



NAVAL SAFETY COMMAND

SAFETY AWARENESS DISPATCH



SA 24-02

Weight Handling Mishaps

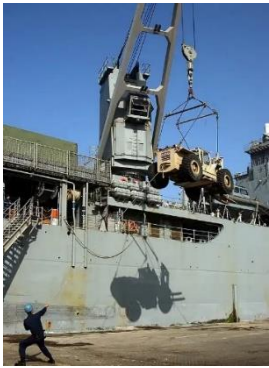
Moving heavy objects isn't just a favorite pastime for Sailors and Marines in the gym; it's a mainstay to warfighting readiness in our naval services (*the big stuff, not kettlebells*). Whether loading stores and munitions or hoisting equipment, many of our Sailors, Marines and civilians depend on weight-handling operations to do their jobs daily. Unfortunately, not all lifting evolutions go as smoothly as planned—or *not planned in some cases*. The Navy and Marine Corps reported more than 276 crane and rigging mishaps in FY 2023, so you can imagine it wasn't hard to find mishap examples from around the enterprise to show how we need to improve our weight-handling risk management to keep out of the mishap database. Have a read and share widely with your teams.



- **A Costly Slip.** Navy base riggers rigged equipment racks for hoisting them from the pier onto a ship's forecastle (bow) using a crane on the pier. During the movement from the pier, the racks slipped out of the rigging and dropped onto the ship's brow, resulting in more than \$10,000 in damage and total loss of the racks. The riggers improperly secured the racks and no one checked their work before the hoist. —*On a positive note, no one was transiting across the brow, or they may have been seriously injured or killed! We can only assume that the brow was secured to traffic during the evolution. However, ensuring the load is properly secured **before** you hoist can avoid a potentially deadly scenario altogether.*
- **Timber!** A crane team was equipment handling at a wharf using a mobile crane with a telescoping boom. During the lifts, a much larger portal crane needed to pass by, requiring the team to retract the mobile crane's outriggers used to stabilize it during lifting operations. The team later turned over the mobile crane operations to another team, who set up to raise a large voltage regulator onto a ship. The team supervisor held a pre-brief but didn't complete the pre-briefing checklist. He also selected a rigger in charge who was not fully qualified for the position—*two missteps that would soon prove costly*. With the outriggers still retracted, the supervisor tasked one of the riggers to rig the load. Once ready, the rigger in charge gave the signal to "boom out," and the operator proceeded to boom the crane's telescopic boom out to its total length of 127 feet over the structure. As the rigger gave the signal to lower the boom over the load, the crane became unstable and toppled forward. The fully extended boom struck a logistics structure and the load landed in the water approximately 15 feet outboard of the ship. The logistics structure buckled and shifted violently, injuring a person inside and a person on top of it. While the injuries were minor, the crane and structure damage was catastrophic. —*Fortunately, mishaps like this one are rare in our database, but it highlights the importance of pre-operation checks, thorough briefs and proper crew selection. Taking a few moments to prepare for the lift will pay dividends in the form of a safe and successful evolution. Take the time to get it right...and safe.*
- **Heads Up.** A crane operating crew and landing craft maintenance personnel used the overhead bridge crane in the ship's hangar bay to remove the port shaft from a landing craft. The team consisted of a rigger in charge, crane operator, surveillance person and other members of the lift operating crew. During the shaft removal, the surveillance person observed a Sailor walking directly under the load (*apparently unnoticed by the rigger in charge or crane operator*). The surveillance person allowed the evolution to continue despite the unsafe act and spoke to the crewmember about the dangerous act after the evolution was completed. —*Walking or standing under a load is a considerable safety breach during weight-handling operations and should prompt an immediate "All Stop" followed by hasty direction and mentorship to the guilty party. It's supposedly bad luck to walk under a ladder, but it's potentially much worse luck to walk under a load. Think about it.*

Weight Handling Mishaps

- **Forklifts Aren't Cranes.** Sailor 1 and Sailor 2 were conducting the load-on for their assigned trailer. Sailor 1 was up on the trailer, communicating where he would like varying pieces of equipment to be set in place for weight distribution. Sailor 1 directed Sailor 2 to place an anchor on the forward end of the trailer. They were using a sling on the forklift to move the anchor. As Sailor 2 lowered the anchor into place, the load made contact with the deck, the sling slid off the forks and the anchor landed on its edge and rolled onto Sailor 1's left foot. Most of the weight struck Sailor 1 just past the area where the steel toe meets the shoelace, resulting in a broken big toe. Sailor 1 was able to free his foot from the anchor on his own and was taken to the local medical center. —*This mishap illustrates why slings **should not** be used on forklifts. Forklifts are designed for palletized or containerized cargo, not as crane substitutes. Please don't break a toe testing this advice and trust us on this one.*



- **Didn't do The Math.** During a Marine Expeditionary Unit load aboard an amphibious ship, a lifting sling parted while lifting a load consisting of an armored vehicle and three other pieces of equipment, dropping it onto the pier and causing damage to the vehicle and equipment. Fortunately, no one was hurt in the incident. The investigation determined that the sling was rated for 40,000 LBS while the load exceeded 53,900 LBS, approximately 135 percent of the sling's capacity. —*The Marine unit provided the sling, so it should have been rated for their equipment (logically the heaviest piece). A key element of weight handling is ensuring your equipment is rated for the lift and adequately labeled with a current weight test date. It's best to find out you have the wrong sling **before** you attempt to lift a 60,000 LB piece of equipment.*

- **Famous Last Words, "I Got This."** A Marine was replacing bedboards on a 7-ton flatbed truck alone (*after being told not to conduct the work without help*). The Marine removed the bed from the truck using the shop's overhead crane. However, the bed shifted while it was suspended, and the weight of the bed pinned the Marine's hand between the bed and the truck frame. Marines around the shop responded to lift the bed for the Marine to remove his hand. —*Fortunately, this do-it-yourselfer escaped with only a bruised hand with help from his fellow Marines, which begs the question: Why didn't the Marines in the shop intervene **beforehand**? (Pun intended). Some ceiling hoists are designed to be single-user hoists, but to lift the bed off a 7-ton truck? We think not, as did the Marine's supervisor, who told him not to. Use the equipment properly and get help, especially when the help is in the shop (SMH).*

Key Takeaways

1. **Start with a qualified team.** There is a technique to crane operations and rigging that shouldn't go underappreciated because, without it, your job may never get off the ground, literally. Ensure all team members are properly trained and qualified for their positions. Supervisors should know their team and individual skill levels and set them up for success.
2. **Use the right gear.** Building on takeaway #1, the most qualified team in the world won't help if the crane and associated lifting gear aren't rated for the job. Use cranes and forklifts as the manufacturer intended and don't modify or alter them to cut corners.
3. **Brief the lift, then follow the brief.** The brief and associated checklist isn't a check in the box. It should be relevant to the individual task and identify the associated risks and concerns. Ensure every member of the team understands their respective roles. There should be no surprises.
4. **Inspect, test and certify.** All lifting gear should have inspection requirements and a current weight test date. Follow your community's guidelines on inspecting, testing and certifying your lifting equipment.

And remember, "Let's be careful out there."