



A BSEE accident investigation Panel concluded that the causes of the fatality were as follows:

- (1) The Crane's boom hoist wire rope parted due to being weakened by advanced corrosion.
- (2) The vicinity of the lift was constrained by other equipment which caused the riggers to use tag lines to control the load, and to be positioned in the path of the falling boom. The positioning riggers in the case of a boom hoist wire rope failure was not considered during the JSA.
- (3) The crane's corroded boom hoist wire rope lacked internal lubrication; probably because of improper lubrication method, frequency, and an improper lubricant type.
- (4) The annual inspection of the crane conducted six months previous probably did not include a comprehensive examination of the boom hoist wire rope.
- (5) The Operator had no company manual for crane operations. It is possible that an internal company policy for crane operations may have led to actions that prevented the incident.
- (6) The detachment of the main block hook from the load may have allowed the bridle to be pulled all the way to the railing, striking the rigger, rather than remaining atop the fallen boom.
- (7) The crane's operator and those supervising the lift possibly did not give "special attention" to all of the crane's wire rope lines during the pre-use inspection per recommendations of API RP-2D.

BSEE recommends the following to Operators:

- Operators should review their methods of inspection of crane wire ropes to insure full and comprehensive examination as per API RP-2D.
  - Third party crane inspections should be checked and verified by Operator personnel.
  - Coats of heavy grease on the crane lines should be removed during inspections so that the external and internal integrity of the lines to be examined.
  - Special attention should be given to indications of changing wire rope diameters (both increasing and decreasing).
  - Wire ropes should be regularly lubricated with the proper lubricants, using recommended methodology to ensure full penetration by the lubricant.
- Operators should review equipment location prior to making a lift. Removing or relocating obstructing equipment in the interest of safety should be strongly considered.
- Operators should review the positioning of riggers using tag lines for all possible emergency contingencies.
- Operators should consider implementing a method of recording wire rope lubrication data for cranes, including date, personnel, type and brand of lubricant, method of application, etc.

A full account of the accident and investigation can be found on the following web site.

[www.BSEE.gov](http://www.BSEE.gov)

A **Safety Alert** is a tool used by BSEE to inform the offshore oil and gas industry of the circumstances surrounding an accident or a near miss. It also contains recommendations that should help prevent the recurrence of such an incident on the Outer Continental Shelf.