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Aircraft Type and Registration:	Bolkow 105, EI-LIT
No. and Type of Engines:	Two, Allison 250-C20B
Aircraft Serial Number:	434
Year of Manufacture:	1981
Date and Time (UTC):	25th. June 1998, 0718 hours
Location:	Near Slane, Co. Meath
Type of Flight:	Private
Persons on Board:	Crew - 1
Injuries:	Crew - None
Nature of Damage:	Impact damage to Tail Rotor blade
Commanders Licence:	Airline Transport Pilots Licence (Helicopter)
Commanders Age:	47 years
Commanders Flying Experience:	3663 hours (of which 135 were on type)
Information Source:	Watch Manager, Shannon. AAIU Field Investigation

Synopsis

The pilot had planned a routine flight from Dublin Airport to Falcarragh, Co. Donegal, where he was to pick up passengers and ferry them to Tory Island.

En route, about 2 nm west of Slane village, the pilot felt a sudden increase in vibration and noise levels. He reduced power, but these vibration levels persisted. While he was satisfied that all systems were normal and the helicopter was fully controllable, he decided to carry out a precautionary landing in a field which was known to him.

The pilot's post-flight inspection showed that one tail rotor blade had serious impact damage to the stainless steel strip on the leading edge and that the tail unit anti-collision light cover and its clamp were missing.

Technical Investigation

The tail rotor blades were removed at the landing site and sent for laboratory examination and analysis of the materials evident in the impact area.

The visual and binocular examination of the impact damaged area revealed extraneous material in the form of a pink powdery material on the stainless steel cladding and particles of red/orange glassy material embedded in the composite material where the stainless steel had been perforated.

Further examination and analysis on a Scanning Electron Microscope (SEM) revealed that the composition of the glassy particles and the pink powdery material was similar, consisting essentially of silicon, with a lower level of zinc, indicative of glass. The pink powdery material was glass which had been so severely impacted that it had been powdered.

The findings of this examination confirmed the pilot's opinion that the anti-collision light cover departed the airframe and made contact with the tail rotor blade, causing an imbalance with subsequent vibration and noise.

The Operator advised that, in future, the anti-collision lights would be covered with heat shrink rubber to prevent a reoccurrence of this incident.