



**SAFETY ALERT - #21-2009**  
**RIG AND ACCESS MATTING HAZARDS**  
**RELEASE DATE: NOVEMBER 24, 2009**

<b>Function:</b> Oilfield Trucking and Construction	<b>Incident Date:</b> Multiple
<b>Incident Type:</b> Hazard Alert	<b>Country and Region:</b> Western Canada

**Summary**

Recent incidents highlight some of the hazards associated with transporting and installing rig mats

**Description of Recent Incidents:**

1. In central Alberta, a driver was reaching down to remove a matting hook from a standard rig mat. There was still some tension on the chain sling. As the worker began reaching to release the matting hook, the hook released striking the worker in the throat area. (See Photo #1)
2. Historical research revealed two separate incidents, where a US pipeline construction worker and a Canadian rig worker were crushed by a rig mat when the rigging used to lift the matting failed to support the weight of the mat. Both workers died from the injuries they sustained.
3. Due to soft ground conditions, a rig mat on a winter access road shifted while it was being driven on. The rig mat struck a nearby worker in the ankle causing a compound leg fracture.
4. A truck driver in northern Alberta was backing down a muddy lease road. He failed to notice a low spot in the road and was unable to stop his vehicle in time. When the vehicle entered the dip, the rig mats, which were much longer than the bed of his truck, dug into the muddy road and were forced up into the headache rack of the truck. The top of the cab was crushed pinning the driver against the steering wheel. The worker's injuries were limited to a bump on the head.

**Hazard Identification and Control Recommendations:**

A detailed review of the incidents identified a number of hazards associated with rig and access mats. These hazards should be considered in Job Safety Assessments and tail-gate safety meetings:

- **Mat Design:** There are a number of different style and designs of rig and access mats. Construction materials, lifting lugs and joining system are all considerations when selecting a matting system appropriate for the size of job and ground conditions. (See Photo #2)
- **Rigging:** There are different styles and designs of rig mats, each requiring a different style of rigging to place and remove the mats. Sling capacity is another important consideration. Selection and maintenance of the proper chains, slings and rigging is vital to the safety of the workers. Alternate lifting systems can help to eliminate some of these hazards. (See Photo #3)
- **Lifting Equipment:** The load capacity and stability of lifting equipment needs to be considered when placing and removing mats. Soft and muddy ground conditions can affect both worker footing and equipment mobility. Monitoring the load weight is important particularly if the mats are frozen in, are caked with mud, or have become water logged. (See Photo #4)
- **Work Practices:** Standard lifting practices apply when handling rig mats. Important considerations when handling rig matting include identification of any danger zones, correct position for the task, required hand signaling and the correct use of tag lines. **Under no circumstances should a worker ever walk under a suspended mat, or any other load.**
- **Pre-Job Hazard Assessments:** A few key hazards to keep in mind are: swinging loads, crush points, slips, trips and falls due to uneven or soft, sticky ground, incorrect signals, dropped loads due to incorrect hook-up, working near rigging under tension, the presence of mud, snow and ice. **It is important to pay close attention to proximity of overhead power lines.**

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### Photographs:

#### Construction materials, lifting lugs, joining systems are key factors in mat selection



Photo #1 - Standard rig mats, no lifting shackles. Two hook system used when worker was injured. These 'pelican' hooks were removed from service.



Photo #2 - Lifting shackles used in conjunction with ASME B30.16 hooks with safety latches can improve safety of lifting procedures

#### Procedures and equipment for lifting, placing and removing matting are important



Photo #3 - Correct use of a quadruple leg sling to lift an access mat. Note: The outriggers on the lift equipment being used are not yet deployed.



Photo #4 - Alternate lift systems can improve safety by eliminating rigging and terrain hazards

### Contact:

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