

Wise up before you rise up!

Consider the risks of personal fall arrest equipment that is improperly maintained.

Description of Incident: During routine maintenance work aloft while at sea, a 41 year old able bodied seaman was seriously injured after a near fatal fall from a height of 13 feet (4 meters) onto the cross deck. The fall was ultimately determined to be the consequence of the lanyard on his fall arrest equipment breaking under tension. The safety harness was found to be overused and had gone unchecked as evidence had shown upon review of the maintenance records for life saving appliances.



Actual Injuries: *The seafarer sustained multiple fractures to his pelvis, left wrist, ribs and a ruptured spleen.* The injury to his pelvis required both surgical and external stabilization.

Potential Risks: *Serious bodily injury or death.* In the event of a fall, it is critical that personal fall arrest equipment has been properly donned, fully functional and reliable. For this reason, personal fall protection equipment must be inspected regularly and checked to be fully functional before each use. Improper storage and care for fall this equipment will increase the likelihood that the next piece of equipment that your shipmate picks up is dangerously weakened.

Recommendations

Equipment

- *Use a full-body harness with a shock-absorbing lanyard or a retractable lifeline.* A full-body harness distributes the fall forces throughout the body and reduces the chances of injury. A “body belt” fall protection device concentrates any fall related forces into the abdomen area. The shock-absorbing lanyard decreases the total fall arresting forces.
- *Only rig a full body harnesses and use fiber lines intended for use as personal fall arrest equipment.* Only personal fall arrest equipment designed for use should be used for working aloft.

Storage

- *Properly store personal fall arrest equipment indoors in a clean, cool, dry place, and hung up if possible.*
- *Personal fall arrest equipment should not be left lying around a jobsite.* Exposure to rain, heat, freezing temperatures, and direct sunlight can potentially damage the equipment. Direct sunlight or exposure to heat sources can cause weakening to the materials that make up the harness and lanyard making them susceptible to failure.

- *Ensure the protection of personal fall arrest equipment by not exposing or storing nearby heat sources, chemical products, where fumes are present, or near sharp objects.*

Cleaning

- *When cleaning personal fall arrest equipment, use a sponge or rag to spot clean harnesses as necessary with warm water and non-corrosive laundry or dish soap, and then hang to dry in a cool dry place. Harnesses should not be soaked in water or cleaned with any agents containing bleach, chlorine, or corrosive or abrasive materials.*

Inspect

- *Incorporate visual checks and inventories of personal fall arrest equipment into your regular safety equipment inspection regime. Inspect harnesses and shock cords regularly as a part of the normal safety equipment check routine. Ensure they are in proper condition, free of wear and tear, and clean and ready for use.*
- *Personal fall arrest equipment found to be damaged, heavily worn, or overused should be removed from the inventory to ensure it is not mistakenly used by the crew.*

Working aloft procedures

- *The ship's safety management system (SMS) should have procedures that include a risk assessment for working aloft. At a minimum the procedures should consider the following:*
 - *Communication.* The officer in charge should communicate the risks of injury that could occur during the exercise to the crewmen who are to go aloft.
 - *Evaluation.* Consider any potential hazards of working aloft, for example, if working aloft during inclement weather conditions.
 - *Safeguarding.* Ensure that safeguards are in place prior to the seaman going aloft. For example, a crewman going aloft on the flying bridge or mast will require radio equipment to be switched off and proper signage posted. It also may be necessary to rope off and post advisories in the area underneath a job aloft as a precaution for dropped tools or debris.
 - *Visual checks.* It is important that all of the personal fall arrest equipment to be used is examined prior to commencing work and found in a good working condition.
 - *Supervision.* The ship's SMS should include procedures for jobs performed aloft and require the Master's approval and adequate supervision. A crewmember keeping watch may be able assist in hoisting to throwing a lifebuoy in an emergency situation.
 - *Further consideration.* A written Safety Job Assessment (SJA) or Job Hazard Analysis (JHA) should be considered as a prelude to the Permit to Work for working aloft. SJA or JHA must be done for certain high risk tasks such as working aloft, confined space entries and hot work. The Master should review and approve the SJA or JHA prior to signing the Permit to Work.
- *Crew members should not go aloft if:*
 - they are not properly trained and familiar with the safe and proper use of the ship's personal fall arrest equipment;
 - they are not appropriately or fully aware of the risks associated tasks to be performed;
 - they have not taken precautionary measures;

- they have not received approval from the Master for the tasks to be performed; and
- there is inadequate supervision available while working aloft.

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