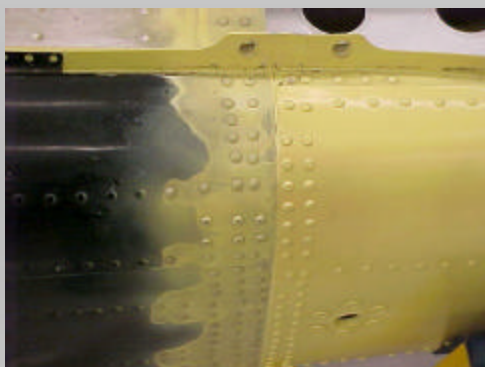


Inspection of Multilayer Aircraft Structures with Raised Head Fasteners

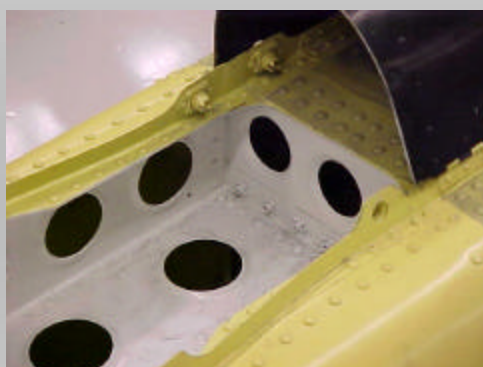
Challenges:

Raised head fastener structures are often seen in helicopter, as well as seen in regular airplanes.

Cracks in raised head fastener holes are difficult to be detected by conventional NDI techniques



Joint External Inspection Region



Tail Boom Mount Inspection Region

IMTT' FG_RFEC rotational probe is the best solution to this problem



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INSPECTION OF RAISED-HEAD FASTENERS

One example of application of rotational FG RFEC probe in aircraft crack detection is the inspection of raised-head fasteners, Figure 3.

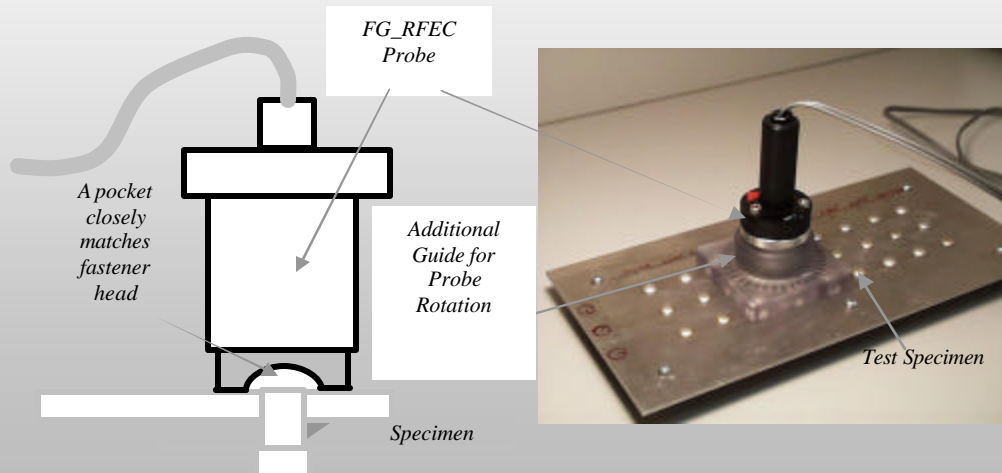


Figure 3: Rotational FG RFEC Probe Applied To Raised-Head Fastener.

Figure 4 shows a typical commercial available FG_RFEC probe, RF2_ROT_RH_DP, working on a panel with raised head fasteners.

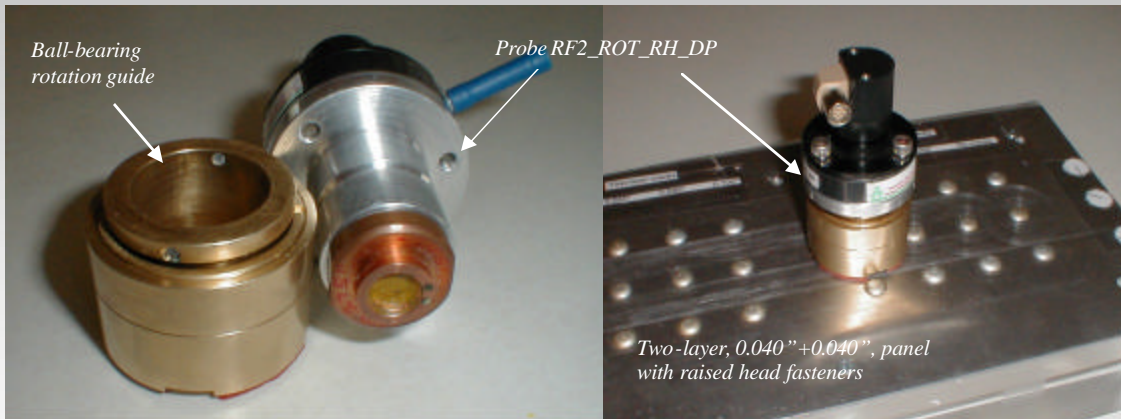


Figure 4: A Typical Commercial Available Rotational FG_RFEC Probe.



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The IMTT FG_RFEC probe for inspection of raised-head fasteners have been extensively tested on different panels provided by Airworthiness Assurance NDI Validation Center (AANC), Federal Aviation Administration (FAA) of the US. So far the probe keeps the best Probability Of Detection (POD) record in detection inner-layer cracks for two layer, 1.0mm + 1.0mm or 0.040" + 0.040", aircraft aluminum structures. A brief of the POD study report is shown in Figure 5.

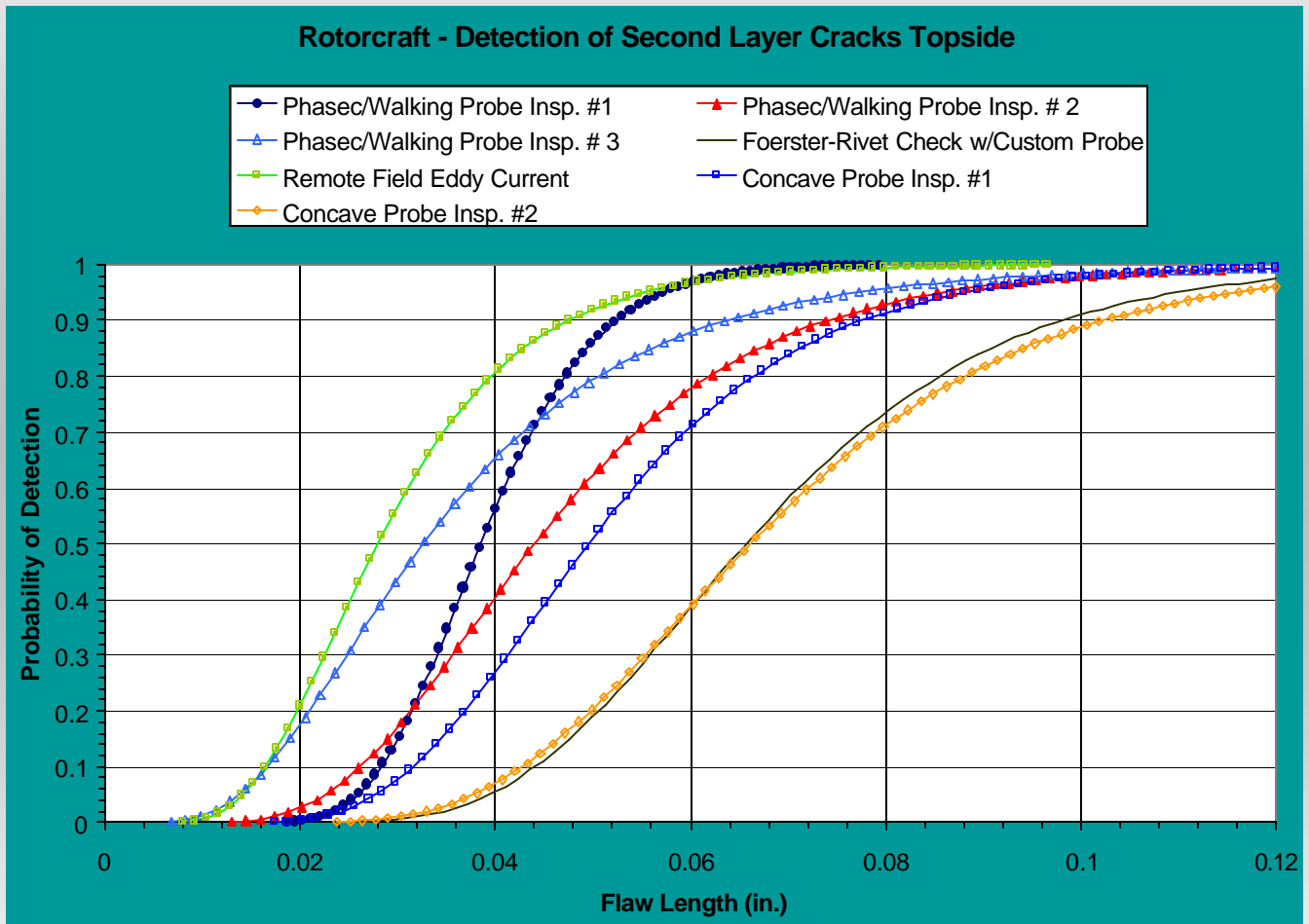


Figure 5: POD study Report



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Superior, CO 80027, USA

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