Evolution of the Airbus NTM’s to include recent developments in NDT technologies

Airbus Customer Service
Structure Engineering Support

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NTM Part 5 – Changed to cover Structural Health Monitoring (SHM) topics

A350 NTM Improvements, to be retrofitted

Rototest Improvement's (NTM 51-10-01).
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NTM Part 5 – Changed to cover Structural Health Monitoring (SHM) topics

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NTM Part 5 – Structural Health Monitoring (SHM)

Introduction to Airbus philosophy

Content will be “Damage Monitoring” (Ref.: SAE ARP6461).
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NTM Part 5 – Structural Health Monitoring (SHM)

General descriptions of the technologies

ChronoMEMS/HealthStick

(Already installed on our Flight Test aircraft, for load evaluation/exceedance monitoring)
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NTM Part 5 – Structural Health Monitoring (SHM)

General descriptions of the technologies

Stick-on UT and ET, sensors

(UT sensors already installed on FT a/c.)
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Rototest Improvement's
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For the A350 ANDT, we introduced Tooling code to ease operator selection of alternate tooling.

(This example is from A350 ANDT 51-90-01)
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For the A350 ANDT, we introduced

Harmonised UT & ET requirements (to improve interchangeability, reduce instrument references)

<table>
<thead>
<tr>
<th>Item</th>
<th>Inspection Area</th>
<th>C.</th>
<th>Reference Block</th>
<th>Nominal Skin</th>
<th>Nominal Hole File</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>HLT2 attach holes near pump apex</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Water drain attachment holes at fin pumps</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Fuel pump attachment holes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(7) Calibration for Item
(a) Couple the 5 BLOCK (995)

NOTE: The table represents the inspection requirements for the A350 ANDT.

C. Instrument Adjustment
1. Calibrate the ULTRASONIC EQUIPMENT (USK7S) in accordance with the manufacturer’s instructions.
2. Select 250 mm (9.843 in) test range.
3. Using CALIBRATION BLOCK (V2X42) as illustrated in FIGURE 53-30-01-991-003, couple the SEARCH UNIT (SKMR879-5) as shown in Detail A.
4. Adjust the search unit position to get the maximum reference signal on the instrument screen.
5. Adjust the instrument sweep and range controls to position the first and second backwall echoes (BWE1) at 1.0 and 4.0 on the instrument screen time base, as illustrated.
6. Select 50 mm
7. Position the instrument as illustrated
8. Connect the SEARCH UNIT (5080941 (W4K-55)) to the instrument
9. Use the appropriate step as per Table 10.1.

NOTE: The first range for the A350 ANDT.
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For the A350 ANDT, we introduced

Included 2D compact PAUT systems
(for damage assessment)

(This example is from A350 ANDT 51-54-45)
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Rototest NTM 51-10-01

Existing procedure to be revised to provide clearer examples (photo’s) of possible indications

New procedure for after repair/re-work
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Rototest NTM 51-10-01:

Multi-frequency rototest.
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Rototest NTM 51-10-01:

“Reverse Rototest” to replace FPI

A320 54-53-90
&
A380 54-51-12
(TFU 71.00.00.056_17)
CONCLUSION!

A step ahead to new technologies

Airbus is continuously looking for innovation and improvement in NDT technics and tooling to always support our customers in Aircraft Maintenance activity.

Your feedback remains key for our progress.

Airbus customer support remains at your disposal for:

- Daily Technical Request
- On-site assistance
- Engineering Workshops
Thank you