

# Hydraulic Fitting Failure Causing an Uncontrolled Descent of a Load

## **Safety Flash** Issued 27/09/2012

### Incident date

31/05/12

### Summary

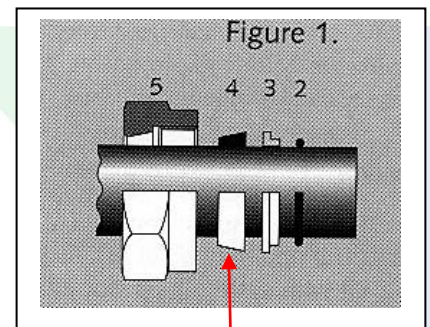
During a routine lift on an offshore installation, an uncontrolled descent of a load occurred. The lift involved a full 6 tonne heli fuel pod which was being lifted using the whip hoist from the east pipe deck to a height of approximately 20ft. The load being lifted was well within the capacity of the crane. During the hoisting process, the load descended rapidly, striking a wireline cage which caused the pod to tilt, causing damage to the deck plate. There were no injuries as a result of the incident but there was a release of approximately 100 litres of oil from the crane's hydraulic system, and approximately 1 litre of heli fuel from the vac breaker on the Pod itself due to the impact.



The heli fuel pod dropped 20ft striking the wireline cage before hitting the deck plate

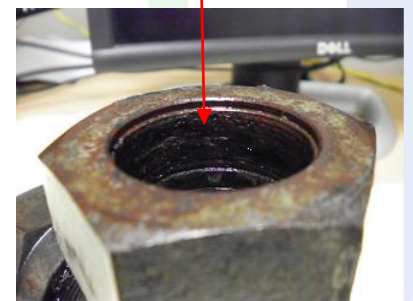
### What Went Wrong

Investigations into the incident found that a section of hydraulic tubing had separated from a hydraulic fitting close to one of the whip hoist motors. The separation of the tubing from this fitting resulted in a sudden loss of pressure in the whip hoist system allowing it to pay out uncontrolled. The fitting itself was one of a number on the crane in an exposed location and had no protection from the elements. It relies on the serrations on the collet to grip the tube (component (4) on illustration, right) which were found to have severely degraded. The orientation of the fitting was vertically arranged allowing the build-up of salt laden water on the top surface as a possible aid to corrosion.



The fittings (some of which were over twenty years old) were not part of a planned maintenance or intrusive inspection regime.

This particular crane had a system to monitor low boost system pressure and when detected, automatically apply the hoist brakes. At first it seemed as if this system did not work but on further investigation it was discovered that the response time, between detection and brake application was not fast enough to prevent the load from falling a considerable distance.



Failed fitting

### Recommended Actions

- Similar hydraulic fittings should be examined and checked for excessive corrosion as soon as possible
- A planned maintenance schedule should be considered to specifically include hydraulic fittings
- The low boost pressure systems' response time in applying brakes should be established (where applicable) and appropriate action taken if found not to be effective.

### Further Details or Advice

Contact QHSE Dept at EnerMech – [lqibb@enermech.com](mailto:lqibb@enermech.com)  
Or call 01224 710640