



ROTORCRAFT FLIGHT MANUAL

SUPPLEMENT INCREASED WEIGHT ALTITUDE TEMPERATURE LIMIT

212-704-129
AND
212-704-153

CERTIFIED
22 MARCH 1996

This supplement shall be attached to Model 212 Flight Manual when both 212-704-129 Tail Rotor Install and 212-704-153 Increased Takeoff Horsepower Kits have been installed.

Information contained herein supplements information of basic Flight Manual. For Limitations, Procedures, and Performance Data not contained in this supplement, consult basic Flight Manual.

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NOTICE PAGE

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NOTE

Revised text is indicated by a black vertical line. Insert latest revision pages; dispose of superseded pages.

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for
MANAGER

ROTORCRAFT CERTIFICATION OFFICE
FEDERAL AVIATION ADMINISTRATION
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GENERAL INFORMATION

This supplement approves an increase Weight-Altitude-Temperatures (WAT) Limit for takeoff, landing and in-ground-effect maneuvers when the 212-704-129 Tail Rotor Modification is installed in conjunction with the 212-704-153 Increased Takeoff Horsepower Kit (BHT-212-FMS-29).

Limitations, procedures and performance data associated with the increased WAT limit are presented for Basic Helicopter plus Winterization Heater.

Section 1

LIMITATIONS

1-5. CONFIGURATION

1-5-A. REQUIRED EQUIPMENT

The following kits shall be installed prior to taking advantage of the Increased Weight Altitude Temperature Limit supplement BHT-212-FMS-35.

Tail Rotor Install (212-704-129)

Increased Takeoff Horsepower (212-704-153)

1-6. WEIGHT AND CENTER OF GRAVITY

Refer to Weight-Altitude-Temperature (WAT) Limitations chart (figure 1-1) for maximum allowable weight for takeoff, landing and IGE hover operation.

1-10. HEIGHT-VELOCITY

The height-velocity limitations are critical in the event of single engine failure during takeoff, landing, or other operation near the surface (figure 1-2). The AVOID area of the Height-Velocity diagram defines the combinations of airspeed and height above ground from which a safe single engine landing on a smooth, level, firm surface cannot be assured.

The H-V diagram is valid only when the Weight-Altitude-Temperature limitations are not exceeded (figure 1-1).

1-13. POWER PLANT

Refer to Basic Manual and/or BHT-212-FMS-29.

NOTE: ALLOWABLE GROSS WEIGHTS OBTAINED FROM THIS CHART MAY EXCEED CONTINUOUS HOVER CAPABILITY UNDER CERTAIN AMBIENT CONDITIONS. REFER TO HOVER CEILING CHARTS IN SECTION 4.

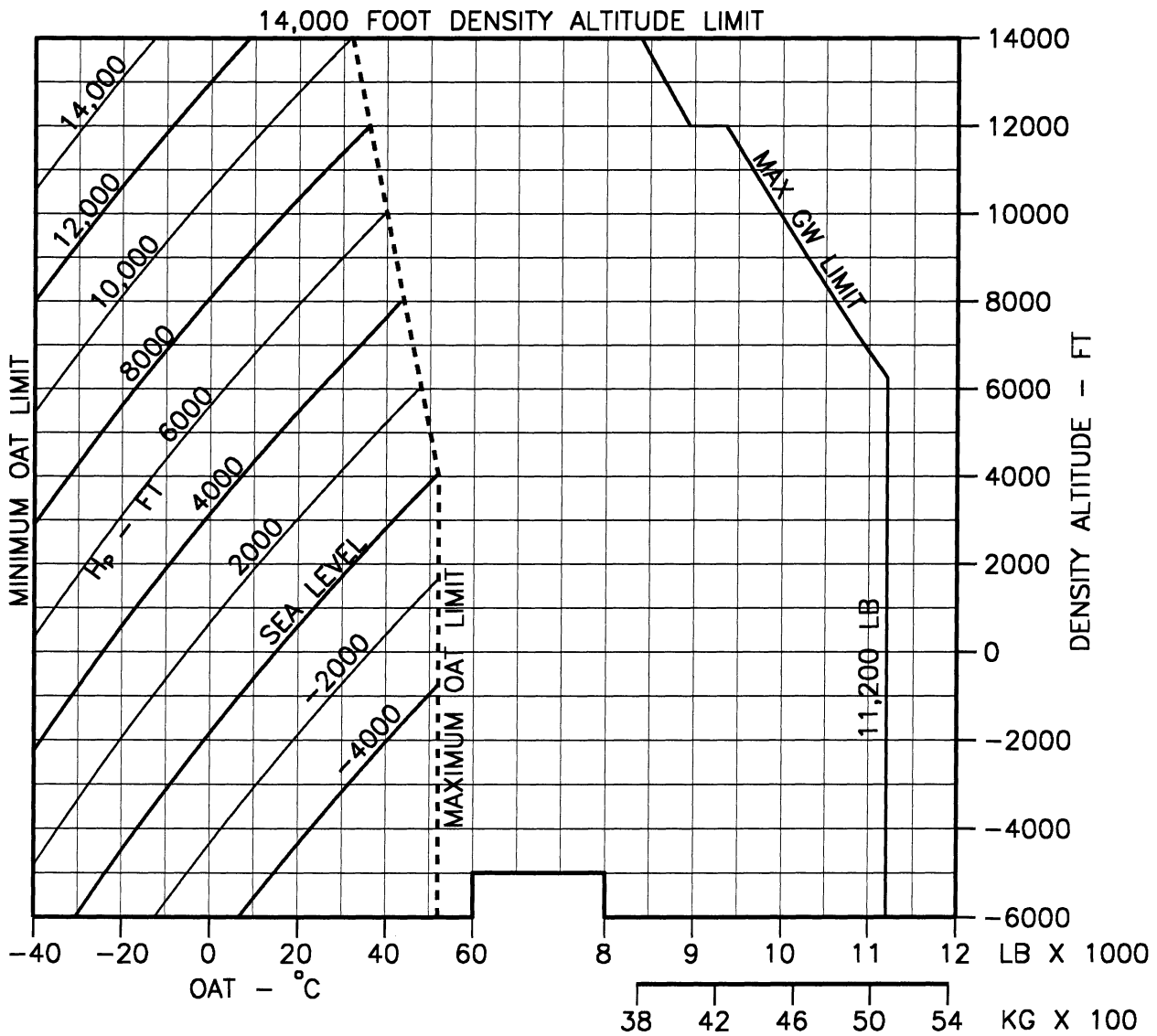


Figure 1-1. WAT for takeoff, landing and IGE maneuver

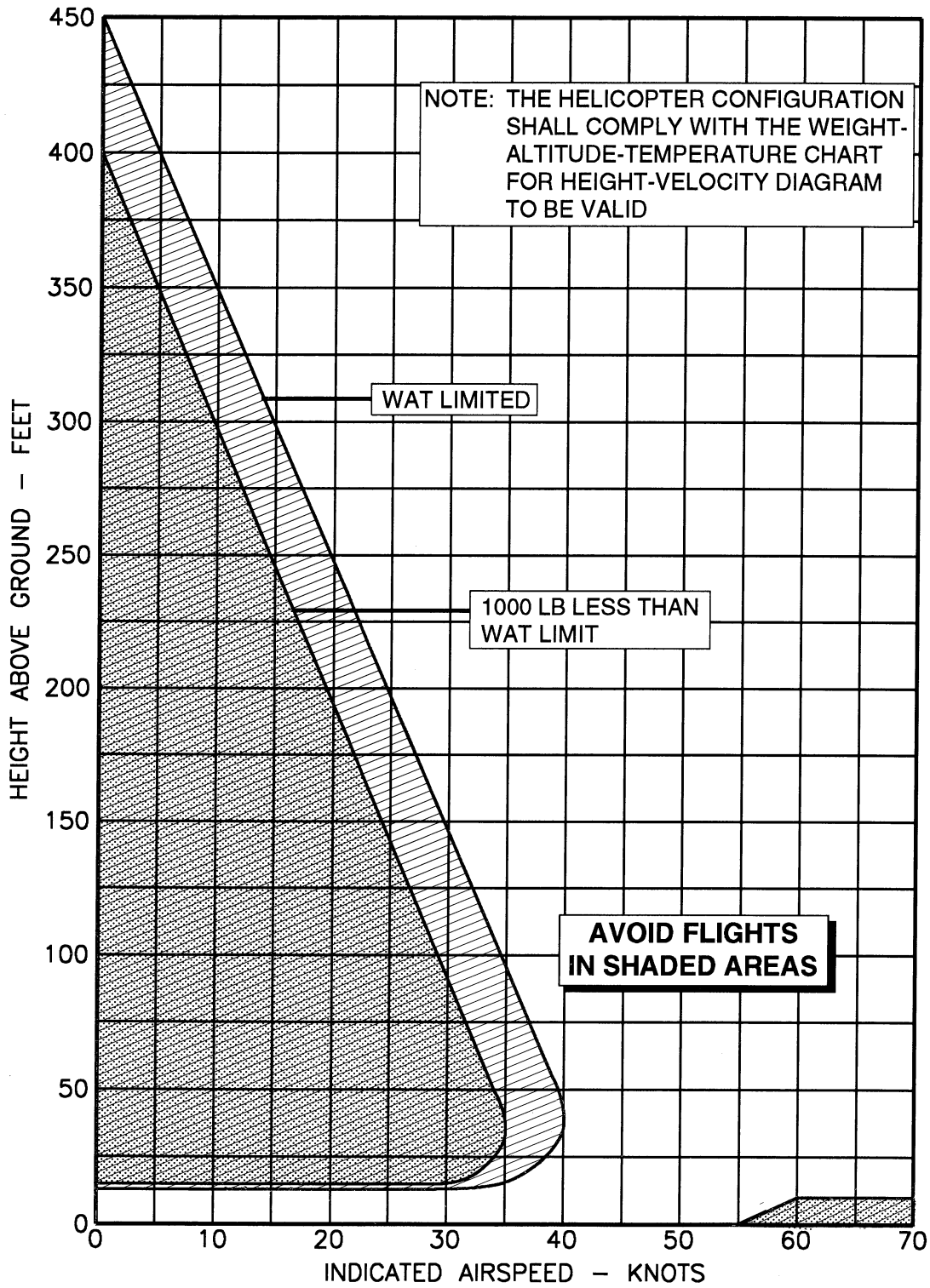


Figure 1-2. Single engine height-velocity chart

Section 2

NORMAL PROCEDURES

Refer to Basic Manual and/or BHT-212-FMS-29.

Section 3

EMERGENCY/MALFUNCTION PROCEDURES

No change from basic manual.

Section 4

PERFORMANCE

4-1. INTRODUCTION

The improved performance data contained in this supplement is applicable for H_D altitudes up to 12,000 feet. Data for H_D altitudes 12,000 to 14,000 feet is the same as Basic Manual and/or BHT-212-FMS-29.

4-5. HOVER CEILING

4-5-A. IGE

Figure 4-1 presents IGE hover performance as allowable GW for conditions of H_p and OAT for basic helicopter.

4-5-B. OGE

Figure 4-2 presents OGE hover performance as allowable GW for conditions of H_p and OAT for basic helicopter and winterization heater.

4-6. TAKEOFF DISTANCE

Takeoff distance required to clear a 50 foot (15.2 meter) obstacle is presented in figure 4-3 as a function of OAT, H_p and GW.

4-7. CLIMB AND DESCENT

4-7-A. TWIN ENGINE TAKEOFF CLIMBOUT SPEED

Twin engine takeoff climbout speed (V_{TOCS}) is that indicated airspeed which will allow takeoff distance over a 50 foot (15.2 meter) obstacle to be realized and will comply with HV restrictions to allow a safe landing in case of an engine failure (figure 4-4).

4-7-B. TWIN ENGINE RATE OF CLIMB

For twin engine rate of climb refer to BHT-212-FMS-29.

4-9. LANDING DISTANCE

Single engine landing distance over 50 foot (15.2 meters) obstacle is shown in figure 4-5 as a function of OAT, H_p and GW.

HOVER CEILING IN GROUND EFFECT

POWER: SEE NOTE BELOW
ENGINE RPM 100% (N2)
GENERATOR 150 AMPS EACH
0° TO 52°C

SKID HEIGHT 4 FT
HEATER ON OR OFF
WINTERIZATION KIT HTR ON OR OFF

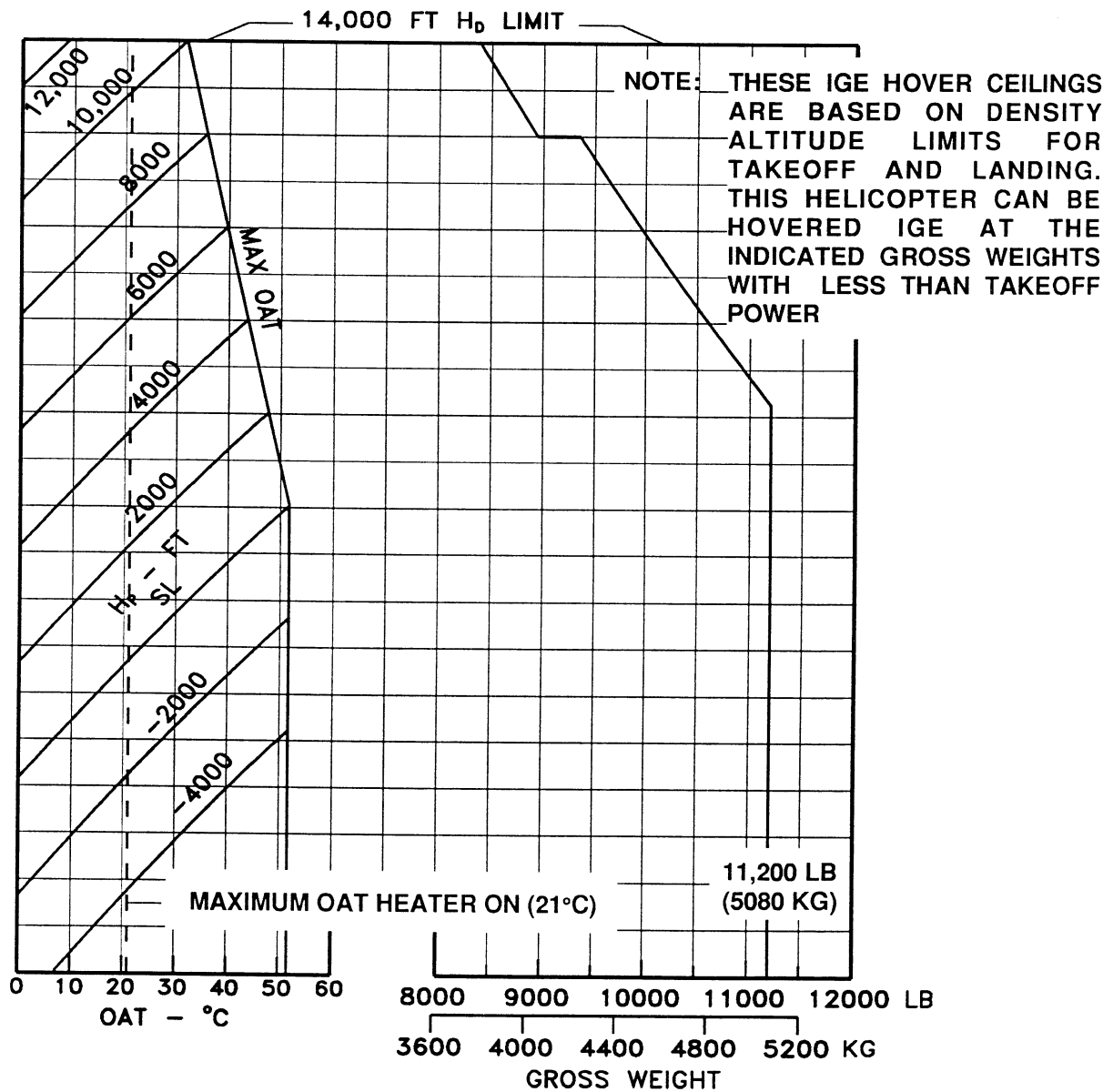


Figure 4-1. Hover ceiling in ground effect chart (sheet 1 of 2)

**HOVER CEILING
IN GROUND EFFECT**

POWER: SEE NOTE BELOW
 ENGINE RPM 100% (N2)
 GENERATOR 150 AMPS EACH
 0° TO --54°C

SKID HEIGHT 4 FT
 HEATER ON OR OFF
 WINTERIZATION KIT HTR ON OR OFF

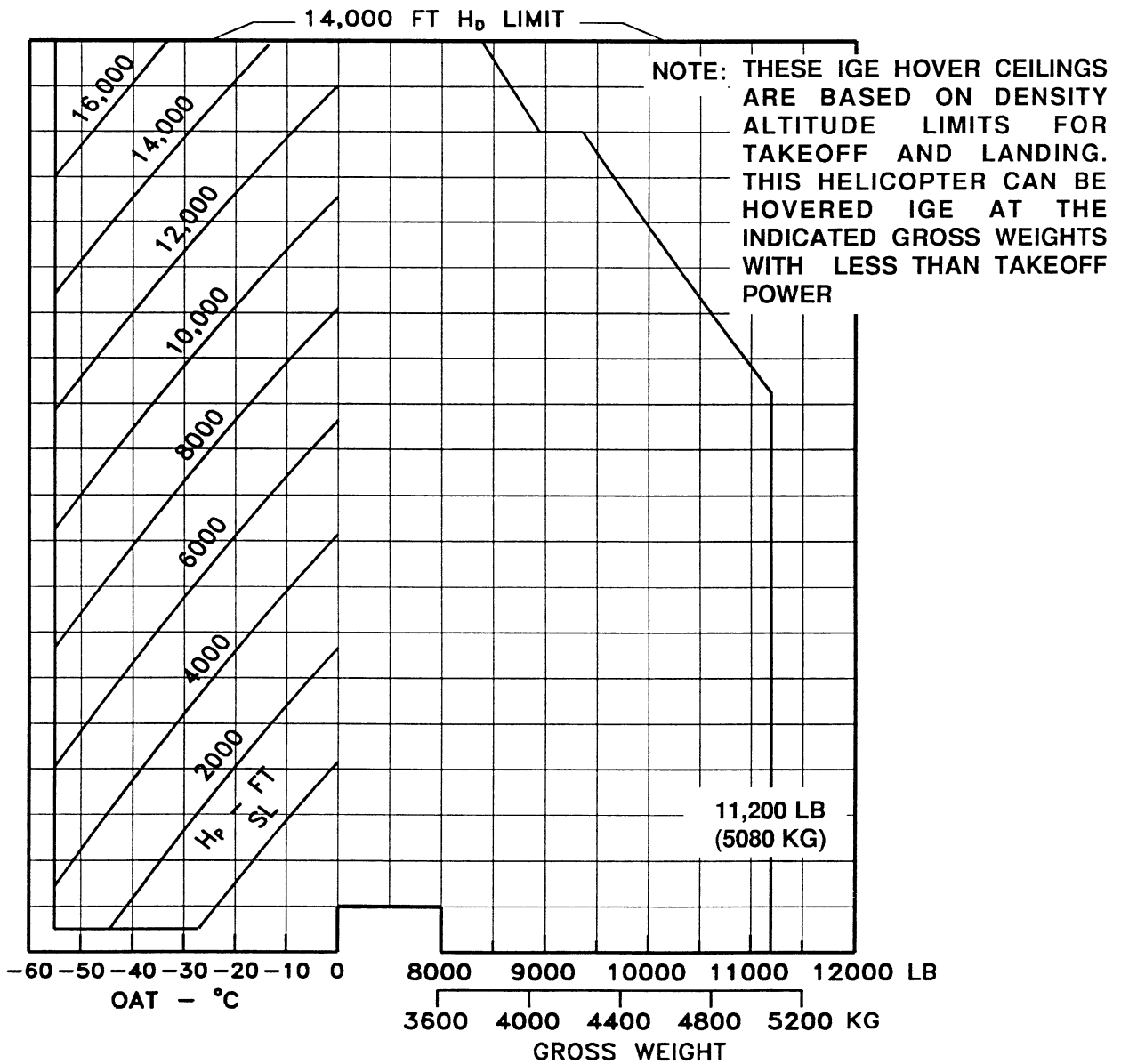


Figure 4-1. Hover ceiling in ground effect chart (sheet 2 of 2)

HOVER CEILING
OUT OF GROUND EFFECT
CALM WIND

TAKEOFF POWER
 ENG RPM 100% (N2)
 GENERATOR 150 AMPS EACH

SKID HEIGHT 60 FT
 HEATER OFF
 0° TO -54°C

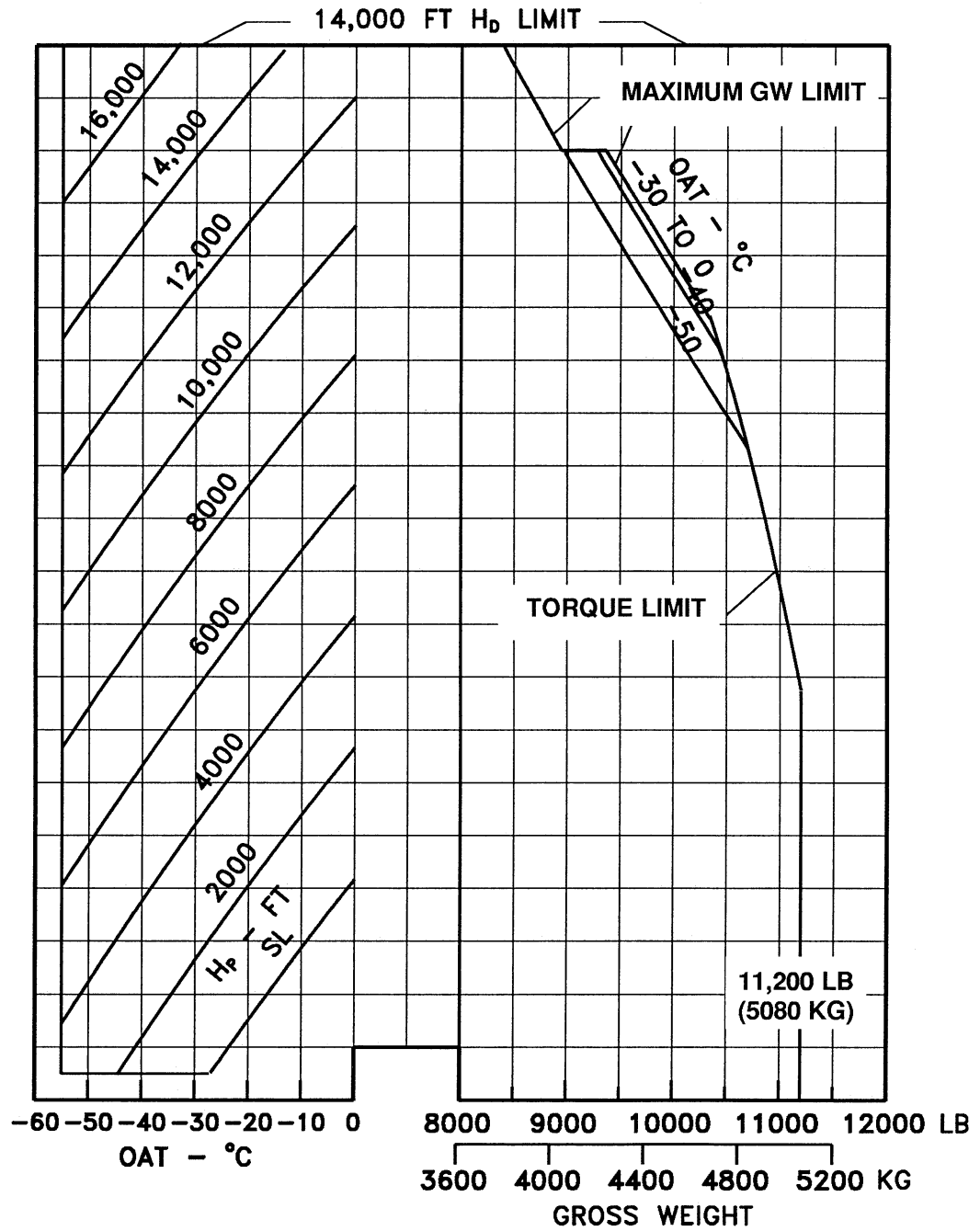


Figure 4-2. Hover ceiling out of ground effect chart (sheet 2 of 6)

**HOVER CEILING
OUT OF GROUND EFFECT
CALM WIND**

TAKEOFF POWER
ENG RPM 100% (N2)
GENERATOR 150 AMPS EACH

SKID HEIGHT 60 FT
HEATER ON
0° TO -54°C

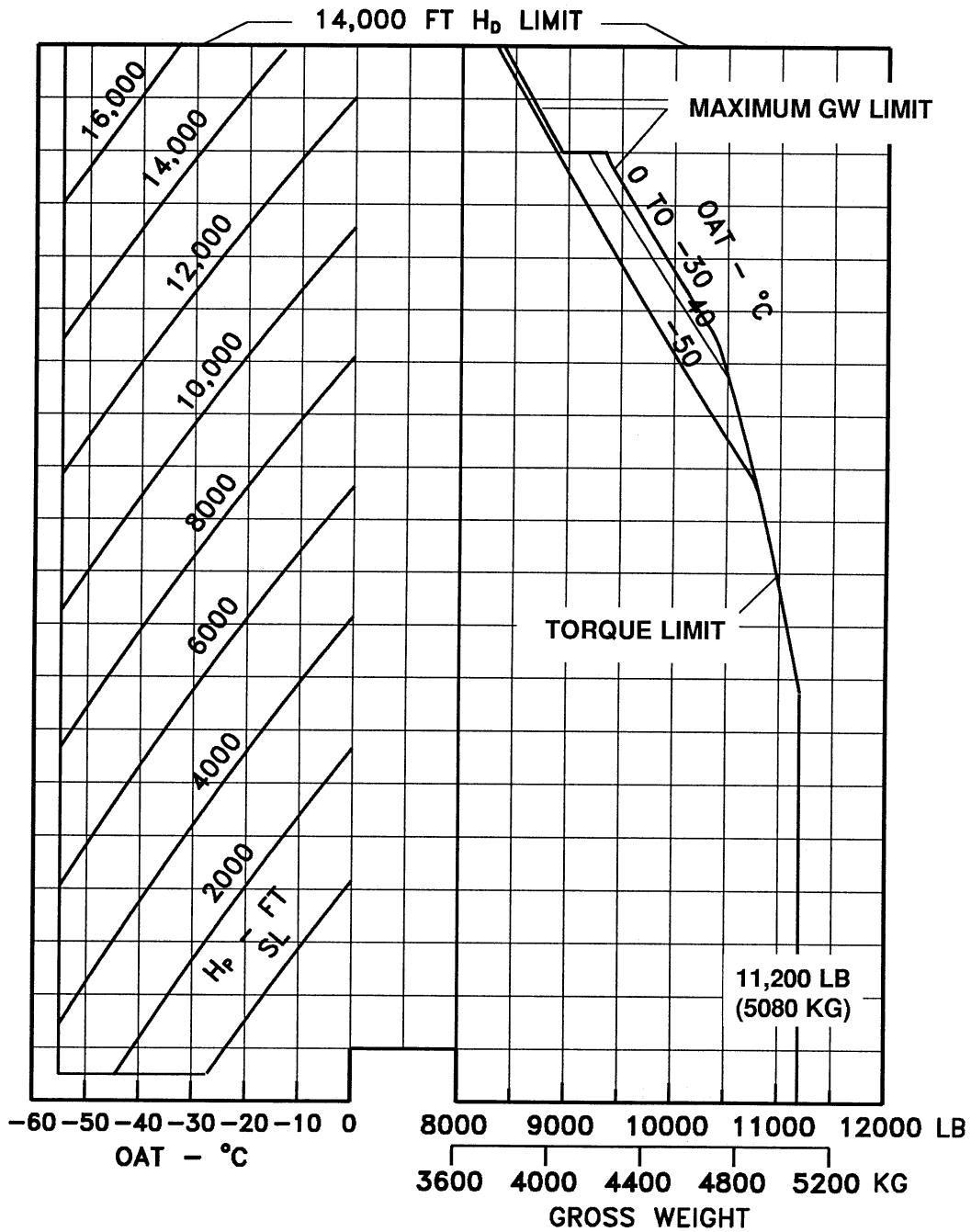


Figure 4-2. Hover ceiling out of ground effect chart (sheet 3 of 6)

**HOVER CEILING
OUT OF GROUND EFFECT
CALM WIND**

TAKEOFF POWER
ENG RPM 100% (N2)
GENERATOR 150 AMPS EACH

SKID HEIGHT 60 FT
HEATER ON
0° TO 20°C

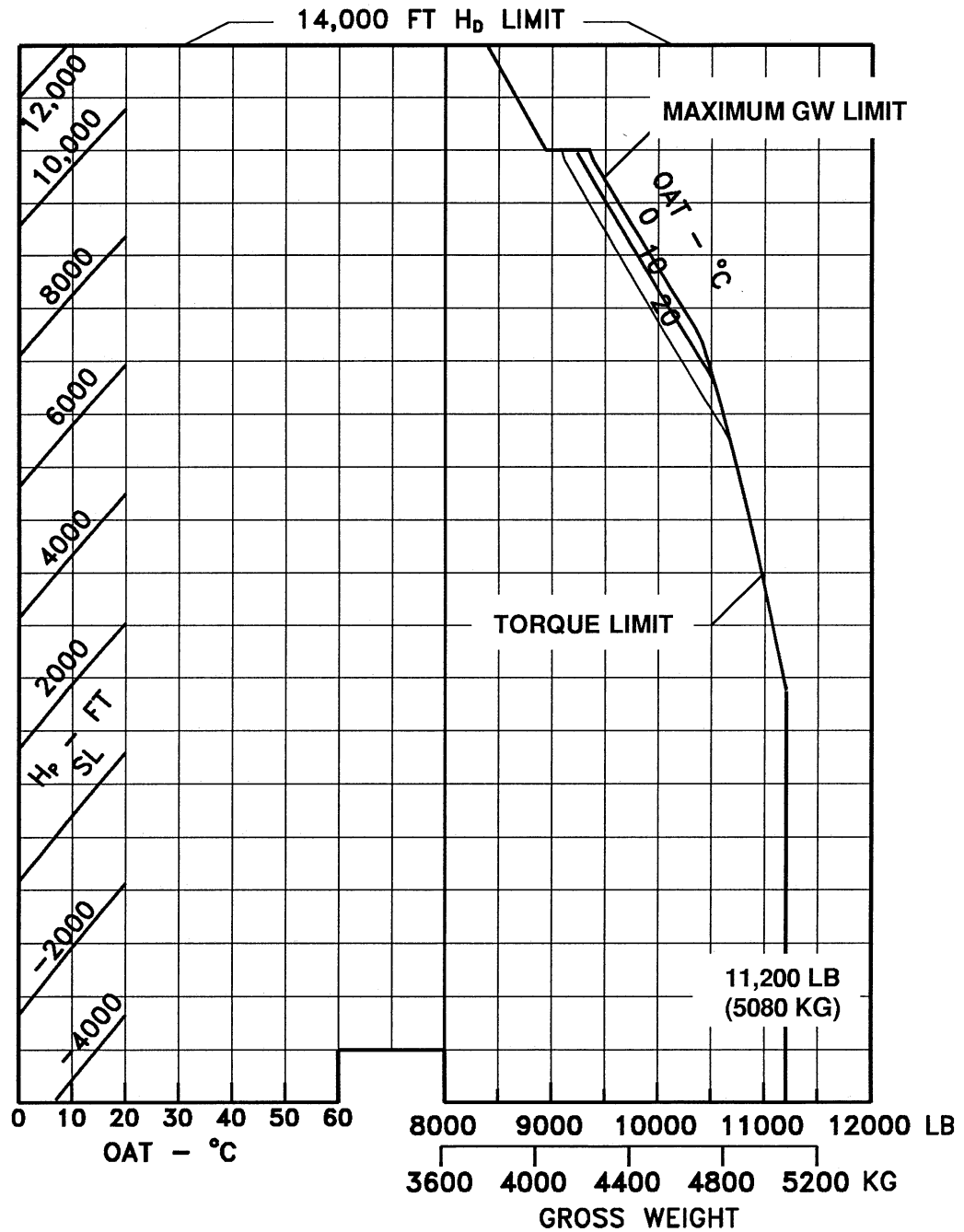


Figure 4-2. Hover ceiling out of ground effect chart (sheet 4 of 6)

HOVER CEILING
OUT OF GROUND EFFECT
CALM WIND

TAKEOFF POWER
ENG RPM 100% (N2)
GENERATOR 150 AMPS EACH

SKID HEIGHT 60 FT
WINTERIZATION ON
0° TO -54°C

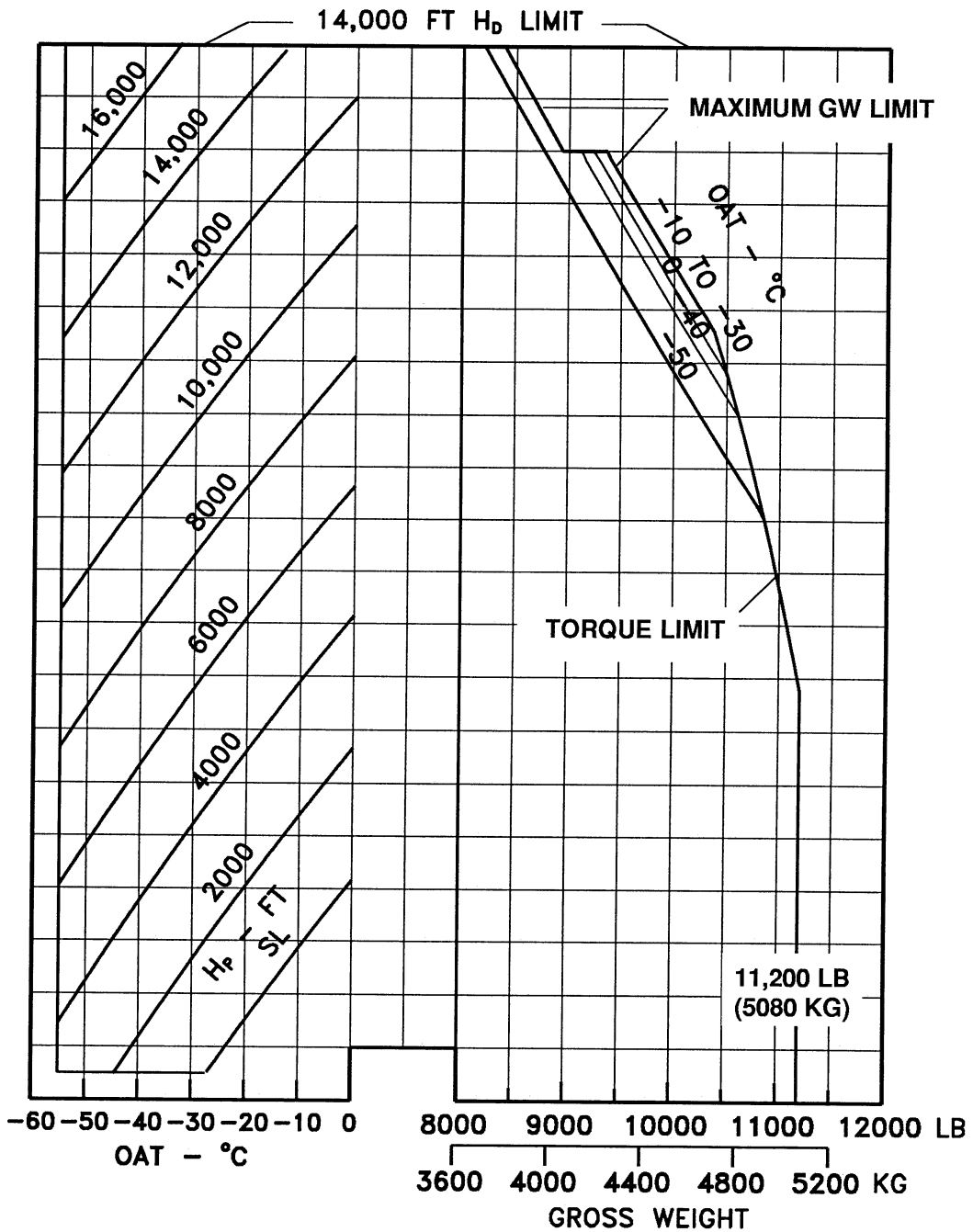


Figure 4-2. Hover ceiling out of ground effect chart (sheet 5 of 6)

**HOVER CEILING
OUT OF GROUND EFFECT
CALM WIND**

TAKEOFF POWER
ENG RPM 100% (N2)
GENERATOR 150 AMPS EACH

SKID HEIGHT 60 FT
WINTERIZATION ON
0° TO 20°C

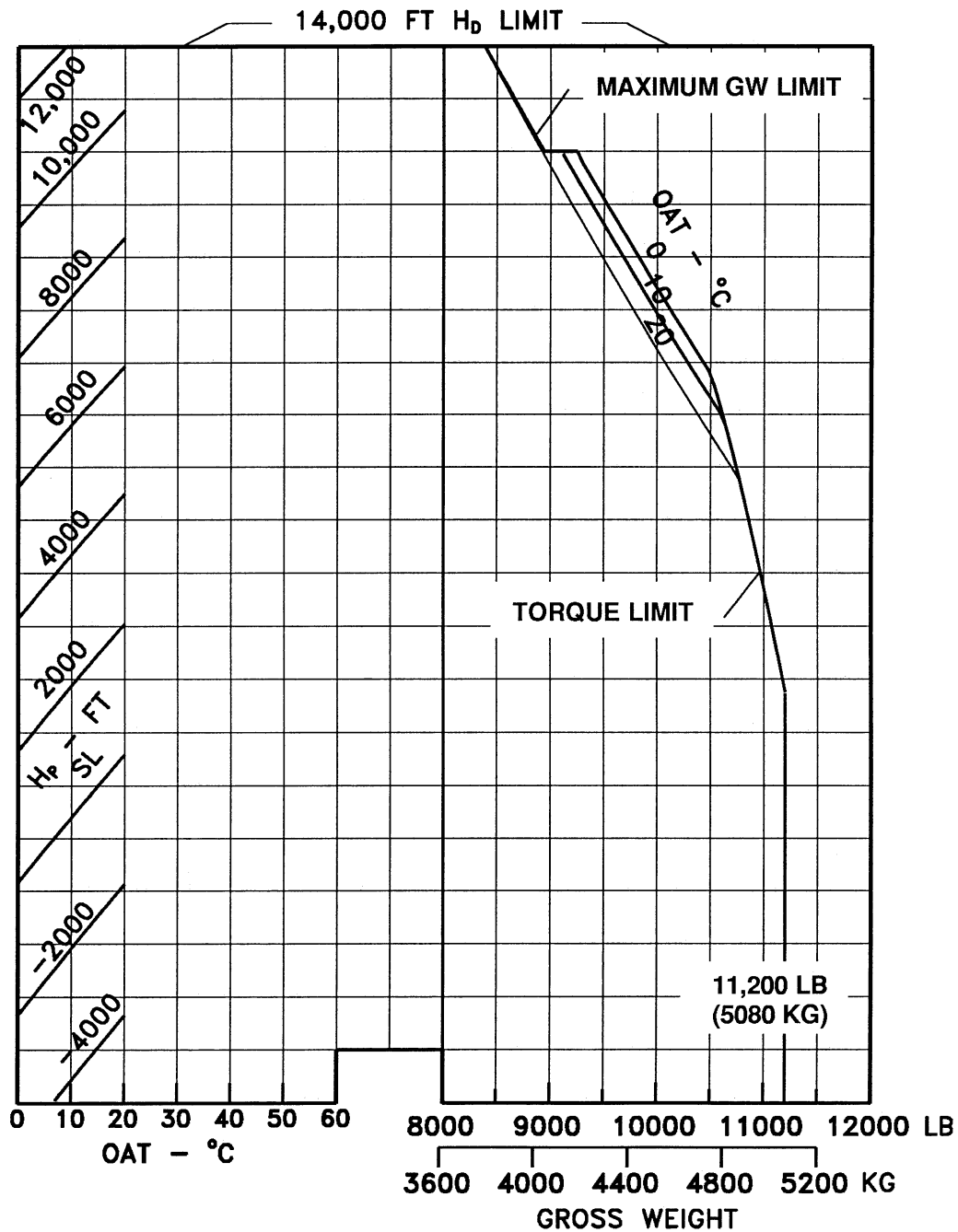


Figure 4-2. Hover ceiling out of ground effect chart (sheet 6 of 6)

**TAKEOFF DISTANCE
OVER 50 FT (15.2m) OBSTACLE**

HOVER POWER +15% TORQUE
ENG RPM 100% (N2)
GENERATOR 150 AMPS

INITIATED FROM 4 FT SKID HEIGHT
HEATER ON OR OFF
WINTERIZATION KIT HTR ON OR OFF

REFER TO V_{TOCS} CHART FOR TAKEOFF SPEED

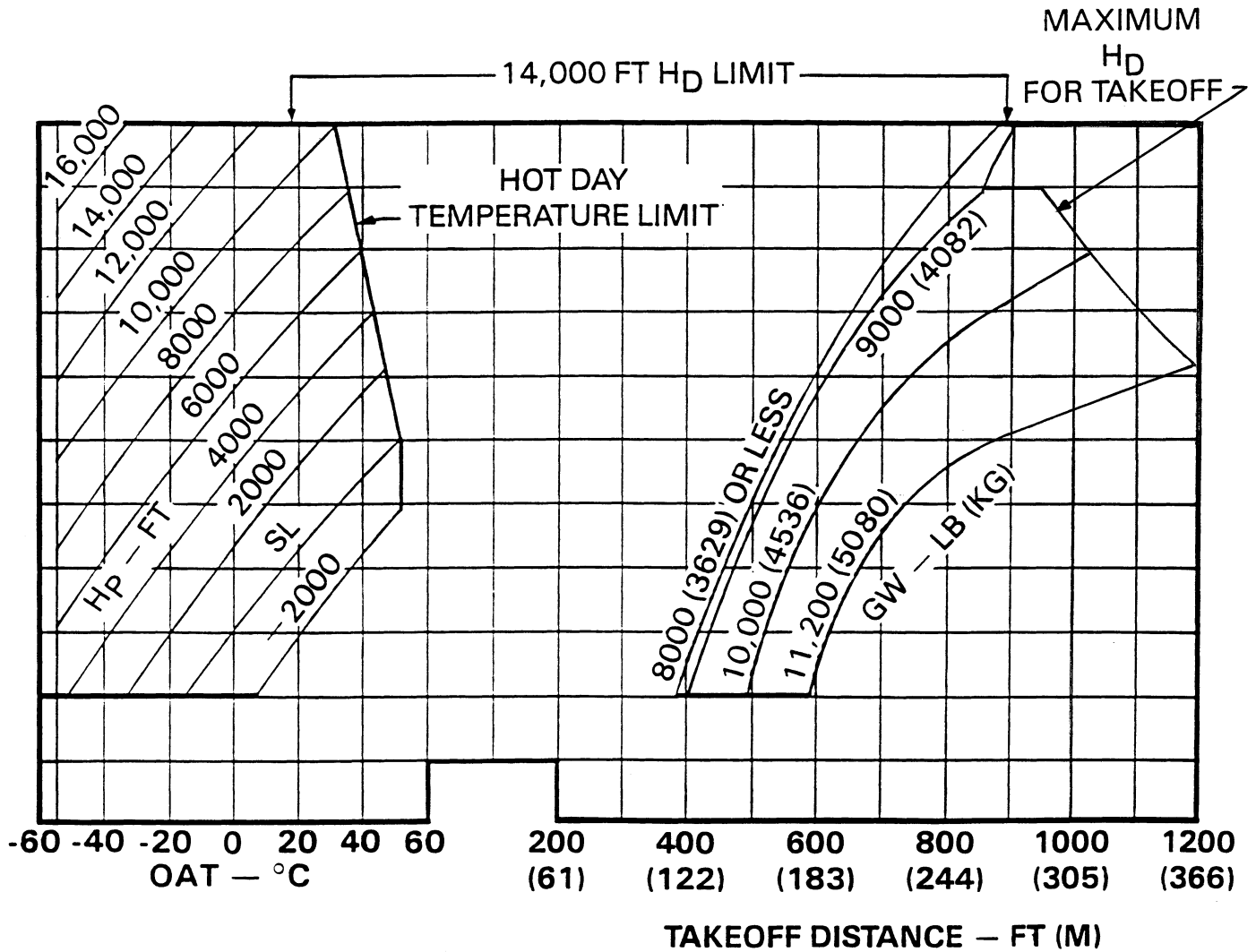


Figure 4-3. Takeoff distance over 50 foot (15.2 meter) obstacle

TWIN ENGINE TAKEOFF CLIMBOUT SPEED - KIAS							
HD - FT*	GW - LB (KG)						
	7000 (3175)	8000 (3629)	9000 (4082)	10,000 (4536)	10,500 (4763)	11,000 (4989)	11,200 (5080)
0	30	30	30	35	38	40	40
1000	30	30	30	35	38	40	40
2000	30	30	30	35	38	40	40
3000	30	30	30	36	38	40	42
4000	30	30	32	36	40	42	42
5000	30	30	32	38	40	42	42
6000	30	30	34	38	42	42	44
7000	30	30	34	40	42	44	44
8000	30	30	34	40	42		
9000	30	30	36	42	44		
10,000	30	32	36	42			
11,000	30	32	38				
12,000	30	34	38				
13,000	30	34					
14,000	30	36					

Figure 4-4. Twin engine takeoff climbout speed

**SINGLE ENGINE LANDING DISTANCE
OVER 50 FT (15.2 M) OBSTACLE**

POWER AS REQUIRED
ENG RPM 97% (N2)
GENERATOR 150 AMPS

V_{IAS} 40 KNOTS
RATE OF DESCENT 500 FPM
HARD SURFACED RUNWAY

INOPERATIVE ENGINE SECURED

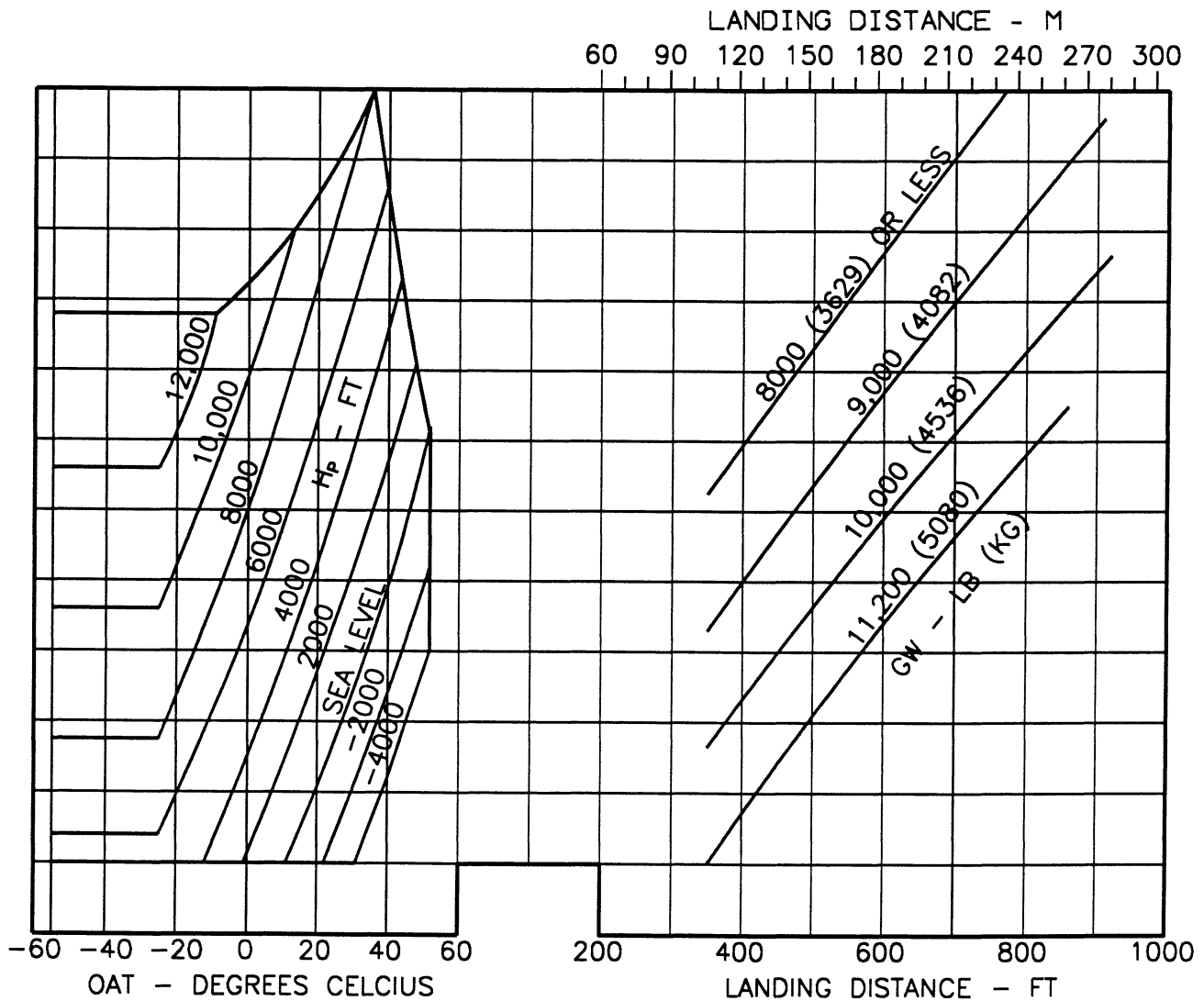


Figure 4-5. Single engine landing distance over 50 foot (15.2 meter) obstacle