


**INSTRUCTIONS FOR CONTINUED AIRWORTHINESS  
(ICA)**

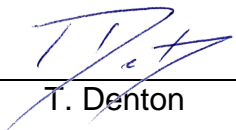
**ICA MB 25.00.149-R0**


**OAL114, Issue 6  
Installation Cargo Swing**

**Airbus Helicopters AS350 B, B2, B3, BA & D**

**(Oceania Aviation Ltd)**

Compiled:  \_\_\_\_\_ 27/11/2015  
T. Drummond

Checked:  \_\_\_\_\_ 27/11/2015  
T. Denton

Released:  \_\_\_\_\_ 27/11/2015  
T. Denton

## **1. DESCRIPTION**

Modification MB 25.00.149-R0 installs a cargo swing on the Airbus Helicopters AS350 B, B2, B3, BA & D rotorcraft.

The modification consists of the following equipment:

- A cargo swing frame.
- Restraint cables.
- Cargo hook.
- Load cell.

The modification is installed in conjunction with several OEM Service Bulletins (SB 25.00.13, SB 55.00.19 and SB 25.00.62) which install provisions to the rotorcraft for the cargo swing frame, such as fixed parts and electrical wiring.

This ICA supplements the Instructions for Continued Airworthiness associated with the service bulletins as referred to above.

## **2. EFFECTIVITY**

These instructions for continued airworthiness are applicable to Airbus Helicopters AS350 B, B2, B3, BA & D rotorcraft modified in accordance with MB 25.00.149-R0.

## **3. AIRWORTHINESS INSTRUCTIONS**

### **3.1. Authorised Personnel**

Visual Inspection and on condition maintenance must be carried out by personnel approved for such tasks within a NZCAA Part 145 maintenance organisation.

Non Destructive Testing (NDT) must be carried out by a New Zealand Testing Laboratory Regional Council (TELARC) approved facility that holds a certificate for testing in accordance with the specification listed in §3.2.5.4.

Proof testing must be carried out within a NZCAA Part 145 maintenance organisation whose exposition is approved for the inspection, repair and overhaul of cargo hooks.

Cadmium plating must be carried out within NZCAA Part 145 maintenance organisations that hold approvals for the process listed in §3.2.7.1.7.

Installation and removal of the cargo swing must be carried out by personnel authorised by the rotorcraft's maintenance organisation. Competency of all authorised personnel must be reviewed every twelve months.

### **3.2. Maintenance Procedures**

All maintenance is to be in accordance with the requirements of CAR Part 43. The FAA advisory circulars listed in NZCAA advisory circular AC 43-1, are an acceptable means of carrying out maintenance under CAR Part 43.

#### **3.2.1. Pre-Flight Inspections**

Pre-flight inspections are to be conducted in accordance with FMS MB 25.00.149 R0.

#### **3.2.2. Cargo Swing Fixed Provisions**

Table 3-1 details maintenance requirements for cargo swing fixed parts as installed by the service bulletins listed in §1.

Documentation references are to Airbus Helicopters Maintenance Manuals (MET) and Standard Practices Manual (MCM). Information in this section supplements maintenance data provided by Airbus Helicopters for all relevant Service Bulletins.

Table 3-1: Cargo Swing Fixed Provision Maintenance Limitations

AS350 Variant	Subject	Task	Details/Reference	Documentation	On Install	Limit				
						hours †	cycles	years	months	days
B, BA, D	Load Release Unit	Check and Test		MET 25.81.10.601	✓	350		2		
		Clean and Check	Normal Conditions	MCM 25.50.99				1		
			Sand Atmosphere	MCM 25.50.99					1	
✓	Control Mechanical Release	Functional Test		MET 25.81.00.601	✓					7
✓		Check and greasing:	Normal Conditions	MCM 25.89.06	✓			3		
✓			Salt-laden atmosphere	MCM 25.89.06	✓				30	
	Hook - Load release unit	Check and Test		MET 25.81.00.601	✓		500	2		
✓				MET 25.81.10.601	✓		500	2		

† Hours are total for cargo swing operations, and do not discount time with no load attached.

NOTE: Tasks ticked as 'On Installation' are required to be carried out upon the initial and any subsequent installation of the cargo hook system.

### 3.2.3. Cargo Hook

For Instructions for Continued Airworthiness refer to the manufacturer's instructions (refer Table 3-2 below for list of ICA documents).

**Table 3-2: Cargo Hooks**

P/N	Manufacturer	Validity	ICA Documentation*
17149-1	Breeze Eastern	AS 350 B, B2, BA, D	Refer to Airbus Helicopters Maintenance Manual
528-023-01	Onboard Systems	AS 350 B, B2, BA, D	123-013-00 122-005-00
528-010-04		AS 350 B, B2, BA, D	120-050-00 122-001-00
528-017-00		AS 350 B, B2, BA, D	
528-028-00		AS 350 B, B2, BA, D	123-013-01 122-015-00
528-029-00		AS 350 B, B2, BA, D	123-013-02 122-017-00
			123-002-00
	123-035-00 122-017-00		

\* Refer to latest FAA approved revision.

#### 3.2.3.1. Maintenance Intervals

For maintenance intervals refer Table 3-3.

Table 3-3: Cargo Hook Maintenance Limitations

Onboard Systems P/N	Breeze Eastern P/N	Subject	Task	Documentation	On Install	Limit				
						hours †	cycles	years	months	days
528-023-01										
528-010-04										
528-028-00										
528-029-00										
528-017-00	17149-1									
✓	✓	Load release unit	Load Indicator Calibration	MET 25.81.00.502	✓	500		2		
✓	✓	Visual Inspection	Close visual inspection	MET 25.81.10.502	✓	500		2		
✓	✓	TBO	Overhaul	Refer §3.2.3.2		100		1		
✓				MET 25.81.00.401			5000	3		
✓				MET 25.81.00.401		1000*		5		
		Storage Limit	Storage in Original Package (BEFORE installation)		N/A				5	
	✓				N/A				5	

† Hours are total for cargo swing operations, and do not discount time with no load attached.

\* Apply a factor of 1/2 to hours in the following operations: logging, sand or dust laden atmosphere, carriage of loads above 1200kg.

NOTE: Tasks ticked as 'On Installation' are required to be carried out upon the initial and any subsequent installation of the cargo hook system.

### 3.2.3.2. Visual Inspection

Frequency: 100 hours of external load operation or 1 year, whichever occurs first.

- 1) Visually inspect for corrosion on the exterior of cargo hook.
  - Any corrosion finding on the cargo hook is cause for immediate overhaul.
- 2) Visually inspect for presence and security of fasteners and electrical connection.
- 3) Visually inspect the load beam, and cargo hook case for damage, gouges, cracks, and corrosion.
  - Refer to Tables 4.2.1 and 4.3.1 in the manufacturer's maintenance manual for damage limits.

### 3.2.4. Load Cell

For Instructions for Continued Airworthiness refer to the manufacturer's instructions (refer Table 3-4 below for list of ICA documents).

**Table 3-4: Load Cells**

P/N Mod Kit	Manufacturer	Validity	ICA Documentation*
S12	Breeze Eastern	AS 350 Series	Refer basic Flight Manual*
D00282-0005		AS 350 Series	
E-69 210-046-01	Onboard Systems	AS 350 B, B2, BA, D	120-114-00
E-86 210-221-00		AS 350 Series	123-026-00

\* Refer to latest FAA approved revision.

### 3.2.5. Cargo Swing Frame and Linkages

Scheduled maintenance of the cargo swing consists of the following:

- 1) Visual inspection of the cargo swing frame and its attachments for condition,
- 2) Conformity inspection with the approved drawings,
- 3) Routine maintenance,
- 4) Proof Loading and,
- 5) Non-Destructive testing.

Scheduled maintenance intervals unless otherwise stated, are the lesser of the following:

- a) Every 50 flight hours modification OAL114 equipment is in service, or;
- b) Every 500 cycles (lifts) (whichever occurs first), or;
- c) Annually.

### 3.2.5.1. Visual Inspection

Check the security of frame, welds, cables and linkages (using a X10 power magnifying glass) for cracks, nicks, scratches and corrosion, with reference to AC43-1 determine if the wear is excessive and repair as instructed in §3.2.7.

### 3.2.5.2. Routine Maintenance

The routine maintenance consists of the following:

#### a. Disassembly

- Remove cargo swing from rotorcraft.

#### b. Rotorcraft Attachment Points

- Inspect rotorcraft hard points for corrosion, cracks, deformations, and/or evidence of wear.
- Replace or repair using standard OEM practices and procedures to restore it.  
NOTE: cutout may be made in flange in accordance with drawing OAL114.AS350.MFG.1000, Rev 2.

#### c. Cargo Swing and Linkages

- Inspect swing frame assembly (P/N OAL114-10200), eyebolt (P/N AN48 or OAL114-10301) and centre bolt (P/N OAL114-10401) for corrosion, cracks, deformations, and/or evidence of wear. Replace or repair damage in accordance with §3.2.7.
- Inspect attaching hardware for corrosion, cracks, and/or evidence of wear. Replace damaged hardware.

#### d. Cables (1/4 x 7 x 19 Galvanised or Stainless Steel) and Fork Ends (MS20667-8)

- Inspect fork ends for corrosion, cracks, deformations, and/or evidence of wear.
- Inspect cables for broken strands visually and by running a gloved-hand along length.
- Replace damaged items or repair in accordance with required.

#### e. Assembly

- Install swing frame on rotorcraft, if and when required.
- Verify conformity of cargo swing with modification OAL114 descriptive data.

### 3.2.5.3. Proof Loading - Cables

Each cable assembly is to be proof loaded by tensile test to 1742 kg (3840 lbs), for three minutes. Intervals are not to exceed the greater of:

- 1) Every 500 flight hours modification OAL114 equipment is in service, or;
- 2) Every 12 months.



**3.2.5.4. Non-Destructive Testing (NDT)****a. Magnetic Particle Inspection (MPI)****Items:**

- Central Bolt (P/N OAL114-10401) or  
(Onboard Systems P/N 290-332-00),
- Shackle/Link (P/N OAL114-10604)
- Link Bolt (P/N OAL114-10602)
- Eye Bolt (P/N OAL114-10301 or AN48-26)
- Attachment Fitting Assembly (P/N OAL114-11100)
- Mount Bracket (P/N OAL114-11101)

**Frequency:** Every 3 years

**Method:** Magnetic Particle Inspection (MPI) I.A.W ASTM-E-1444.

**Defects:** No internal defects are permitted.

**b. Dye Penetrant Inspection****Items:**

- Lifting Swing Frame Assembly (P/N OAL 114-10200)
- Gimbal / Universal Joint assembly  
(P/N OAL114-10500 or -10504)

**Frequency:** Every 3 years

**Method:** Dye Penetrant Inspection I.A.W ASTM-E-1417.

**Defects:** No cracks are permitted.

**3.2.6. *On Condition Maintenance***

In addition to scheduled maintenance the cargo swing must be repaired upon identification of any impending failure or evidence of excessive wear.

**3.2.7. *Repair Procedures***

All repairs are to be in accordance with this ICA and CAR Part 43, standard practices. Guidance material is contained within CAA Advisory Circular AC 43-1.

Repairs outside the scope of AC 43-1 require approval from a CAR Part 146 design organisation.

**3.2.7.1. Defect Removal**

Frequency: On Condition

Materials: Emery Cloth (P-C-1673)  
Rust Preventative (MIL-L-21260)

**NOTE:** Equivalent substitutes may be used for listed items

Defects: No cracks are permitted.

**3.2.7.1.1. Repair: Swing Frame Assembly (P/N OAL114-10200)****Swing Frame (P/N OAL114-10200)**

Remove nicks / gouges.

Nicks / gouges must not exceed 0.010" in depth.

Treat exposed metal by re-plating in accordance with §3.2.7.1.7 or resurface with ATC 054 by Aerospace Thermal Coatings Ltd.

**3.2.7.1.2. Repair: Corner Boss Assembly (P/N OAL114-10300)****Eye bolt (P/N AN48 or OAL114-10301)**

Nicks / gouges are not repairable.

Remove minor scratches & corrosion with emery cloth.

Treat exposed metal with rust preventative or re-plate in accordance with §3.2.7.1.7.

**3.2.7.1.3. Repair: Centre Bolt (P/N OAL114-10401)**

Nicks / gouges are not repairable.

Remove minor scratches & corrosion with emery cloth.

Treat exposed metal with rust preventative or re-plate in accordance with §3.2.7.1.7.

**3.2.7.1.4. Repair: Gimbal / Universal Joint (P/N OAL114-10501 or -10505)**

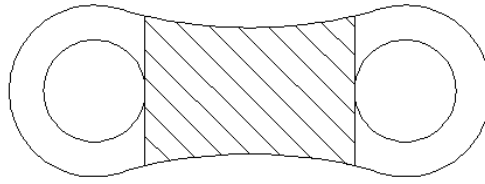
Nicks / gouges are not repairable.

Maximum un-bushed hole elongation is 0.005".

Remove minor scratches & corrosion with emery cloth.

**3.2.7.1.5. Repair: Shackle/Link Assembly (P/N OAL114-10603)****Link (P/N OAL114-10604)**

Remove nicks / gouges refer Figure 3-1.



**Figure 3-1: OAL114-10604 Shackle Acceptable Nick Repair Area (Shaded)**

Note: Nicks / gouges must not exceed 0.020" in depth.

Remove minor scratches & corrosion with emery cloth.

#### 3.2.7.1.6. Repair: Cable Assemblies (P/N OAL114-10700, -10800, -10900 & -11000)

##### Cable Replacement (P/N MIL-W-83420)

Frequency: On condition.

Maximum number of broken strands allowable on each cable is 5.

Kinks, nicks or gouges are not repairable.

##### Cable (P/N MIL-W-83420)

Maximum fork end hole elongation is 0.005".

Remove minor scratches & corrosion with emery cloth.

Restore surface protection as required.

#### 3.2.7.1.7. Replating (Cadmium)

Frequency: On Condition

Method:

- Remove old plating via electrolysis.
- Cadmium plate to QQ-P-416F, Type 1, Class 1.

**Note:** Embrittlement Relief Requirements:  
Bake component at 191±14°C for 8 hours minimum within 4 hours after plating.

P/N: Identify components using an indelible marker.

#### 3.2.7.1.8. Bush Replacement (all bush P/N)

Frequency: On condition.

Maximum bush hole elongation is 0.005".

## **4. DEFECT REPORTING**

Any failure, impending failure or evidence of excessive wear must be brought to the attention of NTech Ltd using the customer feedback form (NT10) supplied with the modification documentation.