HALO 250

CENTEX AEROSPACE GWI STC SERIES

SUPPLEMENTAL TYPE CERTIFICATE NUMBER SA11103SC
HALO 250 COMMUTER CATEGORY CONVERSION OF
BEECHCRAFT KING AIR 200, 200C, A200, A200C, B200, AND B200C AIRPLANES

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 200 Series Airplane Flight Manual, as applicable.

FAA APPROVED

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CENTEX AEROSPACE INCORPORATED, 7925 KARL MAY DRIVE, WACO, TX 76708

Additionally, the Kinds of Equipment List has been updated to require that the display of attitude, altitude and airspeed information is provided by at least two instruments powered by separate sources so that in the event one source failed there would be an operating alternate display. Note that the King Air 200 series airplanes were originally equipped this way; the change is that such a configuration is a requirement now. It is noted the number of passenger seats in the cabin is now limited to maximum of nine seats due to a single emergency exit.

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 B200 series airplanes.

DESCRIPTIVE DATA

MAXIMUM CERTIFICATED WEIGHTS

Maximum Ramp Weight .....13,510 pounds
Maximum Take-off Weight .....13,420 pounds
Maximum Zero Fuel Weight .....Unchanged, see basic AFM/POH
Maximum Landing Weight (Standard landing gear) .....12,500 pounds
Maximum Landing Weight (High Flotation landing gear) .....13,420 pounds

SPECIFIC LOADINGS

Wing Loading: 44.3 pounds per square foot
Power Loading: 7.9 pounds per shaft horsepower

COMPATIBLE MODIFICATIONS

The following STC-approved modifications have been found to be compatible with the Halo 250 Commuter category conversion:

1. SA2698NM-S, Raisbeck Eng. Hartzell HC-D4N-3A/D9383K propeller.
2. SA02130SE, BLR Hartzell HC-E4N-3A/NC9208K propellers
3. STC 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. SA00184LA, Commuter Air Technology Wildness Tires Conversion
16. SA01535WI-D, Garmin G1000 Avionics (GDC 7400 ADC required)
17. SA02738CH, L-3 Comm ESI-1000 standby instrument
18. SA1036GL, McCauley 4HFR34C7 (54,55,71)/94LA-0 Propellers
19. SA01157CH, McCauley 5HFR34C1008/96LTA-0 Propellers
20. SA890GL and SA757GL, Parker Cleveland wheels and brakes
21. SA2451CE, Commuter Air Technology Super 60 (Cargo) Pod (requires AFM Supplement no. 006-3 instead of this supplement)
22. SA2300CE, Avcon Industries Aeropak Cargo Pod (requires AFM Supplement no. 006-3A instead of this supplement)
23. SA03209NY, MT-Propeller MTV-27-1-E-C-F-R(P)/CFR225-55f 5-blade propeller
24. SA03289CH, Elliott Aviation Mid-Continent MD302 Electronic Standby Indicator
25. 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.
26. SA2671CE, Aviation Fabricators stretcher installation.
27. SA4157SW, Aviation Fabricators 2-place attendant divan seat.
28. SA02468LA, Aviation Fabricators aft toilet cabinet seat.
29. SA00635WI, Aviation Fabricators jump seat.
    NOTE: Seating configuration may not exceed 9 passenger seats.
30. SA10478SC, Hawker Beechcraft Services flight data recorder/cockpit voice recorder
31. SA00273WI, LifePort stretcher, patient loading, and support system
32. SA02235LA, LifePort Patient Loading and Utility System (PLUS) and ServiPlex
33. SA00882CH, Spectrum Aeromed air ambulance conversion
34. 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 250 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.

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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.

LOG OF REVISIONS

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SECTION 3
EMERGENCY PROCEDURES
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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}) ..... 121 Knots
One-Engine-Inoperative Enroute Climb (V_{ENR}):
13,420 pounds ..... 125 Knots
13,000 pounds ..... 123 Knots
12,000 pounds ..... 120 Knots
11,000 pounds ..... 115 Knots
10,000 pounds ..... 111 Knots
9,000 pounds ..... 108 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. Brakes ..... MAXIMUM or AS REQUIRED (to stop on runway)
3. Operative Engine ..... MAXIMUM REVERSE or AS REQUIRED

WARNING

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

SECTION 3A
ABNORMAL PROCEDURES
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FLAPS UP LANDING

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

WEIGHT POUNDS	**V_{REF} (FLAPS UP)** KNOTS
13,420	135
13,000	133
12,500	131
12,000	129
11,000	125
10,000	121
9,000	117

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 006-2

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
13,420	105
13,000	104
12,500	103
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 KNOTS

9. Interior and Exterior lights .....AS REQUIRED
10. Radar .....AS 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 Deice .....CYCLE
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 PER CENT

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

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
13,420	105
13,000	104
12,500	103

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 12,500 pounds, which is the maximum landing weight limitation (except for an airplane equipped with Beechcraft High Flotation landing gear). When the airplane is landed at a gross weight above 12,500 pounds (except an airplane equipped with Beechcraft High Flotation landing gear) 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. Note that components in the standard landing gear have less overall strength margin than the corresponding components in the high flotation landing gear. Also, an overweight landing where the touchdown sink rate is nominal will not result in damage to the landing gear or airframe structure.

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SECTION 4
NORMAL PROCEDURES
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All airspeeds quoted in this section 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 .....
- Rotation, V_R.....
- Safety Speed, V_2.....
- Enroute Climb, V_{ENR}.....

Takeoff (Flaps Approach)
- Decision Speed, V_1 .....
- Rotation, V_R.....
- Safety Speed, V_2.....
- Enroute Climb, V_{ENR}.....

See Section 5 Performance for Takeoff Speeds

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
Operating Maneuvering Speed (V_O)..... 181 Knots
Turbulent Air Penetration..... 170 Knots
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 250 Commuter Category STC.

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 Lamps .....CHECK (not illuminated)

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

Emergency Lighting Cabin Switch ..... OFF

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 Switch.....ARM
Elevator Trim Warning System .....TEST
Elevator Trim Control.....SET FOR TAKEOFF
Autofeather Switch..... OFF
Left and Right Power Levers ..... IDLE
Over-speed Aural Warning .....TEST

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. Autofeather Annunciator ..... ILLUMINATED
4. Brakes ..... RELEASE
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

ICING CONDITIONS

1. Engine Anti-Ice ..... CONFIRM ON
   L & R ENG ANTI-ICE annunciators 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 ..... 145 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 – 145 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 145 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 – 145 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 Speed ..... CONFIRM
2. Autofeather ..... ARM
3. Pressurization ..... CHECK
4. Cabin Sign ..... NO SMOKE & FSB
5. Flaps ..... APPROACH
6. Landing Gear ..... DN
7. Lights ..... AS REQUIRED

NOTE

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

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

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

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, whichever is higher:

3. Airspeed ..... V_{REF} + 10 knots
4. Flaps ..... UP
5. Landing Gear ..... UP
6. Airspeed ..... 125 KNOTS

SHUT DOWN AND SECURING

1. Emerg Cabin Lt Switch ..... OFF

Add the following step when exiting the cabin.

2. Emergency Cabin Light Power Switch ..... OFF

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 ..... 145 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.

OVER-SPEED WARNING TEST

A warning system has been added to the aircraft (except Proline 21 equipped airplanes) that provides a pulsing tone aural alert in the cockpit when the airspeed is greater than V_{MO} or the Mach number is greater than M_{MO}. When the alert is heard the pilot must take immediate action to reduce airspeed below the maximum operating limit. The system should be tested while conducting the BEFORE ENGINE STARTING procedure by simply selecting the TEST position on the OVERSPEED WARNING TEST switch. A loud pulsing tone should sound if the system is functioning properly.

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 Halo 250 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 greater than 12,500 pounds, which is the maximum landing weight limitation (except for an airplane equipped with Beechcraft High Flotation landing gear that has a maximum landing weight limitation of 13,420 pounds). If it becomes necessary to land the airplane at a gross weight above 12,500 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 (except for an airplane equipped with Beechcraft High Flotation landing gear that has a maximum landing weight limitation of 13,420 pounds). Note that components in the standard landing gear have less overall strength margin than the corresponding components in the high flotation landing gear. Also, an overweight landing where the touchdown sink rate is nominal will not result in damage to the landing gear or airframe structure.

NOISE CHARACTERISTICS

The takeoff noise level of King Air 200 series airplanes modified in accordance with the CenTex Aerospace Halo 250 Commuter Category STC established in compliance with 14 CFR Part 36, Appendix G and ICOA 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
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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 13,420 pounds and at the maximum landing weight of 12,500 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. Please note that brake energy and tire speed are not limiting factors when the brakes and tires specified by this conversion are installed on the airplane.

For all 14 CFR Part 91 and Part 135 operations:

1. Maximum Takeoff Weight (takeoff climb requirements)
2. Takeoff Field Length
3. Maximum Landing Weight (discontinued approach and balked landing climb requirements)
4. Landing Distance

For 14 CFR Part 135 operations only:

5. Maximum Enroute Weight (one engine inoperative service ceiling)

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.

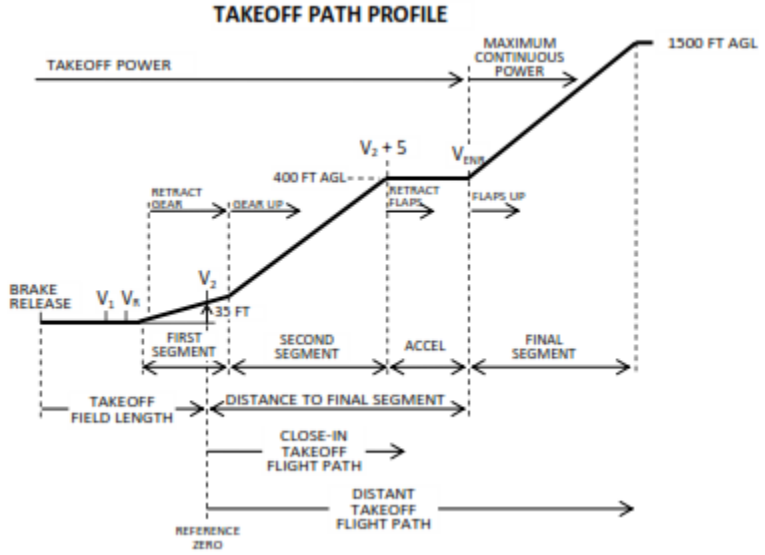
3. All takeoff and landing performance is based on paved, dry runway.
4. Runway or takeoff and landing performance was obtained using the following procedures and conditions:

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. This 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 200 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 200 series airplanes with the Halo 250 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 13,420 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, and on the engine inoperative climb performance of the airplane. Below is a list of the performance data tables and charts contained in the section that establish the maximum allowed takeoff weight.

- MAXIMUM ALLOWED TAKEOFF WEIGHT – FLAPS UP
  TO MEET FIRST, SECOND AND FINAL SEGMENT CLIMB REQUIREMENTS
- MAXIMUM ALLOWED TAKEOFF WEIGHT – FLAPS APPROACH
  TO MEET FIRST, SECOND AND FINAL SEGMENT CLIMB REQUIREMENTS
- MAXIMUM ENROUTE WEIGHT (14 CFR PART 135 OPERATIONS)
- TAKEOFF SPEEDS & BALANCED FIELD LENGTHES – FLAPS UP
- TAKEOFF SPEEDS & BALANCED FIELD LENGTHES – FLAPS APPROACH

MAXIMUM ALLOWED LANDING WEIGHT

The maximum landing weight limit from Section 2 Limitations is 12,500 pounds or 13,420 pounds for an airplane equipped with Beechcraft High Flotation landing gear. 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
Airplane is not equipped with Beechcraft High Flotation landing gear.

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 ..... 26°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 FIRST, SECOND AND FINAL SEGMENT 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 check of the example shown on the table for flaps up shows the maximum allowed takeoff weight to be 13,420 pounds, and for flaps approach, 12,422 pounds.

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 ENROUTE WEIGHT (14 CFR PART 135 OPERATIONS) CHART

This chart establishes the maximum weight at which the airplane can meet the 14 CFR Part 135.181 performance requirements. A determination of the maximum enroute weight is only required when operating under Part 135.

A check of the example shown on the MAXIMUM ENROUTE WEIGHT (14 CFR PART 135 OPERATIONS) chart shows the maximum weight for the most critical route segment (-6°C, 18,000 ft, 29.92 Inches Hg):
Maximum Enroute Weight (14 CFR Part 135 Operations) .....12,860 pounds

The performance example route segment conditions show there are no MEAs above 18,000 feet, which is the lowest altitude for navigating via jet airways, therefore, 18,000 feet is selected as the highest MEA for the example trip. To determine the maximum takeoff weight, the weight of the fuel used to reach the MEA is added to the maximum enroute weight. A check of the example shown on the TIME, FUEL, and DISTANCE TO CLIMB chart provides the following information:

Time to climb from 5,333 feet (28°C) to FL180 (-6°C)..... 8 minutes
Fuel ..... 90 (Fuel to start, taxi, & takeoff) + 122 = 212 pounds
Distance ..... 23 nautical miles

Adding the fuel to reach the MEA (212 pounds) to the maximum enroute weight shows the maximum allowed takeoff weight cannot exceed 13,072 pounds if the flight is to be operated in accordance with 14 CFR Part 135.181 requirements.

TAKEOFF SPEEDS & BALANCED 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 or just below V_1, the airplane is rotated at V_R, and V_2 is obtained and maintained before or upon reaching the 35 feet height. Takeoff field length is said to be "balanced" when upon reaching the takeoff decision speed the pilot can elect to abort the takeoff and stop the airplane, or, continue the takeoff and reach a height of 35 feet above the point of lift off; either within the available runway length. Please note a takeoff with flaps set to approach is only advantageous at heavy gross weights when there is a relatively short runway with minimal obstacles in the second segment of the takeoff path.

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 13,420 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 in-between table values, select the next higher pressure altitude. Below is an example of how to interpolate takeoff field length for temperatures that are in-between values shown in the table.

For Flaps Up:

TOW of 13,420 lbs, Pressure Altitude 5,500 ft, and, OAT of 24°C and 34°C; TFL is 11,181 ft and 13,452 ft, respectively. Interpolate to find TFL at 28°C; TFL = 11,181 + (13,452-11,181) x 4/10 = 12,089 feet, uncorrected TFL. The corresponding V_1, V_r, V_2, and V_{ENR} takeoff speeds are listed as 114, 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 12,089 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 11,470 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 balanced 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 balanced field length.
2. The TODA must be at least equal to the required balanced 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 175 feet high ridge located 9,970 feet from the end of departure runway 35 in the performance example.

The corrected takeoff field length from the example is 11,470 feet. Since the departure runway is 11,500 feet long, from reference zero to the end of the runway is only 30 feet. This distance is added to the 9,970 feet to place the 175 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 1.4%.

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 1.65%, 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.

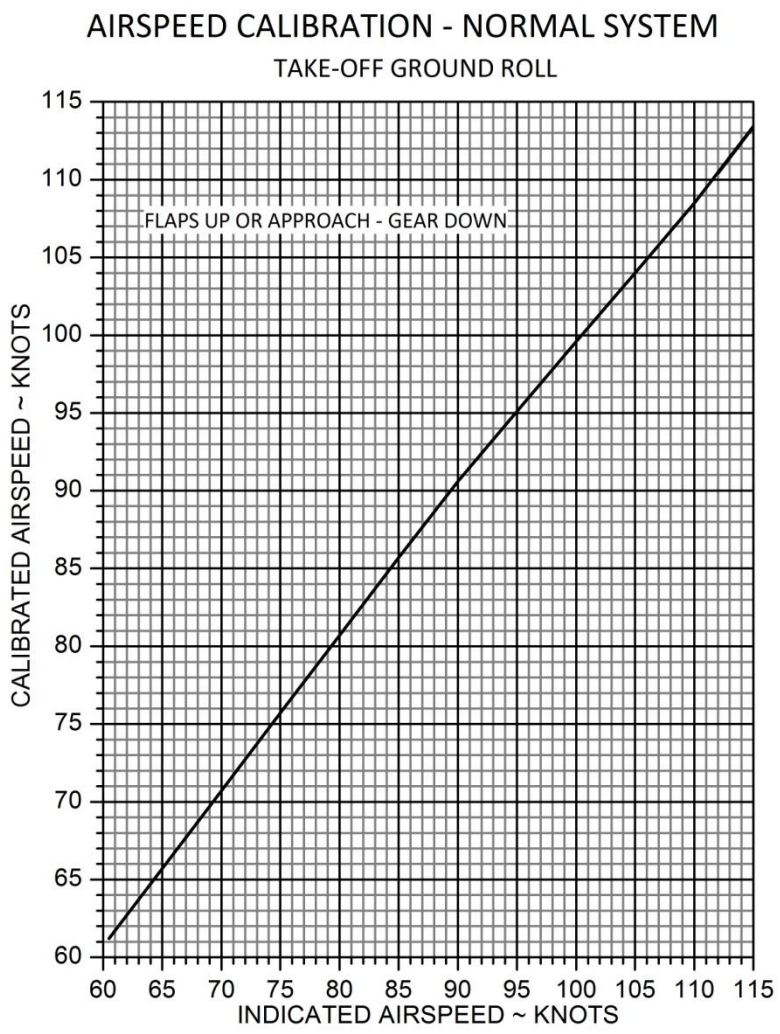
MAXIMUM ALLOWED LANDING WEIGHT TABLES

The maximum landing weight limitation from Section 2 Limitations is 12,500 pounds. However, the maximum allowed landing weight may be less than the maximum landing weight limit depending on the airplane's climb performance. In the event of a discontinued approach with one engine inoperative the climb gradient must not be less than 2.1%. 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. A check of the example shown on the MAXIMUM ALLOWED LANDING WEIGHT table, which corresponds to the example trip, shows the maximum allowed landing weight to be 12,500 pounds. 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

Please note 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.

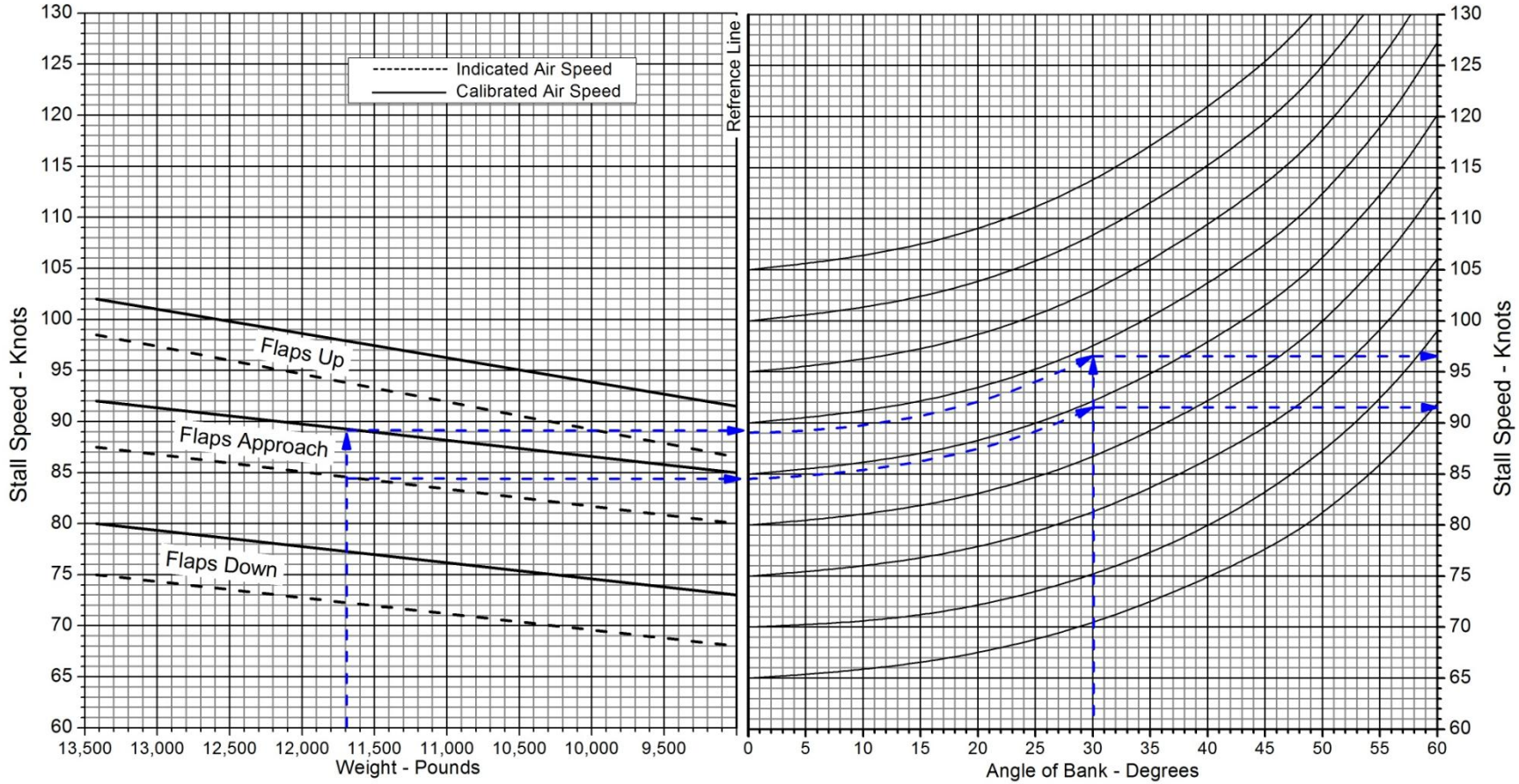

AIRSPEED CALIBRATION - NORMAL SYSTEM
TAKE-OFF GROUND ROLL
FLAPS UP OR APPROACH - GEAR DOWN
CALIBRATED AIRSPEED ~ KNOTS
INDICATED AIRSPEED ~ KNOTS
115
110
105
100
95
90
85
80
75
70
65
60
60 65 70 75 80 85 90 95 100 105 110 115

Stall Speeds - Power Idle

Notes:

1. Maximum altitude loss during normal stall recovery is approximately 800 feet.
2. Maximum nose down pitch attitude and altitude loss durring 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.

Example
Weight..... 11,700 pounds
Flaps ..... Approach
Angle of Bank..... 30 degrees
Stall Speed ..... 97 Knots CAS
92 Knots IAS



MAXIMUM ALLOWED TAKEOFF WEIGHT – FLAPS UP

TO MEET FIRST, SECOND, AND FINAL SEGMENT CLIMB REQUIREMENTS

NOTES:

1. 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.
2. 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 requirement for a climb gradient of not less than 2% in the event of an engine failure.
3. Blue background indicates under the respective conditions the maximum allowed takeoff weight is less than 13,420 pounds.
4. No reduction in gross weight is required when pressure altitude is 2,000 feet or less; or, when outside air temperature is equal to or less than the corresponding ISA+8°C temperature.

Pressure Altitude Feet	**Outside Air Temperature** **Maximum Allowed Takeoff Weight - Pounds**															
10,000	2°C 13,420	4°C 13,280	6°C 13,140	8°C 13,000	10°C 12,834	12°C 12,667	14°C 12,500	16°C 12,334	18°C 12,167	20°C 12,000	22°C 11,834	24°C 11,667	26°C 11,500	28°C 11,333	30°C 11,166	32°C 10,999
9,500	3°C 13,420	5°C 13,420	7°C 13,280	9°C 13,140	11°C 13,000	13°C 12,834	15°C 12,667	17°C 12,500	19°C 12,334	21°C 12,167	23°C 12,000	25°C 11,834	27°C 11,667	29°C 11,500	31°C 11,333	33°C 11,166
9,000	4°C 13,420	6°C 13,420	8°C 13,420	10°C 13,280	12°C 13,140	14°C 13,000	16°C 12,834	18°C 12,667	20°C 12,500	22°C 12,334	24°C 12,167	26°C 12,000	28°C 11,833	30°C 11,666	32°C 11,499	34°C 11,332
8,500	5°C 13,420	7°C 13,420	9°C 13,420	11°C 13,420	13°C 13,280	15°C 13,140	17°C 13,000	19°C 12,834	21°C 12,667	23°C 12,500	25°C 12,334	27°C 12,167	29°C 12,000	31°C 11,833	33°C 11,666	35°C 11,499
8,000	6°C 13,420	8°C 13,420	10°C 13,420	12°C 13,420	14°C 13,420	16°C 13,280	18°C 13,140	20°C 13,000	22°C 12,834	24°C 12,667	26°C 12,500	28°C 12,334	30°C 12,167	32°C 12,000	34°C 11,833	36°C 11,666
7,500	7°C 13,420	9°C 13,420	11°C 13,420	13°C 13,420	15°C 13,420	17°C 13,420	19°C 13,280	21°C 13,140	23°C 13,000	25°C 12,834	27°C 12,667	29°C 12,500	31°C 12,333	33°C 12,166	35°C 11,999	37°C 11,832
7,000	8°C 13,420	10°C 13,420	12°C 13,420	14°C 13,420	16°C 13,420	18°C 13,420	20°C 13,420	22°C 13,280	24°C 13,140	26°C 13,000	28°C 12,834	30°C 12,667	32°C 12,500	34°C 12,333	36°C 12,166	38°C 11,999
6,500	9°C 13,420	11°C 13,420	13°C 13,420	15°C 13,420	17°C 13,420	19°C 13,420	21°C 13,420	23°C 13,420	25°C 13,280	27°C 13,140	29°C 13,000	31°C 12,834	33°C 12,667	35°C 12,500	37°C 12,333	39°C 12,166
6,000	10°C 13,420	12°C 13,420	14°C 13,420	16°C 13,420	18°C 13,420	20°C 13,420	22°C 13,420	24°C 13,420	26°C 13,420	28°C 13,280	30°C 13,140	32°C 13,000	34°C 12,833	36°C 12,666	38°C 12,499	40°C 12,332
5,500	11°C 13,420	13°C 13,420	15°C 13,420	17°C 13,420	19°C 13,420	21°C 13,420	23°C 13,420	25°C 13,420	27°C 13,420	29°C 13,420	31°C 13,280	33°C 13,140	35°C 12,973	37°C 12,806	39°C 12,639	41°C 12,472
5,000	12°C 13,420	14°C 13,420	16°C 13,420	18°C 13,420	20°C 13,420	22°C 13,420	24°C 13,420	26°C 13,420	28°C 13,420	30°C 13,420	32°C 13,420	34°C 13,280	36°C 13,113	38°C 12,946	40°C 12,779	42°C 12,612
4,500	13°C 13,420	15°C 13,420	17°C 13,420	19°C 13,420	21°C 13,420	23°C 13,420	25°C 13,420	27°C 13,420	29°C 13,420	31°C 13,420	33°C 13,420	35°C 13,420	37°C 13,253	39°C 13,086	41°C 12,919	43°C 12,752
4,000	14°C 13,420	16°C 13,420	18°C 13,420	20°C 13,420	22°C 13,420	24°C 13,420	26°C 13,420	28°C 13,420	30°C 13,420	32°C 13,420	34°C 13,420	36°C 13,420	38°C 13,393	40°C 13,226	42°C 13,059	44°C 12,892
3,500	15°C 13,420	17°C 13,420	19°C 13,420	21°C 13,420	23°C 13,420	25°C 13,420	27°C 13,420	29°C 13,420	31°C 13,420	33°C 13,420	35°C 13,420	37°C 13,420	39°C 13,420	41°C 13,366	43°C 13,199	45°C 13,032
3,000	16°C 13,420	18°C 13,420	20°C 13,420	22°C 13,420	24°C 13,420	26°C 13,420	28°C 13,420	30°C 13,420	32°C 13,420	34°C 13,420	36°C 13,420	38°C 13,420	40°C 13,420	42°C 13,420	44°C 13,339	46°C 13,172
2,500	17°C 13,420	19°C 13,420	21°C 13,420	23°C 13,420	25°C 13,420	27°C 13,420	29°C 13,420	31°C 13,420	33°C 13,420	35°C 13,420	37°C 13,420	39°C 13,420	41°C 13,420	43°C 13,420	45°C 13,420	47°C 13,312
2,000	18°C 13,420	20°C 13,420	22°C 13,420	24°C 13,420	26°C 13,420	28°C 13,420	30°C 13,420	32°C 13,420	34°C 13,420	36°C 13,420	38°C 13,420	40°C 13,420	42°C 13,420	44°C 13,420	46°C 13,420	48°C 13,420

MAXIMUM ALLOWED TAKEOFF WEIGHT (LBS) – FLAPS APPROACH

TO MEET FIRST, SECOND, AND FINAL SEGMENT CLIMB REQUIREMENTS

Pressure Altitude Feet	Outside Air Temperature Maximum Allowed Takeoff Weight - Pounds														
10,000	-35°C 13,420	-30°C 13,420	-25°C 13,200	-20°C 13,000	-15°C 12,750	-10°C 12,500	-5°C 12,250	0°C 11,980	5°C 11,660	10°C 11,290	15°C 10,950	20°C 10,590	25°C 10,250	30°C 9,900	32°C 9,750
9,500	-34°C 13,420	-29°C 13,420	-24°C 13,420	-19°C 13,200	-14°C 12,950	-9°C 12,680	-4°C 12,450	1°C 12,190	6°C 11,890	11°C 11,550	16°C 11,130	21°C 10,775	26°C 10,440	31°C 10,050	33°C 9,900
9,000	-33°C 13,420	-28°C 13,420	-23°C 13,420	-18°C 13,380	-13°C 13,120	-8°C 12,880	-3°C 12,600	2°C 12,350	7°C 12,080	12°C 11,750	17°C 11,350	22°C 10,950	27°C 10,600	32°C 10,200	34°C 10,050
8,500	-32°C 13,420	-27°C 13,420	-22°C 13,420	-17°C 13,420	-12°C 13,340	-7°C 13,050	-2°C 12,800	3°C 12,530	8°C 12,270	13°C 11,960	18°C 11,600	23°C 11,170	28°C 10,800	33°C 10,400	35°C 10,220
8,000	-31°C 13,420	-26°C 13,420	-21°C 13,420	-16°C 13,420	-11°C 13,420	-6°C 13,240	-1°C 12,950	4°C 12,700	9°C 12,450	14°C 12,175	19°C 11,850	24°C 11,450	29°C 11,000	34°C 10,575	36°C 10,400
7,500	-30°C 13,420	-25°C 13,420	-20°C 13,420	-15°C 13,420	-10°C 13,420	-5°C 13,420	0°C 13,200	5°C 12,910	10°C 12,650	15°C 12,350	20°C 12,030	25°C 11,600	30°C 11,150	35°C 10,750	37°C 10,570
7,000	-29°C 13,420	-24°C 13,420	-19°C 13,420	-14°C 13,420	-9°C 13,420	-4°C 13,420	1°C 13,350	6°C 13,070	11°C 12,780	16°C 12,480	21°C 12,200	26°C 11,830	31°C 11,330	36°C 10,900	38°C 10,750
6,500	-28°C 13,420	-23°C 13,420	-18°C 13,420	-13°C 13,420	-8°C 13,420	-3°C 13,420	2°C 13,420	7°C 13,280	12°C 13,000	17°C 12,670	22°C 12,370	27°C 12,000	32°C 11,520	37°C 11,090	39°C 10,900
6,000	-27°C 13,420	-22°C 13,420	-17°C 13,420	-12°C 13,420	-7°C 13,420	-2°C 13,420	3°C 13,420	8°C 13,420	13°C 13,170	18°C 12,870	23°C 12,530	28°C 12,170	33°C 11,750	38°C 11,280	40°C 11,100
5,500	-26°C 13,420	-21°C 13,420	-16°C 13,420	-11°C 13,420	-6°C 13,420	-1°C 13,420	4°C 13,420	9°C 13,420	14°C 13,270	19°C 12,980	24°C 12,710	29°C 12,350	34°C 11,950	39°C 11,480	41°C 11,280
5,000	-25°C 13,420	-20°C 13,420	-15°C 13,420	-10°C 13,420	-5°C 13,420	0°C 13,420	5°C 13,420	10°C 13,420	15°C 13,420	20°C 13,150	25°C 12,850	30°C 12,490	35°C 12,130	40°C 11,680	42°C 11,450
4,500	-24°C 13,420	-19°C 13,420	-14°C 13,420	-9°C 13,420	-4°C 13,420	1°C 13,420	6°C 13,420	11°C 13,420	16°C 13,420	21°C 13,350	26°C 13,050	31°C 12,670	36°C 12,300	41°C 11,880	43°C 11,700
4,000	-23°C 13,420	-18°C 13,420	-13°C 13,420	-8°C 13,420	-3°C 13,420	2°C 13,420	7°C 13,420	12°C 13,420	17°C 13,420	22°C 13,420	27°C 13,250	32°C 12,860	37°C 12,500	42°C 12,080	44°C 11,900
3,500	-22°C 13,420	-17°C 13,420	-12°C 13,420	-7°C 13,420	-2°C 13,420	3°C 13,420	8°C 13,420	13°C 13,420	18°C 13,420	23°C 13,420	28°C 13,350	33°C 13,000	38°C 12,600	43°C 12,220	45°C 12,060
3,000	-21°C 13,420	-16°C 13,420	-11°C 13,420	-6°C 13,420	-1°C 13,420	4°C 13,420	9°C 13,420	14°C 13,420	19°C 13,420	24°C 13,420	29°C 13,420	34°C 13,150	39°C 12,700	44°C 12,330	46°C 12,175
2,500	-20°C 13,420	-15°C 13,420	-10°C 13,420	-5°C 13,420	0°C 13,420	5°C 13,420	10°C 13,420	15°C 13,420	20°C 13,420	25°C 13,420	30°C 13,420	35°C 13,300	40°C 12,890	45°C 12,430	47°C 12,280
2,000	-19°C°C 13,420	-14°C 13,420	-9°C 13,420	-4°C 13,420	1°C 13,420	6°C 13,420	11°C 13,420	16°C 13,420	21°C 13,420	26°C 13,420	31°C 13,420	36°C 13,420	41°C 13,050	46°C 12,550	48°C 12,370
1,500	-18°C 13,420	-13°C 13,420	-8°C 13,420	-3°C 13,420	2°C 13,420	7°C 13,420	12°C 13,420	17°C 13,420	22°C 13,420	27°C 13,420	32°C 13,420	37°C 13,420	42°C 13,170	47°C 12,700	49°C 12,500
1,000	-17°C 13,420	-12°C 13,420	-7°C 13,420	-2°C 13,420	3°C 13,420	8°C 13,420	13°C 13,420	18°C 13,420	23°C 13,420	28°C 13,420	33°C 13,420	38°C 13,420	43°C 13,300	48°C 12,800	50°C 12,600
500	-16°C 13,420	-11°C 13,420	-6°C 13,420	-1°C 13,420	4°C 13,420	9°C 13,420	14°C 13,420	19°C 13,420	24°C 13,420	29°C 13,420	34°C 13,420	39°C 13,420	44°C 13,420	49°C 12,980	51°C 12,750
Sea Level	-15°C 13,420	-10°C 13,420	-5°C 13,420	0°C 13,420	5°C 13,420	10°C 13,420	15°C 13,420	20°C 13,420	25°C 13,420	30°C 13,420	35°C 13,420	40°C 13,420	45°C 13,420	50°C 13,100	52°C 12,900

NOTES

1. 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.
2. 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 requirement for a climb gradient in the event of an engine failure of not less than 2%.
3. Blue background indicates under the respective conditions the takeoff weight is less than 13,420 pounds.

EXAMPLE

OAT .....28°C
Pressure Altitude ..... 5,433 Ft

Enter table at 5,500 Feet, interpolation is not required when the next higher pressure altitude is selected. Interpolation is required between 12,710 lbs @ 24°C and 12,350 lbs @ 29°C.
12,710 + (-360 x 4/5) = 12,422

Max Allowed TOW
.....12,422 Pounds

MAXIMUM ENROUTE WEIGHT

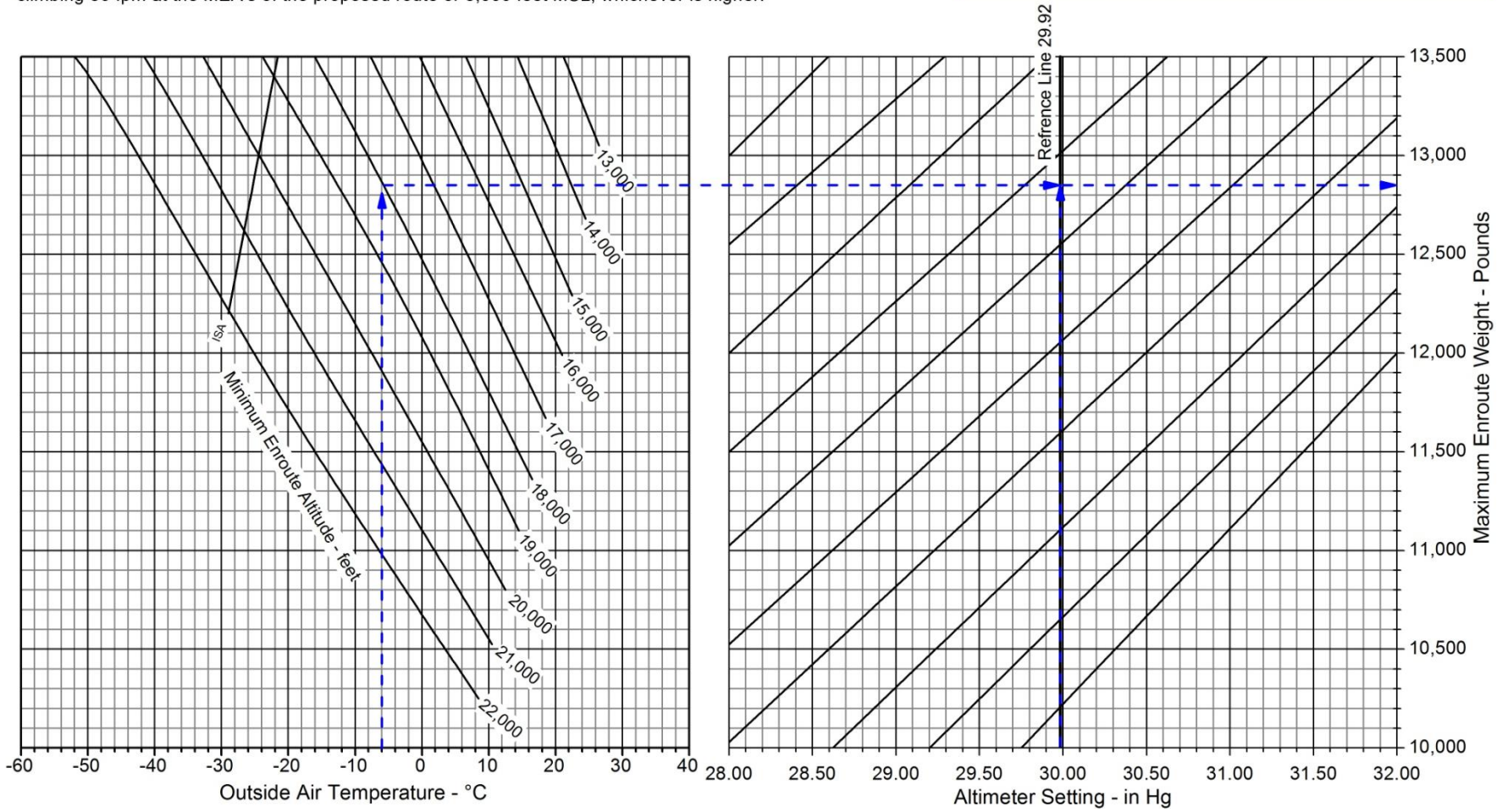
14 CFR PART 135 OPERATIONS

Associated conditions

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

Note: Per 14 CFR Part 135, operations over the top or in IFR conditions require that the airplane be capable of climbing 50 fpm at the MEA's of the proposed route or 5,000 feet MSL, whichever is higher.

Example	
OAT	-6 °C
Minimum Enroute Altitude	18,000 feet
Altimeter Setting	29.92 in Hg
Maximum Enroute Weight	12,860 pounds



TAKEOFF SPEEDS & BAL. 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 performance requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-15	-5	5	15	25	35	45	52
13,420 LB	V_1	96	96	96	96	96	96	96	96
6087 KG	V_R	97	97	97	97	97	97	97	97
	V_2	107	107	107	107	107	107	107	107
V_{ENR} = 125	TOFL-FT	**3,538**	**3,687**	**3,911**	**4,159**	**4,659**	**5,304**	**6,228**	**7,052**
13,000 LB	V_1	95	95	95	95	95	95	95	95
5897 KG	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	V_1	95	95	95	95	95	95	95	95
5670 KG	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	V_1	94	94	94	94	94	94	94	94
5443 KG	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	V_1	94	94	94	94	94	94	94	94
5216 KG	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	V_1	93	93	93	93	93	93	93	93
4990 KG	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	V_1	91	91	91	91	93	93	93	93
4763 KG	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	V_1	90	90	90	90	91	92	93	93
4536 KG	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	V_1	89	89	89	89	89	90	92	93
4309 KG	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**
9,000 LB	V_1	88	88	88	88	89	89	91	92
4082 KG	V_R	97	97	97	97	97	97	97	97
OR LESS	V_2	99	99	99	99	99	99	99	99
V_{ENR} = 108	TOFL-FT	**2,418**	**2,482**	**2,573**	**2,681**	**2,833**	**3,026**	**3,272**	**3,499**

TAKEOFF SPEEDS & BAL. 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 performance requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-16	-6	4	14	24	34	44	51
13,420 LB	V_1	96	96	96	96	96	96	96	96
6087 KG	V_R	97	97	97	97	97	97	97	97
	V_2	107	107	107	107	107	107	107	107
V_{ENR} = 125	TOFL-FT	**3,897**	**4,089**	**4,336**	**4,643**	**5,141**	**5,872**	**6,958**	**7,972**
13,000 LB	V_1	95	95	95	95	95	95	95	95
5897 KG	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	V_1	95	95	95	95	95	95	95	95
5670 KG	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	V_1	94	94	94	94	94	94	94	94
5443 KG	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	V_1	94	94	94	94	94	94	94	94
5216 KG	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	V_1	93	93	93	93	93	93	93	93
4990 KG	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	V_1	91	91	91	92	93	93	93	93
4763 KG	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	V_1	90	90	90	90	91	92	93	93
4536 KG	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	V_1	89	89	89	89	90	90	92	93
4309 KG	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**
9,000 LB	V_1	88	88	88	88	89	89	91	92
4082 KG	V_R	97	97	97	97	97	97	97	97
OR LESS	V_2	99	99	99	99	99	99	99	99
V_{ENR} = 108	TOFL-FT	**2,457**	**2,528**	**2,620**	**2,731**	**2,875**	**3,075**	**3,338**	**3,587**

TAKEOFF SPEEDS & BAL. 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 performance requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-17	-7	3	13	23	33	43	50
13,420 LB	V_1	96	96	96	96	96	96	96	---
6087 KG	V_R	97	97	97	97	97	97	97	---
	V_2	107	107	107	107	107	107	107	---
V_{ENR} = 125	TOFL-FT	**4,257**	**4,490**	**4,760**	**5,127**	**5,623**	**6,440**	**7,689**	---
13,000 LB	V_1	95	95	95	95	95	95	95	95
5897 KG	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	**3,921**	**4,130**	**4,373**	**4,701**	**5,143**	**5,866**	**6,973**	**8,052**
12,500 LB	V_1	95	95	95	95	95	95	95	95
5670 KG	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	V_1	94	94	94	94	94	94	94	94
5443 KG	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	V_1	94	94	94	94	94	94	94	94
5216 KG	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	V_1	93	93	93	93	93	93	93	93
4990 KG	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	V_1	91	91	91	92	93	93	93	93
4763 KG	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	V_1	90	90	90	90	91	92	93	93
4536 KG	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	V_1	89	89	89	89	90	91	92	93
4309 KG	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**
9,000 LB	V_1	88	88	88	88	89	90	91	92
4082 KG	V_R	97	97	97	97	97	97	97	97
OR LESS	V_2	99	99	99	99	99	99	99	99
V_{ENR} = 108	TOFL-FT	**2,496**	**2,574**	**2,667**	**2,781**	**2,918**	**3,124**	**3,405**	**3,674**

TAKEOFF SPEEDS & BAL. 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 performance requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-18	-8	2	12	22	32	42	49
13,420 LB	V_1	96	96	96	96	96	96	96	---
6087 KG	V_R	97	97	97	97	97	97	97	---
	V_2	107	107	107	107	107	107	107	---
V_{ENR} = 125	TOFL-FT	**4,617**	**4,892**	**5,185**	**5,611**	**6,105**	**7,008**	**8,420**	---
13,000 LB	V_1	95	95	95	95	95	95	95	95
5897 KG	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	V_1	95	95	95	95	95	95	95	95
5670 KG	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	V_1	94	94	94	94	94	94	94	94
5443 KG	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	V_1	94	94	94	94	94	94	94	94
5216 KG	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	V_1	93	93	93	93	93	93	93	93
4990 KG	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	V_1	91	91	92	93	93	93	93	93
4763 KG	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	V_1	90	90	90	90	91	92	93	93
4536 KG	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	V_1	89	89	89	89	90	91	93	93
4309 KG	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**
9,000 LB	V_1	88	88	88	88	89	90	91	93
4082 KG	V_R	97	97	97	97	97	97	97	97
OR LESS	V_2	99	99	99	99	99	99	99	99
V_{ENR} = 108	TOFL-FT	**2,535**	**2,620**	**2,714**	**2,831**	**2,961**	**3,172**	**3,472**	**3,762**

TAKEOFF SPEEDS & BAL. 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 performance requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-19	-9	1	11	21	31	41	48
13,420 LB	V_1	96	96	96	96	96	96	96	---
6087 KG	V_R	97	97	97	97	97	97	97	---
	V_2	107	107	107	107	107	107	107	---
V_{ENR} = 125	TOFL-FT	**4,977**	**5,294**	**5,610**	**6,094**	**6,586**	**7,576**	**9,151**	---
13,000 LB	V_1	95	95	95	95	95	95	95	95
5897 KG	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	**4,579**	**4,864**	**5,148**	**5,580**	**6,016**	**6,892**	**8,287**	**9,715**
12,500 LB	V_1	95	95	95	95	95	95	95	95
5670 KG	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	V_1	94	94	94	94	94	94	94	94
5443 KG	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	V_1	94	94	94	94	94	94	94	94
5216 KG	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	V_1	93	93	93	93	93	93	93	93
4990 KG	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	V_1	91	91	92	93	93	93	93	93
4763 KG	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	V_1	90	90	90	91	91	92	93	93
4536 KG	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	V_1	89	89	89	89	90	91	93	93
4309 KG	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**
9,000 LB	V_1	88	88	88	89	89	90	92	93
4082 KG	V_R	97	97	97	97	97	97	97	97
OR LESS	V_2	99	99	99	99	99	99	99	99
V_{ENR} = 108	TOFL-FT	**2,574**	**2,667**	**2,761**	**2,881**	**3,004**	**3,221**	**3,539**	**3,850**

TAKEOFF SPEEDS & BAL. 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 performance requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-20	-10	0	10	20	30	40	47
13,420 LB	V_1	96	96	96	96	96	96	96	---
6087 KG	V_R	97	97	97	97	97	97	97	---
	V_2	107	107	107	107	107	107	107	---
V_{ENR} = 125	TOFL-FT	**5,164**	**5,483**	**5,846**	**6,355**	**6,917**	**7,972**	**9,651**	---
13,000 LB	V_1	95	95	95	95	95	95	95	---
5897 KG	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	V_1	95	95	95	95	95	95	95	95
5670 KG	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	V_1	94	94	94	94	94	94	94	94
5443 KG	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	V_1	94	94	94	94	94	94	94	94
5216 KG	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	V_1	93	93	93	93	93	93	93	93
4990 KG	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	V_1	92	92	92	93	93	93	93	93
4763 KG	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	V_1	90	90	90	91	91	93	93	93
4536 KG	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	V_1	89	89	89	90	90	91	93	93
4309 KG	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**
9,000 LB	V_1	88	88	88	89	89	90	92	93
4082 KG	V_R	97	97	97	97	97	97	97	97
OR LESS	V_2	99	99	99	99	99	99	99	99
V_{ENR} = 108	TOFL-FT	**2,621**	**2,712**	**2,813**	**2,938**	**3,074**	**3,301**	**3,631**	**3,963**

TAKEOFF SPEEDS & BAL. 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 performance requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-21	-11	-1	9	19	29	39	46
13,420 LB	V_1	96	96	96	96	96	96	96	---
6087 KG	V_R	97	97	97	97	97	97	97	---
	V_2	107	107	107	107	107	107	107	---
V_{ENR} = 125	TOFL-FT	**5,351**	**5,672**	**6,082**	**6,617**	**7,248**	**8,367**	**10,152**	---
13,000 LB	V_1	95	95	95	95	95	95	95	---
5897 KG	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	V_1	95	95	95	95	95	95	95	95
5670 KG	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	**4,451**	**4,704**	**5,021**	**5,433**	**5,916**	**6,772**	**8,169**	**9,555**
12,000 LB	V_1	94	94	94	94	94	94	94	94
5443 KG	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	V_1	94	94	94	94	94	94	94	94
5216 KG	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	V_1	93	93	93	93	93	93	93	93
4990 KG	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	V_1	92	92	92	93	93	93	93	93
4763 KG	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	V_1	90	90	91	91	92	93	93	93
4536 KG	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	V_1	89	89	89	90	90	92	93	93
4309 KG	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**
9,000 LB	V_1	88	88	88	89	89	90	92	93
4082 KG	V_R	97	97	97	97	97	97	97	97
OR LESS	V_2	99	99	99	99	99	99	99	99
V_{ENR} = 108	TOFL-FT	**2,667**	**2,756**	**2,865**	**2,995**	**3,144**	**3,382**	**3,723**	**4,075**

TAKEOFF SPEEDS & BAL. 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 performance requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-22	-12	-2	8	18	28	38	45
13,420 LB	V_1	96	96	96	96	96	96	---	---
6087 KG	V_R	97	97	97	97	97	97	---	---
	V_2	107	107	107	107	107	107	---	---
V_{ENR} = 125	TOFL-FT	**5,538**	**5,862**	**6,318**	**6,878**	**7,578**	**8,763**	---	---
13,000 LB	V_1	95	95	95	95	95	95	95	---
5897 KG	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	V_1	95	95	95	95	95	95	95	95
5670 KG	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	**4,594**	**4,848**	**5,199**	**5,628**	**6,163**	**7,068**	**8,560**	**10,005**
12,000 LB	V_1	94	94	94	94	94	94	94	94
5443 KG	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	V_1	94	94	94	94	94	94	94	94
5216 KG	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	V_1	93	93	93	93	93	93	93	93
4990 KG	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	V_1	93	93	93	93	93	93	93	93
4763 KG	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	V_1	90	90	91	91	92	93	93	93
4536 KG	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	V_1	89	89	89	90	91	92	93	93
4309 KG	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**
9,000 LB	V_1	88	88	89	89	90	91	93	93
4082 KG	V_R	97	97	97	97	97	97	97	97
OR LESS	V_2	99	99	99	99	99	99	99	99
V_{ENR} = 108	TOFL-FT	**2,714**	**2,801**	**2,917**	**3,053**	**3,214**	**3,462**	**3,815**	**4,188**

TAKEOFF SPEEDS & BAL. 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 performance requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-23	-13	-3	7	17	27	37	44
13,420 LB	V_1	96	96	96	96	96	96	---	---
6087 KG	V_R	97	97	97	97	97	97	---	---
	V_2	107	107	107	107	107	107	---	---
V_{ENR} = 125	TOFL-FT	**5,725**	**6,051**	**6,553**	**7,139**	**7,909**	**9,159**	---	---
13,000 LB	V_1	95	95	95	95	95	95	95	---
5897 KG	V_R	97	97	97	97	97	97	97	---
	V_2	106	106	106	106	106	106	106	---
V_{ENR} = 123	TOFL-FT	**5,253**	**5,546**	**5,990**	**6,509**	**7,191**	**8,298**	**10,099**	---
12,500 LB	V_1	95	95	95	95	95	95	95	95
5670 KG	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	**4,738**	**4,993**	**5,376**	**5,823**	**6,411**	**7,365**	**8,951**	**10,455**
12,000 LB	V_1	94	94	94	94	94	94	94	94
5443 KG	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	V_1	94	94	94	94	94	94	94	94
5216 KG	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	V_1	93	93	93	93	93	93	93	93
4990 KG	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	V_1	93	93	93	93	93	93	93	93
4763 KG	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	V_1	90	90	91	91	92	93	93	93
4536 KG	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	V_1	89	89	90	90	91	92	93	93
4309 KG	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**
9,000 LB	V_1	88	88	89	89	90	91	93	93
4082 KG	V_R	97	97	97	97	97	97	97	97
OR LESS	V_2	99	99	99	99	99	99	99	99
V_{ENR} = 108	TOFL-FT	**2,761**	**2,846**	**2,969**	**3,110**	**3,284**	**3,543**	**3,908**	**4,300**

TAKEOFF SPEEDS & BAL. 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 performance requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-24	-14	-4	6	16	26	36	43
13,420 LB	V_1	96	96	96	96	96	96	---	---
6087 KG	V_R	97	97	97	97	97	97	---	---
	V_2	107	107	107	107	107	107	---	---
V_{ENR} = 125	TOFL-FT	**5,890**	**6,286**	**6,825**	**7,465**	**8,311**	**9,668**	---	---
13,000 LB	V_1	95	95	95	95	95	95	95	---
5897 KG	V_R	97	97	97	97	97	97	97	---
	V_2	106	106	106	106	106	106	106	---
V_{ENR} = 123	TOFL-FT	**5,401**	**5,753**	**6,231**	**6,798**	**7,547**	**8,757**	**10,791**	---
12,500 LB	V_1	95	95	95	95	95	95	95	---
5670 KG	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	V_1	94	94	94	94	94	94	94	94
5443 KG	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	V_1	94	94	94	94	94	94	94	94
5216 KG	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	V_1	93	93	93	93	93	93	93	93
4990 KG	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	V_1	93	93	93	93	93	93	93	93
4763 KG	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	V_1	90	91	91	92	93	93	93	93
4536 KG	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	V_1	89	89	90	90	91	92	93	93
4309 KG	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**
9,000 LB	V_1	88	89	89	89	90	91	93	93
4082 KG	V_R	97	97	97	97	97	97	97	97
OR LESS	V_2	99	99	99	99	99	99	99	99
V_{ENR} = 108	TOFL-FT	**2,797**	**2,899**	**3,030**	**3,180**	**3,369**	**3,642**	**4,056**	**4,475**

TAKEOFF SPEEDS & BAL. 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 performance requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-25	-15	-5	5	15	25	35	42
13,420 LB	V_1	96	96	96	96	96	96	---	---
6087 KG	V_R	97	97	97	97	97	97	---	---
	V_2	107	107	107	107	107	107	---	---
V_{ENR} = 125	TOFL-FT	**6,055**	**6,520**	**7,097**	**7,792**	**8,713**	**10,177**	---	---
13,000 LB	V_1	95	95	95	95	95	95	---	---
5897 KG	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	V_1	95	95	95	95	95	95	95	---
5670 KG	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	V_1	94	94	94	94	94	94	94	94
5443 KG	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	**4,488**	**4,796**	**5,174**	**5,629**	**6,231**	**7,230**	**8,825**	**10,202**
11,500 LB	V_1	94	94	94	94	94	94	94	94
5216 KG	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	V_1	93	93	93	93	93	93	93	93
4990 KG	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	V_1	93	93	93	93	93	93	93	93
4763 KG	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	V_1	91	91	92	92	93	93	93	93
4536 KG	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	V_1	89	90	90	91	92	93	93	93
4309 KG	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**
9,000 LB	V_1	89	89	89	90	91	92	93	93
4082 KG	V_R	97	97	97	97	97	97	97	97
OR LESS	V_2	99	99	99	99	99	99	99	99
V_{ENR} = 108	TOFL-FT	**2,832**	**2,951**	**3,092**	**3,250**	**3,454**	**3,740**	**4,204**	**4,650**

TAKEOFF SPEEDS & BAL. 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 performance requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-26	-16	-6	4	14	24	34	41
13,420 LB	V_1	96	96	96	96	96	---	---	---
6087 KG	V_R	97	97	97	97	97	---	---	---
	V_2	107	107	107	107	107	---	---	---
V_{ENR} = 125	TOFL-FT	**6,221**	**6,754**	**7,369**	**8,118**	**9,114**	---	---	---
13,000 LB	V_1	95	95	95	95	95	95	---	---
5897 KG	V_R	97	97	97	97	97	97	---	---
	V_2	106	106	106	106	106	106	---	---
V_{ENR} = 123	TOFL-FT	**5,695**	**6,168**	**6,713**	**7,376**	**8,258**	**9,677**	---	---
12,500 LB	V_1	95	95	95	95	95	95	95	---
5670 KG	V_R	97	97	97	97	97	97	97	---
	V_2	105	105	105	105	105	105	105	---
V_{ENR} = 121	TOFL-FT	**5,121**	**5,529**	**5,999**	**6,570**	**7,330**	**8,579**	**10,651**	---
12,000 LB	V_1	94	94	94	94	94	94	94	---
5443 KG	V_R	97	97	97	97	97	97	97	---
	V_2	104	104	104	104	104	104	104	---
V_{ENR} = 120	TOFL-FT	**4,598**	**4,949**	**5,352**	**5,842**	**6,494**	**7,584**	**9,283**	---
11,500 LB	V_1	94	94	94	94	94	94	94	94
5216 KG	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	**4,127**	**4,429**	**4,773**	**5,192**	**5,748**	**6,692**	**8,071**	**9,264**
11,000 LB	V_1	93	93	93	93	93	93	93	93
4990 KG	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	**3,708**	**3,967**	**4,262**	**4,619**	**5,094**	**5,904**	**7,015**	**7,984**
10,500 LB	V_1	93	93	93	93	93	93	93	93
4763 KG	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	**3,362**	**3,577**	**3,819**	**4,124**	**4,530**	**5,219**	**6,115**	**6,900**
10,000 LB	V_1	91	91	92	93	93	93	93	93
4536 KG	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	**3,175**	**3,340**	**3,522**	**3,734**	**4,070**	**4,637**	**5,371**	**6,012**
9,500 LB	V_1	90	90	90	91	92	93	93	93
4309 KG	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	**3,008**	**3,156**	**3,319**	**3,503**	**3,744**	**4,172**	**4,783**	**5,320**
9,000 LB	V_1	89	89	89	90	91	92	93	93
4082 KG	V_R	97	97	97	97	97	97	97	97
OR LESS	V_2	99	99	99	99	99	99	99	99
V_{ENR} = 108	TOFL-FT	**2,868**	**3,004**	**3,154**	**3,320**	**3,538**	**3,839**	**4,352**	**4,825**

TAKEOFF SPEEDS & BAL. 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 performance requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-27	-17	-7	3	13	23	33	40
13,420 LB	V_1	96	96	96	96	96	---	---	---
6087 KG	V_R	97	97	97	97	97	---	---	---
	V_2	107	107	107	107	107	---	---	---
V_{ENR} = 125	TOFL-FT	**6,386**	**6,988**	**7,641**	**8,445**	**9,516**	---	---	---
13,000 LB	V_1	95	95	95	95	95	95	---	---
5897 KG	V_R	97	97	97	97	97	97	---	---
	V_2	106	106	106	106	106	106	---	---
V_{ENR} = 123	TOFL-FT	**5,842**	**6,375**	**6,954**	**7,665**	**8,614**	**10,136**	---	---
12,500 LB	V_1	95	95	95	95	95	95	95	---
5670 KG	V_R	97	97	97	97	97	97	97	---
	V_2	105	105	105	105	105	105	105	---
V_{ENR} = 121	TOFL-FT	**5,248**	**5,708**	**6,206**	**6,819**	**7,637**	**8,984**	**11,217**	---
12,000 LB	V_1	94	94	94	94	94	94	94	---
5443 KG	V_R	97	97	97	97	97	97	97	---
	V_2	104	104	104	104	104	104	104	---
V_{ENR} = 120	TOFL-FT	**4,708**	**5,103**	**5,530**	**6,056**	**6,756**	**7,938**	**9,741**	---
11,500 LB	V_1	94	94	94	94	94	94	94	94
5216 KG	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	**4,222**	**4,560**	**4,926**	**5,374**	**5,972**	**6,999**	**8,437**	**9,702**
11,000 LB	V_1	93	93	93	93	93	93	93	93
4990 KG	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	**3,790**	**4,079**	**4,393**	**4,775**	**5,285**	**6,167**	**7,305**	**8,338**
10,500 LB	V_1	93	93	93	93	93	93	93	93
4763 KG	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	**3,412**	**3,661**	**3,931**	**4,258**	**4,694**	**5,442**	**6,346**	**7,186**
10,000 LB	V_1	91	92	92	93	93	93	93	93
4536 KG	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	**3,220**	**3,404**	**3,597**	**3,823**	**4,199**	**4,825**	**5,558**	**6,245**
9,500 LB	V_1	90	90	91	91	92	93	93	93
4309 KG	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	**3,048**	**3,213**	**3,386**	**3,580**	**3,838**	**4,314**	**4,943**	**5,517**
9,000 LB	V_1	89	89	90	90	91	93	93	93
4082 KG	V_R	97	97	97	97	97	97	97	97
OR LESS	V_2	99	99	99	99	99	99	99	99
V_{ENR} = 108	TOFL-FT	**2,904**	**3,056**	**3,215**	**3,390**	**3,623**	**3,938**	**4,500**	**5,000**

TAKEOFF SPEEDS & BAL. 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 performance requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-28	-18	-8	2	12	22	32	39
13,420 LB	V_1	96	96	96	96	96	---	---	---
6087 KG	V_R	97	97	97	97	97	---	---	---
	V_2	107	107	107	107	107	---	---	---
V_{ENR} = 125	TOFL-FT	**6,637**	**7,263**	**8,021**	**8,968**	**10,255**	---	---	---
13,000 LB	V_1	95	95	95	95	95	95	---	---
5897 KG	V_R	97	97	97	97	97	97	---	---
	V_2	106	106	106	106	106	106	---	---
V_{ENR} = 123	TOFL-FT	**6,064**	**6,619**	**7,290**	**8,135**	**9,268**	**10,989**	---	---
12,500 LB	V_1	95	95	95	95	95	95	---	---
5670 KG	V_R	97	97	97	97	97	97	---	---
	V_2	105	105	105	105	105	105	---	---
V_{ENR} = 121	TOFL-FT	**5,440**	**5,918**	**6,496**	**7,229**	**8,198**	**9,684**	---	---
12,000 LB	V_1	94	94	94	94	94	94	94	---
5443 KG	V_R	97	97	97	97	97	97	97	---
	V_2	104	104	104	104	104	104	104	---
V_{ENR} = 120	TOFL-FT	**4,873**	**5,283**	**5,778**	**6,411**	**7,234**	**8,506**	**10,316**	---
11,500 LB	V_1	94	94	94	94	94	94	94	94
5216 KG	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	**4,363**	**4,714**	**5,138**	**5,680**	**6,375**	**7,455**	**8,933**	**10,310**
11,000 LB	V_1	93	93	93	93	93	93	93	93
4990 KG	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	**3,911**	**4,211**	**4,573**	**5,037**	**5,622**	**6,530**	**7,730**	**8,860**
10,500 LB	V_1	93	93	93	93	93	93	93	93
4763 KG	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	**3,516**	**3,774**	**4,086**	**4,481**	**4,974**	**5,731**	**6,707**	**7,628**
10,000 LB	V_1	91	92	92	93	93	93	93	93
4536 KG	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	**3,295**	**3,484**	**3,716**	**4,013**	**4,432**	**5,059**	**5,864**	**6,613**
9,500 LB	V_1	90	90	91	92	93	93	93	93
4309 KG	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	**3,116**	**3,284**	**3,474**	**3,713**	**4,022**	**4,514**	**5,199**	**5,816**
9,000 LB	V_1	89	89	90	91	92	93	93	93
4082 KG	V_R	97	97	97	97	97	97	97	97
OR LESS	V_2	99	99	99	99	99	99	99	99
V_{ENR} = 108	TOFL-FT	**2,967**	**3,121**	**3,294**	**3,492**	**3,755**	**4,116**	**4,715**	**5,238**

TAKEOFF SPEEDS & BAL. 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 performance requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-29	-19	-9	1	11	21	31	38
13,420 LB	V_1	96	96	96	96	---	---	---	---
6087 KG	V_R	97	97	97	97	---	---	---	---
	V_2	107	107	107	107	---	---	---	---
V_{ENR} = 125	TOFL-FT	**6,888**	**7,538**	**8,400**	**9,492**	---	---	---	---
13,000 LB	V_1	95	95	95	95	95	---	---	---
5897 KG	V_R	97	97	97	97	97	---	---	---
	V_2	106	106	106	106	106	---	---	---
V_{ENR} = 123	TOFL-FT	**6,286**	**6,862**	**7,626**	**8,604**	**9,922**	---	---	---
12,500 LB	V_1	95	95	95	95	95	95	---	---
5670 KG	V_R	97	97	97	97	97	97	---	---
	V_2	105	105	105	105	105	105	---	---
V_{ENR} = 121	TOFL-FT	**5,631**	**6,127**	**6,785**	**7,639**	**8,760**	**10,385**	---	---
12,000 LB	V_1	94	94	94	94	94	94	94	---
5443 KG	V_R	97	97	97	97	97	97	97	---
	V_2	104	104	104	104	104	104	104	---
V_{ENR} = 120	TOFL-FT	**5,037**	**5,463**	**6,027**	**6,766**	**7,712**	**9,074**	**10,890**	---
11,500 LB	V_1	94	94	94	94	94	94	94	---
5216 KG	V_R	97	97	97	97	97	97	97	---
	V_2	104	104	104	104	104	104	104	---
V_{ENR} = 118	TOFL-FT	**4,504**	**4,867**	**5,349**	**5,986**	**6,779**	**7,910**	**9,429**	---
11,000 LB	V_1	93	93	93	93	93	93	93	93
4990 KG	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	**4,031**	**4,342**	**4,754**	**5,299**	**5,959**	**6,892**	**8,155**	**9,382**
10,500 LB	V_1	93	93	93	93	93	93	93	93
4763 KG	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	**3,620**	**3,887**	**4,240**	**4,704**	**5,254**	**6,020**	**7,068**	**8,069**
10,000 LB	V_1	92	92	93	93	93	93	93	93
4536 KG	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	**3,371**	**3,563**	**3,835**	**4,202**	**4,664**	**5,294**	**6,169**	**6,981**
9,500 LB	V_1	90	91	92	92	93	93	93	93
4309 KG	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	**3,184**	**3,355**	**3,562**	**3,847**	**4,206**	**4,714**	**5,456**	**6,116**
9,000 LB	V_1	89	90	90	91	92	93	93	93
4082 KG	V_R	97	97	97	97	97	97	97	97
OR LESS	V_2	99	99	99	99	99	99	99	99
V_{ENR} = 108	TOFL-FT	**3,030**	**3,186**	**3,373**	**3,594**	**3,887**	**4,294**	**4,930**	**5,475**

TAKEOFF SPEEDS & BAL. 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 performance requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-30	-20	-10	0	10	20	30	37
13,420 LB	V_1	96	96	96	96	---	---	---	---
6087 KG	V_R	97	97	97	97	---	---	---	---
	V_2	107	107	107	107	---	---	---	---
V_{ENR} = 125	TOFL-FT	**7,139**	**7,813**	**8,780**	**10,016**	---	---	---	---
13,000 LB	V_1	95	95	95	95	95	---	---	---
5897 KG	V_R	97	97	97	97	97	---	---	---
	V_2	106	106	106	106	106	---	---	---
V_{ENR} = 123	TOFL-FT	**6,509**	**7,106**	**7,962**	**9,073**	**10,575**	---	---	---
12,500 LB	V_1	95	95	95	95	95	95	---	---
5670 KG	V_R	97	97	97	97	97	97	---	---
	V_2	105	105	105	105	105	105	---	---
V_{ENR} = 121	TOFL-FT	**5,823**	**6,337**	**7,075**	**8,048**	**9,321**	**11,085**	---	---
12,000 LB	V_1	94	94	94	94	94	94	94	---
5443 KG	V_R	97	97	97	97	97	97	97	---
	V_2	104	104	104	104	104	104	104	---
V_{ENR} = 120	TOFL-FT	**5,201**	**5,642**	**6,275**	**7,122**	**8,190**	**9,643**	**11,464**	---
11,500 LB	V_1	94	94	94	94	94	94	94	---
5216 KG	V_R	97	97	97	97	97	97	97	---
	V_2	104	104	104	104	104	104	104	---
V_{ENR} = 118	TOFL-FT	**4,644**	**5,021**	**5,561**	**6,292**	**7,182**	**8,366**	**9,925**	---
11,000 LB	V_1	93	93	93	93	93	93	93	93
4990 KG	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	**4,152**	**4,474**	**4,934**	**5,561**	**6,297**	**7,255**	**8,580**	**9,904**
10,500 LB	V_1	93	93	93	93	93	93	93	93
4763 KG	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	**3,723**	**4,000**	**4,394**	**4,927**	**5,535**	**6,309**	**7,430**	**8,511**
10,000 LB	V_1	92	92	93	93	93	93	93	93
4536 KG	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	**3,447**	**3,643**	**3,955**	**4,391**	**4,896**	**5,529**	**6,474**	**7,348**
9,500 LB	V_1	90	91	92	93	93	93	93	93
4309 KG	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	**3,253**	**3,426**	**3,650**	**3,980**	**4,389**	**4,914**	**5,712**	**6,415**
9,000 LB	V_1	89	90	91	92	93	93	93	93
4082 KG	V_R	97	97	97	97	97	97	97	97
OR LESS	V_2	99	99	99	99	99	99	99	99
V_{ENR} = 108	TOFL-FT	**3,093**	**3,250**	**3,452**	**3,696**	**4,018**	**4,472**	**5,145**	**5,713**

TAKEOFF SPEEDS & BAL. 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 performance requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-31	-21	-11	-1	9	19	29	36
13,420 LB	V_1	96	96	96	96	---	---	---	---
6087 KG	V_R	97	97	97	97	---	---	---	---
	V_2	107	107	107	107	---	---	---	---
V_{ENR} = 125	TOFL-FT	**7,390**	**8,088**	**9,159**	**10,540**	---	---	---	---
13,000 LB	V_1	95	95	95	95	---	---	---	---
5897 KG	V_R	97	97	97	97	---	---	---	---
	V_2	106	106	106	106	---	---	---	---
V_{ENR} = 123	TOFL-FT	**6,731**	**7,349**	**8,298**	**9,542**	---	---	---	---
12,500 LB	V_1	95	95	95	95	95	---	---	---
5670 KG	V_R	97	97	97	97	97	---	---	---
	V_2	105	105	105	105	105	---	---	---
V_{ENR} = 121	TOFL-FT	**6,014**	**6,547**	**7,365**	**8,458**	**9,882**	---	---	---
12,000 LB	V_1	94	94	94	94	94	94	---	---
5443 KG	V_R	97	97	97	97	97	97	---	---
	V_2	104	104	104	104	104	104	---	---
V_{ENR} = 120	TOFL-FT	**5,366**	**5,822**	**6,523**	**7,477**	**8,668**	**10,211**	---	---
11,500 LB	V_1	94	94	94	94	94	94	94	---
5216 KG	V_R	97	97	97	97	97	97	97	---
	V_2	104	104	104	104	104	104	104	---
V_{ENR} = 118	TOFL-FT	**4,785**	**5,175**	**5,773**	**6,598**	**7,585**	**8,822**	**10,421**	---
11,000 LB	V_1	93	93	93	93	93	93	93	93
4990 KG	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	**4,272**	**4,605**	**5,115**	**5,823**	**6,634**	**7,617**	**9,005**	**10,426**
10,500 LB	V_1	93	93	93	93	93	93	93	93
4763 KG	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	**3,827**	**4,113**	**4,549**	**5,150**	**5,815**	**6,598**	**7,791**	**8,953**
10,000 LB	V_1	92	93	93	93	93	93	93	93
4536 KG	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	**3,523**	**3,723**	**4,074**	**4,581**	**5,128**	**5,763**	**6,779**	**7,716**
9,500 LB	V_1	90	91	92	93	93	93	93	93
4309 KG	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	**3,321**	**3,496**	**3,738**	**4,114**	**4,573**	**5,114**	**5,969**	**6,715**
9,000 LB	V_1	89	90	91	92	93	93	93	93
4082 KG	V_R	97	97	97	97	97	97	97	97
OR LESS	V_2	99	99	99	99	99	99	99	99
V_{ENR} = 108	TOFL-FT	**3,156**	**3,315**	**3,531**	**3,798**	**4,150**	**4,650**	**5,360**	**5,950**

TAKEOFF SPEEDS & BAL. 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 performance requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-32	-22	-12	-2	8	18	28	35
13,420 LB	V_1	96	96	96	---	---	---	---	---
6087 KG	V_R	97	97	97	---	---	---	---	---
	V_2	107	107	107	---	---	---	---	---
V_{ENR} = 125	TOFL-FT	**7,698**	**8,547**	**9,781**	---	---	---	---	---
13,000 LB	V_1	95	95	95	95	---	---	---	---
5897 KG	V_R	97	97	97	97	---	---	---	---
	V_2	106	106	106	106	---	---	---	---
V_{ENR} = 123	TOFL-FT	**7,004**	**7,758**	**8,855**	**10,315**	---	---	---	---
12,500 LB	V_1	95	95	95	95	95	---	---	---
5670 KG	V_R	97	97	97	97	97	---	---	---
	V_2	105	105	105	105	105	---	---	---
V_{ENR} = 121	TOFL-FT	**6,250**	**6,902**	**7,851**	**9,100**	**10,642**	---	---	---
12,000 LB	V_1	94	94	94	94	94	94	---	---
5443 KG	V_R	97	97	97	97	97	97	---	---
	V_2	104	104	104	104	104	104	---	---
V_{ENR} = 120	TOFL-FT	**5,567**	**6,128**	**6,944**	**8,004**	**9,288**	**10,863**	---	---
11,500 LB	V_1	94	94	94	94	94	94	94	---
5216 KG	V_R	97	97	97	97	97	97	97	---
	V_2	104	104	104	104	104	104	104	---
V_{ENR} = 118	TOFL-FT	**4,957**	**5,437**	**6,135**	**7,027**	**8,086**	**9,388**	**11,097**	---
11,000 LB	V_1	93	93	93	93	93	93	93	---
4990 KG	V_R	97	97	97	97	97	97	97	---
	V_2	103	103	103	103	103	103	103	---
V_{ENR} = 115	TOFL-FT	**4,419**	**4,829**	**5,423**	**6,169**	**7,036**	**8,105**	**9,564**	---
10,500 LB	V_1	93	93	93	93	93	93	93	93
4763 KG	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	**3,953**	**4,304**	**4,809**	**5,430**	**6,137**	**7,013**	**8,250**	**9,446**
10,000 LB	V_1	92	93	93	93	93	93	93	93
4536 KG	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	**3,614**	**3,880**	**4,292**	**4,809**	**5,389**	**6,113**	**7,155**	**8,117**
9,500 LB	V_1	91	92	93	93	93	93	93	93
4309 KG	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	**3,397**	**3,610**	**3,907**	**4,308**	**4,794**	**5,405**	**6,278**	**7,056**
9,000 LB	V_1	90	90	92	92	93	93	93	93
4082 KG	V_R	97	97	97	97	97	97	97	97
OR LESS	V_2	99	99	99	99	99	99	99	99
V_{ENR} = 108	TOFL-FT	**3,224**	**3,409**	**3,649**	**3,961**	**4,350**	**4,888**	**5,620**	**6,263**

TAKEOFF SPEEDS & BAL. 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 performance requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-33	-23	-13	-3	7	17	27	34
13,420 LB	V_1	96	96	96	---	---	---	---	---
6087 KG	V_R	97	97	97	---	---	---	---	---
	V_2	107	107	107	---	---	---	---	---
V_{ENR} = 125	TOFL-FT	**8,007**	**9,007**	**10,402**	---	---	---	---	---
13,000 LB	V_1	95	95	95	95	---	---	---	---
5897 KG	V_R	97	97	97	97	---	---	---	---
	V_2	106	106	106	106	---	---	---	---
V_{ENR} = 123	TOFL-FT	**7,277**	**8,167**	**9,412**	**11,088**	---	---	---	---
12,500 LB	V_1	95	95	95	95	95	---	---	---
5670 KG	V_R	97	97	97	97	97	---	---	---
	V_2	105	105	105	105	105	---	---	---
V_{ENR} = 121	TOFL-FT	**6,485**	**7,256**	**8,337**	**9,742**	**11,403**	---	---	---
12,000 LB	V_1	94	94	94	94	94	94	---	---
5443 KG	V_R	97	97	97	97	97	97	---	---
	V_2	104	104	104	104	104	104	---	---
V_{ENR} = 120	TOFL-FT	**5,769**	**6,433**	**7,365**	**8,532**	**9,909**	**11,514**	---	---
11,500 LB	V_1	94	94	94	94	94	94	---	---
5216 KG	V_R	97	97	97	97	97	97	---	---
	V_2	104	104	104	104	104	104	---	---
V_{ENR} = 118	TOFL-FT	**5,130**	**5,699**	**6,497**	**7,456**	**8,588**	**9,955**	---	---
11,000 LB	V_1	93	93	93	93	93	93	93	---
4990 KG	V_R	97	97	97	97	97	97	97	---
	V_2	103	103	103	103	103	103	103	---
V_{ENR} = 115	TOFL-FT	**4,566**	**5,053**	**5,731**	**6,515**	**7,437**	**8,593**	**10,123**	---
10,500 LB	V_1	93	93	93	93	93	93	93	93
4763 KG	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	**4,079**	**4,495**	**5,068**	**5,709**	**6,458**	**7,429**	**8,709**	**9,940**
10,000 LB	V_1	92	93	93	93	93	93	93	93
4536 KG	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	**3,704**	**4,037**	**4,509**	**5,038**	**5,651**	**6,463**	**7,530**	**8,518**
9,500 LB	V_1	91	92	93	93	93	93	93	93
4309 KG	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	**3,473**	**3,723**	**4,076**	**4,502**	**5,015**	**5,695**	**6,587**	**7,396**
9,000 LB	V_1	90	91	92	93	93	93	93	93
4082 KG	V_R	97	97	97	97	97	97	97	97
OR LESS	V_2	99	99	99	99	99	99	99	99
V_{ENR} = 108	TOFL-FT	**3,293**	**3,502**	**3,766**	**4,124**	**4,550**	**5,125**	**5,880**	**6,575**

TAKEOFF SPEEDS & BAL. 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 performance requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-34	-24	-14	-4	6	16	26	33
13,420 LB	V_1	96	96	96	---	---	---	---	---
6087 KG	V_R	97	97	97	---	---	---	---	---
	V_2	107	107	107	---	---	---	---	---
V_{ENR} = 125	TOFL-FT	**8,315**	**9,466**	**11,024**	---	---	---	---	---
13,000 LB	V_1	95	95	95	---	---	---	---	---
5897 KG	V_R	97	97	97	---	---	---	---	---
	V_2	106	106	106	---	---	---	---	---
V_{ENR} = 123	TOFL-FT	**7,550**	**8,576**	**9,970**	---	---	---	---	---
12,500 LB	V_1	95	95	95	95	---	---	---	---
5670 KG	V_R	97	97	97	97	---	---	---	---
	V_2	105	105	105	105	---	---	---	---
V_{ENR} = 121	TOFL-FT	**6,720**	**7,611**	**8,824**	**10,385**	---	---	---	---
12,000 LB	V_1	94	94	94	94	94	---	---	---
5443 KG	V_R	97	97	97	97	97	---	---	---
	V_2	104	104	104	104	104	---	---	---
V_{ENR} = 120	TOFL-FT	**5,971**	**6,739**	**7,787**	**9,059**	**10,530**	---	---	---
11,500 LB	V_1	94	94	94	94	94	94	---	---
5216 KG	V_R	97	97	97	97	97	97	---	---
	V_2	104	104	104	104	104	104	---	---
V_{ENR} = 118	TOFL-FT	**5,302**	**5,961**	**6,858**	**7,885**	**9,089**	**10,521**	---	---
11,000 LB	V_1	93	93	93	93	93	93	93	---
4990 KG	V_R	97	97	97	97	97	97	97	---
	V_2	103	103	103	103	103	103	103	---
V_{ENR} = 115	TOFL-FT	**4,713**	**5,276**	**6,039**	**6,862**	**7,839**	**9,080**	**10,682**	---
10,500 LB	V_1	93	93	93	93	93	93	93	---
4763 KG	V_R	97	97	97	97	97	97	97	---
	V_2	102	102	102	102	102	102	102	---
V_{ENR} = 113	TOFL-FT	**4,205**	**4,686**	**5,328**	**5,989**	**6,780**	**7,844**	**9,168**	---
10,000 LB	V_1	93	93	93	93	93	93	93	93
4536 KG	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	**3,795**	**4,195**	**4,727**	**5,267**	**5,912**	**6,813**	**7,906**	**8,918**
9,500 LB	V_1	91	93	93	93	93	93	93	93
4309 KG	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	**3,548**	**3,836**	**4,246**	**4,695**	**5,236**	**5,985**	**6,897**	**7,737**
9,000 LB	V_1	90	91	93	93	93	93	93	93
4082 KG	V_R	97	97	97	97	97	97	97	97
OR LESS	V_2	99	99	99	99	99	99	99	99
V_{ENR} = 108	TOFL-FT	**3,361**	**3,596**	**3,884**	**4,287**	**4,750**	**5,363**	**6,140**	**6,888**

TAKEOFF SPEEDS & BAL. 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 performance requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-35	-25	-15	-5	5	15	25	32
13,420 LB	V_1	96	96	---	---	---	---	---	---
6087 KG	V_R	97	97	---	---	---	---	---	---
	V_2	107	107	---	---	---	---	---	---
V_{ENR} = 125	TOFL-FT	**8,623**	**9,925**	---	---	---	---	---	---
13,000 LB	V_1	95	95	95	---	---	---	---	---
5897 KG	V_R	97	97	97	---	---	---	---	---
	V_2	106	106	106	---	---	---	---	---
V_{ENR} = 123	TOFL-FT	**7,823**	**8,985**	**10,527**	---	---	---	---	---
12,500 LB	V_1	95	95	95	95	---	---	---	---
5670 KG	V_R	97	97	97	97	---	---	---	---
	V_2	105	105	105	105	---	---	---	---
V_{ENR} = 121	TOFL-FT	**6,956**	**7,965**	**9,310**	**11,027**	---	---	---	---
12,000 LB	V_1	94	94	94	94	94	---	---	---
5443 KG	V_R	97	97	97	97	97	---	---	---
	V_2	104	104	104	104	104	---	---	---
V_{ENR} = 120	TOFL-FT	**6,173**	**7,045**	**8,208**	**9,587**	**11,151**	---	---	---
11,500 LB	V_1	94	94	94	94	94	94	---	---
5216 KG	V_R	97	97	97	97	97	97	---	---
	V_2	104	104	104	104	104	104	---	---
V_{ENR} = 118	TOFL-FT	**5,474**	**6,223**	**7,220**	**8,314**	**9,591**	**11,087**	---	---
11,000 LB	V_1	93	93	93	93	93	93	---	---
4990 KG	V_R	97	97	97	97	97	97	---	---
	V_2	103	103	103	103	103	103	---	---
V_{ENR} = 115	TOFL-FT	**4,860**	**5,500**	**6,347**	**7,208**	**8,241**	**9,568**	---	---
10,500 LB	V_1	93	93	93	93	93	93	93	---
4763 KG	V_R	97	97	97	97	97	97	97	---
	V_2	102	102	102	102	102	102	102	---
V_{ENR} = 113	TOFL-FT	**4,331**	**4,876**	**5,588**	**6,268**	**7,102**	**8,260**	**9,627**	---
10,000 LB	V_1	93	93	93	93	93	93	93	93
4536 KG	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	**3,886**	**4,352**	**4,944**	**5,495**	**6,174**	**7,162**	**8,282**	**9,319**
9,500 LB	V_1	92	93	93	93	93	93	93	93
4309 KG	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	**3,624**	**3,949**	**4,415**	**4,889**	**5,456**	**6,276**	**7,206**	**8,077**
9,000 LB	V_1	90	92	93	93	93	93	93	93
4082 KG	V_R	97	97	97	97	97	97	97	97
OR LESS	V_2	99	99	99	99	99	99	99	99
V_{ENR} = 108	TOFL-FT	**3,430**	**3,689**	**4,001**	**4,450**	**4,950**	**5,600**	**6,400**	**7,200**

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TAKEOFF SPEEDS & BALANCED 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
13,420 LB	V_1	114	114	114	114	114	114	114	114
6087 KG	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	**4,537**	**4,668**	**4,821**	**5,054**	**5,366**	**5,756**	**6,362**	**7,196**
13,000 LB	V_1	112	112	112	112	112	112	112	112
5897 KG	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	V_1	110	110	110	110	110	110	110	110
5670 KG	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	V_1	108	108	108	108	108	108	108	108
5443 KG	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	V_1	106	106	106	106	106	106	106	106
5216 KG	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	V_1	104	104	104	104	104	104	104	104
4990 KG	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	V_1	102	102	102	102	102	102	102	102
4763 KG	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	V_1	100	99	99	99	99	100	100	100
4536 KG	V_R	101	101	101	101	101	101	101	101
	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	V_1	97	97	97	97	97	98	99	99
4309 KG	V_R	101	101	101	101	101	101	101	101
	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**
9,000 LB	V_1	95	95	95	95	95	96	97	97
4082 KG	V_R	101	101	101	101	101	101	101	101
OR LESS	V_2	108	108	108	108	108	108	108	108
V_{ENR} = 108	TOFL-FT	**2,394**	**2,505**	**2,618**	**2,754**	**2,924**	**3,128**	**3,425**	**3,790**

TAKEOFF SPEEDS & BALANCED 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
13,420 LB	V_1	114	114	114	114	114	114	114	114
6087 KG	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	**4,952**	**5,105**	**5,295**	**5,558**	**5,906**	**6,368**	**7,098**	**8,102**
13,000 LB	V_1	112	112	112	112	112	112	112	112
5897 KG	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	V_1	110	110	110	110	110	110	110	110
5670 KG	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	V_1	108	108	108	108	108	108	108	108
5443 KG	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	V_1	106	106	106	106	106	106	106	106
5216 KG	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	V_1	104	104	104	104	104	104	104	104
4990 KG	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	V_1	102	102	102	102	102	102	102	102
4763 KG	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	V_1	99	99	99	99	100	100	100	100
4536 KG	V_R	101	101	101	101	101	101	101	101
	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	V_1	97	97	97	97	97	98	99	99
4309 KG	V_R	101	101	101	101	101	101	101	101
	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**
9,000 LB	V_1	95	95	95	95	95	96	97	97
4082 KG	V_R	101	101	101	101	101	101	101	101
OR LESS	V_2	108	108	108	108	108	108	108	108
V_{ENR} = 108	TOFL-FT	**2,444**	**2,556**	**2,675**	**2,816**	**2,990**	**3,205**	**3,519**	**3,893**

TAKEOFF SPEEDS & BALANCED 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
13,420 LB	V_1	114	114	114	114	114	114	114	114
6087 KG	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	**5,367**	**5,542**	**5,770**	**6,062**	**6,445**	**6,980**	**7,834**	**9,009**
13,000 LB	V_1	112	112	112	112	112	112	112	112
5897 KG	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	V_1	110	110	110	110	110	110	110	110
5670 KG	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	V_1	108	108	108	108	108	108	108	108
5443 KG	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	V_1	106	106	106	106	106	106	106	106
5216 KG	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	V_1	104	104	104	104	104	104	104	104
4990 KG	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	V_1	102	102	102	102	102	102	102	102
4763 KG	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	V_1	99	99	99	99	100	100	100	100
4536 KG	V_R	101	101	101	101	101	101	101	101
	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	V_1	97	97	97	97	97	98	99	99
4309 KG	V_R	101	101	101	101	101	101	101	101
	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**
9,000 LB	V_1	95	95	95	95	95	96	97	97
4082 KG	V_R	101	101	101	101	101	101	101	101
OR LESS	V_2	108	108	108	108	108	108	108	108
V_{ENR} = 108	TOFL-FT	**2,494**	**2,608**	**2,732**	**2,877**	**3,056**	**3,282**	**3,613**	**3,995**

TAKEOFF SPEEDS & BALANCED 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
13,420 LB	V_1	114	114	114	114	114	114	114	114
6087 KG	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	**5,782**	**5,979**	**6,244**	**6,566**	**6,984**	**7,592**	**8,571**	**9,915**
13,000 LB	V_1	112	112	112	112	112	112	112	112
5897 KG	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	V_1	110	110	110	110	110	110	110	110
5670 KG	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	V_1	108	108	108	108	108	108	108	108
5443 KG	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	V_1	106	106	106	106	106	106	106	106
5216 KG	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	V_1	104	104	104	104	104	104	104	104
4990 KG	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	V_1	102	102	102	102	102	102	102	102
4763 KG	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	V_1	99	99	99	99	100	100	100	100
4536 KG	V_R	101	101	101	101	101	101	101	101
	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	V_1	97	97	97	97	97	98	99	99
4309 KG	V_R	101	101	101	101	101	101	101	101
	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**
9,000 LB	V_1	95	95	95	95	96	96	97	97
4082 KG	V_R	101	101	101	101	101	101	101	101
OR LESS	V_2	108	108	108	108	108	108	108	108
V_{ENR} = 108	TOFL-FT	**2,544**	**2,660**	**2,789**	**2,939**	**3,122**	**3,359**	**3,706**	**4,098**

TAKEOFF SPEEDS & BALANCED 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
13,420 LB	V_1	114	114	114	114	114	114	114	114
6087 KG	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	**6,197**	**6,416**	**6,718**	**7,071**	**7,523**	**8,204**	**9,307**	**10,821**
13,000 LB	V_1	112	112	112	112	112	112	112	112
5897 KG	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	V_1	110	110	110	110	110	110	110	110
5670 KG	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	V_1	108	108	108	108	108	108	108	108
5443 KG	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	V_1	106	106	106	106	106	106	106	106
5216 KG	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	V_1	104	104	104	104	104	104	104	104
4990 KG	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	V_1	102	102	102	102	102	102	102	102
4763 KG	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	V_1	99	99	99	99	100	100	100	100
4536 KG	V_R	101	101	101	101	101	101	101	101
	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	V_1	97	97	97	97	98	99	99	99
4309 KG	V_R	101	101	101	101	101	101	101	101
	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**
9,000 LB	V_1	95	95	95	95	96	96	97	97
4082 KG	V_R	101	101	101	101	101	101	101	101
OR LESS	V_2	108	108	108	108	108	108	108	108
V_{ENR} = 108	TOFL-FT	**2,593**	**2,711**	**2,846**	**3,001**	**3,188**	**3,437**	**3,800**	**4,200**

TAKEOFF SPEEDS & BALANCED 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 performance requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-20	-10	0	10	20	30	40	47
13,420 LB	V_1	114	114	114	114	114	114	114	114
6087 KG	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	**6,361**	**6,603**	**6,932**	**7,299**	**7,806**	**8,562**	**9,904**	**11,572**
13,000 LB	V_1	112	112	112	112	112	112	112	112
5897 KG	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	V_1	110	110	110	110	110	110	110	110
5670 KG	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	V_1	108	108	108	108	108	108	108	108
5443 KG	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	V_1	106	106	106	106	106	106	106	106
5216 KG	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	V_1	104	104	104	104	104	104	104	104
4990 KG	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	V_1	102	102	102	102	102	102	102	102
4763 KG	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	V_1	99	99	99	99	100	100	100	100
4536 KG	V_R	101	101	101	101	101	101	101	101
	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	V_1	97	97	97	97	98	99	99	99
4309 KG	V_R	101	101	101	101	101	101	101	101
	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**
9,000 LB	V_1	95	95	95	95	96	97	97	97
4082 KG	V_R	101	101	101	101	101	101	101	101
OR LESS	V_2	108	108	108	108	108	108	108	108
V_{ENR} = 108	TOFL-FT	**2,652**	**2,774**	**2,917**	**3,077**	**3,266**	**3,540**	**3,938**	**4,363**

TAKEOFF SPEEDS & BALANCED 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 performance requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-21	-11	-1	9	19	29	39	46
13,420 LB	V_1	114	114	114	114	114	114	114	114
6087 KG	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	**6,526**	**6,790**	**7,146**	**7,528**	**8,088**	**8,921**	**10,501**	**12,324**
13,000 LB	V_1	112	112	112	112	112	112	112	112
5897 KG	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	**5,985**	**6,224**	**6,545**	**6,889**	**7,386**	**8,118**	**9,525**	**11,169**
12,500 LB	V_1	110	110	110	110	110	110	110	110
5670 KG	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	**5,403**	**5,615**	**5,900**	**6,205**	**6,637**	**7,267**	**8,488**	**9,937**
12,000 LB	V_1	108	108	108	108	108	108	108	108
5443 KG	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	**4,853**	**5,043**	**5,296**	**5,567**	**5,942**	**6,483**	**7,536**	**8,799**
11,500 LB	V_1	106	106	106	106	106	106	106	106
5216 KG	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	**4,361**	**4,532**	**4,759**	**5,002**	**5,331**	**5,799**	**6,705**	**7,799**
11,000 LB	V_1	104	104	104	104	104	104	104	104
4990 KG	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	**3,914**	**4,070**	**4,277**	**4,498**	**4,790**	**5,199**	**5,976**	**6,915**
10,500 LB	V_1	102	102	102	102	102	102	102	102
4763 KG	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	**3,513**	**3,658**	**3,849**	**4,053**	**4,318**	**4,684**	**5,351**	**6,148**
10,000 LB	V_1	99	99	100	100	100	100	100	100
4536 KG	V_R	101	101	101	101	101	101	101	101
	V_2	111	111	111	111	111	111	111	111
V_{ENR} = 111	TOFL-FT	**3,200**	**3,338**	**3,497**	**3,683**	**3,906**	**4,244**	**4,819**	**5,486**
9,500 LB	V_1	97	97	97	98	98	99	99	99
4309 KG	V_R	101	101	101	101	101	101	101	101
	V_2	110	110	110	110	110	110	110	110
V_{ENR} = 110	TOFL-FT	**2,942**	**3,072**	**3,225**	**3,397**	**3,597**	**3,891**	**4,394**	**4,945**
9,000 LB	V_1	95	95	95	96	96	97	97	97
4082 KG	V_R	101	101	101	101	101	101	101	101
OR LESS	V_2	108	108	108	108	108	108	108	108
V_{ENR} = 108	TOFL-FT	**2,711**	**2,838**	**2,988**	**3,153**	**3,344**	**3,643**	**4,075**	**4,525**

TAKEOFF SPEEDS & BALANCED 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 performance requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-22	-12	-2	8	18	28	38	45
13,420 LB	V_1	114	114	114	114	114	114	114	114
6087 KG	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	**6,691**	**6,977**	**7,360**	**7,756**	**8,370**	**9,279**	**11,099**	**13,075**
13,000 LB	V_1	112	112	112	112	112	112	112	112
5897 KG	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	V_1	110	110	110	110	110	110	110	110
5670 KG	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	V_1	108	108	108	108	108	108	108	108
5443 KG	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	V_1	106	106	106	106	106	106	106	106
5216 KG	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	V_1	104	104	104	104	104	104	104	104
4990 KG	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	V_1	102	102	102	102	102	102	102	102
4763 KG	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	V_1	99	99	100	100	100	100	100	100
4536 KG	V_R	101	101	101	101	101	101	101	101
	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	V_1	97	97	98	98	98	99	99	99
4309 KG	V_R	101	101	101	101	101	101	101	101
	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**
9,000 LB	V_1	95	95	96	96	97	97	97	97
4082 KG	V_R	101	101	101	101	101	101	101	101
OR LESS	V_2	108	108	108	108	108	108	108	108
V_{ENR} = 108	TOFL-FT	**2,770**	**2,901**	**3,059**	**3,228**	**3,422**	**3,747**	**4,213**	**4,688**

TAKEOFF SPEEDS & BALANCED 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 performance requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-23	-13	-3	7	17	27	37	44
13,420 LB	V_1	114	114	114	114	114	114	114	114
6087 KG	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	**6,855**	**7,163**	**7,574**	**7,985**	**8,653**	**9,637**	**11,696**	**13,826**
13,000 LB	V_1	112	112	112	112	112	112	112	112
5897 KG	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	V_1	110	110	110	110	110	110	110	110
5670 KG	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	V_1	108	108	108	108	108	108	108	108
5443 KG	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	V_1	106	106	106	106	106	106	106	106
5216 KG	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	V_1	104	104	104	104	104	104	104	104
4990 KG	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	V_1	102	102	102	102	102	102	102	102
4763 KG	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	V_1	99	100	100	100	100	100	100	100
4536 KG	V_R	101	101	101	101	101	101	101	101
	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	V_1	97	97	98	98	99	99	99	99
4309 KG	V_R	101	101	101	101	101	101	101	101
	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**
9,000 LB	V_1	95	95	96	96	97	97	97	97
4082 KG	V_R	101	101	101	101	101	101	101	101
OR LESS	V_2	108	108	108	108	108	108	108	108
V_{ENR} = 108	TOFL-FT	**2,830**	**2,964**	**3,130**	**3,304**	**3,500**	**3,850**	**4,350**	**4,850**

TAKEOFF SPEEDS & BALANCED 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 performance requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-24	-14	-4	6	16	26	36	43
13,420 LB	V_1	114	114	114	114	114	114	114	
6087 KG	V_R	115	115	115	115	115	115	115	
	V_2	125	125	125	125	125	125	125	
V_{ENR} = 125	TOFL-FT	**6,958**	**7,292**	**7,703**	**8,187**	**8,934**	**10,152**	**12,281**	
13,000 LB	V_1	112	112	112	112	112	112	112	112
5897 KG	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	V_1	110	110	110	110	110	110	110	110
5670 KG	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	V_1	108	108	108	108	108	108	108	108
5443 KG	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	V_1	106	106	106	106	106	106	106	106
5216 KG	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	V_1	104	104	104	104	104	104	104	104
4990 KG	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	V_1	102	102	102	102	102	102	102	102
4763 KG	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	V_1	99	100	100	100	100	100	100	100
4536 KG	V_R	101	101	101	101	101	101	101	101
	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	V_1	97	97	98	98	99	99	99	99
4309 KG	V_R	101	101	101	101	101	101	101	101
	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**
9,000 LB	V_1	95	95	96	96	97	97	97	97
4082 KG	V_R	101	101	101	101	101	101	101	101
OR LESS	V_2	108	108	108	108	108	108	108	108
V_{ENR} = 108	TOFL-FT	**2,878**	**3,023**	**3,191**	**3,376**	**3,600**	**3,975**	**4,488**	**4,988**

TAKEOFF SPEEDS & BALANCED 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 performance requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-25	-15	-5	5	15	25	35	42
13,420 LB	V_1	114	114	114	114	114	114	114	---
6087 KG	V_R	115	115	115	115	115	115	115	---
	V_2	125	125	125	125	125	125	125	---
V_{ENR} = 125	TOFL-FT	**7,061**	**7,420**	**7,832**	**8,389**	**9,215**	**10,667**	**12,866**	---
13,000 LB	V_1	112	112	112	112	112	112	112	---
5897 KG	V_R	113	113	113	113	113	113	113	---
	V_2	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**	---
12,500 LB	V_1	110	110	110	110	110	110	110	110
5670 KG	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	V_1	108	108	108	108	108	108	108	108
5443 KG	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	V_1	106	106	106	106	106	106	106	106
5216 KG	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	V_1	104	104	104	104	104	104	104	104
4990 KG	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	V_1	102	102	102	102	102	102	102	102
4763 KG	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	V_1	99	100	100	100	100	100	100	100
4536 KG	V_R	101	101	101	101	101	101	101	101
	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	V_1	97	97	98	98	99	99	99	99
4309 KG	V_R	101	101	101	101	101	101	101	101
	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**
9,000 LB	V_1	95	95	96	96	97	97	97	97
4082 KG	V_R	101	101	101	101	101	101	101	101
OR LESS	V_2	108	108	108	108	108	108	108	108
V_{ENR} = 108	TOFL-FT	**2,927**	**3,082**	**3,251**	**3,449**	**3,700**	**4,100**	**4,625**	**5,125**

TAKEOFF SPEEDS & BALANCED 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 performance requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-26	-16	-6	4	14	24	34	41
13,420 LB	V_1	114	114	114	114	114	114	114	---
6087 KG	V_R	115	115	115	115	115	115	115	---
	V_2	125	125	125	125	125	125	125	---
V_{ENR} = 125	TOFL-FT	**7,163**	**7,549**	**7,961**	**8,591**	**9,497**	**11,181**	**13,452**	---
13,000 LB	V_1	112	112	112	112	112	112	112	---
5897 KG	V_R	113	113	113	113	113	113	113	---
	V_2	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**	---
12,500 LB	V_1	110	110	110	110	110	110	110	110
5670 KG	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	V_1	108	108	108	108	108	108	108	108
5443 KG	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	V_1	106	106	106	106	106	106	106	106
5216 KG	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	V_1	104	104	104	104	104	104	104	104
4990 KG	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	V_1	102	102	102	102	102	102	102	102
4763 KG	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	V_1	99	100	100	100	100	100	100	100
4536 KG	V_R	101	101	101	101	101	101	101	101
	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	V_1	97	97	98	98	99	99	99	99
4309 KG	V_R	101	101	101	101	101	101	101	101
	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**
9,000 LB	V_1	95	95	96	96	97	97	97	97
4082 KG	V_R	101	101	101	101	101	101	101	101
OR LESS	V_2	108	108	108	108	108	108	108	108
V_{ENR} = 108	TOFL-FT	**2,976**	**3,140**	**3,311**	**3,521**	**3,800**	**4,225**	**4,763**	**5,263**

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TAKEOFF SPEEDS & BALANCED 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 performance requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-27	-17	-7	3	13	23	33	40
13,420 LB	V_1	114	114	114	114	114	114	114	---
6087 KG	V_R	115	115	115	115	115	115	115	---
	V_2	125	125	125	125	125	125	125	---
V_{ENR} = 125	TOFL-FT	**7,266**	**7,677**	**8,090**	**8,793**	**9,778**	**11,696**	**14,037**	---
13,000 LB	V_1	112	112	112	112	112	112	112	---
5897 KG	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	V_1	110	110	110	110	110	110	110	110
5670 KG	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	V_1	108	108	108	108	108	108	108	108
5443 KG	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	V_1	106	106	106	106	106	106	106	106
5216 KG	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	V_1	104	104	104	104	104	104	104	104
4990 KG	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	V_1	102	102	102	102	102	102	102	102
4763 KG	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	V_1	99	100	100	100	100	100	100	100
4536 KG	V_R	101	101	101	101	101	101	101	101
	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	V_1	97	97	98	99	99	99	99	99
4309 KG	V_R	101	101	101	101	101	101	101	101
	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**
9,000 LB	V_1	95	96	96	96	97	97	97	97
4082 KG	V_R	101	101	101	101	101	101	101	101
OR LESS	V_2	108	108	108	108	108	108	108	108
V_{ENR} = 108	TOFL-FT	**3,025**	**3,199**	**3,372**	**3,593**	**3,900**	**4,350**	**4,900**	**5,400**

TAKEOFF SPEEDS & BALANCED 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 performance requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-28	-18	-8	2	12	22	32	39
13,420 LB	V_1	114	114	114	114	114	114	114	---
6087 KG	V_R	115	115	115	115	115	115	115	---
	V_2	125	125	125	125	125	125	125	---
V_{ENR} = 125	TOFL-FT	**7,420**	**7,886**	**8,407**	**9,301**	**10,527**	**12,492**	**14,987**	---
13,000 LB	V_1	112	112	112	112	112	112	112	---
5897 KG	V_R	113	113	113	113	113	113	113	---
	V_2	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**	---
12,500 LB	V_1	110	110	110	110	110	110	110	110
5670 KG	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	V_1	108	108	108	108	108	108	108	108
5443 KG	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	V_1	106	106	106	106	106	106	106	106
5216 KG	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	V_1	104	104	104	104	104	104	104	104
4990 KG	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	V_1	102	102	102	102	102	102	102	102
4763 KG	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	V_1	100	100	100	100	100	100	100	100
4536 KG	V_R	101	101	101	101	101	101	101	101
	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	V_1	97	98	98	99	99	99	99	99
4309 KG	V_R	101	101	101	101	101	101	101	101
	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**
9,000 LB	V_1	95	96	96	97	97	97	97	97
4082 KG	V_R	101	101	101	101	101	101	101	101
OR LESS	V_2	108	108	108	108	108	108	108	108
V_{ENR} = 108	TOFL-FT	**3,088**	**3,273**	**3,466**	**3,732**	**4,075**	**4,538**	**5,113**	**5,650**

TAKEOFF SPEEDS & BALANCED 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 performance requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-29	-19	-9	1	11	21	31	38
13,420 LB	V_1	114	114	114	114	114	114	---	---
6087 KG	V_R	115	115	115	115	115	115	---	---
	V_2	125	125	125	125	125	125	---	---
V_{ENR} = 125	TOFL-FT	**7,574**	**8,094**	**8,723**	**9,809**	**11,276**	**13,287**	---	---
13,000 LB	V_1	112	112	112	112	112	112	112	---
5897 KG	V_R	113	113	113	113	113	113	113	---
	V_2	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**	---
12,500 LB	V_1	110	110	110	110	110	110	110	110
5670 KG	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	V_1	108	108	108	108	108	108	108	108
5443 KG	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	V_1	106	106	106	106	106	106	106	106
5216 KG	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	V_1	104	104	104	104	104	104	104	104
4990 KG	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	V_1	102	102	102	102	102	102	102	102
4763 KG	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	V_1	100	100	100	100	100	100	100	100
4536 KG	V_R	101	101	101	101	101	101	101	101
	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	V_1	97	98	98	99	99	99	99	99
4309 KG	V_R	101	101	101	101	101	101	101	101
	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**
9,000 LB	V_1	96	96	96	97	97	97	97	97
4082 KG	V_R	101	101	101	101	101	101	101	101
OR LESS	V_2	108	108	108	108	108	108	108	108
V_{ENR} = 108	TOFL-FT	**3,151**	**3,348**	**3,561**	**3,871**	**4,250**	**4,725**	**5,325**	**5,900**

TAKEOFF SPEEDS & BALANCED 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 performance requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-30	-20	-10	0	10	20	30	37
13,420 LB	V_1	114	114	114	114	114	114	---	---
6087 KG	V_R	115	115	115	115	115	115	---	---
	V_2	125	125	125	125	125	125	---	---
V_{ENR} = 125	TOFL-FT	**7,728**	**8,303**	**9,040**	**10,316**	**12,025**	**14,083**	---	---
13,000 LB	V_1	112	112	112	112	112	112	112	---
5897 KG	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	V_1	110	110	110	110	110	110	110	---
5670 KG	V_R	111	111	111	111	111	111	111	---
	V_2	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**	---
12,000 LB	V_1	108	108	108	108	108	108	108	108
5443 KG	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	V_1	106	106	106	106	106	106	106	106
5216 KG	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	V_1	104	104	104	104	104	104	104	104
4990 KG	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	V_1	102	102	102	102	102	102	102	102
4763 KG	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	V_1	100	100	100	100	100	100	100	100
4536 KG	V_R	101	101	101	101	101	101	101	101
	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	V_1	98	98	98	99	99	99	99	99
4309 KG	V_R	101	101	101	101	101	101	101	101
	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**
9,000 LB	V_1	96	96	97	97	97	97	97	97
4082 KG	V_R	101	101	101	101	101	101	101	101
OR LESS	V_2	108	108	108	108	108	108	108	108
V_{ENR} = 108	TOFL-FT	**3,214**	**3,422**	**3,655**	**4,011**	**4,425**	**4,913**	**5,538**	**6,150**

TAKEOFF SPEEDS & BALANCED 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 performance requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-31	-21	-11	-1	9	19	29	36
13,420 LB	V_1	114	114	114	114	114	114	---	---
6087 KG	V_R	115	115	115	115	115	115	---	---
	V_2	125	125	125	125	125	125	---	---
V_{ENR} = 125	TOFL-FT	**7,882**	**8,512**	**9,356**	**10,824**	**12,774**	**14,879**	---	---
13,000 LB	V_1	112	112	112	112	112	112	---	---
5897 KG	V_R	113	113	113	113	113	113	---	---
	V_2	123	123	123	123	123	123	---	---
V_{ENR} = 123	TOFL-FT	**7,209**	**7,765**	**8,502**	**9,812**	**11,573**	**13,486**	---	---
12,500 LB	V_1	110	110	110	110	110	110	110	---
5670 KG	V_R	111	111	111	111	111	111	111	---
	V_2	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**	---
12,000 LB	V_1	108	108	108	108	108	108	108	108
5443 KG	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	V_1	106	106	106	106	106	106	106	106
5216 KG	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	V_1	104	104	104	104	104	104	104	104
4990 KG	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	V_1	102	102	102	102	102	102	102	102
4763 KG	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	V_1	100	100	100	100	100	100	100	100
4536 KG	V_R	101	101	101	101	101	101	101	101
	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	V_1	98	99	99	99	99	99	99	99
4309 KG	V_R	101	101	101	101	101	101	101	101
	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**
9,000 LB	V_1	96	96	97	97	97	97	97	97
4082 KG	V_R	101	101	101	101	101	101	101	101
OR LESS	V_2	108	108	108	108	108	108	108	108
V_{ENR} = 108	TOFL-FT	**3,276**	**3,496**	**3,750**	**4,150**	**4,600**	**5,100**	**5,750**	**6,400**

TAKEOFF SPEEDS & BALANCED 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 performance requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-32	-22	-12	-2	8	18	28	35
13,420 LB	V_1	114	114	114	114	114	---	---	---
6087 KG	V_R	115	115	115	115	115	---	---	---
	V_2	125	125	125	125	125	---	---	---
V_{ENR} = 125	TOFL-FT	**8,180**	**8,981**	**10,050**	**11,627**	**13,630**	---	---	---
13,000 LB	V_1	112	112	112	112	112	112	---	---
5897 KG	V_R	113	113	113	113	113	113	---	---
	V_2	123	123	123	123	123	123	---	---
V_{ENR} = 123	TOFL-FT	**7,471**	**8,178**	**9,124**	**10,539**	**12,346**	**14,388**	---	---
12,500 LB	V_1	110	110	110	110	110	110	110	---
5670 KG	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	V_1	108	108	108	108	108	108	108	---
5443 KG	V_R	109	109	109	109	109	109	109	---
	V_2	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**	---
11,500 LB	V_1	106	106	106	106	106	106	106	106
5216 KG	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	V_1	104	104	104	104	104	104	104	104
4990 KG	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	V_1	102	102	102	102	102	102	102	102
4763 KG	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	V_1	100	100	100	100	100	100	100	100
4536 KG	V_R	101	101	101	101	101	101	101	101
	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	V_1	98	99	99	99	99	99	99	99
4309 KG	V_R	101	101	101	101	101	101	101	101
	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**
9,000 LB	V_1	96	96	97	97	97	97	97	97
4082 KG	V_R	101	101	101	101	101	101	101	101
OR LESS	V_2	108	108	108	108	108	108	108	108
V_{ENR} = 108	TOFL-FT	**3,370**	**3,634**	**3,925**	**4,338**	**4,800**	**5,325**	**6,025**	**6,700**

TAKEOFF SPEEDS & BALANCED 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 performance requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-33	-23	-13	-3	7	17	27	34
13,420 LB	V_1	114	114	114	114	114	---	---	---
6087 KG	V_R	115	115	115	115	115	---	---	---
	V_2	125	125	125	125	125	---	---	---
V_{ENR} = 125	TOFL-FT	**8,478**	**9,450**	**10,744**	**12,430**	**14,487**	---	---	---
13,000 LB	V_1	112	112	112	112	112	---	---	---
5897 KG	V_R	113	113	113	113	113	---	---	---
	V_2	123	123	123	123	123	---	---	---
V_{ENR} = 123	TOFL-FT	**7,733**	**8,591**	**9,747**	**11,266**	**13,118**	---	---	---
12,500 LB	V_1	110	110	110	110	110	110	---	---
5670 KG	V_R	111	111	111	111	111	111	---	---
	V_2	121	121	121	121	121	121	---	---
V_{ENR} = 121	TOFL-FT	**6,922**	**7,662**	**8,667**	**10,001**	**11,624**	**13,488**	---	---
12,000 LB	V_1	108	108	108	108	108	108	108	---
5443 KG	V_R	109	109	109	109	109	109	109	---
	V_2	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**	---
11,500 LB	V_1	106	106	106	106	106	106	106	106
5216 KG	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	V_1	104	104	104	104	104	104	104	104
4990 KG	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	V_1	102	102	102	102	102	102	102	102
4763 KG	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	V_1	100	100	100	100	100	100	100	100
4536 KG	V_R	101	101	101	101	101	101	101	101
	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	V_1	98	99	99	99	99	99	99	99
4309 KG	V_R	101	101	101	101	101	101	101	101
	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**
9,000 LB	V_1	96	97	97	97	97	97	97	97
4082 KG	V_R	101	101	101	101	101	101	101	101
OR LESS	V_2	108	108	108	108	108	108	108	108
V_{ENR} = 108	TOFL-FT	**3,463**	**3,773**	**4,100**	**4,525**	**5,000**	**5,550**	**6,300**	**7,000**

TAKEOFF SPEEDS & BALANCED 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 performance requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-34	-24	-14	-4	6	16	26	33
13,420 LB	V_1	114	114	114	114	---	---	---	---
6087 KG	V_R	115	115	115	115	---	---	---	---
	V_2	125	125	125	125	---	---	---	---
V_{ENR} = 125	TOFL-FT	**8,777**	**9,919**	**11,438**	**13,234**	---	---	---	---
13,000 LB	V_1	112	112	112	112	112	---	---	---
5897 KG	V_R	113	113	113	113	113	---	---	---
	V_2	123	123	123	123	123	---	---	---
V_{ENR} = 123	TOFL-FT	**7,994**	**9,005**	**10,370**	**11,994**	**13,890**	---	---	---
12,500 LB	V_1	110	110	110	110	110	110	---	---
5670 KG	V_R	111	111	111	111	111	111	---	---
	V_2	121	121	121	121	121	121	---	---
V_{ENR} = 121	TOFL-FT	**7,146**	**8,017**	**9,211**	**10,644**	**12,302**	**14,250**	---	---
12,000 LB	V_1	108	108	108	108	108	108	108	---
5443 KG	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	V_1	106	106	106	106	106	106	106	---
5216 KG	V_R	107	107	107	107	107	107	107	---
	V_2	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**	---
11,000 LB	V_1	104	104	104	104	104	104	104	104
4990 KG	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	V_1	102	102	102	102	102	102	102	102
4763 KG	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	V_1	100	100	100	100	100	100	100	100
4536 KG	V_R	101	101	101	101	101	101	101	101
	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	V_1	98	99	99	99	99	99	99	99
4309 KG	V_R	101	101	101	101	101	101	101	101
	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**
9,000 LB	V_1	97	97	97	97	97	97	97	97
4082 KG	V_R	101	101	101	101	101	101	101	101
OR LESS	V_2	108	108	108	108	108	108	108	108
V_{ENR} = 108	TOFL-FT	**3,557**	**3,911**	**4,275**	**4,713**	**5,200**	**5,775**	**6,575**	**7,300**

TAKEOFF SPEEDS & BALANCED 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 performance requirements are not met.

T.O. WEIGHT	ITEM	OUTSIDE AIR TEMPERATURE (°C)							
		-35	-25	-15	-5	5	15	25	32
13,420 LB	V_1	114	114	114	114	---	---	---	---
6087 KG	V_R	115	115	115	115	---	---	---	---
	V_2	125	125	125	125	---	---	---	---
V_{ENR} = 125	TOFL-FT	**9,075**	**10,388**	**12,132**	**14,037**	---	---	---	---
13,000 LB	V_1	112	112	112	112	112	---	---	---
5897 KG	V_R	113	113	113	113	113	---	---	---
	V_2	123	123	123	123	123	---	---	---
V_{ENR} = 123	TOFL-FT	**8,256**	**9,418**	**10,992**	**12,721**	**14,662**	---	---	---
12,500 LB	V_1	110	110	110	110	110	110	---	---
5670 KG	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	V_1	108	108	108	108	108	108	---	---
5443 KG	V_R	109	109	109	109	109	109	---	---
	V_2	120	120	120	120	120	120	---	---
V_{ENR} = 120	TOFL-FT	**6,573**	**7,432**	**8,638**	**9,981**	**11,449**	**13,129**	---	---
11,500 LB	V_1	106	106	106	106	106	106	106	---
5216 KG	V_R	107	107	107	107	107	107	107	---
	V_2	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**	---
11,000 LB	V_1	104	104	104	104	104	104	104	104
4990 KG	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	V_1	102	102	102	102	102	102	102	102
4763 KG	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	V_1	100	100	100	100	100	100	100	100
4536 KG	V_R	101	101	101	101	101	101	101	101
	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	V_1	99	99	99	99	99	99	99	99
4309 KG	V_R	101	101	101	101	101	101	101	101
	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**
9,000 LB	V_1	97	97	97	97	97	97	97	97
4082 KG	V_R	101	101	101	101	101	101	101	101
OR LESS	V_2	108	108	108	108	108	108	108	108
V_{ENR} = 108	TOFL-FT	**3,650**	**4,050**	**4,450**	**4,900**	**5,400**	**6,000**	**6,850**	**7,600**

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MAXIMUM ALLOWED LANDING WEIGHT
TO ACHIEVE LANDING CLIMB REQUIREMENTS

EXAMPLE:
Destination
OAT….. 26°C Pressure Altitude…..4,732 feet
Note - Airplane wo/High Flotation landing gear.
Maximum Allowed Landing Weight – 12,500 lbs

NOTES:
1. Airplanes without Beechcraft High Flotation landing gear are limited to a maximum landing weight of 12,500 pounds.
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.

Pressure Altitude Feet	**Outside Air Temperature** **Maximum Allowed Landing Weight - Pounds**																	
12,000	-39°C 12,850	-35°C 12,650	-31°C 12,450	-27°C 12,250	-23°C 12,050	-19°C 11,750	-15°C 11,438	-11°C 11,188	-7°C 10,938	-3°C 10,688	1°C 10,429	5°C 10,143	9°C 9,857	13°C 9,571	17°C 9,200	21°C 8,833	25°C 8,500	28°C 8,230
11,000	-37°C 13,124	-33°C 13,000	-29°C 12,750	-25°C 12,500	-21°C 12,318	-17°C 12,136	-13°C 11,917	-9°C 11,583	-5°C 11,312	-1°C 11,062	3°C 10,812	7°C 10,562	11°C 10,312	15°C 10,062	19°C 9,750	23°C 9,417	27°C 9,083	30°C 8,834
10,000	-35°C 13,420	-31°C 13,300	-27°C 13,060	-23°C 12,833	-19°C 12,611	-15°C 12,409	-11°C 12,227	-7°C 12,045	-3°C 11,750	1°C 11,438	5°C 11,188	9°C 10,944	13°C 10,722	17°C 10,500	21°C 10,214	25°C 9,929	29°C 9,644	32°C 9,431
9,000	-33°C 13,420	-29°C 13,420	-25°C 13,420	-21°C 13,262	-17°C 13,052	-13°C 12,812	-9°C 12,562	-5°C 12,364	-1°C 12,182	3°C 12,000	7°C 11,714	11°C 11,429	15°C 11,143	19°C 10,889	23°C 10,667	27°C 10,438	31°C 10,188	34°C 10,000
8,000	-31°C 13,420	-27°C 13,420	-23°C 13,420	-19°C 13,420	-15°C 13,420	-11°C 13,210	-7°C 13,000	-3°C 12,750	1°C 12,500	5°C 12,318	9°C 12,136	13°C 11,929	17°C 11,643	21°C 11,357	25°C 11,071	29°C 10,833	33°C 10,611	36°C 10,446
7,000	-29°C 13,420	-25°C 13,420	-21°C 13,420	-17°C 13,420	-13°C 13,420	-9°C 13,420	-5°C 13,315	-1°C 13,105	3°C 12,889	7°C 12,667	11°C 12,455	15°C 12,273	19°C 12,091	23°C 11,833	27°C 11,500	31°C 11,250	35°C 11,000	38°C 10,709
6,000	-27°C 13,420	-23°C 13,420	-19°C 13,420	-15°C 13,420	-11°C 13,420	-7°C 13,420	-3°C 13,420	1°C 13,420	5°C 13,240	9°C 13,000	13°C 12,778	17°C 12,556	21°C 12,364	25°C 12,182	29°C 12,000	33°C 11,714	37°C 11,428	40°C 11,212
5,000	-25°C 13,420	-21°C 13,420	-17°C 13,420	-13°C 13,420	-9°C 13,420	-5°C 13,420	-1°C 13,420	3°C 13,420	7°C 13,420	11°C 13,420	15°C 13,180	19°C 12,938	23°C 12,688	27°C 12,450	31°C 12,250	35°C 12,050	39°C 11,835	42°C 11,670
4,000	-23°C 13,420	-19°C 13,420	-15°C 13,420	-11°C 13,420	-7°C 13,420	-3°C 13,420	1°C 13,420	5°C 13,420	9°C 13,420	13°C 13,420	17°C 13,420	21°C 13,280	25°C 13,000	29°C 12,714	33°C 12,444	37°C 12,222	41°C 12,000	44°C 11,835
3,000	-21°C 13,420	-17°C 13,420	-13°C 13,420	-9°C 13,420	-5°C 13,420	-1°C 13,420	3°C 13,420	7°C 13,420	11°C 13,420	15°C 13,420	19°C 13,420	23°C 13,420	27°C 13,420	31°C 13,168	35°C 12,833	39°C 12,500	43°C 12,214	46°C 12,000
2,000	-19°C 13,420	-15°C 13,420	-11°C 13,420	-7°C 13,420	-3°C 13,420	1°C 13,420	5°C 13,420	9°C 13,420	13°C 13,420	17°C 13,420	21°C 13,420	25°C 13,420	29°C 13,420	33°C 13,420	37°C 13,192	41°C 12,856	45°C 12,520	48°C 12,268
1,000	-17°C 13,420	-13°C 13,420	-9°C 13,420	-5°C 13,420	-1°C 13,420	3°C 13,420	7°C 13,420	11°C 13,420	15°C 13,420	19°C 13,420	23°C 13,420	27°C 13,420	31°C 13,420	35°C 13,420	39°C 13,420	43°C 13,084	47°C 12,748	50°C 12,496
0	-15°C 13,420	-11°C 13,420	-7°C 13,420	-3°C 13,420	1°C 13,420	5°C 13,420	9°C 13,420	13°C 13,420	17°C 13,420	21°C 13,420	25°C 13,420	29°C 13,420	33°C 13,420	37°C 13,420	41°C 13,420	45°C 13,252	49°C 12,916	52°C 12,664

MAXIMUM ALLOWED LANDING WEIGHT

TO ACHIEVE LANDING CLIMB REQUIREMENTS WITH ICE ACCUMULATIONS PRESENT

Pressure Altitude Feet	Outside Air Temperature, °C Maximum Allowed Landing Weight, Pounds									
10,000	-35°C 10,082	-31°C 9,951	-27°C 9,828	-23°C 9,705	-19°C 9,586	-15°C 9,468	-1°C 1 9,290	-7°C 9,108	- -	- -
9,500	-34°C 10,168	-30°C 10,048	-26°C 9,935	-22°C 9,814	-18°C 9,695	-14°C 9,576	-10°C 9,415	-6°C 9,249	-2°C 9,064	- -
9,000	-33°C 10,254	-29°C 10,146	-25°C 10,042	-21°C 9,923	-17°C 9,803	-13°C 9,684	-9°C 9,539	-5°C 9,384	-1°C 9,209	3°C 9,034
8,500	-32°C 10,340	-28°C 10,243	-24°C 10,148	-20°C 10,031	-16°C 9,912	-12°C 9,792	-8°C 9,664	-4°C 9,525	0°C 9,377	4°C 9,198
8,000	-31°C 10,426	-27°C 10,340	-23°C 10,255	-19°C 10,140	-15°C 10,020	-11°C 9,900	-7°C 9,788	-3°C 9,673	1°C 9,518	5°C 9,347
7,500	-30°C 10,507	-26°C 10,420	-22°C 10,334	-18°C 10,227	-14°C 10,116	-10°C 10,003	-6°C 9,889	-2°C 9,771	2°C 9,624	6°C 9,464
7,000	-29°C 10,588	-25°C 10,500	-21°C 10,414	-17°C 10,315	-13°C 10,212	-9°C 10,105	-5°C 9,989	-1°C 9,869	3°C 9,729	7°C 9,581
6,500	-28°C 10,669	-24°C 10,580	-20°C 10,493	-16°C 10,402	-12°C 10,308	-8°C 10,208	-4°C 10,090	0°C 9,967	4°C 9,835	8°C 9,698
6,000	-27°C 10,750	-23°C 10,660	-19°C 10,572	-15°C 10,489	-11°C 10,404	-7°C 10,310	-3°C 10,190	1°C 10,065	5°C 9,940	9°C 9,815
5,500	-26°C 10,823	-22°C 10,734	-18°C 10,647	-14°C 10,563	-10°C 10,479	-6°C 10,388	-2°C 10,277	2°C 10,164	6°C 10,050	10°C 9,937
5,000	-25°C 10,895	-21°C 10,807	-17°C 10,721	-13°C 10,637	-9°C 10,553	-5°C 10,465	-1°C 10,365	3°C 10,262	7°C 10,160	- -
4,500	-24°C 10,968	-20°C 10,881	-16°C 10,796	-12°C 10,711	-8°C 10,628	-4°C 10,543	0°C 10,452	4°C 10,361	8°C 10,270	- -
4,000	-23°C 11,040	-19°C 10,954	-15°C 10,870	-11°C 10,785	-7°C 10,702	-3°C 10,620	1°C 10,539	5°C 10,459	9°C 10,380	- -
3,500	-22°C 11,106	-18°C 11,021	-14°C 10,937	-10°C 10,853	-6°C 10,771	-2°C 10,690	2°C 10,610	6°C 10,531	10°C 10,454	- -
3,000	-21°C 11,172	-17°C 11,087	-13°C 11,004	-9°C 10,922	-5°C 10,840	-1°C 10,760	3°C 10,681	7°C 10,604	- -	- -
2,500	-20°C 11,238	-16°C 11,154	-12°C 11,071	-8°C 10,990	-4°C 10,909	0°C 10,830	4°C 10,751	8°C 10,676	- -	- -
2,000	-19°C 11,304	-15°C 11,220	-11°C 11,138	-7°C 11,058	-3°C 10,978	1°C 10,900	5°C 10,822	9°C 10,748	- -	- -
1,500	-18°C 11,381	-14°C 11,298	-10°C 11,216	-6°C 11,136	-2°C 11,056	2°C 10,979	6°C 10,901	10°C 10,824	- -	- -
1,000	-17°C 11,457	-13°C 11,375	-9°C 11,294	-5°C 11,214	-1°C 11,134	3°C 11,057	7°C 10,980	- -	- -	- -
500	-16°C 11,534	-12°C 11,453	-8°C 11,372	-4°C 11,292	0°C 11,212	4°C 11,136	8°C 11,059	- -	- -	- -
Sea Level	-15°C 11,610	-11°C 11,530	-7°C 11,450	-3°C 11,370	1°C 11,290	5°C 11,214	9°C 11,138	- -	- -	- -

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.

DISCONTINUED APPROACH CLIMB GRADIENT

ONE ENGINE INOPERATIVE

Associated Conditions
Power..... Max Cont.
Flaps..... Approach
Landing Gear..... Up
Inoperative Propeller... Feathered

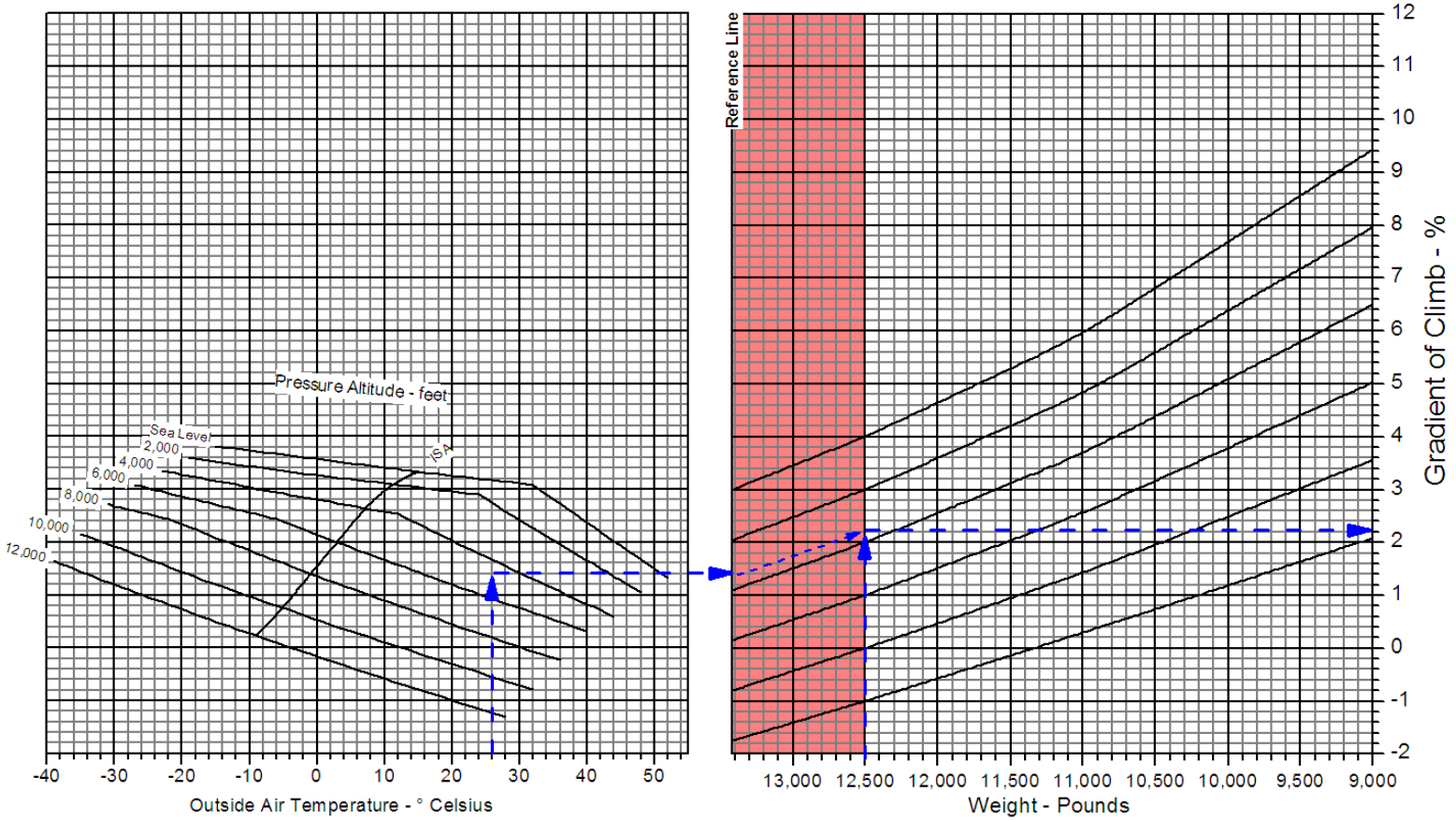
Weight - LBS	V_{REF}+10 (Knots)
13,420	115
13,000	114
12,000	112
11,000	109
10,000	106
9,000	103

Example
OAT..... 26°C
Pressure Altitude..... 4,730 feet

Weight - LBS	Gradient - %
12,500	2.21

Climb Speed at 12,500 pounds..... 113 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.
   Note- climb airspeed is 145 KIAS in icing conditions.
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. Red shaded area is above maximum landing weight, except for airplanes equipped with Beechcraft Hi-Flotation landing gear.



CLIMB - BALKED LANDING

Weight - Pounds	Climb Speed (V_{REF})-Knots
13,420	105
13,000	104
12,000	101
11,000	99
10,000	96
9,000	94

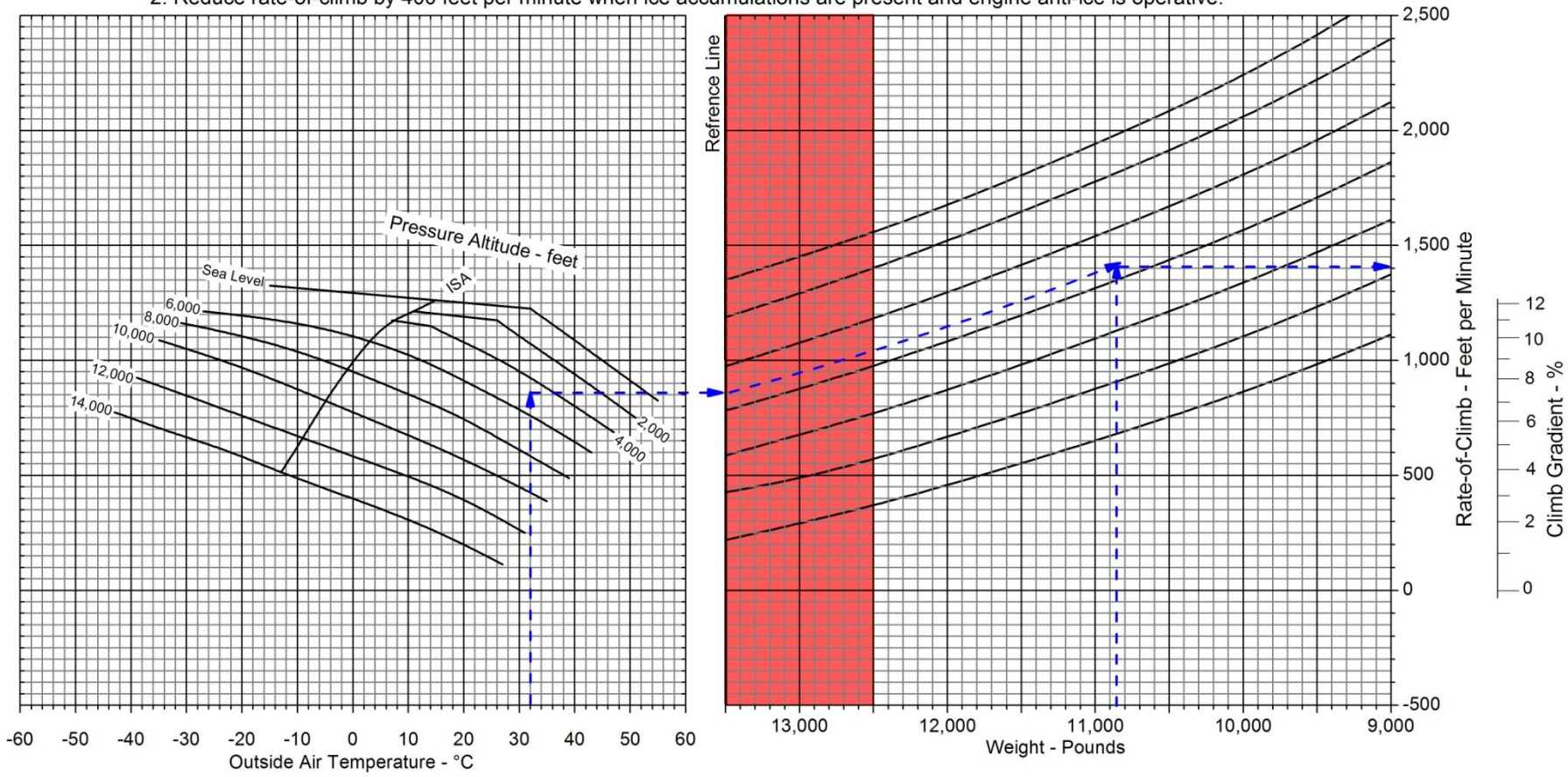
Associated conditions

Power..... Take-Off
Flaps..... Down
Landing Gear..... Down

Example
OAT..... 32 °C
Pressure Altitude..... 4,732 feet
Weight..... 10,854 pounds

Rate-of-Climb..... 1,410 fpm
Climb Gradient..... > 12 %

Notes: 1. The red area is above the maximum landing weight except for an airplane equipped with Beechcraft High Flotation landing gear.
2. Reduce rate-of-climb by 400 feet per minute when ice accumulations are present and engine anti-ice is operative.



SECTION 9
SUPPLEMENTS

TABLE OF CONTENTS

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.

TAKE-OFF DISTANCE - FLAPS UP

Associated conditions

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

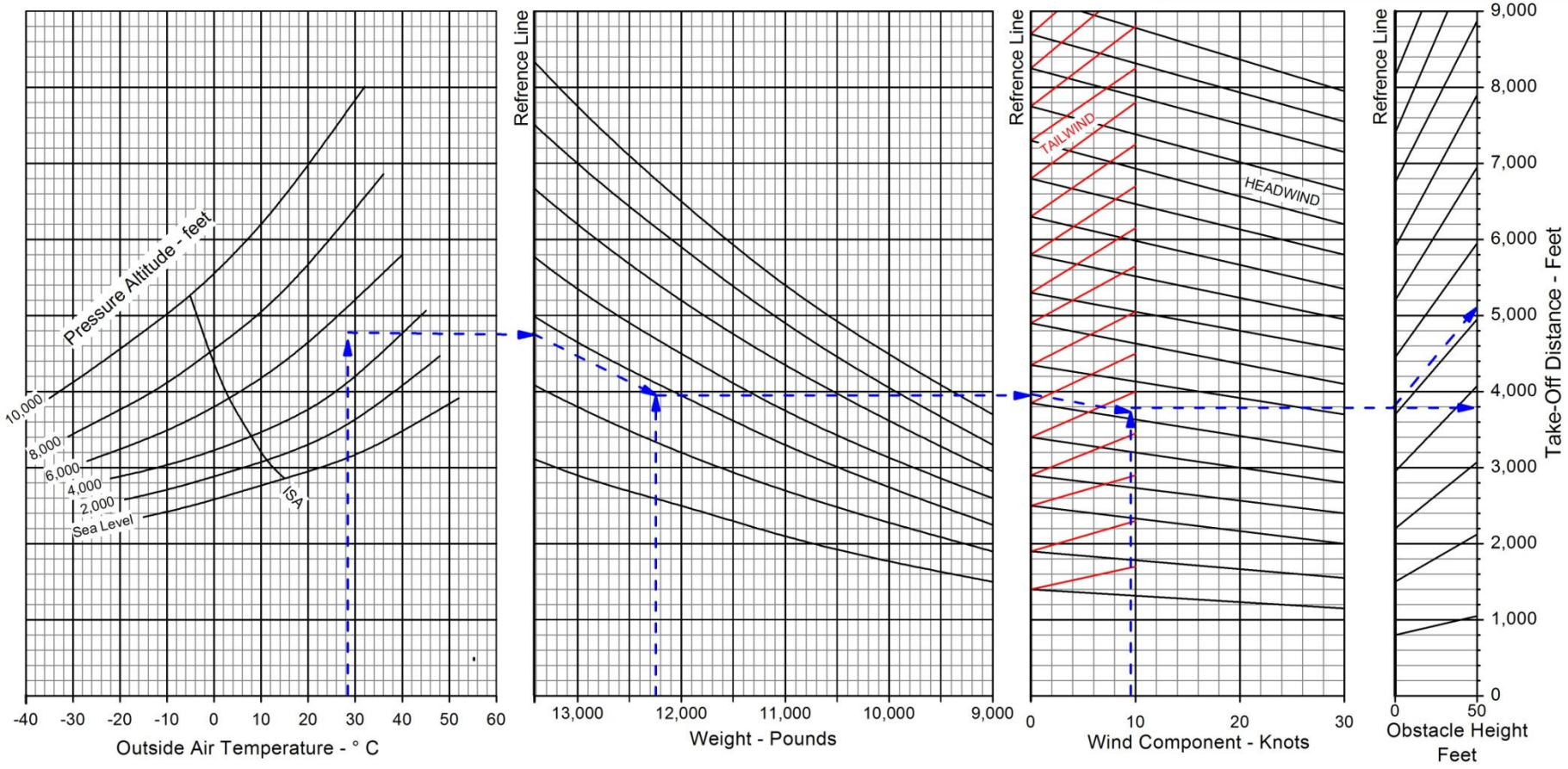
Notes:

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

Weight Pounds	Take-Off Speed - Knots	
	V_R	V_2
13,420	115	125
13,000	113	123
12,500	111	121
12,000	109	120
11,000	105	115
10,000	101	111
9,000	98	108

Example

OAT..... 28 °C
Pressure Altitude..... 5,430 feet
Weight..... 12,250 pounds
Headwind Component..... 9.5 knots
Ground Roll .....3,800 feet
Distance over 50 ft obsticle....5,100 feet
Take-off Speeds
Rotation..... 111 knots
50 feet..... 121 knots



TAKE-OFF DISTANCE - FLAPS APPROACH

Associated conditions

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

Notes:

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

Weight Pounds	Take-Off Speeds - Knots	
	V_R	V_2
13,420	97	107
13,000	97	106
12,500	97	105
12,000	97	104
11,000	97	103
10,000	97	101
9,000	97	99

Example

OAT..... 28 °C
Pressure Altitude..... 5,430 feet
Weight..... 12,220 pounds
Headwind Component..... 9.5 knots
Ground Roll .....2,430 feet
Distance over 50 ft obstacle....3,590 feet
Take-off Speeds
Rotation..... 97 knots
50 feet..... 104 knots