



November 9, 2012

Mr. Todd Fox
National Transportation Safety Board
31 West 775 North Avenue
West Chicago, IL 60185

SUBJECT: Teardown Inspection of Propeller from:
Cessna 208B, N793FE
File #:(MPS:12-04, NTSB: CEN13FA049)

Subject propeller was installed on a Cessna 208B, N739FE, which crashed on November 6, 2012 near Wichita, Kansas. McCauley was requested to assist in the examination of the propeller and with the interpretation of the damage indications. The propeller was inspected at McCauley Propeller Systems, Wichita, Kansas on November 7, 2012 with the following in attendance:

Craig Hatch	National Transportation Safety Board
Ken Marsh	Federal Aviation Administration-Wichita FSDO
Steve Miller	Cessna Aircraft Company
Steve Mason	Baron Aviation
John Downey	Baron Aviation
Danny Ball	McCauley Propeller Systems
Travis Martin	McCauley Propeller Systems

The propeller model number and serial number is as follows:

Model: 3GFR34C703B/A-106GA-2
Serial (S/N): 910782
Blade #1 S/N: UC029
Blade #2 S/N: UC037
Blade #3 S/N: UC038

As a result of the examination, the following conclusions are drawn:

1. Propeller damage is a result of impact. There is no indication of any type of propeller failure prior to impact.



2. Exact amount of power was not determined. The propeller shows indications of low energy absorption consistent with a low engine power level at impact.
3. Exact blade angles at impact were not determined. Impact signature markings indicate that the propeller was at or near the feathered blade angle range during the impact sequence. This approximate blade angle range is consistent with the concluded low power level.
4. No evidence was found for any pressure oil seal failure.

The conclusions noted above are based on a variety of observations, some of which are noted below:

1. All propeller damage is of the type associated with impact forces; with gross deflections, and is of sudden failure type. There is no indication of any type of fatigue failure.
2. All of the propeller blade butts were found with impact marks from contact with the opposing blade actuating pins and other internal parts. The position of these marks indicates a propeller blade angle of approximately feather position at impact.
3. The piston and cylinder showed mating contact damage due to gross deflection at impact. Additionally, the feather stops were deformed by overload from piston contact during the impact sequence. Piston and cylinder damage was consistent, and indicates a propeller blade angle of approximately feather position at impact.
4. Blade bending, twisting, and overall propeller damage is light, and typical of that associated with low power at impact.
5. All pressure seals were inspected. One pitch change o-ring seal had damage due to groove obliteration during the impact sequence. No other pressure seal anomaly was noted.

Per NTSB request, the propeller has been returned to: Yingling Aviation, Wichita, KS.

Respectfully,

Danny L. Ball
Engineering

cc: Steve Miller, Ken Marsh