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Nondestructive Evaluation (NDE) Capabilities Data Book

Reduced procurement budgets are forcing the operational life of aircraft and other Air Force systems to be extended—placing great importance on the ability to find, characterize, and address the deleterious effects of operation in a wide variety of environments. Successful life management of these aging systems depends largely on the ability of nondestructive evaluation (NDE) to identify and quantitatively characterize defects and changes in the materials and structures throughout their lifetime. To provide assistance in the nondestructive inspection of aging aircraft, NTIAC compiled an *NDE Capabilities Data Book*, which consolidates available POD reference information into a single source.

Continued on Story 1

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Nondestructive Testing IAC

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Story 1

Nondestructive Evaluation (NDE) Capabilities Data Book (continued)

In addition to hidden corrosion, widespread fatigue damage is a primary threat to aging aircraft. Reliably detecting and characterizing cracks associated with fatigue damage is an important challenge to inspectors of aging aircraft. A frequently used measure of the reliability of a nondestructive inspection method is the Probability of Detection (POD) which gives the probability of detecting cracks of various lengths and depths under various inspection conditions.

To provide assistance in the nondestructive inspection of aging aircraft, NTIAC compiled an *NDE Capabilities Data Book*, which consolidates available POD reference information into a single source. Over 400 POD curves are organized by NDE method for varying inspection scenarios and data collection conditions. The *NDE Capabilities Data Book* provides guidelines for selecting options for use of nondestructive inspection for various crack detection requirements. The Data Book is available from NTIAC in both hard copy format and on CD. An example of POD curves from the Data Book is given below for crack detection in Titanium alloy plate.

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