ASB-328-57-043

Title: Wings - Inspection of Roll Spoiler Bearing Arms

1 PLANNING INFORMATION

Effectivity
Dornier 328-100
Type Certificate Data Sheet EASA.A.096
Serial No.: All

Reason
Geometric features of roll spoiler bearing arms prevent a clear identification of cracks with the given eddy current test settings defined in NTM 57-71-03-318-000-AA0. Furthermore the access to certain areas is limited for the suggested eddy current probe for geometrical reasons.

Description
The roll spoiler bearing arms must be inspected with an appropriate NDT method described within this ASB.

Approval
The technical content of this Alert Service Bulletin is approved under the authority of EASA approved Design Organisation 328 Support Services GmbH (EASA.21J.438).
Compliance

Mandatory
Perform inspection for roll spoilers on aircraft exceeding 25000 FC not later than 2500 FH after approval date of this Alert Service Bulletin.
It is recommended to perform the inspection with next A5 Check.

Manpower

Access: 2,0 Mh
Inspection: 3,0 Mh
Close-up: 2,0 Mh
Functional checks: 1,0 Mh
Total: 8,0 Mh

Material

Refer to Material Parts List.

Special Tools

Platform, adjustable: GSE No.12.6.03
Eddy Current Test Set: ROHMANN ELOTEST M2 V3
Calibration Standard: Roll spoilers 001B577A1200 000/-001 & -004/-005:
SE.4.45E or equivalent (refer to NTM 51-25-60, figure 7, material: 3.1351 T351 / 2024-T351)
Roll spoilers 001B577A1200 002/-003:
SE.4.45S or equivalent (refer to NTM 51-25-60, figure 7, material: 3.4384 T735X / 7475-T735X)
Surface Probe: KAS 66−3 from ROHMANN, or equivalent
Calibration Standard for Rotary Probe: Refer to section 2B4)a) and to NTM 51-25-60, section 6.
Rotary Probe: For the development of this procedure a SPO-5965.156-.187 from OLYMPUS rotary probe has been used. Refer to section 2B4)a).

Weight and Balance

N/A

Electrical Load Data

N/A
References

AMM-JIC 00-30-01-500-000-YY0 Make the Aircraft Safe For Maintenance - Material and Aircraft Handling
AMM-JIC 00-30-10-500-000-YY0 General Maintenance Practices - Material and Aircraft Handling
AMM-JIC 29-00-00-910-000-YY0 Hydraulic Power, Depressurization - Maintenance Practices
AMM JIC 57-72-00-020-000-YY0 Roll Spoiler - Removal
AMM JIC 57-72-00-420-000-YY0 Roll Spoiler - Installation
NTM 51-25-60-268-000-YY0 Eddy Current
SRM 51-21-00 Cleaning processes
SRM 51-40-11 Fastener Hole and Drill Data - Metallic Structure
SRM 51-41-10 Rivet Identification and Specification
SRM 51-41-20 Rivet Installation & Removal Metallic Structure
SRM 51-74-00 Corrosion Prevention
SRM 51-74-20 Corrosion Preventive Treatment
SRM 51-91-00 Protective Treatment
SRM 51-92-00 Paint Coating

Other Publications Affected
N/A

Reporting

Compliance with this Alert Service Bulletin must be reported to 328 Support Services GmbH Global Support Centre using the Compliance Report for Configuration Control.
2 ACCOMPLISHMENT INSTRUCTIONS

CAUTION: Obey the General Maintenance Practices and Safety Precautions i.a.w. AMM JIC Chapter 00, in particular:

00-30-10 General Maintenance Practices
Obey the special safety precautions when you work on the adjustable platform

CAUTION: Put a note into the cockpit not to move the controls

A Preparation

1) Make the aircraft safe for maintenance, refer to AMM JIC 00-30-01.
2) The adjustable platform (GSE No.12.6.03) must be in position.
3) The hydraulic system must be depressurized. Refer to the AMM JIC 29-00-00.
4) Remove the roll spoiler. Refer to AMM JIC 57-72-00-020-000-YY0.
5) Clean the inspection areas. Refer to SRM 51-21-00.

B Inspection

1) Components or Area to be Inspected
   a) Bearing arm, cross section at the area of the rivets and load transfer. Refer to Figure 1.

2) Description of Possible Damage
   a) Fatigue cracks in inner brackets, starting at the rivet hole and extending transverse to the support arm. Refer to Figure 2.

3) Related Documentation
   a) NTM – Part 1, Chapter 51-25-60-268-000-YY0, Eddy Current Testing - General.

4) Equipment and Materials
   a) The equipment used in the development of the procedure was as follows:

      Instrument        ROHMANN ELOTEST M2 V3
      Surface Probe     KAS 66–3 from ROHMANN (Figure 5)
      Rotary Probe      SPO-5965.156-.187 from OLYMPUS (Figure 6)
      Calibration Standard Refer to Figure 4
      Calibration Standard Refer to NTM 51-25-60, section 6.

   NOTE: The Eddy Current Test Equipment ROHMANN ELOTEST M2 V3 is the recommended equipment. Alternative test equipment can be used.
5) Preparation for the Inspection
   a) Drill out rivets at indicated locations in Figure 1 where an inspection with a rotary probe is necessary.
   b) Make sure that the surface of the inspection area is clean.

6) Instrument Calibration
   a) Operate the test equipment as given in the manufacturer’s instructions.
   b) For the inspection with the surface probe set the necessary frequency 300 kHz.
   c) Use the calibration standard (Figure 4)
      1. Put the surface probe on the calibration standard, in a slot–free area. Refer to Figure 4.
         i. Calibrate the instrument as given in the manufacturer’s instruction for the lift off at 270° on the screen as shown in Figure 7.
      2. Move the surface probe over the 0.2 mm (0.08 in.), 0.5 mm (0.02 in.) and 1.0mm (0.04 in.) slots in the calibration standard and adjust the instrument’s sensitivity so that the signal at 1.0 mm (0.04 in.) is at 90 % of the full scale as shown in Figure 7.
   
   NOTE: Alternative instruments can have different settings. Consider operation range of used surface probe. Other parameters must be determined by analyzing the responses from the calibration standard.
   d) For the inspections with the rotary probe set the necessary frequency 200 kHz.
   e) Use a calibration standard. Refer to 51-25-60, section 6.
      1. Calibrate the instrument as given in the manufacturer’s instruction for a vertical slot indication with screen in x-y mode.
      2. Adjust the instrument’s sensitivity in the y-t mode so that the signal at 0.5 mm (0.02 in.) is at 90 % of the full scale as shown in Figure 8.

7) Inspection Procedure
   a) Do the inspection around the bearings as follows:
      1. Do the inspection on both sides of the related bearing arm as given in Figure 3.
   b) Do the inspection with the surface probe around rivets where rivets do NOT have to be removed and at defined edges as follows (refer to Figure 1 for locations):
      1. Set the necessary frequency 300 kHz.
2. Position the surface probe on the compensation point near to the inspection area and set lift-off as necessary.

3. Carry out the inspection in as given in Figure 3. Use the surface probe position and scanning movements close to the rivet heads and formed side, as illustrated.

4. Look at the display for signals that differ from that of the compensation point.

   c) Do the inspection with the rotary probe of rivet holes where rivets have to be removed as follows (refer to Figure 1 for locations):
      1. Set the necessary frequency 200 KHz.
      2. Refer to NTM 51-25-60, section 7. D. for information about inspection for cracks in holes.

   d) Determine the length of all detected cracks.

   e) Record the crack length and orientation.

   f) Repeat steps a) thru e) for all inspection areas indicated in Figure 1.

8) Acceptance Criteria
None

9) Final NDT Requirement
None

C Close-up

1) Install blueprint rivets (Item 1) where previously removed.

2) Perform a foreign object inspection of the complete modification areas

3) Return the roll spoiler to a serviceable condition.

4) Install the roll spoiler. Refer to AMM JIC 57−72−00−420−000−YY0.
3 MATERIAL INFORMATION

A Material Parts List

<table>
<thead>
<tr>
<th>Item</th>
<th>Part Number</th>
<th>Qty.</th>
<th>Nomenclature</th>
<th>Remarks</th>
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<tbody>
<tr>
<td>1</td>
<td>DON308-4000</td>
<td>AR</td>
<td>Rivet</td>
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The following consumables are to be provided by the operator or ordered separately in commercial quantity (not part of the kit):

<table>
<thead>
<tr>
<th>Item</th>
<th>Qty.</th>
<th>Nomenclature</th>
<th>Remarks</th>
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<tbody>
<tr>
<td>2</td>
<td>AR</td>
<td>Dry cleaning solvent (CML 11-001)</td>
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</tr>
<tr>
<td>3</td>
<td>AR</td>
<td>Cleaning cloth (CML 05-101) or paper towel (CML 05-007)</td>
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B Required Documents

<table>
<thead>
<tr>
<th>Document Number</th>
<th>Nomenclature</th>
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<tbody>
<tr>
<td>Miscellaneous</td>
<td>Technical Publication</td>
<td>As required</td>
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</table>
Figure 1 (Sheet 1): Inspection Area – Roll Spoiler Arm
Figure 1 (Sheet 2): Inspection Area – Roll Spoiler Arm
Figure 2 (Sheet 1): Possible Damage – Roll Spoiler Arm
Figure 2 (Sheet 2): Possible Damage – Roll Spoiler Arm
Figure 3 (Sheet 1): Inspection Procedure – Roll Spoiler Arm
Figure 3 (Sheet 2): Inspection Procedure – Roll Spoiler Arm
Figure 3 (Sheet 3): Inspection Procedure – Roll Spoiler Arm
Roll spoilers 001B577A1200 000/-001 & -004/-005:
SE.4.45E or equivalent (refer to NTM 51-25-60, figure 7, material: 3.1351 T351 / 2024-T351)
Roll spoilers 001B577A1200 002/-003:
SE.4.45S or equivalent (refer to NTM 51-25-60, figure 7, material: 3.4384 T735X / 7475-T735X)

Figure 4: Calibration Standard

Figure 5: Surface probe

Figure 6: Rotary Probe
Figure 7: Equipment Calibration Signal for Surface Probe

Figure 8: Equipment Calibration Signal for Rotary Probe
Please complete this compliance form for each aircraft only when it is applicable, and mail, e-mail, or fax to:

328 Support Services GmbH
Global Support Centre
P. O. Box 1252
D-82231 Wessling
E-Mail: gsc.op@328.eu
Telefax: +49 8153 88111 6565

From Company: 

<table>
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<th>Doc. No.</th>
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<tr>
<td>ASB-328-57-043</td>
<td>–</td>
<td>Wings - Inspection of Roll Spoiler Bearing Arms</td>
</tr>
</tbody>
</table>

Aircraft Serial Number: 
Operator: 
Total Flight Hours: 
Total Landings: 
Date of Compliance: 
Comments: 

Date __________________________ Authorized Signature __________________________