| *Product Awareness Notice* | |
|---|---|
| Doc. no.: 1252 | **date: 12.02.2008** |
| **Doc. distributed to:** | **Customers having this equipment.<br>USH Service Engineers, USH Service Partners,<br>USH Claims Coordinator, USH Management.** |
| ***NB!! Implied customers should be informed of this document*** | |
| **Manufacturer:** | **Umoe Schat-Harding Harding AS,<br>Umoe Schat-Harding SRO** |
| **Product:** | **Free-Fall Hook type FFH13** |
| **Production Period:** | **all up to this date** |
| **Improvement Note Ref.:** | |

**Advice of inspection.**

**1. Description**

During week 3 in 2008 there was an incident on the "Kristin" oil rig in the Norwegian North Sea, where one free-fall hook failed to operate during a normal hook release test. A simulated free-fall test was planned to be carried out and during this test the hydraulic release system was operated and a pressure of around 200 bars was applied without the hook acting as it should. In case of emergency this hook would not have released and lifeboat would not have been safely evacuated away from platform.

The hydraulic cylinder was changed and further examination revealed that the piston rod was stuck to the cylinder end piece by corrosion. The cylinder end piece is of normal steel, and as the enclosed pictures shows that the outside is clearly corroded due to that the applied painting is not sufficient to protect this part. On the inside one we also see corrosion and a damaged area on the piston rod which we believe is where the rod was stuck to the end piece. To avoid this situation there should be hydraulic oil inside in the cylinder both in the high pressure side and in the low pressure side, but it seems that there has not been oil or that some water has entered the seal in the cylinder end piece.

**2. Action**

A mock training freefall should be carried out as soon as possible (according to given instructions) in order to verify that the cylinder and the hook is operating as it should. The hydraulic cylinder should then be inspected that is moves when pressure is applied. If the cylinder is not operating, please contact our Aftersales and Service Department for assistance. The hook arrangement including the hydraulic cylinder should be operated and tested according to given instructions at a regular time interval.

Arild Lokøy
R&D Manager
**Umoe Schat-Harding As**

**3. Contact Details.**

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N-5470 Rosendal
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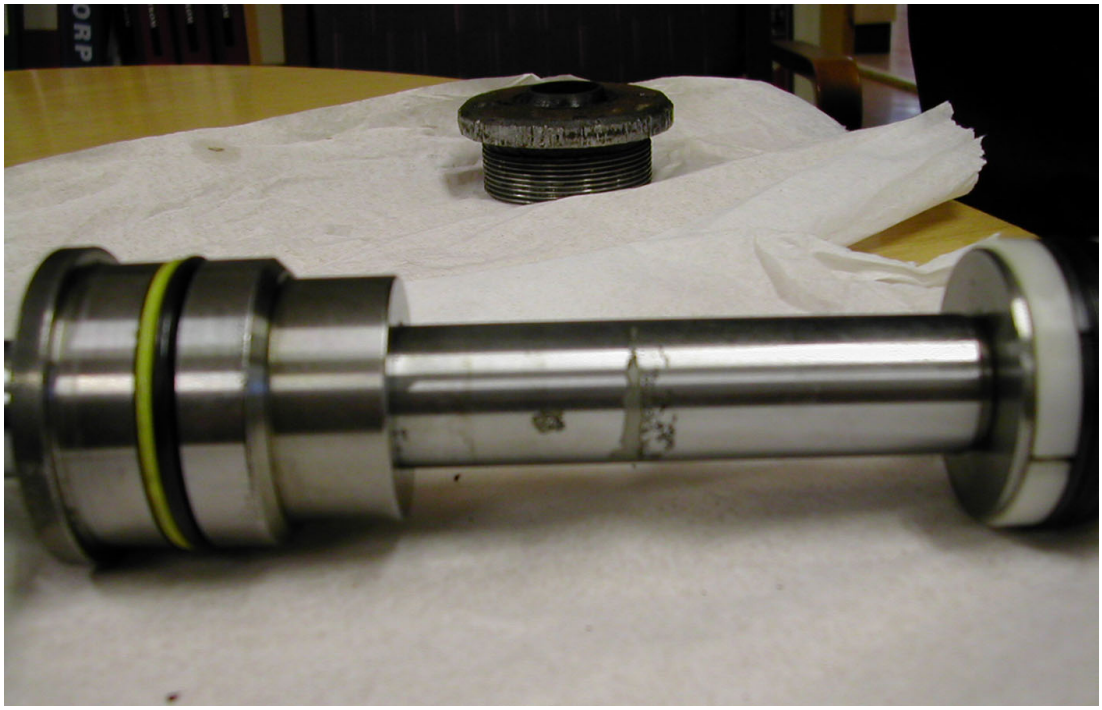
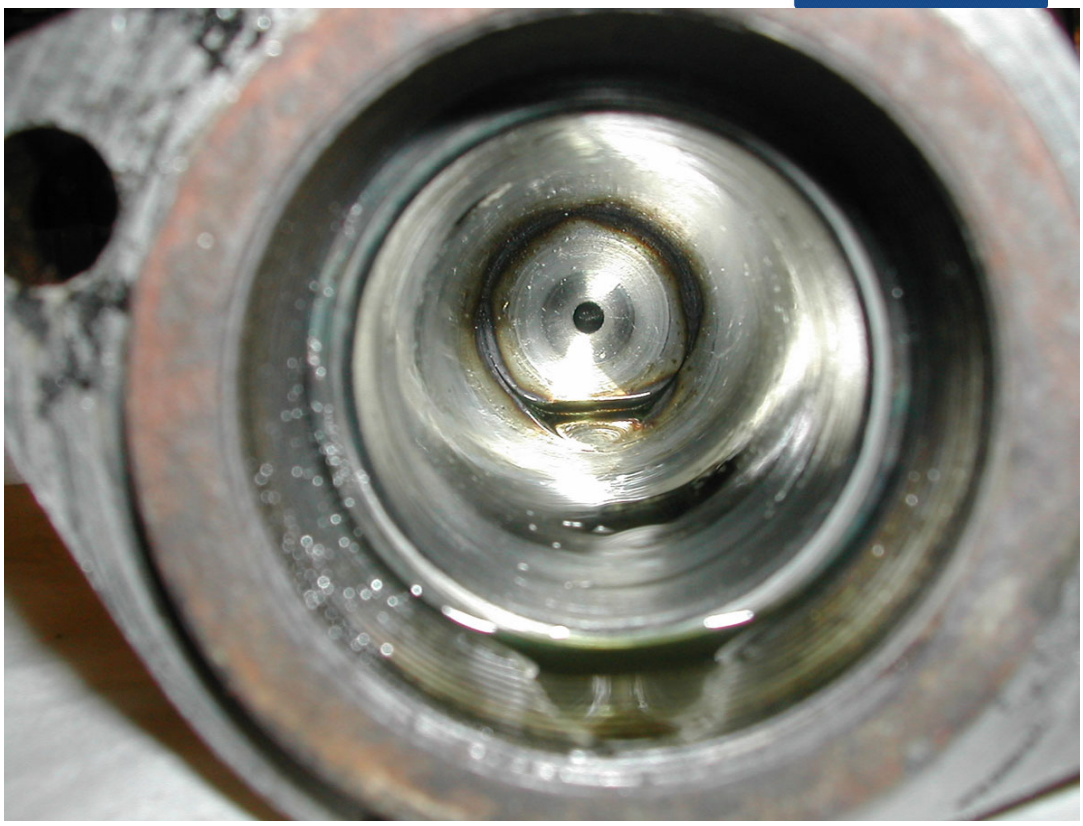
**4. Enclosure.**

Picture 1.
The piston rod was cut in order to manage to disassemble the hook. Cylinder to the left and the end piece to the right.

Picture 2.
The end piece is corroded, also on the inside.



Picture 3.
Piston rod has clearly a damaged area.



Picture 4.
Seen inside the cylinder, does not show corrosion on the inside.

Below see pages from lifeboat manual regarding maintenance interval and description.

*Section:* **DESCRIPTION**

*Subject :* **HOOK ARRANGEMENT**

## FREE-FALL HOOK (FFH13) ARRANGEMENT

**IMPORTANT**
**Read the *HOOK Manual* before use.**
**Be Acquaint with the *HOOK* and its *OPERATION***

The lifeboat is fitted with one freefall hook located aft on the boarding deck. Access to the free-fall hook , outside on the stern ramp and inside at the entrance hatch.

Fabrication: Umoe Schat-Harding

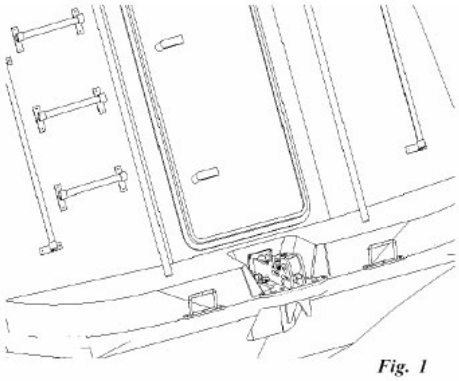


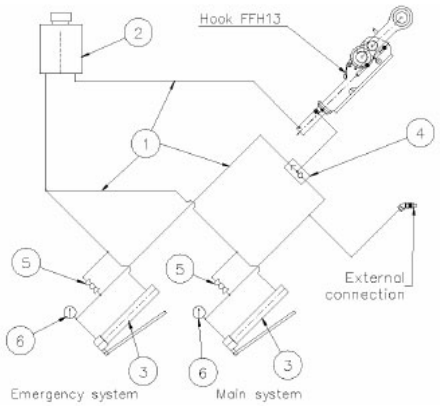
*Fig. 1*

The hook is released from the inside by use of a hydraulic pump. The hydraulic pumps, hydraulic tank and pressure gauges are all fitted inside the lifeboat.

Two totally independent hydraulic release systems are fitted. A main release system and an emergency system.

**Fig.2**

1. Hydraulic Hose
2. Hydraulic Tank
3. Hydraulic Pump
4. Alternating Valve
5. Ball Valve (Free-Fall valve)
6. Pressure Gauge 0-400 bar




| Date: | Sign.: | Approved: | Page: of: | Chapter: |
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| 14.11.05 | RMM | KOU | 1 2 | **4.1** |

SCHAT HARDING



*Lifeboat Manual*
Doc no: **MA044.0864/C**
Replaces: MA044.0864/B

*Section:* **MAINTENANCE**

*Subject :* **HOOK ARRANGEMENT**

**Preventive maintenance**

**Interval 2 month**

**IMPORTANT**
**Read the *HOOK Manual* before use.**
**Be Acquaint with the *HOOK* and its *OPERATION*.**

1. Inspect FF hook for visible damage

   a. Insert safety bolt and turn it.

   b. Operate free fall valve.

   c. Pump out the hook while checking the movements. Register maximum starting pressure and minimum pressure. Over time these should not vary more than 20 bars.

   d. Keep the pressure on the hydraulics system at approx. 180 bars for a period of 1-2 minutes. Then check that no oil is leaking out into the piston rod packing on both cylinder and pumps. Check also tubes and connections through the entire system.

   e. (Test both main and emergency systems).
   Lubricate all lubrication points as per lubrication chart (*see chapter 4.11.2*).

   f. When testing is finished reset the free fall valves to "locked pos" and remove the safety bolt from the **hook**.

| Date: | Sign.: | Approved: | Page: of: | Chapter: |
|---|---|---|---|---|
| 22.03.07 | LH | TL | 2 2 | **4.1** |

| *Product Awareness Notice* | | |
|---|---|---|
| Doc. no.: 1487 | | **date: 14.01.2009** |
| **Doc. distributed to:** | **Customers having this equipment.<br>USH Service Engineers, USH Service Partners,<br>USH Claims Coordinator, USH Management.** | |
| ***NB!! Implied customers should be informed of this document*** | | |
| **Manufacturer:** | **Umoe Schat-Harding Harding AS,<br>Umoe Schat-Harding SRO** | |
| **Product:** | **Free-Fall Hook type FFH13** | |
| **Production Period:** | **all up to this date (1999-2009)** | |
| **Improvement Note Ref.:** | | |

**Description**

During analysis and testing of hooks for 'Kristin' and 'Veslefrikk B' installations in the Norwegian North Sea, we have discovered that a number of five hooks have been produced of wrong steel material.

The FFH13 hook is designed for the FF1000S skid free-fall lifeboat for ships and offshore installations.

The findings consists of that the side plates in the hook frame has been made of plain steel (S355J2G3 similar to NVE36) instead of WELDOX 900 (or XABO 890) that is a high tensile steel. This is a production mistake that has not been discovered by our Quality Control system before the hooks left our factory.

Schat-Harding has checked production data (material certificates) for all hooks produced and found that the hooks with the following serial numbers must be replaced:

- 1002/04
- 1003/04
- 1004/04
- 1005/04
- 1006/04

Schat-Harding has informed the implied customers and are preparing production of new hooks.

The wrong steel type used reduces the overall safe working load of the hook so that the required safety factor is reduced from 6 which is required by Solas down to 4 (this

applies only to the hooks with the above serial numbers). The reduction in safety factor has been verified by an actual strength test of a hook with wrong material used.

Schat-Harding is sending this PAN-message to all our customers having this equipment for information, but all implied customers are contacted directly by Schat-Harding and dealt with separately.

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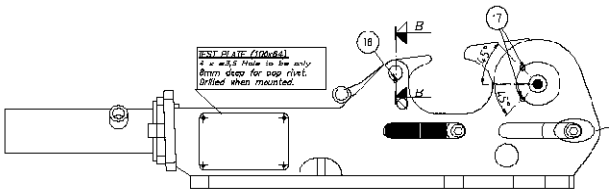
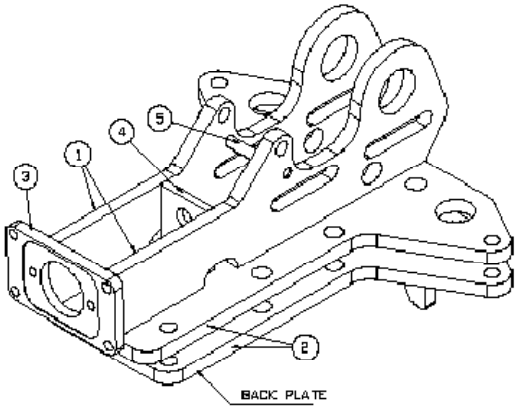
|  | Hook FFH13. |
|   | Side plates shown by item no 1. |

Best reagards
For Umoe Schat-Harding AS

Arild Lokøy
R&D Manager