



National Transportation Safety Board Aviation Accident Final Report

Location:	Delano, CA	Accident Number:	LAX05LA253
Date & Time:	08/01/2005, 1730 PDT	Registration:	N870BM
Aircraft:	Malechek Q-200	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	1 Serious, 1 Minor
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

A propeller blade separated while the airplane was cruising at 9,500 feet mean sea level. The pilot then experienced a severe vibration and he shut off the engine. During the ensuing forced landing, the airplane impacted objects short of the runway and came to rest inverted. A subsequent examination of the wood propeller revealed that it had separated at glue joints and delaminated. The pilot had torqued the propeller's attachment bolts to the 18-foot-pound value placarded on the propeller. The previous owner of the airplane had recommended torquing the bolts to 15-foot-pounds. A hair-line crack was found emanating from one of the propeller's attachment bolt holes. The FAA coordinator reported that the attachment bolt torquing sequence for the experimental airplane's propeller was not specified by the manufacturer.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the in-flight delamination and separation of a propeller blade for undetermined reasons.

Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION
Phase of Operation: CRUISE - NORMAL

Findings

1. (C) PROPELLER SYSTEM/ACCESSORIES, BLADE - SEPARATION

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

Occurrence #3: ON GROUND/WATER COLLISION WITH OBJECT
Phase of Operation: EMERGENCY DESCENT/LANDING

Findings

2. OBJECT - FENCE
3. OBJECT - UTILITY POLE

Factual Information

On August 1, 2005, about 1730 Pacific daylight time, a privately owned and operated Malechek, Q-200, N870BM, experienced the in-flight separation of the outer portion of one propeller blade during cruise flight. The pilot received directions to the nearest airport from a Federal Aviation Administration (FAA) air traffic controller (ATC). During the forced landing, the experimental airplane collided with objects while on final approach to runway 14 at the Delano Municipal Airport, Delano, California. Visual meteorological conditions prevailed at the time, and no flight plan had been filed. The airplane was destroyed. The private pilot was seriously injured, and the passenger sustained minor injuries. The flight was performed under the provisions of 14 CFR Part 91. The personal flight originated from Modesto, California, about 1630.

The pilot reported to the National Transportation Safety Board investigator that, while en route to his intended Ramona, California, destination, and cruising at 9,500 feet mean sea level, he had suddenly experienced a severe vibration and believed one propeller had separated from the engine. Thereafter, he shut off the airplane's engine. Ground-based witnesses reported that the airplane approached the Delano Municipal Airport from the north, and it was heading straight for the runway. The pilot made a forced landing and the airplane touched down short of the runway. It collided with a pole and a chain link fence, broke apart, and came to rest upside down approximately 1,000 feet prior to reaching the approach end of the runway. There was no fire.

According to the pilot, 1/2 of the blade's span had broken off. A local FAA certificated airframe and powerplant mechanic recovered some of the airplane's propeller blade. The mechanic noted that the 2-bladed Aymar-DeMuth 60 X 72 wood propeller (S/N 04371) had experienced a separation at the glue joints. The propeller delaminated.

In the pilot's completed "Aircraft Accident Report," he indicated his procedures for torquing the propeller blade's attachment bolts. The owner reported that rather than torquing the bolts to the recommended 15-foot-pound value, he torqued the bolts to 18-foot-pounds, according to a placard on the propeller.

The FAA coordinator reported observing evidence of a hair-line crack emanating from one of the propeller's attachment bolt holes. The FAA coordinator reported to the Safety Board investigator that the attachment bolt torquing sequence was not specified by the manufacturer.

Pilot Information

Certificate:	Private	Age:	50, Male
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 With Waivers/Limitations	Last Medical Exam:	11/01/2003
Occupational Pilot:		Last Flight Review or Equivalent:	11/01/2003
Flight Time:	325 hours (Total, all aircraft), 130 hours (Total, this make and model), 285 hours (Pilot In Command, all aircraft), 40 hours (Last 90 days, all aircraft), 20 hours (Last 30 days, all aircraft), 12 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	Malechek	Registration:	N870BM
Model/Series:	Q-200	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Experimental	Serial Number:	2572
Landing Gear Type:	Tailwheel	Seats:	2
Date/Type of Last Inspection:	07/01/2004, Annual	Certified Max Gross Wt.:	
Time Since Last Inspection:	117.5 Hours	Engines:	1 Reciprocating
Airframe Total Time:	1201 Hours	Engine Manufacturer:	Continental
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	O-200A
Registered Owner:	Philip S. Lankford	Rated Power:	100 hp
Operator:	Philip S. Lankford	Air Carrier Operating Certificate:	None

Meteorological Information and Flight Plan

Observation Facility, Elevation:	BFL, 507 ft msl	Observation Time:	1754 PDT
Distance from Accident Site:	21 Nautical Miles	Condition of Light:	Day
Direction from Accident Site:	143°	Conditions at Accident Site:	Visual Conditions
Lowest Cloud Condition:	Clear	Temperature/Dew Point:	38° C / 9° C
Lowest Ceiling:	None	Visibility	10 Miles
Wind Speed/Gusts, Direction:	12 knots, 320°	Visibility (RVR):	
Altimeter Setting:	29.79 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Modesto, CA (MOD)	Type of Flight Plan Filed:	None
Destination:	RAMONA, CA (RNM)	Type of Clearance:	None
Departure Time:	1630 PDT	Type of Airspace:	

Airport Information

Airport:	Delano Municipal (DLO)	Runway Surface Type:	Asphalt
Airport Elevation:	314 ft	Runway Surface Condition:	Dry
Runway Used:	14	IFR Approach:	None
Runway Length/Width:	5650 ft / 75 ft	VFR Approach/Landing:	Forced Landing

Wreckage and Impact Information

Crew Injuries:	1 Serious	Aircraft Damage:	Destroyed
Passenger Injuries:	1 Minor	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Serious, 1 Minor		

Administrative Information

Investigator In Charge (IIC):	Wayne Pollack	Adopted Date:	02/26/2007
Additional Participating Persons:	Gene Sweet; Federal Aviation Administration; Fresno, CA		
Publish Date:			
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.nts.gov/pubdms/ .		

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