

From: [REDACTED]
To: [REDACTED]
Subject: WPR23LA107 - Yuma, AZ - Materials Laboratory Examination Report
Date: Wednesday, April 24, 2024 11:26:02 AM
Attachments: [IMG_1614.JPG](#)
[IMG_1618.JPG](#)
[image002.png](#)

Scott,

The main rotor mast piece and the fracture surface on the mast piece are shown as received in the attached images. The main rotor mast was bent slightly adjacent to the fracture surface. The fracture surface was oriented primarily in the plane perpendicular to the mast axis, consistent with ductile overstress fracture under torsion loading. A portion of the fracture surface appeared relatively smooth and flat, and the remainder of the fracture surface had radial features and lipped material at the edges consistent with ductile overstress fracture in the shear plane. For a closer examination of the smooth area, a piece of the mast with the fracture surface was cut from the remainder of the piece, and the fracture surface was cleaned using an ultrasonic cleaner while submerged in a solution of Alconox detergent and warm water. The cleaned fracture surface was then examined using a scanning electron microscope. The fracture surface showed elongated dimple features with elongation in the circumferential plane, features consistent with ductile overstress fracture from torsion loading.

Thank you,
Matt



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Photo 1 – Main Rotor Mast N36FA

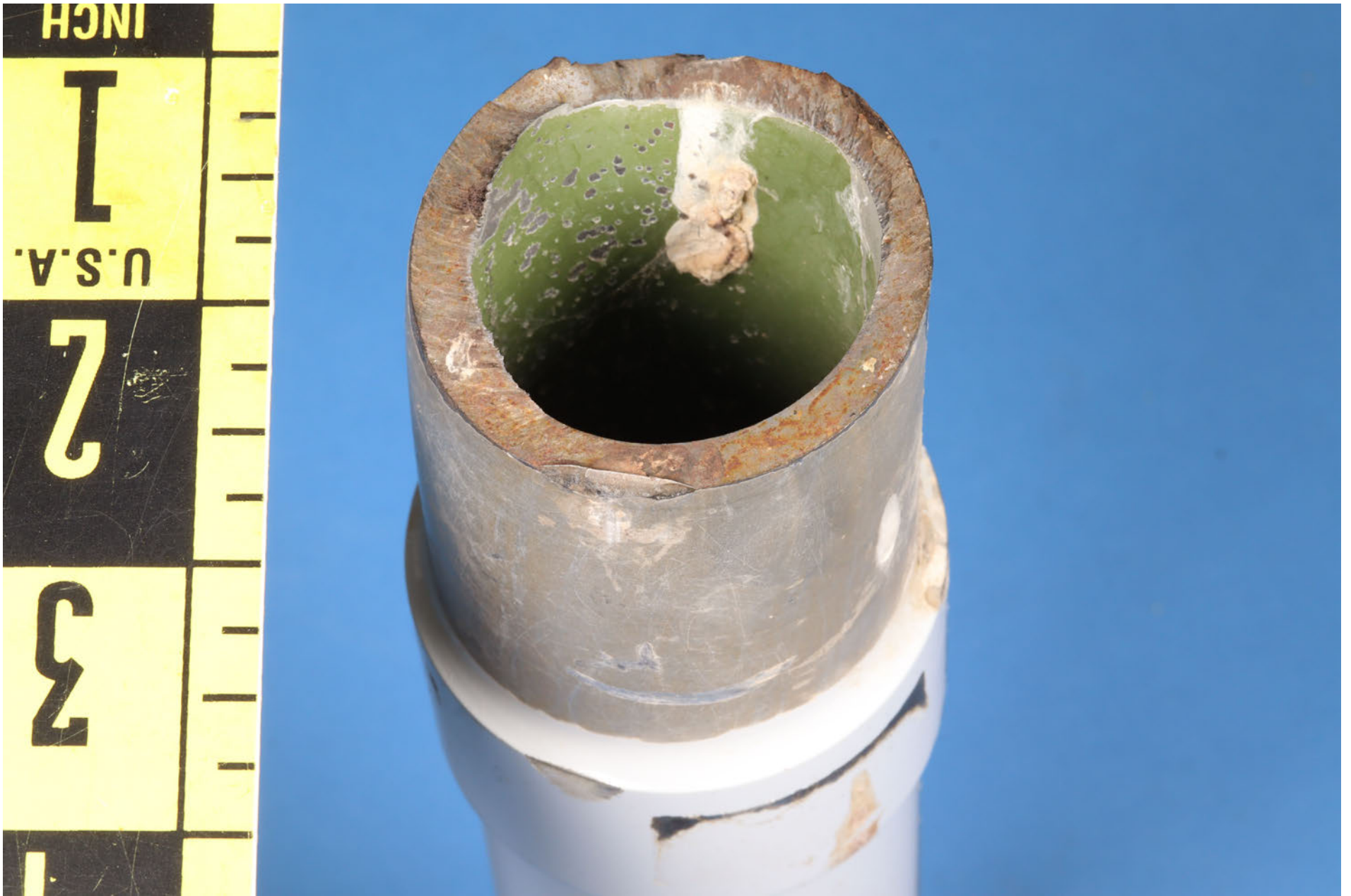


Photo 2 – Mast Fractured Edge N36FA