

MEMORANDUM FOR RECORD

Timothy W. Monville
Sr. Air Safety Investigator
Office of Aviation Safety-Eastern Region

Date: May 28, 2025

Subject: ERA23FA249

Contact: NTSB Materials Laboratory E-mail report from NTSB Subject Matter Expert

As part of the investigation, while on-scene, the left flap up cable was fractured at the upper door post in the area of a pulley. The two ends of the fractured cable were retained for retained for examination by the NTSB Materials Laboratory.

According to the e-mail reported from the NTSB Materials Engineer subject matter expert, "There was a separation in the submitted cable ('IMG_0031'). The separated cable ends were lightly cleaned using methanol and inspected with a 5-50x stereomicroscope. At the location of the separation, one half of the fractured cable had wires that had unwound, while the other half had wires that remained bundled in their strands ('IMG_0032'). Flat areas were observed on the outer diameter of the cable ('End 1 S (30x)' and 'End 2 S (20x)') that were consistent with rubbing against another object for some time. There was thinning of the separated wire ends adjacent to the area with the external rub, ('End 1 fracture surfaces S (50x) and 'End 2 fracture surfaces S (40x)'), as well as lesser amounts of thinning on a few internal wires due to rubbing contact between contacting wires. The fracture surfaces of the wires were silver colored and appeared fresh. Several of the fractured wires with thinning appeared to have flat fracture surfaces consistent with fatigue. The remaining majority of wires displayed necking and cup-cone macro features consistent with ductile overstress on their fractured wire ends."

Six photographs were provided and are attached with the original labeling.

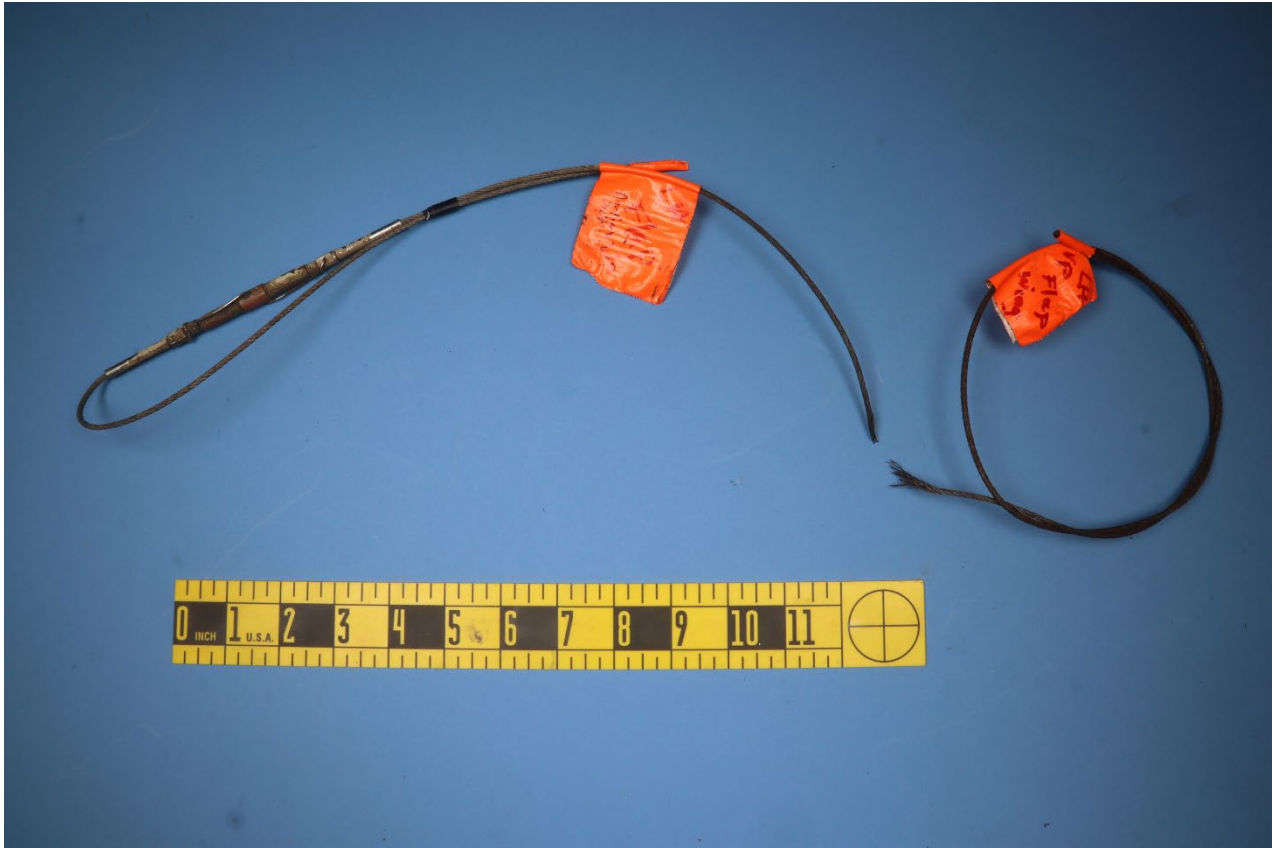


Figure 1 IMG-0031 View of the Submitted Sections of the Fractured Left Flap Up Cable



Figure 2 IMG_0032. View Showing the Condition of each Fractured End of the Cable



Figure 3 End 1 S (30X) View Showing Flat Areas on Cable Strands



Figure 4 End 2 S (20X). View Showing Flat Areas on Cable Strands



Figure 5 End 1 Fracture Surfaces S (50X). View of thinning of Cable Strands Adjacent to Area with External Rub



Figure 6 End 2 Fracture Surfaces S (40X). View Showing the Ends of the Fractures Strands