



National Transportation Safety Board Aviation Accident Data Summary

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|--------------------------------|---|-------------------------|--------------------|
| Location: | Bunnell, FL | Accident Number: | MIA04LA058 |
| Date & Time: | 03/12/2004, 1830 EST | Registration: | N69EP |
| Aircraft: | Ortmayer/Parson none | Injuries: | 1 Fatal, 1 Serious |
| Flight Conducted Under: | Part 91: General Aviation - Instructional | | |

Analysis

While on an instructional flight, a bolt in the main rotor blade broke separating the blade from the hub. The blade struck the student pilot resulting in fatal injuries. The responding FAA inspector stated the on-scene investigation found the hub bar wing and rotor blade had separated from the hub bar due to the failure of the hub bar wing retaining bolt head. The NTSB material lab reported the bolt that retains the hub bar wing to the hub bar was fractured in the radius between the shank and the head. Presence of fatigue arrest marks covering approximately 90 percent of the cross-sectional area. The fatigue cracks initiated from multiple origins all the way around the outer diameter surface at the bases of the radius with the head. The head contacts that hub bar without the use of a washer. A product notice number 33 was issued by Rotary Air Force (RAF) on June 18, 2001, placing a 500 hour time change factor on RAF rotor blades and hub bar "until further notice". The product notice number 33 had not been accomplished on the accident gyroplane at the time of the accident. The owner/certified flight instructor (CFI) stated the blades had a total time of about 930 hours at the time of the accident, which about 430 of those hours were of airtime. He did remember getting some kind of notice through the mail, something about a 500 hours time on the blades but the notice was not clear and too vague. If it was mandatory, a notice would be issued stating as such. The Owner/CFI added the blades on the accident gyroplane never experience a ground strike, but did have nicks and scrape marks on the blades. A representative of RAF contacted the owner/CFI about a month after product notice 33 was issued advising of the notice and informed him about internal damage and stress that occurs if the rotor blade contacts the ground and the nature of such damage, which are undetectable. The owner/CFI stated he and RAF have had conversations; however, those discussions were more about training issues and the amount of training time the students were receiving. None of those conversations were about RAF product notice number 33 or blade strikes.

Probable Cause

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The owner/pilot mechanic's failure to comply with a manufacture notice to replace the rotor blades and hub bar assembly, resulting in a failure of the hub bar to hub bar wing attaching bolt and separation of a main rotor blade.

Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION
Phase of Operation: TAXI

Findings

1. ROTOR SYSTEM,MAIN ROTOR BLADE RETAINING PIN/BOLT - FATIGUE

2. ROTOR SYSTEM,MAIN ROTOR BLADE RETAINING PIN/BOLT - FAILURE
 3. ROTOR SYSTEM,MAIN ROTOR BLADE - SEPARATION
 4. (C) MAINTENANCE,SERVICE BULLETIN/LETTER - NOT COMPLIED WITH - OWNER/PILOT MECHANIC
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Occurrence #2: PROPELLER/ROTOR CONTACT TO PERSON
Phase of Operation: TAXI

Flight Instructor Information

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|----------------------------------|--|------------------------------|---|
| Certificate: | Flight Instructor; Commercial | Age: | 59 |
| Airplane Rating(s): | Multi-engine Land; Single-engine Land | Instrument Rating(s): | Airplane |
| Other Aircraft Rating(s): | Gyroplane | Instructor Rating(s): | Airplane Multi-engine; Airplane Single-engine; Gyroplane; Instrument Airplane |
| Flight Time: | 2460 hours (Total, all aircraft), 1211 hours (Total, this make and model), 2460 hours (Pilot In Command, all aircraft), 25 hours (Last 90 days, all aircraft), 6 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft) | | |

Student Pilot Information

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|----------------------------------|------|------------------------------|------|
| Certificate: | None | Age: | 54 |
| Airplane Rating(s): | None | Instrument Rating(s): | None |
| Other Aircraft Rating(s): | None | Instructor Rating(s): | None |
| Flight Time: | | | |

Aircraft and Owner/Operator Information

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|---------------------------------------|---|-----------------------------|-----------------|
| Aircraft Make: | Ortmayer/Parson | Registration: | N69EP |
| Model/Series: | none | Engines: | 1 Reciprocating |
| Operator: | William R. Ortmayer | Engine Manufacturer: | Mazda |
| Operating Certificate(s) Held: | None | Engine Model/Series: | 13B |
| Flight Conducted Under: | Part 91: General Aviation - Instructional | | |

Meteorological Information and Flight Plan

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|---|-------------------|-------------------------------------|------------------------------|
| Conditions at Accident Site: | Visual Conditions | Condition of Light: | Day |
| Observation Facility, Elevation: | KDAB, 33 ft msl | Weather Information Source: | Weather Observation Facility |
| Lowest Ceiling: | None | Wind Speed/Gusts, Direction: | 5 knots / , 90° |
| Temperature: | 19° C | Visibility | 9 Miles |
| Precipitation and Obscuration: | | | |
| Departure Point: | BUNNELL, FL (X47) | Destination: | |

Airport Information

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|-----------------------------|----------------------|----------------------------------|---------|
| Airport: | Flagler County (X47) | Runway Surface Type: | Asphalt |
| Runway Used: | 150 | Runway Surface Condition: | Dry |
| Runway Length/Width: | 3000 ft / 150 ft | | |

Wreckage and Impact Information

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|-----------------------------|-----------------------|----------------------------|-------------|
| Crew Injuries: | 1 Fatal, 1 Serious | Aircraft Damage: | Substantial |
| Passenger Injuries: | N/A | Aircraft Fire: | None |
| Ground Injuries: | N/A | Aircraft Explosion: | None |
| Latitude, Longitude: | 29.467222, -81.206111 | | |

Administrative Information

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|--------------------------------------|---|----------------------|------------|
| Investigator In Charge (IIC): | Jose L Obregon | Adopted Date: | 09/13/2005 |
| Investigation Docket: | NTSB accident and incident docket 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.nts.gov/pubdms/ . | | |

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