National Transportation Safety Board
Aviation Accident Data Summary

Location:	VAN NUYS, CA	**Accident Number:**	LAX99TA066
Date & Time:	01/02/1999, 2115 PST	**Registration:**	N58126
Aircraft:	Bell 205A-1	**Injuries:**	1 Serious, 2 None
Flight Conducted Under:	Part 91: General Aviation - Public Aircraft		

Analysis

During a night training flight over mountainous terrain the pilot heard a loud 'clunking' sound, which was accompanied by vibrations. The engine then emitted a loud grinding, metallic grating sound. Simultaneously, warning lights, engine chip lights, and the rpm decay light became illuminated. The pilot lowered the collective and entered an autorotation but did not have sufficient airspeed and altitude to reach a dirt road, so he turned down a canyon and performed a hard flare and near-vertical descent with little forward speed. The helicopter landed hard and came to rest on rough uneven terrain surrounded by trees and high vegetation. Postaccident examination revealed that the engine power turbine as viewed from the exhaust exhibited damage. The number 4 turbine wheel was missing all of its blades and the blades on the number 3 turbine wheel were damaged. Scoring was evidenced on the inside diameter of the turbine case in the area of the Nos. 3 and 4 turbine wheels. All the vanes and inner and outer supports of the second stage power turbine nozzle were displaced and/or missing, and fragments of the outer vane support were torn and distorted. The third stage turbine nozzle exhibited extensive damage on the trailing edges of the vanes and on the shroud/outer housing. Metallurgical examination of the turbine components disclosed features indicative of overload fractures without evidence of material defects or fatigue. The metallurgist concluded that the overall type and degree of engine damage was indicative of a component failure in the second stage power turbine nozzle area; however, the cause of the component failure was not determined.

Probable Cause

The National Transportation Safety Board determines the probable cause(s) of this accident to be:
A loss of engine power due to an undetermined component failure in the second stage power turbine nozzle area. Factors in the accident were the mountainous/hilly nature of the terrain and the dark night lighting conditions which precluded the pilot from selecting a suitable forced landing area.

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - MECH FAILURE/MALF
Phase of Operation: CLIMB

Findings
1. (C) TURBOSHAFT ENGINE,FREE(POWER) TURBINE - FAILURE
2. (C) REASON FOR OCCURRENCE UNDETERMINED

Occurrence #2: FORCED LANDING
Phase of Operation: EMERGENCY DESCENT/LANDING

Findings

3. (F) TERRAIN CONDITION - MOUNTAINOUS/HILLY
4. (F) LIGHT CONDITION - DARK NIGHT

Occurrence #3: HARD LANDING
Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings
5. TERRAIN CONDITION - ROUGH/UNEVEN
6. TERRAIN CONDITION - HIGH VEGETATION

Pilot Information

Certificate:	Flight Instructor; Commercial	**Age:**	42
Airplane Rating(s):	Single-engine Land	**Instrument Rating(s):**	None
Other Aircraft Rating(s):	Helicopter	**Instructor Rating(s):**	Helicopter
Flight Time:	3000 hours (Total, all aircraft), 300 hours (Total, this make and model), 2800 hours (Pilot In Command, all aircraft), 80 hours (Last 90 days, all aircraft), 25 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Bell	**Registration:**	N58126
Model/Series:	205A-1 205A-1	**Engines:**	1 Turbo Shaft
Operator:	CITY OF LOS ANGELES	**Engine Manufacturer:**	Lycoming
Operating Certificate(s) Held:	None	**Engine Model/Series:**	T53-13B
Flight Conducted Under:	Part 91: General Aviation - Public Aircraft		

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	**Condition of Light:**	Night/Bright
Observation Facility, Elevation:	, 0 ft msl	**Weather Information Source:**	Pilot
Lowest Ceiling:	None / 0 ft agl	**Wind Speed/Gusts, Direction:**	8 knots / , 340°
Temperature:	16°C	**Visibility**	10 Miles
Precipitation and Obscuration:			
Departure Point:	VAN NUYS, CA (VNY)	**Destination:**	

Wreckage and Impact Information

Crew Injuries:	1 Serious, 2 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	N/A	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Latitude, Longitude:			

Administrative Information

Investigator In Charge (IIC):	JEFF RICH	**Adopted Date:**	11/30/2000
Investigation Docket:	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov, or at 800-877-6799. Dockets released after this date are available at http://dms.ntsb.gov/pubdms/.		

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