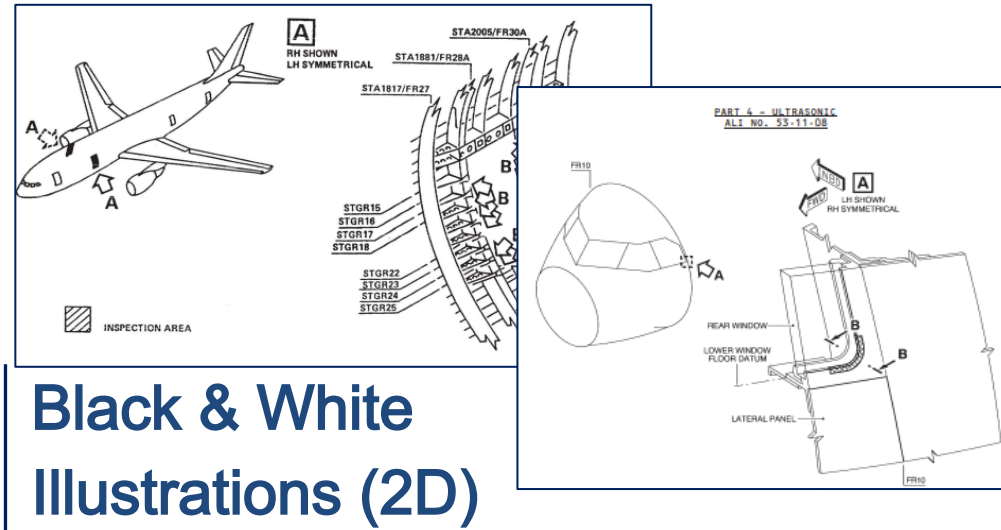


Future of Interactive Inspection Procedures

Non-Destructive Testing Manual (NTM)

Andreas Karpunin, NTM Product Leader
September 30th, 2022

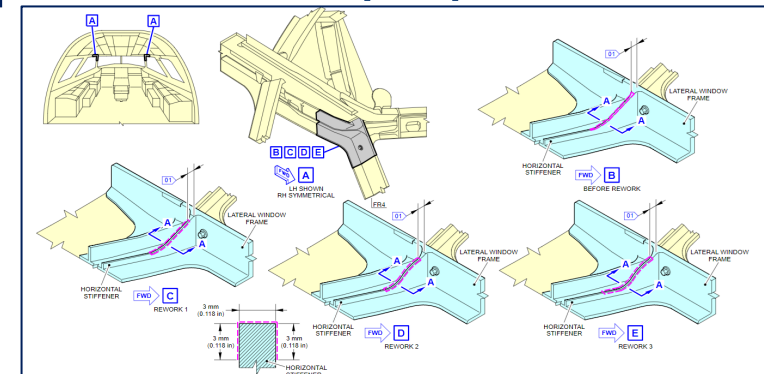
Evolution of the NTM



... Manually printed
Cut&Paste
illustrations

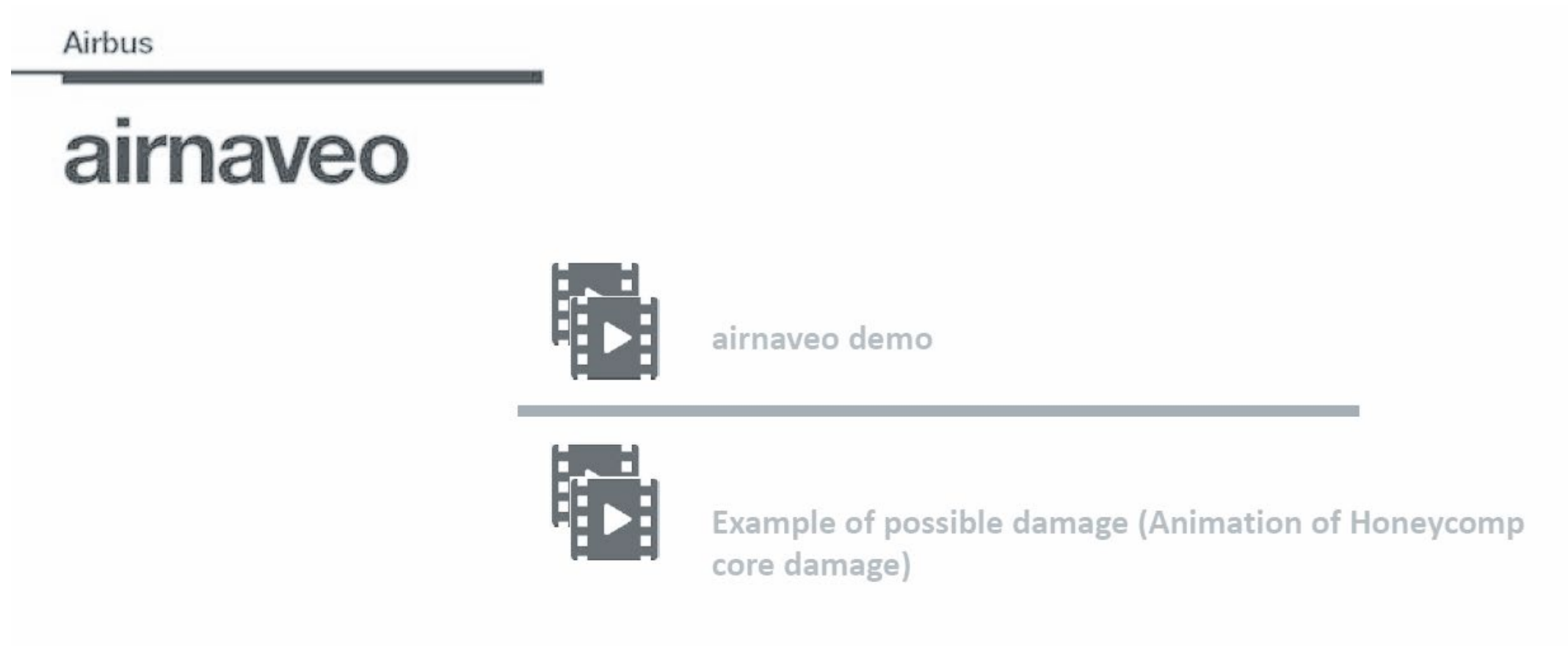


Colored
illustrations (3D)



What's
next?

Throwback A4A 2019



The aim of the NTM is to present possible damages, instrument adjustment and scan paths of probes or search units in difficult areas.

NTM goes 3D animations (example: A320 NTM task 57-12-06)

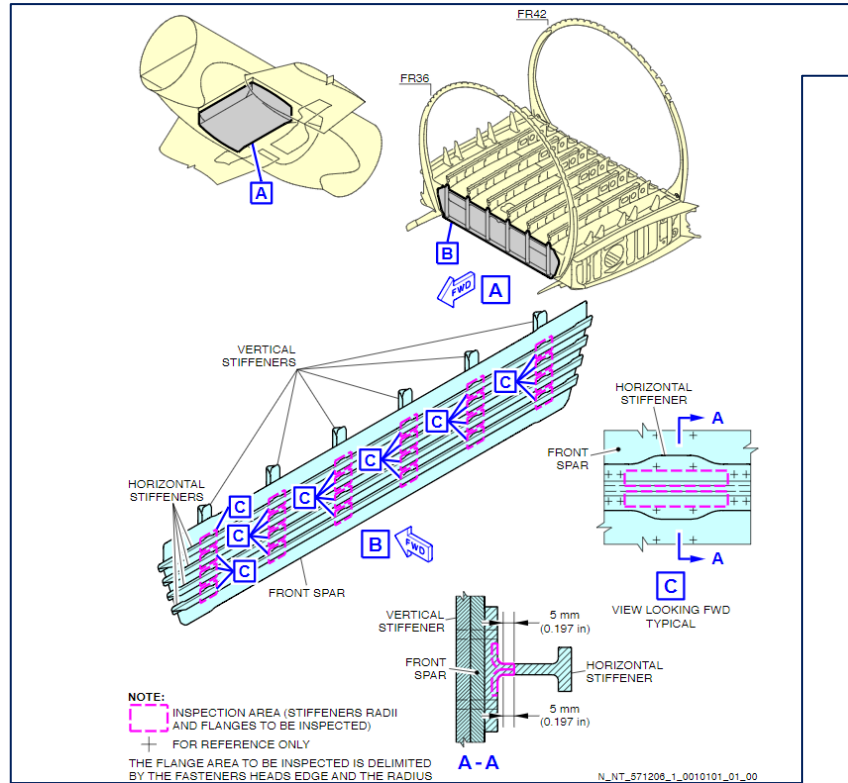
The screenshot displays the Airbus airnavX web application interface. The top navigation bar includes the Airbus logo, the airnavX logo, and links for Data Search, My Library, Troubleshooting, Allowed Part(s), and GenEWIS. A HELP CENTRE link is also present. The left sidebar contains a 'CONTEXT' menu with a 'RESET' button and several filter categories: Customization, Aircraft types (with 'A320' selected), MSN - TN - FSN - Eng Mod, Doctypes (with 'NTM' selected), ATA, FIN, Part Number, and Zone (with '3DZoning' selected). The main content area features the airnavX logo and a search bar with the placeholder text 'Search on your content... click on left (?) for more...'. A login overlay titled 'AIRBUSWorld' is positioned in the foreground, containing a message about the portal's availability, login and password fields, a 'Sign in' button, and links for 'Forgot password?', 'Change password', and 'Help'. At the bottom of the overlay, there are links to 'Privacy Notice' and 'AirbusWorld for Helicopters'.

NTM goes 3D animations (example: A320 NTM task 57-12-06)

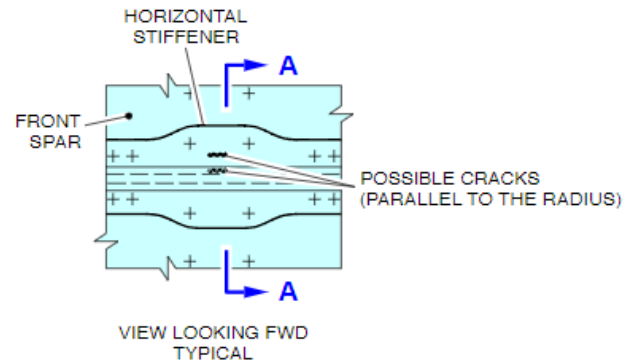
The screenshot displays the Airbus AMBER NTM (Non-Timed Maintenance) interface. The top navigation bar includes the Airbus logo, 'airnavX', and a 'Document View' button. The left sidebar contains filters for 'Aircraft types' (A318, A319, A320, A321) and 'Revision Date' (01-Aug-2022). The main content area shows a task hierarchy for '57-12-06 - CENTER WING BOX HORIZONTAL STIFFENERS AT FRONT SPAR'. The selected task is '57-12-06-250-801-A01 - Internal Center Wing Box Horizontal Stiffeners Radius and Flange at Front Spar'. Below this, three sub-tasks are listed: 'Figure 57-12-06-991-001-A (SHEET 1) - Inspection Area', 'Figure 57-12-06-991-002-A (SHEET 1) - Possible Damage', and 'Figure 57-12-06-991-003-A (SHEET 1) - Inspection Procedure'. The right pane displays the inspection procedure text, which includes a warning: 'MOVEMENT OF COMPONENTS CAN KILL OR CAUSE INJURY TO PERSONS AND CAN CAUSE DAMAGE.' The procedure is divided into subtasks: 'SUBTASK 57-12-06-251-001-A. Preparation for Inspection', 'SUBTASK 57-12-06-252-001-A. Instrument Adjustment', 'SUBTASK 57-12-06-253-001-A. Inspection', and 'SUBTASK 57-12-06-971-001-A. Acceptance Criteria'. The inspection procedure includes steps for using equipment, identifying the inspection area, and checking for visual damage or discontinuities. A note specifies that for the flange area, the inspection area is delimited by the fasteners head edge and the radius. The bottom of the right pane shows the same three sub-tasks as the left pane, each with a small icon representing a 3D animation.

NTM goes 3D animations (example: A320 NTM task 57-12-06)

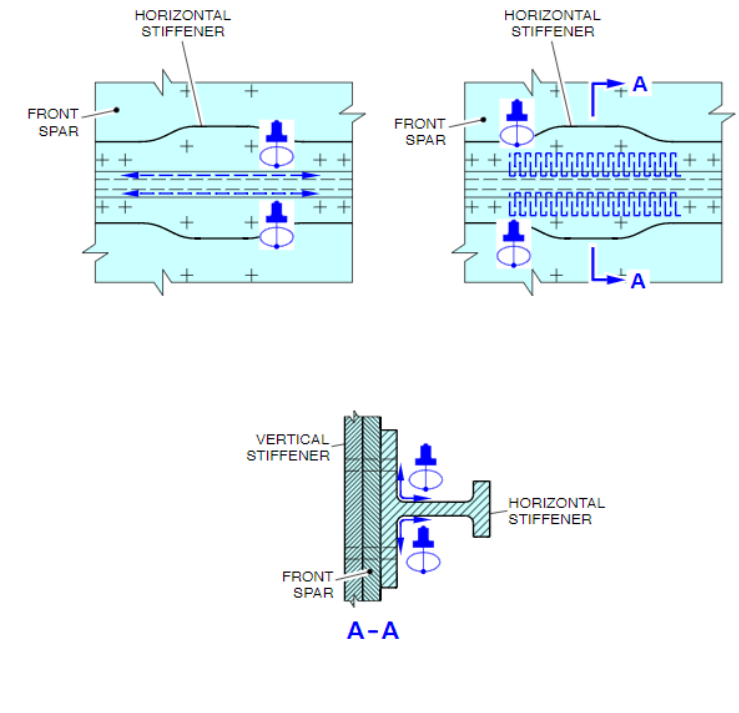
Inspection Area



Possible Damage



Inspection Procedure



NOTE:
 [] PROBE SCAN PATH (CROSS SCAN)
 [] PROBE SCAN PATH (LONGITUDINAL SCAN)
 + FOR REFERENCE ONLY

N_NT_571206_1_0030101_01_00

NTM goes 3D animations (example: A320 NTM task 57-12-06)

AIRBUS | airnavX Document View NTM - A318,A319,A320,A321 - 01-Aug-2022 HELP CENTRE

CONTEXT

Customization

Aircraft types

A318
A319
A320
A321

MSN - TN - FSN

DocTypes

NTM

Revision Date

01-Aug-2022

NONDESTRUCTIVE TESTING MANUAL

MANUAL FRONT MATTER

> 28 - FUEL

> 51 - STANDARDS PRACTICES AND STRUCTURES

> 52 - DOORS

> 53 - FUSELAGE

> 54 - NACELLES / PYLONS

> 55 - STABILIZER

> 57 - WINGS

> 57-00 - WINGS - GENERAL

> 57-11 - CENTER WING

> 57-12 - OUTER WING BOX TRIFORM FITTING AND STIFFENER BETWEEN STIF

> 57-12-02 - CWB, LWR PNL UPPR SURFACE AT BONDING LOCATION BETWEEN STIFFENERS 13 AND 14 AT Y=+/- 765, LH/RH

> 57-12-03 - OUTER WING BOX TRIFORM FITTING AND STIFFENER BETWEEN STIFFENER 6 AND FR42 LH/RH

> 57-12-04 - CENTRE WING BOX AND OUTER WING BOX, LOWER SPLICE AND PANEL BETWEEN STIFFENER 6 AND FR42, LH/RH

> 57-12-05 - CENTER WING BOX, FR42 UPPER SPLICING AT Y=0

> 57-12-06 - CENTER WING BOX HORIZONTAL STIFFENERS AT FRONT SPAR

> 57-12-06 - Descriptions

> 57-12-06-01 - Procedures

> **57-12-06-250-801-A01 - Internal Center Wing Box Horizontal Stiffeners Radius and Flange at Front Spar**

> 57-12-10 - CWB LOWER PANEL SYSTEM HOLES AT BONDING LOCATION BETWEEN STIFFENERS 13 AND 14 AT Y=+/- 765, LH/RH

> 57-20 - OUTER WING

> 57-21 - MAIN STRUCTURE

> 57-26 - FITTINGS

> 57-29 - MISCELLANEOUS

> 57-31 - INSPECTION OF WING TIP, SHARKLET INTERNAL STRUCTURE FROM

> 57-41 - LEADING EDGE

VE. MOVEMENT OF COMPONENTS CAN KILL OR CAUSE INJURY TO PERSONS AND CAN CAUSE DAMAGE.

SUBTASK 57-12-06-251-001-A

A. Preparation for Inspection

(1) Use the equipment as described in [51-10-08](#).

(2) Use an aluminum alloy CALIBRATION BLOCK (29A029).

(3) Use pencil probe type C (See [51-62-01](#)).

(4) Identify the inspection area.

(5) Make sure that the access to the inspection area is clear.

(6) Make sure that the inspection area is clean and smooth.

(7) Do a check of the inspection area for visual damage or discontinuities.

(8) For more preparation see [51-10-08](#).

SUBTASK 57-12-06-252-001-A

B. Instrument Adjustment

(1) See [51-10-08](#).

SUBTASK 57-12-06-253-001-A

C. Inspection

Do the pencil probe inspection in accordance with [51-10-08](#) and probe positions and scan movements as shown in [FIGURE 57-12-06-991-003](#) and in [ANIMATION 57-12-06-XXX-001](#).

NOTE: For the flange area, the inspection area is delimited by the fasteners head edge and the radius.

SUBTASK 57-12-06-971-001-A

D. Acceptance Criteria

(1) See [51-10-08](#).

(2) Record all the results.

(3) Record the data that follows:

(a) Affected part

(b) Location and position of the cracks

(c) Direction and length of the cracks

(d) Amplitude of the cracks signal (FSH)

(e) Instrument adjustment.

click

NTM goes 3D animations (example: A320 NTM task 57-12-06)



NTM Poll



SCAN ME

<https://forms.gle/YzA59mREkhhbxxsN68>

Thank you

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