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Title: Senior Air Safety Investigator
Division: AS-ERA

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Subject: ERA24LA024 Rangely, ME

Contact: Michael Meadows – Materials Engineer – NTSB

Mr. Meadows was consulted on the condition of a pair of tailwheel springs harvested by the FAA in the investigation cited above. He provided some photographs and a brief synopsis of his observations by email. The following was excerpted from his email.

The NTSB Materials Lab received two tailwheel coil springs labeled “left” and “right” with the “rudder side” indicated on each. The right spring was reported to have separated from the aircraft upon landing. The left spring remained attached to the rudder arm and tailwheel assembly post-accident.

Contact marks and gouges were observed on the rudder side hook end of each spring, consistent with hard contact with the rudder arm or tooling marks. The ends of each hook on both the left and right springs appeared consistent with being sheared and were likely in an as manufactured condition.

The arc length of the right spring hook end (wheel side) was approximately 0.14 inch shorter than that of the left spring. The gap between the end of the hook and the adjacent coil was nearly 2.5 times greater on the right spring relative to the left spring (wheel side). The left spring exhibited non-uniform coil separation and a sharper bend at the apex of the wheel side hook, consistent with experiencing tensile loading in excess of the yield strength of the spring, and likely a result of remaining attached to the aircraft during the accident sequence.

Based on the observed differences between the wheel side hook ends of the left and right springs, the right spring would have been more likely to separate from the aircraft under abnormal loading conditions.