THE CRANE CORNER

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Editor: (757) 967-3816/DSN 387-3816/m_nfsh_ncc_crane_corner@navy.mil

A WORD FROM TOPSIDE

Sam Bevins

One all too frequent cause of dropped loads, especially heavy loads, is the severing of synthetic slings caused by improper contact with the load. In 2005, we issued an alert on this subject (CSA 153) and noted several significant dropped loads, including a mobile crane where the slings were rigged around the outrigger beams, another mobile crane where the slings were rigged around the boom, an aerial work platform where the slings were rigged around the outrigger beams, and a 10-ton steel box where the sling was cut by the corner of the box.

Unfortunately, dropped loads resulting from cut synthetic slings are still occurring. The most recent event was during the installation of a 23,000-pound bridge crane girder by a contractor. Synthetic slings were choked around the girder, and while the load was lifted and suspended above the runway rails, one of the slings severed and the girder fell. The result was a serious injury and a delay in contract completion. The results could have been even worse.

Corners of steel girders, boxes, outrigger beams, valves, etc., may not appear to be sharp, but when a synthetic sling is supporting the load, these corners can easily cut and sever the sling. Corners of large concrete sections can quickly abrade and cut these slings. In many of the accidents reported, some form of protection was provided but it was not substantial enough to protect the sling. Standard materials used for "chafing" protection (rubber padding, canvas sleeves, etc.) frequently do not provide a sufficient rounding of the corner to prevent cutting and severing of synthetic slings. Solid materials, such as pipe sections, may be necessary to round off the sharp corners. Synthetic sling and accessory manufacturers now have a wide range of products designed to protect the slings when they are rigged around corners or over small diameter pins. They also provide shackles and hooks specially designed for synthetic sling use.

Some naval activities now control the use of synthetic slings and permit their use only for applications where they provide significant advantage over other types of slings. Their use for other applications requires management approval. This is a proactive approach to accident prevention.

Supervisors and personnel performing surveillance of lifting operations should be on the lookout for lifts involving synthetic slings. Ensure corners in contact with the slings are well protected and the rigging hardware is compatible with the sling. The same applies to contract administrators who oversee contractor lifting operations.

As we acknowledged in the CSA, synthetic slings do have their place in lifting and handling operations, but they are less forgiving than other types of slings. Therefore, they must be used, and maintained, properly to ensure a safe lift.

Inside This Issue

AVAILABILITY OF FLOATING CRANES

There are three floating cranes in the Navy inventory, listed below, that are available for transfer. If your activity is interested in acquiring one of these assets, please contact the Navy Crane Center for more information.

-YD-252

This is a Halter Marine 100 long ton crane built in the late 1980's and currently stationed in La Maddalena Italy. Though it has not been certified in some time, a joint Norfolk Naval Shipyard and NCC inspection in Sept '06 found only a few areas of concern. A full inspection report can be forwarded upon request. Approximate price for overhaul is $2 million. Details on barge size and lifting capacities are below.

YD-252 Lifting Capabilities		
Hoist	Radius	Capacity
Main	60'	224,000 lbs
	90'	210,000 lbs
	105'	189,000 lbs
	120'	152,000 lbs
	160'	94,000 lbs
	175'	80,000 lbs
Aux	63'-190'	38,000 lbs
Whip	60'-215'	10,200 lbs

YD-252 Barge Dimensions	
Length (MLD)	175' 6"
Length Overall	177'
Breadth (MLD) @ side	75'
Breadth Maximum	76' 5"
Depth (MLD) @ side	12' 6"
Displacement	1680 Long Tons
Draft-Mean (@Mid length)	5'
Draft Load Line (MLD)	7'
Height-Maximum (Above 5'0" WL)	98' 2"

-YD-247

This is a 100 long ton Westmont crane stationed at NAVFAC MIDLANT in Norfolk, VA. It was built in the late 1980's but has been out of service for some time (since the early '90s). There are 10 other Westmont floaters in the Navy inventory so there is plenty of history and knowledge for these cranes. This crane will require approximately $3-$4 million in repairs.

YD-247 lifting capabilities		
Hoist	Radius	Capacity
Main	80’	224,000 lbs
	100’	195,000 lbs
	120’	155,000 lbs
	160’	94,000 lbs
	175’	80,000 lbs
Aux	63’-190’	38,000 lbs
Whip	80’-217’	10,000 lbs

YD-247 Barge Dimensions	
Length	175’
Beam	75’
Depth	12’ 6”
Design Draft	5’

-YD-196
This is a 100 long ton Dravo crane built in the 1950’s and is currently in TRF King's Bay, GA. This crane will need moderate work before it can be certified. An inspection report can be forwarded if requested.

Several activities have also expressed a need for a smaller type barge/short boom floating crane with a capacity around 60-100 tons. A preliminary study to determine the feasibility of a possible new purchase contract is being put together. Please contact the Navy Crane Center if you are interested in procuring a similar floating crane.

CRANE SAFETY ADVISORIES AND EQUIPMENT DEFICIENCY MEMORANDA

We receive reports of equipment deficiencies, component failures, crane accidents, and other potentially unsafe conditions and practices. When applicable to other activities, we issue a Crane Safety Advisory (CSA) or an Equipment Deficiency Memorandum (EDM). A CSA is a directive and often requires feedback from the activities receiving the advisory. An EDM is provided for information and can include deficiencies to non-load bearing or non-load controlling parts.

CRANE SAFETY ADVISORY

CSA 159A, Link head bearing failure on a Westmont 100-ton floating crane band brake

CSA 159 alerted activities of a possible problem with the link head assembly on the whip and auxiliary hoist band brakes on the Westmont 100-ton floating cranes. An activity reported that the link head assembly slid off of the plain bearing on its eccentric shaft, which effectively disabled the band brake. After discussions with the OEM, Hagglunds, the only possible explanation for this failure is that the link head assembly was installed backwards. The link head has a small inner shoulder located on the opposite side from the shaft nut and washer that in combination with the shaft nut holds the entire assembly together. If the link head is installed backwards such that the shoulder is close to the nut and washer, it is possible for the link head to disengage from the plain bearing. The maintenance manuals show a blow up of this assembly.

During the next “A” inspection, ensure that the link heads on the whip and auxiliary hoists are installed correctly with the shoulder on the opposite side of the bearing from the nut and washer. This verification can be done visually or by feel. If the link arm is installed correctly, visual inspections as required by CSA 159 may be discontinued.

If the link arm is installed backwards, continue visual inspection as required by CSA 159. At the next “B” inspection period, reinstall the link arm in the correct orientation. Report any incorrectly installed link heads to the Navy Crane Center.

CSA 165, Slewing ring bearing fastener failure during tensioning

An activity recently reported the failure of a slewing ring bearing fastener while performing required annual tightness checks with a hydraulic tensioner. The fastener failed in the threaded area where the tensioner gripped the fastener. This area is normally unloaded and only sees load during tensioning. Metallurgical analysis of the failed fastener determined that that the failure was caused by a pre-existing crack that grew through low cycle fatigue until the remaining cross-sectional area of the fastener failed by overload during the tensioning operation. There was an additional crack on the failed fastener approximately three threads above the failure and 180 degrees away from the crack that initiated failure. The activity concluded that previous improper seating of the tensioner induced a moment on the fastener causing the cracks to form. Additional 5x visual inspections of the remaining slewing ring bearing fasteners on the crane revealed three other fasteners with cracks in the threaded areas utilized by the tensioner.

For all cranes that utilize tensioners (vice torque wrenches or other methods) to tighten slewing ring bearing fasteners, before the next tightness check of the fasteners perform a 5x visual inspection for cracks on the exposed threaded portions of the fasteners utilized by the tensioner. Replace any fasteners that have cracks. Report all results (cracks or no cracks) to NAVCRANECEN.

CSA 166, Mobile crane live mast operating procedures

Some models of lattice boom mobile cranes utilize a live mast (also called a floating mast or strut) to assist with boom luffing. Some of these live masts may also be used to help self-erect the crane as they have a limited lifting capacity ("using live mast as a boom"). Live masts generally have several parts of line running to them, shifting their center of gravity such that they may overhaul and go over backwards at less than 90 degrees elevation without the main boom attached. While using the live mast for lifting on Link-Belt cranes, there are live mast backstops that must be positioned correctly to prevent the live mast from going over backwards. While the operator's manual has specific steps to follow for using the live mast for lifting, it does not have similar steps or cautions for disconnecting the live mast from the main boom and moving it. This may be necessary to remove the main boom from the crane.

An activity reported a crane accident and damage to the crane while disassembling the boom on a 300-ton Link-Belt truck crane. The live mast was being moved to provide clearance for another crane to remove the boom base section. The live mast was not being utilized for lifting and did not have any rigging or additional attachments installed. The operator's manual does not specifically state that the live mast backstops need to be positioned correctly while only moving the live mast. The live mast backstops were not in the working position. At approximately 60 degrees elevation, the live mast overhauled, went over backwards, and damaged the crane.

Discussions with Link-Belt have indicated that they will be reviewing their operator's manual for the 300-ton lattice boom cranes and may include a caution that the live mast backstops must be in the working position any time the main boom is not attached to the live mast. Other Link-Belt models of lattice boom cranes and other manufacturers' cranes may have a similar oversight in their operator's manuals.

For all lattice boom cranes with a live mast, review operator's manuals for any special precautions while the live mast is not attached to the main boom. Note any discrepancies between procedures for using the live mast for lifting and for only moving the live mast. Update operator's manuals and activity developed procedures for live mast operations to included proper positioning of live mast backstops or other similar devices to prevent the live mast from overhauling and going over backwards. This shall be accomplished before any such operation occurs, but no later than the next "B" PM.

CSA 167, <u>Crane accident involving ship antenna</u>

Recently, a crane accident occurred when the wire rope of a mobile crane was snagged by a ship's antenna that rotated unexpectedly. Only minor damage resulted however, there was potential for serious personal injury and extensive damage to equipment. Although a formal investigation into this accident is ongoing, the following details are known.

A crane team using a mobile crane was tasked with placing loads on a ship's 04 level. The requested placement of the loads required the whip hoist wire rope to be within the sweep radius of the ship's antenna. Prior to commencing lifting operations, a pre-lift meeting was conducted. The crane had been working all morning in a different location. This was the first lift that put the wire rope in the radius of the antenna. Work activity on and around the ship was intense as system checkouts and equipment verifications were being completed in preparation for deployment. Just after disconnecting a load from the crane, the antenna started to rotate unexpectedly. The rotating antenna snagged the crane's wire rope and wrapped it around the antenna base and supporting structure. The headache ball was pulled into the antenna's structure wedging it against the foundation causing the antenna's rotate motor to trip electrically. The crane's wire rope was pulled out of radius by the rotating antenna and the crane could have overturned if the operator had not reacted quickly to lower the boom and put slack in the hoist wire rope.

Although the ship’s procedure for activating the antenna states, 'before proceeding, ensure that antenna radius is clear of all obstructions' it appears that either this procedure was not followed, was ineffective or the visual verification was completed prior to lift operations. Investigations are ongoing to determine if the increased tempo of ship deployment preparations were contributing factors in this accident.

Activities shall ensure that crane teams apply Operational Risk Management (ORM) during all crane lifts. This is especially important where general activity and intensity of work is increased due to ship departure schedules or where multiple work functions are being performed at the same location. When working shipboard and prior to beginning lift operations ensure the ship is informed of all crane work and that the necessary precautions are implemented to control inadvertent movement or operation of ship's equipment. Lift plans and pre-lift briefings should discuss potentially hazardous equipment located in the vicinity of the load path and actions to mitigate those hazards when handling loads near this equipment.

CSA 168, <u>Grounding wire and conduit configuration for 60 ton and 151 ton Samsung portal cranes</u>

The purpose of this CSA is to address possible grounding wire and conduit discrepancies that may exist on 60 ton and 151 ton Samsung portal cranes. An activity reported that several grounding wires are undersized and conduit runs differed from the 60-ton Samsung portal crane drawings.

Activities shall inspect and document the installed grounding wire sizes for the runs listed below on both 60 ton and 151 ton Samsung portal cranes.
1. From the AC generator to generator control panel, conduit GPH 001.
2. From the 500 ohm neutral ground resistor to the ground bus in the generator and load absorber control panel.
3. From the AC power main line contactor panel to 480vac distribution panel, conduit mph 014.
4. From the 480vac distribution panel to each isolation transformer, Conduit MPG 020, 022, 024, 026, and MPH 028.
5. From each isolation transformers to each control panel MPG 021, 023, 025, MPF 027, and MPH 029.

Activities shall inspect and document the conduit runs listed below. If individual conduit is not used, then identify conduit size, as well as the number and size of conductors present in each conduit.
1. 480vac distribution panel to each isolation transformer, conduit MPG 020, 022, 024, 026, and mph 028.
2. From the isolation transformers to each control panel, conduit MPG 021, 023, 025, MPF 027, and mph 029.

The above inspections shall be performed no later than the next scheduled "B" type maintenance inspection. All findings shall be reported to NAVCRANECEN. In the event NEC violations are discovered, NAVCRANECEN will provide future guidance regarding the action to be taken.

CSA 169, Johnson Industries SMAA type shoe brake air cap intrusion and loose magnet screw

An activity reported that during a recent inspection on a Westmont 60-ton portal crane a Johnson Industries model SMAA16 electric shoe brake was found not making the same sound as two other Johnson shoe brakes when releasing. A thin metal sleeve from the magnet's outer diameter was discovered protruding into the air gap, which prevented the magnet from contacting the armature. Further inspection also found the screw retaining the brake magnet to its mounting surface was loose. This may have contributed to the metal sleeve coming loose and protruding into the air gap. Johnson Industries states the sleeve is used in the manufacturing process as a mold for the resin poured over the coil windings. The magnet securing screw is installed snug tight at assembly. At the next type "B" or annual maintenance period involving a load test, activities with cranes utilizing Johnson Industries SMAA brakes shall disassemble the brake as needed and ensure the magnet screw (part number 18 on Johnson Industries drawing number A3988-P12) is tightened snug tight and ensure the metal sleeve is in place. Notify NAVCRANECEN of any loose screws or loose or improperly located metal sleeves that are found.

EQUIPMENT DEFICIENCY MEMORANDUM

EDM 089, Hagglunds hydraulic motors – Viking 84 series two speed distributor upgrade

An activity reported that during an upgrade of a main hoist motor two speed distributor, the pilot piston, valve housing and cover were found damaged. The upgrade was issued as an improved new design to the guiding rod, pilot piston, adjusting screw, and new high pressure relief valve. There were no operational indications of valve malfunction or damage prior to disassembly. The Hagglunds Viking 84 series hydraulic motors with two speed distributors are common to boom and main hoists on Westmont 100 long-ton floating cranes. Viking 84 series motors with two speed distributors may be used in other Navy shore based crane inventory.

The OEM has stated that the upgrade be accomplished on an as needed basis. Inspection for wear and or damage can be easily accomplished by removal of the valve cover. NAVCRANECEN recommends that activities contact Hagglunds to verify applicability of the upgrade and parts availability. NAVCRANECEN further recommends that activities inspect two speed distributor valves and accomplish the upgrade at the crane's next type "B" maintenance inspection.

EDM 090, Electro-hydraulic stroker null adjustment on Hagglunds hydraulic hoists

The primary control system for the hoist pumps, manufactured by Hagglunds, is an electro-hydraulic stroker that controls pump flow. These pumps then provide hydraulic power for the hoist hydraulic motors. The electro-hydraulic stroker can be adjusted by a trimmer screw to bias the hoist in either direction. This ensures that the hoist motor has no movement (nulling the pump) when the controller is in the neutral position. As the pump and motor wear, internal leakage increases which may result in hoist rollback. The internal leakage rate for a new motor is 2-3 gpm, for a new pump the leakage rate is 3-4 gpm. When the leakage rate increases to 8-10 gpm for the pump or motor, maintenance is required.

By adjusting a trimmer screw (located under the acorn nut on the bottom of the electro-hydraulic stroker), hoist rollback can be corrected. However, care must be taken in adjusting this trimmer screw in that fine adjustments cause a large change. Refer to the Hagglunds adjustment procedure for the 500 series electric stroker.

An activity reported that as they adjusted the trimmer screw on a hoist motor to reduce rollback, with the controller in neutral and the brakes set, the hoist drove through the brake in the raising direction. This is due to the fact that the band brakes on the hoist motors are single acting brakes as they only develop full braking strength in the downward direction. The band brakes only develop approximately 20% of their full braking torque in the hoisting direction. This could have resulted in a two-block incident since misadjusting the electric null screw effectively bypasses the motor control. The hydraulic pressure feeding the hoist motor at pump port AG should not exceed 500 psi.

Care must be taken during maintenance and trouble shooting evolutions as systems are being adjusted to avoid manipulating these systems into non-standard operating parameters. Familiarity with system operations and functions as well as stationing personnel in strategic locations will help prevent problems from occurring.

EDM 091, Coffing electric chain hoist mechanical load brake failure

Two activities have recently reported mechanical load brake failures on their Coffing electric chain EC series hoists, a one-half (1/2) ton capacity model EC1016, manufactured in 1981, and a 3-ton capacity model EC6005, manufactured in 2000. The failures were found during the load test. After releasing the motor brake, the load accelerated downward. These failures were not noted during hoist dynamic testing.

Upon inspection, it was found that both output gear assemblies were bound onto the sheave shaft assemblies and significant force was required to separate them; one had to be cut apart.

Discussions with Coffing hoists have determined that their mechanical load brakes do have a tendency to tightly bind if the hoist is subjected to shock loading. A redesign of the mechanical load brake assemblies has reduced the possibility of the output gear binding onto the sheave shaft. This redesign changed the load brake's roller ratchet assembly to a pawl and ratchet, and changed the thread series on the sheave shaft. The series of hoist can be determined by looking at the fourth place in the hoist serial number. An 'A' indicates an older design with the roller ratchet and a 'C' indicates a newer pawl and ratchet assembly.

Activities with older Coffing electric chain hoists equipped with mechanical load brakes should consider upgrading if their hoist begins to experience these problems. Activities are also reminded of the importance of proper crane operation and of proper maintenance, inspection, and testing of mechanical load brakes in accordance with NAVFAC P-307.

FIRST QUARTER FY07 ACCIDENT REPORT

The purpose of this report is to disseminate shore activity weight handling equipment (WHE) accident and near miss lessons learned to prevent repeat accidents and improve overall safety.

NAVFAC P-307 requires commands to submit to NAVCRANECEN a final, complete accident report (including corrective/preventive actions) within 30 days of an accident, regardless of severity or type. This reporting requirement includes rigging gear accidents, i.e., gear covered by section 14 of NAVFAC P-307 used by itself in a weight handling operation and other unplanned occurrences with lessons to be learned. In addition, contracting officers are required to forward to NAVCRANECEN reports of all contractor accidents, including contractor caused accidents with Navy owned cranes.

For the first quarter of FY07, 41 Navy WHE accidents (31 crane accidents and 10 rigging gear accidents) were reported and 1 contractor crane accident was reported. Significant Navy crane accidents this quarter include a load collision resulting in multiple injuries, a two-blocking, and a dropped load that resulted in injury.

INJURY

Accident: Load collision, resulting in injury.
Three workers were injured when a load contacted a partially erected and unstable structure inside a production shop. The shop supervisor developed a plan to install steel floor plates into the structure without the use of a crane. However, when the job was to be done, several obstructions prevented this method of installation. The installation team elected to deviate from the original plan by removing some ceiling panels from the structure and then use a pendant controlled bridge crane to lift and set the plates through the ceiling. The panel removal further weakened the structure. After the shop operator briefed the team, the operator lifted the plate and began setting it into position. As the plate was being lowered to a horizontal position on the floor, the bottom edge of the plate slipped on the deck and pushed into one of the walls, buckling it and causing the structure to collapse. Three personnel were struck by wall panels and associated construction debris. Their injuries were minor.

Lessons Learned: The operator and personnel performing rigging functions are responsible to ensure the load is safe to lift and properly controlled. If there is doubt, stop the operation and request assistance. This includes the mitigation of undesired load movement during placement.

Employees are responsible to obtain supervisory approval to alter work procedures once they are established. Structural modifications must be approved by appropriate personnel.

DROPPED LOADS

Accident: A shore power cable passed through a power snatch block that was suspended from a category 4 boom truck. The shore power cable fell approximately 40 feet and struck an employee who was coiling the cable. The injured employee who had limited experience in this type of work was standing in an unsafe position in the middle of the coil. As the shore power cable was being lowered, the rigger-in-charge (RIC) walked away from the lift to perform other work. The operator, who was focused on the employee coiling the cable, did not stop the operation when the RIC walked away. The activity's investigation determined that an insufficient number of personnel were assigned to perform this type of work, unacceptable production pressure to complete work was placed on the crew, personnel failed to perform as trained, and procedures for handling shore power cables were inadequate. The seriously injured employee was out of work for an extended period.

Lessons Learned: Personnel must not stand under a suspended load or in an area where they can be struck by the load. The RIC is responsible to ensure that the load is properly rigged and controlled throughout the lift evolution and that personnel do not place themselves in unsafe areas. The operator must stop operations if communication with the RIC is not maintained. Management has the responsibility to ensure that jobs are adequately manned by trained and qualified personnel. Procedures must accurately reflect actual work and safety precautions must be observed. Safe operation/work practices cannot be compromised to meet real or perceived schedule demands.

TWO-BLOCKINGS

Accident: A mobile crane was two-blocked as it was being prepared for travel. The boom was in the boom rest with the hook attached to the crane's tie back/weak link. The upper limit switch was bypassed to facilitate placing the crane's hoist block into the travel position. The RIC signaled the operator to hoist the main block. The RIC stopped the block several inches below the head sheave. However, the RIC recognized that the block needed to be elevated more to increase ground clearance. During the attempt to raise the block several more inches, the hoist speed was faster than expected and the crane was two blocked. The activity investigation revealed that low lighting prevented the operator from clearly seeing the block. The RIC was not aware of this condition. The RIC did not adequately direct the crane operator when in an area of close tolerance.

Lessons Learned: Effective communication between the rigger and the operator is essential. The crane should be operated at the slowest speed possible in areas of close tolerance such as operations where a limit switch is overridden to store a hoist in the travel position or during maintenance work where limit switches may be disconnected or defeated.

SIGNIFICANT CONTRACTOR ACCIDENT

Accident: High voltage power line contacted. A mobile crane was unloading roof panels from a flatbed trailer when rigging gear suspended from the hook contacted a 12KVA power line. When centered over the trailer, the hoist wire rope was approximately 17 ft from the power line. After successfully offloading the first set of panels, the operator rotated the crane back over the trailer for another lift. During the return swing, the operator recognized that the crane's hoist wire rope may contact the power lines and immediately reversed the crane's direction. In doing so, the rigging gear suspended from the block swayed out and made contact with the power line. The power line severed, the sling was damaged, and a main transformer tripped. No injuries occurred but the mishap could have been fatal. The activity investigation revealed that no one was directing the crane nor was anyone in charge of the operation and that the crane was operated at an excessive speed.

Lessons Learned: Power line contact is the largest single cause of fatalities associated with cranes. The operator must control the crane and its load at all times. When operating near power lines, the crane should be located where the swing radius of the fully extended boom is completely outside the power line limit of approach. If the crane placement puts the swing radius inside the limit, an observer is required. The observer must be positioned to visually monitor and control the clearance between the equipment and the power lines. The designated observer cannot be assigned other duties that interfere with the ability to give a timely danger warning to the crane operator. The RIC must be in a position to direct the safe movement of the crane at all times. A risk assessment should be performed to identify all possible hazards and then mitigate the potential conditions that could hinder safe operation of the equipment. This should be done during the planning phases of the work and discussed during a pre-lift brief. Management shall ensure crane teams are aware of crane travel restrictions within the facility and emphasize special hazards associated with operating within close proximity of overhead transmission lines.

Weight handling program managers and safety officials are encouraged to review the above lessons learned with personnel performing lifting and handling functions and consider the potential risk of accidents occurring at your activity. OPNAVINST 3500.39B prescribes methods for assessing hazardous operations, which should be used in the planning and preparations of all WHE lifts.

E-mail submission of reports of accidents, unplanned occurrences and near misses is encouraged. The e-mail address is nfsh_ncc_accident@navy.mil. The reports must include a complete and concise situation description, corrective and preventive actions, probable cause and contributing factors, and an assessment of damage. For equipment malfunction or failure, include specific description of the component and the resulting effect or problem caused by the malfunction or failure.

WEIGHT HANDLING EQUIPMENT FALL PREVENTION SAFETY REMINDER

The purpose of this report is to remind activities of fall protection requirements and prevention while operating, inspecting or maintaining Navy shore activity weight handling equipment (WHE).

A contractor employee recently fell from an access platform while performing maintenance. The details are incomplete at this time but this event emphasizes the need for increased awareness of fall protection requirements and the recognition and control of workplace hazards via operational risk management (ORM).

Falls from heights are a leading cause of industrial work-related injuries and fatalities. The Navy and its contractors continue to experience serious fall related mishaps even with adequate fall protection rules, equipment, training and oversight in place. The principles of ORM can help provide an additional level of safety when applied during every task, and should now be an engrained standard practice for each and every weight handling operation and maintenance evolution. Simply looking around and asking three basic questions at the job site can prevent serious injury or worse:

What can hurt me or someone else?
What can I do about it?
If I cannot do anything about it, who do I tell to get it fixed?

There are many work scenarios that create the potential for falling from an elevated structure. Whenever practical, structures are built with guardrails to provide fall protection for personnel standing on the deck. This includes the use of swing gates or hatch covers for floor openings. When fall hazards cannot be engineered out, the use of fall protection is warranted. Fall protection must be worn when exposed to fall hazards on any elevated walking working surface with unprotected sides or edges from which there is a possibility of falling 4 feet (5 feet for shipyard operations) or more to a lower level; or where there is a possibility of a fall from any height onto dangerous equipment, into a hazardous environment, or onto an impalement hazard.

Increased safety awareness by all personnel involved in weight handling operations and maintenance will help prevent accidents. OPNAVINST 3500.39B provides additional information on operational risk management. Every accident diminishes support to fleet readiness. Navy shore activity commanding officers are encouraged to intensify their focus on safety, with a strong emphasis on the application of ORM principles.

SHARE YOUR SUCCESS

We are always in need of articles from the field. Please share your sea stories with our editor *m_nfsh_ncc_crane_corner@navy.mil*.