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December 8, 2005

Ms. Leah Yeager
National Transportation Safety Board
624 Six Flags Drive
Suite 150
Arlington, TX 76011

Subject: Teardown Inspection of Propellers
From Cessna 310Q, N1971W

Dear Ms. Yeager:

The following report concerns the teardown inspection of the propellers from the above subject aircraft.

Subject propellers were installed on a Cessna 310Q aircraft, N1971W, which crashed on July 24, 2005 shortly after takeoff from Ada Municipal Airport near Ada, Oklahoma. McCauley was requested to assist in the examination of the propellers and with the interpretation of damage indications. The propellers were inspected at McCauley Propeller Systems, Wichita, Kansas on October 18-19, 2005 with the following in attendance:

Leah Yeager	- NTSB
Court Goodroe	- NTSB
Emile Lohman	- Cessna Aircraft Company
Andrew Swick	- Teledyne Continental Motors
Tom Knopp	- McCauley Propeller Systems

The model numbers and serial numbers of the propellers are as follows:

	Left Propeller	Right Propeller
Model No.	D2AF34C71-NP/84JF-3	D2AF34C71-NP/84JF-3
Serial No.	736810	714987
Blade #1 S/N	C91473YS	FH163YS
Blade #2 S/N	C91481YS	K86377YS

As a result of our examination the following conclusions were drawn:

1. Propeller damage was a result of impact. There were no indications of any type of propeller failure prior to impact.

Tom Knopp
[redacted]
Vandalia, OH. 45377

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2. Left propeller was rotating at impact. Propeller was operating at or very near low pitch blade angle at impact.

3. Left propeller was being operated under conditions of low power at impact. The exact amount of power was not determined.

4. Right propeller was at the feathered blade angle at impact.

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

1. All propeller damage was of the type associated with impact forces, with gross deflections, was of sudden failure type, and there were no indications of any type of fatigue failure.

2. Left propeller blade retention nut top surfaces contained light counterweight impact marks indicating blades were at or very near low pitch blade angle at impact. Additionally, the pitch change mechanism of the left propeller was found at or near the low pitch to latch position at disassembly.

3. Left propeller damage was minimal and consistent with impact at low power.

4. Right propeller damage was limited to decrease pitch twisting of the number two blade. This blade contained scratches and paint burnishing outboard that were not consistent with rotation. Type and orientation of scratches and blade twisting indicates that propeller was feathered at impact and that ground forces caused blade to twist toward decrease pitch. Number one blade was virtually undamaged.

If we can be of further assistance, please contact us. The propellers are being returned to Air Salvage of Dallas.

Respectfully,

[redacted]

Thomas M. Knopp
Chief Engineer-Propeller Systems

cc: Mr. Emile Lohman – Cessna Aircraft Company

Tom Knopp
[redacted] Vandalia, OH. 45377
[redacted]
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