

		NTSB ID: DEN01LA012		Aircraft Registration Number: N613	
		Occurrence Date: 10/30/2000		Most Critical Injury: None	
		Occurrence Type: Accident		Investigated By: NTSB	
Location/Time					
Nearest City/Place MESA VERDE		State CO	Zip Code 81330	Local Time 1130	Time Zone MDT
Airport Proximity: On Airport/Airstrip		Distance From Landing Facility:			
Aircraft Information Summary					
Aircraft Manufacturer Bell		Model/Series 206L-1 /206L-1		Type of Aircraft Helicopter	
Revenue Sightseeing Flight: No			Air Medical Transport Flight: No		
Narrative					
<p>Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:</p> <p>On October 30, 2000, at 1130 mountain daylight time, a Bell 206L-1 helicopter, N613, sustained substantial damage when a tail rotor blade failed during approach to a helicopter landing pad at Mesa Verde National Park, Colorado. The airline transport certificated pilot, the sole occupant, was not injured. The flight was a public use flight operating under Title 14 CFR Part 91 and no flight plan was filed. Visual meteorological conditions prevailed. The flight originated from the pad about 0930.</p> <p>According to information provided by the Department of Interior, Office of Aviation Services, the flight was on approach to land at the completion of a seeding flight when the pilot noted an increase in vibration level. The pilot landed the helicopter without incident. An examination following shut down of the helicopter provided information that a counterweight and part of the trailing edge had separated from one tail rotor blade. The resulting vibration fractured three of the four tail rotor gearbox mounts. The tail rotor blades had accumulated approximately 30.8 hours time in service since new. All failed parts were recovered at the accident site.</p> <p>Following the accident, repairs to the helicopter were made. New tail rotor blades were required and when one of the two blades was unpacked from its shipping container, the repair station noted what appeared to be a faulty counterweight attachment. They rejected the blade.</p> <p>The failed tail rotor blade, its mate, and the new rejected blade were sent to the National Transportation Safety Board's Materials Laboratory for examination. Their report of the examination is attached and provides evidence that the failed tail rotor blade failed due to fatigue in the inboard and outboard skins initiating at the root near the trailing edge counterweights. The fatigue initiated due to buckling deformation of the inboard skin which was found to be thinner than that specified in the manufacturer's drawings.</p> <p>The rejected new tail rotor blade examination provided evidence of uneven bonding of the inboard counterweight and deformation due to the riveting process. Deformation was also noted on the outboard counterweight.</p> <p>According to information provided by the Federal Aviation Administration, Rotorcraft Directorate, Composite Structures, LLC, Monrovia, California, manufactured all the tail rotor blades.</p>					
FACTUAL REPORT - AVIATION					
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 National Transportation Safety Board FACTUAL REPORT AVIATION		NTSB ID: DEN01LA012			
		Occurrence Date: 10/30/2000			
		Occurrence Type: Accident			
Landing Facility/Approach Information					
Airport Name	Airport ID:	Airport Elevation 6840 Ft. MSL	Runway Used 0	Runway Length	Runway Width
Runway Surface Type: Concrete					
Runway Surface Condition: Dry					
Approach/Arrival Flown: NONE					
VFR Approach/Landing: Precautionary Landing					
Aircraft Information					
Aircraft Manufacturer Bell		Model/Series 206L-1 /206L-1		Serial Number 45287	
Airworthiness Certificate(s): Normal					
Landing Gear Type: Skid					
Amateur Built Acft? No	Number of Seats: 7	Certified Max Gross Wt. 4150 LBS	Number of Engines: 1		
Engine Type: Turbo Shaft	Engine Manufacturer: Allison	Model/Series: C30P	Rated Power: 650 HP		
- Aircraft Inspection Information					
Type of Last Inspection Annual	Date of Last Inspection 10/2000	Time Since Last Inspection 31 Hours	Airframe Total Time 10006 Hours		
- Emergency Locator Transmitter (ELT) Information					
ELT Installed?/Type Yes /	ELT Operated? No	ELT Aided in Locating Accident Site?			
Owner/Operator Information					
Registered Aircraft Owner U. S. DEPT. OF INTERIOR		Street Address BOX 81169			
		City PHOENIX	State AZ	Zip Code 85069	
Operator of Aircraft U.S. BUREAU OF RECLAMATION		Street Address 400 RAILROAD AVENUE			
		City BOULDER CITY	State NV	Zip Code 89006	
Operator Does Business As:			Operator Designator Code:		
- Type of U.S. Certificate(s) Held: None					
Air Carrier Operating Certificate(s):					
Operating Certificate:			Operator Certificate:		
Regulation Flight Conducted Under: Part 91: General Aviation					
Type of Flight Operation Conducted: Public Use					

 <p>National Transportation Safety Board FACTUAL REPORT AVIATION</p>	NTSB ID: DEN01LA012
	Occurrence Date: 10/30/2000
	Occurrence Type: Accident

First Pilot Information

Name On File	City On File	State On File	Date of Birth	Age 51
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Sex: M	Seat Occupied: Right	Occupational Pilot? Civilian Pilot	Certificate Number:
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Certificate(s): Airline Transport; Flight Instructor

Airplane Rating(s): Single-engine Land

Rotorcraft/Glider/LTA: Helicopter

Instrument Rating(s): Airplane; Helicopter

Instructor Rating(s): Helicopter

Current Biennial Flight Review?

Medical Cert.: Class 2	Medical Cert. Status: Valid Medical--w/ waivers/lim.	Date of Last Medical Exam: 05/2000
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- Flight Time Matrix	All A/C	This Make and Model	Airplane Single Engine	Airplane Multi-Engine	Night	Instrument		Rotorcraft	Glider	Lighter Than Air
						Actual	Simulated			
Total Time	15237	3009	1500		1500	250	500	13737		
Pilot In Command(PIC)	14237	3009	1500		1400	250		12737		
Instructor	100									
Instruction Received										
Last 90 Days	140	119								
Last 30 Days	71	51								
Last 24 Hours	7	7								

Seatbelt Used? Yes	Shoulder Harness Used? Yes	Toxicology Performed? No	Second Pilot? No
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Flight Plan/Itinerary

Type of Flight Plan Filed: None	
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Departure Point Same as Accident/Incident Location	State	Airport Identifier	Departure Time 0930	Time Zone MDT
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Destination Local Flight	State	Airport Identifier	
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Type of Clearance: None

Type of Airspace: Class G

Weather Information

Source of Wx Information:

No record of briefing

 <p>National Transportation Safety Board FACTUAL REPORT AVIATION</p>	NTSB ID: DEN01LA012
	Occurrence Date: 10/30/2000
	Occurrence Type: Accident

Weather Information

WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
	0000		0 Ft. MSL	0 NM	0 Deg. Mag.
Sky/Lowest Cloud Condition: Scattered			0 Ft. AGL	Condition of Light: Day	
Lowest Ceiling: None			0 Ft. AGL	Visibility: 0 SM	Altimeter: "Hg
Temperature: 10 °C	Dew Point: °C	Weather Conditions at Accident Site: Visual Conditions			
Wind Direction: 180	Wind Speed: 10	Wind Gusts:			
Visibility (RVR): 0 Ft.	Visibility (RVV) 0 SM				
Precip and/or Obscuration:					

Accident Information

Aircraft Damage: Substantial	Aircraft Fire: None	Aircraft Explosion: None
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- Injury Summary Matrix	Fatal	Serious	Minor	None	TOTAL
First Pilot				1	1
Second Pilot					
Student Pilot					
Flight Instructor					
Check Pilot					
Flight Engineer					
Cabin Attendants					
Other Crew					
Passengers					
- TOTAL ABOARD -				1	1
Other Ground	0	0	0		0
- GRAND TOTAL -	0	0	0	1	1

National Transportation Safety Board

FACTUAL REPORT

AVIATION



NTSB ID: DEN01LA012

Occurrence Date: 10/30/2000

Occurrence Type: Accident

Administrative Information

Investigator-In-Charge (IIC)

NORMAN F. WIEMEYER

Additional Persons Participating in This Accident/Incident Investigation:

DARON B MALMBORG

SALT LAKE CITY, UT