

## Gretz Robert

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**From:** Gretz Robert  
**Sent:** Friday, October 6, 2017 11:28 AM  
**To:** Gretz Robert  
**Subject:** FW: Re: Fwd: N765KV Follow-up Questions

-----Original Message-----

From: "Lance Raber" [REDACTED]  
To: "Kley Lucas" [REDACTED]  
Date: Tue, 05 Sep 2017 09:21:45 -0400  
Subject: Re: Fwd: N765KV Follow-up Questions

To whom it may concern,

1. What attitude was the aircraft in during the "pull" operation and the length of time the aircraft was in that attitude?

In a aft or left leaning attitude. I knew the warnings for side pull operations regarding fuel level and right pull operations so I avoided this attitude, even though it is not leaned over as far when dragging conductor compared to traditional side pull operations.

2. The amount of time that elapsed between the time of leveling off to hover and the power loss.

45 seconds to a minute

3. Will you describe the complete flight from when you picked up the load until the mishap? Include the helicopters heading as compared to the conductors track over the ground and the helicopters pitch and roll attitudes during the flight. Provide as much detail as you can remember.

Hooked up to the conductor on top of a hill 3-400 feet tall. Pulled it over and down the hill. Terrain was tall grass until the bottom of the hill by the LZ. There was a few small trees and a little creek crossing. The inspectors who came the morning after saw this location. Helicopter was heading mainly between 180 and 270. Conductor was being dragged from 270. I did hundreds of these operations before the engine failure. Nothing felt different. But this was the 2nd or 3rd day flying 765KV. I flew 50AP many months for most of the operations. Attitude was less than wire pull operations.

4. What are Haverfield's minimum fuel requirements for external load operations? Are the minimum fuel requirement published in Haverfield's Part 133, Rotorcraft External Load Operations Manual or other publications? If so, please provide copies.

For all operations accept side wire pull is 100lbs, strictly enforced. This is out of the Haverfield safety manual section III line C.

| C.<br>AIRCRAFT<br>MINIMUM<br>FUEL<br>STANDARDS<br>FOR | FUEL<br>CAPACITY<br>(GALLONS) | UNUSABLE<br>FUEL<br>(GALLONS) | AVERAGE<br>GALLONS/HOUR<br>CONSUMPTION | AVERAGE<br>FLIGHT<br>HOURS | LANDING<br>MINIMUM |
|-------------------------------------------------------|-------------------------------|-------------------------------|----------------------------------------|----------------------------|--------------------|
|                                                       |                               |                               |                                        |                            |                    |

| <b>LANDING<br/>AIRCRAFT</b> |    |     |             |     |          |
|-----------------------------|----|-----|-------------|-----|----------|
| MD500D/E                    | 64 | 1.9 | 29 Gal/Hour | 1.6 | 100 Lbs. |
|                             |    |     |             |     |          |

Here is the Side pull Limitations out of the operations manual

7. Always start the pull of each sock line with a full tank of fuel. As the aircraft leans over in a steep bank to the right to pull the sock line, this may easily uncover the fuel sump. There should be a maximum of one hour of flight time while pulling sock line. If required for refueling, drop off the sock line mid span (In the middle, between towers) and go top off the tank.

This report was completed by Lance Raber [REDACTED]