

From: [Adrienne Lamm](#)
To: [Andrew Swick](#)
Subject: Email report for Cordes Lakes AZ (WPR25LA040)
Date: Monday, May 12, 2025 12:17:17 PM
Attachments: [Mixture cable close.JPG](#)
[Mixture cable overall.JPG](#)
[Wire fracture surface \(80x\).jpg](#)
[Wire profile \(40x\).jpg](#)
[SEM of fracture surface \(50x\).jpg](#)
[SEM of fracture surface \(500x\).jpg](#)

Andrew -

The following is my email report on the mixture cable and linkage from your Cordes Lakes AZ (WPR25LA040) case:

"The subject aircraft, a Cessna 172I (N8390L), performed an emergency landing after repeated engine misfires resulted in power loss of the engine while in flight. The aircraft landed hard on uneven terrain and suffered substantial damage. During examination of the aircraft following the accident the mixture cable was discovered separated. The mixture cable and mating mixture linkage were submitted for evaluation.

Two sections of the mixture cable were submitted, with one section still assembled to the mixture linkage. A mating spring was submitted with the loose section of cable. The cable fractured at the clamping location where it mated with the linkage.

The section of cable still assembled was bent towards the bolt head of the mating linkage, with cracks on the side of the wire parallel to the fracture surface. The cracks were close to the fracture surface in a location that would have had high strain during bending. Following disassembly, this section of cable showed distinct kinks from clamping in the linkage. The fracture surface of the cable had shear lips consistent with unidirectional bending, which was consistent with the bent profile of the cable. The fracture surface was examined using a scanning electron microscope. Smearing obscured the features around the edges of the fracture surface, while the undamaged portions of the fracture surface displayed ductile dimples consistent with overstress fracture. No evidence of fatigue or progressive cracking was observed.

Rub marks completely obscured the fracture surface on the loose cable. An area on the end of the mating coil also had rub marks. Both rub marks likely resulted from post-fracture contact."

Let me know if you have any questions or need additional images.

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