

SCHWEIZER AIRCRAFT CORP.

Supplement to the Approved
Rotorcraft Flight Manual

For

Schweizer 330 Model 269D Helicopters

INCREASED DIAMETER MAIN ROTOR SYSTEM IN CONJUNCTION WITH EXTENDED HEIGHT LANDING GEAR Part Numbers 269A1002-11 & 269D7100

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REVISION TABLE

Number Change	Date	Description
1	20 Jul 1998	Addition of Hover Out-Of-Ground Effect Chart.
2	25 Nov 1998	Additional Maximum Operating Pressure Altitude

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SECTION I
General

This supplement must be carried in the applicable basic FAA approved 330 Model 269D Rotorcraft Flight Manual when the rotorcraft is equipped with the 269A1002-11 Increased Diameter Main Rotor System in conjunction with the 269D7100 Extended Height Landing Gear.

Except as modified by this flight manual supplement, operation in compliance with the basic approved Rotorcraft Flight manual is mandatory.

1-1. DESIGN AND CONSTRUCTION

- The 269A1185-5 main rotor blades are the only blades used with the 269A1002-11 Increased Diameter Main Rotor System.

1-2. GENERAL DIMENSIONAL DATA

Main Rotor Characteristics

- Rotor Diameter 27.26 feet
- Rotor Disc Area 583.6 square feet
- Blade Area (tabs not included) 23.00

	ENGINE N ₂ %	MAIN		TAIL	
		RPM	Tip Speed ft/sec	RPM	Tip Speed ft/sec
Maximum Redline - Power OFF	NA	504	719	3314	737.37
Minimum Redline - Power OFF	NA	410	585	2696	599.86
Maximum - Power ON	91	471	672	3097	689.08
Minimum - Power-ON	90	466	665	3066	682.18

1-3. PRINCIPLE DIMENSIONS

- Overall Length 31 feet 1.5 inches

1-4. WEIGHTS

- Design Gross Weight 2260 lbs.

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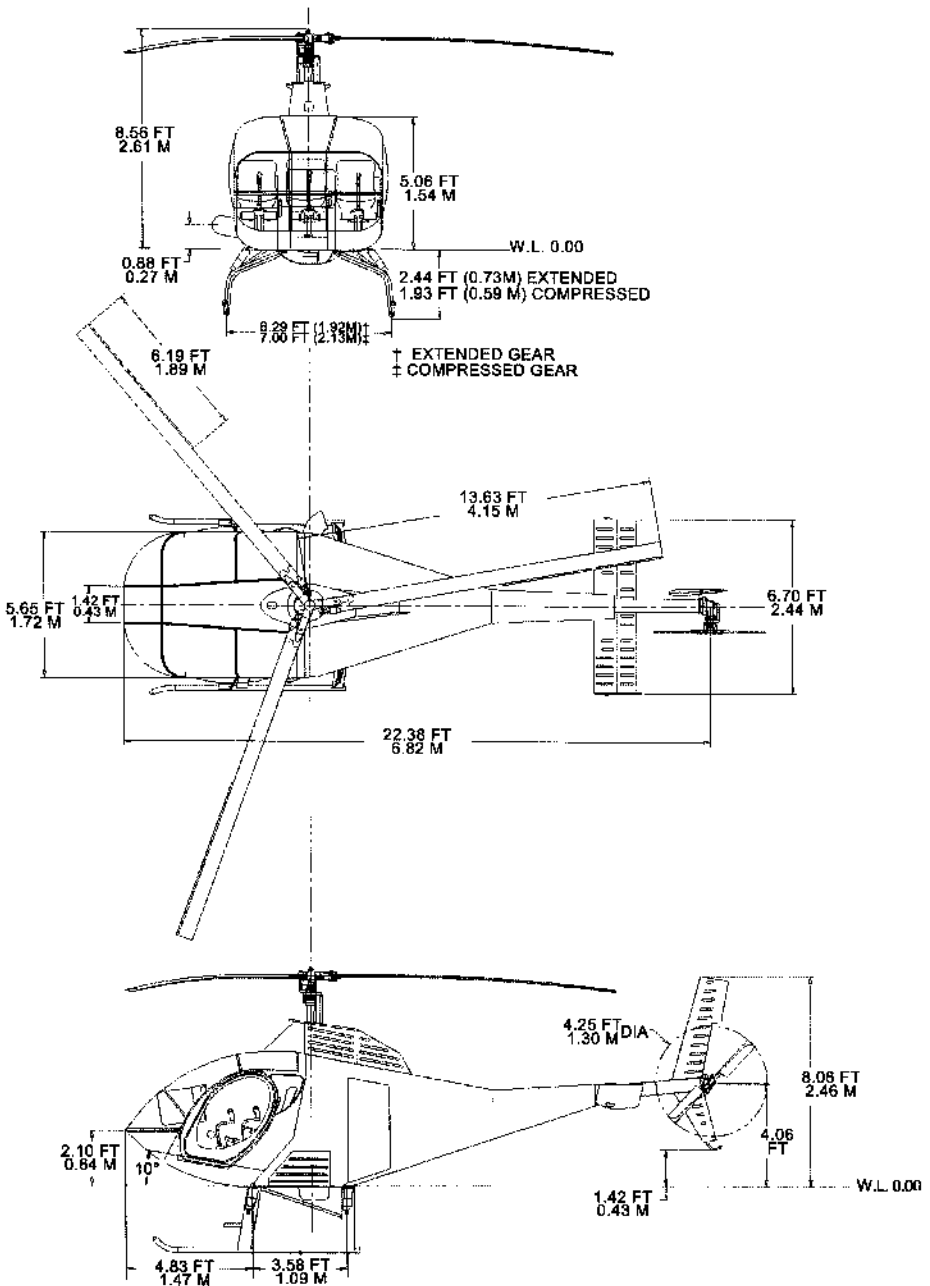


Figure 1-1 Principal Rotorcraft Dimensions

269A1002-11 Increased Diameter Main Rotor System installed with 269D7100 Extended Height Landing Gear

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SECTION II
Limitations

2-1. WEIGHT LIMITATIONS

- Maximum gross weight 2260 lbs

2-2. FLIGHT LIMITATION

- The following is PROHIBITED:
 - Flight exceeding maximum operating pressure altitude of 12,800 ft.

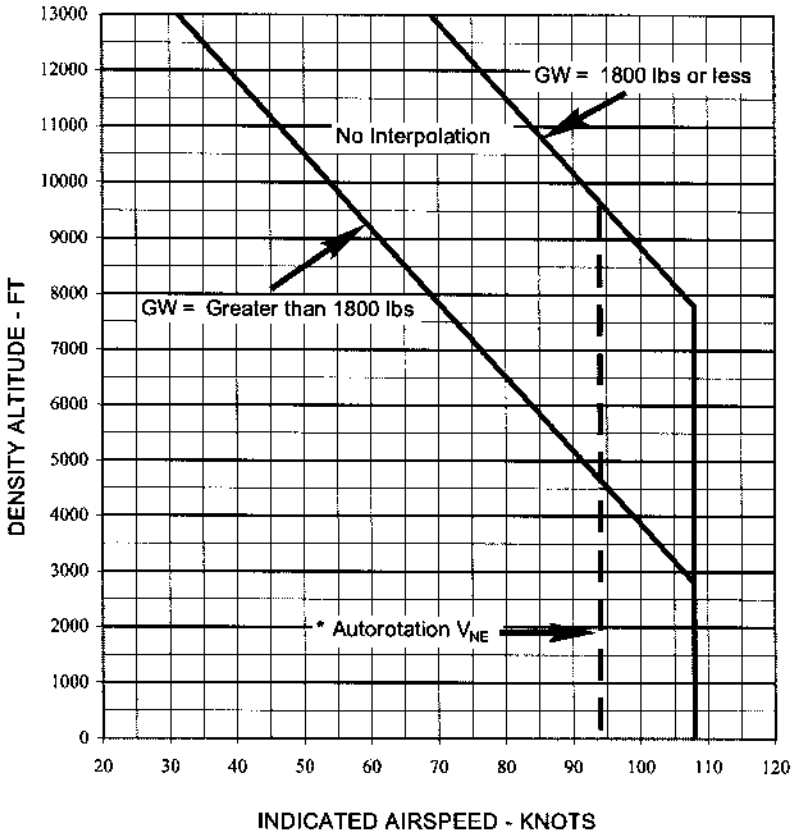
2-3. AIRSPEED LIMITATIONS (Fig. 2-1)

- Limit VNE to 108 KIAS (Refer to Fig. 2-1 and Paragraph 2-5 for V_{NE} reduction with increasing altitude).
- Limit VNE to 94 KIAS during autorotation (Refer to Fig. 2-1 for VNE reduction with increasing altitude.).

2-4. CENTER OF GRAVITY (CG ENVELOPE) (Fig. 2-2 and 2-3)

- The datum line is 100.0 inches forward of the main rotor hub centerline.
- Forward CG limit is 94.2 inches at 2260 pounds varying linearly to 92.0 inches at 1800 pounds and below. Aft CG limit is 96.0 inches at 2260 pounds varying linearly to 101.0 inches at 1800 pounds & below (Fig. 2-2).
- Lateral "+" CG is right of the aircraft centerline; lateral "-" CG is left of the aircraft centerline when looking forward (Fig. 2-3).
- The right lateral CG limit varies linearly from a gross weight of 2260 lbs at butto line 2.4 inches to 1800 pounds & below at butto line 4.5 inches.
- The left lateral CG limit varies linearly from a gross weight of 2260 lbs at butto line -.9 inches to 1800 lbs & below at butto line -3.0 inches.

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*AUTOROTATION V_{NE} LIMITED TO 84 KNOTS OR POWER-ON LIMIT, WHICHEVER IS LESS

Figure 2-1. V_{NE} Limitations

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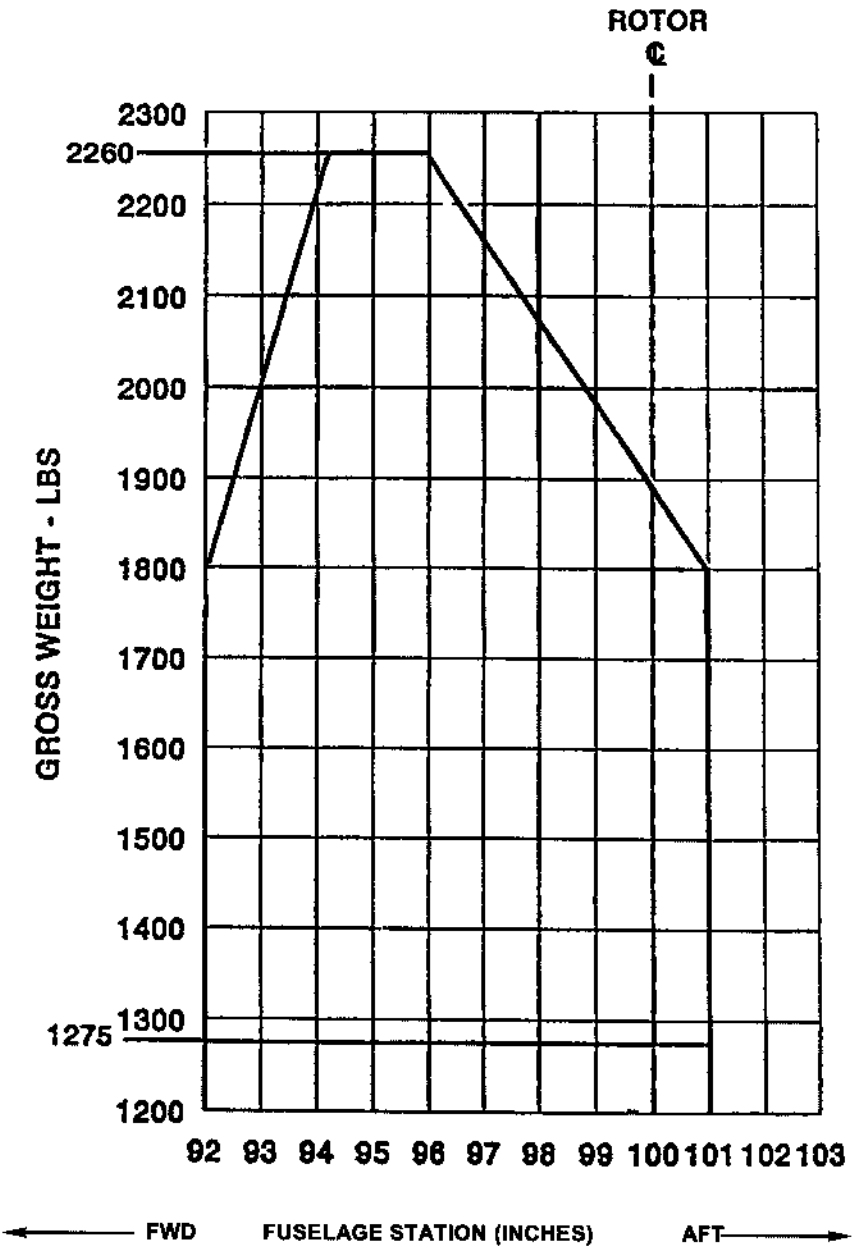


Figure 2-2. Longitudinal Center of Gravity Envelope

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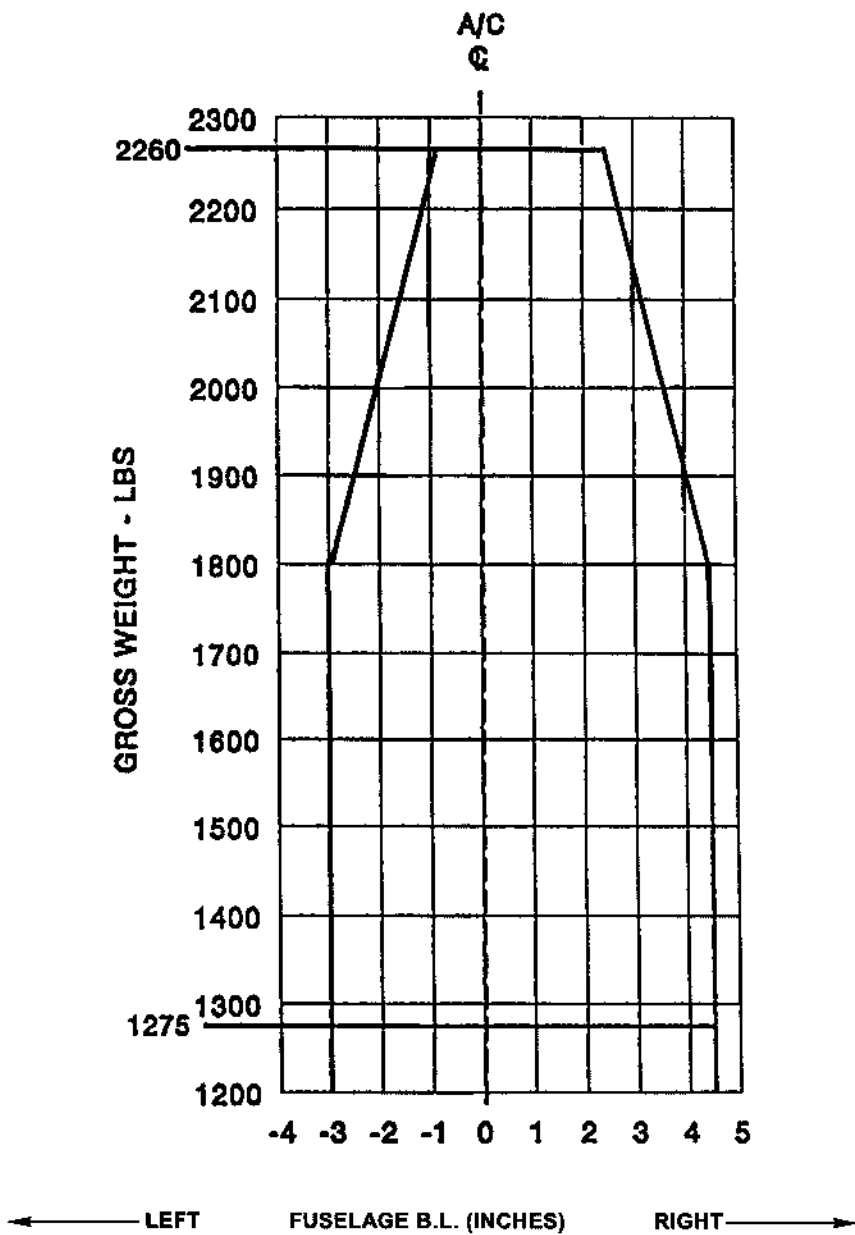


Figure 2-3. Lateral Center of Gravity Envelope

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2-5 LIMITATIONS PLACARDS, V_{NE} (250-C20W)

The "NO FLIGHT" portion of the VNE placards have been imposed to comply with Allison Model 250-C20W operating and starting limit temperatures and or with Figure 2-1 V_{NE} density altitude limits.

OAT		VNE IAS KNOTS (1800 LBS & BELOW, TOGW) 1000 FT PRESS ALT							
		0	2	4	6	8	10	12	12.8
°C	°F								
-23	-10	108	108	108	108	108	108	90	82
-18	0	108	108	108	108	108	104	84	77
-7	20	108	108	108	108	108	93	74	NO FLIGHT
4	40	108	108	108	108	102	83		
16	60	108	108	108	108	92	74		
27	80	108	108	108	101	83			
38	100	108	108	108	93	74			
43	110	108	108	107	89	70			

OAT		VNE IAS KNOTS (1801 LBS & ABOVE, TOGW) 1000 FT PRESS ALT							
		0	2	4	6	8	10	12	12.8
°C	°F								
-23	-10	108	108	108	108	90	71	52	45
-18	0	108	108	108	104	85	66	47	39
-7	20	108	108	108	93	74	55	37	NO FLIGHT
4	40	108	108	101	83	64	46		
16	60	108	108	92	73	55	36		
27	80	108	101	82	64	46			
38	100	108	91	73	55	37			
43	110	105	87	69	51	33			

2-6. POWERPLANT LIMITS - ALLISON MODEL 250-C20W

- From sea level to 6000 ft pressure altitude, the maximum engine air inlet ambient temperature is 54°C (130°F); from 6000 feet to 12,800 feet pressure altitude, the maximum temperature varies linearly from 54°C to 40°C (130°F to 105°F) respectively. It is to be assumed that the air inlet temperature is the same as ambient (free air) temperature.

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SECTION III
Emergency Procedures
Not affected

SECTION IV
Normal Procedures
Not affected

SECTION V
Performance

5-1. NOISE

- The Model 269D Helicopter meets FAR Part 36 Appendix J. At maximum gross weight, the helicopter produces 80.6 dBA SEL.

5-2. HOVER

- See Figure 5-1 for hover ceiling in-ground-effect (3-foot skid height).
- Controllability during hovering flight has been substantiated to be adequate in left, right and rearward winds up to seventeen knots at maximum gross weight up to a density altitude of 9,000 feet.
- See Figure 5-2 for altitude and gross weight restrictions due to height velocity considerations.

5-3. BEST RATE OF CLIMB

- See Figure 5-4 for best rate of climb speed - V_y .

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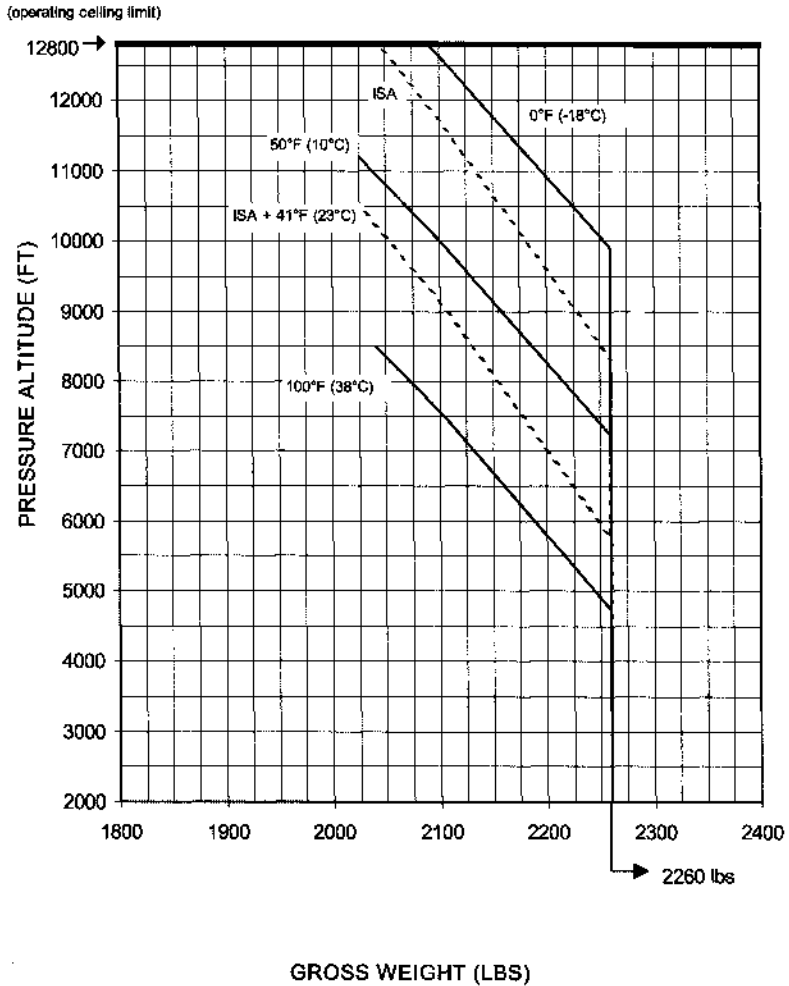
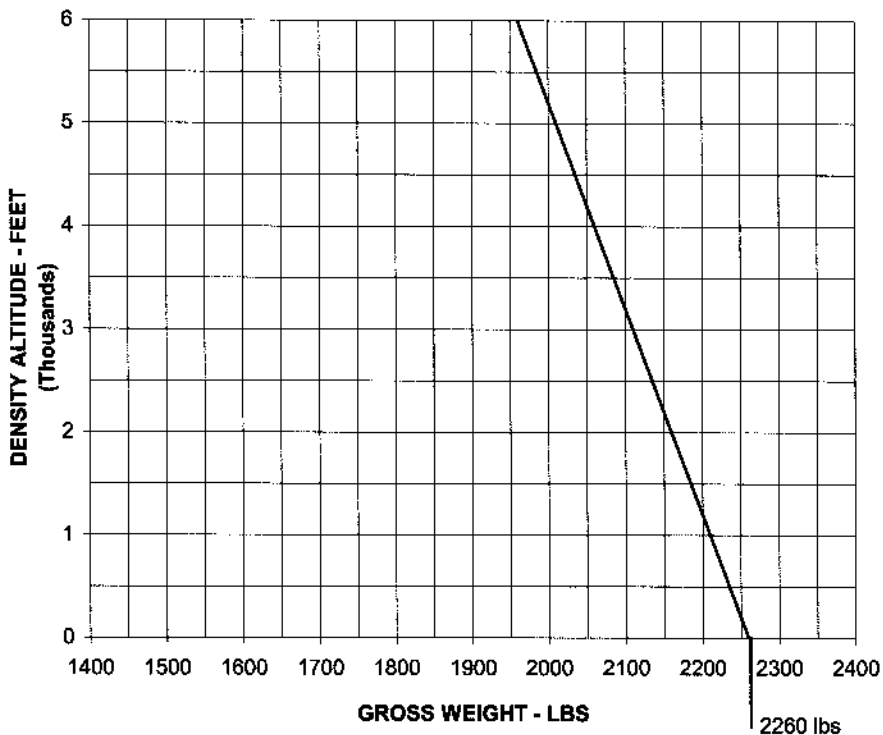


Figure 5-1. Hover Ceiling In-Ground-Effect - Three Foot Skid Height at
Take-off Power and 91% N₂

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NOTE :

Recommended gross weights are shown to maintain conditions at altitude in Figure 5-3.

Figure 5-2. Gross Weight Limitations for Height Velocity Diagram

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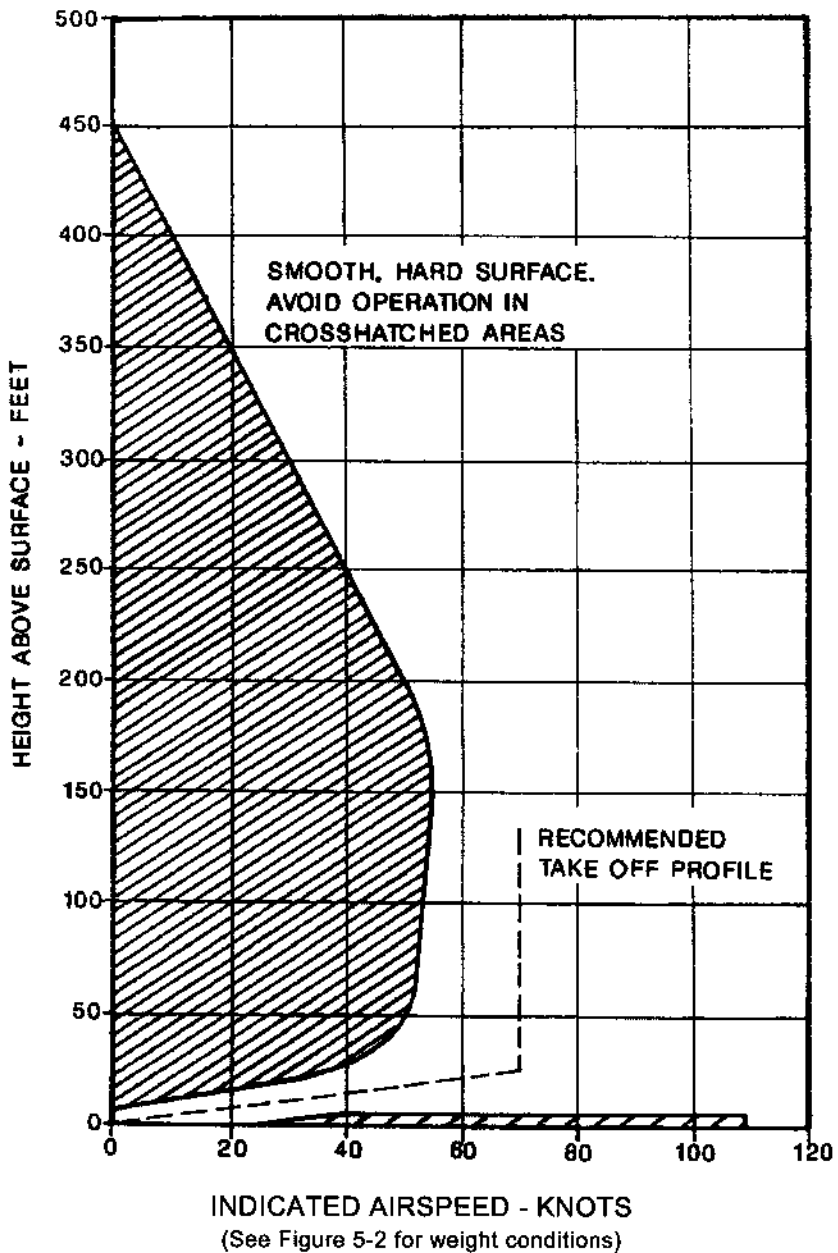


Figure 5-3. Height Velocity Diagram at Sea Level

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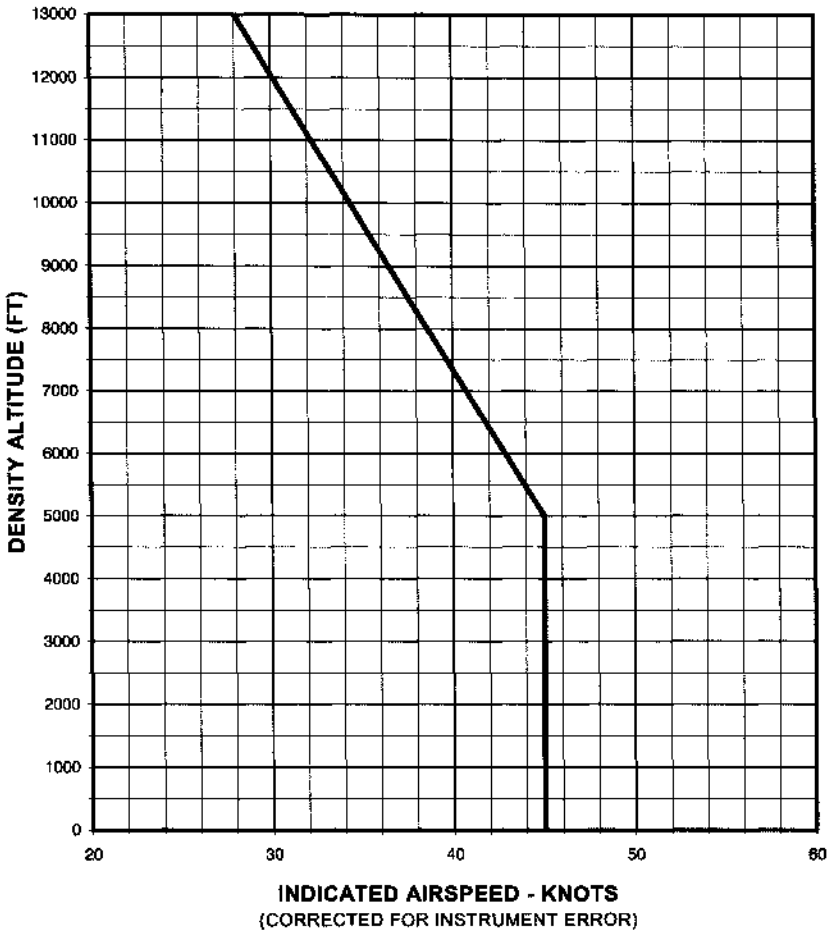


Figure 5-4. Speed For Best Rate of Climb - V_y

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**SECTION VI
Weight And Balance**

Center of Gravity Limits

Gross Weight (lb)	Longitudinal C.G. Limit (Sta.-in.)		Lateral C.G. Limit (Sta.-in.)	
	Forward	Aft	(+) Right, (-) Left	
2260	94.2	96.0	+2.4	-.9
1950	92.7	99.4	+ 3.8	- 2.3
1800 & below	92.0	101.0	+ 4.5	- 3.0

NOTE: Forward C.G. limit is 94.2 in. at 2260 lbs varying linearly to 92.0 in. at 1800 lbs and below. Aft C.G. limit is 96.0 in. at 2260 lbs varying linearly to 101.0 in. at 1800 lbs & below. (Fig. 2-2)

NOTE: The right lateral C.G. limit varies linearly from a gross weight of 2260 lbs at butline 2.4 in. to 1800 lbs & below at butline 4.5 in.

NOTE: The left lateral C.G. limit varies linearly from a gross weight of 2260 lbs at butline -.9 in. to 1800 lbs & below at butline -3.0 in.

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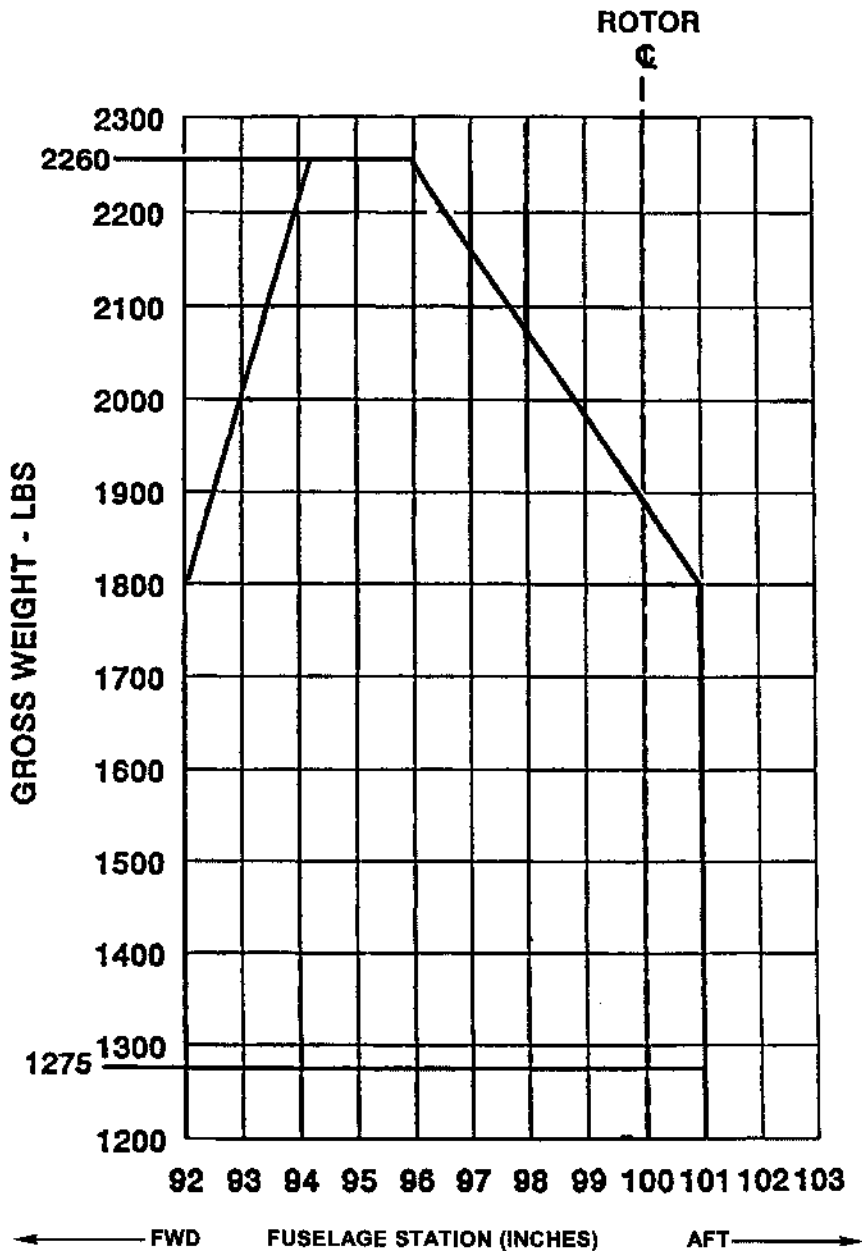


Figure 6-1. Longitudinal Center of Gravity Limits

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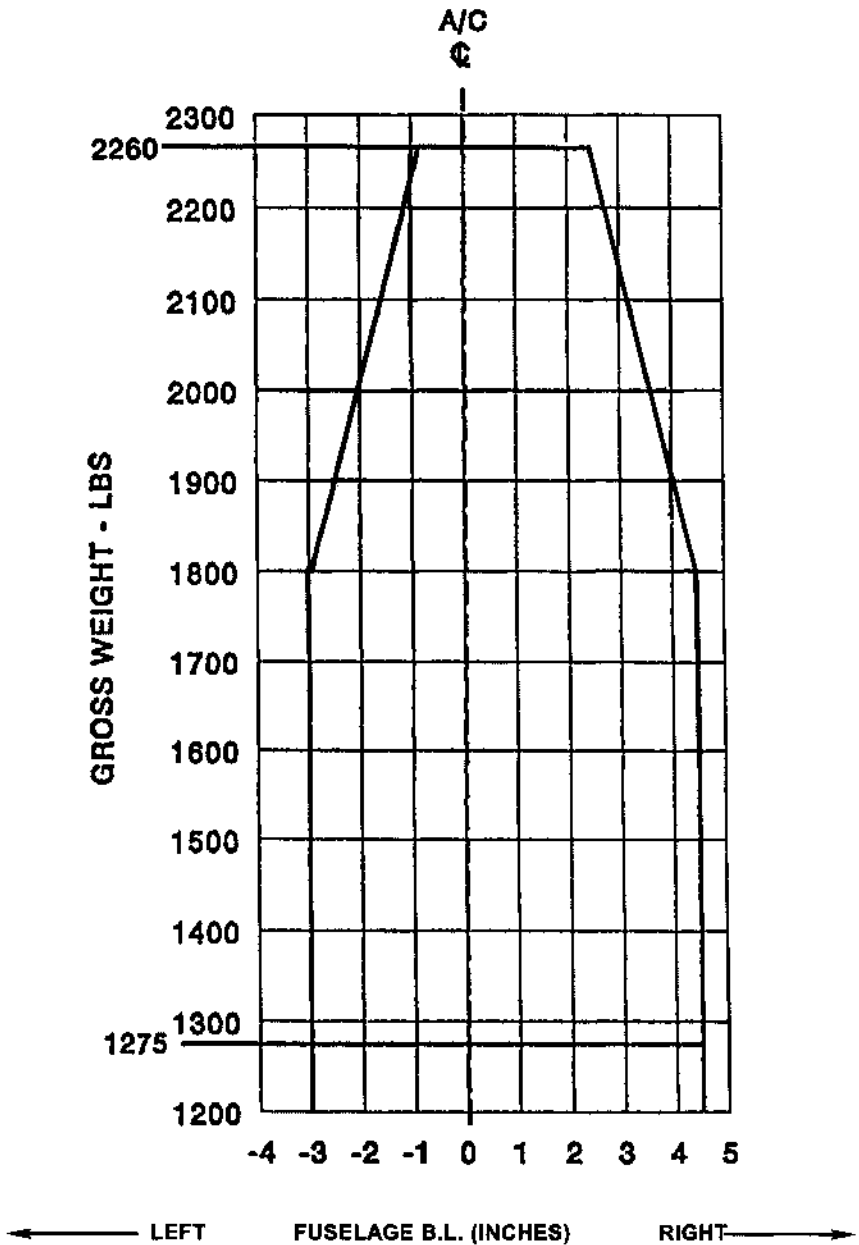


Figure 6-2. Lateral Center of Gravity Limits

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**SECTION VII
Aircraft Handling, Servicing and Maintenance**

7-1. DESIGN AND CONSTRUCTION

- The 269A1185-5 main rotor blades are the only blades used with the 269A1002-11 Increased Diameter Main Rotor System.

7-2. GENERAL DIMENSIONAL DATA

Main Rotor Characteristics

- Rotor Diameter 27.26 feet
- Rotor Disc Area 583.6 square feet
- Blade Area (tabs not included) 23.00

7-3. PRINCIPLE DIMENSIONS

- Overall Length 31 feet 1.5 inches

7-4. WEIGHTS

- Design Gross Weight 2260 lbs

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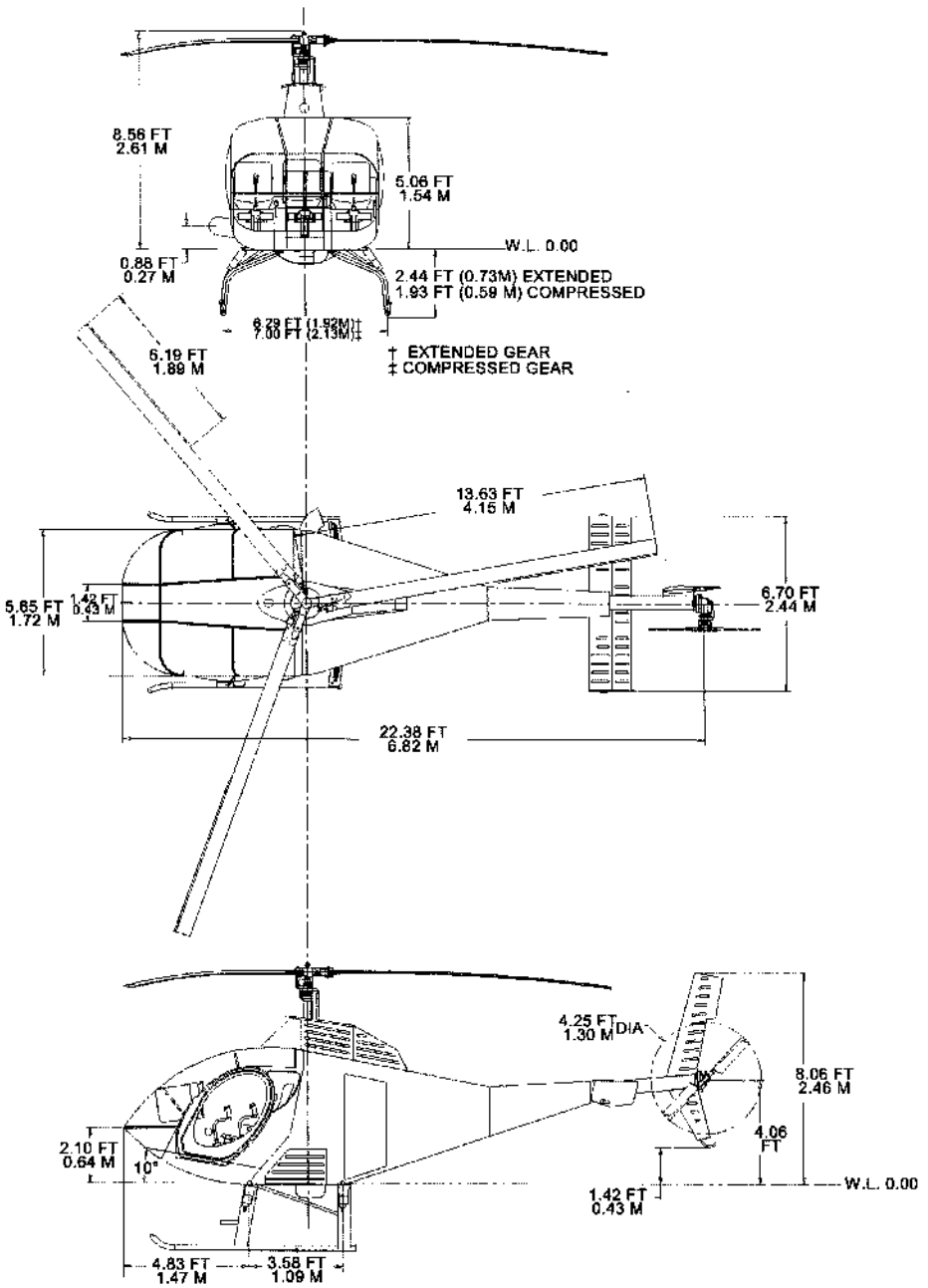


Figure 7-1 Principal Rotorcraft Dimensions

269A1002-11 Increased Diameter Main Rotor System installed with 269D7100 Extended Height Landing Gear

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SECTION VIII
Additional Operations and Performance Data

8-1 Performance data defined in Section 8 of the approved rotorcraft flight manual is not applicable with this helicopter configuration supplement.

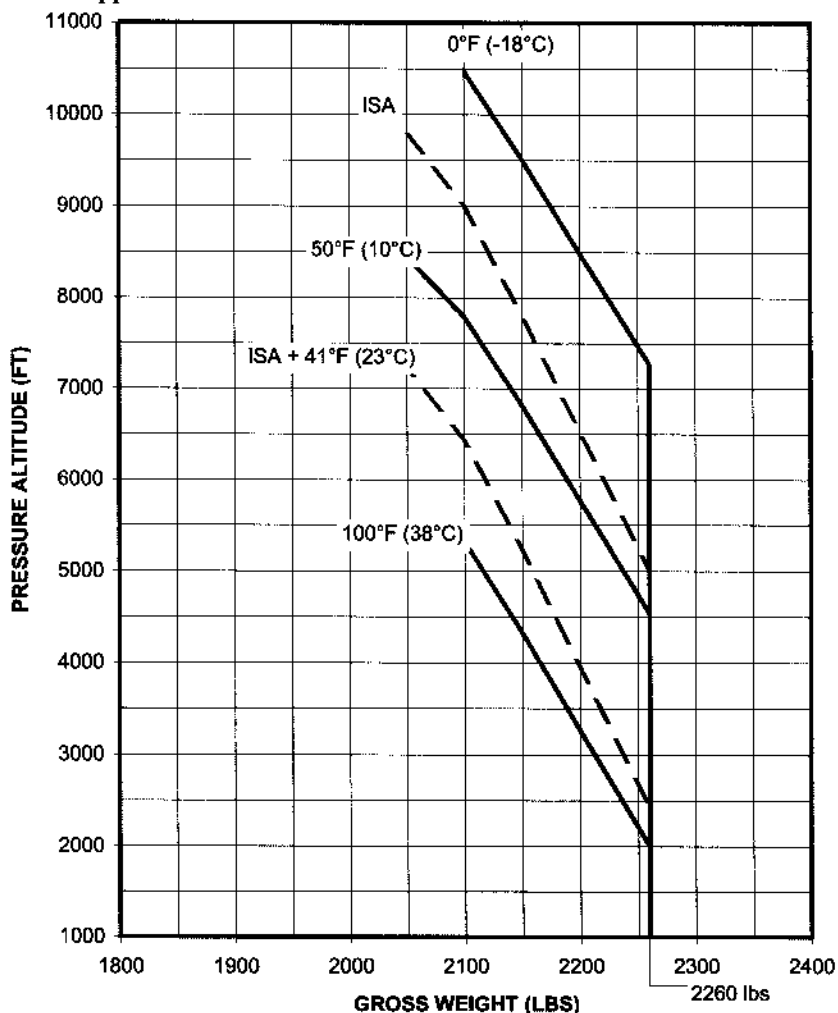


Figure 8-1. Out-of-Ground Effect Hover Ceiling Vs. Gross Weight
54 Foot skid Height, Take-off Power, 91% N₂