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# MD 500 Engine Flameout

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CAGC SAFETY ALERT

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# Safety Alert

04-02

## ***Incident Date***

March 04, 2002

## ***MD 500 Engine Flameout***

On February 27th, 2002, at about 13:30, a MD 500 was conducting a seismic operation in northeastern British Columbia using a 100-foot long line. The aircraft was being flown in light to moderate snow and the OAT was about -6 c. While on the approach to the fueling/staging area and as the pilot was setting the carousel on the ground, the engine compressor stalled and the engine lost power. The pilot heard a popping noise and experienced a yaw. The engine out audio activated. The pilot lowered the collective and had an initial loss of between 40 to 50 feet. The pilot was not aware that the engine re-ignition had activated and that the engine re-started. However, aware that the carousel was on the ground, and, not certain why the engine had lost power, the pilot set up for an engine out landing. While in the flare, he realized that the engine was producing power and carried out a controlled landing in about 2 feet of snow about 110 feet beyond his initial planned landing site. The long line was not released. There was no damage to the aircraft or equipment.

The day of the incident was the first day on the job for the pilot. He had just completed a crew change. The flight was being conducted without the Engine Inlet Deflector Kit in snow. When the MD 500 left Whitecourt, the Deflector Kit was installed. The Deflector Kit was removed in the field by the pilot who was being relieved. It is not known why the deflector kit was removed.

## ***Flight Operation in Falling and/or Blowing Snow***

In 1996, the Transportation Safety Board of Canada reviewed the MD 500 series engine failure accidents and concluded that many of the accidents were directly attributable to flight in falling or blowing snow, and, that the helicopters in each instance were not fitted with Engine Inlet Deflector Kits. Their analysis was sufficient to prompt a recommendation to the airworthiness authorities in both Canada and the United States for the inclusion of some form of snow deflector kit on MD 500 series helicopter when flight in falling and blowing snow was conducted. As a result, the FAA issued an airworthiness Directive and McDonnell Douglas amended the MD 500 Rotocraft Flight Manual.

Revision 2 of the MD 500 Rotocraft Flight Manual, Section 2-2, page 2-3 states: "Flight operation is permitted in falling and/or blowing snow only when the Automatic Engine Re-ignition Kit, Engine Failure Warning System and Engine Inlet Deflector Kit are installed and operable".

## ***Why do I Require a Deflector Kit***

It is important to understand why the deflector kit was made a mandatory installation on the MD 500. The reason is quite simply that if you are operating the helicopter in snow conditions you have a high probability of experiencing an engine flame out because of ice or snow ingestion if the Engine Inlet Deflector Kit is not installed.

## ***Is Performance Affected***

In cold weather operations the short answer is; NO

### ***When Should the Deflector Kit be Installed***

The deflector kit should be installed when you will be operating in temperatures below +4.4c. Although the kit is only required for flight in falling and/or blowing snow, it should not be removed just because the weather is nice. You never know when you might encounter snow during a flight. In warmer temperatures, engine oil temperature will be affected (increased), so be aware.

**Remember; Flight in falling and/or blowing snow is prohibited if the Engine Inlet Deflector Kit is not installed.**

Installation of the Engine Inlet Deflector Kits for flight in falling and/or blowing snow also applies to the B206 helicopter.

### ***Contact Information***

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