

MD EXPLORER®

CATEGORY A OPERATIONS

3.0 CATEGORY A OPERATIONS

The MD Explorer (902 Configuration) is fully certified for Category A operations from clear airfields, heliports and elevated helipads. The MD Explorer demonstrated safe single engine flight profiles to the FAA that met or exceeded aircraft strength requirements and safety design and construction criteria. The MD Explorer (902 Configuration) was certified for Category A Rotorcraft Operations on August 8, 1996.

To achieve full FAA Part 27 Appendix C, Certification as a Category A rotorcraft, the MD Explorer with installed Pratt and Whitney PW207E engines demonstrated engine takeoff performance that meets the following parameters:

- If one engine fails at any time after the start of takeoff, the MD Explorer can either return to the point of takeoff and stop safely, or safely continue the takeoff and climb out.
- If the pilot elects to continue the climb out, a configuration and airspeed can be attained that will allow for the safe landing back to an elevated pad, a ship's landing deck, or an open landing area.
- Refer to Weight, Altitude and Temperature (WAT) charts in the Rotorcraft Flight Manual for specific performance parameters.
- Refer to Rotorcraft Flight Manual for distances required to clear obstacles.
- Category A capability, combined with the MD Explorer redundant design safety features, make this aircraft one of the safest helicopters in the world today.

3.1. Category A Take-off:

The take-off must be performed in such a manner that in the event of a single engine failure the helicopter must be able to:

- Prior to TDP, return to, and stop safely on the take-off area (rejected take-off).
- After TDP, continue the take-off and climb out, and attain a configuration and airspeed that allows continued flight.

Take-off Decision Point (TDP): Clear airfield

- The TDP is a point that occurs 8 seconds after the take-off procedure is initiated. The take-off light will display a yellow "NO-GO" indication for 8 seconds.
- The green "GO" indicator illuminates after the TDP

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Heliport/Elevated helipad

- The TDP is a point 100 FT HAT and approximately 300 FT behind the center of the heliport.

HAT

- Height above touchdown.

Take-off Safety Speed (V_{TOSS}):

- The speed (40 KIAS) at which a safe take-off can be continued following an engine failure.

Best rate of climb speed (V_y):

- The best rate of climb speed is that airspeed that achieves the best rate of climb at a given density altitude. (Ref. Section V).

3.2. Category A landing:

The landing must be performed in such a manner so that if the critical engine fails at any point in the approach path, the helicopter must be able to:

- Prior to LDP, climb out and attain an airspeed that allows continued flight (balked landing).
- After LDP, land and stop safely.

Landing Decision Point (LDP):

The landing decision point is the last point in the approach and landing path at which a balked landing can be accomplished with the critical engine failed or failing and with the engine failure recognized by the pilot. This point is defined as 100 FT HAT and 35 KIAS.

Landing Distance:

Clear Airfield

- The horizontal distance required to land and come to a complete stop from a point 50 feet above the landing surface.

Heliport/Elevated helipad

- The horizontal distance required to land and come to a complete stop from a point 25 feet above the landing surface.

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3.3. Clear airfield, heliport and elevated helipad.

Environmental operating conditions:

Kinds of operations

- This rotorcraft is certified in the normal helicopter category for day and night VFR Category A operations when the appropriate instruments and equipment required by the airworthiness and/or operating rules are approved, installed and are in operable condition.

Critical wind azimuth

- Refer to Figure 1.

Weight altitude temperature limits

- Open field: Maximum weight for Category A operations is 6500 lb or less as determined by Figure 2.
- Heliport/Elevated helipad: Maximum weight for Category A operations is 6500 lb or less as determined by Figure 11-2.3.
- Maximum altitude for Category A operations is 10000 ft HD.

Power assurance checks:

- Each engine must pass a power assurance check prior to take-off (Ref. Section V).

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Heliport/Elevated helipad requirements:

Heliport/Elevated helipad restricted to a solid surface. Minimum Heliport/Elevated helipad dimensions: 50 ft x 50 ft.

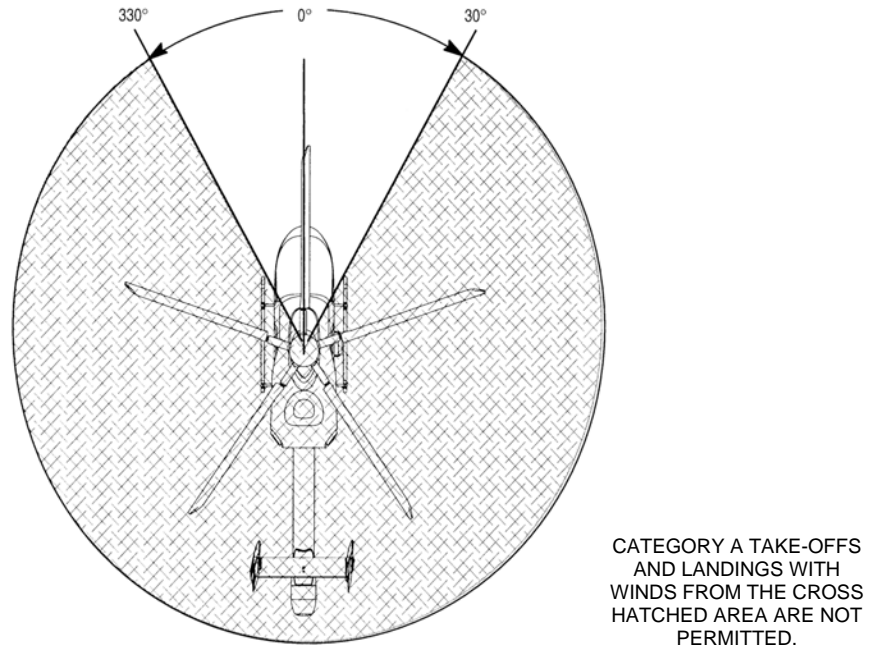


Figure 1. Category A Takeoff and Landing Wind Azimuth Limitations.

3.4. Maximum take-off and landing weight limits:

Description:

These charts show the maximum gross weight for a given temperature and altitude for Category A operations from a clear airfield ([Ref. Figure 2](#)) or Heliport/Elevated helipad ([Ref. Figure 3](#)).

Use of Chart:

The following example explains the correct use of the chart in Figure 2.

Example:

Wanted: Maximum gross weight for Category A operations from a clear airfield.

Known: Outside air temperature = 28°C

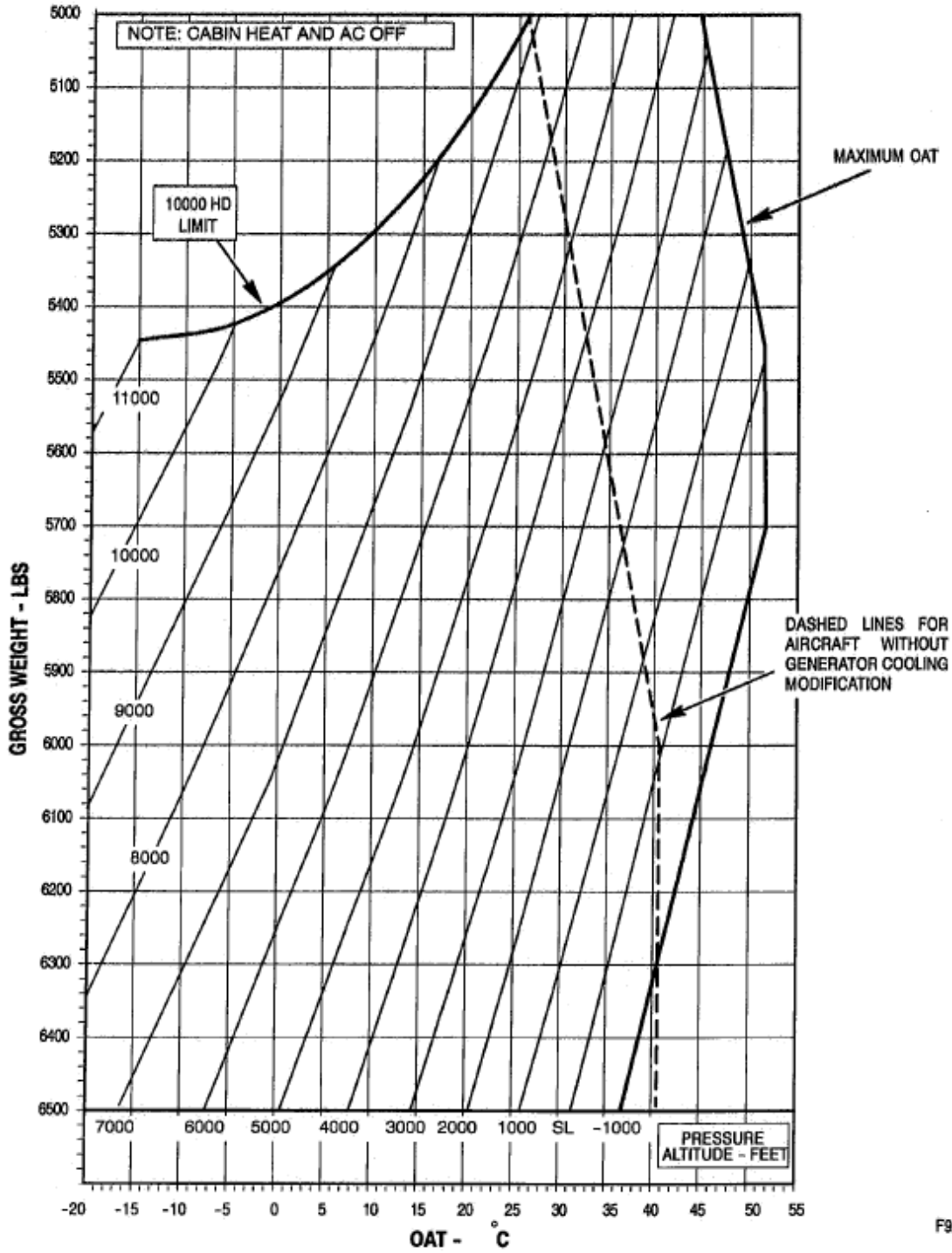
Known: Pressure altitude = 2000 FT

Method: Enter bottom of chart at 28°C. Move up to the 2000 FT line and then directly to the left to read 6100 lb.

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Weight Altitude Temperature Limits – Clear Airfield



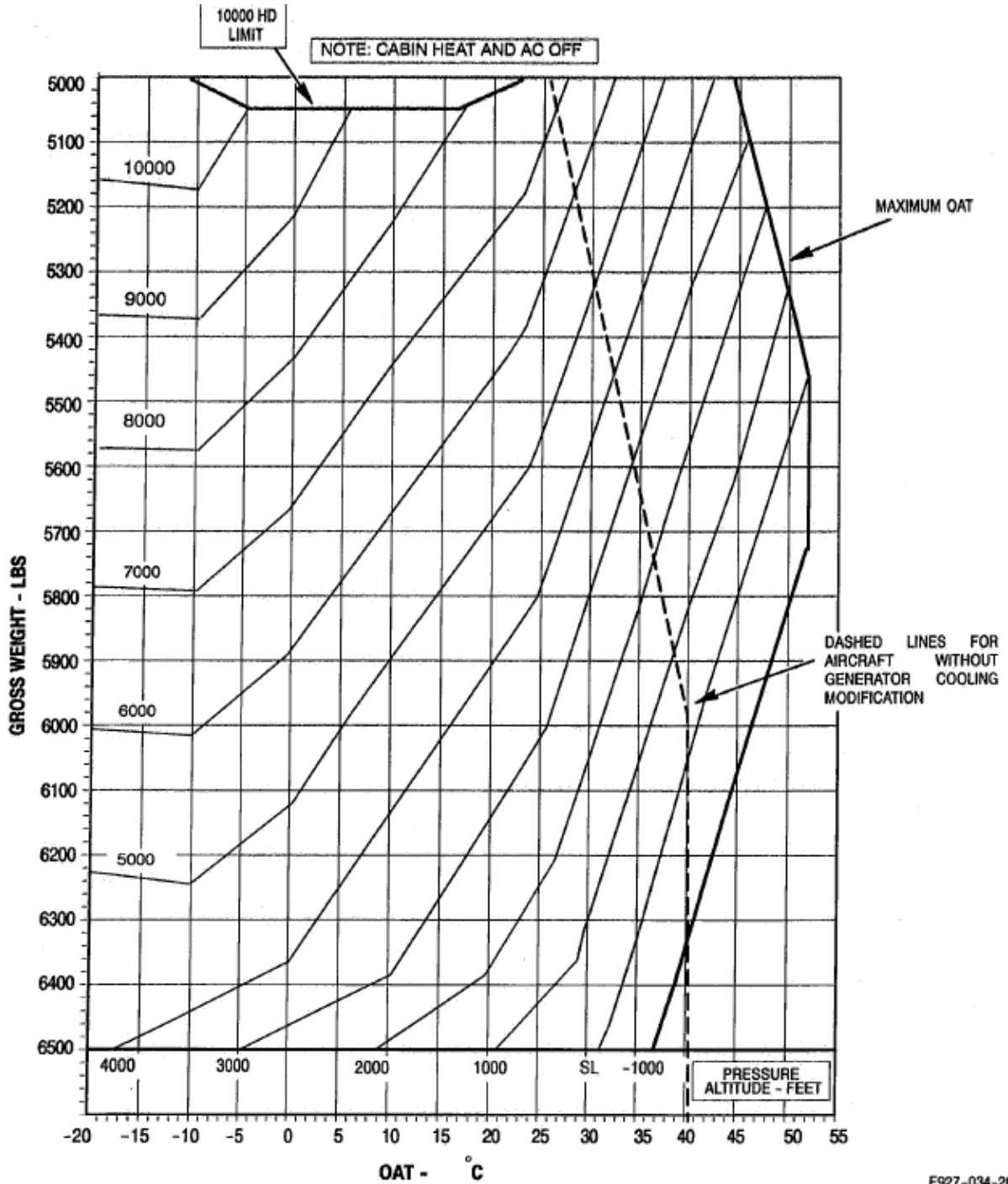
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Figure 2: Weight Altitude Temperature Limits – Clear Airfield

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Weight Altitude Temperature Limits – Heliport/Elevated Helipad



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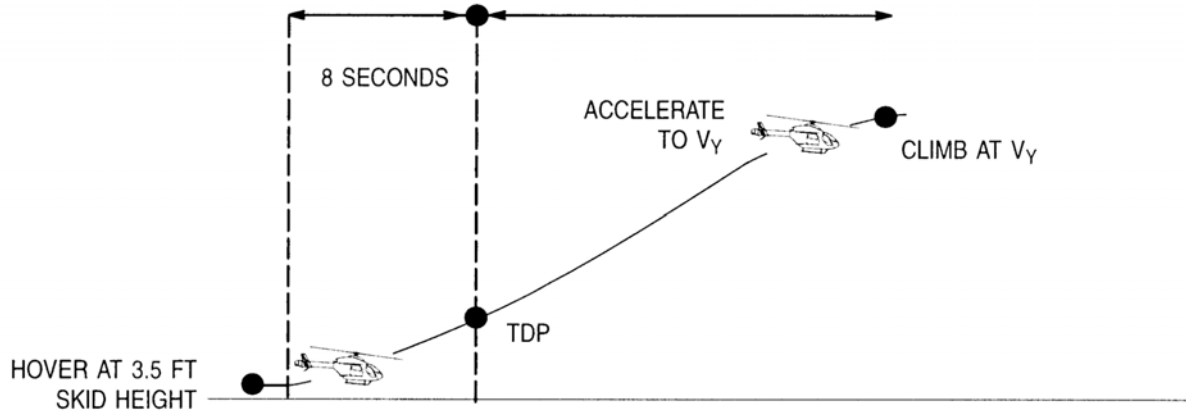
Figure 2.1 Weight Altitude Temperature Limits – Heliport/Elevated Helipad

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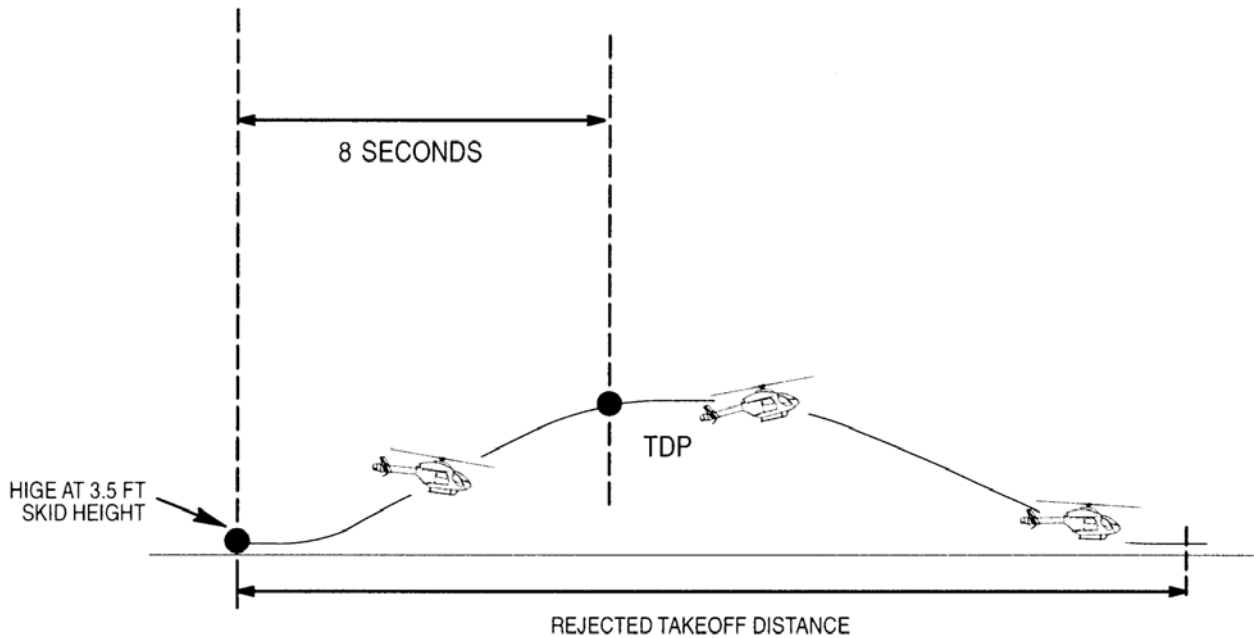
3.5. Clear airfield take-off procedures:

3.5.1. Normal take-off and take-off path:



Engine failure before TDP.

3.5.2. Category A rejected take-off:

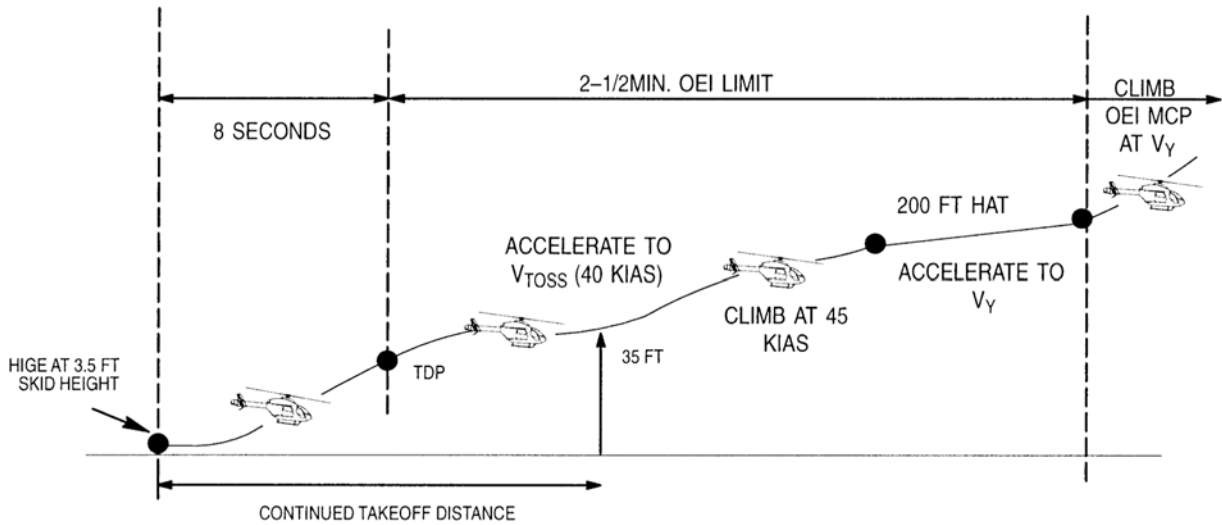


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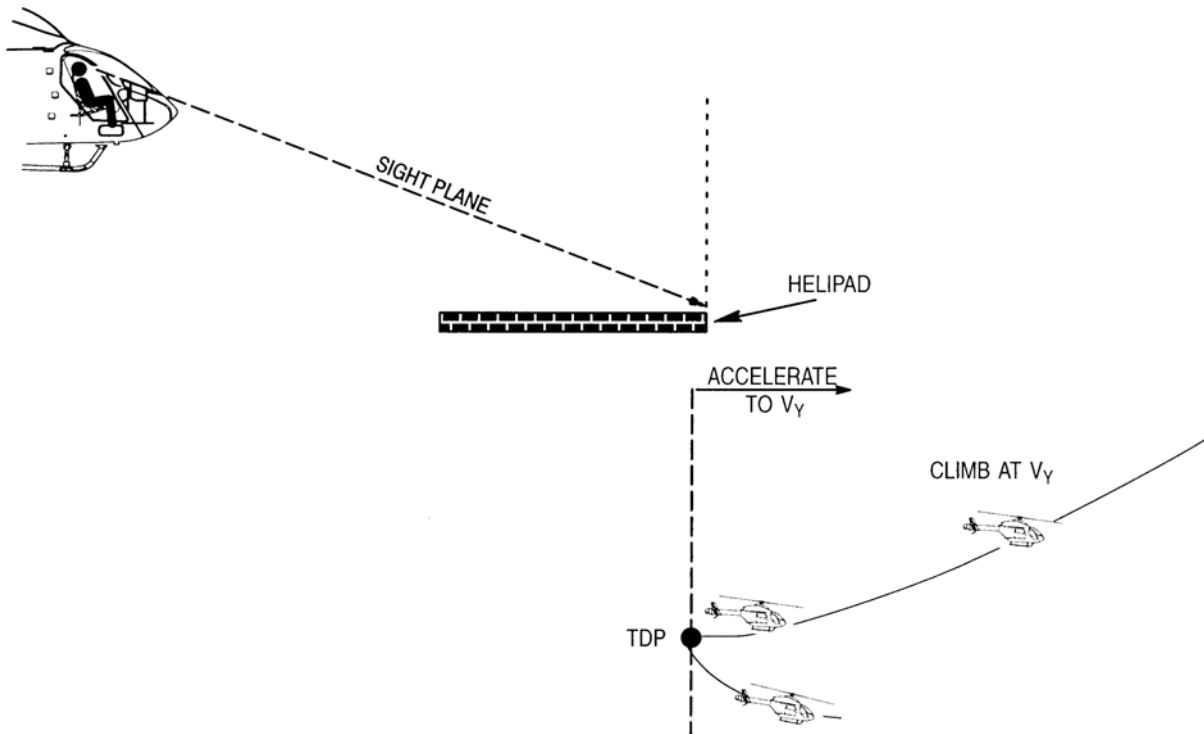
Engine failure after TDP.

3.5.3. Continued take-off:



Heliport/Elevated helipad take-off procedures:

3.5.4. Normal take-off profile - Heliport/Elevated Helipad

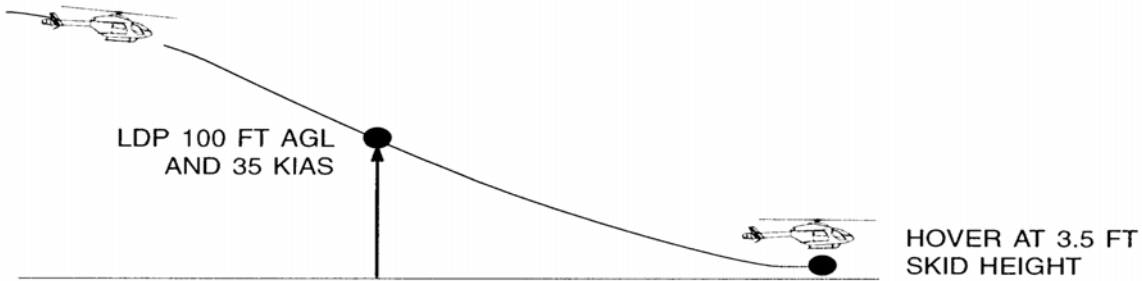


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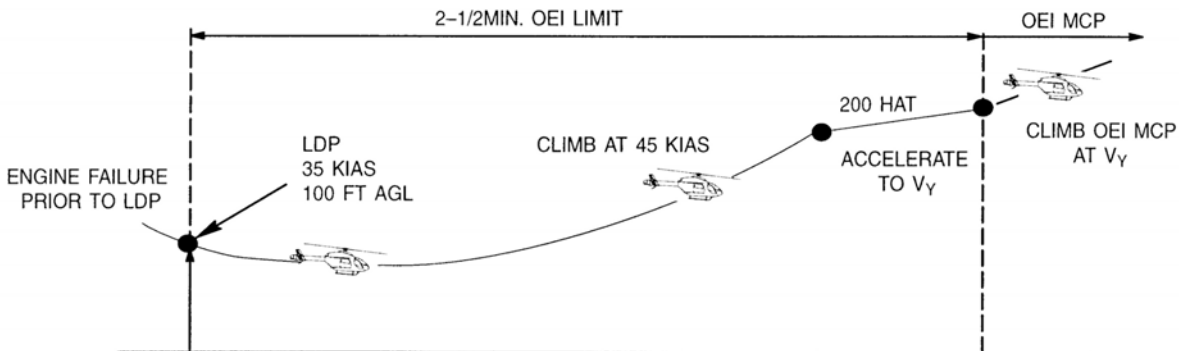
3.6. Landing procedures - clear airfield, heliport and elevated helipad:

3.6.1. Normal landing profile



Engine failure prior to LDP.

3.6.2. Balked landing:



Engine failure after LDP.

3.6.3. Continued Landing

