

2006-02

**Snapped Lifting Sling Causes Fatalities**

November 2006

**Events**

**Site/Facility:** Hadeed Project, Jubail, Saudi Arabia

**Crane Incident Results in Fatalities**

**Reference:** CH2MHILL Hanford Group Just-in-Time Report No. 06-021

On October 2, 2006, two people were killed and several others seriously injured when a crane boom flipped over its cab and dropped onto a pipe rack (see photo) and an office building. The crane had been lifting a load when the lifting sling snapped, dropping its load and causing the crane boom to flip.



Important Point:	<ul style="list-style-type: none"> <li>The crew was experienced, judged to be one of the “most professional and safety-conscious contractors in Saudi Arabia” performing a “routine simple lift.”</li> <li>The sling inspection was inadequate.</li> </ul>
Contributor:	<ul style="list-style-type: none"> <li>The crew stated that the sling “looked OK.”</li> </ul>

**Site/Facility:** Los Alamos National Laboratory

**Two Workers Injured in Crane Lifting Accident**

**References:** ORPS Report NA--LASO-LANL-WASTEMGT-2006-0016;  
**Lessons Learned Identifier** LANL WASTEMGT 2006-0016

On June 28, 2006, two subcontractor ironworkers were injured, one severely, when a 1,500-pound staircase struck them as it was being lifted by a mobile crane. The Laboratory Director convened a formal accident investigation team to evaluate the accident and determine root and contributing causes. The accident had two direct causes: one was that the staircase had been rigged in a nylon sling using a single-point, single-wrap technique that could not secure the staircase or keep it from moving; and the other was the ironworkers standing beneath the suspended staircase in violation of OSHA standards and DOE’s hoisting and rigging standard. Additional causal factors are listed below.

Important Point:	<ul style="list-style-type: none"> <li>The staircase was improperly secured according to the requirements in ANSI/ASME B30.5, Section 5-3.2.1.5(a)(2).</li> </ul>
Contributor:	<ul style="list-style-type: none"> <li>LANL did not ensure that the subcontractor’s health and safety plan complied with the requirements in its Integrated Work Document (IWD) and did not provide sufficient oversight of the work.</li> </ul>
Important Point:	<ul style="list-style-type: none"> <li>Three ironworkers stood beneath the suspended staircase.</li> </ul>
Contributor:	<ul style="list-style-type: none"> <li>Integrated Safety Management and other requirements did not flow down from LANL to the subcontractor.</li> <li>The ironworkers believed that standing under a suspended load was a normal and expected occupational risk.</li> </ul>

Important Point:	<ul style="list-style-type: none"> <li>• <b>The flagman had his back turned while the staircase was suspended so that he could step around obstacles in the area.</b></li> </ul>
Contributor:	<ul style="list-style-type: none"> <li>• <b>The flagman was not a qualified rigger, as the IWD required.</b></li> <li>• <b>Housekeeping was known to be an issue before the accident occurred.</b></li> </ul>
Important Point:	<ul style="list-style-type: none"> <li>• <b>A keeper pin was missing from the boom barrel pin.</b></li> </ul>
Contributor:	<ul style="list-style-type: none"> <li>• <b>The subcontractor's daily inspection failed to identify this problem.</b></li> </ul>

**Site/Facility: Y-12 Plant**

### **Defective Lifting Slings**

**Reference: ORPS Report NA--YSO-BWXT-Y12SITE-2006-0017**

On September 30, 2006, two lift slings were found with missing stitching. Although testing showed that the slings tested successfully at twice the rated capacity using only one of four straps, the event highlights the importance of pre-use inspections.

Important Point:	<ul style="list-style-type: none"> <li>• <b>One of four lifting straps on a sling was not sewn.</b></li> <li>• <b>Another sling was not sewn at two intersections.</b></li> </ul>
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For additional information on other types of material handling events, see Just-In-Time Report [2006-01](#), *Improper Material Handling Results in Near Misses*.

## **Important Considerations for Hoisting and Rigging (Lessons Learned)**

- Does the work package include a prerequisite or other mechanism to ensure that personnel conduct required pre-use inspections of hoisting and rigging equipment?
- Are personnel properly trained as required in [DOE-STD-1090-04](#), *Hoisting and Rigging (formerly Hoisting and Rigging Manual)*?
- Do subcontracts require compliance with OSHA standards and DOE guidelines for hoisting and rigging?
- Is oversight of contractors and subcontractors rigorous enough to detect noncompliances?
- Are the required pre-use inspections of lifting equipment performed, and are they sufficient to detect anomalies?
- Have unanalyzed hazards been introduced by deviating from the original plan?
- Do hoisting and rigging personnel know how to properly place slings to rig a load?
- Does pre-job planning account for potential sharp edges on a load?
- Have unanalyzed hazards been introduced by deviating from the original plan?