FLOTATION LANDING GEAR

FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT

Airplane Serial No: _____

This supplement must be attached to the appropriate FAA Approved Airplane Flight Manual when the aircraft is modified in accordance with STC SA11103SC. The information contained herein supplements or supersedes the basic Airplane Flight Manual only in those areas listed herein. For limitations, procedures and performance information not contained in this supplement, consult the basic Beechcraft B200GT or B200 Airplane Flight Manual / Pilot Operating Handbook, as applicable.

FAA APPROVED


Jim Grigg
Manager, Fort Worth Aircraft Certification Office
Southwest Region
Federal Aviation Administration
Fort Worth, Texas 76177
Dated: June 29, 2017

REFERENCE ONLY

AIRPLANE FLIGHT MANUAL SUPPLEMENT
BEECHCRAFT KING AIR B200GT AIRPLANES
AND
BEECHCRAFT KING AIR B200 AND B200C AIRPLANES
WITH ROCKWELL COLLINS PROLINE 21 AVIONICS
WITH
HIGH FLOTATION LANDING GEAR AND
HALO 275 COMMUTER CATEGORY CONVERSION

TABLE OF DIVISIONS

SECTION 1	GENERAL
SECTION 2	LIMITATIONS
SECTION 3	EMERGENCY PROCEDURES
SECTION 3A	ABNORMAL PROCEDURES
SECTION 4	NORMAL PROCEDURES
SECTION 5	PERFORMANCE
SECTION 6	WEIGHT & BALANCE
SECTION 7	SYSTEMS DESCRIPTION
SECTION 8	HANDLING, SERVICING, AND MAINTENANCE
SECTION 9	SUPPLEMENTS

REFERENCE ONLY

THIS PAGE IS INTENTIONALLY BLANK

REFERENCE ONLY

SECTION 1
GENERAL
TABLE OF CONTENTS

<u>SUBJECT</u>	<u>PAGE</u>
INTRODUCTION	1-2
DESCRIPTIVE DATA	
MAXIMUM CERTIFICATED WEIGHTS.....	1-3
SPECIFIC LOADINGS	1-3
COMPATIBLE MODIFICATIONS	1-3
LIST OF EFFECTIVE PAGES	1-5
LOG OF REVISIONS.....	1-6

REFERENCE ONLY

INTRODUCTION

This supplement should be read carefully by the owner and the operator in order to become familiar with the operation of the airplane having now been modified by the installation of the CenTex Aerospace Halo 275 Commuter Category conversion. With this conversion, a King Air 200 series airplane equipped with High Flotation landing gear now has a maximum ramp weight of 14,090 pounds, a maximum takeoff weight of 14,000 pounds, and a maximum landing weight of 13,500 pounds. Airplanes manufactured in 1993, and after, now have a maximum zero fuel weight of 11,500 pounds. These increases in the maximum weight limitations allow the aircraft to carry significantly more payload.

A BE-200 type rating is required for pilots to operate converted King Air 200 series airplanes, except for airplanes operating under option 1 of the Supplemental Type Certificate.

With the change to Commuter category comes takeoff and discontinued approach flight path profiles up to 1,500 Feet, AGL, and the corresponding airplane performance data to construct these new profiles. Therefore, the takeoff and climb performance data in Section 5 are presented somewhat differently than found in the basic AFM. Takeoff field lengths include the runway length required to stop the airplane on the available runway in the event an engine failure occurs, or continue the takeoff with an inoperative engine. Maximum allowed takeoff weight tables and maximum allowed landing weight tables limit the gross weight so that the required minimum climb gradients can be met. Together, the new profiles, takeoff field length data, and maximum allowed takeoff and landing weight limitations serve to increase operational safety by ensuring adequate airplane performance for all contingency situations.

New systems that are included in the conversion increase the level of safety by providing safety functions that were not previously available. Below is a list of the new systems and associated functions.

- Takeoff trim warning system – aural alert when elevator trim is not set properly for takeoff.
- Stall warning system ice mode – aural alert when stall is imminent due to ice accumulation on wings.
- Engine fire extinguisher system – extinguish fire in engine compartment.
- Emergency cabin lighting system – illumination of cabin during emergency situations
- Escape path markings – show pathway along the cabin floor to main door and emergency exit.

The number of passenger seats in the cabin is now limited to a maximum of nine seats.

The terminology used in this supplement matches the terminology used in the basic AFM and POH. This includes the definitions of warnings, cautions, and notes. Also, you will find the format of limitations, procedures, and checklists herein match the AFM and POH format for 200 series airplanes.

DESCRIPTIVE DATA

MAXIMUM CERTIFICATED WEIGHTS

Maximum Ramp Weight14,090 pounds
Maximum Take-off Weight14,000 pounds

Maximum Zero Fuel Weight:

Model B200/B200GT series with Serials BB-1439, BB-1444 & after,
BL-139 & after, BY-1 thru BY-116, BY-118.....11,500 pounds

Maximum Landing Weight13,500 pounds

SPECIFIC LOADINGS

Wing Loading: 46.2 pounds per square foot

Power Loading: 8.2 pounds per shaft horsepower

COMPATIBLE MODIFICATIONS

The following STC-approved modifications have been found to be compatible with the Halo 275 Commuter category conversion:

1. SA2698NM-S, Raisbeck Eng. Hartzell HC-D4N-3A/D9383K propeller.
2. SA02130SE, BLR Hartzell HC-E4N-3A/NC9208K propellers
3. SA3366NM, Raisbeck Ram Air Recovery System
4. SA3831NM, Raisbeck Inboard Leading Edges
5. SA3519NM, Raisbeck Aft Body Strakes
6. SA4175NM, Raisbeck MLG Doors
7. SA3857NM, Raisbeck Storage Lockers
8. SA3683NM, Raisbeck Exhaust Stack Fairings
9. SA00433AT, Blackhawk Modifications PWC PT6A-42 Engine Conversion
10. SA10824SC, Blackhawk Modifications PWC PT6A-52 Engine Conversion

11. SA10842SC, Enhanced Aero PWC PT6A-52 Engine Conversion
12. SA02715CH-D, Standard Aero PWC PT6A-52 Engine Conversion
13. SA10737SC, Blackhawk Modifications PWC PT6A-61 Engine Conversion
14. SA01615SE, BLR Winglets
15. SA01535WI-D, Garmin G1000 Avionics (GDC 7400 ADC required)
16. SA02738CH, L-3 Comm ESI-1000 standby instrument
17. SA1036GL, McCauley 4HFR34C7 (54,55,71)/94LA-0 Propellers
18. SA01157CH, McCauley 5HFR34C1008/96LTA-0 Propellers
19. SA757GL, Parker Cleveland wheels and brakes
20. SA2451CE, Commuter Air Technology Super 60 (Cargo) Pod (requires AFM Supplement no. 006-3 HW additionally)
21. SA2300CE, Avcon Industries Aeropak Cargo Pod (requires AFM Supplement no. 006-3A HW additionally)
22. SA03209NY, MT-Propeller MTV-27-1-E-C-F-R(P)/CFR225-55f 5-blade propeller
23. SA03289CH, Elliott Aviation Mid-Continent MD302 Electronic Standby Indicator
24. SA2633CE, Aviation Fabricators 4-place side facing divan seat.
NOTE: Only airplanes manufactured prior to 12/12/86 with passenger seating configurations of 9 or less are compatible.
25. SA2671CE, Aviation Fabricators stretcher installation.
26. SA4157SW, Aviation Fabricators 2-place attendant divan seat.
27. SA02468LA, Aviation Fabricators aft toilet cabinet seat.
28. SA00635WI, Aviation Fabricators jump seat.
NOTE: Seating configuration may not exceed 9 passenger seats.
29. SA10478SC, Hawker Beechcraft Services flight data recorder/cockpit voice recorder
30. SA00273WI, LifePort stretcher, patient loading, and support system
31. SA02235LA, LifePort Patient Loading and Utility System (PLUS) and ServiPlex
32. SA00882CH, Spectrum Aeromed air ambulance conversion
33. SA01213CH, Spectrum Aeromed air ambulance conversion

It is up to the installer to determine whether any other STC-approved modifications are compatible with the Halo 275 Commuter category conversion. When determining compatibility regulatory requirements applicable to Commuter category airplanes must be considered. Note, other modifications affecting the display of flight attitude, airspeed, and altitude; and autopilot functionality must meet the design assurance levels required for Commuter category airplanes.

- Continued on next page -

LIST OF EFFECTIVE PAGES

The list of effective pages shown below contains all current pages with the page version date. This list should be used to verify this supplement contains all of the applicable and required pages. When inserting revised pages into this supplement the List of Effective Pages should be updated, as well, to the corresponding new list.

Title Page	May 2017
iii thru iv	May 2017
1-1 thru 1-6	May 2017
2-1 thru 2-12	May 2017
3-1 thru 3-4	May 2017
3A-1 thru 3A-6	May 2017
4-1 thru 4-10	May 2017
5-1 thru 5-89	May 2017
6-1 thru 6-6	May 2017
7-1 thru 7-8	May 2017
8-1 thru 8-2	May 2017
9-1 thru 9-4	May 2017

REFERENCE ONLY

LOG OF REVISIONS

Initial Release
Includes pages dated May 2017

Date: June 29, 2017

APPROVED BY: James A. Grigg

REFERENCE ONLY

SECTION 2
LIMITATIONS
TABLE OF CONTENTS

<i>SUBJECT</i>	<i>PAGE</i>
AIRSPED LIMITATIONS	2-2
POWER PLANT LIMITATIONS	2-4
FUEL IMBALANCE	2-4
WEIGHT LIMITS	2-4
CENTER-OF-GRAVITY LIMITS	
Aft Limits	2-5
Forward Limits	2-5
MANEUVER LIMITS	2-5
FLIGHT LOAD FACTOR LIMITS	2-5
MINIMUM FLIGHT CREW	2-5
ICING LIMITATIONS	2-5
OTHER LIMITATIONS	
Structural Limitations	2-7
Maximum Tailwind Component Limitation	2-7
Maximum Headwind Component Limitation	2-7
PLACARDS	2-7
KINDS OF OPERATIONS	2-8
KINDS OF OPERATIONS EQUIPMENT LIST	2-8

The limitations shown in this section are approved by the Federal Aviation Administration and must be observed while operating Beechcraft King Air 200 series airplanes that have been modified by the CenTex Aerospace Halo 275 Conversion. This conversion provides the following changes:

- Increases maximum ramp weight limitation to 14,090 pounds.
- Increases maximum takeoff weight limitation to 14,000 pounds.
- Increases maximum landing weight limitation to 13,500 pounds.
- Increases maximum zero fuel weight limitation to 11,500 pounds for B200 airplanes manufactured in 1993 and after.
- Creates option to change from Normal category to Commuter category.

Refer to the Beechcraft 200 series Airplane Flight Manual / Pilot Operating Handbook for limitations not contained in this section.

It is noted that not all of the information presented in this Supplement is changed from the basic Airplane Flight Manual or Pilot Operating Handbook information. In this section, the changed information or value is identified either by a note or by simple underline.

AIRSPPEED LIMITATIONS

SPEED	KCAS	KIAS	REMARKS
<u>Operating Maneuvering Speed, V_o</u>	182	181	Do not make full or abrupt control movements above this speed.
Maximum Flap Extension/ Extended Speed, V_{FE} Approach Position – 40% Full Down Position – 100%	NC NC	NC NC	Do not extend flaps or operate with flaps in prescribed position above these speeds.
Maximum Landing Gear Operating Speed, V_{LO} Extension Retraction	NC NC	NC NC	Do not exceed or retract landing gear above the speeds given.
Maximum Landing Gear Extended Speed, V_{LE}	NC	NC	Do not exceed this speed with landing gear extended.
Air Minimum Control Speed V_{MCA} Hartzell Propellers McCaughey Propellers..... ¹ STC SA2698NM....Flaps Up ... Flaps Approach... ² STC SA02130SE...Flaps Up Flaps Approach...	NC NC NC NC NC NC	NC NC NC NC NC NC	This is the lowest airspeed at which the airplane is directionally controllable when one engine suddenly becomes inoperative and the other engine is at takeoff power. (See definition in Section I of the basic AFM or POH)
Maximum Operating Speed V_{MO} M_{MO}	NC <u>0.58 Mach</u>	NC	Do not exceed this airspeed or Mach number in any operation.

NC-No change to original airspeed limitation. See basic AFM / POH.

1-Hartzell HC-D4N-3A/D9383K prop installed per Raisbeck Engineering STC SA2698NM-S.

2-Hartzell HC-E4N-3A/NC9208K prop installed per BLR Hartzell STC SA02130SE.

THIS PAGE IS INTENTIONALLY BLANK

REFERENCE ONLY

POWER PLANT LIMITATIONS

Engine Model(s)PT6A-41 or PT6A-42 or PT6A-52 or PT6A-61

Engine Operating Limits:

Takeoff & Max Continuous Power	850 SHP	2230 FT-LBS	2000 RPM
--------------------------------	---------	-------------	----------

Propeller Limitation: Autofeather must be in operation during takeoff.

FUEL IMBALANCE

The maximum allowable fuel imbalance between wing fuel systems is 300 pounds, except for one engine inoperative operations. The maximum allowable fuel imbalance between wing fuel systems is 1,000 pounds when operating with one engine inoperative.

WEIGHT LIMITS

Maximum Ramp Weight14,090 pounds

Maximum Take-off Weight is 14,000 pounds or as limited by (see Section 5):

- Maximum Allowed Takeoff Weight tables
- Maximum Allowed Takeoff Weight Limited By Brake Energy
- Maximum Tire Speed During Takeoff
- Takeoff Speeds and Field Length tables

For 14 CFR Part 135 Operations:

- Service Ceiling - One Engine inoperative chart

Maximum Landing Weight is 13,500 pounds or as limited by (see Section 5)

- Maximum Allowed Landing Weight tables
- Landing Distance charts

Maximum Zero Fuel Weight:

Model B200/B200GT series with Serials BB-1439, BB-1444 & after,
BL-139 & after, BY-1 thru BY-116, BY-118.....11,500 pounds

CENTER OF GRAVITY LIMITS

Aft Limits

195.4 inches aft of datum at 14,000 pounds gross weight with straight line variation to 196.4 inches aft of datum at 12,500 pounds gross weight.
196.4 inches aft of datum at gross weights less than 12,500 pounds.

Forward Limits

188.3 inches aft of datum at gross weights between 14,000 pounds and 13,500 pounds with straight line variation to 181.0 inches aft of datum at 11,279 pounds gross weight.
181.0 inches aft of datum at gross weights less than 11,279 pounds.

MANEUVER LIMITS

The Beechcraft King Air B200/B200GT series airplanes modified with the HALO 275 conversion are Commuter category airplanes. Acrobatic maneuvers, including spins, are prohibited.

FLIGHT LOAD FACTOR LIMITS

FLAPS UP	FLAPS DOWN
<u>3.10</u> positive g's	2.00 positive g's
<u>1.24</u> negative g's	0.00 g

MINIMUM FLIGHT CREWOne Pilot

MAXIMUM OCCUPANCY LIMIT

Flight CrewTwo (Pilot and Co-pilot)
PassengersNine (9)

ICING LIMITATIONS

The limitations and information presented in this subsection have been changed from the basic Airplane Flight Manual and Pilot Operation Handbook. The changes are considered by the FAA to be essential in ensuring the safe operation of the airplane in icing conditions.

Minimum Ambient Temperature for Operation of Deicing Boots -40°C
Minimum Airspeed for Sustained Icing Flight 148 Knots

Sustained flight in icing conditions with flaps extended is prohibited except for approach and landing.

ENGINE ANTI-ICE shall be ON for operations in ambient temperatures of +5°C or below when flight free of visible moisture cannot be assured.

ENGINE ANTI-ICE shall be OFF for all takeoff and flight operations in ambient temperatures above + 15°C.

Takeoff is prohibited with any frost, ice, snow, or slush adhering to the wings, horizontal stabilizer, control surfaces, propeller blades, or engine inlet.

In icing conditions the airplane must be operated and its ice protection system used as described in the operating procedures section of this AFM Supplement. Where specific operational speeds and performance information have been established for such conditions, this information must be used.

WARNING

Severe icing may result from environment conditions outside of those for which the airplane is certificated. Flight in freezing rain, freezing drizzle, or mixed icing conditions (super cooled liquid water and ice crystals) may result in ice build-up on protected surfaces exceeding the capacity of the ice protection system, or may result in ice forming aft of the protected surfaces. This ice may not be shed using the ice protection systems, and may seriously degrade the performance and controllability of the airplane and an unsafe situation will likely result. It is the responsibility of the pilot to identify severe icing conditions and to exit such condition to ensure safe flight operations.

1. Severe icing conditions that exceed those for which the airplane is certificated shall be determined by the following visual cues. If one or more of these visual cues exists, immediately request priority handling from Air Traffic Control to facilitate a route or an altitude change to exit the icing conditions.
 - Extensive ice accumulation on the airframe and windshield in areas not observed to collect ice during light or moderate icing conditions.
 - Accumulation of ice on the upper surface of the wing, aft of the protected area (i.e., leading-edge boot).
 - Accumulation of ice on the engine nacelles and propeller spinners farther aft than observed during light or moderate icing conditions.
2. DO NOT USE THE AUTOPILOT in severe icing conditions or whenever:
 - Visual cues specified above exist.
 - Unusual aileron trim settings are required.
 - Autopilot trim warnings occur.

Note: an unsafe condition exists when the autopilot is engaged and the airplane handling characteristics are degrading due to ice accumulating on the airplane. The pilot will not be aware of this unsafe condition, which requires an immediate exit from icing conditions, if he/she is not manually flying the airplane.

3. All icing detection lights must be operative prior to flight into known or forecast icing conditions at night.

OTHER LIMITATIONS

STRUCTURAL LIMITATIONS

Refer to Chapter Four of the *Super King Air 200 Series Maintenance Manual* and to the *CenTex Aerospace Halo 250 Commuter Category Conversion Instructions for Continued Airworthiness* for structural limitations.

MAXIMUM TAILWIND COMPONENT LIMITATION

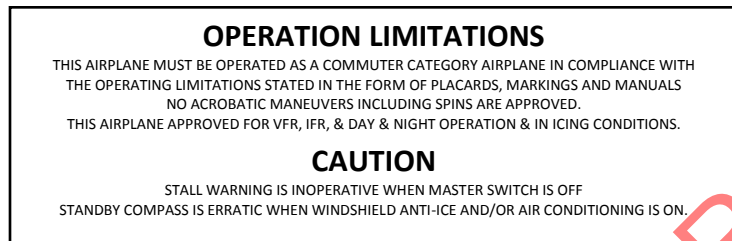
Do not take-off with a tailwind component greater than 10 knots.
Do not land with a tailwind component greater than 10 knots.

MAXIMUM HEADWIND COMPONENT LIMITATION

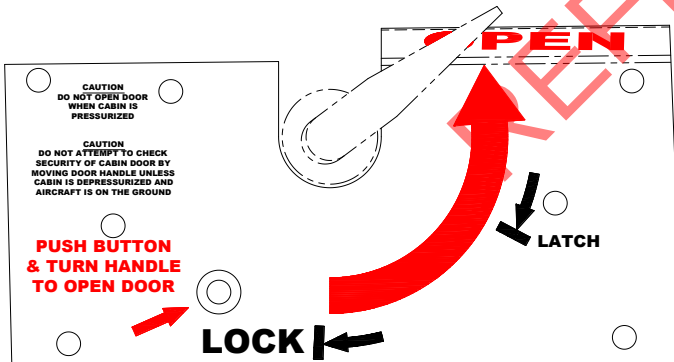
Do not extrapolate for a headwind component that exceeds 30 knots. Assume a 30 knot headwind component when correcting takeoff field length whenever there is a 30 knot or greater headwind.

PLACARDS

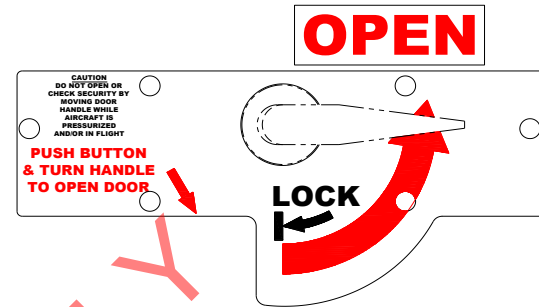
On Overhead Panels in Pilot's Compartment:



Inside Non-Cargo Airstair Door Behind Handle:



Inside Cargo Airstair Door Behind Handle:



KINDS OF OPERATIONS

The Beechcraft King Air 200 series airplanes are approved for the following type of operations when the required equipment is installed and operational as defined within the KINDS OF OPERATIONS EQUIPMENT LIST.

VFR Day
VFR Night
IFR Day
IFR Night
Known Icing Conditions

KINDS OF OPERATIONS EQUIPMENT LIST

This airplane may be operated in day or night VFR, or day and night IFR, when the appropriate equipment is installed and operable.

The following equipment list identifies the systems and equipment upon which type certification for each kind of operation was predicated. The systems and items of equipment listed must be installed and operable unless:

1. The airplane is operated in accordance with a current Minimum Equipment List (MEL) issued by the FAA.
or;
2. An alternate procedure is provided in the Pilot Operating Handbook and FAA Approved Airplane Flight Manual for the inoperative state of the listed equipment.

Numbers on the Kinds of Operations Equipment List refer to quantities required to be operative for a specified condition.

NOTE

The following systems and equipment list does not include all equipment required by the 14 CFR Part 91 and 135 operating requirements. It also does not include components obviously required for the airplane to be airworthy, such as wings, empennage, engine, etc.

SYSTEM and/or COMPONENT	VFR DAY				
	VFR NIGHT				
	IFR DAY				
	IFR NIGHT				
	ICING CONDITIONS				
ELECTRICAL POWER					
1. AC Volts/Frequency Meter	1	1	1	1	1
2. Battery	1	1	1	1	1
3. DC Generator	2	2	2	2	2
4. DC GEN Annunciator	2	2	2	2	2
5. DC Load Meter	2	2	2	2	2
ENGINE INDICATIONS					
1. Multifunctional Display	1	1	1	1	1
ENGINE OIL					
1. Chip Detector System including Annunciators	2	2	2	2	2
2. Oil Pressure Indicator	2	2	2	2	2
3. Oil Temperature Indicator	2	2	2	2	2
4. OIL PRESS annunciator	2	2	2	2	2
ENVIRONMENTAL					
1. BL AIR FAIL Annunciator	2	2	2	2	2
2. ALT WARN Annunciator (Cabin)	1	1	1	1	1
3. Cabin Rate of Climb Indicator	1	1	1	1	1
4. Differential Pressure/Cabin Altitude Indicator	1	1	1	1	1
5. DUCT OVERTEMP Annunciator	1	1	1	1	1
6. Outflow Valve	1	1	1	1	1
7. Pressurization Controller	1	1	1	1	1
8. Safety Valve	1	1	1	1	1
9. Bleed Air Shutoff Valve	2	2	2	2	2
FIRE PROTECTION					
1. Engine Fire Detector System and Annunciator	2	2	2	2	2
2. Engine Fire Extinguisher Sys & Annunciator	2	2	2	2	2
FLIGHT CONTROLS					
1. Flap Position Indicator	1	1	1	1	1
2. Flap System	1	1	1	1	1
3. Stall Warning Horn	1	1	1	1	1
4. <u>Stall Warning System Ice Mode</u>	0	0	0	0	1
5. Trim Tab Position Indicator (Rudder, Aileron, and Elevator)	3	3	3	3	3
6. Yaw Damper System	1	1	1	1	1
7. Elevator Trim Warning System	1	1	1	1	1

SYSTEM and/or COMPONENT	VFR DAY					
	VFR NIGHT					ICING CONDITIONS
	IFR DAY					
	IFR NIGHT					
FUEL						
1. Engine Driven Boost Pump	2	2	2	2	2	
2. Fuel Crossfeed System including Annunciator	1	1	1	1	1	
3. Standby Fuel Boost Pump	2	2	2	2	2	
4. FUEL PRESS Annunciator	2	2	2	2	2	
5. Fuel Quantity Indicating System incl. Annunciators	2	2	2	2	2	
6. Firewall Fuel Shutoff System incl. Annunciators	2	2	2	2	2	
7. Jet Transfer Pump	2	2	2	2	2	
8. Motive Flow Valve	2	2	2	2	2	
9. Fuel Flow Indicator	2	2	2	2	2	
ICE AND RAIN PROTECTION						
1. Alternate Static Air Source	0	0	1	1	1	
2. Engine Auto Ignition and Annunciators	2	2	2	2	2	
3. Engine Anti-Ice System and Annunciators	2	2	2	2	2	
4. Heated Fuel Vent	0	0	0	0	1	
5. Heated Windshield (Left)	0	0	0	0	1	
6. Pitot Heat	0	0	2	2	2	
7. Pneumatic Pressure Indicator	0	0	1	1	1	
8. Propeller Deicer System	0	0	0	0	1	
9. Stall Warning Heat (Lift Transducer and Mounting Plate)	0	0	0	0	1	
10. Surface Deicer System	0	0	0	0	1	
11. Wing Ice Light (Left)	0	0	0	0	1	
LANDING GEAR						
1. Landing Gear Position Indicator Lights	3	3	3	3	3	
2. Landing Gear Handle Light	1	1	1	1	1	
3. Landing Gear Aural Warning	1	1	1	1	1	
4. Alternate Landing Gear Extension System	1	1	1	1	1	
5. HYD FLUID LOW Annunciator	1	1	1	1	1	
6. Landing Gear Actuation System	1	1	1	1	1	
LIGHTS						
1. Cockpit and Instrument Lighting system	0	1	0	1	0	
2. DOOR UNLOCKED Annunciator	1	1	1	1	1	
3. Landing Lights	0	1	0	1	0	
4. Position Lights	0	3	0	3	0	
5. Anti-collision Lights System	0	1	0	1	0	
6. <u>Cabin Emergency Lighting System and Escape Path Markings</u>	Required when carrying passengers					

SYSTEM and/or COMPONENT	VFR DAY				
	VFR NIGHT				
	IFR DAY				
	IFR NIGHT				
	ICING CONDITIONS				
NAVIGATION INSTRUMENTS					
1. Over-speed Warning System	1	1	1	1	1
2. Left side Primary Flight Display	1	1	1	1	1
3. Right side Primary Flight Display	1	1	1	1	1
4. AHRS	2	2	2	2	2
5. Electronic Standby Instrument System (ESIS)	1	1	1	1	1
6. Magnetic Compass	1	1	1	1	1
7. Outside Air Temperature	1	1	1	1	1
OXYGEN					
1. Oxygen System	1	1	1	1	1
PROPELLER					
1. Prop Reversing System including Annunciators	2	2	2	2	2
2. Prop Governor Test Switch	1	1	1	1	1
3. Prop Over-speed Governor	2	2	2	2	2
4. Prop Low-Pitch Stop	2	2	2	2	2
5. Autofeather System including Annunciators	1	1	1	1	1
VACUUM SYSTEM					
1. Instrument Air system	1	1	1	1	1
2. Vacuum Indicator	1	1	1	1	1

NOTE

The above Kinds of Operations Equipment List does not include all specific flight instruments and communication/navigation equipment required by 14 CFR Part 91 and 135 Operating Requirements.

THIS PAGE IS INTENTIONALLY BLANK

REFERENCE ONLY

SECTION 3
EMERGENCY PROCEDURES
TABLE OF CONTENTS

<u>SUBJECT</u>	<u>PAGE</u>
EMERGENCY AIRSPEEDS	3-2
ENGINE FAILURE DURING TAKEOFF (AT OR BELOW V_1)..... TAKEOFF ABORTED	3-2
ENGINE FAILURE DURING TAKEOFF (AT OR ABOVE V_1) TAKEOFF CONTINUED	3-3
CABIN EMERGENCY LIGHTING ACTIVATION	3-3
EMERGENCY ESCAPE PATH	3-3

NOTE

See Beechcraft B200GT or B200 Pilot Operating Handbook
for other Emergency Procedures as applicable.

REFERENCE ONLY

All airspeeds quoted in this section are indicated airspeeds (IAS) and assume zero instrument error.

EMERGENCY AIRSPEEDS

One-Engine Inoperative Best Angle-of-Climb (V_{XSE})	115 Knots
One-Engine Inoperative Best Rate-of-Climb (V_{YSE})	124 Knots
One-Engine-Inoperative Enroute Climb (V_{ENR}):	
14,000 pounds	126 Knots
13,000 pounds	123 Knots
12,000 pounds	120 Knots
11,000 pounds	115 Knots
10,000 pounds	111 Knots
9,500 pounds	110 Knots
Air Minimum Control Speed (V_{MCA}).....	86 Knots
Raisbeck Engineering STC Prop Installation (V_{MCA}).....	91 Knots
BLR Aerospace STC Prop Installation (V_{MCA}).....	92 Knots
Emergency Descent	181 Knots
Maximum Range Glide	136 Knots

**ENGINE FAILURE DURING TAKEOFF (AT OR BELOW V_1) –
TAKEOFF ABORTED**

- 1. Power Levers GROUND FINE
- 2. BrakesAS REQUIRED TO ACHIEVE STOPPING DISTANCE
- 3. Operative Engine MAXIMUM REVERSE or AS REQUIRED

WARNING

Extreme care must be exercised when using single-engine reversing on surfaces with reduced traction.

ENGINE FAILURE DURING TAKEOFF (AT OR ABOVE V_1) –

TAKEOFF CONTINUED

1. V_R Speed ROTATE TO APPROX 8° NOSE UP ATTITUDE
2. Landing Gear (when positive climb established) UP
3. Airspeed V_2 (MAINTAIN TO 400 FEET AGL)
4. Propeller Inoperative Engine VERIFY FEATHERED
5. Airspeed at 400 Feet AGL..... V_{ENR}
6. Flaps (if extended) UP AT $V_2 + 5$ KNOTS
7. Climb to 1,500 Feet AGL

WARNING

Do not retard the failed engine power lever until the Autofeather system has completely feathered the propeller and propeller rotation has stopped. To do so will deactivate the autofeather circuit and prevent automatic feathering.

8. Clean up (Inoperative engine)
 - a. Condition Lever - FUEL CUT OFF
 - b. Propeller Lever - FEATHER
 - c. Firewall Shutoff Valve - CLOSED
 - d. Auto Ignition - OFF
 - e. Autofeather - OFF
 - f. Generator - OFF
 - g. Prop Sync - OFF
9. Electrical Load MONITOR

CABIN EMERGENCY LIGHTING ACTIVATION

An emergency lighting system has been added to provide lighting in key areas of the passenger cabin in case there is an emergency situation, such as a loss of electrical power or when an evacuation of the aircraft is required. To manually activate the system, place the control switch located on the copilot instrument panel in the ON position. The emergency cabin flood lamps will illuminate the cabin areas near the emergency exit and door. Also, the system will automatically activate the emergency cabin flood lamps whenever the control switch is in the ARM position, and the aircraft experiences a horizontal deceleration of 2g's, or more.

EMERGENCY ESCAPE PATH

Photoluminescent markings have been installed on the cabin floor outlining the aisle and the location of the emergency exit door and cabin door. Under conditions of reduced visibility, such as a cabin filled with smoke, occupants can follow this marked escape path to the exit from the aircraft.

THIS PAGE IS INTENTIONALLY BLANK

REFERENCE ONLY

SECTION 3A
ABNORMAL PROCEDURES
TABLE OF CONTENTS

<u>SUBJECT</u>	<u>PAGE</u>
FLAPS UP LANDING	3A-2
ONE-ENGINE-INOPERATIVE APPROACH AND LANDING	3A-3
ONE-ENGINE-INOPERATIVE GO-AROUND.....	3A-5
OVERWEIGHT LANDING.....	3A-5

NOTE

See Beechcraft B200GT or B200 Pilot Operating Handbook as applicable for other abnormal procedures.

REFERENCE ONLY

FLAPS UP LANDING

Refer to Section 5 of Supplement AFM 006-2A HW for Flaps Up Landing Distance.

WEIGHT POUNDS	V _{REF} (FLAPS UP) KNOTS
14,000	128
13,500	126
13,000	124
12,000	121
11,000	118
10,000	115
9,000	111

1. Approach Speed, V_{REF} (Flaps Up) CONFIRM
2. Autofeather ARM
3. Pressurization CHECK
4. Cabin Sign NO SMOKE & FSB
5. Flaps UP

CAUTION

Do not silence the landing gear warning horn, since the flap actuated portion of the landing gear warning system will not be actuated during a flap up landing.

6. Flap Override (If installed) SELECT
7. Landing Gear DOWN
8. Lights AS REQUIRED

NOTE

Under low visibility conditions, landing and taxi lights should be left off due to light reflections.

9. Radar AS REQUIRED
10. Surface Deice CYCLE (as required)

If wings are free of ice:

11. Stall Warning Ice Mode Switch – PRESS (to select Normal Mode)

If residual ice remains on wing boots:

12. Surface Deice CYCLE
13. Stall Warning Ice Mode Annunciator ILLUMINATED
14. Approach Speed and Landing Distance INCREASE V_{REF} BY 15 KNOTS AND INCREASE LANDING DISTANCE BY 25 PER CENT.

See LANDING DISTANCE chart in Section 5 of Supplement AFM 006-2A HW

NOTE

Prior to the landing approach, cycle the wing deice boots to shed as much residual ice as possible, regardless of the amount of ice remaining on the boots. Stall speeds can be expected to increase if ice is not shed from the deice boots.

NOTE

If crosswind landing is anticipated, determine Crosswind Component from Section 5, PERFORMANCE. Immediately prior to touchdown, lower upwind wing and align the fuselage with the runway. During rollout, hold aileron control into the wind and maintain directional control with rudder and brakes. Use propeller reverse as desired.

When Landing Is Assured:

- 15. Approach Speed..... V_{REF} – ESTABLISHED (With ice on wings, $V_{REF} + 15$)
- 16. Yaw Damp OFF
- 17. Power Levers..... IDLE
- 18. Propeller Levers FULL FORWARD

After Touchdown:

- 14. Power Levers..... LIFT AND SELECT GROUND FINE OR REVERSE (as required)
- 15. Brakes AS REQUIRED

ONE-ENGINE-INOPERATIVE APPROACH AND LANDING

WEIGHT POUNDS	Flaps DOWN V_{REF} Speeds, KNOTS
14,000	106
13,500	105
13,000	104
12,000	102
11,000	99
10,000	96
9,000	93

- 1. Approach Speed, V_{REF} CONFIRM
- 2. Fuel Balance CHECK
- 3. Pressurization CHECK
- 4. Cabin Sign NO SMOKE & FSB

When It Is Certain that the Field Can Be Reached:

- 5. Flaps..... APPROACH
- 6. Landing Gear DOWN
- 7. Propeller Lever (operating engine) FULL FORWARD
- 8. Airspeed $V_{REF} + 10$

9. Interior and Exterior lightsAS REQUIRED
10. RadarAS REQUIRED
11. Surface Deice CYCLE (as required)

If wings are free of ice:

12. Stall Warning Ice Mode Switch PRESS (to select Normal Mode)

If residual ice remains on wing boots:

13. Surface DeiceCYCLE
14. Stall Warning Ice Mode Annunciator ILLUMINATED
15. Approach Speed and Landing Distance INCREASE V_{REF} BY 15 KNOTS AND
INCREASE LANDING DISTANCE BY 25 PERCENT

See LANDING DISTANCE chart in Section 5 of Supplement AFM 006-2A HW.

NOTE

Prior to the landing approach, cycle the wing deice boots to shed as much residual ice as possible, regardless of the amount of ice remaining on the boots. Stall speeds can be expected to increase if ice is not shed from the deice boots.

NOTE

If crosswind landing is anticipated, determine Crosswind Component from Section 5, PERFORMANCE. Immediately prior to touchdown, lower upwind wing and align the fuselage with the runway. During rollout, hold aileron control into the wind and maintain directional control with rudder and brakes.

When it is Certain There is No Possibility of a Go-Around

16. Flaps DN
17. Airspeed V_{REF} (With ice on wings, $V_{REF} + 15$)
19. Perform normal landing.

NOTE

Single-engine reverse thrust may be used with caution after touchdown on smooth, dry, paved surfaces.

ONE-ENGINE-INOPERATIVE GO-AROUND

1. Power.....MAXIMUM ALLOWABLE
2. Landing Gear.....UP
3. Flaps.....UP AT $V_{REF} + 10$ KNOTS
4. Airspeed..... $V_{REF} + 20$ KNOTS

OVERWEIGHT LANDING

WEIGHT POUNDS	V_{REF} KNOTS
14,000	106
13,500	105

When Landing Is Assured:

1. Flaps.....DOWN
2. Airspeed..... V_{REF}
3. Yaw Damp.....OFF
4. Power Levers.....IDLE
5. Propeller Levers.....FULL FORWARD

CAUTION

To ensure constant reversing characteristics, the propeller levers must be in the high rpm position.

6. Sink Rate.....TOUCHDOWN WITH NOMINAL OR LESS SINK RATE

After Touchdown:

7. Power Levers.....LIFT AND SELECT GROUND FINE
8. Brakes.....AS REQUIRED

NOTE

An overweight landing is defined as any landing made when the airplane gross weight is greater than 13,500 pounds, which is the maximum landing weight limitation. When the airplane is landed at a gross weight above 13,500 pounds the pilot should request that an inspection in accordance with the King Air 200 Series Maintenance Manual Section 5-50-00, Inspection After Hard Landing be performed before the next flight.

THIS PAGE IS INTENTIONALLY BLANK

REFERENCE ONLY

SECTION 4
NORMAL PROCEDURES
TABLE OF CONTENTS

<i>SUBJECT</i>	<i>PAGE</i>
AIRSPEDS FOR SAFE OPERATION	4-2
PROCEDURES BY FLIGHT PHASE	
PREFLIGHT INSPECTION	4-3
BEFORE ENGINE STARTING	4-3
BEFORE TAKEOFF (RUNUP)	4-3
TAKEOFF	4-4
ENROUTE CLIMB	
ICING CONDITIONS	4-4
CRUISE	
ICING CONDITIONS	4-5
BEFORE LANDING	4-6
NORMAL LANDING.....	4-7
MAXIMUM REVERSE THRUST LANDING.....	4-7
BALKED LANDING	4-7
SHUT DOWN AND SECURING	4-7
OTHER PROCEDURES	
ICING FLIGHT	4-8
TAKEOFF TRIM WARNING TEST	4-8
STALL WARNING SYSTEM OPERATION.....	4-9
CABIN EMERGENCY LIGHTING SYSTEM OPERATION	4-9
CHARGING EMERGENCY ESCAPE PATH MARKINGS	4-10
OVERWEIGHT LANDING.....	4-10
NOISE CHARACTERISTICS	4-10

All airspeeds are indicated airspeeds (IAS) and assume zero instrument error.

AIRSPEEDS FOR SAFE OPERATION

Maximum Demonstrated Crosswind Component	25 Knots
Maximum Demonstrated Wind Components for Coupled Approaches	
Crosswind.....	See basic AFM / POH
Tailwind.....	See basic AFM / POH
Takeoff (Flaps UP)	
Decision Speed, V_1	See Section 5 Performance for Takeoff Speeds
Rotation, V_R	
Safety Speed, V_2	
Enroute Climb, V_{ENR}	
Takeoff (Flaps Approach)	
Decision Speed, V_1	See Section 5 Performance for Takeoff Speeds
Rotation, V_R	
Safety Speed, V_2	
Enroute Climb, V_{ENR}	
Two-Engine Best Angle-of-Climb (V_X).....	100 Knots
Two-Engine Best Rate-of-Climb (V_Y)	125 Knots
Cruise Climb:	
Sea level to 10,000 feet	160 Knots
10,000 feet to 20,000 feet	140 Knots
20,000 feet to 25,000 feet	130 Knots
25,000 feet to 35,000 feet	120 Knots
Maximum Airspeed for Effective Windshield Anti-icing	226 Knots
<u>Operating</u> Maneuvering Speed (V_O).....	181 Knots
Turbulent Air Penetration	170 Knots

CAUTION

For turbulent air penetration, use an airspeed of 170 knots. Avoid over-action on power levers. Turn off autopilot altitude hold. Keep wings level, maintain attitude and avoid use of trim. Do not chase airspeed and altitude. Penetration should be at an altitude which provides adequate maneuvering margins when severe turbulence is encountered.

Landing Approach:

Flaps Down.....	V_{REF} , see Section 5 Performance
Balked Landing Climb	V_{REF} , see Section 5 Performance
Intentional One-Engine-Inoperative Speed (V_{SSE})	104 Knots
Air Minimum Control Speed (VMCA)	
Hartzell & McCauley propellers	86 Knots
Raisbeck Engineering STC SA2698NM-S, Flaps Up	91 Knots
Flaps Approach	88 Knots
BLR Hartzell STC SA02130SE, Flaps Up	92 Knots
Flaps Approach	87 Knots

PROCEDURES BY FLIGHT PHASE

NOTE

Refer to all applicable Supplements for flight phase procedures for optional equipment installed in the airplane. The procedures listed below are required for airplanes modified by the installation of the CenTex Aerospace Halo 275 Conversion.

PREFLIGHT INSPECTION

CABIN/COCKPIT

Add the following steps while Battery Switch is OFF.

Emergency Lighting Cabin Switch ON
Emerg Cabin Lt Control Switch.....ARM
Emergency Cabin Flood Lamps CHECK (illuminated)

Add the following step when Battery Switch is ON

Emergency Cabin Flood LampsCHECK (not illuminated)

Add the following step after the Battery Switch is turned OFF.

Emergency Lighting Cabin Switch OFF
Emergency Escape Path Markings MUST BE UNCOVERED & VISIBLE

BEFORE ENGINE STARTING

Add the following step after airstair door is LOCKED.

Emergency Lighting Cabin Switch ON

Add the following steps after the Battery Switch is ON.

Left Power Lever ADVANCE TO AT LEAST 80% POSITION
Autofeather SwitchARM
Elevator Trim Warning SystemTEST
Elevator Trim Control..... SET FOR TAKEOFF
Autofeather Switch OFF
Left and Right Power Levers IDLE

BEFORE TAKEOFF (RUNUP)

Add the following steps after the Surface Deice System check.

Stall Warning Ice Mode Annunciator ILLUMINATED
Stall Warning..... TEST
Stall Warning Ice Mode Annunciator PRESS (to select Normal Mode)

NOTE

The stall warning system must be in the Normal Mode during takeoff and initial climb-out. If a takeoff is conducting with the stall warning system in the Ice Mode, a misleading stall warning following lift-off will likely occur.

TAKEOFF

1. Brakes HOLD
2. Power SET (ensure minimum takeoff power is available)
3. [L AFX] and [R AFX] or ILLUMINATED
[L AUTOFEATHER] and [R AUTOFEATHER] ILLUMINATED
4. Brakes RELEASE

NOTE

Increasing airspeed will cause torque and ITT to increase.

5. V_R ROTATE TO APPROX. 8° NOSE UP ATTITUDE
6. Landing Gear (when positive climb established) UP
7. Airspeed MAINTAIN V_2 UNTIL CLEAR OF OBSTACLES
8. Flaps (at $V_2 + 5$ Knots) UP

CLIMB

Add the following after normal climb checklist.

CLIMB IN ICING CONDITIONS

1. Engine Anti-Ice ON
[L ENG ANTI-ICE] & [R ENG ANTI-ICE] ILLUMINATED
2. Auto Ignition ARM
3. Prop Deice AUTO
4. Stall Warning Heat CONFIRM ON
5. Left and Right Fuel Vent Heat CONFIRM ON
6. Left and Right Pitot Heat CONFIRM ON
7. Windshield Anti-Ice CONFIRM NORMAL OR HI
At first sign of ice accretion on aircraft.
8. Surface Deice Switch SINGLE AND RELEASE (repeat as required)
9. Stall Warning Ice Mode Annunciator ILLUMINATED
10. Climb Power SET MAX CONT POWER (to expedite climb)
11. Airspeed 148 KNOTS MINIMUM AIRSPEED

CRUISE

Add the following after normal cruise checklist.

CRUISE IN ICING CONDITIONS

At first sign of ice accretion on aircraft.

1. Airspeed – 148 KNOTS MINIMUM
2. Surface Deice Switch – SINGLE AND RELEASE
3. Stall Warning Ice Mode Annunciator – VERIFY ILLUMINATED

OUTSIDE OF ICING CONDITIONS AND WINGS FREE OF ICE

1. Stall Warning Ice Mode Annunciator – PRESS (to select Normal Mode)
2. Stall Warning Ice Mode Annunciator – EXTINGUISHED

ICING CONDITIONS

Replace the warning statement with the following:

WARNING

Due to distortion of the wing airfoil, ice accumulation on the leading edges can cause a significant loss in rate of climb and in cruise speed, as well as increases in stall speed. Even after cycling deicing boots, the ice accumulation remaining on the boots plus ice accumulations on unprotected areas can cause large performance losses. In order to minimize ice accumulation on unprotected surfaces of the wing, maintain a minimum of 148 knots during operations in sustained icing conditions. In the event of windshield icing, reduce airspeed to 226 knots or below. Prior to a landing approach, cycle the deicing boots to shed any accumulated ice. The stall warning system will sound the aural warning at 15 to 20 knots above the normal warning speed when it is in the ice mode, which is appropriate when there is ice on the wings.

Add the following after Surface Deice.

At first sign of ice accretion on aircraft.

- a. Airspeed – 148 KNOTS MINIMUM
- b. Surface Deice Switch – SINGLE AND RELEASE
- c. Stall Warning Ice Mode Annunciator – VERIFY ILLUMINATED
- d. Repeat as required

If Single Position of the Surface Deice Switch Fails:

- e. Surface Deice Switch – MANUAL AND HOLD
FOR A MINIMUM OF 6 SECONDS, THEN RELEASE
- f. Stall Warning Ice Mode Annunciator – VERIFY ILLUMINATED
- g. Repeat as required.

Add the following.

OUTSIDE OF ICING CONDITIONS AND WINGS FREE OF ICE

- a. Stall Warning Ice Mode Annunciator – PRESS (to select Normal Mode)
- b. Stall Warning Ice Mode Annunciator – EXTINGUISHED

BEFORE LANDING

1. Approach SpeedCONFIRM V_{REF}
2. AutofeatherARM
3. PressurizationCHECK
4. Cabin Sign NO SMOKE & FSB
5. Flaps APPROACH
6. Landing Gear DN
7. LightsAS REQUIRED

NOTE

Under low visibility conditions, landing and taxi lights should be left off due to light reflections.

8. RadarAS REQUIRED
9. Surface Deice CYCLE AS REQUIRED
- If wings are free of ice:*
10. Stall Warning Ice Mode Switch PRESS (to select Normal Mode)
- If residual ice remains on wing boots:*
11. Surface DeiceCYCLE
12. Stall Warning Ice Mode Annunciator ILLUMINATED
13. Approach Speed and Landing DistanceINCREASE V_{REF} BY 15 KNOTS
AND INCREASE EXPECTED LANDING DISTANCE BY 25 PERCENT

In the NOTE replace last sentence with "Stall speeds can be expected to increase as much as 15 knots if ice is present on the wings and/or horizontal tail surfaces."

NORMAL LANDING

When Landing Is Assured

1. Flaps DOWN
3. Airspeed V_{REF} (With ice on wings, $V_{REF} + 15$)
4. Yaw Damper OFF
5. Power Levers IDLE
6. Prop Levers FULL FORWARD

After Touchdown:

7. Power Levers LIFT AND SELECT GROUND FINE
8. Brakes AS REQUIRED

MAXIMUM REVERSE THRUST LANDING

Replace step 2:

2. Airspeed V_{REF} (With ice on wings, $V_{REF} + 15$)

BALKED LANDING

1. Power MAXIMUM ALLOWABLE
2. Airspeed MAINTAIN V_{REF}

When clear of obstacles or 400 feet AGL, establish a normal climb.

3. Flaps (at $V_{REF} + 10$) APPROACH
4. Landing Gear UP
5. Flaps (at 125 knots) UP

SHUT DOWN AND SECURING

Add the following steps.

16. Emerg Cabin Lt Switch OFF
20. Emergency Cabin Light Power Switch OFF

REFERENCE ONLY

OTHER PROCEDURES

ICING FLIGHT

Refer to Section 2 Limitations of this Supplement for limitations relating to icing flight. See Section 3A for abnormal procedures associated with icing equipment malfunctions and procedures required for severe icing conditions. See the BEFORE TAKEOFF (RUNUP) and CRUISE checklists in this section for normal ground and in-flight procedures pertaining to flight in icing conditions.

At first sign of ice accretion on aircraft:

- a. Airspeed 148 KNOTS MINIMUM
- b. Surface Deice Switch SINGLE AND RELEASE
- c. Stall Warning Ice Mode Annunciator VERIFY ILLUMINATED
- d. Repeat as required

TAKEOFF TRIM WARNING TEST

A warning system has been added that provides a constant tone aural alert in the cockpit when the elevator trim tab is not set within the acceptable range for takeoff and engine power is increased above approximately 80% N_1 . The system should be tested for proper operation before the first flight of each day while conducting the BEFORE ENGINE STARTING procedure. To perform this test the trim warning system must first be activated by placing the Autofeather switch to ARM. Then the left power lever must be advanced past the 80% N_1 position. The system should now be tested by adjusting the elevator trim tab to a position outside of the takeoff range marked on the tab position indicator in both the nose up and the nose down directions. The aural alert should sound just as the tab position indicator moves outside of the takeoff range. The aural alert should be silent when the tab position is inside of the takeoff range.

When the power levers are advanced to initiate a takeoff and the aural alert sounds, immediately reduce power to idle and abort the takeoff. Do not takeoff when the elevator trim tab position is not set within the takeoff range.

STALL WARNING SYSTEM OPERATION

An ICE MODE feature has been added to the stall warning system. The ice mode is automatically activated when the Surface Deice system is selected by the pilot. Illumination of the STALL WARNING ICE MODE annunciator indicates the stall warning system is operating in the ice mode. After exiting icing conditions and when the aircraft is free of ice, transfer the stall warning system to the normal mode by pressing and releasing the STALL WARNING ICE MODE annunciator.

CABIN EMERGENCY LIGHTING SYSTEM OPERATION

An emergency lighting system has been added to provide supplemental lighting in the passenger cabin around the emergency exit door and cabin door. Two switches – a cabin switch located in the ceiling and a control switch located in the copilot instrument panel – control operation of the system.

When entering the cabin during the preflight inspection the charge level of the emergency lighting system battery pack should be verified. To do this, place the cabin switch to ON with the aircraft battery switch OFF. The emergency cabin flood lamps should illuminate. If the lamps do not illuminate, the emergency lighting system batteries have been discharged or there is a malfunction in the system. Discharged batteries must be removed and recharged or replaced. The Instructions for Continued Airworthiness manual describes the proper procedures for removing and recharging or replacing the cabin emergency lighting system batteries.

Before taxiing, place the cabin switch to ON and the control switch to ARMED. This is the switch configuration for normal taxiing and flight operations.

When shutting down and exiting the airplane, place both the control switch and the cabin switch to OFF.

It is acceptable to utilize the flood lamps to illuminate the cabin whenever needed, such as for boarding or to charge the photoluminescent escape path markings. Limit the time the flood lamps are being powered by the emergency lighting system battery to no more than 20 minutes to ensure the battery will have remaining capacity in case of an emergency.

CHARGING EMERGENCY ESCAPE PATH MARKINGS

Photoluminescent markings have been installed on the cabin floor outlining the aisle and the paths to the emergency exit door and cabin door. The markings must be charged during preflight operations by illuminating the cabin with either or a combination of sunlight through the cabin windows, the cabin lights, or the emergency cabin flood lamps when any part of that flight will be conducted in darkness. The table below lists the minimum charging time to ensure the markings will perform as intended throughout the respective flight.

Required Charging of Emergency Escape Path Markings

Charging Time	Duration of Acceptable Luminance
5 minutes	1.5 hours
10 minutes	2.5 hours
20 minutes	4 hours
30 minutes	5 hours

OVERWEIGHT LANDING

An overweight landing is defined as any landing made when the airplane gross weight is heavier than 13,500 pounds, which is the maximum landing weight limitation. If it becomes necessary to land the airplane at a gross weight heavier than 13,500 pounds the pilot should request that an inspection in accordance with the King Air 200 Series Maintenance Manual Section 5-50-00 Inspection After Hard Landing be performed before the next flight.

NOISE CHARACTERISTICS

The takeoff noise level of King Air 200 series airplanes modified in accordance with the CenTex Aerospace Halo 275 Conversion established in compliance with 14 CFR Part 36, Appendix G and ICAO Annex 16, Chapter 10 is 85.3 dB(A). The limit is 88.0 dB(A).

No determination has been made by the Federal Aviation Administration that the noise level of this airplane is, or should be, acceptable or unacceptable for operation at, into, or out of any airport.

SECTION 5
PERFORMANCE
TABLE OF CONTENTS

<i>SUBJECT</i>	<i>PAGE</i>
Introduction to Commuter Category Performance and Flight Planning	5-2
Takeoff Path Profile	5-5
Maximum Allowed Takeoff Weight	5-6
Maximum Allowed Landing Weight	5-6
Performance Example	5-6
Airspeed Calibration – Normal System, Take-Off Ground Roll	5-12
Stall Speeds – Zero Thrust	5-13
Maximum Allowed Takeoff Weight (LBS) – Flaps Up	5-14
Maximum Takeoff Weight – Flaps Up, Limited By Brake Energy	5-15
Maximum Tire Speed During Takeoff – Flaps Up	5-16
Maximum Allowed Takeoff Weight (LBS) – Flaps Approach	5-17
Maximum Takeoff Weight – Flaps Approach, Limited By Brake Energy	5-18
Maximum Tire Speed During Takeoff – Flaps Approach	5-19
Service Ceiling - One Engine Inoperative	5-20
Using Takeoff Speeds & Field Length Tables	5-21
Takeoff Speeds & Field Lengths – Flaps Approach	5-23
Takeoff Field Length Correction – Flaps Approach	5-45
Accelerate Stop Distance – Flaps Approach	5-46
Net Gradient of Climb – Flaps Approach	5-47
Takeoff Speeds & Field Lengths – Flaps UP	5-49
Takeoff Field Length Correction – Flaps UP	5-71
Accelerate Stop Distance – Flaps UP	5-72
Net Gradient of Climb – Flaps UP	5-73
Climb – One Engine Inoperative	5-74
Climb – Two Engines – Flaps Up	5-75
Time, Fuel, and Distance to Climb	5-76
Close-In Takeoff Flight Path	5-77
Distant Takeoff Flight Path	5-78
Total Height Required - Pressure Altitude Conversion	5-79
Maximum Cruise Power, ISA	5-80
Maximum Range Power, ISA	5-81
One Engine Inoperative Maximum Cruise Power	5-82
Time, Fuel, Distance to Descend	5-83
Maximum Allowed Landing Weight – To Achieve Landing Climb Req	5-84
Maximum Allowed Landing Weight – To Achieve Landing Climb Req (Ice) ..	5-85
Discontinued Approach Climb Gradient	5-86
Climb – Balked Landing	5-87
Landing Distance Without Propeller Reversing	5-88
Landing Distance With Propeller Reversing	5-89

INTRODUCTION TO COMMUTER CATEGORY PERFORMANCE AND FLIGHT PLANNING

REGULATORY COMPLIANCE

Information in this section is provided for the purpose of maintaining compliance with the applicable certification requirements of 14 CFR Part 23, which imposes specific performance based limitations. The airplane will not meet these performance limitations under all atmospheric conditions for which it is approved at the maximum takeoff weight of 14,000 pounds and at the maximum landing weight of 13,500 pounds. Therefore, the operating weight must be reduced under some atmospheric conditions. The maximum operating weights are limited by the following performance data and compliance therewith is mandatory.

For all 14 CFR Part 91 and Part 135 operations:

1. Maximum Allowed Takeoff Weight (to achieve takeoff climb requirements and limited by brake energy)
2. Maximum Tire Speed During Takeoff (to not exceed maximum tire speed rating)
3. Takeoff Field Length
4. Maximum Allowed Landing Weight (to achieve landing climb requirements)
5. Landing Distance

For 14 CFR Part 135 operations only:

6. Service Ceiling - One Engine Inoperative

FLIGHT TEST PERFORMANCE CONDITIONS

All performance data presented in this section is based on FAA-approved performance data taken from applicable King Air 200 series Airplane Flight Manual(s) and verified by FAA flight testing.

1. Power ratings include the installation, bleed air, and accessory losses.
2. Full temperature accountability within the operational limits for which the airplane is certified.

NOTE

Should ambient air temperature or altitude be below the lowest temperature or altitude shown on the performance charts, use the performance at the lowest value shown.

3. All takeoff and landing performance is based on paved, dry runway.
4. Runway or takeoff and landing performance was obtained using the following procedures and conditions:

ONE ENGINE INOPERATIVE TAKEOFF (ACCELERATE-GO)

- Static takeoff power was set.
- The critical engine was shutdown with the condition lever just prior to V_1 . The Autofeather system was allowed to feather the inoperative engine propeller.
- The acceleration was continued to V_R and the airplane was rotated to an attitude of approximately 8° nose up.
- The landing gear was retracted when a positive rate of climb was established.
- V_2 was attained by 35 feet AGL and maintained until 400 feet AGL.

REJECTED TAKEOFF (ACCELERATE STOP)

- Static takeoff power was set.
- The critical engine was shut down with the condition lever just prior to V_1 .
- Both power levers were rapidly moved to the idle position in one continuous motion at V_1 .
- Maximum braking was immediately initiated and maintained until the airplane came to a complete stop.

ALL ENGINES TAKEOFF

- Static takeoff power was set.
- The airplane was accelerated to V_R and the airplane was rotated to an attitude of approximately 8° nose up.
- The landing gear was retracted when a positive rate of climb was established.
- V_2 was attained by 35 feet AGL and maintained until 400 feet AGL.

LANDING

- Power was set to maintain a 3° approach angle with the airspeed stabilized at V_{REF} .
- Both power levers were moved to the idle position when the airplane reached 50 feet AGL.
- Maximum braking was immediately initiated and maintained until the airplane came to a complete stop.

PERFORMANCE CONFIGURATIONS

	No. of Oper- ating Engines	Power	Flap Setting	Landing Gear
1 st Segment Takeoff Climb	1	Takeoff	Up or Approach	Down
2 nd Segment Takeoff Climb	1	Takeoff	Up or Approach	Up
Horizontal Acceleration	1	Takeoff	Up	Up
Enroute Climb	1	Max Continuous	Up	Up
Approach Climb	1	Max Continuous	Approach	Up
Balked Landing Climb	2	Takeoff	Landing	Down

FLIGHT PLANNING

Flight planning is an essential part of operating this airplane. Proper flight planning ensures that the pilot is complying with the applicable 14 CFR Part 23 regulatory requirements, which are intended to increase the level of safety. The regulations applicable to Commuter category airplanes impose performance minimums that must be met in order for the airplane to takeoff and land using a specified departure and destination runway. These additional performance minimums make sure, in the event there is an engine failure during takeoff, the airplane can be stopped on the available runway or the airplane's climb performance is adequate to clear obstacles within the takeoff flight path. It is the pilot's responsibility to do the proper flight planning and thereby make certain the airplane's performance will meet the required minimums under the actual conditions. When the actual conditions are such that the performance minimums cannot be met, the pilot must elect to lower the gross weight of the airplane, select a longer runway, or wait until outside air temperatures cool sufficiently so the performance minimums will be met.

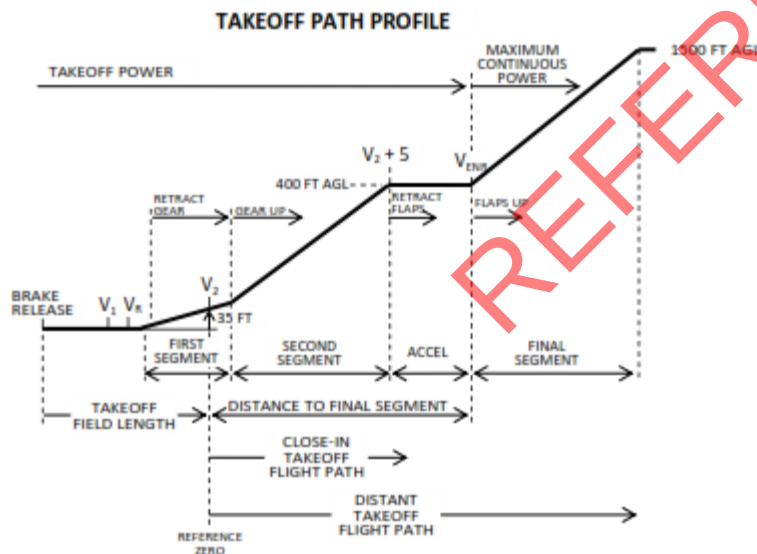
Furthermore, the takeoff flight path profile that the pilot must fly is defined in this section. The subsequent paragraph TAKEOFF PATH PROFILE shows and explains the new takeoff flight path profile, which is typical for commuter and transport category airplanes. The profile has multiple segments where the takeoff speeds and airplane configurations are applicable from the beginning of the takeoff run until the airplane reaches 1,500 feet above ground level.

The performance data in this section are presented in a familiar format, similar to the Beechcraft performance charts, tables, and graphs in the basic AFM/POH. However, the tabular presentations of takeoff field lengths and of maximum allowed takeoff and landing weight to meet minimum climb requirements are new to the operators and pilots of the King Air 200 series airplanes. These tables should prove to be straightforward and easy to use. It is noted interpolation of the tabulated data can be utilized when needed.

The following example shows how to properly plan for a typical flight. The departure airport and destination airport were selected for the following example so that there is similarity with the flight planning example found in the Beechcraft King Air B200/B200GT series AFM/POH. Please note the airport, weather, and route information presented in this example are not to be considered accurate or reliable and should not be used for any actual flight plan. It is presented here only as an example of how to properly plan a flight and how to correctly utilize the performance data in this section.

TAKEOFF PATH PROFILE

For the King Air B200/B200GT series airplanes with the Halo 275 Commuter category conversion, the takeoff path is defined as shown below. The performance data presented in this section provide the parameters that are needed to construct such a takeoff path for a given departure runway and location. The variable the pilot must consider and restrict, if necessary, is the takeoff weight. This is required to ensure the takeoff path of the airplane will not require more runway than is available and will clear all obstacles.



MAXIMUM ALLOWED TAKEOFF WEIGHT

The maximum takeoff weight limit from Section 2 Limitations is 14,000 pounds. However, the maximum allowed takeoff weight may be less than the maximum takeoff weight limit depending on the available runway length and any obstacles in the takeoff path, the engine inoperative climb performance of the airplane, the braking energy that would be needed to abort a takeoff at decision speed (V_1), and the tire speed rating. Below is a list of the performance data tables and charts contained in this section that establish the maximum allowed takeoff weight.

- MAXIMUM ALLOWED TAKEOFF WEIGHT – FLAPS UP / APPROACH TO MEET TAKEOFF CLIMB REQUIREMENTS
- MAXIMUM ALLOWED TAKEOFF WEIGHT LIMITED BY BRAKE ENERGY – FLAPS UP / APPROACH
- MAXIMUM TIRE SPEED DURING TAKEOFF - FLAPS UP / APPROACH
- SERVICE CEILING - ONE ENGINE INOPERATIVE (14 CFR PART 135 OPERATIONS)
- TAKEOFF SPEEDS & FIELD LENGTHS – FLAPS UP / APPROACH

MAXIMUM ALLOWED LANDING WEIGHT

The maximum landing weight limit from Section 2 Limitations is 13,500 pounds. However, the maximum allowed landing weight may be less if a reduction in weight is required so that the engine inoperative climb performance during a discontinued/missed approach meets the minimum requirement. The following chart(s) should be used to determine the maximum allowed landing weight:

- MAXIMUM ALLOWED LANDING WEIGHT - TO ACHIEVE LANDING CLIMB REQUIREMENTS
- MAXIMUM ALLOWED LANDING WEIGHT - TO ACHIEVE LANDING CLIMB REQUIREMENT WITH ICE ACCUMULATIONS PRESENT
- LANDING DISTANCE (WITHOUT/WITH) PROPELLER REVERSE
- CLIMB -BALKED LANDING (Note-requirement met at all weights)

PERFORMANCE EXAMPLE**CONDITIONS**

At Departure:

Outside Air Temperature 28°C
Field Elevation..... 5,333 feet
Altimeter Setting..... 29.82 Inches Hg
Wind 330° at 10 knots
Runway 35L length..... 11,500 feet
Runway 35L gradient 0.4% Down
Pressure Altitude 5,333 ft + (29.92-29.82) x 1,000 ft = 5,433 feet
Temperature Relative to ISA 28°C - (ISA @ 5,333 ft) = 28° - 4° => ISA+24°C

Route Segment	Course	Dist. NM	Wind, Temp. at FL 260	Temp. FL 180
LEG A	265° M 252° T	143	350°/40ks, -10°C	-6°C
LEG B	321° M 255° T	192	350°/40ks, -10°C	-6°C
LEG C	270° M 233° T	81	340°/35ks, -20°C	0°C
LEG D	250° M 234° T	145	340°/35ks, -20°C	0°C
LEG E	227° M 210° T	146	290°/45ks, -20°C	-4°C

At Destination:

Outside Air Temperature 32°C
Field Elevation..... 4,412 feet
Altimeter Setting..... 29.60 Inches Hg
Wind 270° at 5 knots
Runway 25 length 6,101 feet
Pressure Altitude 4,412 ft + (29.92-29.60) x 1,000 ft = 4,732 feet

MAXIMUM ALLOWED TAKEOFF WEIGHT TABLES

TO MEET TAKEOFF CLIMB REQUIREMENTS

The maximum allowed takeoff weight must be established for the takeoff configuration (i.e, flaps up or flaps approach) and the departure conditions (i.e., pressure altitude and outside air temperature). These two tables list the maximum allowed takeoff weight for the corresponding configuration at which the airplane will meet the first, second, and final segment climb requirements.

A computation using interpolation shows the MATOW to be 13,252 pounds for flaps up and 11,797 pounds for flaps approach.

NOTE: Similarly, the maximum allowed landing weight should be established for the arrival conditions during preflight planning. The landing weight (i.e., takeoff weight minus the fuel consumed enroute to the destination) must not be greater than the maximum allowed landing weight.

MAXIMUM ALLOWED TAKEOFF WEIGHT LIMITED BY BRAKE ENERGY CHART

Determine with the applicable chart whether a reduction in takeoff weight is necessary to not exceed the brake energy rating during a rejected/aborted takeoff run. For this example, no reduction in takeoff weight is required.

MAXIMUM TIRE SPEED DURING TAKEOFF CHARTS

Determine with the applicable chart whether the takeoff conditions will cause the tire speed rating(s) to be exceeded. The lowest tire speed rating approved for airplanes with this conversion is 160 MPH. Do not attempt a takeoff if the tire speed rating will be exceeded. Change runway to reduce a tail wind or increase a headwind component, or wait until conditions are acceptable. Also, tires with a speed rating of 170 MPH or greater can be installed. For this example, the maximum tire speed will be less than 160 mph.

SERVICE CEILING – ONE ENGINE INOPERATIVE CHART

This chart establishes the maximum weight at which the airplane will climb at least 50 feet per minute with one engine inoperative and the associated propeller feathered. It also serves to provide the altitudes necessary to comply with 14 CFR Section 135.181 or 135.391 performance requirements for operations under Part 135 regulations.

A check of the example shown on the Service Ceiling – One Engine Inoperative chart shows for an outside temperature of -6°C and a Minimum Enroute Altitude of 18,000 Feet the maximum gross weight at the MEA is 12,200 pounds.

Note, to determine the maximum takeoff weight that results in a service ceiling equal to the highest Maximum Enroute Altitude (MEA), add the weight of the fuel used to reach a MEA to the weight from this chart that provides the required service ceiling.

REFERENCE ONLY

TAKEOFF SPEEDS & FIELD LENGTHS TABLES

There are two sets of takeoff speeds and field length tables - one set for flaps up and the other set for flaps approach. The pilot can choose either of these two flap settings for takeoff, but the corresponding maximum allowed takeoff weight, accelerate stop distance, and net gradient of climb data must be applied. Takeoff speeds are the takeoff decision speed (V_1), rotation speed (V_R), safety speed (V_2), and final segment climb speed (V_{ENR}) that apply to the takeoff condition. The field lengths presented in these charts allow the airplane to be stopped within the distance shown when an engine fails at a speed below V_1 and the pilot immediately aborts the takeoff with maximum braking. Also, the field lengths are sufficient to allow a takeoff to be continued and to reach a height of 35 feet above the point of liftoff within the distance shown when an engine failure occurs at V_1 , the airplane is rotated at V_R , and V_2 is obtained and maintained before or upon reaching the 35 feet height.

A preliminary look at the takeoff field length required for a flaps-up takeoff at the performance example departure conditions and at a gross weight of 13,252 pounds shows the required field length to be very close to the available runway length of 11,500 feet. As you can see, interpolation is required to determine whether the takeoff field length is greater than the available runway. Also, if pressure altitude is between table values, select the next higher pressure altitude. Below is an example of how to interpolate takeoff field length for temperatures that are between values shown in the table.

For Flaps Up:

TOW of 13,252 lbs, Pressure Altitude 5,500 ft, and, OAT of 28°C.

A computation using interpolation shows the uncorrected TFL to be 11,636 feet. The corresponding V_1 , V_R , V_2 , and V_{ENR} takeoff speeds are 115, 115, 125, 125 knots, respectively.

TAKEOFF FIELD LENGTH CORRECTION CHART

Use these charts to correct the takeoff field length for runway slope/gradient and for headwind and tail wind components. When the runway surface is not flat, the takeoff field length should be corrected to account for the effect of a sloping takeoff surface. A downward slope will aid in accelerating the airplane and thus reduces the field length. However, if the accelerate-stop distance is the deciding field length, a downward slope will result in a longer field length. This effect can be seen for field lengths less than approximately 4,000 feet.

The uncorrected TFL distance of 11,636 feet can now be corrected for the runway 35 downward gradient of 0.4% and effect of wind (330° at 10 knots) using this chart. For determining headwind or tail wind component see the WIND COMPONENTS graph in the basic AFM/POH. The example on the chart shows the corrected TFL to be 10,930 feet, which is less than the available length of runway 35 at the departure airport.

CLEARWAYS

If the runway to be used for takeoff has a clearway, up to 20% of the field length required for takeoff can be over the clearway. Check the runway declared distance information, which is published in the Airport/Facility Directory, to determine whether the runway has a clearway. This information will include the following lengths if a clearway exists:

- TORA (takeoff run available)
- TODA (takeoff distance available)
- ASDA (accelerate-stop distance available)

Note - The length of a clearway is TODA minus TORA.

To utilize a clearway all of the following conditions must be met:

1. The TORA must be at least 80% of the required field length.
2. The TODA must be at least equal to the required field length.
3. The ASDA must be equal to or greater than the required accelerate-stop distance (see the ACCELERATE-STOP DISTANCE chart in this section).

CLOSE IN and DISTANT TAKEOFF FLIGHT PATH CHARTS

The Close-In Takeoff Flight Path and Distant Takeoff Flight Path charts are used to determine the minimum climb gradient required from the zero reference point in the takeoff path to clear any obstacles in the takeoff path. To demonstrate how to use the charts assume there is a 150 feet high ridge located 9,430 feet from the end of departure runway 35 in the performance example.

The corrected takeoff field length from the example is 10,930 feet. Since the departure runway is 11,500 feet long, from reference zero to the end of the runway is 570 feet. This distance is added to 9,430 feet to place the 150 feet high ridge 10,000 feet from reference zero. A check of the Close-In Takeoff Flight Path chart example shows the minimum climb gradient must be 1.2%.

Next, check the Net Gradient of Climb chart to see whether the climb gradient produced by the airplane will meet the minimum climb gradient. The example on this chart shows the airplane will deliver a climb gradient of 1.5%, which will allow the airplane to clear the ridge.

Note, when a takeoff is made with flaps set to approach there is a period upon reaching 400 feet AGL where the pilot momentarily levels off and accelerates to $V_2 + 5$, and then retracts the flaps before climbing again at V_{ENR} . The airplane travels approximately 6,000 feet horizontally during this period. This 6,000 feet should be subtracted from the distance to the obstacle when determining the minimum climb gradient. The reduction in the distance to the obstacle is a means to account for the distance the aircraft travels while it is accelerating and not climbing.

MAXIMUM ALLOWED LANDING WEIGHT TABLES

The maximum landing weight limitation from Section 2 Limitations is 13,500 pounds. However, the maximum allowed landing weight may be less than the maximum landing weight limit depending on the airplane's climb performance. Following the data in the maximum allowed landing weight table ensures the airplane will be at a weight allowing the climb requirements to be met.

The fuel required to reach the destination should be subtracted from the takeoff weight to determine the predicted landing weight. If the predicted landing weight is greater than the maximum allowed landing weight, then the takeoff weight must be reduced so that the maximum allowed landing weight is not exceeded at the destination. The following charts contained in this section are provided to aid in determining the fuel required to reach the destination. See the basic AFM/POH for more detailed information regarding cruise performance and the associated fuel consumption.

- TIME, FUEL, AND DISTANCE TO CLIMB
- MAXIMUM CRUISE POWER 1700 RPM (ISA and ISA+20°C tables)
- MAXIMUM RANGE POWER 1700 RPM (ISA and ISA+20°C tables)
- TIME, FUEL, AND DISTANCE TO DESCEND

Note that when icing is expected during the landing approach, the MAXIMUM ALLOWED LANDING WEIGHT - TO ACHIEVE LANDING CLIMB REQUIREMENTS WITH ICE ACCUMULATIONS PRESENT table must be used to determine the maximum allowed landing weight. The data presented in this table takes into account the increased drag and loss of propeller efficiency caused by ice accumulations on the airplane.

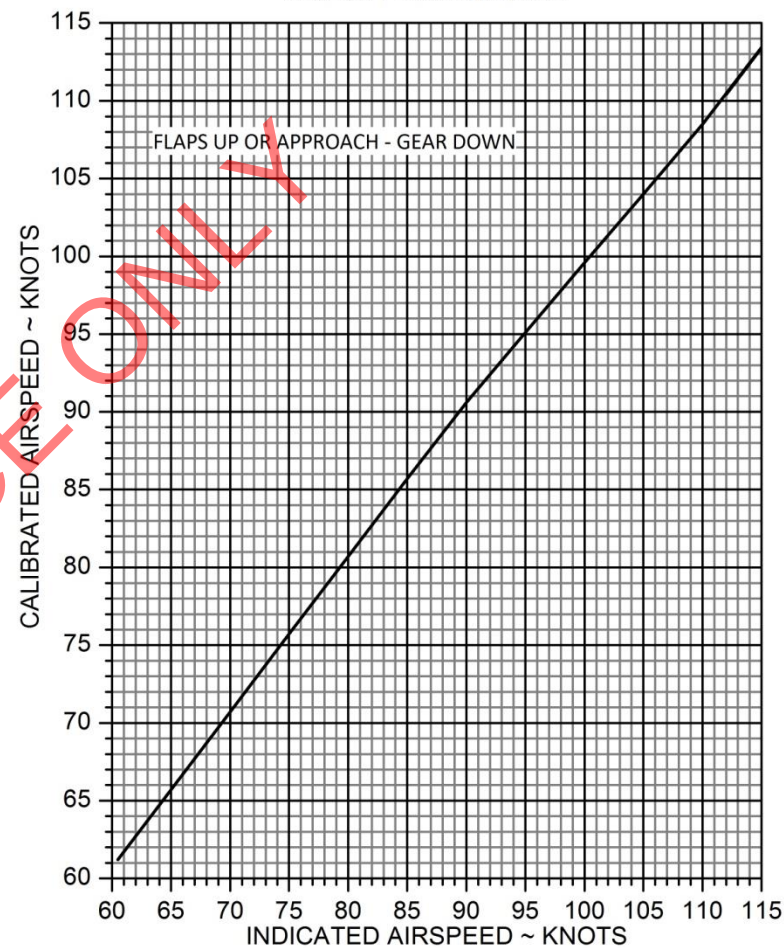
LANDING INFORMATION

The example on the Climb - Balked Landing chart shows how to determine the rate of climb and the associated gradient of climb for a given set of conditions.

The example on the Landing Distance without and with Propeller Reversing charts show how to determine flaps down landing distance and flaps up landing distance, if needed.

AIRSPED CALIBRATION - NORMAL SYSTEM

TAKE-OFF GROUND ROLL



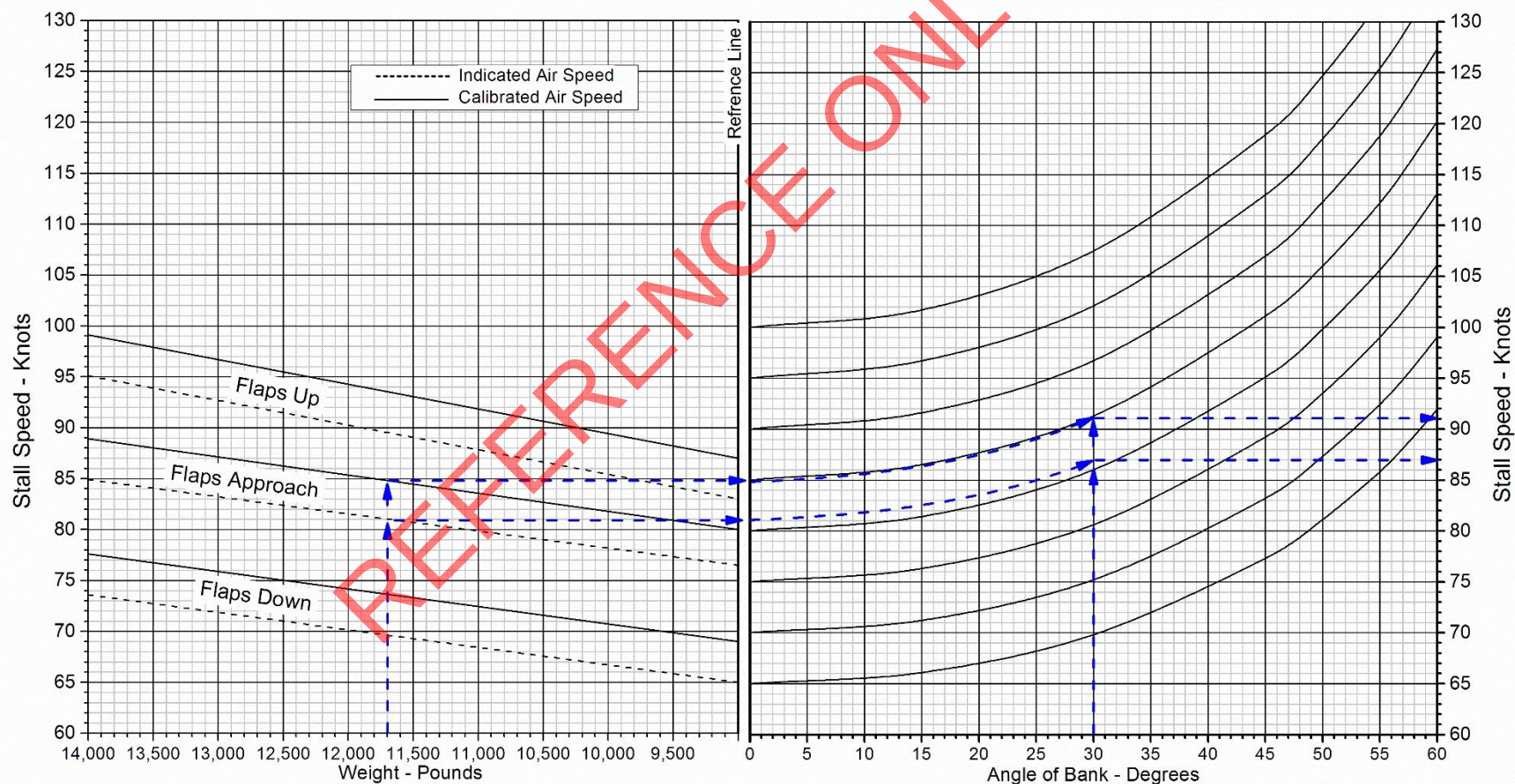
Stall Speeds - Zero Thrust

Notes:

1. Maximum altitude loss during 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 degrees and 300 feet respectively.
3. The pilot should respond to a stall warning by pitching the aircraft nose down until the stall warning ceases, leveling the wings to orient lift vector for recovery, and adding power to assist in the recovery. Level the airplane after the stall warning has ceased and airspeed has increased at least 25 knots.
4. For operations with ice accumulations present, stall speeds may increase 15 knots.
5. Power setting to achieve zero thrust is 250 FT-LB of Torque and propeller speed of 1600 RPM.

Example

Weight..... 11,700 pounds
Flaps Approach
Angle of Bank..... 30 degrees
Stall Speed 91 Knots CAS
87 Knots IAS



MAXIMUM ALLOWED TAKEOFF WEIGHT – FLAPS UP

TO ACHIEVE TAKEOFF CLIMB REQUIREMENTS

NOTES:

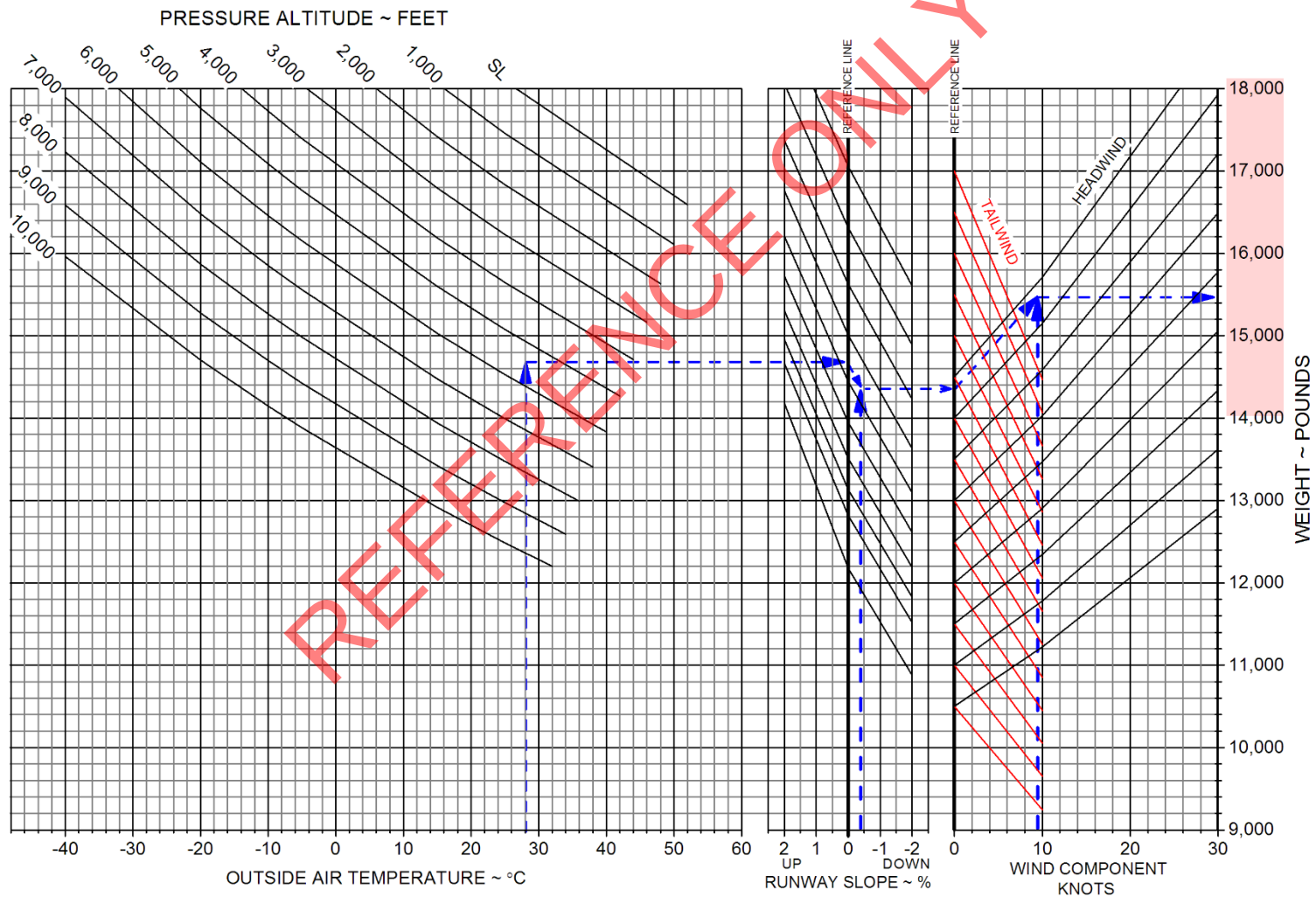
- For operations with ice vanes extended, add 6°C to the actual Outside Air Temperature and use this adjusted Outside Air Temperature in the table.
- For takeoff, the gross weight of the airplane must not exceed the maximum allowed takeoff weight at the corresponding pressure altitude and temperature shown in this table. This ensures compliance to the regulatory requirements for first, second, and enroute climb segments with one engine inoperative.
- Blue background indicates under the respective conditions the maximum allowed takeoff weight is less than 14,000 pounds.

Pressure Altitude -Feet-	Outside Air Temperature Maximum Allowed Takeoff Weight - Pounds															
	-25°C	-20°C	-15°C	-10°C	-5°C	0°C	5°C	10°C	15°C	20°C	25°C	30°C				
10,000	14,000	13,823	13,558	13,274	12,969	12,685	12,396	12,110	11,818	11,516	11,192	10,863	32°C 10,735			
9,000	14,000	14,000	14,000	13,876	13,551	13,236	12,923	12,623	12,324	12,021	11,717	11,393	34°C 11,117			
8,000	14,000	14,000	14,000	14,000	14,000	13,804	13,467	13,142	12,826	12,511	12,207	11,892	35°C 11,570	36°C 11,503		
7,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	13,686	13,343	13,000	12,682	12,360	38°C 11,842			
6,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	13,877	13,513	13,163	12,821	40°C 12,151			
5,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	13,704	13,324	12,950	42°C 12,450		
4,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	13,885	13,469	44°C 12,678		
3,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	13,963	45°C 13,091	46°C 13,002	
2,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	13,950	48°C 13,218	
1,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	13,945	50°C 13,464	
Sea Level	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	13,954	52°C 13,757

MAXIMUM ALLOWED TAKEOFF WEIGHT - FLAPS UP LIMITED BY BRAKE ENERGY

NOTE: Red shading identifies the Maximum Takeoff Weight limitation is exceeded.

Example
Outside Air Temperature 28°C
Pressure Altitude 5,433 Feet
Runway Slope 0.4% Down
Headwind Component 9.4 Knots
Maximum Takeoff Weight
Limited By Brake Energy >14,000 LBS



MAXIMUM TIRE SPEED DURING TAKEOFF - FLAPS UP

Associated Conditions:

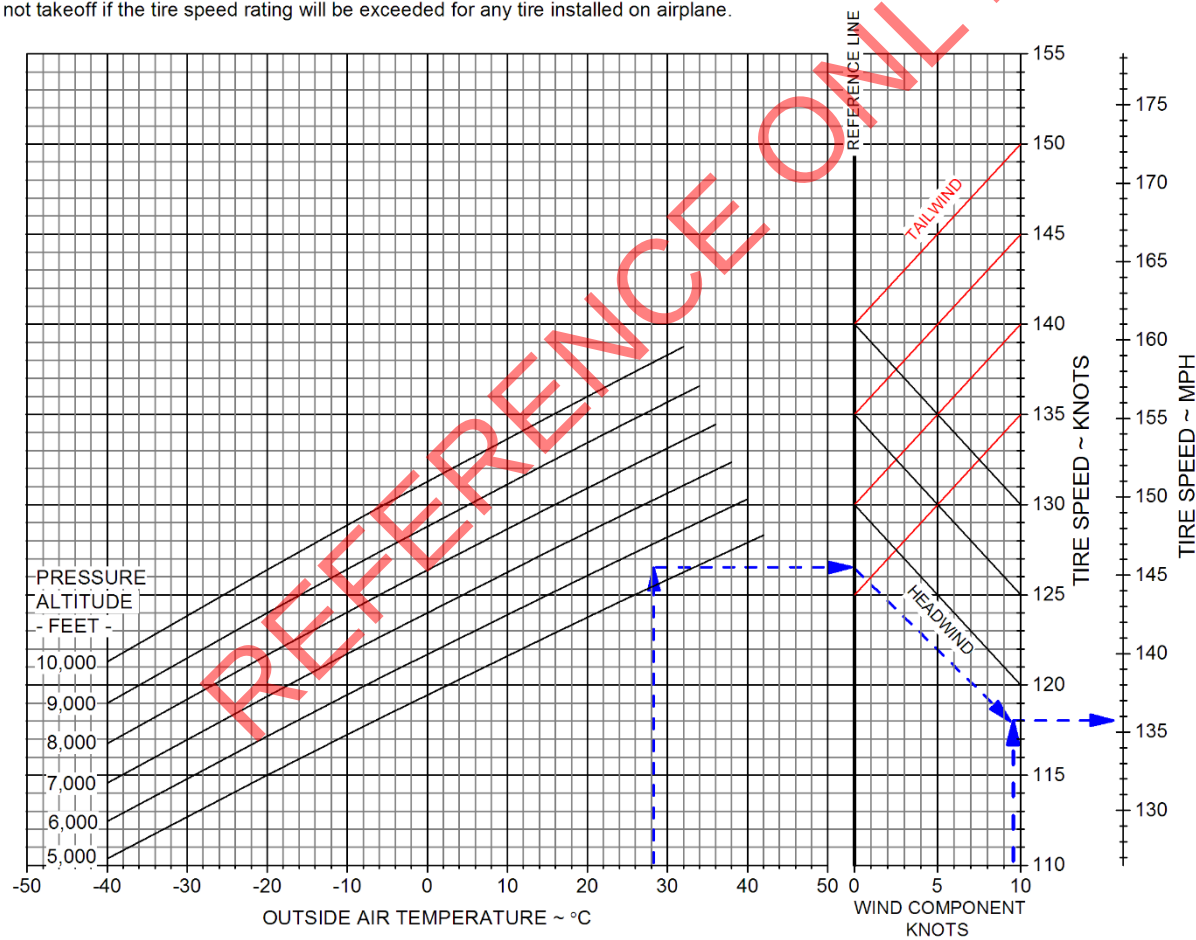
- Pitch rotation occurs at V_R .

Notes:

- The lowest tire speed rating approved for airplanes with this conversion is 160 mph.
- Do not takeoff if the tire speed rating will be exceeded for any tire installed on airplane.

Example

Outside Air Temperature..... 28°C
Pressure Altitude..... 5,433 Feet
Headwind Component..... 9.4 Knots
Tire Speed 118 Knots (136 MPH)
Tire speed rating is not exceeded.



MAXIMUM ALLOWED TAKEOFF WEIGHT – FLAPS APPROACH

TO ACHIEVE TAKEOFF CLIMB REQUIREMENTS

NOTES:

- For operations with ice vanes extended, add 6°C to the actual Outside Air Temperature and use this adjusted Outside Air Temperature in the table.
- For takeoff, the gross weight of the airplane must not exceed the maximum allowed takeoff weight at the corresponding pressure altitude and temperature shown in this table. This ensures compliance to the regulatory requirements for first, second, and enroute climb segments with one engine inoperative.
- Blue background indicates under the respective conditions the maximum allowed takeoff weight is less than 14,000 pounds.

Pressure Altitude Feet	Outside Air Temperature Maximum Allowed Takeoff Weight - Pounds																		
	-35°C	-30°C	-25°C	-20°C	-15°C	-10°C	-5°C	0°C	5°C	10°C	15°C	20°C	25°C	30°C					
10,000	12,657	12,445	12,246	12,038	11,837	11,623	11,390	11,165	10,927	10,663	10,414	10,154	9,861	9,551	32°C 9,500				
9,000	13,157	12,945	12,733	12,516	12,313	12,102	11,882	11,651	11,413	11,177	10,920	10,626	10,326	10,029	34°C 9,779				
8,000	13,567	13,373	13,179	12,974	12,769	12,545	12,335	12,111	11,882	11,640	11,360	11,085	10,768	10,443	35°C 10,147	36°C 10,086			
7,000	13,899	13,717	13,535	13,353	13,172	12,967	12,763	12,542	12,321	12,083	11,808	11,506	11,209	10,881	10,519	38°C 10,330			
6,000	14,000	14,000	13,850	13,667	13,481	13,321	13,151	12,965	12,743	12,503	12,235	11,947	11,649	11,292	10,929	40°C 10,520			
5,000	14,000	14,000	14,000	13,954	13,802	13,644	13,473	13,325	13,136	12,931	12,663	12,362	12,064	11,719	11,346	10,978	42°C 10,811		
4,000	14,000	14,000	14,000	14,000	14,000	13,947	13,808	13,636	13,460	13,299	13,123	12,786	12,451	12,124	11,782	11,423	44°C 11,078		
3,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	13,929	13,776	13,616	13,459	13,229	12,873	12,513	12,177	11,836	45°C 11,478	46°C 11,412	
2,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	13,908	13,777	13,632	13,301	12,934	12,563	12,212	11,857	48°C 11,639	
1,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	13,930	13,731	13,377	12,994	12,606	12,234	50°C 11,861	
Sea Level	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	13,888	13,445	13,046	12,633	12,236	52°C 12,075

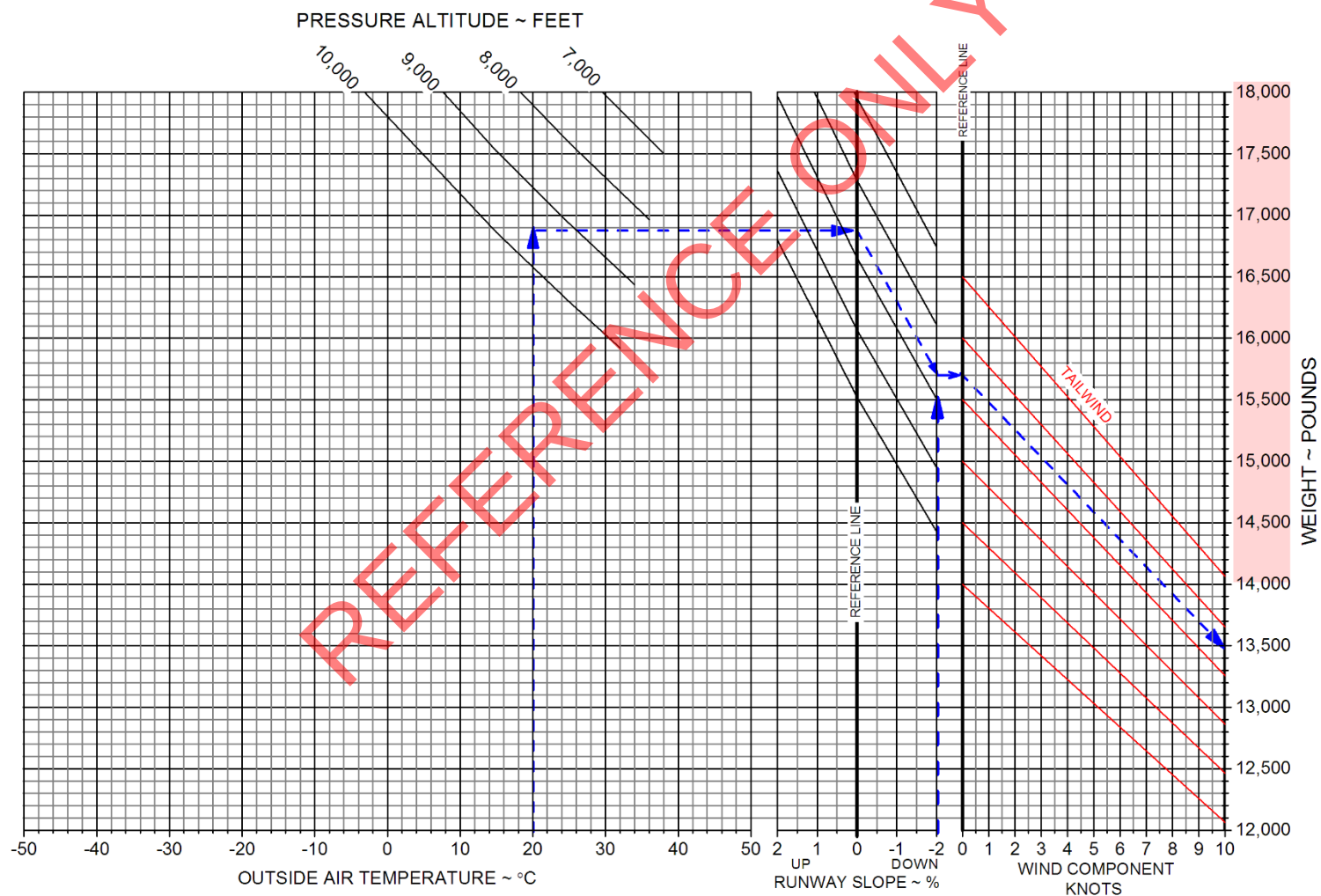
MAXIMUM ALLOWED TAKEOFF WEIGHT - FLAPS APPROACH LIMITED BY BRAKE ENERGY

NOTES:

1. Red shading identifies the Maximum Takeoff Weight limitation is exceeded.
2. MATOW limited by brake energy will not be below 14,000 LBS when there is a headwind during takeoff, therefore, effect of headwind is not shown on this chart.

Example

Outside Air Temperature 20°C
Pressure Altitude 9,500 Feet
Runway Slope 2% Down
Tailwind Component 10 Knots
Maximum Takeoff Weight
Limited By Brake Energy 13,490 LBS



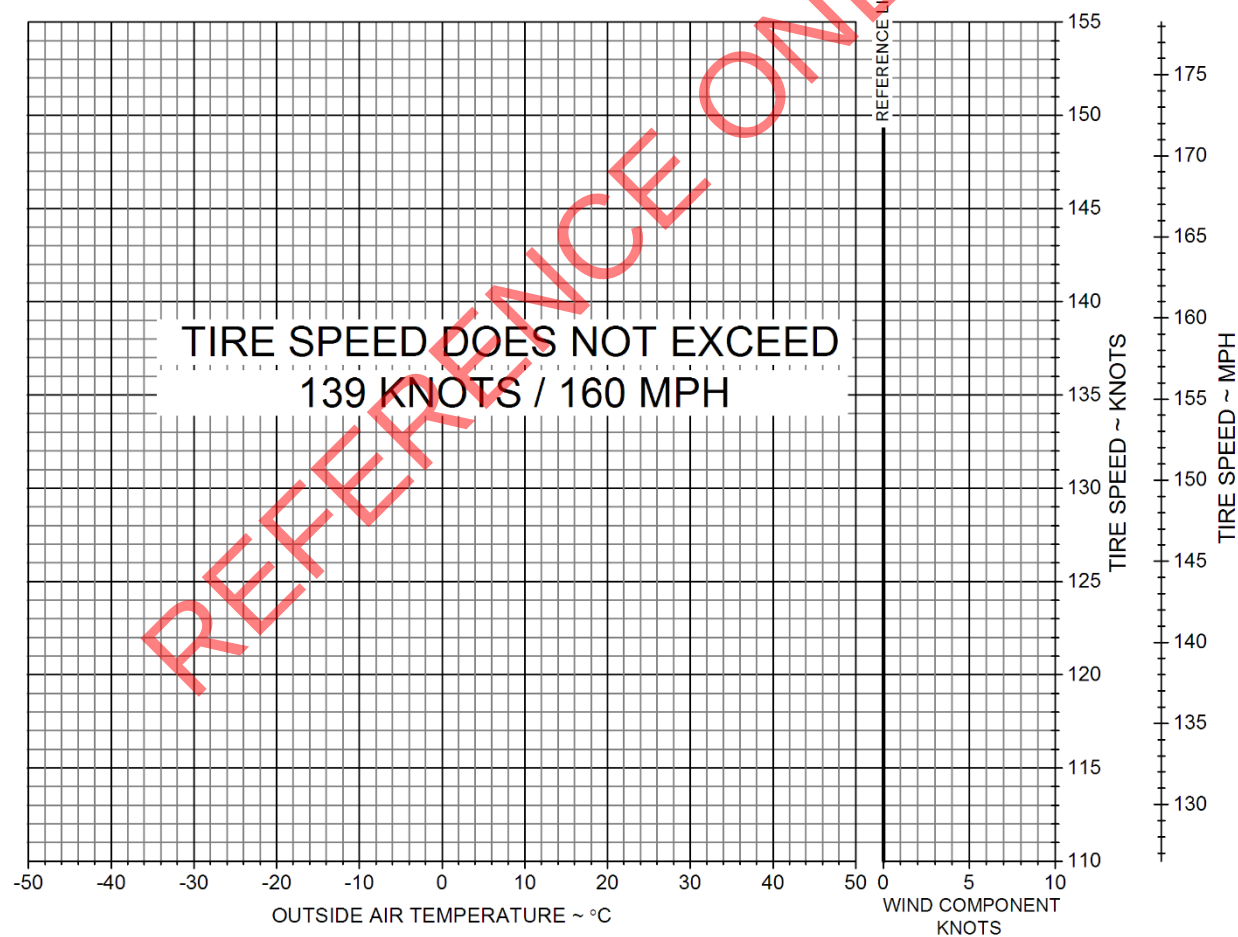
MAXIMUM TIRE SPEED DURING TAKEOFF - FLAPS APPROACH

Associated Conditions:

- Pitch rotation occurs at V_R .

Notes:

- The lowest tire speed rating approved for airplanes with this conversion is 160 mph.
- Do not takeoff if the tire speed rating will be exceeded for any tire installed on airplane.



SERVICE CEILING - ONE ENGINE INOPERATIVE

AIRPLANES WITH HIGH FLOTATION LANDING GEAR

Associated Conditions

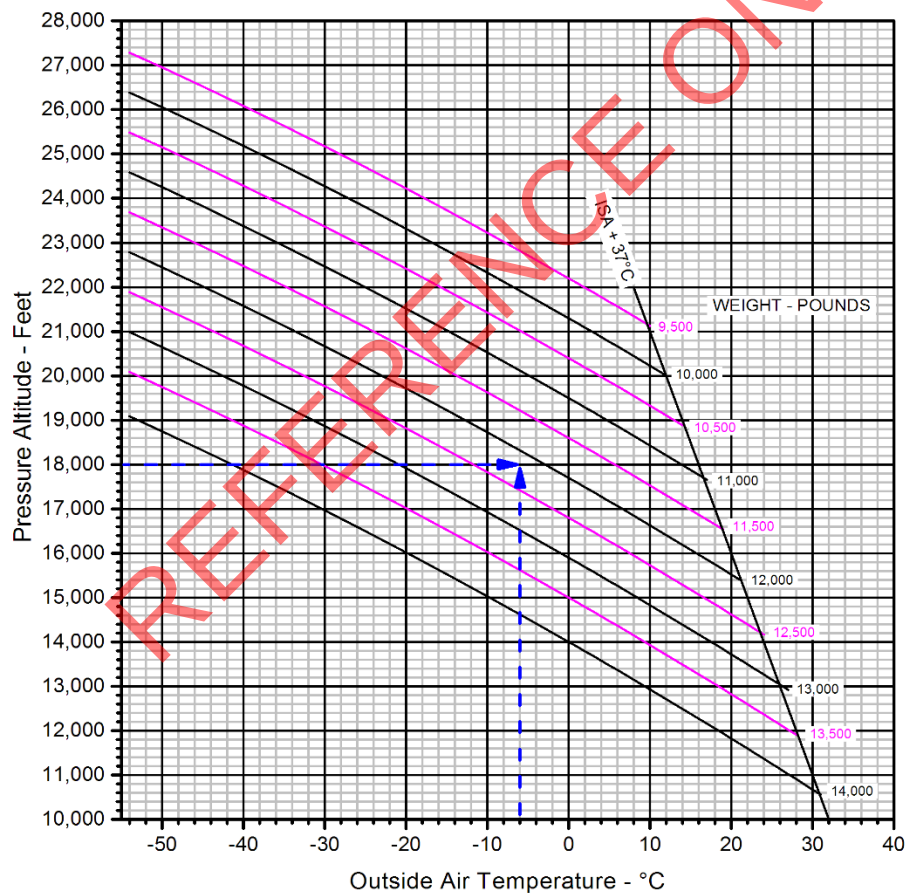
PowerMax Continuous
Landing GearUp
Inoperative Prop ...Feathered
FlapsUp

Example

OAT-6°C
Pressure Altitude (MEA)18,000 Feet
Maximum Weight at MEA ...12,200 LBS

Notes

1. Service ceiling is the maximum pressure altitude at which the airplane is capable of climbing 50 FPM with one propeller feathered.
2. For operations with ice vanes extended, decrease the service ceiling obtained from this graph by 3,000 feet.



USING TAKEOFF SPEEDS & FIELD LENGTHS TABLES

The first group of tables applies to aircraft operating with flaps set at the approach setting for takeoff and the second group for takeoff with flaps up. In each group, tables are provided for each 500 foot increment in pressure altitude starting with sea level pressure up through 10,000 feet. Each chart is arranged by aircraft weight and ambient outside air temperature. Starting with the maximum takeoff weight of 14,000 pounds in the top row, subsequent rows provide takeoff data for aircraft from 13,500 pound to 9,500 pound weights at 500 pound increments. For each row, the takeoff speeds in knots indicated airspeed (KIAS) and takeoff field length (TOFL) in feet are listed for each temperature. Outside air temperatures in degrees Celsius are given in 10°C increments, starting with 30°C below standard atmospheric (ISA) conditions and ending with 37°C above ISA, which equates to the maximum operating temperature limit of the aircraft. In the tables, the ambient temperatures are organized as follows:

Pres. Alt. Feet	OUTSIDE AIR TEMPERATURE (°C)							
	ISA-30	ISA-20	ISA-10	ISA	ISA+10	ISA+20	ISA+30	ISA+37
Sea level	-15	-5	5	15	25	35	45	52
500	-16	-6	4	14	24	34	44	51
1,000	-17	-7	3	13	23	33	43	50
1,500	-18	-8	2	12	22	32	42	49
2,000	-19	-9	1	11	21	31	41	48
2,500	-20	-10	0	10	20	30	40	47
3,000	-21	-11	-1	9	19	29	39	46
3,500	-22	-12	-2	8	18	28	38	45
4,000	-23	-13	-3	7	17	27	37	44
4,500	-24	-14	-4	6	16	26	36	43
5,000	-25	-15	-5	5	15	25	35	42
5,500	-26	-16	-6	4	14	24	34	41
6,000	-27	-17	-7	3	13	23	33	40
6,500	-28	-18	-8	2	12	22	32	39
7,000	-29	-19	-9	1	11	21	31	38
7,500	-30	-20	-10	0	10	20	30	37
8,000	-31	-21	-11	-1	9	19	29	36
8,500	-32	-22	-12	-2	8	18	28	35
9,000	-33	-23	-13	-3	7	17	27	34
9,500	-34	-24	-14	-4	6	16	26	33
10,000	-35	-25	-15	-5	5	15	25	32

NOTE: The standard day (ISA) temperature column is lightly shaded.

THIS PAGE IS INTENTIONALLY BLANK

REFERENCE ONLY

TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS APPROACH
SEA LEVEL PRESSURE ALTITUDE

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature. Red shading indicates takeoff climb requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-15	-5	5	15	25	35	45	52
14,000 LB 6350 KG	V ₁	97	97	97	97	97	97	97	
	V _R	98	98	98	98	98	98	98	
	V ₂	108	108	108	108	108	108	108	
V _{ENR} = 126	TOFL-FT	3,944	4,115	4,372	4,658	5,235	5,990	7,073	
13,500 LB 6124 KG	V ₁	96	96	96	96	96	96	96	
	V _R	97	97	97	97	97	97	97	
	V ₂	107	107	107	107	107	107	107	
V _{ENR} = 125	TOFL-FT	3,590	3,742	3,970	4,224	4,734	5,392	6,336	
13,000 LB 5897 KG	V ₁	95	95	95	95	95	95	95	95
	V _R	97	97	97	97	97	97	97	97
	V ₂	106	106	106	106	106	106	106	106
V _{ENR} = 123	TOFL-FT	3,262	3,397	3,598	3,821	4,270	4,841	5,659	6,389
12,500 LB 5670 KG	V ₁	95	95	95	95	95	95	95	95
	V _R	97	97	97	97	97	97	97	97
	V ₂	105	105	105	105	105	105	105	105
V _{ENR} = 121	TOFL-FT	3,182	3,309	3,498	3,709	4,132	4,660	5,418	6,094
12,000 LB 5443 KG	V ₁	94	94	94	94	94	94	94	94
	V _R	97	97	97	97	97	97	97	97
	V ₂	104	104	104	104	104	104	104	104
V _{ENR} = 120	TOFL-FT	3,086	3,205	3,382	3,579	3,973	4,458	5,153	5,773
11,500 LB 5216 KG	V ₁	94	94	94	94	94	94	94	94
	V _R	97	97	97	97	97	97	97	97
	V ₂	104	104	104	104	104	104	104	104
V _{ENR} = 118	TOFL-FT	2,982	3,091	3,256	3,439	3,803	4,245	4,877	5,441
11,000 LB 4990 KG	V ₁	93	93	93	93	93	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	103	103	103	103	103	103	103	103
V _{ENR} = 115	TOFL-FT	2,946	3,029	3,155	3,321	3,629	4,031	4,605	5,115
10,500 LB 4763 KG	V ₁	91	91	91	91	93	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	102	102	102	102	102	102	102	102
V _{ENR} = 113	TOFL-FT	2,757	2,843	2,966	3,111	3,288	3,620	4,113	4,549
10,000 LB 4536 KG	V ₁	90	90	90	90	91	92	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	101	101	101	101	101	101	101	101
V _{ENR} = 111	TOFL-FT	2,628	2,705	2,813	2,943	3,131	3,362	3,698	4,074
9,500 LB 4309 KG	V ₁	89	89	89	89	89	90	92	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	100	100	100	100	100	100	100	100
V _{ENR} = 110	TOFL-FT	2,515	2,584	2,683	2,801	2,970	3,178	3,447	3,691

**TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS APPROACH
500 FEET PRESSURE ALTITUDE**

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature. Red shading indicates takeoff climb requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-16	-6	4	14	24	34	44	51
14,000 LB 6350 KG	V ₁	97	97	97	97	97	97		
	V _R	98	98	98	98	98	98		
	V ₂	108	108	108	108	108	108		
V _{ENR} = 126	TOFL-FT	4,349	4,569	4,853	5,208	5,784	6,641		
13,500 LB 6124 KG	V ₁	96	96	96	96	96	96	96	
	V _R	97	97	97	97	97	97	97	
	V ₂	107	107	107	107	107	107	107	
V _{ENR} = 125	TOFL-FT	3,956	4,150	4,402	4,716	5,224	5,971	7,081	
13,000 LB 5897 KG	V ₁	95	95	95	95	95	95	95	95
	V _R	97	97	97	97	97	97	97	97
	V ₂	106	106	106	106	106	106	106	106
V _{ENR} = 123	TOFL-FT	3,592	3,763	3,985	4,261	4,706	5,353	6,316	7,221
12,500 LB 5670 KG	V ₁	95	95	95	95	95	95	95	95
	V _R	97	97	97	97	97	97	97	97
	V ₂	105	105	105	105	105	105	105	105
V _{ENR} = 121	TOFL-FT	3,428	3,585	3,790	4,043	4,454	5,040	5,910	6,734
12,000 LB 5443 KG	V ₁	94	94	94	94	94	94	94	94
	V _R	97	97	97	97	97	97	97	97
	V ₂	104	104	104	104	104	104	104	104
V _{ENR} = 120	TOFL-FT	3,256	3,400	3,588	3,817	4,193	4,720	5,500	6,242
11,500 LB 5216 KG	V ₁	94	94	94	94	94	94	94	94
	V _R	97	97	97	97	97	97	97	97
	V ₂	104	104	104	104	104	104	104	104
V _{ENR} = 118	TOFL-FT	3,091	3,221	3,393	3,601	3,943	4,415	5,112	5,776
11,000 LB 4990 KG	V ₁	93	93	93	93	93	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	103	103	103	103	103	103	103	103
V _{ENR} = 115	TOFL-FT	2,987	3,092	3,228	3,413	3,705	4,127	4,747	5,338
10,500 LB 4763 KG	V ₁	91	91	91	92	93	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	102	102	102	102	102	102	102	102
V _{ENR} = 113	TOFL-FT	2,809	2,906	3,032	3,174	3,354	3,707	4,240	4,745
10,000 LB 4536 KG	V ₁	90	90	90	90	91	92	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	101	101	101	101	101	101	101	101
V _{ENR} = 111	TOFL-FT	2,675	2,761	2,870	3,005	3,183	3,420	3,808	4,239
9,500 LB 4309 KG	V ₁	89	89	89	89	90	90	92	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	100	100	100	100	100	100	100	100
V _{ENR} = 110	TOFL-FT	2,557	2,635	2,735	2,856	3,017	3,232	3,522	3,828

TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS APPROACH
1,000 FEET PRESSURE ALTITUDE

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature. Red shading indicates takeoff climb requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-17	-7	3	13	23	33	43	50
14,000 LB 6350 KG	V ₁	97	97	97	97	97	97		
	V _R	98	98	98	98	98	98		
	V ₂	108	108	108	108	108	108		
V _{ENR} = 126	TOFL-FT	4,754	5,022	5,333	5,757	6,333	7,291		
13,500 LB 6124 KG	V ₁	96	96	96	96	96	96	96	
	V _R	97	97	97	97	97	97	97	
	V ₂	107	107	107	107	107	107	107	
V _{ENR} = 125	TOFL-FT	4,321	4,559	4,834	5,208	5,714	6,549	7,826	
13,000 LB 5897 KG	V ₁	95	95	95	95	95	95	95	
	V _R	97	97	97	97	97	97	97	
	V ₂	106	106	106	106	106	106	106	
V _{ENR} = 123	TOFL-FT	3,921	4,130	4,373	4,701	5,143	5,866	6,973	
12,500 LB 5670 KG	V ₁	95	95	95	95	95	95	95	95
	V _R	97	97	97	97	97	97	97	97
	V ₂	105	105	105	105	105	105	105	105
V _{ENR} = 121	TOFL-FT	3,673	3,862	4,083	4,377	4,776	5,420	6,403	7,374
12,000 LB 5443 KG	V ₁	94	94	94	94	94	94	94	94
	V _R	97	97	97	97	97	97	97	97
	V ₂	104	104	104	104	104	104	104	104
V _{ENR} = 120	TOFL-FT	3,425	3,594	3,793	4,055	4,413	4,981	5,846	6,711
11,500 LB 5216 KG	V ₁	94	94	94	94	94	94	94	94
	V _R	97	97	97	97	97	97	97	97
	V ₂	104	104	104	104	104	104	104	104
V _{ENR} = 118	TOFL-FT	3,201	3,352	3,530	3,763	4,084	4,585	5,346	6,111
11,000 LB 4990 KG	V ₁	93	93	93	93	93	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	103	103	103	103	103	103	103	103
V _{ENR} = 115	TOFL-FT	3,028	3,154	3,300	3,506	3,780	4,222	4,890	5,561
10,500 LB 4763 KG	V ₁	91	91	91	92	93	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	102	102	102	102	102	102	102	102
V _{ENR} = 113	TOFL-FT	2,862	2,969	3,097	3,237	3,419	3,794	4,367	4,941
10,000 LB 4536 KG	V ₁	90	90	90	90	91	92	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	101	101	101	101	101	101	101	101
V _{ENR} = 111	TOFL-FT	2,721	2,816	2,928	3,067	3,235	3,478	3,917	4,404
9,500 LB 4309 KG	V ₁	89	89	89	89	90	91	92	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	100	100	100	100	100	100	100	100
V _{ENR} = 110	TOFL-FT	2,600	2,685	2,787	2,911	3,063	3,285	3,596	3,965

**TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS APPROACH
1,500 FEET PRESSURE ALTITUDE**

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature. Red shading indicates takeoff climb requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-18	-8	2	12	22	32	42	49
14,000 LB 6350 KG	V ₁	97	97	97	97	97	97		
	V _R	98	98	98	98	98	98		
	V ₂	108	108	108	108	108	108		
V _{ENR} = 126	TOFL-FT	5,160	5,475	5,813	6,306	6,883	7,941		
13,500 LB 6124 KG	V ₁	96	96	96	96	96	96	96	
	V _R	97	97	97	97	97	97	97	
	V ₂	107	107	107	107	107	107	107	
V _{ENR} = 125	TOFL-FT	4,687	4,967	5,266	5,700	6,205	7,128	8,570	
13,000 LB 5897 KG	V ₁	95	95	95	95	95	95	95	95
	V _R	97	97	97	97	97	97	97	97
	V ₂	106	106	106	106	106	106	106	106
V _{ENR} = 123	TOFL-FT	4,250	4,497	4,761	5,140	5,579	6,379	7,630	8,884
12,500 LB 5670 KG	V ₁	95	95	95	95	95	95	95	95
	V _R	97	97	97	97	97	97	97	97
	V ₂	105	105	105	105	105	105	105	105
V _{ENR} = 121	TOFL-FT	3,919	4,139	4,375	4,710	5,099	5,800	6,896	8,015
12,000 LB 5443 KG	V ₁	94	94	94	94	94	94	94	94
	V _R	97	97	97	97	97	97	97	97
	V ₂	104	104	104	104	104	104	104	104
V _{ENR} = 120	TOFL-FT	3,595	3,789	3,998	4,292	4,633	5,243	6,193	7,179
11,500 LB 5216 KG	V ₁	94	94	94	94	94	94	94	94
	V _R	97	97	97	97	97	97	97	97
	V ₂	104	104	104	104	104	104	104	104
V _{ENR} = 118	TOFL-FT	3,310	3,482	3,667	3,925	4,225	4,756	5,580	6,445
11,000 LB 4990 KG	V ₁	93	93	93	93	93	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	103	103	103	103	103	103	103	103
V _{ENR} = 115	TOFL-FT	3,069	3,216	3,373	3,599	3,856	4,318	5,032	5,785
10,500 LB 4763 KG	V ₁	91	91	92	93	93	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	102	102	102	102	102	102	102	102
V _{ENR} = 113	TOFL-FT	2,914	3,031	3,163	3,300	3,485	3,881	4,494	5,137
10,000 LB 4536 KG	V ₁	90	90	90	90	91	92	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	101	101	101	101	101	101	101	101
V _{ENR} = 111	TOFL-FT	2,767	2,871	2,985	3,128	3,287	3,536	4,027	4,568
9,500 LB 4309 KG	V ₁	89	89	89	89	90	91	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	100	100	100	100	100	100	100	100
V _{ENR} = 110	TOFL-FT	2,643	2,736	2,839	2,966	3,110	3,339	3,671	4,102

TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS APPROACH
2,000 FEET PRESSURE ALTITUDE

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature. Red shading indicates takeoff climb requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-19	-9	1	11	21	31	41	48
14,000 LB 6350 KG	V ₁	97	97	97	97	97			
	V _R	98	98	98	98	98			
	V ₂	108	108	108	108	108			
	V _{ENR} = 126 TOFL-FT	5,565	5,929	6,293	6,855	7,432			
13,500 LB 6124 KG	V ₁	96	96	96	96	96	96		
	V _R	97	97	97	97	97	97		
	V ₂	107	107	107	107	107	107		
	V _{ENR} = 125 TOFL-FT	5,053	5,376	5,698	6,192	6,695	7,706		
13,000 LB 5897 KG	V ₁	95	95	95	95	95	95	95	
	V _R	97	97	97	97	97	97	97	
	V ₂	106	106	106	106	106	106	106	
	V _{ENR} = 123 TOFL-FT	4,579	4,864	5,148	5,580	6,016	6,892	8,287	
12,500 LB 5670 KG	V ₁	95	95	95	95	95	95	95	95
	V _R	97	97	97	97	97	97	97	97
	V ₂	105	105	105	105	105	105	105	105
	V _{ENR} = 121 TOFL-FT	4,164	4,415	4,667	5,044	5,421	6,180	7,388	8,655
12,000 LB 5443 KG	V ₁	94	94	94	94	94	94	94	94
	V _R	97	97	97	97	97	97	97	97
	V ₂	104	104	104	104	104	104	104	104
	V _{ENR} = 120 TOFL-FT	3,764	3,984	4,203	4,530	4,854	5,505	6,540	7,648
11,500 LB 5216 KG	V ₁	94	94	94	94	94	94	94	94
	V _R	97	97	97	97	97	97	97	97
	V ₂	104	104	104	104	104	104	104	104
	V _{ENR} = 118 TOFL-FT	3,420	3,612	3,804	4,087	4,366	4,926	5,814	6,780
11,000 LB 4990 KG	V ₁	93	93	93	93	93	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	103	103	103	103	103	103	103	103
	V _{ENR} = 115 TOFL-FT	3,110	3,278	3,446	3,691	3,931	4,413	5,174	6,008
10,500 LB 4763 KG	V ₁	91	91	92	93	93	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	102	102	102	102	102	102	102	102
	V _{ENR} = 113 TOFL-FT	2,966	3,094	3,228	3,363	3,550	3,968	4,621	5,333
10,000 LB 4536 KG	V ₁	90	90	90	91	91	92	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	101	101	101	101	101	101	101	101
	V _{ENR} = 111 TOFL-FT	2,814	2,927	3,043	3,190	3,339	3,594	4,137	4,733
9,500 LB 4309 KG	V ₁	89	89	89	89	90	91	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	100	100	100	100	100	100	100	100
	V _{ENR} = 110 TOFL-FT	2,685	2,786	2,891	3,021	3,156	3,392	3,746	4,239

**TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS APPROACH
2,500 FEET PRESSURE ALTITUDE**

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature. Red shading indicates takeoff climb requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-20	-10	0	10	20	30	40	47
14,000 LB 6350 KG	V ₁	97	97	97	97	97	97		
	V _R	98	98	98	98	98	98		
	V ₂	108	108	108	108	108	108		
V _{ENR} = 126	TOFL-FT	5,779	6,146	6,566	7,160	7,818	9,054		
13,500 LB 6124 KG	V ₁	96	96	96	96	96	96		
	V _R	97	97	97	97	97	97		
	V ₂	107	107	107	107	107	107		
V _{ENR} = 125	TOFL-FT	5,243	5,569	5,939	6,459	7,033	8,110		
13,000 LB 5897 KG	V ₁	95	95	95	95	95	95	95	
	V _R	97	97	97	97	97	97	97	
	V ₂	106	106	106	106	106	106	106	
V _{ENR} = 123	TOFL-FT	4,748	5,034	5,359	5,812	6,309	7,243	8,740	
12,500 LB 5670 KG	V ₁	95	95	95	95	95	95	95	95
	V _R	97	97	97	97	97	97	97	97
	V ₂	105	105	105	105	105	105	105	105
V _{ENR} = 121	TOFL-FT	4,308	4,560	4,844	5,238	5,668	6,476	7,779	9,105
12,000 LB 5443 KG	V ₁	94	94	94	94	94	94	94	94
	V _R	97	97	97	97	97	97	97	97
	V ₂	104	104	104	104	104	104	104	104
V _{ENR} = 120	TOFL-FT	3,890	4,110	4,357	4,698	5,067	5,759	6,882	8,018
11,500 LB 5216 KG	V ₁	94	94	94	94	94	94	94	94
	V _R	97	97	97	97	97	97	97	97
	V ₂	104	104	104	104	104	104	104	104
V _{ENR} = 118	TOFL-FT	3,526	3,718	3,932	4,226	4,543	5,138	6,104	7,072
11,000 LB 4990 KG	V ₁	93	93	93	93	93	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	103	103	103	103	103	103	103	103
V _{ENR} = 115	TOFL-FT	3,199	3,366	3,552	3,806	4,078	4,589	5,417	6,236
10,500 LB 4763 KG	V ₁	92	92	92	93	93	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	102	102	102	102	102	102	102	102
V _{ENR} = 113	TOFL-FT	3,028	3,152	3,291	3,453	3,673	4,113	4,822	5,510
10,000 LB 4536 KG	V ₁	90	90	90	91	91	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	101	101	101	101	101	101	101	101
V _{ENR} = 111	TOFL-FT	2,870	2,981	3,106	3,259	3,425	3,714	4,305	4,878
9,500 LB 4309 KG	V ₁	89	89	89	90	90	91	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	100	100	100	100	100	100	100	100
V _{ENR} = 110	TOFL-FT	2,736	2,835	2,948	3,084	3,232	3,481	3,885	4,362

TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS APPROACH
3,000 FEET PRESSURE ALTITUDE

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature. Red shading indicates takeoff climb requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-21	-11	-1	9	19	29	39	46
14,000 LB 6350 KG	V ₁	97	97	97	97	97			
	V _R	98	98	98	98	98			
	V ₂	108	108	108	108	108			
	V _{ENR} = 126 TOFL-FT	5,993	6,364	6,840	7,464	8,204			
13,500 LB 6124 KG	V ₁	96	96	96	96	96	96		
	V _R	97	97	97	97	97	97		
	V ₂	107	107	107	107	107	107		
	V _{ENR} = 125 TOFL-FT	5,434	5,762	6,179	6,726	7,370	8,515		
13,000 LB 5897 KG	V ₁	95	95	95	95	95	95	95	
	V _R	97	97	97	97	97	97	97	
	V ₂	106	106	106	106	106	106	106	
	V _{ENR} = 123 TOFL-FT	4,916	5,205	5,569	6,044	6,603	7,595	9,193	
12,500 LB 5670 KG	V ₁	95	95	95	95	95	95	95	
	V _R	97	97	97	97	97	97	97	
	V ₂	105	105	105	105	105	105	105	
	V _{ENR} = 121 TOFL-FT	4,451	4,704	5,021	5,433	5,916	6,772	8,169	
12,000 LB 5443 KG	V ₁	94	94	94	94	94	94	94	94
	V _R	97	97	97	97	97	97	97	97
	V ₂	104	104	104	104	104	104	104	104
	V _{ENR} = 120 TOFL-FT	4,016	4,237	4,511	4,866	5,280	6,014	7,225	8,388
11,500 LB 5216 KG	V ₁	94	94	94	94	94	94	94	94
	V _R	97	97	97	97	97	97	97	97
	V ₂	104	104	104	104	104	104	104	104
	V _{ENR} = 118 TOFL-FT	3,631	3,823	4,060	4,366	4,721	5,349	6,394	7,365
11,000 LB 4990 KG	V ₁	93	93	93	93	93	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	103	103	103	103	103	103	103	103
	V _{ENR} = 115 TOFL-FT	3,287	3,454	3,658	3,921	4,226	4,764	5,660	6,464
10,500 LB 4763 KG	V ₁	92	92	92	93	93	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	102	102	102	102	102	102	102	102
	V _{ENR} = 113 TOFL-FT	3,090	3,210	3,355	3,543	3,795	4,258	5,023	5,687
10,000 LB 4536 KG	V ₁	90	90	91	91	92	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	101	101	101	101	101	101	101	101
	V _{ENR} = 111 TOFL-FT	2,927	3,036	3,169	3,329	3,510	3,834	4,473	5,022
9,500 LB 4309 KG	V ₁	89	89	89	90	90	92	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	100	100	100	100	100	100	100	100
	V _{ENR} = 110 TOFL-FT	2,787	2,885	3,004	3,146	3,309	3,570	4,024	4,485

**TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS APPROACH
3,500 FEET PRESSURE ALTITUDE**

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature. Red shading indicates takeoff climb requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-22	-12	-2	8	18	28	38	45
14,000 LB 6350 KG	V ₁	97	97	97	97	97			
	V _R	98	98	98	98	98			
	V ₂	108	108	108	108	108			
V _{ENR} = 126	TOFL-FT	6,207	6,581	7,114	7,769	8,590			
13,500 LB 6124 KG	V ₁	96	96	96	96	96	96		
	V _R	97	97	97	97	97	97		
	V ₂	107	107	107	107	107	107		
V _{ENR} = 125	TOFL-FT	5,624	5,955	6,420	6,992	7,708	8,919		
13,000 LB 5897 KG	V ₁	95	95	95	95	95	95	95	
	V _R	97	97	97	97	97	97	97	
	V ₂	106	106	106	106	106	106	106	
V _{ENR} = 123	TOFL-FT	5,085	5,375	5,780	6,277	6,897	7,946	9,646	
12,500 LB 5670 KG	V ₁	95	95	95	95	95	95	95	
	V _R	97	97	97	97	97	97	97	
	V ₂	105	105	105	105	105	105	105	
V _{ENR} = 121	TOFL-FT	4,594	4,848	5,199	5,628	6,163	7,068	8,560	
12,000 LB 5443 KG	V ₁	94	94	94	94	94	94	94	94
	V _R	97	97	97	97	97	97	97	97
	V ₂	104	104	104	104	104	104	104	104
V _{ENR} = 120	TOFL-FT	4,142	4,363	4,664	5,033	5,492	6,268	7,567	8,758
11,500 LB 5216 KG	V ₁	94	94	94	94	94	94	94	94
	V _R	97	97	97	97	97	97	97	97
	V ₂	104	104	104	104	104	104	104	104
V _{ENR} = 118	TOFL-FT	3,737	3,929	4,188	4,505	4,898	5,561	6,684	7,657
11,000 LB 4990 KG	V ₁	93	93	93	93	93	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	103	103	103	103	103	103	103	103
V _{ENR} = 115	TOFL-FT	3,375	3,542	3,764	4,037	4,373	4,940	5,903	6,693
10,500 LB 4763 KG	V ₁	93	93	93	93	93	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	102	102	102	102	102	102	102	102
V _{ENR} = 113	TOFL-FT	3,151	3,267	3,418	3,633	3,918	4,403	5,223	5,864
10,000 LB 4536 KG	V ₁	90	90	91	91	92	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	101	101	101	101	101	101	101	101
V _{ENR} = 111	TOFL-FT	2,984	3,091	3,232	3,398	3,596	3,954	4,641	5,167
9,500 LB 4309 KG	V ₁	89	89	89	90	91	92	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	100	100	100	100	100	100	100	100
V _{ENR} = 110	TOFL-FT	2,838	2,934	3,061	3,209	3,385	3,658	4,163	4,608

TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS APPROACH
4,000 FEET PRESSURE ALTITUDE

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature. Red shading indicates takeoff climb requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-23	-13	-3	7	17	27	37	44
14,000 LB 6350 KG	V ₁	97	97	97	97				
	V _R	98	98	98	98				
	V ₂	108	108	108	108				
	V _{ENR} = 126 TOFL-FT	6,421	6,799	7,387	8,074				
13,500 LB 6124 KG	V ₁	96	96	96	96	96			
	V _R	97	97	97	97	97			
	V ₂	107	107	107	107	107			
	V _{ENR} = 125 TOFL-FT	5,815	6,148	6,661	7,259	8,046			
13,000 LB 5897 KG	V ₁	95	95	95	95	95	95		
	V _R	97	97	97	97	97	97		
	V ₂	106	106	106	106	106	106		
	V _{ENR} = 123 TOFL-FT	5,253	5,546	5,990	6,509	7,191	8,298		
12,500 LB 5670 KG	V ₁	95	95	95	95	95	95	95	
	V _R	97	97	97	97	97	97	97	
	V ₂	105	105	105	105	105	105	105	
	V _{ENR} = 121 TOFL-FT	4,738	4,993	5,376	5,823	6,411	7,365	8,951	
12,000 LB 5443 KG	V ₁	94	94	94	94	94	94	94	94
	V _R	97	97	97	97	97	97	97	97
	V ₂	104	104	104	104	104	104	104	104
	V _{ENR} = 120 TOFL-FT	4,267	4,489	4,818	5,201	5,705	6,523	7,909	9,127
11,500 LB 5216 KG	V ₁	94	94	94	94	94	94	94	94
	V _R	97	97	97	97	97	97	97	97
	V ₂	104	104	104	104	104	104	104	104
	V _{ENR} = 118 TOFL-FT	3,843	4,035	4,316	4,644	5,075	5,773	6,974	7,949
11,000 LB 4990 KG	V ₁	93	93	93	93	93	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	103	103	103	103	103	103	103	103
	V _{ENR} = 115 TOFL-FT	3,463	3,629	3,870	4,152	4,520	5,115	6,146	6,921
10,500 LB 4763 KG	V ₁	93	93	93	93	93	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	102	102	102	102	102	102	102	102
	V _{ENR} = 113 TOFL-FT	3,213	3,325	3,481	3,723	4,040	4,549	5,424	6,042
10,000 LB 4536 KG	V ₁	90	90	91	91	92	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	101	101	101	101	101	101	101	101
	V _{ENR} = 111 TOFL-FT	3,040	3,146	3,296	3,467	3,681	4,074	4,809	5,312
9,500 LB 4309 KG	V ₁	89	89	90	90	91	92	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	100	100	100	100	100	100	100	100
	V _{ENR} = 110 TOFL-FT	2,889	2,984	3,117	3,271	3,461	3,747	4,301	4,731

**TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS APPROACH
4,500 FEET PRESSURE ALTITUDE**

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature. Red shading indicates takeoff climb requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-24	-14	-4	6	16	26	36	43
14,000 LB 6350 KG	V ₁	97	97	97	97				
	V _R	98	98	98	98				
	V ₂	108	108	108	108				
	V _{ENR} = 126 TOFL-FT	6,614	7,073	7,706	8,456				
13,500 LB 6124 KG	V ₁	96	96	96	96	96			
	V _R	97	97	97	97	97			
	V ₂	107	107	107	107	107			
	V _{ENR} = 125 TOFL-FT	5,983	6,387	6,939	7,593	8,456			
13,000 LB 5897 KG	V ₁	95	95	95	95	95	95		
	V _R	97	97	97	97	97	97		
	V ₂	106	106	106	106	106	106		
	V _{ENR} = 123 TOFL-FT	5,401	5,753	6,231	6,798	7,547	8,757		
12,500 LB 5670 KG	V ₁	95	95	95	95	95	95	95	
	V _R	97	97	97	97	97	97	97	
	V ₂	105	105	105	105	105	105	105	
	V _{ENR} = 121 TOFL-FT	4,865	5,172	5,583	6,072	6,717	7,769	9,517	
12,000 LB 5443 KG	V ₁	94	94	94	94	94	94	94	94
	V _R	97	97	97	97	97	97	97	97
	V ₂	104	104	104	104	104	104	104	104
	V _{ENR} = 120 TOFL-FT	4,378	4,643	4,996	5,415	5,968	6,877	8,367	9,665
11,500 LB 5216 KG	V ₁	94	94	94	94	94	94	94	94
	V _R	97	97	97	97	97	97	97	97
	V ₂	104	104	104	104	104	104	104	104
	V _{ENR} = 118 TOFL-FT	3,938	4,166	4,469	4,827	5,300	6,080	7,340	8,387
11,000 LB 4990 KG	V ₁	93	93	93	93	93	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	103	103	103	103	103	103	103	103
	V _{ENR} = 115 TOFL-FT	3,545	3,742	4,001	4,308	4,711	5,378	6,436	7,275
10,500 LB 4763 KG	V ₁	93	93	93	93	93	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	102	102	102	102	102	102	102	102
	V _{ENR} = 113 TOFL-FT	3,263	3,409	3,594	3,857	4,204	4,772	5,654	6,328
10,000 LB 4536 KG	V ₁	90	91	91	92	93	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	101	101	101	101	101	101	101	101
	V _{ENR} = 111 TOFL-FT	3,085	3,210	3,371	3,556	3,811	4,262	4,997	5,545
9,500 LB 4309 KG	V ₁	89	89	90	90	91	92	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	100	100	100	100	100	100	100	100
	V _{ENR} = 110 TOFL-FT	2,929	3,041	3,184	3,348	3,556	3,889	4,462	4,928

TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS APPROACH
5,000 FEET PRESSURE ALTITUDE

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature. Red shading indicates takeoff climb requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-25	-15	-5	5	15	25	35	42
14,000 LB 6350 KG	V ₁	97	97	97					
	V _R	98	98	98					
	V ₂	108	108	108					
	V _{ENR} = 126 TOFL-FT	6,806	7,348	8,025					
13,500 LB 6124 KG	V ₁	96	96	96	96	96			
	V _R	97	97	97	97	97			
	V ₂	107	107	107	107	107			
	V _{ENR} = 125 TOFL-FT	6,152	6,626	7,216	7,926	8,867			
13,000 LB 5897 KG	V ₁	95	95	95	95	95	95		
	V _R	97	97	97	97	97	97		
	V ₂	106	106	106	106	106	106		
	V _{ENR} = 123 TOFL-FT	5,548	5,960	6,472	7,087	7,902	9,217		
12,500 LB 5670 KG	V ₁	95	95	95	95	95	95	95	
	V _R	97	97	97	97	97	97	97	
	V ₂	105	105	105	105	105	105	105	
	V _{ENR} = 121 TOFL-FT	4,993	5,350	5,791	6,321	7,024	8,174	10,084	
12,000 LB 5443 KG	V ₁	94	94	94	94	94	94	94	
	V _R	97	97	97	97	97	97	97	
	V ₂	104	104	104	104	104	104	104	
	V _{ENR} = 120 TOFL-FT	4,488	4,796	5,174	5,629	6,231	7,230	8,825	
11,500 LB 5216 KG	V ₁	94	94	94	94	94	94	94	94
	V _R	97	97	97	97	97	97	97	97
	V ₂	104	104	104	104	104	104	104	104
	V _{ENR} = 118 TOFL-FT	4,032	4,297	4,621	5,009	5,524	6,386	7,706	8,826
11,000 LB 4990 KG	V ₁	93	93	93	93	93	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	103	103	103	103	103	103	103	103
	V _{ENR} = 115 TOFL-FT	3,627	3,854	4,132	4,463	4,903	5,641	6,726	7,629
10,500 LB 4763 KG	V ₁	93	93	93	93	93	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	102	102	102	102	102	102	102	102
	V _{ENR} = 113 TOFL-FT	3,313	3,493	3,706	3,991	4,367	4,995	5,885	6,614
10,000 LB 4536 KG	V ₁	91	91	92	92	93	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	101	101	101	101	101	101	101	101
	V _{ENR} = 111 TOFL-FT	3,130	3,275	3,446	3,645	3,940	4,449	5,184	5,779
9,500 LB 4309 KG	V ₁	89	90	90	91	92	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	100	100	100	100	100	100	100	100
	V _{ENR} = 110 TOFL-FT	2,968	3,098	3,252	3,425	3,650	4,031	4,622	5,124

**TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS APPROACH
5,500 FEET PRESSURE ALTITUDE**

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature. Red shading indicates takeoff climb requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-26	-16	-6	4	14	24	34	41
14,000 LB 6350 KG	V ₁	97	97	97					
	V _R	98	98	98					
	V ₂	108	108	108					
	TOFL-FT	6,999	7,623	8,344					
V _{ENR} = 126									
13,500 LB 6124 KG	V ₁	96	96	96	96	96			
	V _R	97	97	97	97	97			
	V ₂	107	107	107	107	107			
	TOFL-FT	6,321	6,866	7,494	8,260	9,277			
V _{ENR} = 125									
13,000 LB 5897 KG	V ₁	95	95	95	95	95	95		
	V _R	97	97	97	97	97	97		
	V ₂	106	106	106	106	106	106		
	TOFL-FT	5,695	6,168	6,713	7,376	8,258	9,677		
V _{ENR} = 123									
12,500 LB 5670 KG	V ₁	95	95	95	95	95	95	95	
	V _R	97	97	97	97	97	97	97	
	V ₂	105	105	105	105	105	105	105	
	TOFL-FT	5,121	5,529	5,999	6,570	7,330	8,579	10,651	
V _{ENR} = 121									
12,000 LB 5443 KG	V ₁	94	94	94	94	94	94	94	
	V _R	97	97	97	97	97	97	97	
	V ₂	104	104	104	104	104	104	104	
	TOFL-FT	4,598	4,949	5,352	5,842	6,494	7,584	9,283	
V _{ENR} = 120									
11,500 LB 5216 KG	V ₁	94	94	94	94	94	94	94	94
	V _R	97	97	97	97	97	97	97	97
	V ₂	104	104	104	104	104	104	104	104
	TOFL-FT	4,127	4,429	4,773	5,192	5,748	6,692	8,071	9,264
V _{ENR} = 118									
11,000 LB 4990 KG	V ₁	93	93	93	93	93	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	103	103	103	103	103	103	103	103
	TOFL-FT	3,708	3,967	4,262	4,619	5,094	5,904	7,015	7,984
V _{ENR} = 115									
10,500 LB 4763 KG	V ₁	93	93	93	93	93	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	102	102	102	102	102	102	102	102
	TOFL-FT	3,362	3,577	3,819	4,124	4,530	5,219	6,115	6,900
V _{ENR} = 113									
10,000 LB 4536 KG	V ₁	91	91	92	93	93	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	101	101	101	101	101	101	101	101
	TOFL-FT	3,175	3,340	3,522	3,734	4,070	4,637	5,371	6,012
V _{ENR} = 111									
9,500 LB 4309 KG	V ₁	90	90	90	91	92	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	100	100	100	100	100	100	100	100
	TOFL-FT	3,008	3,156	3,319	3,503	3,744	4,172	4,783	5,320
V _{ENR} = 110									

TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS APPROACH
6,000 FEET PRESSURE ALTITUDE

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature. Red shading indicates takeoff climb requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-27	-17	-7	3	13	23	33	40
14,000 LB 6350 KG $V_{ENR} = 126$	V_1	97	97						
	V_R	98	98						
	V_2	108	108						
	TOFL-FT	7,191	7,897						
13,500 LB 6124 KG $V_{ENR} = 125$	V_1	96	96	96	96				
	V_R	97	97	97	97				
	V_2	107	107	107	107				
	TOFL-FT	6,490	7,105	7,772	8,593				
13,000 LB 5897 KG $V_{ENR} = 123$	V_1	95	95	95	95	95			
	V_R	97	97	97	97	97			
	V_2	106	106	106	106	106			
	TOFL-FT	5,842	6,375	6,954	7,665	8,614			
12,500 LB 5670 KG $V_{ENR} = 121$	V_1	95	95	95	95	95	95		
	V_R	97	97	97	97	97	97		
	V_2	105	105	105	105	105	105		
	TOFL-FT	5,248	5,708	6,206	6,819	7,637	8,984		
12,000 LB 5443 KG $V_{ENR} = 120$	V_1	94	94	94	94	94	94	94	
	V_R	97	97	97	97	97	97	97	
	V_2	104	104	104	104	104	104	104	
	TOFL-FT	4,708	5,103	5,530	6,056	6,756	7,938	9,741	
11,500 LB 5216 KG $V_{ENR} = 118$	V_1	94	94	94	94	94	94	94	94
	V_R	97	97	97	97	97	97	97	97
	V_2	104	104	104	104	104	104	104	104
	TOFL-FT	4,222	4,560	4,926	5,374	5,972	6,999	8,437	9,702
11,000 LB 4990 KG $V_{ENR} = 115$	V_1	93	93	93	93	93	93	93	93
	V_R	97	97	97	97	97	97	97	97
	V_2	103	103	103	103	103	103	103	103
	TOFL-FT	3,790	4,079	4,393	4,775	5,285	6,167	7,305	8,338
10,500 LB 4763 KG $V_{ENR} = 113$	V_1	93	93	93	93	93	93	93	93
	V_R	97	97	97	97	97	97	97	97
	V_2	102	102	102	102	102	102	102	102
	TOFL-FT	3,412	3,661	3,931	4,258	4,694	5,442	6,346	7,186
10,000 LB 4536 KG $V_{ENR} = 111$	V_1	91	92	92	93	93	93	93	93
	V_R	97	97	97	97	97	97	97	97
	V_2	101	101	101	101	101	101	101	101
	TOFL-FT	3,220	3,404	3,597	3,823	4,199	4,825	5,558	6,245
9,500 LB 4309 KG $V_{ENR} = 110$	V_1	90	90	91	91	92	93	93	93
	V_R	97	97	97	97	97	97	97	97
	V_2	100	100	100	100	100	100	100	100
	TOFL-FT	3,048	3,213	3,386	3,580	3,838	4,314	4,943	5,517

**TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS APPROACH
6,500 FEET PRESSURE ALTITUDE**

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature. Red shading indicates takeoff climb requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-28	-18	-8	2	12	22	32	39
14,000 LB 6350 KG	V ₁	97	97	97					
	V _R	98	98	98					
	V ₂	108	108	108					
	TOFL-FT	7,485	8,219	9,107					
V _{ENR} = 126									
13,500 LB 6124 KG	V ₁	96	96	96	96				
	V _R	97	97	97	97				
	V ₂	107	107	107	107				
	TOFL-FT	6,746	7,386	8,160	9,127				
V _{ENR} = 125									
13,000 LB 5897 KG	V ₁	95	95	95	95	95			
	V _R	97	97	97	97	97			
	V ₂	106	106	106	106	106			
	TOFL-FT	6,064	6,619	7,290	8,135	9,268			
V _{ENR} = 123									
12,500 LB 5670 KG	V ₁	95	95	95	95	95	95		
	V _R	97	97	97	97	97	97		
	V ₂	105	105	105	105	105	105		
	TOFL-FT	5,440	5,918	6,496	7,229	8,198	9,684		
V _{ENR} = 121									
12,000 LB 5443 KG	V ₁	94	94	94	94	94	94	94	
	V _R	97	97	97	97	97	97	97	
	V ₂	104	104	104	104	104	104	104	
	TOFL-FT	4,873	5,283	5,778	6,411	7,234	8,506	10,316	
V _{ENR} = 120									
11,500 LB 5216 KG	V ₁	94	94	94	94	94	94	94	94
	V _R	97	97	97	97	97	97	97	97
	V ₂	104	104	104	104	104	104	104	104
	TOFL-FT	4,363	4,714	5,138	5,680	6,375	7,455	8,933	10,310
V _{ENR} = 118									
11,000 LB 4990 KG	V ₁	93	93	93	93	93	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	103	103	103	103	103	103	103	103
	TOFL-FT	3,911	4,211	4,573	5,037	5,622	6,530	7,730	8,860
V _{ENR} = 115									
10,500 LB 4763 KG	V ₁	93	93	93	93	93	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	102	102	102	102	102	102	102	102
	TOFL-FT	3,516	3,774	4,086	4,481	4,974	5,731	6,707	7,628
V _{ENR} = 113									
10,000 LB 4536 KG	V ₁	91	92	92	93	93	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	101	101	101	101	101	101	101	101
	TOFL-FT	3,295	3,484	3,716	4,013	4,432	5,059	5,864	6,613
V _{ENR} = 111									
9,500 LB 4309 KG	V ₁	90	90	91	92	93	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	100	100	100	100	100	100	100	100
	TOFL-FT	3,116	3,284	3,474	3,713	4,022	4,514	5,199	5,816
V _{ENR} = 110									

TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS APPROACH
7,000 FEET PRESSURE ALTITUDE

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature. Red shading indicates takeoff climb requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-29	-19	-9	1	11	21	31	38
14,000 LB 6350 KG $V_{ENR} = 126$	V_1	97	97						
	V_R	98	98						
	V_2	108	108						
	TOFL-FT	7,780	8,541						
13,500 LB 6124 KG $V_{ENR} = 125$	V_1	96	96	96					
	V_R	97	97	97					
	V_2	107	107	107					
	TOFL-FT	7,003	7,667	8,548					
13,000 LB 5897 KG $V_{ENR} = 123$	V_1	95	95	95	95	95			
	V_R	97	97	97	97	97			
	V_2	106	106	106	106	106			
	TOFL-FT	6,286	6,862	7,626	8,604	9,922			
12,500 LB 5670 KG $V_{ENR} = 121$	V_1	95	95	95	95	95	95		
	V_R	97	97	97	97	97	97		
	V_2	105	105	105	105	105	105		
	TOFL-FT	5,631	6,127	6,785	7,639	8,760	10,385		
12,000 LB 5443 KG $V_{ENR} = 120$	V_1	94	94	94	94	94	94	94	
	V_R	97	97	97	97	97	97	97	
	V_2	104	104	104	104	104	104	104	
	TOFL-FT	5,037	5,463	6,027	6,766	7,712	9,074	10,890	
11,500 LB 5216 KG $V_{ENR} = 118$	V_1	94	94	94	94	94	94	94	
	V_R	97	97	97	97	97	97	97	
	V_2	104	104	104	104	104	104	104	
	TOFL-FT	4,504	4,867	5,349	5,986	6,779	7,910	9,429	
11,000 LB 4990 KG $V_{ENR} = 115$	V_1	93	93	93	93	93	93	93	93
	V_R	97	97	97	97	97	97	97	97
	V_2	103	103	103	103	103	103	103	103
	TOFL-FT	4,031	4,342	4,754	5,299	5,959	6,892	8,155	9,382
10,500 LB 4763 KG $V_{ENR} = 113$	V_1	93	93	93	93	93	93	93	93
	V_R	97	97	97	97	97	97	97	97
	V_2	102	102	102	102	102	102	102	102
	TOFL-FT	3,620	3,887	4,240	4,704	5,254	6,020	7,068	8,069
10,000 LB 4536 KG $V_{ENR} = 111$	V_1	92	92	93	93	93	93	93	93
	V_R	97	97	97	97	97	97	97	97
	V_2	101	101	101	101	101	101	101	101
	TOFL-FT	3,371	3,563	3,835	4,202	4,664	5,294	6,169	6,981
9,500 LB 4309 KG $V_{ENR} = 110$	V_1	90	91	92	92	93	93	93	93
	V_R	97	97	97	97	97	97	97	97
	V_2	100	100	100	100	100	100	100	100
	TOFL-FT	3,184	3,355	3,562	3,847	4,206	4,714	5,456	6,116

**TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS APPROACH
7,500 FEET PRESSURE ALTITUDE**

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature. Red shading indicates takeoff climb requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-30	-20	-10	0	10	20	30	37
14,000 LB 6350 KG $V_{ENR} = 126$	V_1	97	97						
	V_R	98	98						
	V_2	108	108						
	TOFL-FT	8,074	8,863						
13,500 LB 6124 KG $V_{ENR} = 125$	V_1	96	96						
	V_R	97	97						
	V_2	107	107						
	TOFL-FT	7,259	7,948	8,935					
13,000 LB 5897 KG $V_{ENR} = 123$	V_1	95	95	95	95				
	V_R	97	97	97	97				
	V_2	106	106	106	106				
	TOFL-FT	6,509	7,106	7,962	9,073				
12,500 LB 5670 KG $V_{ENR} = 121$	V_1	95	95	95	95	95			
	V_R	97	97	97	97	97			
	V_2	105	105	105	105	105			
	TOFL-FT	5,823	6,337	7,075	8,048	9,321			
12,000 LB 5443 KG $V_{ENR} = 120$	V_1	94	94	94	94	94	94		
	V_R	97	97	97	97	97	97		
	V_2	104	104	104	104	104	104		
	TOFL-FT	5,201	5,642	6,275	7,122	8,190	9,643		
11,500 LB 5216 KG $V_{ENR} = 118$	V_1	94	94	94	94	94	94	94	
	V_R	97	97	97	97	97	97	97	
	V_2	104	104	104	104	104	104	104	
	TOFL-FT	4,644	5,021	5,561	6,292	7,182	8,366	9,925	
11,000 LB 4990 KG $V_{ENR} = 115$	V_1	93	93	93	93	93	93	93	93
	V_R	97	97	97	97	97	97	97	97
	V_2	103	103	103	103	103	103	103	103
	TOFL-FT	4,152	4,474	4,934	5,561	6,297	7,255	8,580	9,904
10,500 LB 4763 KG $V_{ENR} = 113$	V_1	93	93	93	93	93	93	93	93
	V_R	97	97	97	97	97	97	97	97
	V_2	102	102	102	102	102	102	102	102
	TOFL-FT	3,723	4,000	4,394	4,927	5,535	6,309	7,430	8,511
10,000 LB 4536 KG $V_{ENR} = 111$	V_1	92	92	93	93	93	93	93	93
	V_R	97	97	97	97	97	97	97	97
	V_2	101	101	101	101	101	101	101	101
	TOFL-FT	3,447	3,643	3,955	4,391	4,896	5,529	6,474	7,348
9,500 LB 4309 KG $V_{ENR} = 110$	V_1	90	91	92	93	93	93	93	93
	V_R	97	97	97	97	97	97	97	97
	V_2	100	100	100	100	100	100	100	100
	TOFL-FT	3,253	3,426	3,650	3,980	4,389	4,914	5,712	6,415

TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS APPROACH
8,000 FEET PRESSURE ALTITUDE

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature. Red shading indicates takeoff climb requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-31	-21	-11	-1	9	19	29	36
14,000 LB 6350 KG V _{ENR} = 126	V ₁								
	V _R								
	V ₂								
	TOFL-FT								
13,500 LB 6124 KG V _{ENR} = 125	V ₁	96	96	96					
	V _R	97	97	97					
	V ₂	107	107	107					
	TOFL-FT	7,516	8,228	9,323					
13,000 LB 5897 KG V _{ENR} = 123	V ₁	95	95	95	95				
	V _R	97	97	97	97				
	V ₂	106	106	106	106				
	TOFL-FT	6,731	7,349	8,298	9,542				
12,500 LB 5670 KG V _{ENR} = 121	V ₁	95	95	95	95	95			
	V _R	97	97	97	97	97			
	V ₂	105	105	105	105	105			
	TOFL-FT	6,014	6,547	7,365	8,458	9,882			
12,000 LB 5443 KG V _{ENR} = 120	V ₁	94	94	94	94	94	94		
	V _R	97	97	97	97	97	97		
	V ₂	104	104	104	104	104	104		
	TOFL-FT	5,366	5,822	6,523	7,477	8,668	10,211		
11,500 LB 5216 KG V _{ENR} = 118	V ₁	94	94	94	94	94	94	94	
	V _R	97	97	97	97	97	97	97	
	V ₂	104	104	104	104	104	104	104	
	TOFL-FT	4,785	5,175	5,773	6,598	7,585	8,822	10,421	
11,000 LB 4990 KG V _{ENR} = 115	V ₁	93	93	93	93	93	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	103	103	103	103	103	103	103	103
	TOFL-FT	4,272	4,605	5,115	5,823	6,634	7,617	9,005	10,426
10,500 LB 4763 KG V _{ENR} = 113	V ₁	93	93	93	93	93	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	102	102	102	102	102	102	102	102
	TOFL-FT	3,827	4,113	4,549	5,150	5,815	6,598	7,791	8,953
10,000 LB 4536 KG V _{ENR} = 111	V ₁	92	93	93	93	93	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	101	101	101	101	101	101	101	101
	TOFL-FT	3,523	3,723	4,074	4,581	5,128	5,763	6,779	7,716
9,500 LB 4309 KG V _{ENR} = 110	V ₁	90	91	92	93	93	93	93	93
	V _R	97	97	97	97	97	97	97	97
	V ₂	100	100	100	100	100	100	100	100
	TOFL-FT	3,321	3,496	3,738	4,114	4,573	5,114	5,969	6,715

**TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS APPROACH
8,500 FEET PRESSURE ALTITUDE**

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature. Red shading indicates takeoff climb requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-32	-22	-12	-2	8	18	28	35
14,000 LB 6350 KG $V_{ENR} = 126$	V_1								
	V_R								
	V_2								
	TOFL-FT								
13,500 LB 6124 KG $V_{ENR} = 125$	V_1	96	96	96					
	V_R	97	97	97					
	V_2	107	107	107					
	TOFL-FT	7,831	8,697	9,957					
13,000 LB 5897 KG $V_{ENR} = 123$	V_1	95	95	95	95				
	V_R	97	97	97	97				
	V_2	106	106	106	106				
	TOFL-FT	7,004	7,758	8,855	10,315				
12,500 LB 5670 KG $V_{ENR} = 121$	V_1	95	95	95	95	95			
	V_R	97	97	97	97	97			
	V_2	105	105	105	105	105			
	TOFL-FT	6,250	6,902	7,851	9,100	10,642			
12,000 LB 5443 KG $V_{ENR} = 120$	V_1	94	94	94	94	94	94		
	V_R	97	97	97	97	97	97		
	V_2	104	104	104	104	104	104		
	TOFL-FT	5,567	6,128	6,944	8,004	9,288	10,863		
11,500 LB 5216 KG $V_{ENR} = 118$	V_1	94	94	94	94	94	94	94	
	V_R	97	97	97	97	97	97	97	
	V_2	104	104	104	104	104	104	104	
	TOFL-FT	4,957	5,437	6,135	7,027	8,086	9,388	11,097	
11,000 LB 4990 KG $V_{ENR} = 115$	V_1	93	93	93	93	93	93	93	93
	V_R	97	97	97	97	97	97	97	97
	V_2	103	103	103	103	103	103	103	103
	TOFL-FT	4,419	4,829	5,423	6,169	7,036	8,105	9,564	11,044
10,500 LB 4763 KG $V_{ENR} = 113$	V_1	93	93	93	93	93	93	93	93
	V_R	97	97	97	97	97	97	97	97
	V_2	102	102	102	102	102	102	102	102
	TOFL-FT	3,953	4,304	4,809	5,430	6,137	7,013	8,250	9,446
10,000 LB 4536 KG $V_{ENR} = 111$	V_1	92	93	93	93	93	93	93	93
	V_R	97	97	97	97	97	97	97	97
	V_2	101	101	101	101	101	101	101	101
	TOFL-FT	3,614	3,880	4,292	4,809	5,389	6,113	7,155	8,117
9,500 LB 4309 KG $V_{ENR} = 110$	V_1	91	92	93	93	93	93	93	93
	V_R	97	97	97	97	97	97	97	97
	V_2	100	100	100	100	100	100	100	100
	TOFL-FT	3,397	3,610	3,907	4,308	4,794	5,405	6,278	7,056

TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS APPROACH
9,000 FEET PRESSURE ALTITUDE

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature. Red shading indicates takeoff climb requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-33	-23	-13	-3	7	17	27	34
14,000 LB 6350 KG $V_{ENR} = 126$	V_1								
	V_R								
	V_2								
	TOFL-FT								
13,500 LB 6124 KG $V_{ENR} = 125$	V_1	96	96						
	V_R	97	97						
	V_2	107	107						
	TOFL-FT	8,146	9,166						
13,000 LB 5897 KG $V_{ENR} = 123$	V_1	95	95	95					
	V_R	97	97	97					
	V_2	106	106	106					
	TOFL-FT	7,277	8,167	9,412					
12,500 LB 5670 KG $V_{ENR} = 121$	V_1	95	95	95	95				
	V_R	97	97	97	97				
	V_2	105	105	105	105				
	TOFL-FT	6,485	7,256	8,337	9,742				
12,000 LB 5443 KG $V_{ENR} = 120$	V_1	94	94	94	94	94			
	V_R	97	97	97	97	97			
	V_2	104	104	104	104	104			
	TOFL-FT	5,769	6,433	7,365	8,532	9,909			
11,500 LB 5216 KG $V_{ENR} = 118$	V_1	94	94	94	94	94	94		
	V_R	97	97	97	97	97	97		
	V_2	104	104	104	104	104	104		
	TOFL-FT	5,130	5,699	6,497	7,456	8,588	9,955		
11,000 LB 4990 KG $V_{ENR} = 115$	V_1	93	93	93	93	93	93	93	
	V_R	97	97	97	97	97	97	97	
	V_2	103	103	103	103	103	103	103	
	TOFL-FT	4,566	5,053	5,731	6,515	7,437	8,593	10,123	
10,500 LB 4763 KG $V_{ENR} = 113$	V_1	93	93	93	93	93	93	93	93
	V_R	97	97	97	97	97	97	97	97
	V_2	102	102	102	102	102	102	102	102
	TOFL-FT	4,079	4,495	5,068	5,709	6,458	7,429	8,709	9,940
10,000 LB 4536 KG $V_{ENR} = 111$	V_1	92	93	93	93	93	93	93	93
	V_R	97	97	97	97	97	97	97	97
	V_2	101	101	101	101	101	101	101	101
	TOFL-FT	3,704	4,037	4,509	5,038	5,651	6,463	7,530	8,518
9,500 LB 4309 KG $V_{ENR} = 110$	V_1	91	92	93	93	93	93	93	93
	V_R	97	97	97	97	97	97	97	97
	V_2	100	100	100	100	100	100	100	100
	TOFL-FT	3,473	3,723	4,076	4,502	5,015	5,695	6,587	7,396

**TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS APPROACH
9,500 FEET PRESSURE ALTITUDE**

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature. Red shading indicates takeoff climb requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-34	-24	-14	-4	6	16	26	33
14,000 LB 6350 KG $V_{ENR} = 126$	V_1								
	V_R								
	V_2								
	TOFL-FT								
13,500 LB 6124 KG $V_{ENR} = 125$	V_1	96	96						
	V_R	97	97						
	V_2	107	107						
	TOFL-FT	8,461	9,635						
13,000 LB 5897 KG $V_{ENR} = 123$	V_1	95	95	95					
	V_R	97	97	97					
	V_2	106	106	106					
	TOFL-FT	7,550	8,576	9,970					
12,500 LB 5670 KG $V_{ENR} = 121$	V_1	95	95	95	95				
	V_R	97	97	97	97				
	V_2	105	105	105	105				
	TOFL-FT	6,720	7,611	8,824	10,385				
12,000 LB 5443 KG $V_{ENR} = 120$	V_1	94	94	94	94	94			
	V_R	97	97	97	97	97			
	V_2	104	104	104	104	104			
	TOFL-FT	5,971	6,739	7,787	9,059	10,530			
11,500 LB 5216 KG $V_{ENR} = 118$	V_1	94	94	94	94	94	94		
	V_R	97	97	97	97	97	97		
	V_2	104	104	104	104	104	104		
	TOFL-FT	5,302	5,961	6,858	7,885	9,089	10,521		
11,000 LB 4990 KG $V_{ENR} = 115$	V_1	93	93	93	93	93	93	93	
	V_R	97	97	97	97	97	97	97	
	V_2	103	103	103	103	103	103	103	
	TOFL-FT	4,713	5,276	6,039	6,862	7,839	9,080	10,682	
10,500 LB 4763 KG $V_{ENR} = 113$	V_1	93	93	93	93	93	93	93	93
	V_R	97	97	97	97	97	97	97	97
	V_2	102	102	102	102	102	102	102	102
	TOFL-FT	4,205	4,686	5,328	5,989	6,780	7,844	9,168	10,433
10,000 LB 4536 KG $V_{ENR} = 111$	V_1	93	93	93	93	93	93	93	93
	V_R	97	97	97	97	97	97	97	97
	V_2	101	101	101	101	101	101	101	101
	TOFL-FT	3,795	4,195	4,727	5,267	5,912	6,813	7,906	8,918
9,500 LB 4309 KG $V_{ENR} = 110$	V_1	91	93	93	93	93	93	93	93
	V_R	97	97	97	97	97	97	97	97
	V_2	100	100	100	100	100	100	100	100
	TOFL-FT	3,548	3,836	4,246	4,695	5,236	5,985	6,897	7,737

TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS APPROACH 10,000 FEET PRESSURE ALTITUDE

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature. Red shading indicates takeoff climb requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-35	-25	-15	-5	5	15	25	32
14,000 LB 6350 KG $V_{ENR} = 126$	V_1								
	V_R								
	V_2								
	TOFL-FT								
13,500 LB 6124 KG $V_{ENR} = 125$	V_1								
	V_R								
	V_2								
	TOFL-FT								
13,000 LB 5897 KG $V_{ENR} = 123$	V_1	95	95						
	V_R	97	97						
	V_2	106	106						
	TOFL-FT	7,823	8,985						
12,500 LB 5670 KG $V_{ENR} = 121$	V_1	95	95	95					
	V_R	97	97	97					
	V_2	105	105	105					
	TOFL-FT	6,956	7,965	9,310					
12,000 LB 5443 KG $V_{ENR} = 120$	V_1	94	94	94	94				
	V_R	97	97	97	97				
	V_2	104	104	104	104				
	TOFL-FT	6,173	7,045	8,208	9,587				
11,500 LB 5216 KG $V_{ENR} = 118$	V_1	94	94	94	94	94			
	V_R	97	97	97	97	97			
	V_2	104	104	104	104	104			
	TOFL-FT	5,474	6,223	7,220	8,314	9,591			
11,000 LB 4990 KG $V_{ENR} = 115$	V_1	93	93	93	93	93	93		
	V_R	97	97	97	97	97	97		
	V_2	103	103	103	103	103	103		
	TOFL-FT	4,860	5,500	6,347	7,208	8,241	9,568		
10,500 LB 4763 KG $V_{ENR} = 113$	V_1	93	93	93	93	93	93	93	
	V_R	97	97	97	97	97	97	97	
	V_2	102	102	102	102	102	102	102	
	TOFL-FT	4,331	4,876	5,588	6,268	7,102	8,260	9,627	
10,000 LB 4536 KG $V_{ENR} = 111$	V_1	93	93	93	93	93	93	93	93
	V_R	97	97	97	97	97	97	97	97
	V_2	101	101	101	101	101	101	101	101
	TOFL-FT	3,886	4,352	4,944	5,495	6,174	7,162	8,282	9,319
9,500 LB 4309 KG $V_{ENR} = 110$	V_1	92	93	93	93	93	93	93	93
	V_R	97	97	97	97	97	97	97	97
	V_2	100	100	100	100	100	100	100	100
	TOFL-FT	3,624	3,949	4,415	4,889	5,456	6,276	7,206	8,077

THIS PAGE IS INTENTIONALLY BLANK

REFERENCE ONLY

TAKE-OFF FIELD LENGTH CORRECTION - FLAPS APPROACH

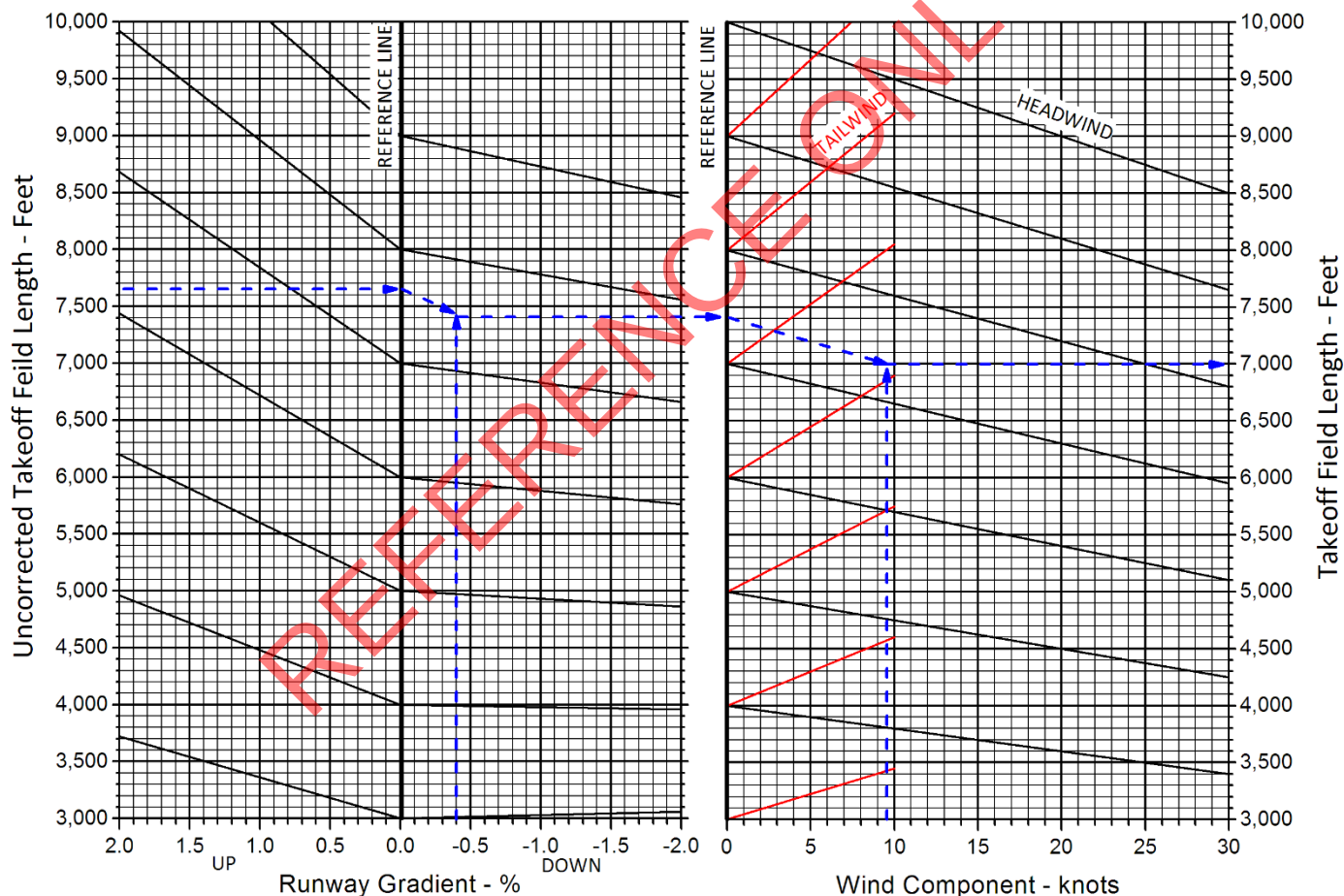
FOR RUNWAY GRADIENT AND WIND COMPONENT

Notes:

1. Obtain take-off field length from the appropriate Take-Off Speeds and Balanced Field Lengths table and enter the graph below with that value to determine the field length corrected for runway gradient and wind component.
2. The wind grid includes factors of 50% for headwinds and 150% for tailwinds. Components of reported winds may be used directly in the graph.
3. Do not extrapolate for headwind components greater than 30 knots. Use a 30 knot headwind component for correcting Takeoff Field Length when headwind component is 30 knots or greater.
4. Do not takeoff with more than a 10 knot tail wind component.

Example:

Uncorrected Takeoff Field Length.. 7,650 Feet
Runway gradient..... 0.4% Down
Headwind component..... 9.5 Knots
Corrected take-off field length..... 7,000 Feet



ACCELERATE - STOP DISTANCE - FLAPS APPROACH

AIRPLANES WITH HIGH FLOTATION LANDING GEAR

Associated conditions

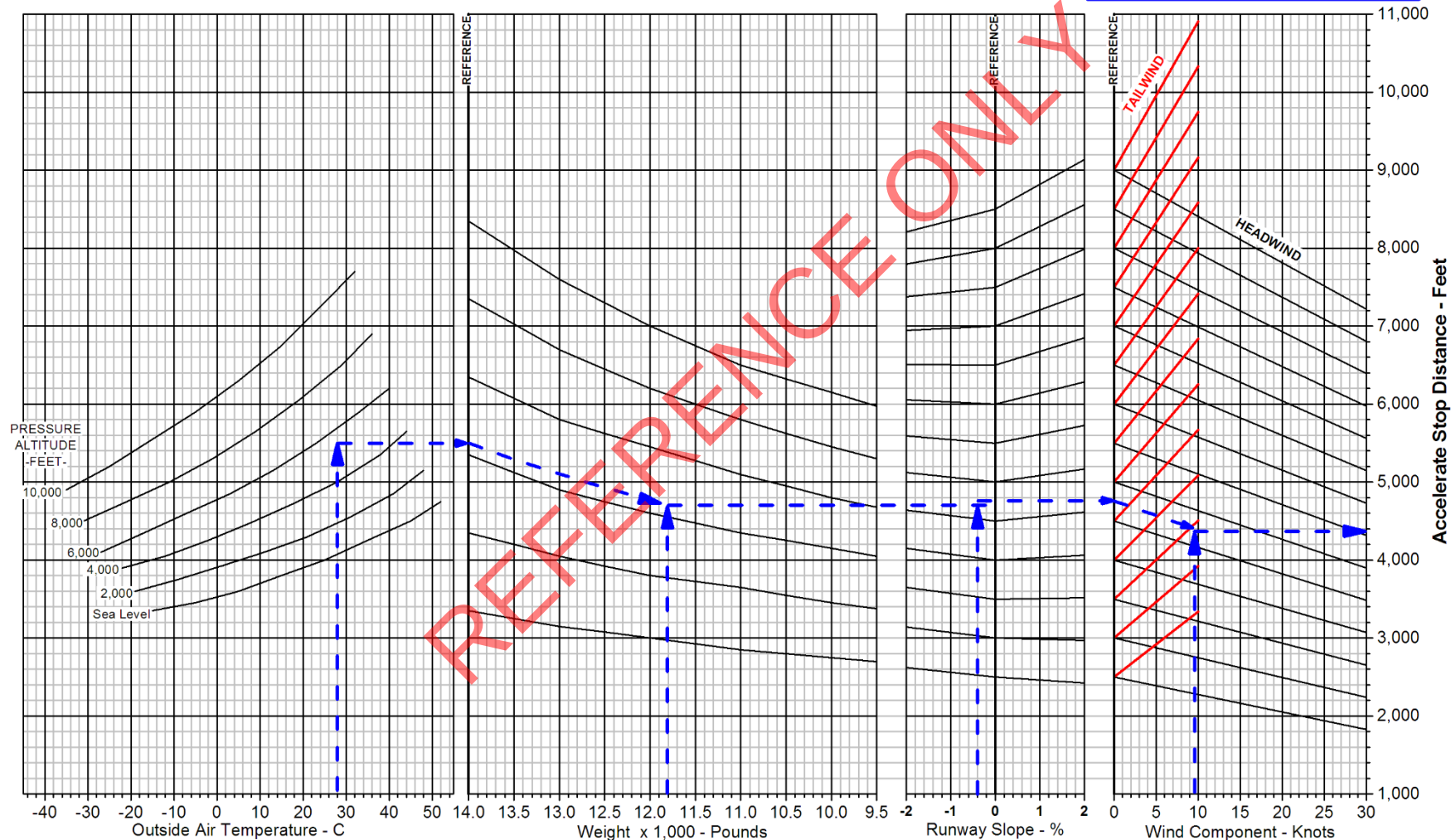
- Power..... 1. Take-off power set before brake release.
2. Both engines idle at V_1 speed and reverse on operating engine.

Flaps..... Approach
Autofeather..... Armed
Braking..... Maximum
Runway..... Paved, Level, Dry Surface

Weight - LBS	Speed, V_1 - Kts
14,000	98
11,500	94
9,500	93

Example

OAT..... 28 °C
Pressure Altitude..... 5,433 Feet
Weight..... 11,820 LBS
Runway Slope..... -0.4%(Down)
Headwind Component..... 9.5 Knots
Field Length 4,390 Feet



NET GRADIENT OF CLIMB - FLAPS APPROACH

AIRPLANES WITH HIGH FLOTATION LANDING GEAR

Associated Conditions

Power..... Take-Off
Flaps..... Approach
Landing Gear..... Up
Inoperative Propeller... Feathered

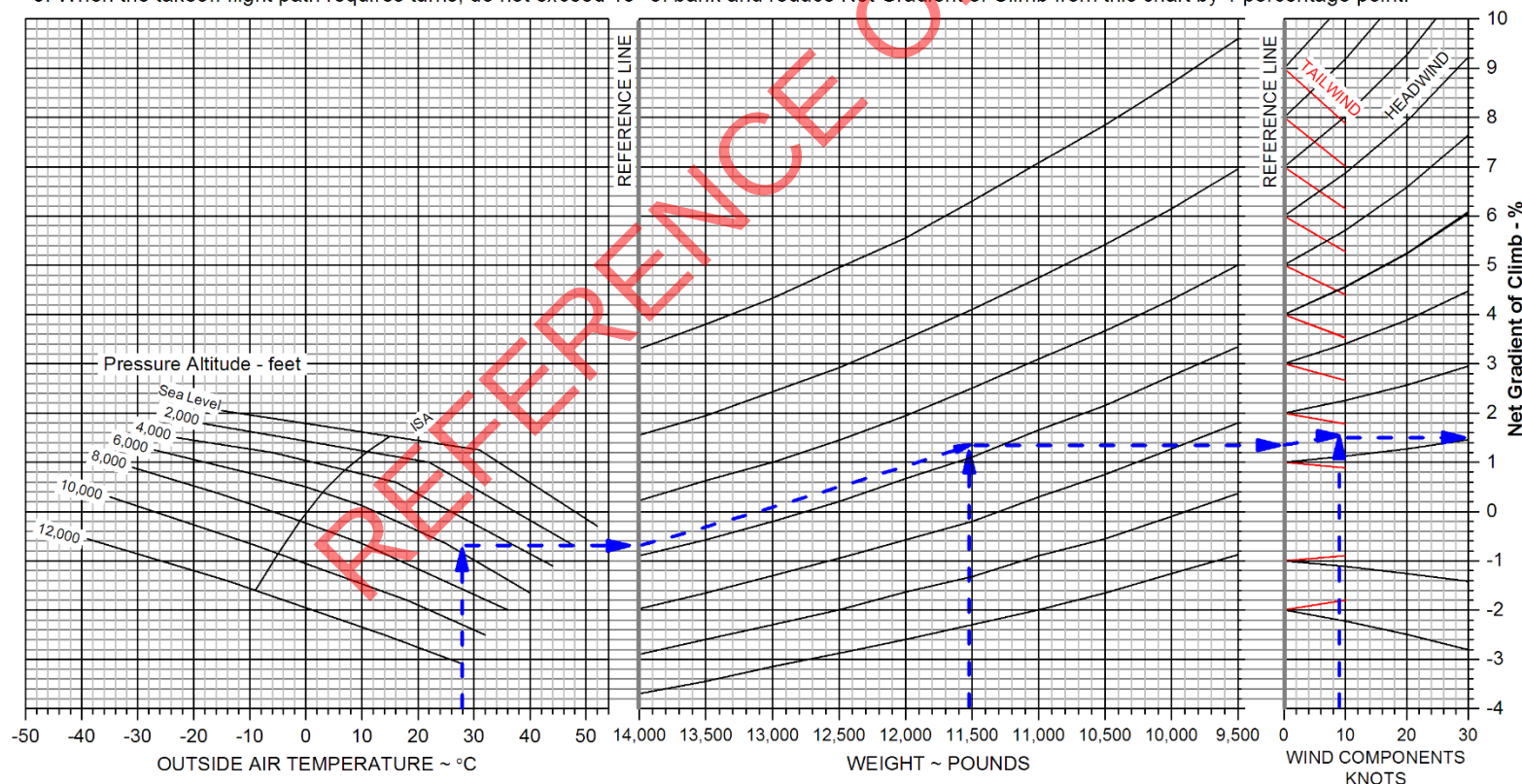
Weight - LBS	Speed - Kts
14,000	108
13,000	106
12,000	104
11,000	103
10,000	101
9,500	100

Example

OAT.....28°C
Pressure Altitude.....5,433 Feet
Takeoff Weight11,520 lbs
Headwind Component...9.5 knots
Net Gradient 1.5%
Speed104 Knots

Notes:

1. This chart is applicable to the second segment when the takeoff is executed with flaps set to approach position.
Use the pressure altitude of the top of the second segment.
2. A distance of 3,000 feet is required for acceleration during flap retraction and transition from V_2 to V_{ENR} .
When V_{ENR} is 148, the required distance is 8,500 feet.
3. For operations with engine ice vanes extended reduce the Net Gradient of Climb from this chart by 0.9 percentage points.
5. When the takeoff flight path requires turns, do not exceed 15° of bank and reduce Net Gradient of Climb from this chart by 1 percentage point.



THIS PAGE IS INTENTIONALLY BLANK

REFERENCE ONLY

TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS UP
SEA LEVEL PRESSURE ALTITUDE

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-15	-5	5	15	25	35	45	52
14,000 LB 6350 KG	V ₁	117	117	117	117	117	117	117	117
	V _R	117	117	117	117	117	117	117	117
	V ₂	126	126	126	126	126	126	126	126
V _{ENR} = 126	TOFL-FT	5,088	5,232	5,402	5,669	6,028	6,478	7,185	8,181
13,500 LB 6124 KG	V ₁	115	115	115	115	115	115	115	115
	V _R	115	115	115	115	115	115	115	115
	V ₂	125	125	125	125	125	125	125	125
V _{ENR} = 125	TOFL-FT	4,609	4,741	4,896	5,134	5,452	5,849	6,468	7,322
13,000 LB 5897 KG	V ₁	113	113	113	113	113	113	113	113
	V _R	113	113	113	113	113	113	113	113
	V ₂	123	123	123	123	123	123	123	123
V _{ENR} = 123	TOFL-FT	4,162	4,282	4,424	4,636	4,917	5,268	5,808	6,536
12,500 LB 5670 KG	V ₁	111	111	111	111	111	111	111	111
	V _R	111	111	111	111	111	111	111	111
	V ₂	121	121	121	121	121	121	121	121
V _{ENR} = 121	TOFL-FT	4,041	4,161	4,301	4,504	4,772	5,108	5,616	6,283
12,000 LB 5443 KG	V ₁	109	109	109	109	109	109	109	109
	V _R	109	109	109	109	109	109	109	109
	V ₂	120	120	120	120	120	120	120	120
V _{ENR} = 120	TOFL-FT	3,892	4,009	4,147	4,342	4,598	4,918	5,395	6,002
11,500 LB 5216 KG	V ₁	107	107	107	107	107	107	107	107
	V _R	107	107	107	107	107	107	107	107
	V ₂	118	118	118	118	118	118	118	118
V _{ENR} = 118	TOFL-FT	3,722	3,836	3,971	4,158	4,403	4,709	5,158	5,711
11,000 LB 4990 KG	V ₁	105	105	105	105	105	105	105	105
	V _R	105	105	105	105	105	105	105	105
	V ₂	115	115	115	115	115	115	115	115
V _{ENR} = 115	TOFL-FT	3,537	3,649	3,781	3,962	4,198	4,494	4,919	5,426
10,500 LB 4763 KG	V ₁	103	103	103	103	103	103	103	103
	V _R	103	103	103	103	103	103	103	103
	V ₂	113	113	113	113	113	113	113	113
V _{ENR} = 113	TOFL-FT	3,157	3,260	3,381	3,549	3,767	4,040	4,427	4,873
10,000 LB 4536 KG	V ₁	100	99	99	99	99	100	100	100
	V _R	102	102	102	102	102	102	102	102
	V ₂	111	111	111	111	111	111	111	111
V _{ENR} = 111	TOFL-FT	2,846	2,970	3,097	3,247	3,432	3,648	4,009	4,416
9,500 LB 4309 KG	V ₁	97	97	97	97	97	98	99	99
	V _R	102	102	102	102	102	102	102	102
	V ₂	110	110	110	110	110	110	110	110
V _{ENR} = 110	TOFL-FT	2,608	2,724	2,845	2,986	3,162	3,368	3,667	4,055

**TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS UP
500 FEET PRESSURE ALTITUDE**

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-16	-6	4	14	24	34	44	51
14,000 LB 6350 KG	V ₁	117	117	117	117	117	117	117	117
	V _R	117	117	117	117	117	117	117	117
	V ₂	126	126	126	126	126	126	126	126
V _{ENR} = 126	TOFL-FT	5,552	5,723	5,937	6,239	6,639	7,175	8,034	9,218
13,500 LB 6124 KG	V ₁	115	115	115	115	115	115	115	115
	V _R	115	115	115	115	115	115	115	115
	V ₂	125	125	125	125	125	125	125	125
V _{ENR} = 125	TOFL-FT	5,030	5,185	5,378	5,646	6,000	6,472	7,218	8,245
13,000 LB 5897 KG	V ₁	113	113	113	113	113	113	113	113
	V _R	113	113	113	113	113	113	113	113
	V ₂	123	123	123	123	123	123	123	123
V _{ENR} = 123	TOFL-FT	4,543	4,683	4,858	5,096	5,408	5,823	6,469	7,354
12,500 LB 5670 KG	V ₁	111	111	111	111	111	111	111	111
	V _R	111	111	111	111	111	111	111	111
	V ₂	121	121	121	121	121	121	121	121
V _{ENR} = 121	TOFL-FT	4,318	4,453	4,618	4,841	5,133	5,517	6,104	6,902
12,000 LB 5443 KG	V ₁	109	109	109	109	109	109	109	109
	V _R	109	109	109	109	109	109	109	109
	V ₂	120	120	120	120	120	120	120	120
V _{ENR} = 120	TOFL-FT	4,076	4,204	4,361	4,570	4,842	5,198	5,730	6,443
11,500 LB 5216 KG	V ₁	107	107	107	107	107	107	107	107
	V _R	107	107	107	107	107	107	107	107
	V ₂	118	118	118	118	118	118	118	118
V _{ENR} = 118	TOFL-FT	3,833	3,956	4,105	4,302	4,558	4,890	5,376	6,013
11,000 LB 4990 KG	V ₁	105	105	105	105	105	105	105	105
	V _R	105	105	105	105	105	105	105	105
	V ₂	115	115	115	115	115	115	115	115
V _{ENR} = 115	TOFL-FT	3,590	3,708	3,850	4,038	4,281	4,594	5,042	5,614
10,500 LB 4763 KG	V ₁	103	103	103	103	103	103	103	103
	V _R	103	103	103	103	103	103	103	103
	V ₂	113	113	113	113	113	113	113	113
V _{ENR} = 113	TOFL-FT	3,210	3,318	3,450	3,624	3,849	4,136	4,541	5,039
10,000 LB 4536 KG	V ₁	99	99	99	99	100	100	100	100
	V _R	102	102	102	102	102	102	102	102
	V ₂	111	111	111	111	111	111	111	111
V _{ENR} = 111	TOFL-FT	2,902	3,028	3,159	3,314	3,498	3,738	4,114	4,557
9,500 LB 4309 KG	V ₁	97	97	97	97	97	98	99	99
	V _R	102	102	102	102	102	102	102	102
	V ₂	110	110	110	110	110	110	110	110
V _{ENR} = 110	TOFL-FT	2,661	2,779	2,904	3,050	3,228	3,443	3,766	4,175

TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS UP
1,000 FEET PRESSURE ALTITUDE

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-17	-7	3	13	23	33	43	50
14,000 LB 6350 KG	V ₁	117	117	117	117	117	117	117	117
	V _R	117	117	117	117	117	117	117	117
	V ₂	126	126	126	126	126	126	126	126
V _{ENR} = 126	TOFL-FT	6,016	6,213	6,472	6,808	7,249	7,871	8,883	10,255
13,500 LB 6124 KG	V ₁	115	115	115	115	115	115	115	115
	V _R	115	115	115	115	115	115	115	115
	V ₂	125	125	125	125	125	125	125	125
V _{ENR} = 125	TOFL-FT	5,451	5,629	5,861	6,159	6,549	7,095	7,969	9,168
13,000 LB 5897 KG	V ₁	113	113	113	113	113	113	113	113
	V _R	113	113	113	113	113	113	113	113
	V ₂	123	123	123	123	123	123	123	123
V _{ENR} = 123	TOFL-FT	4,924	5,085	5,291	5,556	5,900	6,379	7,130	8,172
12,500 LB 5670 KG	V ₁	111	111	111	111	111	111	111	111
	V _R	111	111	111	111	111	111	111	111
	V ₂	121	121	121	121	121	121	121	121
V _{ENR} = 121	TOFL-FT	4,595	4,745	4,936	5,179	5,494	5,927	6,592	7,520
12,000 LB 5443 KG	V ₁	109	109	109	109	109	109	109	109
	V _R	109	109	109	109	109	109	109	109
	V ₂	120	120	120	120	120	120	120	120
V _{ENR} = 120	TOFL-FT	4,259	4,399	4,575	4,798	5,087	5,478	6,065	6,884
11,500 LB 5216 KG	V ₁	107	107	107	107	107	107	107	107
	V _R	107	107	107	107	107	107	107	107
	V ₂	118	118	118	118	118	118	118	118
V _{ENR} = 118	TOFL-FT	3,945	4,075	4,240	4,446	4,714	5,071	5,594	6,315
11,000 LB 4990 KG	V ₁	105	105	105	105	105	105	105	105
	V _R	105	105	105	105	105	105	105	105
	V ₂	115	115	115	115	115	115	115	115
V _{ENR} = 115	TOFL-FT	3,643	3,766	3,920	4,114	4,364	4,694	5,166	5,801
10,500 LB 4763 KG	V ₁	103	103	103	103	103	103	103	103
	V _R	103	103	103	103	103	103	103	103
	V ₂	113	113	113	113	113	113	113	113
V _{ENR} = 113	TOFL-FT	3,263	3,377	3,520	3,699	3,930	4,233	4,655	5,205
10,000 LB 4536 KG	V ₁	99	99	99	99	100	100	100	100
	V _R	102	102	102	102	102	102	102	102
	V ₂	111	111	111	111	111	111	111	111
V _{ENR} = 111	TOFL-FT	2,959	3,085	3,222	3,380	3,565	3,828	4,218	4,698
9,500 LB 4309 KG	V ₁	97	97	97	97	97	98	99	99
	V _R	102	102	102	102	102	102	102	102
	V ₂	110	110	110	110	110	110	110	110
V _{ENR} = 110	TOFL-FT	2,714	2,833	2,963	3,113	3,295	3,518	3,866	4,294

**TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS UP
1,500 FEET PRESSURE ALTITUDE**

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-18	-8	2	12	22	32	42	49
14,000 LB 6350 KG	V ₁	117	117	117	117	117	117	117	117
	V _R	117	117	117	117	117	117	117	117
	V ₂	126	126	126	126	126	126	126	126
V _{ENR} = 126	TOFL-FT	6,480	6,704	7,007	7,378	7,859	8,568	9,733	11,292
13,500 LB 6124 KG	V ₁	115	115	115	115	115	115	115	115
	V _R	115	115	115	115	115	115	115	115
	V ₂	125	125	125	125	125	125	125	125
V _{ENR} = 125	TOFL-FT	5,873	6,073	6,343	6,671	7,097	7,717	8,719	10,091
13,000 LB 5897 KG	V ₁	113	113	113	113	113	113	113	113
	V _R	113	113	113	113	113	113	113	113
	V ₂	123	123	123	123	123	123	123	123
V _{ENR} = 123	TOFL-FT	5,305	5,486	5,725	6,016	6,392	6,934	7,791	8,990
12,500 LB 5670 KG	V ₁	111	111	111	111	111	111	111	111
	V _R	111	111	111	111	111	111	111	111
	V ₂	121	121	121	121	121	121	121	121
V _{ENR} = 121	TOFL-FT	4,872	5,037	5,254	5,516	5,855	6,336	7,080	8,138
12,000 LB 5443 KG	V ₁	109	109	109	109	109	109	109	109
	V _R	109	109	109	109	109	109	109	109
	V ₂	120	120	120	120	120	120	120	120
V _{ENR} = 120	TOFL-FT	4,443	4,593	4,789	5,026	5,332	5,758	6,400	7,325
11,500 LB 5216 KG	V ₁	107	107	107	107	107	107	107	107
	V _R	107	107	107	107	107	107	107	107
	V ₂	118	118	118	118	118	118	118	118
V _{ENR} = 118	TOFL-FT	4,056	4,195	4,374	4,590	4,869	5,252	5,811	6,618
11,000 LB 4990 KG	V ₁	105	105	105	105	105	105	105	105
	V _R	105	105	105	105	105	105	105	105
	V ₂	115	115	115	115	115	115	115	115
V _{ENR} = 115	TOFL-FT	3,696	3,825	3,990	4,190	4,447	4,795	5,289	5,989
10,500 LB 4763 KG	V ₁	103	103	103	103	103	103	103	103
	V _R	103	103	103	103	103	103	103	103
	V ₂	113	113	113	113	113	113	113	113
V _{ENR} = 113	TOFL-FT	3,316	3,436	3,589	3,774	4,012	4,330	4,770	5,372
10,000 LB 4536 KG	V ₁	99	99	99	99	100	100	100	100
	V _R	102	102	102	102	102	102	102	102
	V ₂	111	111	111	111	111	111	111	111
V _{ENR} = 111	TOFL-FT	3,015	3,143	3,284	3,446	3,632	3,919	4,322	4,839
9,500 LB 4309 KG	V ₁	97	97	97	97	97	98	99	99
	V _R	102	102	102	102	102	102	102	102
	V ₂	110	110	110	110	110	110	110	110
V _{ENR} = 110	TOFL-FT	2,767	2,888	3,022	3,176	3,362	3,592	3,965	4,414

TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS UP
2,000 FEET PRESSURE ALTITUDE

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-19	-9	1	11	21	31	41	48
14,000 LB 6350 KG	V ₁	117	117	117	117	117	117	117	117
	V _R	117	117	117	117	117	117	117	117
	V ₂	126	126	126	126	126	126	126	126
V _{ENR} = 126	TOFL-FT	6,944	7,194	7,542	7,947	8,469	9,265	10,582	12,329
13,500 LB 6124 KG	V ₁	115	115	115	115	115	115	115	115
	V _R	115	115	115	115	115	115	115	115
	V ₂	125	125	125	125	125	125	125	125
V _{ENR} = 125	TOFL-FT	6,294	6,517	6,825	7,184	7,645	8,340	9,470	11,014
13,000 LB 5897 KG	V ₁	113	113	113	113	113	113	113	113
	V _R	113	113	113	113	113	113	113	113
	V ₂	123	123	123	123	123	123	123	123
V _{ENR} = 123	TOFL-FT	5,687	5,887	6,159	6,476	6,884	7,489	8,452	9,808
12,500 LB 5670 KG	V ₁	111	111	111	111	111	111	111	111
	V _R	111	111	111	111	111	111	111	111
	V ₂	121	121	121	121	121	121	121	121
V _{ENR} = 121	TOFL-FT	5,149	5,329	5,571	5,853	6,216	6,746	7,568	8,757
12,000 LB 5443 KG	V ₁	109	109	109	109	109	109	109	109
	V _R	109	109	109	109	109	109	109	109
	V ₂	120	120	120	120	120	120	120	120
V _{ENR} = 120	TOFL-FT	4,626	4,788	5,003	5,254	5,576	6,038	6,736	7,766
11,500 LB 5216 KG	V ₁	107	107	107	107	107	107	107	107
	V _R	107	107	107	107	107	107	107	107
	V ₂	118	118	118	118	118	118	118	118
V _{ENR} = 118	TOFL-FT	4,168	4,315	4,508	4,734	5,024	5,432	6,029	6,920
11,000 LB 4990 KG	V ₁	105	105	105	105	105	105	105	105
	V _R	105	105	105	105	105	105	105	105
	V ₂	115	115	115	115	115	115	115	115
V _{ENR} = 115	TOFL-FT	3,749	3,883	4,060	4,265	4,530	4,895	5,412	6,177
10,500 LB 4763 KG	V ₁	103	103	103	103	103	103	103	103
	V _R	103	103	103	103	103	103	103	103
	V ₂	113	113	113	113	113	113	113	113
V _{ENR} = 113	TOFL-FT	3,369	3,494	3,658	3,849	4,094	4,427	4,884	5,538
10,000 LB 4536 KG	V ₁	99	99	99	99	100	100	100	100
	V _R	102	102	102	102	102	102	102	102
	V ₂	111	111	111	111	111	111	111	111
V _{ENR} = 111	TOFL-FT	3,072	3,201	3,347	3,513	3,699	4,009	4,426	4,980
9,500 LB 4309 KG	V ₁	97	97	97	97	98	99	99	99
	V _R	102	102	102	102	102	102	102	102
	V ₂	110	110	110	110	110	110	110	110
V _{ENR} = 110	TOFL-FT	2,820	2,942	3,081	3,240	3,428	3,667	4,065	4,534

**TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS UP
2,500 FEET PRESSURE ALTITUDE**

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature. Red shading indicates takeoff climb requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-20	-10	0	10	20	30	40	47
14,000 LB 6350 KG	V ₁	117	117	117	117	117	117	117	117
	V _R	117	117	117	117	117	117	117	117
	V ₂	126	126	126	126	126	126	126	126
V _{ENR} = 126	TOFL-FT	7,132	7,408	7,787	8,210	8,799	9,690	11,268	13,184
13,500 LB 6124 KG	V ₁	115	115	115	115	115	115	115	115
	V _R	115	115	115	115	115	115	115	115
	V ₂	125	125	125	125	125	125	125	125
V _{ENR} = 125	TOFL-FT	6,461	6,708	7,043	7,417	7,934	8,707	10,078	11,779
13,000 LB 5897 KG	V ₁	113	113	113	113	113	113	113	113
	V _R	113	113	113	113	113	113	113	113
	V ₂	123	123	123	123	123	123	123	123
V _{ENR} = 123	TOFL-FT	5,836	6,056	6,352	6,682	7,135	7,804	8,989	10,489
12,500 LB 5670 KG	V ₁	111	111	111	111	111	111	111	111
	V _R	111	111	111	111	111	111	111	111
	V ₂	121	121	121	121	121	121	121	121
V _{ENR} = 121	TOFL-FT	5,276	5,472	5,736	6,029	6,426	7,006	8,028	9,347
12,000 LB 5443 KG	V ₁	109	109	109	109	109	109	109	109
	V _R	109	109	109	109	109	109	109	109
	V ₂	120	120	120	120	120	120	120	120
V _{ENR} = 120	TOFL-FT	4,739	4,915	5,149	5,410	5,759	6,260	7,136	8,282
11,500 LB 5216 KG	V ₁	107	107	107	107	107	107	107	107
	V _R	107	107	107	107	107	107	107	107
	V ₂	118	118	118	118	118	118	118	118
V _{ENR} = 118	TOFL-FT	4,264	4,423	4,634	4,868	5,178	5,616	6,367	7,359
11,000 LB 4990 KG	V ₁	105	105	105	105	105	105	105	105
	V _R	105	105	105	105	105	105	105	105
	V ₂	115	115	115	115	115	115	115	115
V _{ENR} = 115	TOFL-FT	3,831	3,977	4,168	4,382	4,660	5,047	5,694	6,546
10,500 LB 4763 KG	V ₁	103	103	103	103	103	103	103	103
	V _R	103	103	103	103	103	103	103	103
	V ₂	113	113	113	113	113	113	113	113
V _{ENR} = 113	TOFL-FT	3,441	3,576	3,753	3,951	4,206	4,555	5,118	5,843
10,000 LB 4536 KG	V ₁	99	99	99	99	100	100	100	100
	V _R	102	102	102	102	102	102	102	102
	V ₂	111	111	111	111	111	111	111	111
V _{ENR} = 111	TOFL-FT	3,136	3,269	3,422	3,598	3,803	4,127	4,623	5,233
9,500 LB 4309 KG	V ₁	97	97	97	97	98	99	99	99
	V _R	102	102	102	102	102	102	102	102
	V ₂	110	110	110	110	110	110	110	110
V _{ENR} = 110	TOFL-FT	2,881	3,007	3,153	3,318	3,513	3,779	4,229	4,739

TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS UP
3,000 FEET PRESSURE ALTITUDE

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature. Red shading indicates takeoff climb requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-21	-11	-1	9	19	29	39	46
14,000 LB 6350 KG $V_{ENR} = 126$	V_1	117	117	117	117	117	117	117	117
	V_R	117	117	117	117	117	117	117	117
	V_2	126	126	126	126	126	126	126	126
	TOFL-FT	7,320	7,622	8,033	8,472	9,130	10,115	11,955	14,038
13,500 LB 6124 KG $V_{ENR} = 125$	V_1	115	115	115	115	115	115	115	115
	V_R	115	115	115	115	115	115	115	115
	V_2	125	125	125	125	125	125	125	125
	TOFL-FT	6,629	6,898	7,261	7,649	8,222	9,073	10,687	12,544
13,000 LB 5897 KG $V_{ENR} = 123$	V_1	113	113	113	113	113	113	113	113
	V_R	113	113	113	113	113	113	113	113
	V_2	123	123	123	123	123	123	123	123
	TOFL-FT	5,985	6,224	6,545	6,889	7,386	8,118	9,525	11,169
12,500 LB 5670 KG $V_{ENR} = 121$	V_1	111	111	111	111	111	111	111	111
	V_R	111	111	111	111	111	111	111	111
	V_2	121	121	121	121	121	121	121	121
	TOFL-FT	5,403	5,615	5,900	6,205	6,637	7,267	8,488	9,937
12,000 LB 5443 KG $V_{ENR} = 120$	V_1	109	109	109	109	109	109	109	109
	V_R	109	109	109	109	109	109	109	109
	V_2	120	120	120	120	120	120	120	120
	TOFL-FT	4,853	5,043	5,296	5,567	5,942	6,483	7,536	8,799
11,500 LB 5216 KG $V_{ENR} = 118$	V_1	107	107	107	107	107	107	107	107
	V_R	107	107	107	107	107	107	107	107
	V_2	118	118	118	118	118	118	118	118
	TOFL-FT	4,361	4,532	4,759	5,002	5,331	5,799	6,705	7,799
11,000 LB 4990 KG $V_{ENR} = 115$	V_1	105	105	105	105	105	105	105	105
	V_R	105	105	105	105	105	105	105	105
	V_2	115	115	115	115	115	115	115	115
	TOFL-FT	3,914	4,070	4,277	4,498	4,790	5,199	5,976	6,915
10,500 LB 4763 KG $V_{ENR} = 113$	V_1	103	103	103	103	103	103	103	103
	V_R	103	103	103	103	103	103	103	103
	V_2	113	113	113	113	113	113	113	113
	TOFL-FT	3,513	3,658	3,849	4,053	4,318	4,684	5,351	6,148
10,000 LB 4536 KG $V_{ENR} = 111$	V_1	99	99	100	100	100	100	100	100
	V_R	102	102	102	102	102	102	102	102
	V_2	111	111	111	111	111	111	111	111
	TOFL-FT	3,200	3,338	3,497	3,683	3,906	4,244	4,819	5,486
9,500 LB 4309 KG $V_{ENR} = 110$	V_1	97	97	97	98	98	99	99	99
	V_R	102	102	102	102	102	102	102	102
	V_2	110	110	110	110	110	110	110	110
	TOFL-FT	2,942	3,072	3,225	3,397	3,597	3,891	4,394	4,945

**TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS UP
3,500 FEET PRESSURE ALTITUDE**

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature. Red shading indicates takeoff climb requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-22	-12	-2	8	18	28	38	45
14,000 LB 6350 KG	V ₁	117	117	117	117	117	117	117	117
	V _R	117	117	117	117	117	117	117	117
	V ₂	126	126	126	126	126	126	126	126
V _{ENR} = 126	TOFL-FT	7,508	7,836	8,278	8,734	9,460	10,540	12,641	14,892
13,500 LB 6124 KG	V ₁	115	115	115	115	115	115	115	115
	V _R	115	115	115	115	115	115	115	115
	V ₂	125	125	125	125	125	125	125	125
V _{ENR} = 125	TOFL-FT	6,797	7,088	7,479	7,882	8,510	9,440	11,296	13,308
13,000 LB 5897 KG	V ₁	113	113	113	113	113	113	113	113
	V _R	113	113	113	113	113	113	113	113
	V ₂	123	123	123	123	123	123	123	123
V _{ENR} = 123	TOFL-FT	6,135	6,393	6,738	7,095	7,637	8,433	10,062	11,849
12,500 LB 5670 KG	V ₁	111	111	111	111	111	111	111	111
	V _R	111	111	111	111	111	111	111	111
	V ₂	121	121	121	121	121	121	121	121
V _{ENR} = 121	TOFL-FT	5,529	5,758	6,065	6,381	6,847	7,527	8,949	10,526
12,000 LB 5443 KG	V ₁	109	109	109	109	109	109	109	109
	V _R	109	109	109	109	109	109	109	109
	V ₂	120	120	120	120	120	120	120	120
V _{ENR} = 120	TOFL-FT	4,966	5,170	5,442	5,723	6,125	6,705	7,936	9,315
11,500 LB 5216 KG	V ₁	107	107	107	107	107	107	107	107
	V _R	107	107	107	107	107	107	107	107
	V ₂	118	118	118	118	118	118	118	118
V _{ENR} = 118	TOFL-FT	4,457	4,641	4,885	5,137	5,485	5,982	7,042	8,238
11,000 LB 4990 KG	V ₁	105	105	105	105	105	105	105	105
	V _R	105	105	105	105	105	105	105	105
	V ₂	115	115	115	115	115	115	115	115
V _{ENR} = 115	TOFL-FT	3,997	4,164	4,385	4,614	4,919	5,352	6,258	7,284
10,500 LB 4763 KG	V ₁	103	103	103	103	103	103	103	103
	V _R	103	103	103	103	103	103	103	103
	V ₂	113	113	113	113	113	113	113	113
V _{ENR} = 113	TOFL-FT	3,586	3,740	3,944	4,155	4,429	4,813	5,584	6,453
10,000 LB 4536 KG	V ₁	99	99	100	100	100	100	100	100
	V _R	102	102	102	102	102	102	102	102
	V ₂	111	111	111	111	111	111	111	111
V _{ENR} = 111	TOFL-FT	3,265	3,406	3,572	3,768	4,010	4,361	5,015	5,739
9,500 LB 4309 KG	V ₁	97	97	98	98	98	99	99	99
	V _R	102	102	102	102	102	102	102	102
	V ₂	110	110	110	110	110	110	110	110
V _{ENR} = 110	TOFL-FT	3,003	3,137	3,298	3,476	3,682	4,003	4,558	5,151

TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS UP
4,000 FEET PRESSURE ALTITUDE

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature. Red shading indicates takeoff climb requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-23	-13	-3	7	17	27	37	44
14,000 LB 6350 KG	V ₁	117	117	117	117	117	117	117	
	V _R	117	117	117	117	117	117	117	
	V ₂	126	126	126	126	126	126	126	
	V _{ENR} = 126 TOFL-FT	7,696	8,050	8,524	8,997	9,790	10,966	13,328	
13,500 LB 6124 KG	V ₁	115	115	115	115	115	115	115	115
	V _R	115	115	115	115	115	115	115	115
	V ₂	125	125	125	125	125	125	125	125
	V _{ENR} = 125 TOFL-FT	6,964	7,278	7,697	8,115	8,798	9,807	11,905	14,073
13,000 LB 5897 KG	V ₁	113	113	113	113	113	113	113	113
	V _R	113	113	113	113	113	113	113	113
	V ₂	123	123	123	123	123	123	123	123
	V _{ENR} = 123 TOFL-FT	6,284	6,562	6,932	7,302	7,888	8,747	10,599	12,530
12,500 LB 5670 KG	V ₁	111	111	111	111	111	111	111	111
	V _R	111	111	111	111	111	111	111	111
	V ₂	121	121	121	121	121	121	121	121
	V _{ENR} = 121 TOFL-FT	5,656	5,902	6,229	6,556	7,057	7,787	9,409	11,116
12,000 LB 5443 KG	V ₁	109	109	109	109	109	109	109	109
	V _R	109	109	109	109	109	109	109	109
	V ₂	120	120	120	120	120	120	120	120
	V _{ENR} = 120 TOFL-FT	5,079	5,297	5,588	5,879	6,307	6,927	8,336	9,832
11,500 LB 5216 KG	V ₁	107	107	107	107	107	107	107	107
	V _R	107	107	107	107	107	107	107	107
	V ₂	118	118	118	118	118	118	118	118
	V _{ENR} = 118 TOFL-FT	4,554	4,749	5,010	5,271	5,638	6,166	7,380	8,678
11,000 LB 4990 KG	V ₁	105	105	105	105	105	105	105	105
	V _R	105	105	105	105	105	105	105	105
	V ₂	115	115	115	115	115	115	115	115
	V _{ENR} = 115 TOFL-FT	4,080	4,257	4,494	4,730	5,049	5,504	6,541	7,653
10,500 LB 4763 KG	V ₁	103	103	103	103	103	103	103	103
	V _R	103	103	103	103	103	103	103	103
	V ₂	113	113	113	113	113	113	113	113
	V _{ENR} = 113 TOFL-FT	3,658	3,821	4,040	4,258	4,541	4,941	5,818	6,758
10,000 LB 4536 KG	V ₁	99	100	100	100	100	100	100	100
	V _R	102	102	102	102	102	102	102	102
	V ₂	111	111	111	111	111	111	111	111
	V _{ENR} = 111 TOFL-FT	3,329	3,475	3,648	3,854	4,114	4,478	5,212	5,992
9,500 LB 4309 KG	V ₁	97	97	98	98	99	99	99	99
	V _R	102	102	102	102	102	102	102	102
	V ₂	110	110	110	110	110	110	110	110
	V _{ENR} = 110 TOFL-FT	3,064	3,203	3,370	3,554	3,766	4,114	4,723	5,356

TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS UP
4,500 FEET PRESSURE ALTITUDE

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature. Red shading indicates takeoff climb requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-24	-14	-4	6	16	26	36	43
14,000 LB 6350 KG	V ₁	117	117	117	117	117	117	117	
	V _R	117	117	117	117	117	117	117	
	V ₂	126	126	126	126	126	126	126	
V _{ENR} = 126	TOFL-FT	7,814	8,198	8,672	9,237	10,126	11,556	13,992	
13,500 LB 6124 KG	V ₁	115	115	115	115	115	115	115	115
	V _R	115	115	115	115	115	115	115	115
	V ₂	125	125	125	125	125	125	125	125
V _{ENR} = 125	TOFL-FT	7,069	7,409	7,828	8,322	9,087	10,331	12,501	14,678
13,000 LB 5897 KG	V ₁	113	113	113	113	113	113	113	113
	V _R	113	113	113	113	113	113	113	113
	V ₂	123	123	123	123	123	123	123	123
V _{ENR} = 123	TOFL-FT	6,377	6,677	7,048	7,479	8,133	9,210	11,129	13,063
12,500 LB 5670 KG	V ₁	111	111	111	111	111	111	111	111
	V _R	111	111	111	111	111	111	111	111
	V ₂	121	121	121	121	121	121	121	121
V _{ENR} = 121	TOFL-FT	5,738	6,004	6,332	6,708	7,266	8,193	9,878	11,582
12,000 LB 5443 KG	V ₁	109	109	109	109	109	109	109	109
	V _R	109	109	109	109	109	109	109	109
	V ₂	120	120	120	120	120	120	120	120
V _{ENR} = 120	TOFL-FT	5,152	5,388	5,680	6,009	6,484	7,279	8,747	10,236
11,500 LB 5216 KG	V ₁	107	107	107	107	107	107	107	107
	V _R	107	107	107	107	107	107	107	107
	V ₂	118	118	118	118	118	118	118	118
V _{ENR} = 118	TOFL-FT	4,619	4,831	5,092	5,381	5,789	6,469	7,737	9,025
11,000 LB 4990 KG	V ₁	105	105	105	105	105	105	105	105
	V _R	105	105	105	105	105	105	105	105
	V ₂	115	115	115	115	115	115	115	115
V _{ENR} = 115	TOFL-FT	4,139	4,331	4,568	4,826	5,179	5,763	6,847	7,948
10,500 LB 4763 KG	V ₁	103	103	103	103	103	103	103	103
	V _R	103	103	103	103	103	103	103	103
	V ₂	113	113	113	113	113	113	113	113
V _{ENR} = 113	TOFL-FT	3,712	3,890	4,108	4,343	4,655	5,160	6,076	7,006
10,000 LB 4536 KG	V ₁	99	100	100	100	100	100	100	100
	V _R	102	102	102	102	102	102	102	102
	V ₂	111	111	111	111	111	111	111	111
V _{ENR} = 111	TOFL-FT	3,381	3,531	3,712	3,932	4,218	4,662	5,427	6,198
9,500 LB 4309 KG	V ₁	97	97	98	98	99	99	99	99
	V _R	102	102	102	102	102	102	102	102
	V ₂	110	110	110	110	110	110	110	110
V _{ENR} = 110	TOFL-FT	3,114	3,262	3,431	3,620	3,866	4,266	4,897	5,526

TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS UP
5,000 FEET PRESSURE ALTITUDE

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air

Temperature. Red shading indicates takeoff climb requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-25	-15	-5	5	15	25	35	42
14,000 LB 6350 KG	V ₁	117	117	117	117	117	117	117	
	V _R	117	117	117	117	117	117	117	
	V ₂	126	126	126	126	126	126	126	
V _{ENR} = 126	TOFL-FT	7,932	8,346	8,821	9,477	10,462	12,147	14,656	
13,500 LB 6124 KG	V ₁	115	115	115	115	115	115	115	
	V _R	115	115	115	115	115	115	115	
	V ₂	125	125	125	125	125	125	125	
V _{ENR} = 125	TOFL-FT	7,173	7,540	7,959	8,529	9,375	10,856	13,096	
13,000 LB 5897 KG	V ₁	113	113	113	113	113	113	113	113
	V _R	113	113	113	113	113	113	113	113
	V ₂	123	123	123	123	123	123	123	123
V _{ENR} = 123	TOFL-FT	6,469	6,793	7,164	7,656	8,379	9,673	11,660	13,900
12,500 LB 5670 KG	V ₁	111	111	111	111	111	111	111	111
	V _R	111	111	111	111	111	111	111	111
	V ₂	121	121	121	121	121	121	121	121
V _{ENR} = 121	TOFL-FT	5,820	6,106	6,434	6,859	7,474	8,598	10,347	12,048
12,000 LB 5443 KG	V ₁	109	109	109	109	109	109	109	109
	V _R	109	109	109	109	109	109	109	109
	V ₂	120	120	120	120	120	120	120	120
V _{ENR} = 120	TOFL-FT	5,225	5,479	5,771	6,138	6,661	7,632	9,159	10,640
11,500 LB 5216 KG	V ₁	107	107	107	107	107	107	107	107
	V _R	107	107	107	107	107	107	107	107
	V ₂	118	118	118	118	118	118	118	118
V _{ENR} = 118	TOFL-FT	4,684	4,912	5,173	5,492	5,939	6,773	8,094	9,372
11,000 LB 4990 KG	V ₁	105	105	105	105	105	105	105	105
	V _R	105	105	105	105	105	105	105	105
	V ₂	115	115	115	115	115	115	115	115
V _{ENR} = 115	TOFL-FT	4,198	4,405	4,642	4,922	5,309	6,022	7,152	8,243
10,500 LB 4763 KG	V ₁	103	103	103	103	103	103	103	103
	V _R	103	103	103	103	103	103	103	103
	V ₂	113	113	113	113	113	113	113	113
V _{ENR} = 113	TOFL-FT	3,767	3,958	4,176	4,428	4,770	5,380	6,335	7,254
10,000 LB 4536 KG	V ₁	99	100	100	100	100	100	100	100
	V _R	102	102	102	102	102	102	102	102
	V ₂	111	111	111	111	111	111	111	111
V _{ENR} = 111	TOFL-FT	3,433	3,587	3,776	4,010	4,322	4,845	5,641	6,405
9,500 LB 4309 KG	V ₁	97	97	98	98	99	99	99	99
	V _R	102	102	102	102	102	102	102	102
	V ₂	110	110	110	110	110	110	110	110
V _{ENR} = 110	TOFL-FT	3,164	3,321	3,492	3,685	3,965	4,418	5,071	5,695

**TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS UP
5,500 FEET PRESSURE ALTITUDE**

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature. Red shading indicates takeoff climb requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-26	-16	-6	4	14	24	34	41
14,000 LB 6350 KG	V ₁	117	117	117	117	117	117	117	
	V _R	117	117	117	117	117	117	117	
	V ₂	126	126	126	126	126	126	126	
V _{ENR} = 126	TOFL-FT	8,050	8,494	8,970	9,718	10,798	12,737	15,320	
13,500 LB 6124 KG	V ₁	115	115	115	115	115	115	115	
	V _R	115	115	115	115	115	115	115	
	V ₂	125	125	125	125	125	125	125	
V _{ENR} = 125	TOFL-FT	7,278	7,670	8,091	8,736	9,663	11,380	13,692	
13,000 LB 5897 KG	V ₁	113	113	113	113	113	113	113	113
	V _R	113	113	113	113	113	113	113	113
	V ₂	123	123	123	123	123	123	123	123
V _{ENR} = 123	TOFL-FT	6,562	6,909	7,280	7,833	8,625	10,136	12,191	14,585
12,500 LB 5670 KG	V ₁	111	111	111	111	111	111	111	111
	V _R	111	111	111	111	111	111	111	111
	V ₂	121	121	121	121	121	121	121	121
V _{ENR} = 121	TOFL-FT	5,902	6,209	6,537	7,010	7,683	9,004	10,817	12,514
12,000 LB 5443 KG	V ₁	109	109	109	109	109	109	109	109
	V _R	109	109	109	109	109	109	109	109
	V ₂	120	120	120	120	120	120	120	120
V _{ENR} = 120	TOFL-FT	5,297	5,570	5,862	6,267	6,838	7,984	9,570	11,044
11,500 LB 5216 KG	V ₁	107	107	107	107	107	107	107	107
	V _R	107	107	107	107	107	107	107	107
	V ₂	118	118	118	118	118	118	118	118
V _{ENR} = 118	TOFL-FT	4,749	4,994	5,255	5,603	6,090	7,076	8,450	9,719
11,000 LB 4990 KG	V ₁	105	105	105	105	105	105	105	105
	V _R	105	105	105	105	105	105	105	105
	V ₂	115	115	115	115	115	115	115	115
V _{ENR} = 115	TOFL-FT	4,257	4,479	4,716	5,018	5,439	6,281	7,458	8,538
10,500 LB 4763 KG	V ₁	103	103	103	103	103	103	103	103
	V _R	103	103	103	103	103	103	103	103
	V ₂	113	113	113	113	113	113	113	113
V _{ENR} = 113	TOFL-FT	3,821	4,026	4,244	4,513	4,884	5,599	6,593	7,502
10,000 LB 4536 KG	V ₁	99	100	100	100	100	100	100	100
	V _R	102	102	102	102	102	102	102	102
	V ₂	111	111	111	111	111	111	111	111
V _{ENR} = 111	TOFL-FT	3,486	3,643	3,841	4,088	4,426	5,028	5,856	6,611
9,500 LB 4309 KG	V ₁	97	97	98	98	99	99	99	99
	V _R	102	102	102	102	102	102	102	102
	V ₂	110	110	110	110	110	110	110	110
V _{ENR} = 110	TOFL-FT	3,214	3,380	3,553	3,751	4,065	4,571	5,246	5,864

TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS UP
6,000 FEET PRESSURE ALTITUDE

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature. Red shading indicates takeoff climb requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-27	-17	-7	3	13	23	33	40
14,000 LB 6350 KG	V ₁	117	117	117	117	117	117	117	
	V _R	117	117	117	117	117	117	117	
	V ₂	126	126	126	126	126	126	126	
V _{ENR} = 126	TOFL-FT	8,169	8,642	9,118	9,958	11,134	13,328	15,984	
13,500 LB 6124 KG	V ₁	115	115	115	115	115	115	115	
	V _R	115	115	115	115	115	115	115	
	V ₂	125	125	125	125	125	125	125	
V _{ENR} = 125	TOFL-FT	7,383	7,801	8,222	8,943	9,951	11,905	14,287	
13,000 LB 5897 KG	V ₁	113	113	113	113	113	113	113	
	V _R	113	113	113	113	113	113	113	
	V ₂	123	123	123	123	123	123	123	
V _{ENR} = 123	TOFL-FT	6,654	7,024	7,396	8,010	8,870	10,599	12,721	
12,500 LB 5670 KG	V ₁	111	111	111	111	111	111	111	111
	V _R	111	111	111	111	111	111	111	111
	V ₂	121	121	121	121	121	121	121	121
V _{ENR} = 121	TOFL-FT	5,983	6,311	6,640	7,161	7,892	9,409	11,286	12,981
12,000 LB 5443 KG	V ₁	109	109	109	109	109	109	109	109
	V _R	109	109	109	109	109	109	109	109
	V ₂	120	120	120	120	120	120	120	120
V _{ENR} = 120	TOFL-FT	5,370	5,661	5,953	6,396	7,015	8,336	9,981	11,449
11,500 LB 5216 KG	V ₁	107	107	107	107	107	107	107	107
	V _R	107	107	107	107	107	107	107	107
	V ₂	118	118	118	118	118	118	118	118
V _{ENR} = 118	TOFL-FT	4,814	5,075	5,336	5,713	6,241	7,380	8,807	10,066
11,000 LB 4990 KG	V ₁	105	105	105	105	105	105	105	105
	V _R	105	105	105	105	105	105	105	105
	V ₂	115	115	115	115	115	115	115	115
V _{ENR} = 115	TOFL-FT	4,316	4,553	4,790	5,114	5,569	6,541	7,764	8,834
10,500 LB 4763 KG	V ₁	103	103	103	103	103	103	103	103
	V _R	103	103	103	103	103	103	103	103
	V ₂	113	113	113	113	113	113	113	113
V _{ENR} = 113	TOFL-FT	3,876	4,094	4,312	4,598	4,998	5,818	6,852	7,751
10,000 LB 4536 KG	V ₁	99	100	100	100	100	100	100	100
	V _R	102	102	102	102	102	102	102	102
	V ₂	111	111	111	111	111	111	111	111
V _{ENR} = 111	TOFL-FT	3,538	3,699	3,905	4,166	4,530	5,212	6,070	6,817
9,500 LB 4309 KG	V ₁	97	97	98	99	99	99	99	99
	V _R	102	102	102	102	102	102	102	102
	V ₂	110	110	110	110	110	110	110	110
V _{ENR} = 110	TOFL-FT	3,264	3,440	3,614	3,816	4,164	4,723	5,420	6,034

**TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS UP
6,500 FEET PRESSURE ALTITUDE**

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature. Red shading indicates takeoff climb requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-28	-18	-8	2	12	22	32	39
14,000 LB 6350 KG	V ₁	117	117	117	117	117	117	117	
	V _R	117	117	117	117	117	117	117	
	V ₂	126	126	126	126	126	126	126	
V _{ENR} = 126	TOFL-FT	8,346	8,887	9,496	10,551	11,989	14,230	17,099	
13,500 LB 6124 KG	V ₁	115	115	115	115	115	115	115	
	V _R	115	115	115	115	115	115	115	
	V ₂	125	125	125	125	125	125	125	
V _{ENR} = 125	TOFL-FT	7,540	8,015	8,546	9,461	10,714	12,715	15,259	
13,000 LB 5897 KG	V ₁	113	113	113	113	113	113	113	113
	V _R	113	113	113	113	113	113	113	113
	V ₂	123	123	123	123	123	123	123	123
V _{ENR} = 123	TOFL-FT	6,793	7,209	7,673	8,461	9,546	11,321	13,561	16,182
12,500 LB 5670 KG	V ₁	111	111	111	111	111	111	111	111
	V _R	111	111	111	111	111	111	111	111
	V ₂	121	121	121	121	121	121	121	121
V _{ENR} = 121	TOFL-FT	6,106	6,471	6,875	7,550	8,486	10,048	12,006	13,866
12,000 LB 5443 KG	V ₁	109	109	109	109	109	109	109	109
	V _R	109	109	109	109	109	109	109	109
	V ₂	120	120	120	120	120	120	120	120
V _{ENR} = 120	TOFL-FT	5,479	5,801	6,152	6,730	7,533	8,896	10,593	12,177
11,500 LB 5216 KG	V ₁	107	107	107	107	107	107	107	107
	V _R	107	107	107	107	107	107	107	107
	V ₂	118	118	118	118	118	118	118	118
V _{ENR} = 118	TOFL-FT	4,912	5,197	5,506	6,000	6,688	7,866	9,323	10,660
11,000 LB 4990 KG	V ₁	105	105	105	105	105	105	105	105
	V _R	105	105	105	105	105	105	105	105
	V ₂	115	115	115	115	115	115	115	115
V _{ENR} = 115	TOFL-FT	4,405	4,661	4,936	5,360	5,950	6,958	8,196	9,315
10,500 LB 4763 KG	V ₁	103	103	103	103	103	103	103	103
	V _R	103	103	103	103	103	103	103	103
	V ₂	113	113	113	113	113	113	113	113
V _{ENR} = 113	TOFL-FT	3,958	4,192	4,441	4,810	5,320	6,171	7,211	8,141
10,000 LB 4536 KG	V ₁	100	100	100	100	100	100	100	100
	V _R	102	102	102	102	102	102	102	102
	V ₂	111	111	111	111	111	111	111	111
V _{ENR} = 111	TOFL-FT	3,604	3,790	4,022	4,350	4,798	5,505	6,369	7,139
9,500 LB 4309 KG	V ₁	97	98	98	99	99	99	99	99
	V _R	102	102	102	102	102	102	102	102
	V ₂	110	110	110	110	110	110	110	110
V _{ENR} = 110	TOFL-FT	3,327	3,509	3,714	3,980	4,383	4,961	5,669	6,309

TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS UP
7,000 FEET PRESSURE ALTITUDE

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature. Red shading indicates takeoff climb requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-29	-19	-9	1	11	21	31	38
14,000 LB 6350 KG	V ₁	117	117	117	117	117	117		
	V _R	117	117	117	117	117	117		
	V ₂	126	126	126	126	126	126		
V _{ENR} = 126	TOFL-FT	8,524	9,132	9,874	11,145	12,844	15,133		
13,500 LB 6124 KG	V ₁	115	115	115	115	115	115	115	
	V _R	115	115	115	115	115	115	115	
	V ₂	125	125	125	125	125	125	125	
V _{ENR} = 125	TOFL-FT	7,697	8,228	8,870	9,980	11,477	13,525	16,230	
13,000 LB 5897 KG	V ₁	113	113	113	113	113	113	113	113
	V _R	113	113	113	113	113	113	113	113
	V ₂	123	123	123	123	123	123	123	123
V _{ENR} = 123	TOFL-FT	6,932	7,394	7,949	8,911	10,222	12,042	14,400	17,094
12,500 LB 5670 KG	V ₁	111	111	111	111	111	111	111	111
	V _R	111	111	111	111	111	111	111	111
	V ₂	121	121	121	121	121	121	121	121
V _{ENR} = 121	TOFL-FT	6,229	6,632	7,109	7,939	9,080	10,687	12,725	14,751
12,000 LB 5443 KG	V ₁	109	109	109	109	109	109	109	109
	V _R	109	109	109	109	109	109	109	109
	V ₂	120	120	120	120	120	120	120	120
V _{ENR} = 120	TOFL-FT	5,588	5,940	6,352	7,065	8,051	9,457	11,205	12,906
11,500 LB 5216 KG	V ₁	107	107	107	107	107	107	107	107
	V _R	107	107	107	107	107	107	107	107
	V ₂	118	118	118	118	118	118	118	118
V _{ENR} = 118	TOFL-FT	5,010	5,319	5,676	6,287	7,135	8,353	9,839	11,254
11,000 LB 4990 KG	V ₁	105	105	105	105	105	105	105	105
	V _R	105	105	105	105	105	105	105	105
	V ₂	115	115	115	115	115	115	115	115
V _{ENR} = 115	TOFL-FT	4,494	4,769	5,082	5,606	6,332	7,375	8,627	9,796
10,500 LB 4763 KG	V ₁	103	103	103	103	103	103	103	103
	V _R	103	103	103	103	103	103	103	103
	V ₂	113	113	113	113	113	113	113	113
V _{ENR} = 113	TOFL-FT	4,040	4,289	4,570	5,021	5,642	6,523	7,570	8,532
10,000 LB 4536 KG	V ₁	100	100	100	100	100	100	100	100
	V _R	102	102	102	102	102	102	102	102
	V ₂	111	111	111	111	111	111	111	111
V _{ENR} = 111	TOFL-FT	3,670	3,880	4,140	4,534	5,065	5,798	6,667	7,461
9,500 LB 4309 KG	V ₁	97	98	98	99	99	99	99	99
	V _R	102	102	102	102	102	102	102	102
	V ₂	110	110	110	110	110	110	110	110
V _{ENR} = 110	TOFL-FT	3,390	3,578	3,814	4,144	4,601	5,198	5,919	6,584

TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS UP
7,500 FEET PRESSURE ALTITUDE

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature. Red shading indicates takeoff climb requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-30	-20	-10	0	10	20	30	37
14,000 LB 6350 KG	V ₁	117	117	117	117	117	117		
	V _R	117	117	117	117	117	117		
	V ₂	126	126	126	126	126	126		
V _{ENR} = 126	TOFL-FT	8,701	9,377	10,252	11,739	13,700	16,035		
13,500 LB 6124 KG	V ₁	115	115	115	115	115	115	115	
	V _R	115	115	115	115	115	115	115	
	V ₂	125	125	125	125	125	125	125	
V _{ENR} = 125	TOFL-FT	7,854	8,441	9,195	10,498	12,239	14,334	17,201	
13,000 LB 5897 KG	V ₁	113	113	113	113	113	113	113	
	V _R	113	113	113	113	113	113	113	
	V ₂	123	123	123	123	123	123	123	
V _{ENR} = 123	TOFL-FT	7,070	7,580	8,225	9,361	10,898	12,764	15,240	
12,500 LB 5670 KG	V ₁	111	111	111	111	111	111	111	111
	V _R	111	111	111	111	111	111	111	111
	V ₂	121	121	121	121	121	121	121	121
V _{ENR} = 121	TOFL-FT	6,352	6,792	7,344	8,328	9,674	11,325	13,445	15,764
12,000 LB 5443 KG	V ₁	109	109	109	109	109	109	109	109
	V _R	109	109	109	109	109	109	109	109
	V ₂	120	120	120	120	120	120	120	120
V _{ENR} = 120	TOFL-FT	5,698	6,079	6,551	7,399	8,569	10,017	11,817	13,635
11,500 LB 5216 KG	V ₁	107	107	107	107	107	107	107	107
	V _R	107	107	107	107	107	107	107	107
	V ₂	118	118	118	118	118	118	118	118
V _{ENR} = 118	TOFL-FT	5,108	5,441	5,845	6,573	7,582	8,839	10,355	11,848
11,000 LB 4990 KG	V ₁	105	105	105	105	105	105	105	105
	V _R	105	105	105	105	105	105	105	105
	V ₂	115	115	115	115	115	115	115	115
V _{ENR} = 115	TOFL-FT	4,582	4,876	5,228	5,851	6,714	7,792	9,059	10,277
10,500 LB 4763 KG	V ₁	103	103	103	103	103	103	103	103
	V _R	103	103	103	103	103	103	103	103
	V ₂	113	113	113	113	113	113	113	113
V _{ENR} = 113	TOFL-FT	4,121	4,386	4,698	5,233	5,964	6,876	7,929	8,922
10,000 LB 4536 KG	V ₁	100	100	100	100	100	100	100	100
	V _R	102	102	102	102	102	102	102	102
	V ₂	111	111	111	111	111	111	111	111
V _{ENR} = 111	TOFL-FT	3,736	3,971	4,257	4,718	5,333	6,091	6,966	7,782
9,500 LB 4309 KG	V ₁	98	98	98	99	99	99	99	99
	V _R	102	102	102	102	102	102	102	102
	V ₂	110	110	110	110	110	110	110	110
V _{ENR} = 110	TOFL-FT	3,454	3,647	3,915	4,307	4,820	5,436	6,168	6,858

TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS UP
8,000 FEET PRESSURE ALTITUDE

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature. Red shading indicates takeoff climb requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-31	-21	-11	-1	9	19	29	36
14,000 LB 6350 KG	V ₁	117	117	117	117	117	117		
	V _R	117	117	117	117	117	117		
	V ₂	126	126	126	126	126	126		
V _{ENR} = 126	TOFL-FT	8,878	9,622	10,630	12,332	14,555	16,937		
13,500 LB 6124 KG	V ₁	115	115	115	115	115	115		
	V _R	115	115	115	115	115	115		
	V ₂	125	125	125	125	125	125		
V _{ENR} = 125	TOFL-FT	8,010	8,654	9,519	11,017	13,002	15,144		
13,000 LB 5897 KG	V ₁	113	113	113	113	113	113	113	
	V _R	113	113	113	113	113	113	113	
	V ₂	123	123	123	123	123	123	123	
V _{ENR} = 123	TOFL-FT	7,209	7,765	8,502	9,812	11,573	13,486	16,080	
12,500 LB 5670 KG	V ₁	111	111	111	111	111	111	111	111
	V _R	111	111	111	111	111	111	111	111
	V ₂	121	121	121	121	121	121	121	121
V _{ENR} = 121	TOFL-FT	6,475	6,953	7,579	8,717	10,268	11,964	14,165	16,522
12,000 LB 5443 KG	V ₁	109	109	109	109	109	109	109	109
	V _R	109	109	109	109	109	109	109	109
	V ₂	120	120	120	120	120	120	120	120
V _{ENR} = 120	TOFL-FT	5,807	6,219	6,750	7,733	9,087	10,577	12,429	14,363
11,500 LB 5216 KG	V ₁	107	107	107	107	107	107	107	107
	V _R	107	107	107	107	107	107	107	107
	V ₂	118	118	118	118	118	118	118	118
V _{ENR} = 118	TOFL-FT	5,205	5,563	6,015	6,860	8,030	9,326	10,870	12,442
11,000 LB 4990 KG	V ₁	105	105	105	105	105	105	105	105
	V _R	105	105	105	105	105	105	105	105
	V ₂	115	115	115	115	115	115	115	115
V _{ENR} = 115	TOFL-FT	4,671	4,984	5,374	6,097	7,096	8,210	9,490	10,758
10,500 LB 4763 KG	V ₁	103	103	103	103	103	103	103	103
	V _R	103	103	103	103	103	103	103	103
	V ₂	113	113	113	113	113	113	113	113
V _{ENR} = 113	TOFL-FT	4,203	4,484	4,827	5,444	6,286	7,229	8,288	9,312
10,000 LB 4536 KG	V ₁	100	100	100	100	100	100	100	100
	V _R	102	102	102	102	102	102	102	102
	V ₂	111	111	111	111	111	111	111	111
V _{ENR} = 111	TOFL-FT	3,802	4,061	4,374	4,903	5,600	6,384	7,264	8,104
9,500 LB 4309 KG	V ₁	98	99	99	99	99	99	99	99
	V _R	102	102	102	102	102	102	102	102
	V ₂	110	110	110	110	110	110	110	110
V _{ENR} = 110	TOFL-FT	3,517	3,717	4,015	4,471	5,038	5,674	6,418	7,133

**TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS UP
8,500 FEET PRESSURE ALTITUDE**

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature. Red shading indicates takeoff climb requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-32	-22	-12	-2	8	18	28	35
14,000 LB 6350 KG	V ₁	117	117	117	117	117			
	V _R	117	117	117	117	117			
	V ₂	126	126	126	126	126			
V _{ENR} = 126	TOFL-FT	9,232	10,175	11,429	13,245	15,535			
13,500 LB 6124 KG	V ₁	115	115	115	115	115	115		
	V _R	115	115	115	115	115	115		
	V ₂	125	125	125	125	125	125		
V _{ENR} = 125	TOFL-FT	8,316	9,134	10,226	11,834	13,875	16,201		
13,000 LB 5897 KG	V ₁	113	113	113	113	113	113	113	
	V _R	113	113	113	113	113	113	113	
	V ₂	123	123	123	123	123	123	123	
V _{ENR} = 123	TOFL-FT	7,471	8,178	9,124	10,539	12,346	14,388	17,495	
12,500 LB 5670 KG	V ₁	111	111	111	111	111	111	111	
	V _R	111	111	111	111	111	111	111	
	V ₂	121	121	121	121	121	121	121	
V _{ENR} = 121	TOFL-FT	6,698	7,307	8,123	9,359	10,946	12,726	15,326	
12,000 LB 5443 KG	V ₁	109	109	109	109	109	109	109	109
	V _R	109	109	109	109	109	109	109	109
	V ₂	120	120	120	120	120	120	120	120
V _{ENR} = 120	TOFL-FT	5,998	6,522	7,222	8,295	9,677	11,215	13,366	15,573
11,500 LB 5216 KG	V ₁	107	107	107	107	107	107	107	107
	V _R	107	107	107	107	107	107	107	107
	V ₂	118	118	118	118	118	118	118	118
V _{ENR} = 118	TOFL-FT	5,370	5,822	6,421	7,347	8,539	9,855	11,617	13,385
11,000 LB 4990 KG	V ₁	105	105	105	105	105	105	105	105
	V _R	105	105	105	105	105	105	105	105
	V ₂	115	115	115	115	115	115	115	115
V _{ENR} = 115	TOFL-FT	4,814	5,207	5,721	6,514	7,530	8,647	10,078	11,480
10,500 LB 4763 KG	V ₁	103	103	103	103	103	103	103	103
	V _R	103	103	103	103	103	103	103	103
	V ₂	113	113	113	113	113	113	113	113
V _{ENR} = 113	TOFL-FT	4,331	4,677	5,121	5,796	6,652	7,590	8,749	9,859
10,000 LB 4536 KG	V ₁	100	100	100	100	100	100	100	100
	V _R	102	102	102	102	102	102	102	102
	V ₂	111	111	111	111	111	111	111	111
V _{ENR} = 111	TOFL-FT	3,919	4,233	4,622	5,195	5,905	6,684	7,631	8,522
9,500 LB 4309 KG	V ₁	98	99	99	99	99	99	99	99
	V _R	102	102	102	102	102	102	102	102
	V ₂	110	110	110	110	110	110	110	110
V _{ENR} = 110	TOFL-FT	3,617	3,874	4,223	4,708	5,287	5,929	6,723	7,469

TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS UP
9,000 FEET PRESSURE ALTITUDE

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature. Red shading indicates takeoff climb requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-33	-23	-13	-3	7	17	27	34
14,000 LB 6350 KG	V ₁	117	117	117	117	117			
	V _R	117	117	117	117	117			
	V ₂	126	126	126	126	126			
V _{ENR} = 126	TOFL-FT	9,586	10,728	12,228	14,158	16,515			
13,500 LB 6124 KG	V ₁	115	115	115	115	115	115		
	V _R	115	115	115	115	115	115		
	V ₂	125	125	125	125	125	125		
V _{ENR} = 125	TOFL-FT	8,621	9,613	10,934	12,652	14,748	17,258		
13,000 LB 5897 KG	V ₁	113	113	113	113	113	113		
	V _R	113	113	113	113	113	113		
	V ₂	123	123	123	123	123	123		
V _{ENR} = 123	TOFL-FT	7,733	8,591	9,747	11,266	13,118	15,289		
12,500 LB 5670 KG	V ₁	111	111	111	111	111	111	111	
	V _R	111	111	111	111	111	111	111	
	V ₂	121	121	121	121	121	121	121	
V _{ENR} = 121	TOFL-FT	6,922	7,662	8,667	10,001	11,624	13,488	16,486	
12,000 LB 5443 KG	V ₁	109	109	109	109	109	109	109	109
	V _R	109	109	109	109	109	109	109	109
	V ₂	120	120	120	120	120	120	120	120
V _{ENR} = 120	TOFL-FT	6,190	6,825	7,694	8,857	10,268	11,853	14,303	16,783
11,500 LB 5216 KG	V ₁	107	107	107	107	107	107	107	107
	V _R	107	107	107	107	107	107	107	107
	V ₂	118	118	118	118	118	118	118	118
V _{ENR} = 118	TOFL-FT	5,535	6,081	6,828	7,834	9,048	10,385	12,363	14,327
11,000 LB 4990 KG	V ₁	105	105	105	105	105	105	105	105
	V _R	105	105	105	105	105	105	105	105
	V ₂	115	115	115	115	115	115	115	115
V _{ENR} = 115	TOFL-FT	4,958	5,430	6,068	6,931	7,965	9,084	10,666	12,202
10,500 LB 4763 KG	V ₁	103	103	103	103	103	103	103	103
	V _R	103	103	103	103	103	103	103	103
	V ₂	113	113	113	113	113	113	113	113
V _{ENR} = 113	TOFL-FT	4,458	4,871	5,416	6,148	7,018	7,950	9,210	10,406
10,000 LB 4536 KG	V ₁	100	100	100	100	100	100	100	100
	V _R	102	102	102	102	102	102	102	102
	V ₂	111	111	111	111	111	111	111	111
V _{ENR} = 111	TOFL-FT	4,036	4,405	4,870	5,486	6,209	6,983	7,998	8,941
9,500 LB 4309 KG	V ₁	98	99	99	99	99	99	99	99
	V _R	102	102	102	102	102	102	102	102
	V ₂	110	110	110	110	110	110	110	110
V _{ENR} = 110	TOFL-FT	3,716	4,031	4,432	4,945	5,536	6,183	7,028	7,806

**TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS UP
9,500 FEET PRESSURE ALTITUDE**

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature. Red shading indicates takeoff climb requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-34	-24	-14	-4	6	16	26	33
14,000 LB 6350 KG	V ₁	117	117	117	117				
	V _R	117	117	117	117				
	V ₂	126	126	126	126				
V _{ENR} = 126	TOFL-FT	9,940	11,281	13,027	15,071				
13,500 LB 6124 KG	V ₁	115	115	115	115	115			
	V _R	115	115	115	115	115			
	V ₂	125	125	125	125	125			
V _{ENR} = 125	TOFL-FT	8,926	10,093	11,642	13,470	15,621			
13,000 LB 5897 KG	V ₁	113	113	113	113	113	113		
	V _R	113	113	113	113	113	113		
	V ₂	123	123	123	123	123	123		
V _{ENR} = 123	TOFL-FT	7,994	9,005	10,370	11,994	13,890	16,191		
12,500 LB 5670 KG	V ₁	111	111	111	111	111	111	111	
	V _R	111	111	111	111	111	111	111	
	V ₂	121	121	121	121	121	121	121	
V _{ENR} = 121	TOFL-FT	7,146	8,017	9,211	10,644	12,302	14,250	17,646	
12,000 LB 5443 KG	V ₁	109	109	109	109	109	109	109	
	V _R	109	109	109	109	109	109	109	
	V ₂	120	120	120	120	120	120	120	
V _{ENR} = 120	TOFL-FT	6,381	7,129	8,166	9,419	10,858	12,491	15,241	
11,500 LB 5216 KG	V ₁	107	107	107	107	107	107	107	107
	V _R	107	107	107	107	107	107	107	107
	V ₂	118	118	118	118	118	118	118	118
V _{ENR} = 118	TOFL-FT	5,699	6,341	7,234	8,320	9,557	10,915	13,110	15,270
11,000 LB 4990 KG	V ₁	105	105	105	105	105	105	105	105
	V _R	105	105	105	105	105	105	105	105
	V ₂	115	115	115	115	115	115	115	115
V _{ENR} = 115	TOFL-FT	5,101	5,652	6,415	7,347	8,399	9,522	11,253	12,924
10,500 LB 4763 KG	V ₁	103	103	103	103	103	103	103	103
	V _R	103	103	103	103	103	103	103	103
	V ₂	113	113	113	113	113	113	113	113
V _{ENR} = 113	TOFL-FT	4,585	5,064	5,710	6,500	7,385	8,311	9,672	10,954
10,000 LB 4536 KG	V ₁	100	100	100	100	100	100	100	100
	V _R	102	102	102	102	102	102	102	102
	V ₂	111	111	111	111	111	111	111	111
V _{ENR} = 111	TOFL-FT	4,153	4,576	5,118	5,778	6,513	7,283	8,365	9,360
9,500 LB 4309 KG	V ₁	98	99	99	99	99	99	99	99
	V _R	102	102	102	102	102	102	102	102
	V ₂	110	110	110	110	110	110	110	110
V _{ENR} = 110	TOFL-FT	3,816	4,188	4,640	5,183	5,785	6,438	7,333	8,142

TAKEOFF SPEEDS & FIELD LENGTHS - FLAPS UP
10,000 FEET PRESSURE ALTITUDE

Notes:

For operations with ice vanes extended, add 6°C to actual Outside Air Temperature. Red shading indicates takeoff climb requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-35	-25	-15	-5	5	15	25	32
14,000 LB 6350 KG	V ₁	117	117	117	117				
	V _R	117	117	117	117				
	V ₂	126	126	126	126				
	V _{ENR} = 126 TOFL-FT	10,294	11,834	13,826	15,984				
13,500 LB 6124 KG	V ₁	115	115	115	115	115			
	V _R	115	115	115	115	115			
	V ₂	125	125	125	125	125			
	V _{ENR} = 125 TOFL-FT	9,231	10,572	12,349	14,287	16,494			
13,000 LB 5897 KG	V ₁	113	113	113	113	113	113		
	V _R	113	113	113	113	113	113		
	V ₂	123	123	123	123	123	123		
	V _{ENR} = 123 TOFL-FT	8,256	9,418	10,992	12,721	14,662	17,092		
12,500 LB 5670 KG	V ₁	111	111	111	111	111	111		
	V _R	111	111	111	111	111	111		
	V ₂	121	121	121	121	121	121		
	V _{ENR} = 121 TOFL-FT	7,370	8,371	9,755	11,286	12,981	15,011		
12,000 LB 5443 KG	V ₁	109	109	109	109	109	109	109	
	V _R	109	109	109	109	109	109	109	
	V ₂	120	120	120	120	120	120	120	
	V _{ENR} = 120 TOFL-FT	6,573	7,432	8,638	9,981	11,449	13,129	16,178	
11,500 LB 5216 KG	V ₁	107	107	107	107	107	107	107	107
	V _R	107	107	107	107	107	107	107	107
	V ₂	118	118	118	118	118	118	118	118
	V _{ENR} = 118 TOFL-FT	5,864	6,600	7,640	8,807	10,066	11,445	13,856	16,213
11,000 LB 4990 KG	V ₁	105	105	105	105	105	105	105	105
	V _R	105	105	105	105	105	105	105	105
	V ₂	115	115	115	115	115	115	115	115
	V _{ENR} = 115 TOFL-FT	5,244	5,875	6,763	7,764	8,834	9,959	11,841	13,645
10,500 LB 4763 KG	V ₁	103	103	103	103	103	103	103	103
	V _R	103	103	103	103	103	103	103	103
	V ₂	113	113	113	113	113	113	113	113
	V _{ENR} = 113 TOFL-FT	4,713	5,258	6,005	6,852	7,751	8,672	10,133	11,501
10,000 LB 4536 KG	V ₁	100	100	100	100	100	100	100	100
	V _R	102	102	102	102	102	102	102	102
	V ₂	111	111	111	111	111	111	111	111
	V _{ENR} = 111 TOFL-FT	4,270	4,748	5,367	6,070	6,817	7,583	8,732	9,778
9,500 LB 4309 KG	V ₁	99	99	99	99	99	99	99	99
	V _R	102	102	102	102	102	102	102	102
	V ₂	110	110	110	110	110	110	110	110
	V _{ENR} = 110 TOFL-FT	3,916	4,345	4,848	5,420	6,034	6,692	7,637	8,478

THIS PAGE IS INTENTIONALLY BLANK

REFERENCE ONLY

TAKE-OFF FIELD LENGTH CORRECTION - FLAPS UP

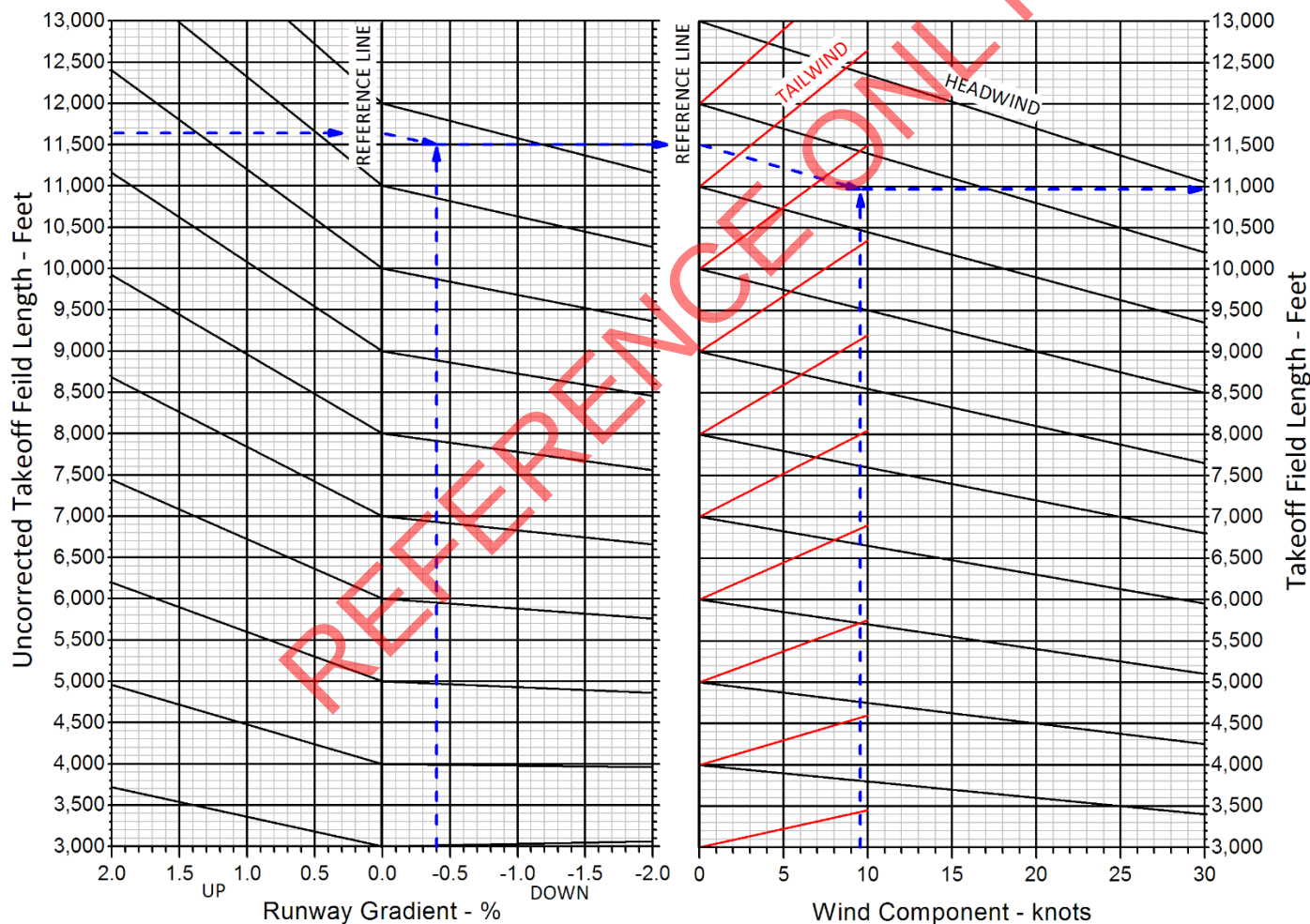
FOR RUNWAY GRADIENT AND WIND COMPONENT

Notes:

1. Obtain take-off field length from the appropriate Take-Off Speeds and Balanced Field Lengths table and enter the graph below with that value to determine the field length corrected for runway gradient and wind component.
2. The wind grid includes factors of 50% for headwinds and 150% for tailwinds. Components of reported winds may be used directly in the graph.
3. Do not extrapolate for headwind components greater than 30 knots. Use a 30 knot headwind component for correcting Takeoff Field Length when headwind component is 30 knots or greater.
4. Do not takeoff with more than a 10 knot tail wind component.

Example:

Uncorrected Takeoff Field Length.. 11,636 Feet
Runway gradient..... -0.4% (Down)
Headwind component..... 9.5 Knots
Corrected take-off field length..... 10,930 feet



ACCELERATE - STOP DISTANCE - FLAPS UP

AIRPLANES WITH HIGH FLOTATION LANDING GEAR

Associated conditions

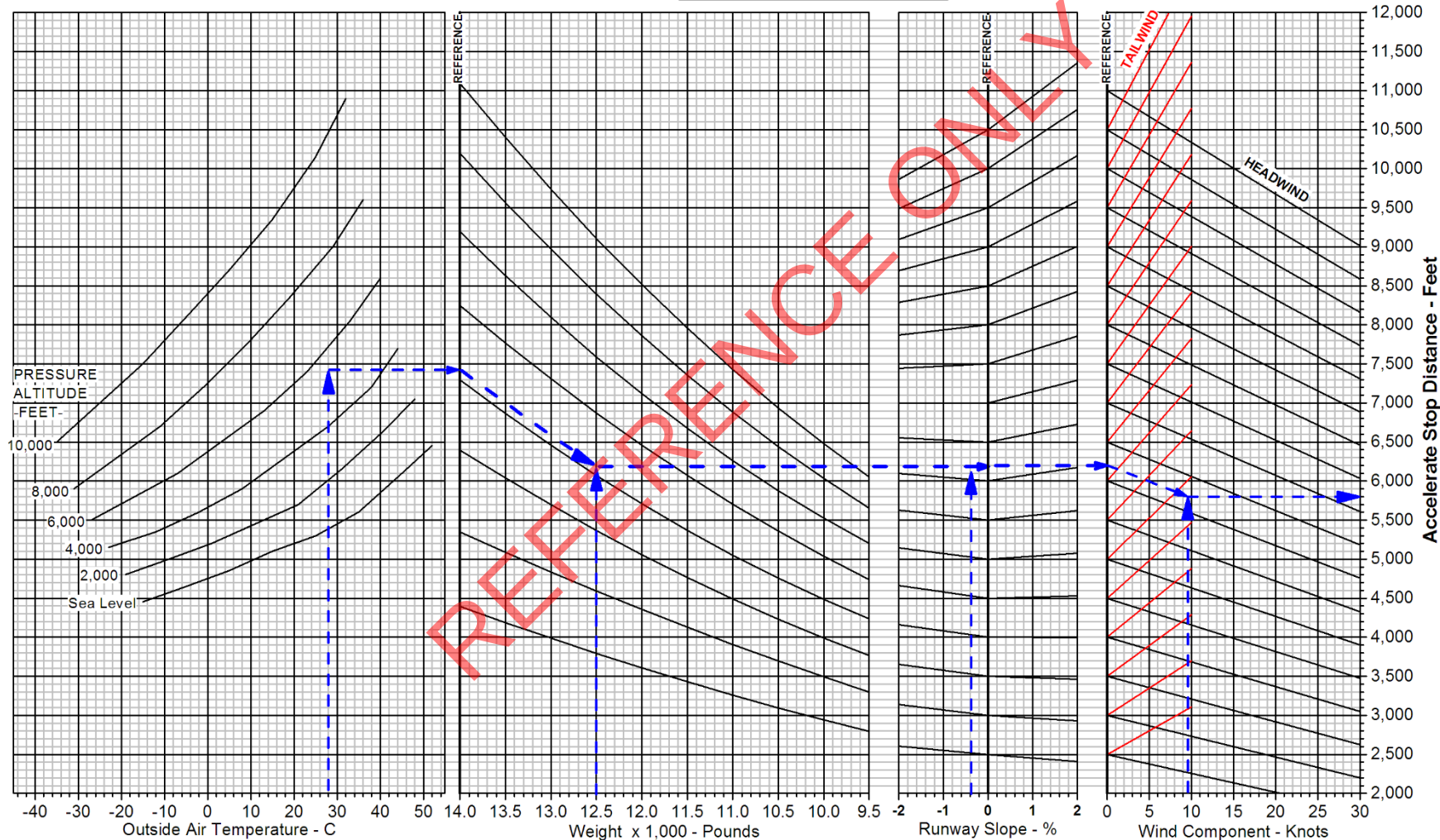
- Power..... 1. Take-off power set before brake release.
2. Both engines idle at V_1 speed and reverse on operating engine.

Flaps..... Up
Autofeather..... Armed
Braking..... Maximum
Runway..... Paved, Level, Dry Surface

Weight - LBS	Speed, V_1 - Kts
14,000	117
13,000	113
12,000	109
9,500	102

Example

OAT..... 28 °C
Pressure Altitude..... 5,433 Feet
Weight..... 12,500 LBS
Runway Slope..... -0.4%(Down)
Headwind Component..... 9.5 Knots
Field Length 5,800 Feet



NET GRADIENT OF CLIMB - FLAPS UP

AIRPLANES WITH HIGH FLOTATION LANDING GEAR

Associated Conditions

Power..... Take-Off
Flaps..... Up
Landing Gear..... Up
Inoperative Propeller... Feathered

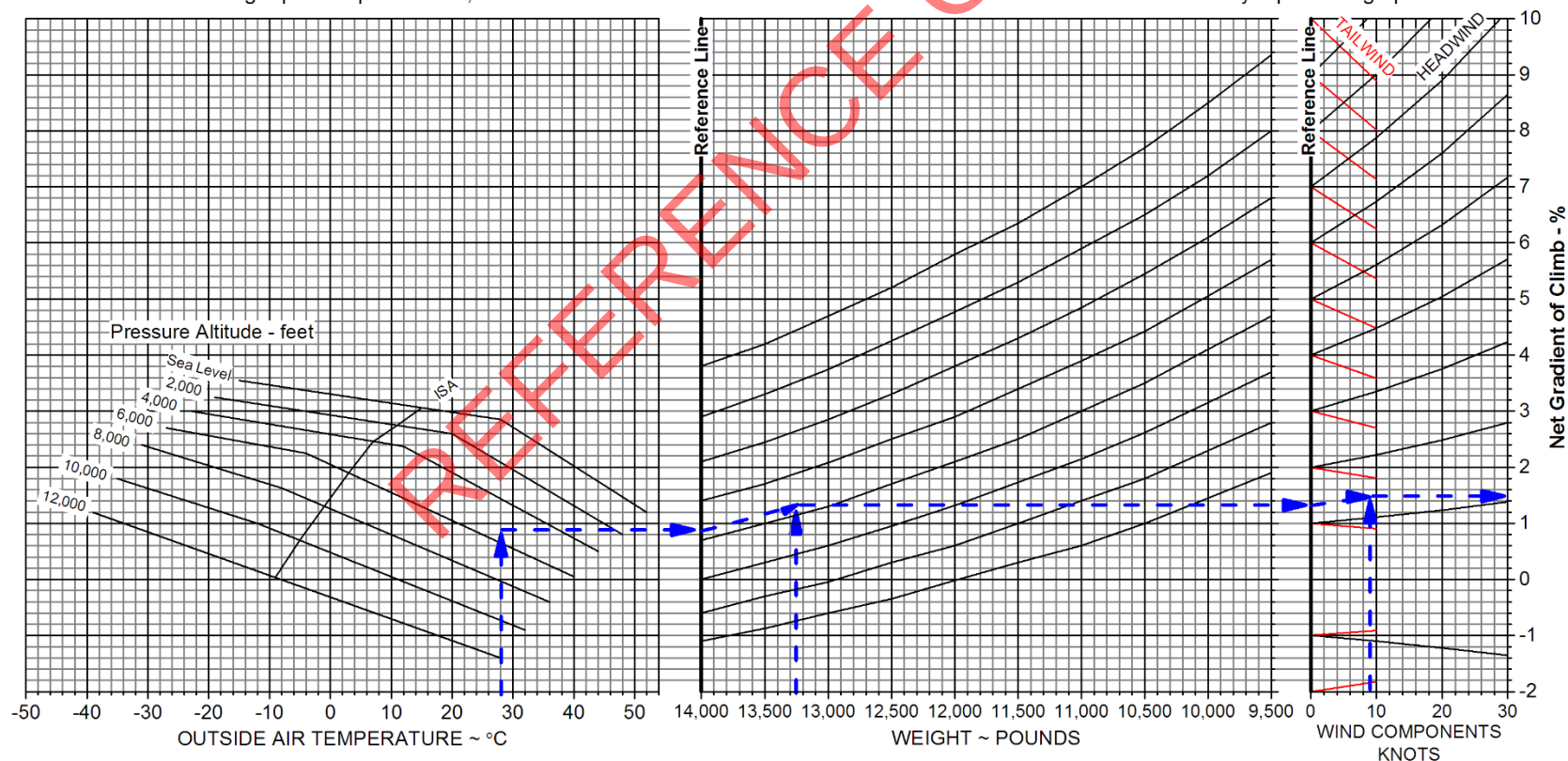
Weight - LBS	Speed - Kts
14,000	126
13,000	123
12,000	120
11,000	115
10,000	111
9,500	110

Example

OAT.....28°C
Pressure Altitude.....5,433 Feet
Takeoff Weight13,252 LBS
Headwind Component...9.5 Knots
Net Gradient 1.5%
Speed124 Knots

Notes:

1. This chart is applicable to the second segment (when the takeoff is executed with flaps up) and final segment of the takeoff flight path.
Use the pressure altitude of the top of the climb segment.
2. V_{ENR} is 148 when operating in icing conditions.
3. Reduce Net Gradient of Climb from this chart by 0.5 percentage points when V_{ENR} is 148 knots.
4. For operations with engine ice vanes extended reduce the Net Gradient of Climb from this chart by 0.9 percentage points.
5. When the takeoff flight path requires turns, do not exceed 15° of bank and reduce Net Gradient of Climb from this chart by 1 percentage point.



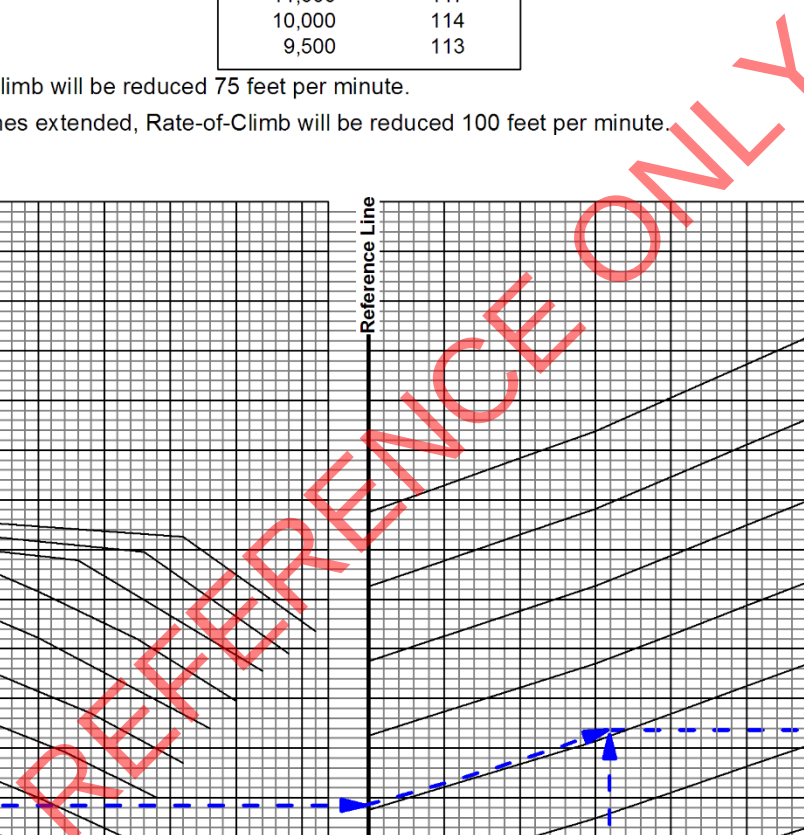
AIRPLANES WITH HIGH FLOTATION LANDING GEAR

Power.....	Maximum Continuous
Flaps.....	Up
Landing Gear.....	Up
Inoperative Propeller...	Feathered

<u>Weight - LBS</u>	<u>Speed - Kts</u>
14,000	124
13,000	122
12,000	119
11,000	117
10,000	114
9,500	113

1. When V_{ENR} is 148 Knots, Rate-of-Climb will be reduced 75 feet per minute.
2. When operating with engine ice vanes extended, Rate-of-Climb will be reduced 100 feet per minute.

OAT.....	-6°C
Pressure Altitude.....	16,000 Feet
<u>Takeoff Weight</u>	<u>12,405 LBS</u>
Rate of Climb.....	135 FPM
Climb Gradient	0.85%
Speed	121 Knots



CLIMB - TWO ENGINES - FLAPS UP

AIRPLANES WITH HIGH FLOTATION LANDING GEAR

Associated Conditions

Power.....Maximum Continuous
Flaps.....Up
Landing Gear.....Up

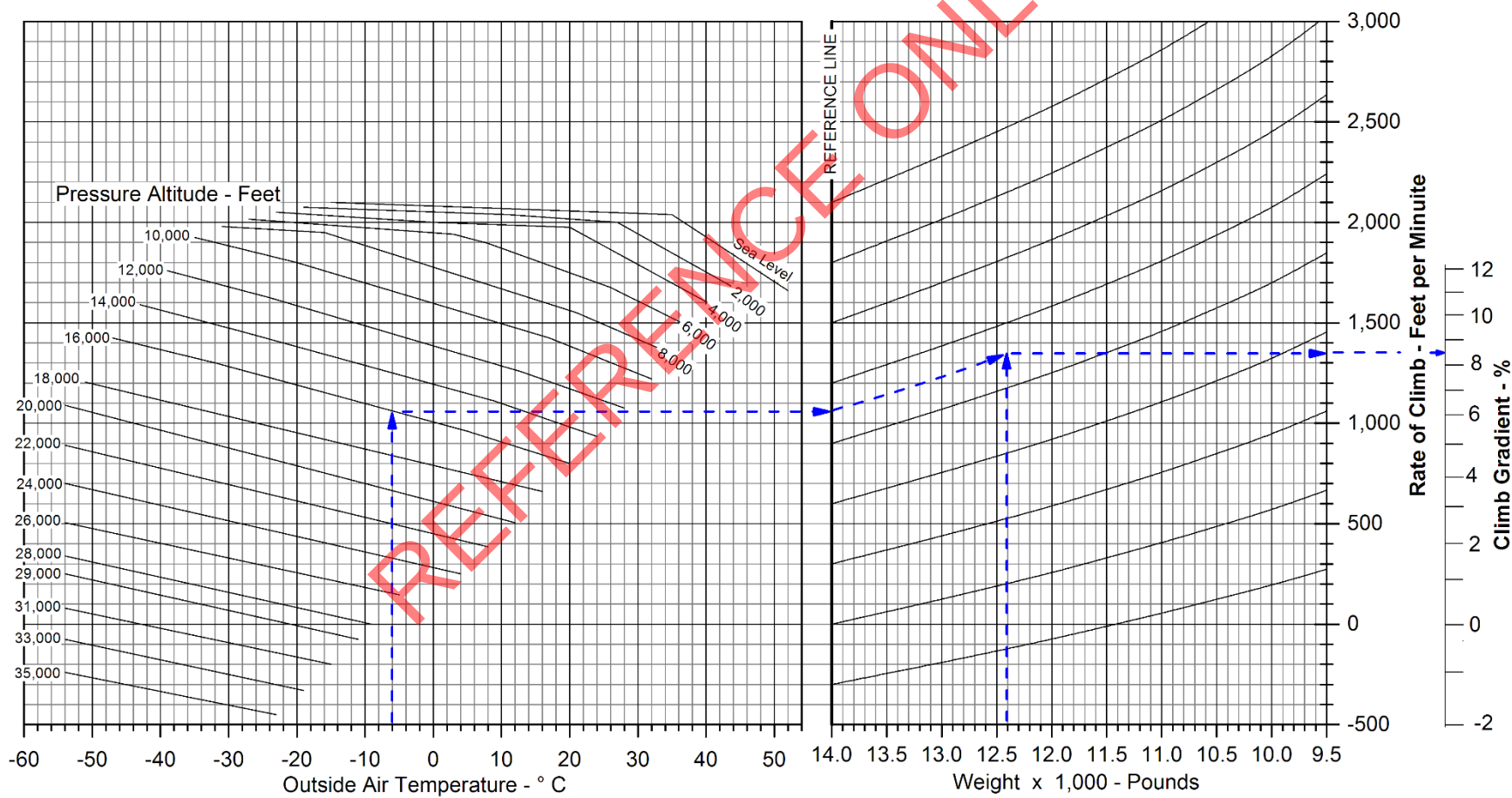
Notes

1. During operation with ice vane extended, Rate-of-Climb will be reduced 250 feet per minute.
2. When climb speed is 148 Knots, Rate-of-Climb will be reduced 100 feet per minute.

Weight - LBS	Speed - Knots
14,000	129
13,000	126
12,000	123
11,000	121
10,000	118
9,500	117

Example

OAT.....-6 °C
Pressure Altitude..... 16,000 Feet
Weight..... 12,405 LBS
Rate of Climb 1,350 FPM
Climb Gradient..... 8.5%
Climb Speed.....125 Knots



TIME, FUEL, AND DISTANCE TO CLIMB

AIRPLANES WITH HIGH FLOTATION LANDING GEAR

Associated conditions

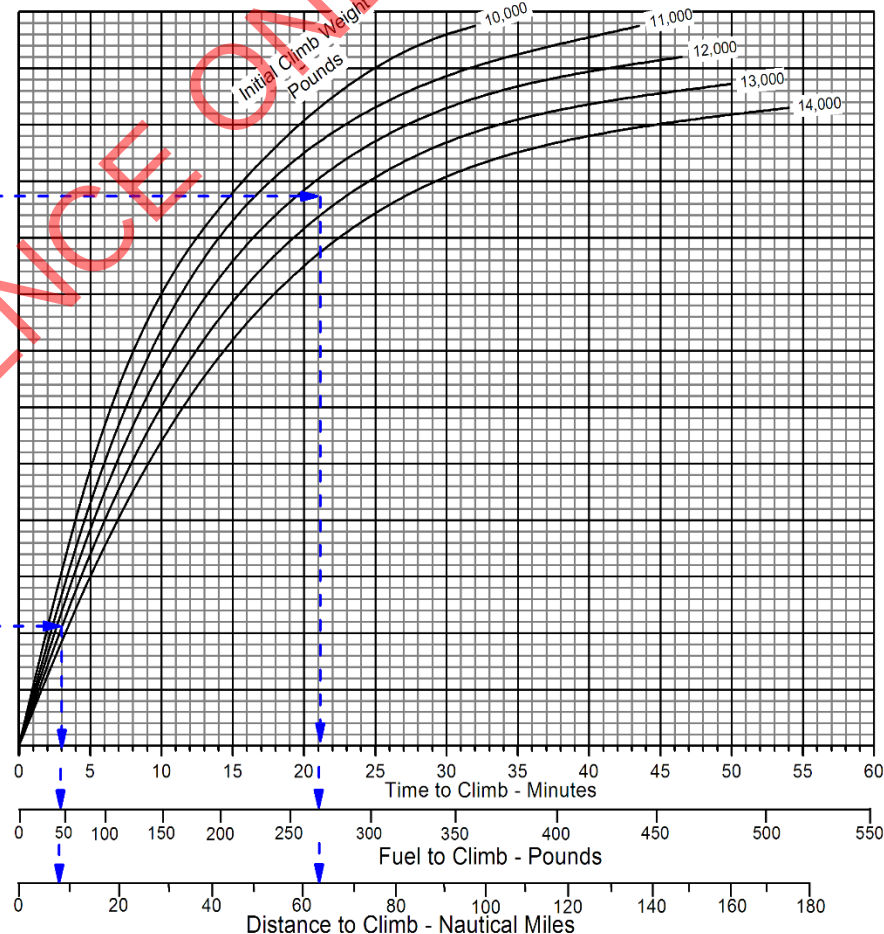
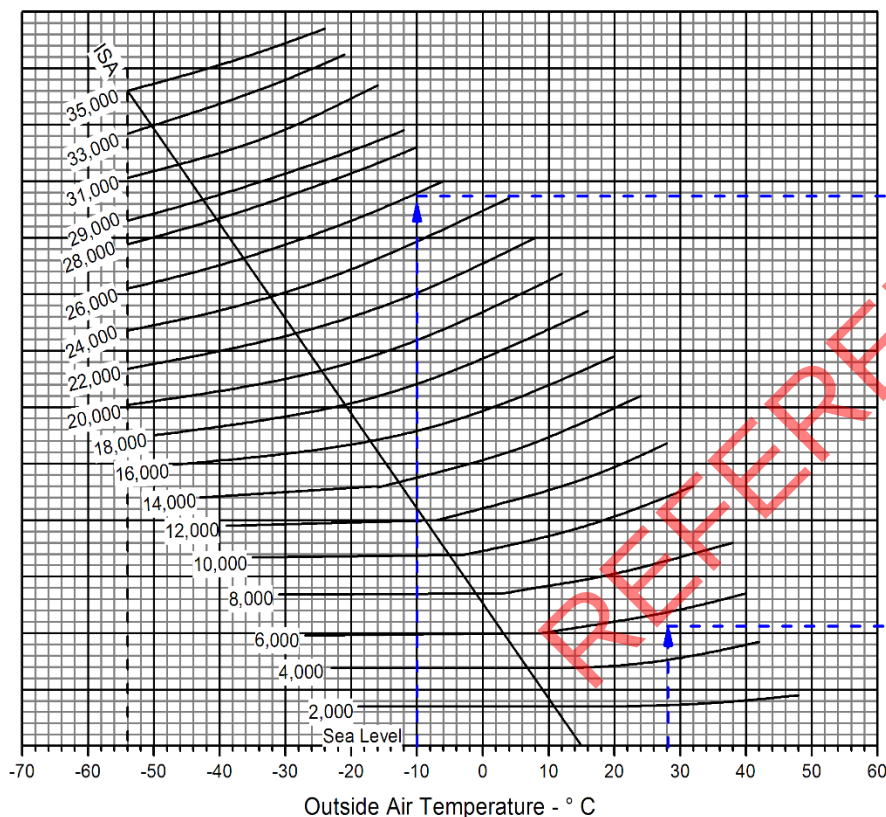
Propeller speed..... 1,900 RPM
ITT..... 770 °C
or Torque..... 2230 foot-pounds

Altitude - Feet	Climb Speed - Knots
Sea Level to 10,000	160
10,000 to 20,000	140
20,000 to 25,000	130
25,000 to 35,000	120

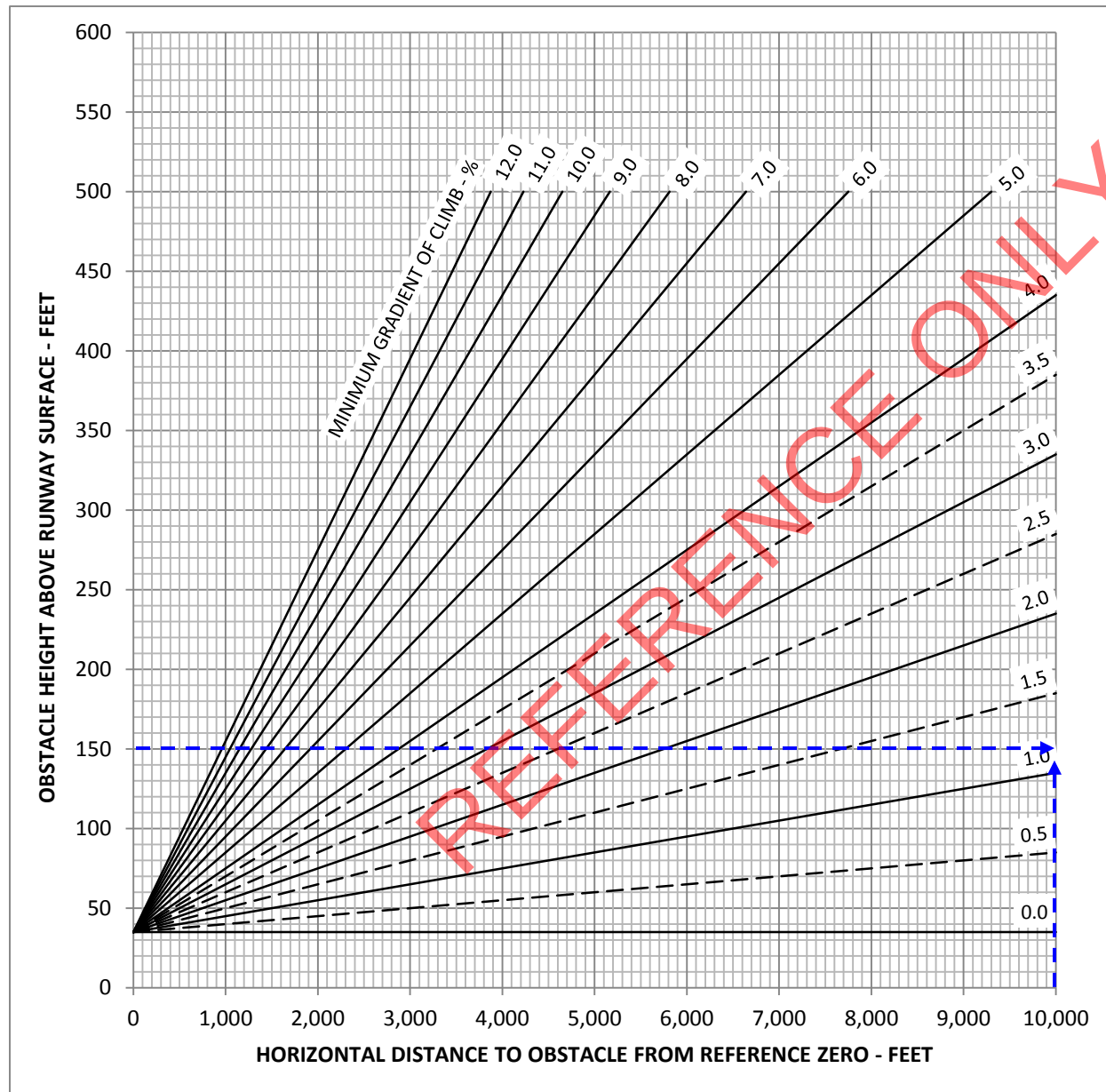
Notes: 1. Add 90 pounds of fuel for start, taxi, and takeoff.
2. For operation with ice vanes extended add 20°C to the actual OAT before entering the chart.

Example

OAT at takeoff..... 28 °C
OAT at cruise..... -10 °C
Airport altitude..... 5,333 Feet
Cruise altitude..... 26,000 Feet
Weight..... 12,500 LBS
Time to climb (21-3)..... 18 Minutes
Fuel to climb (265-43)..... 222 LBS
Distance to Climb (63-8)..... 55 Nautical Miles



CLOSE-IN TAKEOFF FLIGHT PATH



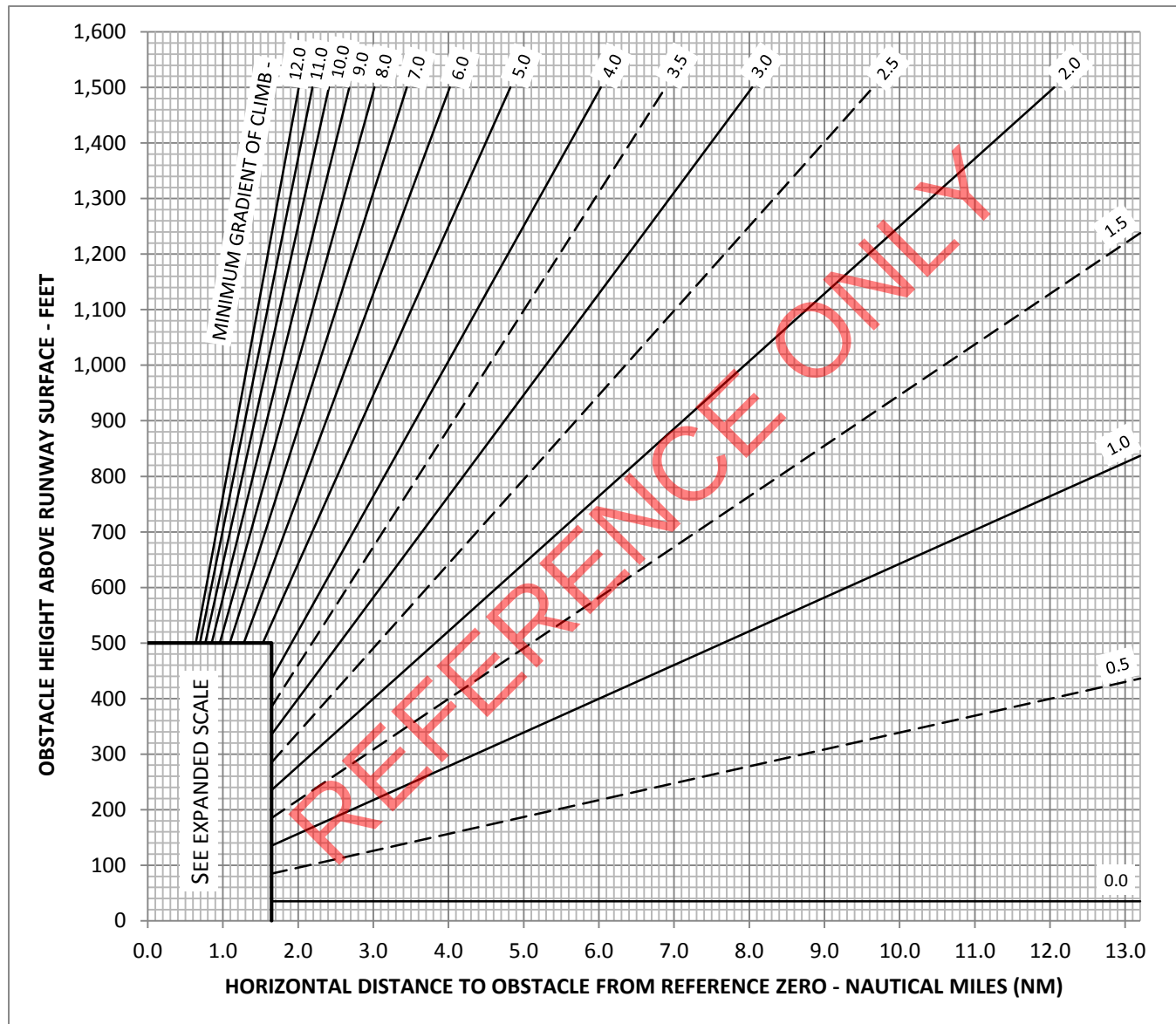
REFERENCE ZERO: THE POINT AT THE END OF THE TAKEOFF RUN AT WHICH THE AIRPLANE IS 35 FEET ABOVE THE RUNWAY SURFACE.

EXAMPLE:

OBSTACLE HEIGHT. 150 FEET

HORIZONTAL DISTANCE FROM REFERENCE ZERO FEET	MINIMUM GRADIENT OF CLIMB %
10,000	1.2

DISTANT TAKEOFF FLIGHT PATH



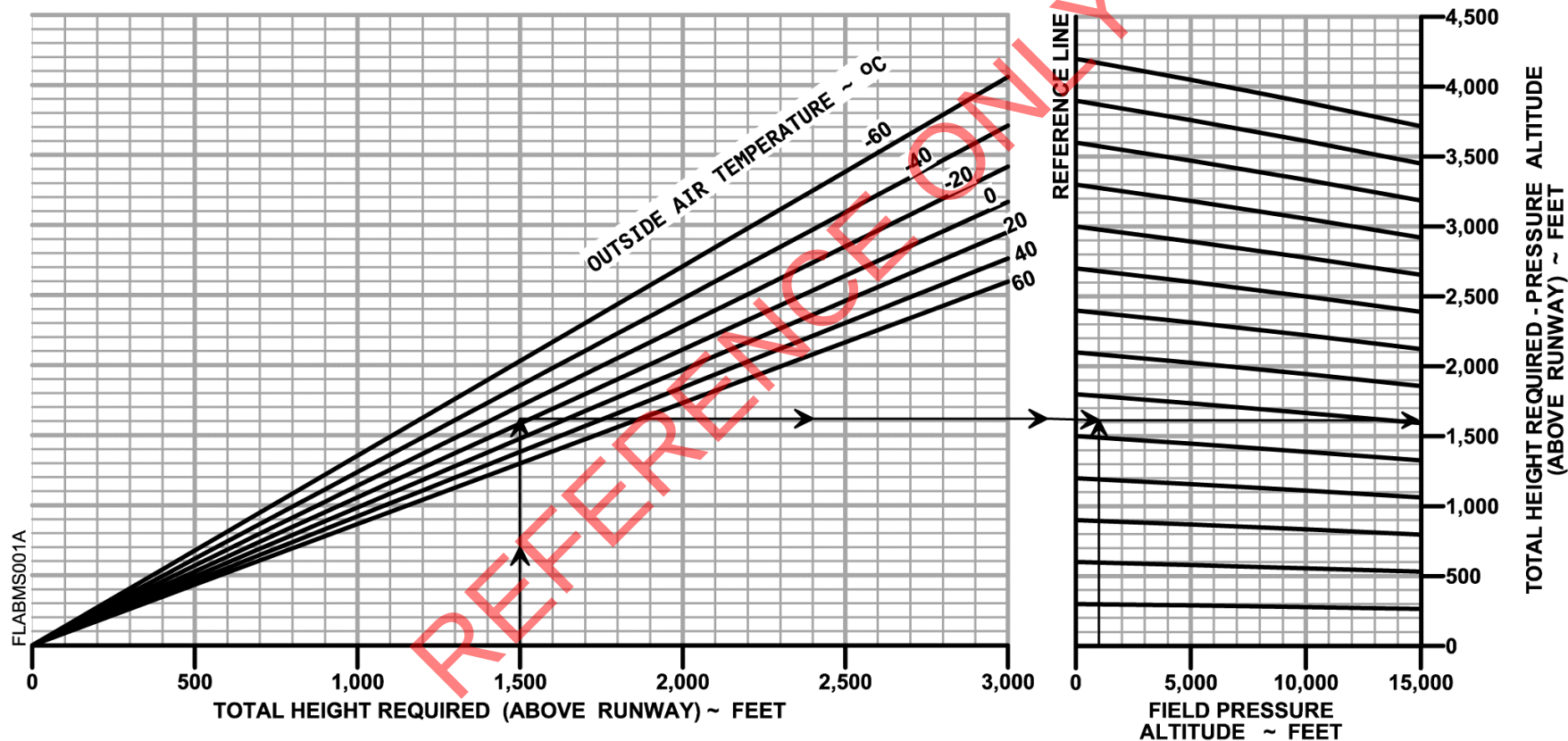
TOTAL HEIGHT REQUIRED - PRESSURE ALTITUDE CONVERSION

NOTES:

1. ASSUMES ZERO ALTIMETER ERROR (FOR PRESSURE ALTITUDE).
2. TO USE CHART, ENTER WITH TOTAL HEIGHT REQUIRED (ABOVE RUNWAY). USING FIELD CONDITIONS OF OUTSIDE AIR TEMPERATURE AND PRESSURE ALTITUDE, CONVERT THE TOTAL HEIGHT REQUIRED TO AN EQUIVALENT INCREMENT OF PRESSURE ALTITUDE (ABOVE RUNWAY).

EXAMPLE:

TOTAL HEIGHT REQUIRED (ABOVE RUNWAY).....1,500 FT
OUTSIDE AIR TEMPERATURE (FIELD LEVEL)....-6°C
FIELD PRESSURE ALTITUDE.....1,000 FT
TOTAL HEIGHT REQUIRED IN PRESSURE
ALTITUDE (ABOVE RUNWAY).....1,607 FT



**MAXIMUM CRUISE POWER
1700 RPM
ISA**

NOTES:

1. See basic AFM/POH for other weights and temperatures.
2. IOAT, Torque, and fuel flow based on 12,000 pounds.
3. During operation with ice vanes extended and with ice accumulations present, torque will decrease approx 14% if handbook power is not or cannot be reset, true airspeed will decrease approx 75 knots, and fuel flow will decrease approx 50 lb/hr/engine. If handbook power is reset true airspeed will decrease approx 55 knots and fuel flow will increase approx 25 lb/hr/engine.

Pressure Altitude	IOAT	OAT	Torque per Engine	Total Fuel Flow	Airspeed ~ Knots			
					@13,000 LBS		@12,000 LBS	
Feet	°C	°C	FT-LBS	LBS/HR	IAS	TAS	IAS	TAS
SL	20	15	2230	946	235	236	236	237
2000	16	11	2230	920	232	240	234	241
4000	13	7	2230	892	230	245	231	246
6000	9	3	2230	866	228	249	229	251
8000	5	-1	2230	844	225	254	226	255
10,000	1	-5	2230	822	223	259	224	260
12,000	-2	-9	2230	800	220	264	222	266
14,000	-6	-13	2230	786	218	269	219	271
16,000	-10	-17	2230	776	215	274	216	276
18,000	-13	-21	2230	772	212	278	213	281
20,000	-17	-25	2131	734	205	279	207	281
22,000	-21	-29	2031	698	199	278	200	281
24,000	-25	-33	1905	652	191	276	193	280
26,000	-29	-37	1771	604	181	272	184	277
28,000	-34	-41	1634	558	171	266	175	272

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

NOTES:

1. See basic AFM/POH for other weights and temperatures.
2. IOAT, Torque, and fuel flow based on 12,000 pounds.
3. During operation with ice vanes extended and with ice accumulations present, torque will decrease approx 14% if handbook power is not or cannot be reset, true airspeed will decrease approx 75 knots, and fuel flow will decrease approx 50 lb/hr/engine. If handbook power is reset true airspeed will decrease approx 55 knots and fuel flow will increase approx 25 lb/hr/engine.

Pressure Altitude	IOAT	OAT	Torque per Engine	Total Fuel Flow	Airspeed ~ Knots			
					@13,000 LBS		@12,000 LBS	
Feet	°C	°C	FT-LBS	LBS/HR	IAS	TAS	IAS	TAS
SL	40	35	2230	958	232	241	233	242
2000	37	31	2230	932	229	245	231	247
4000	33	27	2230	904	229	240	228	251
6000	29	23	2230	878	225	255	226	256
8000	25	19	2230	854	222	260	223	261
10,000	22	15	2230	832	220	265	221	266
12,000	18	11	2230	810	217	270	218	271
14,000	14	7	2184	780	212	272	214	274
16,000	10	3	2104	744	206	273	208	275
18,000	6	-1	2023	708	200	274	202	276
20,000	3	-5	1944	678	194	274	196	277
22,000	-1	-9	1862	646	187	274	190	278
24,000	-6	-13	1745	604	179	271	182	275
26,000	-10	-17	1610	558	169	265	173	271
28,000	-14	-21	1472	514	157	257	162	264

**MAXIMUM RANGE POWER
1700 RPM
ISA**

NOTES:

1. See basic AFM/POH for other weights and temperatures.
2. 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 decrease approx 10 knots.

WEIGHT →			13,000 POUNDS				12,000 POUNDS			
Pressure Altitude	IOAT	OAT	Torque per Engine	Total Fuel Flow	IAS	TAS	Torque per Engine	Total Fuel Flow	IAS	TAS
Feet	°C	°C	FT-LBS	LBS/HR	KTS	KTS	FT-LBS	LBS/HR	KTS	KTS
SL	19	15	1801	840	217	218	1730	822	214	215
2000	15	11	1718	790	210	217	1630	770	207	214
4000	11	7	1656	746	204	217	1564	724	201	214
6000	7	3	1560	696	197	216	1459	672	193	211
8000	3	-1	1505	656	191	216	1406	632	188	212
10,000	-1	-5	1448	614	186	216	1343	588	182	212
12,000	-5	-9	1413	582	181	218	1302	554	177	212
14,000	-9	-13	1379	554	177	219	1261	526	172	213
16,000	-12	-17	1355	532	173	221	1228	500	167	214
18,000	-16	-21	1338	514	169	223	1209	482	163	216
20,000	-20	-25	1326	500	165	226	1192	464	160	218
22,000	-24	-29	1324	488	162	229	1187	452	157	221
24,000	-28	-33	1341	482	161	235	1205	444	155	227
26,000	-31	-37	1309	464	155	235	1223	438	154	232
28,000	-35	-41	1320	462	153	240	1207	428	150	234

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

NOTES:

1. See basic AFM/POH for other weights and temperatures.
2. 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 decrease approx 10 knots.

WEIGHT →			13,000 POUNDS				12,000 POUNDS			
Pressure Altitude	IOAT	OAT	Torque per Engine	Total Fuel Flow	IAS	TAS	Torque per Engine	Total Fuel Flow	IAS	TAS
Feet	°C	°C	FT-LBS	LBS/HR	KTS	KTS	FT-LBS	LBS/HR	KTS	KTS
SL	39	35	1635	810	205	213	1588	798	204	212
2000	35	31	1596	722	201	215	1548	758	200	214
4000	31	27	1566	734	197	217	1531	726	197	217
6000	28	23	1532	698	193	219	1496	688	193	219
8000	24	19	1490	660	188	220	1452	650	188	221
10,000	20	15	1447	622	183	222	1404	610	183	222
12,000	16	11	1410	588	179	223	1371	578	179	223
14,000	12	7	1384	562	174	224	1341	550	175	225
16,000	8	3	1361	538	170	226	1315	526	171	227
18,000	4	-1	1337	516	166	228	1295	504	167	229
20,000	0	-5	1334	502	163	231	1285	488	163	232
22,000	-3	-9	1325	490	159	234	1267	472	159	234
24,000	-7	-13	1341	484	157	239	1231	452	154	234
26,000	-11	-17	1366	484	156	245	1230	444	151	238
28,000	-15	-21	1362	480	152	247	1254	446	149	244

**ONE ENGINE INOPERATIVE
MAXIMUM CRUISE POWER
1900 RPM
ISA**

NOTES:

1. See basic AFM/POH for other weights and temperatures.
2. During operation with ice vanes extended and ice accumulations present, torque will decrease approx 10%. If original power is not or cannot be reset, true airspeed will decrease approximately 65 knots and fuel flow will decrease approximately 7%. If original power is reset, true airspeed will decrease approx 45 knots and fuel flow will increase approximately 30 pounds per hour per engine.

Pressure Altitude	IOAT	OAT	Operative Engine Torque	Fuel Flow	Airspeed ~ Knots			
					@13,000 LBS		@12,000 LBS	
Feet	°C	°C	FT-LBS	LBS/HR	IAS	TAS	IAS	TAS
SL	18	15	2230	525	184	185	186	187
2000	14	11	2230	511	181	188	184	190
4000	11	7	2230	497	179	190	181	193
6000	7	3	2230	483	176	193	179	196
8000	3	-1	2230	469	173	196	176	200
10,000	-1	-5	2230	457	170	199	174	202
12,000	-5	-9	2169	436	165	198	169	203
14,000	-9	-13	2065	412	157	195	162	201
16,000	-13	-17	1961	390	148	190	154	198
18,000	-17	-21	1855	369	138	183	146	194
20,000	-21	-25	1767	351	119	163	137	188

**ONE ENGINE INOPERATIVE
MAXIMUM CRUISE POWER
1900 RPM
ISA+20°C**

NOTES:

1. See basic AFM/POH for other weights and temperatures.
2. During operation with ice vanes extended and ice accumulations present, torque will decrease approx 10%. If original power is not or cannot be reset, true airspeed will decrease approximately 65 knots and fuel flow will decrease approximately 7%. If original power is reset, true airspeed will decrease approx 45 knots and fuel flow will increase approximately 30 pounds per hour per engine.

Pressure Altitude	IOAT	OAT	Operative Engine Torque	Fuel Flow	Airspeed ~ Knots			
					@13,000 LBS		@12,000 LBS	
Feet	°C	°C	FT-LBS	LBS/HR	IAS	TAS	IAS	TAS
SL	38	35	2230	530	181	188	183	191
2000	35	31	2230	515	178	191	181	194
4000	31	27	2230	500	176	194	178	197
6000	27	23	2156	475	170	193	173	197
8000	23	19	2060	447	163	191	167	196
10,000	19	15	1962	418	155	188	160	194
12,000	15	11	1878	394	148	185	153	192
14,000	11	7	1818	376	140	180	147	190
16,000	7	3	1758	359	129	172	140	187

TIME, FUEL, AND DISTANCE TO DESCEND

ASSOCIATED CONDITIONS:

POWER.....AS REQUIRED TO DESCEND AT 1500 FPM

GEAR.....UP

FLAPS.....UP

NOTE: Descent speed - M_{MO} or 250 knots, whichever is less.

EXAMPLE:

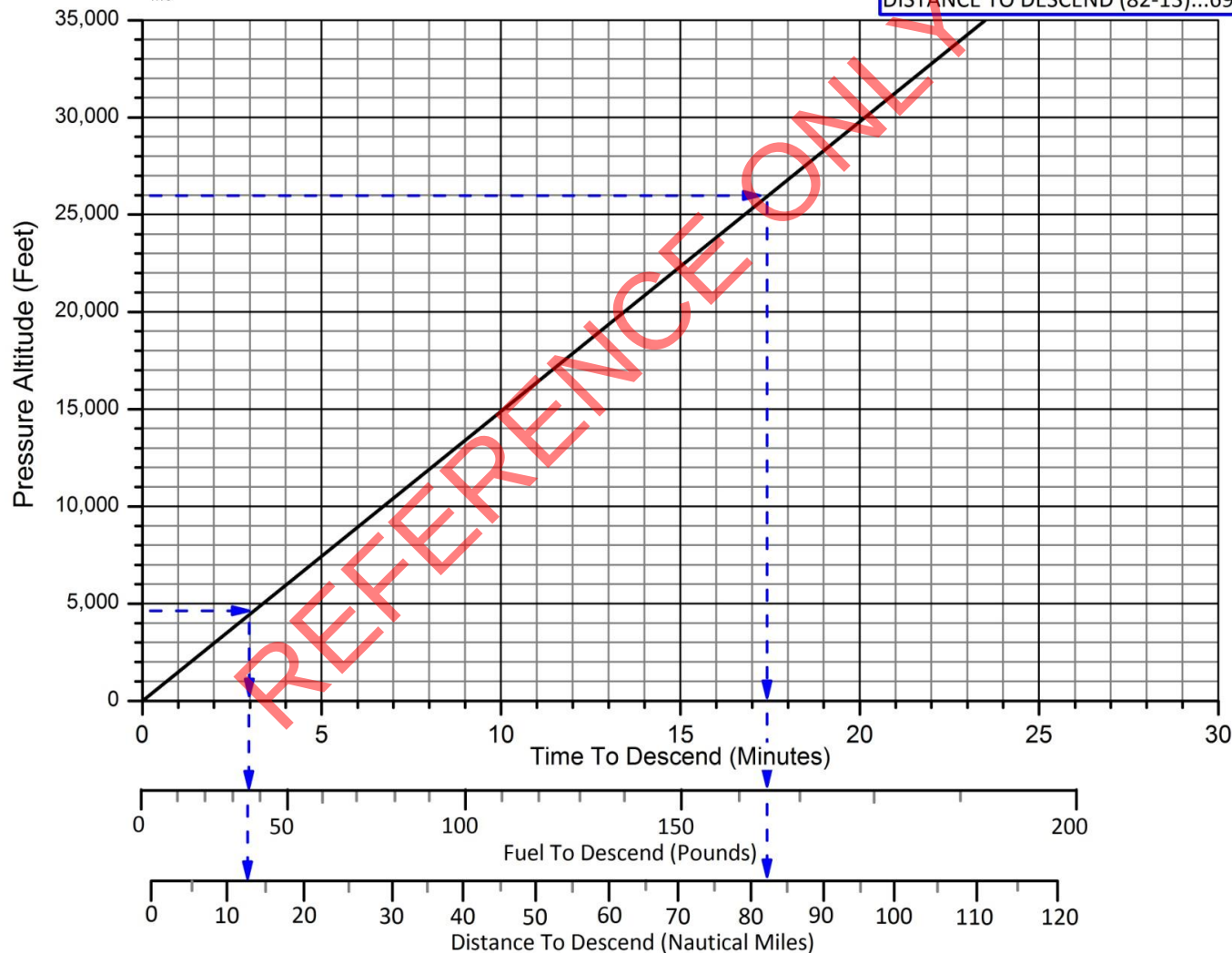
INITIAL ALTITUDE.....26,000 FT

FINAL ALTITUDE.....4732 FT

TIME TO DESCEND (17-3).....14 MINUTES

FUEL TO DESCEND (164-36).....128 LBS

DISTANCE TO DESCEND (82-13)...69 NM



MAXIMUM ALLOWED LANDING WEIGHT TO ACHIEVE LANDING CLIMB REQUIREMENTS

NOTES:

1. Enter the table at the pressure altitude and temperature from which a go-around would be initiated at the destination. The predicted landing weight at the destination must not exceed the corresponding maximum allowed landing weight shown in this table. This ensures compliance to the regulatory requirements for discontinued approach and balked landing climb in the event of an engine failure.
2. Blue background indicates under the respective conditions the maximum allowed landing weight is less than 13,500 pounds.

Pressure Altitude Feet	Outside Air Temperature Maximum Allowed Landing Weight - Pounds																		
	-35°C	-30°C	-25°C	-20°C	-15°C	-10°C	-5°C	0°C	5°C	10°C	15°C	20°C							
11,500	11,755	11,479	11,316	11,1508	10,978	10,740	10,484	10,264	10,034	9,793	9,537	9,281							
11,000	11,982	11,749	11,571	11,397	11,227	11,024	10,774	10,512	10,290	10,058	9,815	9,530	21°C 9,245						
10,000	12,444	12,269	12,086	11,906	11,727	11,526	11,304	11,077	10,830	10,563	10,328	10,066	25°C 9,771	30°C 9,476					
9,000	12,965	12,768	12,571	12,385	12,197	12,000	11,790	11,555	11,327	11,089	10,822	10,526	10,240	9,940	34°C 9,689				
8,000	13,437	13,243	13,049	12,854	12,654	12,442	12,239	12,012	11,790	11,544	11,273	10,996	10,669	10,357	35°C 10,059	36°C 9,997			
7,000	13,500	13,500	13,425	13,247	13,063	12,862	12,657	12,443	12,225	11,986	11,715	11,420	11,122	10,784	10,431	38°C 10,244			
6,000	13,500	13,500	13,500	13,500	13,377	13,215	13,042	12,860	12,637	12,408	12,138	11,856	11,553	11,205	10,832	40°C 10,432			
5,000	13,500	13,500	13,500	13,500	13,500	13,500	13,369	13,219	13,026	12,826	12,556	12,266	11,969	11,624	11,260	10,881	42°C 10,713		
4,000	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,355	13,192	13,013	12,681	12,356	12,026	11,688	11,337	44°C 11,022		
3,000	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,495	13,355	13,121	12,767	12,417	12,080	11,743	45°C 11,392	46°C 11,325	
2,000	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,195	12,829	12,461	12,114	11,764	48°C 11,543	
1,000	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,271	12,890	12,499	12,137	50°C 11,769	
Sea Level	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,341	12,939	12,526	12,139	52°C 12,171

MAXIMUM ALLOWED LANDING WEIGHT TO ACHIEVE LANDING CLIMB REQUIREMENTS WITH ICE ACCUMULATIONS PRESENT

NOTES:

1. Use of this table is required when icing is expected during the landing approach at the destination airport.
2. Enter the table at the pressure altitude and temperature from which a go-around would be initiated at the destination.
The predicted landing weight at the destination must not exceed the corresponding maximum allowed landing weight shown in this table. This ensures compliance to the regulatory requirements for discontinued approach and balked landing climb in the event of an engine failure with ice accumulations on the airplane.

Pressure Altitude Feet	Outside Air Temperature Maximum Allowed Landing Weight - Pounds								
	-35°C	-30°C	-25°C	-20°C	-15°C	-10°C	-5°C	0°C	5°C
10,000	9,960	9,817	9,668	9,514	9,360	-	-	-	-
9,000	10,154	10,161	10,015	9,873	9,723	9,566	9,409	-	-
8,000	10,648	10,454	10,320	10,183	10,043	9,894	9,741	9,573	9,405
7,000	10,870	10,731	10,570	10,440	10,315	10,179	10,038	9,892	9,729
6,000	10,990	10,875	10,764	10,651	10,530	10,416	10,300	10,177	10,023
5,000	11,145	11,042	10,917	10,825	10,731	10,635	10,525	10,419	10,289
4,000	11,206	11,128	11,050	10,962	10,892	10,821	10,736	10,630	10,513
3,000	11,268	11,207	11,146	11,082	11,024	10,964	10,902	10,809	10,714
2,000	11,388	11,326	11,264	11,202	11,140	11,079	11,016	10,946	10,870
1,000	11,498	11,437	11,375	11,314	11,252	11,191	11,129	11,068	11,005
Sea Level	11,576	11,520	11,464	11,408	11,352	11,296	11,240	11,183	11,126

DISCONTINUED APPROACH CLIMB GRADIENT

AIRPLANES WITH HIGH FLOTATION LANDING GEAR

Associated Conditions

Power..... Take-Off
Flaps..... Approach
Landing Gear..... Up
Inoperative Propeller... Feathered

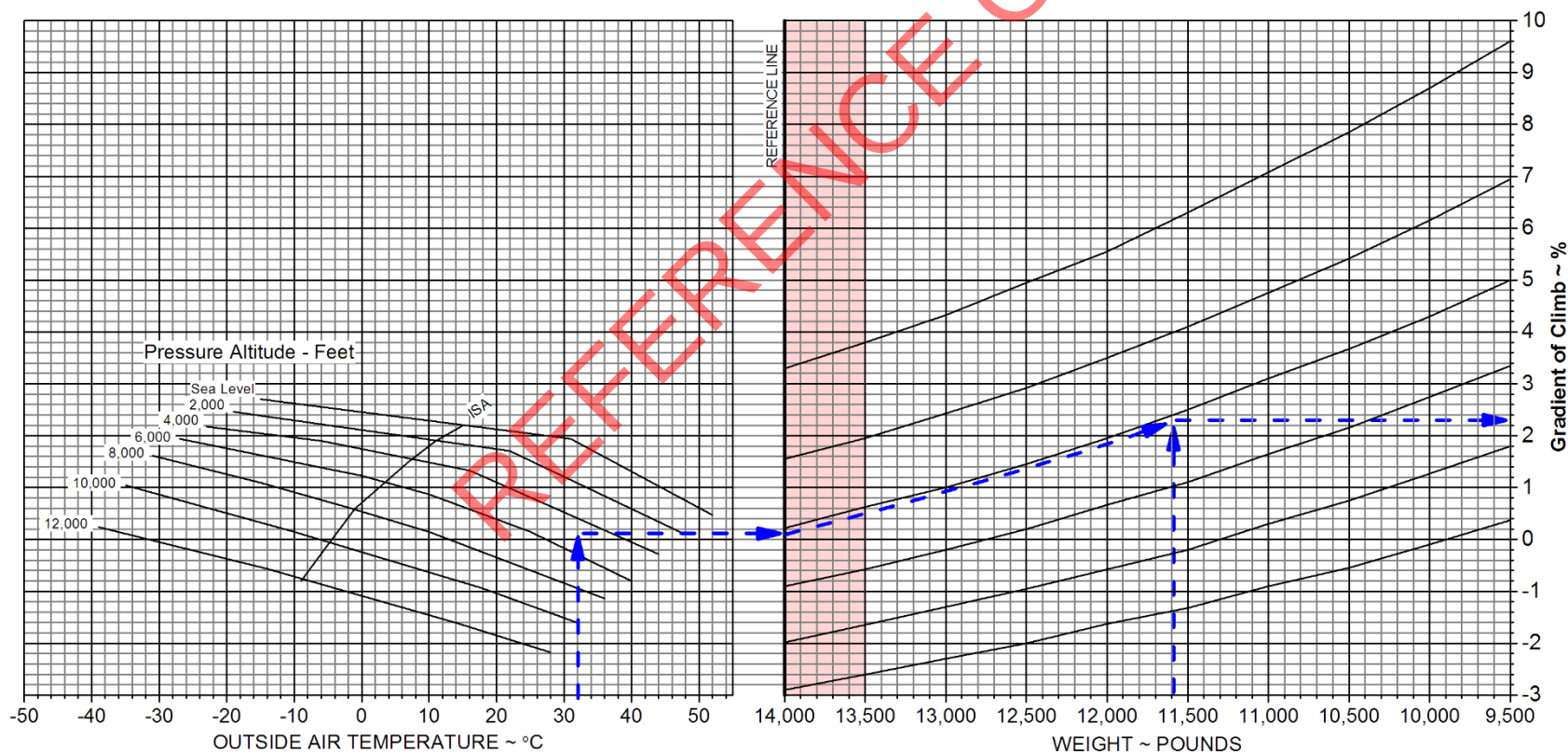
Weight - LBS	V _{REF} +10 - Kts
14,000	116
13,000	114
12,000	112
11,000	109
10,000	106
9,500	105

Example

OAT.....32°C
Pressure Altitude.....4,730 Feet
Weight11,590 LBS
Net Gradient 2.3%
Speed111 Knots

Notes:

1. Decrease the percent gradient from this chart by 0.9 points when engine ice vanes are extended.
2. Decrease the percent gradient from this chart by 5.0 points when icing conditions are present. Minimum airspeed in sustained icing conditions is 148 knots.
3. When the discontinued approach climb path requires turns, do not exceed 15° of bank and reduce Gradient of Climb from this chart by 1 percentage point.
4. When the missing approach flight path requires turns, do not exceed 15° of bank and reduce Gradient of Climb from this chart by 1 percentage point.
5. Red shaded area is above maximum landing weight.



CLIMB - BALKED LANDING

AIRPLANES WITH HIGH FLOTATION LANDING GEAR

Associated Conditions

Power..... Takeoff
Flaps..... Down
Landing Gear..... Down

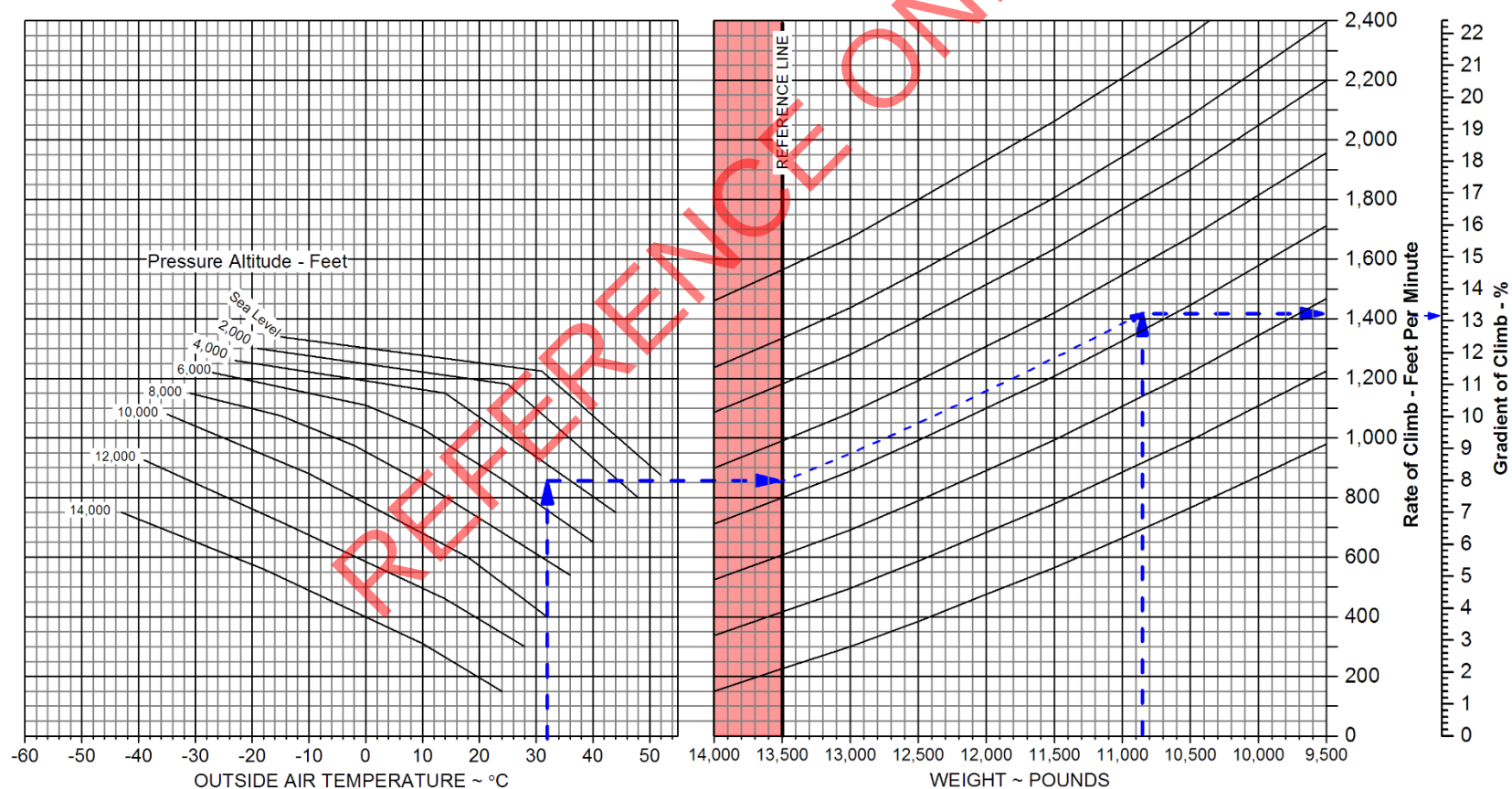
Weight - LBS	Climb Speed (V_{REF}) - Kts
14,000	106
13,000	104
12,000	102
11,000	99
10,000	96
9,000	93

Example

OAT..... 32°C
Pressure Altitude..... 4,732 Feet
Weight..... 10,854 LBS
Rate of Climb..... 1420 FPM
Climb Gradient 13.2%
Speed 99 Knots

Notes:

1. When ice accumulations are present and engine anti-ice is operative, reduce the Rate-of-Climb from this chart by 400 FPM.
2. Red shaded area are weights above the Max Landing Weight.



LANDING DISTANCE WITHOUT PROPELLER REVERSING

AIRPLANES WITH HIGH FLOTATION LANDING GEAR

Associated conditions

Power..... Retard for 500 to 680 fpm on final approach.
Flaps..... Down
Runway..... Paved, Dry, Level Surface
Braking..... Maximum

NOTES:

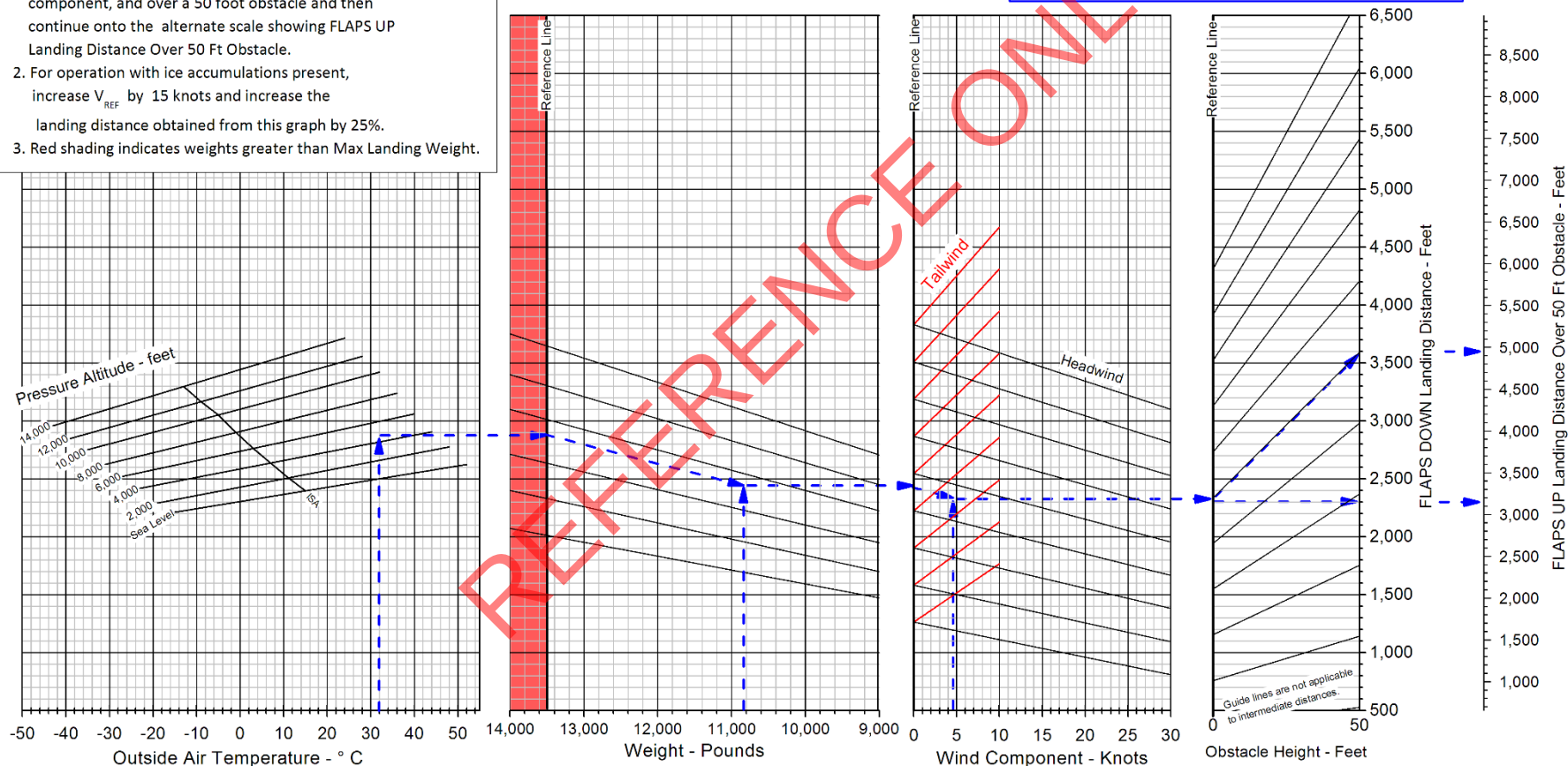
1. Landing with flaps full down is the normal procedure, if it is necessary to land with flaps up, find the landing distance for the appropriate OAT, weight, wind component, and over a 50 foot obstacle and then continue onto the alternate scale showing FLAPS UP Landing Distance Over 50 Ft Obstacle.
2. For operation with ice accumulations present, increase V_{REF} by 15 knots and increase the landing distance obtained from this graph by 25%.
3. Red shading indicates weights greater than Max Landing Weight.

Weight Pounds	V_{REF} Speeds - Knots	
	Flaps Dwn	Flaps Up
14,000	106	128
13,000	104	124
12,000	102	121
11,000	99	118
10,000	96	115
9,000	93	111

Example

OAT..... 32 °C
Pressure Altitude..... 4,732 Feet
Weight..... 10,854 LBS
Headwind Component..... 4.7 Knots
Ground Roll 2,300 Feet
Distance over 50 ft Obstacle Flaps Down..... 3,600 Feet
Approach Speed Flaps Down..... 99 Knots

Ground Roll - Flaps Up 3,150 Feet
Distance over 50 ft Obstacle Flaps Up..... 4,950 Feet
Approach Speed Flaps Up..... 118 Knots



LANDING DISTANCE WITH PROPELLER REVERSING

AIRPLANES WITH HIGH FLOTATION LANDING GEAR

Associated conditions

Power..... Retard for 500 to 680 fpm on final approach.
Flaps..... Down
Runway..... Paved, Dry, Level Surface
Braking..... Maximum
Condition Levers..... High Idle
Propeller Controls..... Full Forward
Power Levers..... Maximum reverse after touchdown.

Weight Pounds	V _{REF} Speeds - Knots	
	Flaps Dwn	Flaps Up
14,000	106	128
13,000	104	124
12,000	102	121
11,000	99	118
10,000	96	115
9,000	93	111

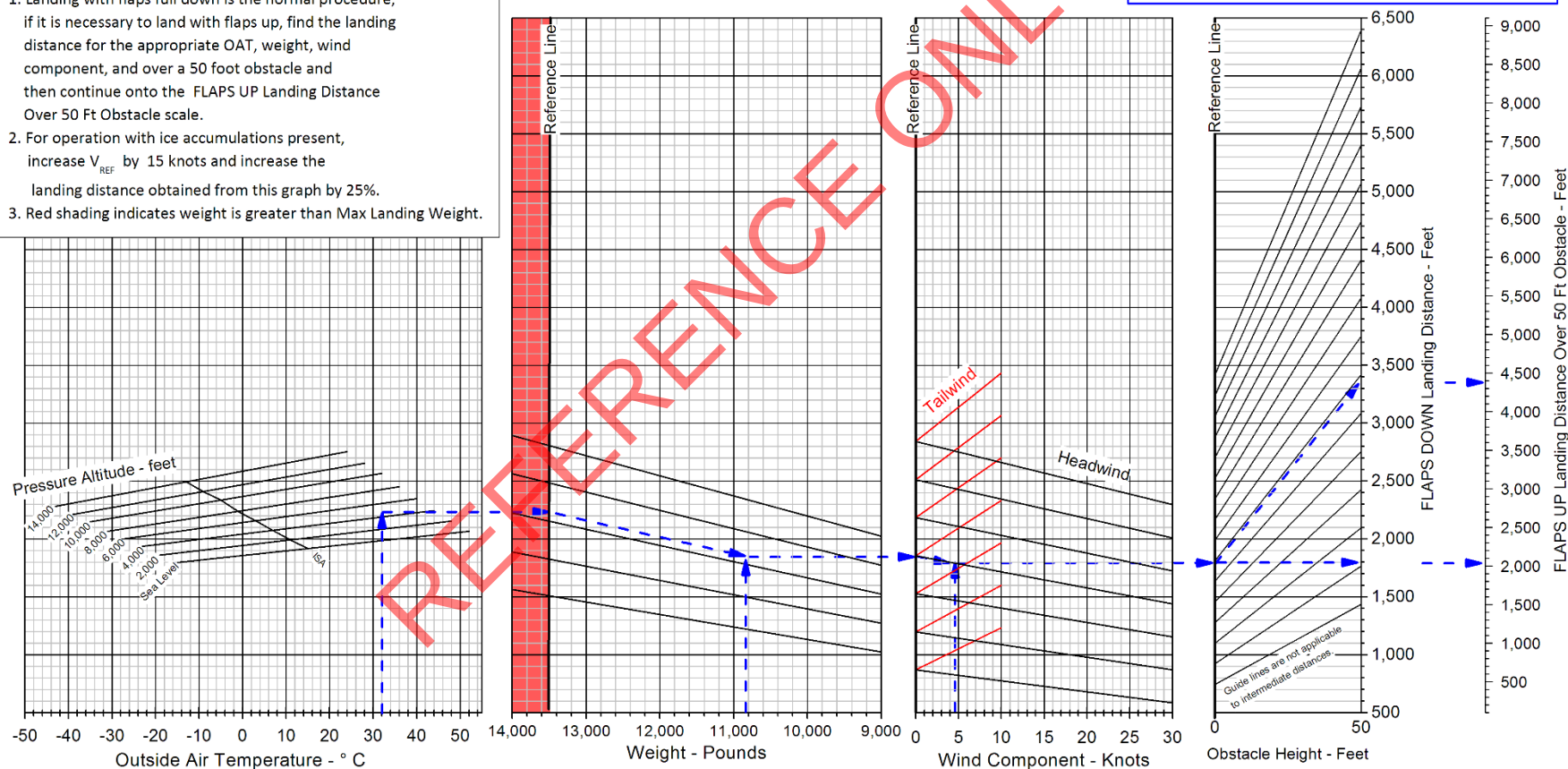
Example

OAT..... 32 °C
Pressure Altitude..... 4,732 Feet
Weight..... 10,854 LBS
Headwind Component..... 4.7 Knots
Ground Roll 1,800 Feet
Distance over 50 ft Obstacle Flaps Down... 3,350 Feet
Approach Speed Flaps Down..... 99 Knots

Ground Roll (Flaps Up)..... 2,050 Feet
Distance over 50 ft Obstacle Flaps Up..... 4,375 Feet
Approach Speed Flaps Up..... 118 Knots

NOTES:

1. Landing with flaps full down is the normal procedure, if it is necessary to land with flaps up, find the landing distance for the appropriate OAT, weight, wind component, and over a 50 foot obstacle and then continue onto the FLAPS UP Landing Distance Over 50 Ft Obstacle scale.
2. For operation with ice accumulations present, increase V_{REF} by 15 knots and increase the landing distance obtained from this graph by 25%.
3. Red shading indicates weight is greater than Max Landing Weight.



THIS PAGE IS INTENTIONALLY BLANK

REFERENCE ONLY

SECTION 6 WEIGHT AND BALANCE

TABLE OF CONTENTS

<i>SUBJECT</i>	<i>PAGE</i>
INTRODUCTION.....	6-2
WEIGHT AND CENTER-OF-GRAVITY LIMITS	
WEIGHT LIMITS.....	6-3
CENTER-OF-GRAVITY LIMITS.....	6-3
WEIGHT AND BALANCE DIAGRAM (POUNDS)	6-4
WEIGHT AND BALANCE DIAGRAM (KILOGRAMS)	6-5

REFERENCE ONLY

INTRODUCTION

The CenTex Aerospace Halo 275 Conversion approves operating the King Air B200/B200GT series airplanes with high flotation landing gear at an increased maximum takeoff weight of 14,000 pounds. This is an increase of 1500 pounds over the original maximum takeoff weight of 12,500 pounds. The maximum landing weight is increased to 13,500 pounds. Also, the maximum zero fuel weight for airplanes manufactured after the year 1992 is increased to 11,500 pounds. The forward and aft center-of-gravity limits change above 12,500 pounds, but, at 12,500 pounds and below, the center-of-gravity limits are unchanged.

Other changes include a move from Normal category to Commuter category and the addition of several safety systems, which are required by 14 CFR Part 23 requirements for Commuter category airplanes. Another change is a new limitation that restricts each airplane to have no more than nine passenger seats. This restriction is applicable to all airplanes certificated in the Commuter category that have a single emergency exit.

There are no changes to weighing instructions, computing basic empty weight and balance, dimensional and loading data, cabin arrangements (other than a limitation of nine passenger seats), and the procedure for computing weight and balance. See the B200/B200GT Airplane Flight Manual or Pilot Operating Handbook for weight and balance information and procedures not contained in this section.

Two new weight and balance diagrams are in this section that incorporate the new maximum takeoff weight and center-of-gravity limitations. The first diagram is useful for verifying the loaded airplane is within the approved center-of-gravity limits when weight computations are made in pounds gross weight. The second diagram should be used when weight and balance computations are made in kilograms.

WEIGHT AND CENTER-OF-GRAVITY LIMITS

The following weight and center-of-gravity limits are taken from Section 2 Limitations of this AFM Supplement and repeated here for convenience to the airplane operator. Values that are underlined have been changed by the Halo 275 Conversion.

WEIGHT LIMITS

Maximum Ramp Weight14,090 pounds
Maximum Take-off Weight:14,000 pounds
Maximum Landing Weight13,500 pounds

Maximum Zero Fuel Weight:

B200/B200GT series with Serials BB-1439, BB-1444 & after,
BL-139 & after, BY-1 thru BY-116, BY-118.....11,500 pounds

CENTER OF GRAVITY LIMITS

AFT LIMITS

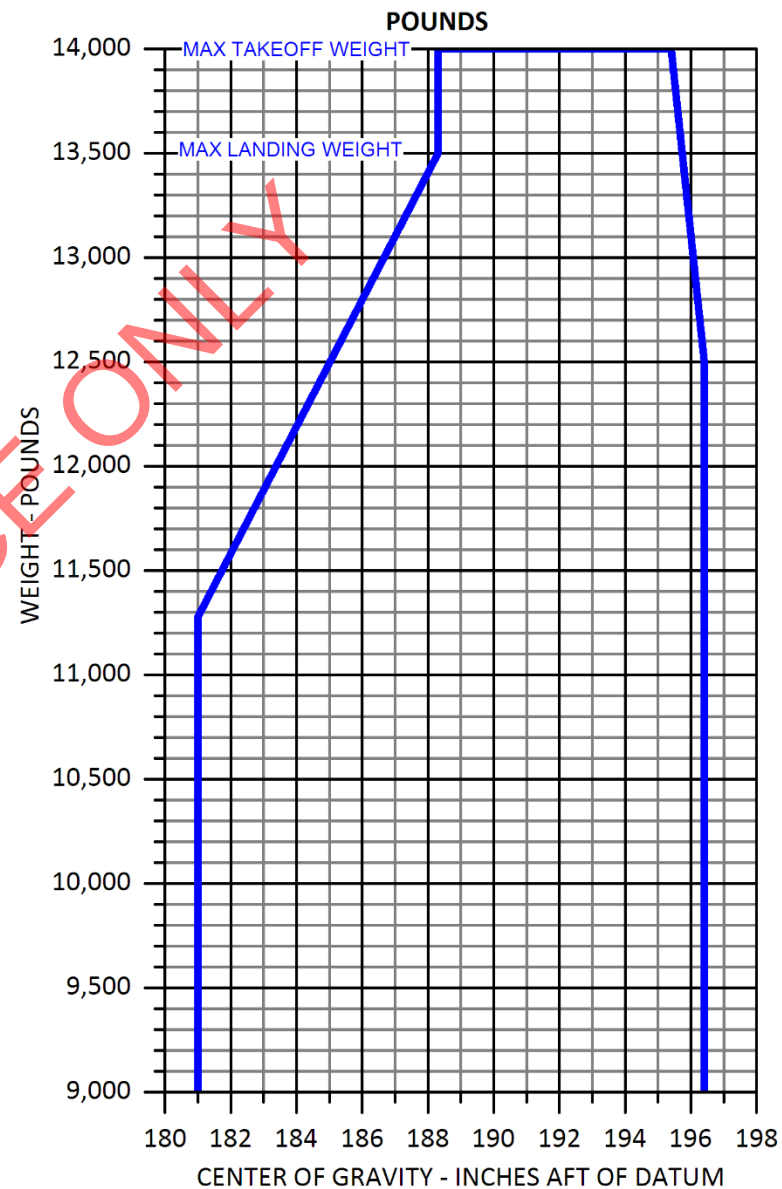
195.4 inches aft of datum at 14,000 pounds gross weight with straight line variation to 196.4 inches aft of datum at 12,500 pounds gross weight.
196.4 inches aft of datum at gross weights less than 12,500 pounds.

FORWARD LIMITS

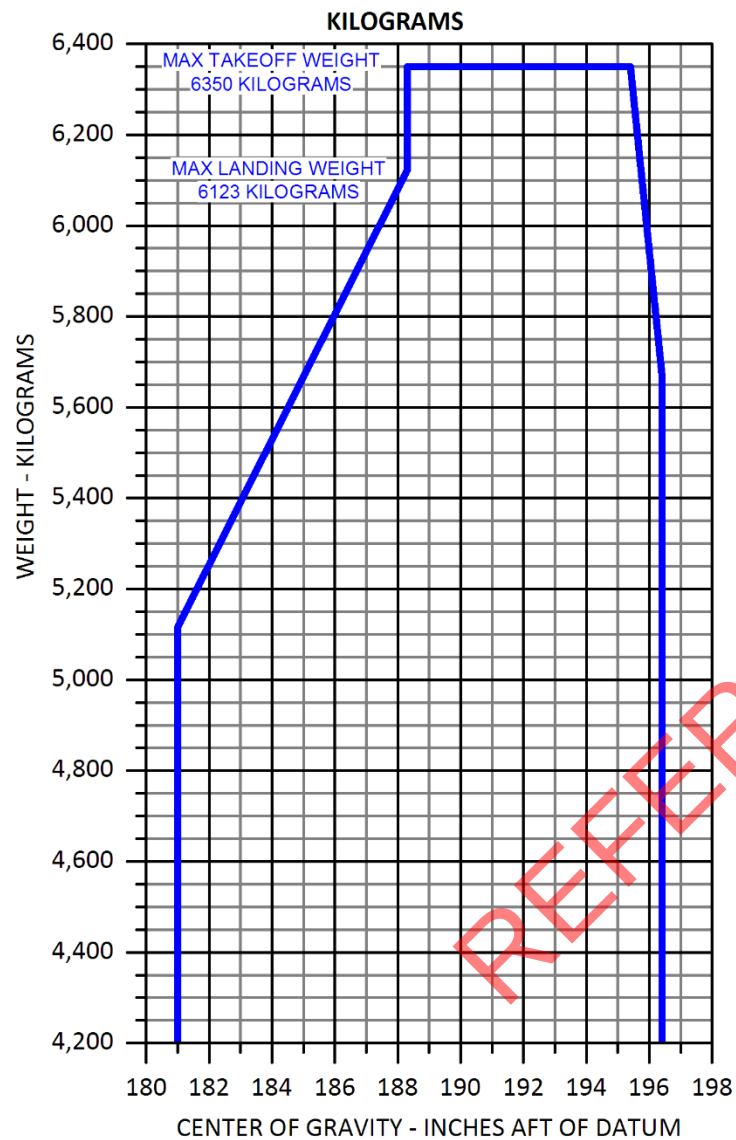
188.3 inches aft of datum at gross weights between 14,000 pounds and 13,500 pounds with straight line variation to 181.0 inches aft of datum at 11,279 pounds gross weight.
181.0 inches aft of datum at gross weights less than 11,279 pounds.

REFERENCE ONLY

**HALO 275 CONVERSION
WEIGHT AND BALANCE DIAGRAM**



**HALO 275 CONVERSION
WEIGHT AND BALANCE DIAGRAM**



THIS PAGE IS INTENTIONALLY BLANK

REFERENCE ONLY

SECTION 7
SYSTEMS DESCRIPTION
TABLE OF CONTENTS

<u>SUBJECT</u>	<u>PAGE</u>
INTRODUCTION.....	7-2
TAKEOFF TRIM WARNING.....	7-3
OVER-SPEED WARNING	7-4
SEATING ARRANGEMENT	7-4
EMERGENCY ESCAPE PATH MARKINGS	7-4
ENGINE FIRE EXTINGUISHER	7-5
STALL WARNING ICE MODE	7-5
CABIN EMERGENCY LIGHTING	7-6
RIGHT CIRCUIT BREAKER PANEL	7-9
RIGHT CIRCUIT BREAKER PANEL - GARMIN G1000 EQUIPPED.....	7-10

REFERENCE ONLY

INTRODUCTION

The Halo 275 Commuter category conversion features new airplane safety systems. These systems provide safety functions that are required for airplanes certificated in the Commuter category. Also, the stall warning system has been modified and will now provide accurate and reliable warning when the airplane is operated in icing conditions. The result is a King Air B200 series airplane that operates at a higher level of safety.

Below is a list of the added functions:

- Takeoff Trim Warning
- (Omitted)
- Engine Fire Extinguisher
- Stall Warning Ice Mode
- Emergency Cabin Lighting
- Escape Path Markings

This section describes the functionality of these systems and the pertinent design details. It is imperative that the pilot be knowledgeable of this information so he/she can fully utilize these new features and thereby realize the added safety they provide. For information on systems other than those described in this section see the applicable King Air B200/B200GT Pilot Operating Handbook.

TAKEOFF TRIM WARNING

The Halo 275 conversion adds a takeoff trim warning system. The system detects if the elevator trim tab has not been properly set before takeoff and sounds a warning when the pilot initiates a takeoff. The pilot should respond to the warning by immediately aborting the takeoff run.

The trim warning system utilizes the existing elevator tab position indicator to determine tab position. A micro switch actuated by the tab position indicator activates the warning horn when the tab position is outside of the approved range for takeoff. The horn emits a constant, mid-frequency tone. It is located beneath the lower edge of the pilot's instrument panel next to the console. The micro switch is mounted to the console beneath the elevator trim wheel.

The Autofeather/takeoff trim warning system is powered from Dual Fed Bus No. 2. Power to the elevator trim warning system comes through the Autofeather system switch when it is in the ARMED position. Power must also pass through the weight-on-wheels switch and the 90% N_1 switch associated with the left engine power lever. The system becomes fully operational once the Autofeather system is ARMED and the left power lever is advance to the 90% N_1 , or higher, position. The takeoff trim warning system is deactivated through the weight-on-wheels switch after liftoff so no misleading warnings occur during flight. Note the Autofeather system must be operative for takeoff.

The warning system should be tested before the first flight of each day, as specified in Section 4 Normal Procedures.

REFERENCE ONLY

OVER-SPEED WARNING

The B200GT and B200 (BB-1843 and after) are equipped with Rockwell Collins Proline 21 integrated avionics. The Proline 21 system provides an aural over-speed warning. The aural warning automatically alerts the pilot whenever airspeed is greater than V_{MO} or Mach number is greater than M_{MO} . This system provides a backup to the function provided by the airspeed tape on the Primary Flight Displays. The pilot should respond to a warning by immediately taking the necessary action to reduce airspeed.

If the airplane is equipped with Garmin G1000 integrated avionics, an aural over-speed warning system is installed as part of the Halo 275 conversion. The warning automatically alerts the pilot whenever airspeed is greater than V_{MO} or Mach number is greater than M_{MO} . This system provides an aural backup to the function provided by the airspeed tape on each Primary Flight Display. The pilot should respond to a warning by immediately taking the necessary action to reduce airspeed.

The warning sound is a pulsing, high-frequency tone emitted by a Sonalert device located beneath the glareshield in front of the pilot. Power to the system is fed from the main electrical bus through a five (5) amp circuit breaker labeled O/S WARN located in the Warning section of the copilot circuit breaker panel.

The system should be tested when conducting the BEFORE ENGINE STARTING procedure by selecting TEST on the OVERSPEED WARN TEST switch. This switch is located in the lower, left area of the pilot's instrument panel near the engine start switches.

SEATING ARRANGEMENTS

Various configurations of passenger chairs and one-place couch installations may be installed on the continuous tracks mounted to the cabin floor. Seating for up to nine (9) persons, excluding crew, may be installed. This is a new limitation imposed by the Commuter category requirements.

EMERGENCY ESCAPE PATH MARKINGS

The Halo 275 conversion adds photoluminescent markings that highlight the escape path along the floor to the emergency exit door and cabin door. The photoluminescent markings must be visible (not covered by floor mats or any other coverings) and adequately charged before conducting any part of a flight in darkness. Charging can be accomplished with sunlight or with the interior lights or with the emergency flood lamps. See Section 4 Normal Procedures for the required charging time.

ENGINE FIRE EXTINGUISHER

The Halo 275 conversion adds an engine fire extinguisher system if one is not already installed. Either the Halo 275 conversion engine fire extinguisher system or the optional Beechcraft engine fire extinguisher system is installed on the airplane. Both systems function and operate in the same manner. Information regarding the engine fire extinguisher system is contained in the Beechcraft Pilot Operating Handbook.

STALL WARNING ICE MODE

The King Air B200 series stall warning system does not have the capability to adjust for the effect that icing has on stall speed. Ice accretion causes the wing to stall at a lower angle-of-attack and can result in a 15% to 20% increase in stall speed. The Halo 275 conversion adds additional capability so a reliable and accurate stall warning is available in icing conditions. This new stall warning functionality is called the "ice mode".

The stall warning system will activate the warning horn when the output of the lift transducer reaches a preset voltage. The system has three different voltage settings, one for each flap position; which enables it to provide accurate warning at each flap setting. The Halo 275 conversion adds components to the stall warning system that allow three different preset voltages to become active when it is in the ice mode. These voltage settings are uniquely selected so that the effect of ice on the wings is considered. With wing flaps up, the stall warning activates at approximately 20 knots higher airspeed in the ice mode.

The pilot should respond to the initial warning by pitching the aircraft nose down until the warning ceases, leveling the wings to orient lift vector for recovery, and adding power to assist in the recovery. The pilot's failure to respond to a stall warning can result in a stall and subsequent loss of control of the airplane.

Switching to the ice mode occurs automatically when the pilot selects either SINGLE or MANUAL on the Surface Deice switch. The STALL WARNING ICE MODE annunciator, which is located in the glare shield in front of the pilot, will illuminate whenever the ice mode is active (See FIGURE 7-2). The ice mode will stay active until it is manually deactivated by the pilot pressing the illuminated annunciator. This should be done when the airplane is outside of icing conditions and is free of ice. Pressing the annunciator when it is extinguished has no effect. Note the stall warning heat must be operating when flying in icing conditions to keep the lift transducer free of ice.

When testing the stall warning system, the mode in operation when the test is performed is the mode that is tested. A constant tone will be heard if the system is functioning properly. The new system components are located inside the aft end of the console.

FIGURE 7-2
STALL WARNING ICE MODE ANNUNCIATOR**CABIN EMERGENCY LIGHTING**

The Halo 275 conversion adds a cabin emergency lighting system. It provides supplemental lighting in the cabin around the emergency exit door and cabin door. The system has two LED flood lamps located in the cabin ceiling that are powered by a dedicated battery pack, which contains two 12-volt, sealed lead-acid batteries connected in series, installed under the cabin floor.

The system automatically turns on the flood lamps in the event of a 2-g, or greater, deceleration or a loss of power on the main electrical bus. This keeps the cabin from becoming unlighted during such critical events. Additionally, the lamps can be used for lighting the cabin when boarding or to charge the photoluminescent escape path markings.

Two switches operate the system and provide required functionality. A cabin switch located next to the aft flood lamp connects the battery pack to the system (See FIGURE 7-3). A control switch located in the pilot's sub-panel arms automatic operation or provides manual operation of the flood lamps from the cockpit (See FIGURE 7-4). Power to charge the battery pack is fed from the main electrical bus through a five (5) amp circuit breaker labeled EMERG LIGHT in the right circuit breaker panel (See FIGURE 7-5 or FIGURE 7-6).

Two amber indicator lights located adjacent to the control switch (See FIGURE 7-4) warn the pilot when the system switches are not set as required for taxi and takeoff operations. The amber indicator lights will be extinguished when the cockpit control switch is ARMED and the cabin switch is ON. Note these are the required positions for taxi and flight operations.

When exiting the airplane both the control switch and the cabin switch should be placed in the OFF position. If left on, a timer prevents the battery from becoming totally discharged by disconnecting the battery pack from the system after 10 minutes. Selecting OFF on the cabin switch reconnects the battery pack and resets the timer. Note recharging of the battery pack occurs automatically whenever the airplane battery switch is ON and the main electrical bus is powered by either the generators or an external power source.

The level of charge of the emergency lighting system battery pack should be checked before the first flight of each day as described in Section 4 NORMAL PROCEDURES. The system must be operational when carrying passengers. If the lamps do not illuminate, the emergency lighting system batteries have been discharged or there is a malfunction in the system. A discharged battery pack must be removed and the batteries recharged or replaced. The *Instructions for Continued Airworthiness* (CTA manual no. 006-30), which is applicable to airplanes with the Halo 275 conversion, describes the proper procedures for removing and recharging or replacing the cabin emergency lighting system battery pack.

The battery pack and relays are located beneath the cabin floor. Also, the battery pack should be inspected at each maintenance phase inspection interval for general condition and the time-in-service for the batteries. The batteries must be replaced after 36 calendar months from the time they were installed.

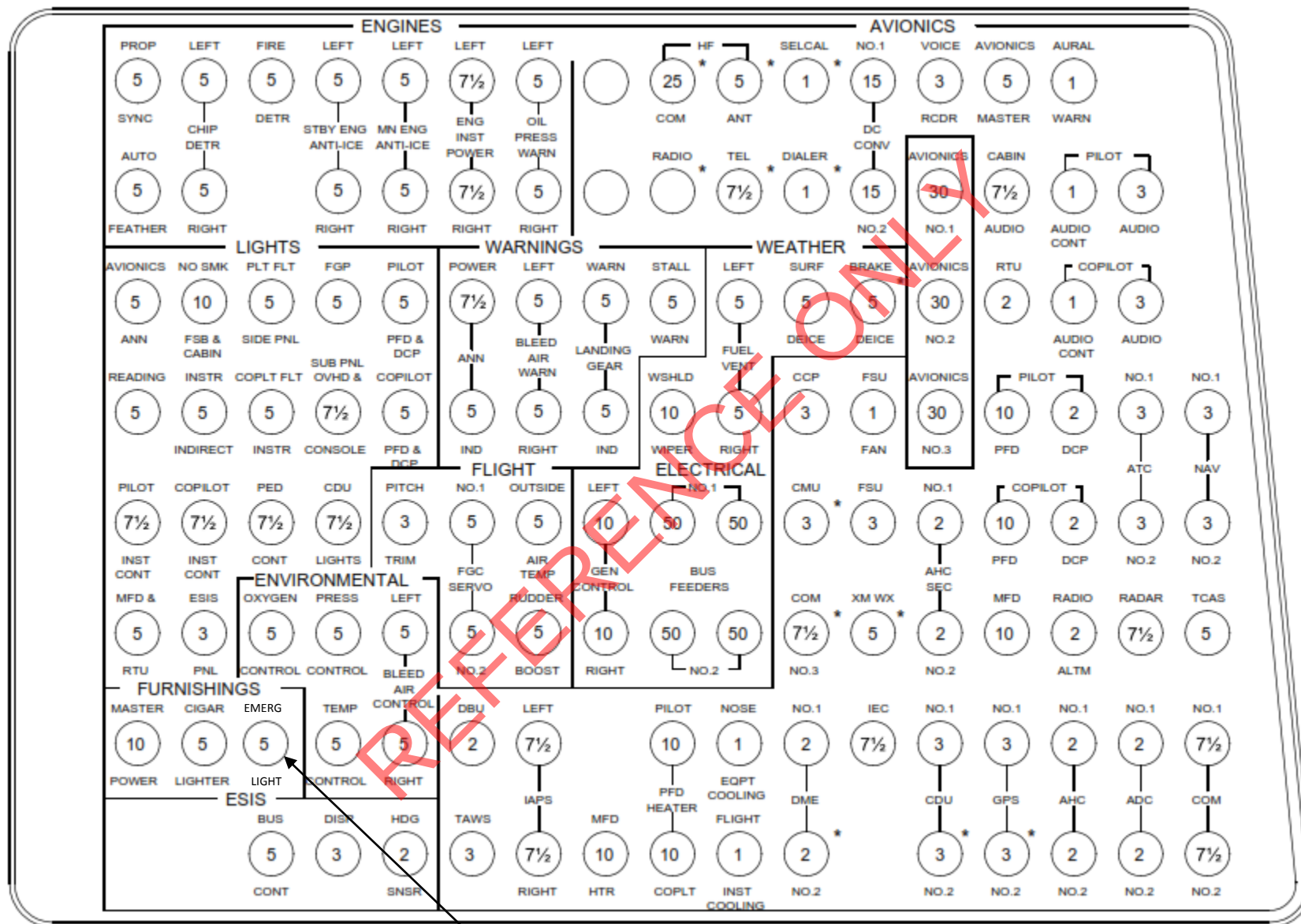
FIGURE 7-3
EMERGENCY CABIN LIGHTING SYSTEM
CABIN SWITCH & FLOOD LAMP



FIGURE 7-4
EMERGENCY CABIN LIGHTING SYSTEM
COCKPIT CONTROL SWITCH
and INDICATOR LIGHTS



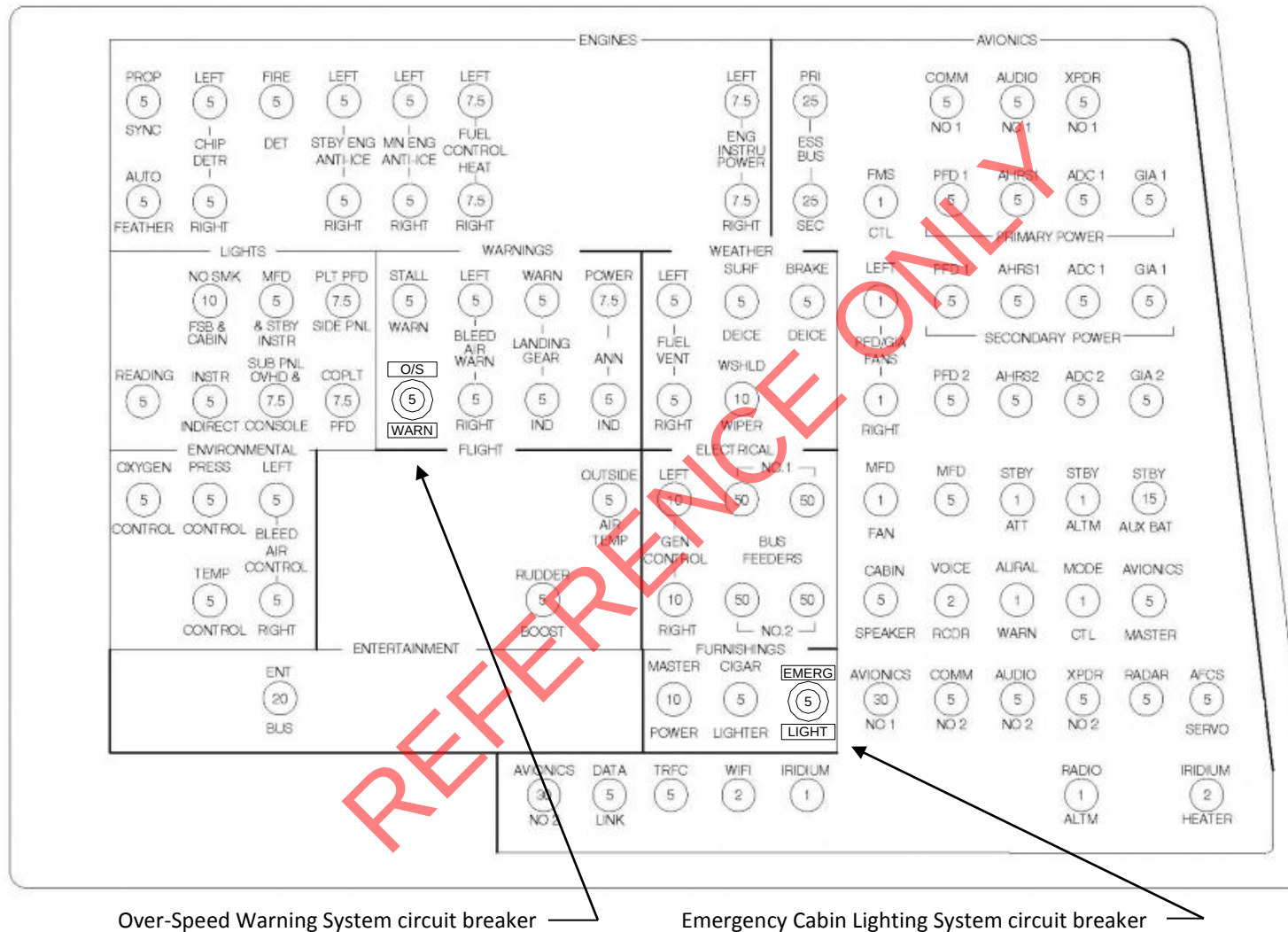
FIGURE 7-5
RIGHT CIRCUIT BREAKER PANEL (PRO LINE 21)



* OPTIONAL/IF INSTALLED

EMERGENCY LIGHTING SYSTEM CIRCUIT BREAKER

FIGURE 7-6
RIGHT CIRCUIT BREAKER PANEL - GARMIN G1000 INSTALLED



SECTION 8 HANDLING, SERVICING, & MAINTENANCE

TABLE OF CONTENTS

<u>SUBJECT</u>	<u>PAGE</u>
TIRE PRESSURES	8-2
CABIN EMERGENCY LIGHTING SYSTEM	8-2

NOTE

See Beechcraft Pilot Operating Handbook for Handling, Servicing And Maintenance items not contained in this section.

REFERENCE ONLY

TIRE PRESSURES

Keep the tires inflated at the following pressures:

Nose Wheel Tires

Tire Size	Inflation Pressure
22 X 6.75-10, 8-ply	55 to 60 psi

Main Wheel Tires

Tire Size	Inflation Pressure
22 X 6.75-10, 8-ply	70 $\pm$ 2 psi

Note: All tires on main and nose wheels must have a speed rating 160 mph (139 knots) or greater. Replace any tires not meeting this speed rating.

CABIN EMERGENCY LIGHTING SYSTEM

The battery pack that powers the cabin emergency lighting system must be replaced every 36 calendar months.

REFERENCE ONLY

**SECTION 9
SUPPLEMENTS**

TABLE OF CONTENTS

<u>SUBJECT</u>	<u>PAGE</u>
TAKEOFF DISTANCE FOR SPECIAL AND CANADIAN OPERATORS	9-2
TAKEOFF DISTANCE – FLAPS UP	9-3
TAKEOFF DISTANCE – FLAPS APPROACH	9-4

REFERENCE ONLY

TAKEOFF DISTANCE FOR SPECIAL AND CANADIAN OPERATORS

The takeoff distance charts shown on pages 9-3 and 9-4 are provided as supplemental performance planning data for special mission operators with approved regulatory exemptions and Canadian operations under Transport Canada Civil Aviation Operating and Flight Rules. These two charts show the takeoff ground roll distance and the takeoff distance to clear a 50-foot obstacle with two engines operating.

REFERENCE ONLY

TAKE-OFF DISTANCE - FLAPS UP

AIRPLANES WITH HIGH FLOTATION LANDING GEAR

Associated conditions

Power..... Takeoff power set before brake release.
Flaps..... Up
Landing Gear..... Retract after lift off.
Runway..... Paved, Dry, Level Surface

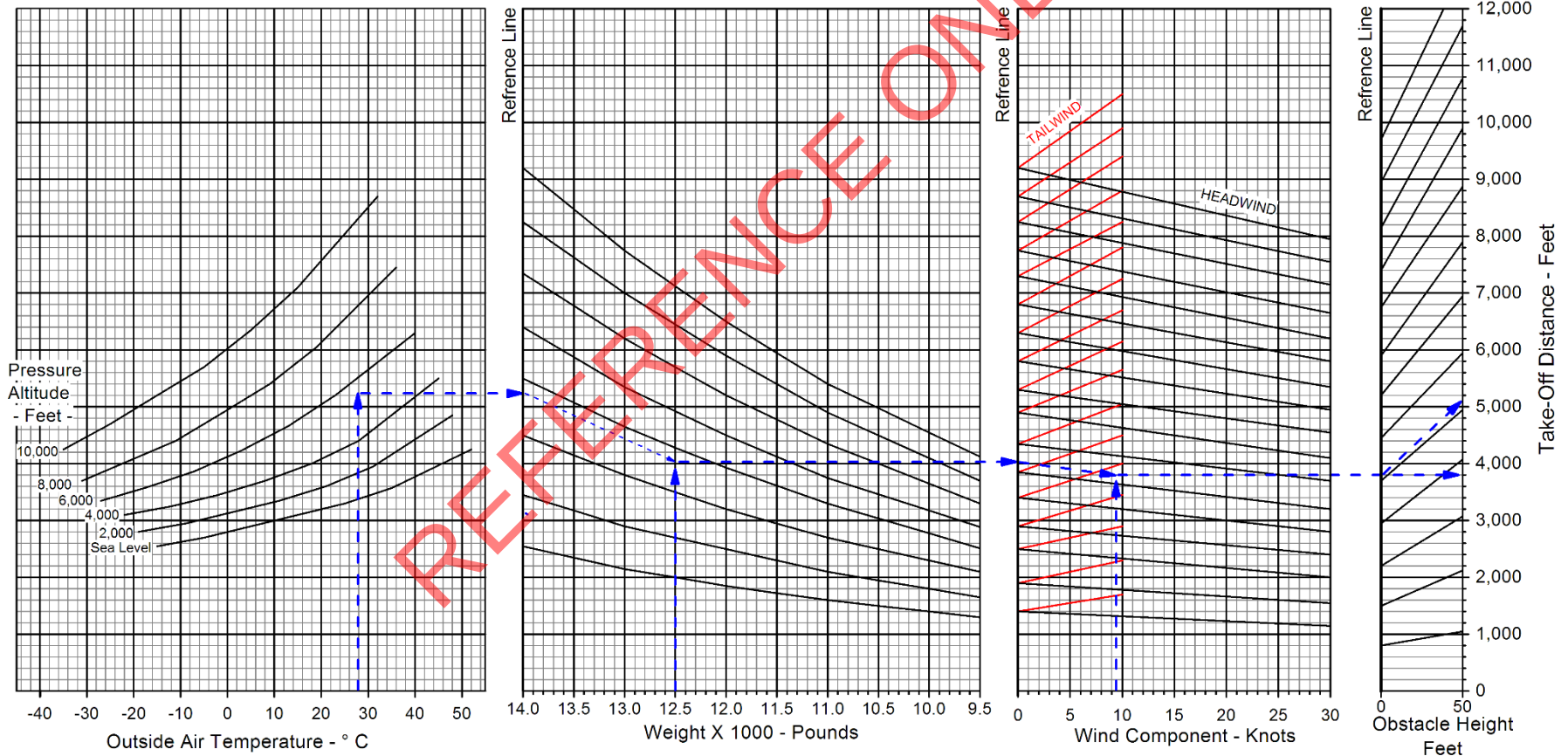
Note:

Obstacle clearance guide lines are not applicable to intermediate obstacle heights.

Weight Pounds	Take-Off Speed - Knots	
	V _R	V ₅₀
14,000	117	126
13,000	113	123
12,000	109	120
11,000	105	115
10,000	102	111
9,500	102	109

Example

OAT..... 28 °C
Pressure Altitude..... 5,433 Feet
Weight..... 12,500 LBS
Headwind Component..... 9.5 Knots
Ground Roll3,800 Feet
Distance over 50 ft obstacle...5,100 Feet
Take-off Speeds
Rotation..... 111 Knots
50 feet..... 121 Knots



TAKE-OFF DISTANCE - FLAPS APPROACH

AIRPLANES WITH HIGH FLOTATION LANDING GEAR

Associated conditions

Power..... Takeoff power set before brake release.
Flaps..... Approach
Landing Gear..... Retract after lift off.
Runway..... Paved, Dry, Level Surface

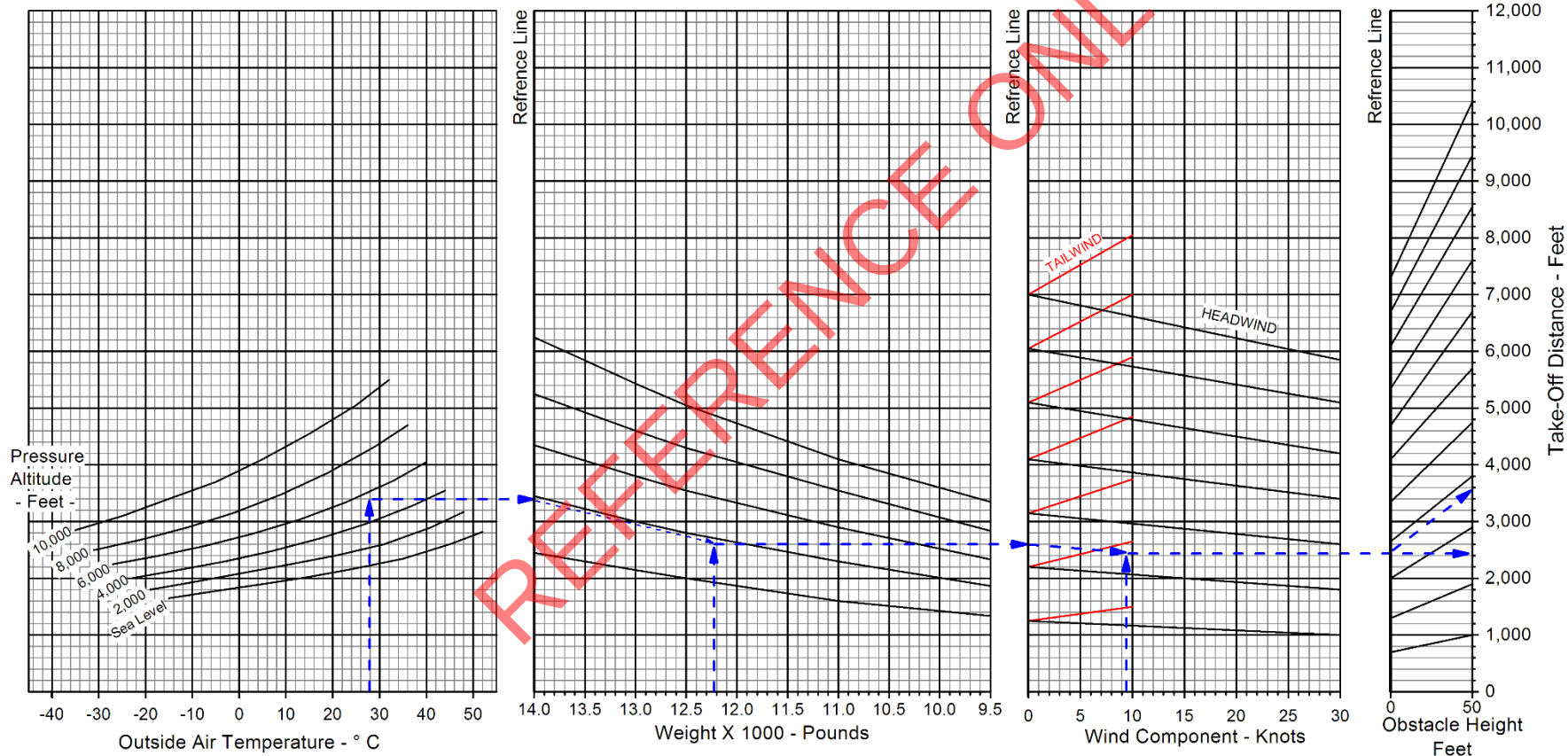
Note:

Obstacle clearance guide lines are not applicable to intermediate obstacle heights.

Weight Pounds	Take-Off Speed - Knots	
	V _R	V ₅₀
14,000	98	108
13,000	97	106
12,000	97	104
11,000	97	103
10,000	97	101
9,500	97	100

Example

OAT..... 28°C
Pressure Altitude..... 5,433 Feet
Weight..... 12,220 LBS
Headwind Component..... 9.5 Knots
Ground Roll2,430 Feet
Distance over 50 ft obstacle...3,590 Feet
Take-off Speeds
Rotation.....97 Knots
50 feet.....104 Knots



THIS PAGE IS INTENTIONALLY BLANK

REFERENCE ONLY